



# Annex XIX: Letter responses to the consultation on the proposed revised MSC Fisheries Standard

May 2022

*These are responses to a public consultation on a working paper. This report is part of ongoing policy development. The views and opinions expressed in parts of this report are those of stakeholders and do not necessarily reflect the official policy or position of the Marine Stewardship Council*

## Purpose of this document

Alongside responses to the online survey, we received 29 emailed responses in the form of letters or documents. The letters were analysed in addition to the survey feedback. For those that consented, their submissions are below.

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April 1, 2022

Rohan Currey, PhD  
Science and Standards Director  
Marine Stewardship Council  
Via email only: [rohan.currey@msc.org](mailto:rohan.currey@msc.org)

Re: Proposed Revised MSC Fisheries Standard v. 3.0

Dear MSC,

Please know that the current action being considered by MSC that would result in the delisting of ALL northern hemisphere spiny dogfish would lead to the collapse of the US spiny dogfish fishery. 90% of the food products sold from spiny dogfish go to customers who REQUIRE that they be MSC certified. I suspect the anti-shark fishing movement knows this and has angled for this action to arise.

Spiny dogfish in the US North Atlantic waters is an incredible MSC success story. The fishery has a long history of boom and bust. With MSC's help, this fishery has become a steady and sustainable. This is a fishery that MSC should be touting and hanging your hat on. **This is a fishery that MSC NEEDS TO FIGHT FOR.**

The scientific evidence is undisputable that spiny dogfish stocks in the western North Atlantic have been rebuilt and are being fished sustainably. If MSC will not fight to protect this fishery, then it is my opinion that MSC's entire reason for existing is invalid.

I love MSC and what it has done for our fishery. Please do not take this action that would effectively neuter your entire credibility.

On the fish side, spiny dogfish supports the livelihood of 100's of fishermen, dock workers, salesmen and production workers. What MSC might not be aware of is what happens to the byproduct of the spiny dogfish that is not used for human consumption.

Since 1994, our company has been converting spiny dogfish byproduct into a liquid fertilizer. Our fertilizer is widely recognized as a key player in the success of the organic and biological farming movement that took off in the late 1990's. Spiny dogfish fertilizer has been the catalyst ingredient in the successful turn around of 100's of thousands of acres of farmland across the US, Canada, Peru and Ghana.

The use of spiny dogfish fertilizer supplants the use of nitrogen fertilizer and greatly reduces the need for pesticides and fungicides. We have a validated carbon benefit impact. We also have been using spiny dogfish fertilizer to stop nutrient run-off into waterways. We have successful waterway projects ongoing in MA, NJ, and FL.



Without spiny dogfish fertilizer, our network of 100's of farmer will be without the key tool they need to stimulate the bioactivity of their soils, which allows all the other regenerative agricultural practices to work (ex. soil mineral balancing, timed foliar feeding).

Our work in the regenerative farming field has been expanding very rapidly. MSC has unknowingly been a big part of this movement.

Its ironic to me that there are environmentalists pushing to delist spiny dogfish.

Its no secret that the US N. Atlantic spiny dogfish population is healthy and being fished sustainably.

I urge MSC to stand up and do the right thing here. From citrus growers in CA to cocoa growers in Ghana, 1,000's of large and small farmers are counting on you.

Sincerely,  
Jeffrey Young  
President



1<sup>st</sup> April 2022

To whom it may concern,

Austral Fisheries have been long time supporters of the MSC, and at present have 3 certifications across 4 Australian fisheries:

- Heard Island and McDonald Islands Patagonian Toothfish fishery;
- Heard Island and McDonald Islands Mackerel Icefish fishery;
- Macquarie Island Patagonian Toothfish fishery; and
- Australian Northern Prawn Fishery.

We write this letter as a response to the MSC Fisheries Standard Review for version 3.0. We have elected to write a letter instead of filling out the online survey. We would also like to note that we fully endorse the Standard Review responses by the *Association of Sustainable Fisheries* and the *Australian Informal MSC Fisheries Group*.

Broadly speaking, we believe the draft Standard in its current form:

- increases complexity;
- would lead to lower scores for already certified fisheries;
- would reduce likelihood of becoming certified and retaining certification; and
- would increase certification costs due to increased requirements for CABs.
- While at the same time not necessarily improving sustainability outcomes.

As such we do not support the draft Standard in its current form.

Specific areas that we would like to make comment on include:

- Marine Mammals
  - We are generally ok with the intent, but the definition needs refinement as almost any interaction is defined as harassment. For example, this currently would include any change in marine mammal behaviour or feeding, which if applied as written, would significantly reduce the likelihood of those fisheries facing depredation gaining certification. This definition could be amended to only relate to actions which would directly compromise survivorship.



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- Also in 1.1.2.3, this should be restricted to *intended results*. Some interactions may be *anticipated* but are not *intended*.
- Ghost gear
  - We are generally ok with the intent, but the definition needs refinement. We would also note that not all lost gear equals ghost gear, and we think this should be made clear.
  - It appears as though if there is evidence that gear does not ghost fish or is infrequent then this might not apply, although this isn't clear. It may also be very difficult to prove that ghost gear impacts are negligible. This is too open to interpretation.
- Shared stocks / multiple jurisdictions
  - Is CCAMLR considered an RFMO for the purpose of Section SE? If so, this needs to be better specified as CCAMLR is not an RFMO.
  - Harvest strategy development/changes are much slower within these international forums, and this may disadvantage already certified fisheries where harvest strategy changes are required or underway. We point to the work currently underway in CCAMLR as some fisheries approach the target of B50, with considerations that the CCAMLR Decision Rule may require changing as fisheries approach the target.
- Observer (observation) requirements
  - We believe any observer requirements should be as is specified by the relevant RFMO or national authority. Many fisheries will have significant challenges meeting the proposed requirements.
  - Additionally, what is considered observer coverage can be very subjective. There are 'crew observer programs' in place with the Regulator in some fisheries – and we point to Australia's Northern Prawn Fishery here. Will this meet requirements even though it does with the Regulator?
- Bait
  - We remain concerned that the assessment of bait within the current standard is neither clear, feasible nor acceptable, and has not been addressed in the current review.
- ETPOOS
  - For many fisheries and species, the new requirements will not be able to be met as much of this information is simply not available and likely not practicable to be obtained in the near future either.
- Combination of primary and secondary species
  - This essentially defaults the 'In Scope Species' to what were the lowest scoring elements (either Primary or Secondary). This is not such an issue, but the other changes to the standard will serve to lower P2 scores.

- The combination of Primary and Secondary also changes the triggering of cumulative assessments for 'Secondary' species at 5% rather than 10% of the catch.
- Labour
  - We strongly suggest the avoidance of creating new standards in this area, of which MSC is not an expert, and simply refer to existing reporting requirements within national legislation. i.e. Modern Slavery Act.
- Overall complexity of Standard
  - This is still a very long and complicated Standard with multiple documents requiring to be understood. This is simply too much to ask for many industry players.
  - The continual raising of the bar is striving too far. If this continues the MSC risks losing many clients as industry support drops away. It is becoming more and more likely that what was once deemed a sustainable fishery under a previously already high standard, will struggle to keep up with the ever-changing and increasing requirements.

Sincerely,



David Carter  
CEO



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# FISHERIES STANDARD REVIEW RESPONSE

Submitted by Email to [standards@msc.org](mailto:standards@msc.org) , 3 April 2022

by AUSTRALIAN INFORMAL MSC FISHERIES GROUP

## Introduction

This submission arises out of informal meetings of Australian fisheries engaged with the MSC. Participants and fisheries are listed below and range from small to large. This submission identifies the need for further action by the MSC. Adoption of the draft Standard (and linked documents) would lead to sustainable fisheries becoming less likely to be certified. For those that can be certified their costs will increase and the process of certification will become riskier.

## Broad Grouping of Australian MSC Fisheries

Participants from the fisheries listed below have been actively engaged with the FSR including participation in formal MSC processes, direct consultations with MSC staff and industry discussions. Some are members of the Association of Sustainable Fishers. All have benefited from the briefing notes and comments prepared by the ASF. Participants have also engaged in briefings from CABS. The CABS are not only experts, but essential to the integrity and reputation of third-party assessment.

Although an informal grouping the participants in those discussions have agreed to make this joint submission. [Appendix A](#) below lists comments based on common high priority issues identified from our discussions and briefings. These common issues should be read in conjunction with submissions of the ASF and individual fishery submissions, whether through the survey or emailed directly to the Review.

## Conclusion

The conclusion of this Group is that the FSR has failed to meet the high standards of the MSC, and the objectives originally set for the FSR Review in 2018. The text of the Standard has become more complex, without a corresponding increase in certainty and clarity. The text in some areas, such as implementation timeframes, is particularly opaque. Elements such as marine mammal harassment and evidence requirements need significant additional development and are at odds with their common language description in the Guidance. Other changes seem to be rooted in the experiences of other jurisdictions with resultant changes likely to lead to unanticipated consequences in an Australian context (for example on evidence requirements).

These changes have raised the bar to accreditation without improving sustainability outcomes. In some cases, the unintended consequence would be to exclude Australian sustainable fisheries from accreditation. For those fisheries that might be accredited, the advice they have received is that risks and costs will be raised. These deficiencies outweigh the benefits of potentially positive changes, such as to P2 and the treatment of ETP/OOS.

Some of these problems may be the result of the Covid pandemic, which has undoubtedly increased the challenge of finding common ground and coordination in drafting. This is a challenge to overcome, not a reason to accept a poor result. The MSC cannot construct a sensible standard by accumulating interest group priorities, species specific concerns and hot topics.



## **Recommendations**

Clear deficiencies in this draft have undermined confidence by participants in the MSC and in the FSR consultation process. That this is a last draft with no more public review steps is of great concern. Further transparent review steps are required applying a more stringent approach to the degree to which changes meet MSC and Review objectives. This might involve steps such re-engagement with the TAB and STAC, with their recommendations also being publicly available. Approaches to novel topics/issues need to be substantively improved or re-written. If such changes cannot be achieved in the time available, they should be dropped or made subject to further investigation leading into the next review.

## **Participants in Discussions and Key fisheries**

Annie Jarrett: Northern Prawn Fishery

Martin Exel and Rhys Arangio: Austral and Southern Fisheries (including Heard and McDonald Islands)

Brian Jeffriess: Australian Southern Bluefin Tuna

Johann Botha and Felicity Horn: Shark Bay Managed Prawn Fishery

George Kailis: Exmouth Gulf Managed Prawn Fishery

Malcolm McNeill: Australian Longline and Southern Fisheries (including Heard and McDonald Islands)

Hamish Ch'ng: Abrolhos Islands & Mid-West Trawl Managed Fishery

Phil Ravello: Eastern Tuna and Billfish Fishery

Claire Webber: South Australian Sardines

Kelly Pyke-Tape: Spencer Gulf & West Coast Prawn Fishermen's Association Inc.

Simon Boag, Atlantis and South East Australian Fisheries.

## **APPENDIX A: SUMMARY OF COMMON ISSUES RAISED IN DISCUSSIONS:**

### **P2 Scoring Elements**

Advice received is that the scoring process, especially the reduction in species categories from 3 to 2 decreases the number of “scoring elements” in each and increases risk of lower scores. By way of example if under the current version a fishery might have achieved achieve a Primary spp scored 90, secondary scored 75, and ETP scored 80. Under the new proposal scores will either be 75 for “in-scope” and 80 for ETPOOS, or 90 for “in-scope” and 75 for ETPOSS, or worst case 75 for “in-scope” and 75 for ETPOOS. In all cases the average will be lower. This could be a challenge for some fisheries.

### **New Classifications of OOS and Data Rich Fisheries**

New classifications will require an assessment of all OOS species with which the fishery interacts, even if only a little bit. Assessments will be more lengthy and costly, or using RBF may end up with excessively precautionary outcomes. By way of example. New rules say any bird with more than 5 individuals in the catch data must be evaluated. There is a perverse disincentive whereby fisheries that are data rich will find it the hardest to meet requirements.

### **Evidentiary Requirements**

- Concern on Impact generally of changed requirements/wording
- Impact of reference to Toolbox Appendix B. Including in areas such as In scope species (SA3.7.2) and ecosystems/habitat (SA 3.12.3)
- Interaction between evidentiary requirements and observer/observation coverage. Apparent setting of specific % levels.

In general, the evidentiary changes are convoluted and difficult to apply. Further there is requirement is to apply them at a scoring element level. This will add cost and time to assessments.

Fisheries with monitoring otherwise deemed adequate, but not meeting the prescribed thresholds will have trouble justifying the adequacy of monitoring.

Fisheries with more than adequate monitoring will still face higher assessment costs because of the requirement to apply the evidence framework to each scoring element.

### **Marine Mammal Harassment and Killing**

This section is especially problematic. The wording is especially convoluted. Wording that may be appropriate in an American (USA) legislative context is inappropriate for use in this standard.

- Appears substantively at odd with comments in the Guidance. (Noting the Orange Roughy adjudicator’s view that clear words in the standard cannot be modified by Guidance etc).
- Potential extension to consequences that are anticipated, but (in common meaning of the word) genuinely unintended. Such as dolphins feeding off discards in tropical trawl fisheries
- Potential to injure is very broad in 1.1.2.3 i and potential to disturb even broader in 1.1.2.3 ii. Relationship of these provisions to definition of ‘incidentally’ and
- Are the CAB processes in 1.1.2.3 (c) consistent with any principles of natural justice? There appears to be no discretion, consideration of what may be independent verification (Note: Natural Justice/due Process may also be a problem with 1.1.2.4).

## **Ghost Gear**

Participant concerns focused on wording and practical application. For example, possibility of low GG scores bringing the overall scores down, especially in areas such as unobserved mortality under the new evidence standards. There was uncertainty of the impact on cost and risk (for minimal benefit).

## **NEW ETP/OOS Structure**

- Concern on the complexity of the changes.
- Acknowledged potential benefit for some fisheries such as OR.
- Question was raised on what happens if a third party such as IUCN changes the rating of a species in or out of ETP. Is this covered in SA 3.1.7.1 (c)?

## **VME now Habitats**

Appears a positive change but concern with interaction with new evidentiary rules. What would be required to meet is not clear to fisheries. More guidance in the Standard may be required on habitat definition and identification for the purposes of scoring.

## **Risk Base Framework**

In the online workshops held by MSC there were references to the risk-based framework as an alternative path. Recent communications from ASF/MSC discussions suggest that an RBF is a potential 'get out of jail' card (for ETPs in particular). In the past we had been advised of the potential for RBF pathways to add cost, complexity and risk (of outcome).

CAPE COD COMMERCIAL  
**FISHERMEN'S  
ALLIANCE**

**Small Boats. Big Ideas.**

March 31, 2022

Rohan Currey, PhD  
Science and Standards Director  
Marine Stewardship Council  
Via email only: rohan.currey@msc.org

Re: Proposed Revised MSC Fisheries Standard v. 3.0

Dear Dr. Currey:

On behalf of the members of the Cape Cod Commercial Fishermen's Alliance, I am writing to oppose in the strongest possible terms an adoption of the proposed revised MSC Fisheries Standard (Proposed Standard).

Please understand that this is not a typical, "business as usual," pro forma letter. Adoption of this Standard, which has no scientific, environmental, or stock protection merit for the historic fishery of Cape Cod and the Northwest Atlantic more generally, would threaten the very existence of the small-boat, independent, family-based fishing community we represent.

This is no exaggeration. This wholly unnecessary tragedy must not be allowed to happen.

The Cape Cod Commercial Fishermen's Alliance is a member-based, nonprofit organization that works to build lasting solutions to protect our ecosystem and the future of our fisheries. The Alliance represents 150 fishing businesses and more than 300 fishing families. We have been at the forefront of sustainable fishing effort including full accountability, improving stock assessments, and testing and developing gear modifications to eliminate risk of potential harm to whales. We are deeply invested in public policies that protect the environment, manage stocks well, and build sustainability for next-generation fishermen.

The U.S. Atlantic spiny dogfish fishery was first certified by MSC as a sustainable fishery in August, 2012. The stock that was certified is the Northwest Atlantic stock of spiny dogfish. It was re-certified in May, 2018. By any measure, the U.S. Atlantic spiny dogfish fishery is sustainable.

The Northwest Atlantic stock of spiny dogfish is not endangered, threatened or protected. The Proposed Standard ignores this scientific fact and automatically classifies a species as Endangered, Threatened or Protected (ETP) or Out of Scope (OOS) if the species is listed on Appendix 1 or 2 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). (See p. 30, Figure SA3: Decision tree for ETP/OOS species). Spiny dogfish are listed on CMS Appendix 2.

The Northeast and Northwest Atlantic spiny dogfish stocks are distinctly separate. CMS' listing of spiny dogfish refers only to the Northeast Atlantic spiny dogfish stock. <https://www.cms.int/en/species/squalus-acanthias>. CMS ignored undisputed scientific fact when it erroneously listed all spiny dogfish stocks in the Northern hemisphere without distinguishing between the Northeast and Northwest Atlantic stocks. If CMS had recognized the different stocks as does IUCN (whom CMS refers to in the aforementioned citation) the

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Northwestern Atlantic stock would not be on Appendix 2.  
<https://www.iucnredlist.org/species/91209505/124551959>

The automatic classification lacks even a scintilla of scientific foundation in its misapplication to the U.S. Atlantic spiny dogfish fishery.

The decision tree (Figure SA3) and accompanying clause SA3.1.7.3 provides for an exception to ETP/OOS listing for species other than sharks based on life history, management, and stock status. The management and stock status of the northwestern stock of spiny dogfish are why it is currently passing Principle 1 of the Standard and certified sustainable. We would accept as a solution to this problem that commercially and sustainably harvested sharks such as spiny dogfish also be provided the exception in SA3.1.7.3, provided that clause SA3.1.7.1b is stricken.

The U.S. Atlantic spiny dogfish fishery continues to meet all criteria of the MSC definition of sustainable fishing. Adopting the Proposed Standard would strip the fishery of its certification in a manner that is antithetical to MSC's goals.

Spiny dogfish have become a staple of our small-boat fishing fleet, replacing other historic stocks. Dogfish arrive in our waters in great abundance during the warmer months. Day-boat fishermen harvest them in both state and federal waters. Total harvests are regulated, and sustainable. In addition, our fishermen experience almost no "by-catch," successfully targeting dogfish and skates, another plentiful species also MSC certified (#MSC-F-31501, issued Feb. 19, 2021).

Nearly 100% of U.S. Atlantic spiny dogfish is sold in the European Union (EU), and we presume soon to Great Britain. Most buyers in the EU require MSC certification. Adopting this standard would mean that our fleet, and many other regional fishermen, will no longer be certified as a sustainable fishery. This will cause a complete collapse of the commercial market for no reason. Given the abundance of dogfish, alternative stocks are not a feasible option for harvest.

This is directly at odds with the MSC's stated mission to use markets to incentivize proven sustainable fishing practices.

All of the Cape's fishermen, and the overwhelming majority of all fishermen with spiny dogfish permits (approximately 2000 vessels) are independently owned and operated. But it's not just the permit holders who are imperiled; all ancillary companies that for example process, cut and ship dogfish will suffer unnecessarily. The Board will be the direct cause of severe economic impacts without any justification from stock management or habitat protection perspectives.

The Cape Cod Commercial Fishermen's Alliance implores the MSC Board of Trustees to strike the ETP/OOS automatic classification in its entirety, or provide an exemption under SA3.1.7.3 and strike clause SA3.1.7.1b, or abandon the Proposed Standard completely.

Sincerely,



John Pappalardo, CEO

John Pappalardo, CEO



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April 3, 2022

Standards Review Team  
Marine House  
1 Snow Hill  
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EC1A 2DH

Sent via email: [standards@msc.org](mailto:standards@msc.org)

**Re: The Fishery Standard Review**

Dear Standards Review Team;

I submit this letter on behalf of Clearwater Seafoods Limited Partnership (hereafter "Clearwater") on the Fisheries Standard Review.

Clearwater has been a long-time supporter of the MSC program. Clearwater initiated the certification of the Patagonian scallop fishery in 2005 and in the subsequent 15+ years has been a driving force behind the continued certification of many fisheries throughout eastern Canada. We also engage in the MSC program through Macduff Shellfish's support of Project UK. Macduff will be providing additional feedback in their own submission. It is within the context of support for a robust standard that is rooted in practical application that we provide the following feedback.

Detailed feedback on specific elements outlined in the consultation document are provided below. However, as introduction I would like to highlight two primary concerns we have with the direction of the standard:

- The standard is becoming so complicated clients can no longer understand it. I've been reviewing MSC standards for 14 years and I've completely lost the ability to see my fisheries reflected against the standard. The MSC must wrangle with, and succeed in incorporating new expectations and clarifications, without sacrificing the ability of clients to comprehend the standard. Having to hire a full-time MSC Standard Specialists simply to navigate a certification is a failure in the program and earns the MSC the reputation that is simply too labour intensive and expensive to be worthwhile. I invite you to interpret this feedback in the context of the specific project on making the standard more efficient, but it is also intended to be more broadly applied, as the most recent efforts on making the standard more consistently applied are resulting in sacrificing comprehension.
- With this proposed standard there is a greater shift of MSC prescribing what management approaches are required, rather than evaluating whether a particular fishery's management is achieving outcomes. This is exceedingly clear with the 20%-100% at-sea observer stipulation in the Evidence Requirement Framework (ERF) but also in the proposed use of CITES, CMS, and IUCN as a repository for ETP identifications. A complicated certification standard which prescribes approaches that may not fit the local context places maintaining MSC certification in conflict with making right-sized local management priorities and decisions. It is likely to



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undermine credibility of the MSC certification and lower the value of certification to fisheries stakeholders.

The remainder of this submission provides some detailed feedback on specific elements of the draft standard.

### Scope

We agree with the intent behind adding 'marine mammal harassment' and 'conviction of serious crimes' to the scope. However, there are further details needed.

#### *Marine Mammal harassment*

What defines an "entity?" If a client group member has an employee that takes part in marine mammal harassment on their own time, does that exclude the client group member from the certificate? Within the Canadian context, there are fish harvesters who take part seasonally in the Canadian seal hunt but at a different time of year make up crew on commercial fishing vessels. The scope definition should clearly state that it is the fishing activity within the UoC that is subject to the scope evaluation.

#### *Conviction of Serious Crimes*

Again, we require clarity on what defines an "entity"? If a client group member has an employee that takes part in any of these crimes, and is subsequently released from employment, will that be sufficient to retain their membership to the client group?

### Endangered Threatened Protected and Out-of-Scope (ETP/OOS)

In extensive feedback submitted to MSC July 29, 2021, Clearwater provided our opinion that the reliance on CITES, CMS, and IUCN was problematic and did not achieve the stated desire of the MSC to increase consistency across assessments. In the current consultation draft the MSC standard retains the use of CITES, CMS, and IUCN listings and the MSC online survey specifically asks if the amendments proposed for ETP/OOS will be effective and feasible. It is our position that this proposal still does not achieve any of the stated intended objectives (consistency, effectiveness, feasibility). It adds additional complexity which will only serve to make more work for CABs.

### Evidence Requirement Framework (ERF)

We see this as potentially the most significant change in the new standard, especially as this interacts with other changes, such as the inclusion of all Out-of-Scope species in the ETP requirements. The ERF relies heavily on at-sea observer (AOS) coverage as the baseline definition of success for fishery independent data. While the draft acknowledges that equivalents to these ASO targets would be accepted, outside of a vague reference to electronic monitoring and reference fleets, there is no guidance as to what CABs may accept as equivalents. There is no justification given for why the proposed limits (20%, 30%, 65%, 100%) are chosen at different thresholds or how these percentages are to be calculated (of catch, of landings, of sea days, of trips). With these very precise limits for observer coverage, and very vague definitions for acceptable alternatives, it will be a very risky choice to pursue MSC certification if ASO are not currently deployed at the suggested thresholds. The inclusion of these



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elements in the late stages of the standard review process introduces significant uncertainty for current clients and those evaluating entry into the program. It also raises concerns that these thresholds were not sufficiently stress tested in real-life fisheries before inclusion in the draft standard.

I thank you for the opportunity to comment on these proposed changes and look forward to future engagement on Fishery Standard Review.

Kind Regards,

A handwritten signature in blue ink that reads "Catherine Boyd".

Catherine Boyd  
Director, Sustainability and Public Affairs





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Sent via email to [standards@msc.org](mailto:standards@msc.org)

4 April, 2022

cc: Dan Averill, [dan.averill@msc.org](mailto:dan.averill@msc.org)  
Jay Lugar, [jay.lugar@msc.org](mailto:jay.lugar@msc.org)

Dear Sir or Madame:

Thank you for the opportunity to provide comments on the proposed changes to the MSC Standard. We apologize for not submitting our comments on time. We understood the public comment period closed today but thought we had until the end of the day. Dan Averill suggested we submit our comments today in hopes that you would still take them into consideration. We work with fishery clients in Russia and the USA to help them through the MSC process and are very concerned about some of the proposed changes as outlined below.

**Evidence Requirements Framework (Toolbox B):** Numerous problems were highlighted with the ERF in the [Impact Assessment](#) that have not been addressed to date. The mandatory evidence requirements framework is not appropriate for every fishery. Requiring the use of the ERF will add unnecessary burden and cost on our clients without significantly improving the sustainability of their fisheries. Most of our clients are involved with salmon fisheries that use small vessels to transport fish from fixed traps to shore. Observer requirements would be extremely difficult to implement and serve little benefit.

**Gear Loss, Ghost Gear & Unobserved Mortality:** Proposed changes to the standard would require demonstrating that lost gear impacts are minimized to achieve the SG60 for Primary, ETPOOS and Habitats management indicators and requires explicit consideration of unobserved mortality. The gear used in Russian salmon fisheries (fixed coastal trap nets and beach seines) is extremely unlikely to be lost and if lost, would not be expected to continue impacting other species and habitats. Requiring demonstration that lost gear impacts are minimized would create undue burden and costs to our clients without improving the sustainability of their fisheries. We urge you to reconsider the SG60 scoring requirements in relation to lost gear impacts where gear loss is not a significant concern.

Thank you for considering our concerns regarding the proposed changes to the MSC Standards.

Sincerely,

Natalia Novikova  
Founder, ForSea Solutions



**Comments Submitted as Part of the Public Review Process  
for the Proposed MSC Scope Change for Marine Mammals  
and the Revised MSC Fisheries Standard**

By  
Guillermo Gómez<sup>1</sup>  
President  
Gomez-Hall Associates  
March 23<sup>rd</sup>, 2022

**Introduction**

The Marine Stewardship Council (MSC) is in the process of revising its Standard, including considering a significant Scope Change (SC) with respect to marine mammals.

The aim of this document is to provide input into the MSC Standard Review process, with the intention of highlighting areas where proposed revisions to the Standard are likely to cause harm to the MSC's goals for more sustainable and well-managed fisheries, as well as to its reputation as a science- and process-driven standard holder.

If approved as written, fisheries such as those that catch tuna in association with dolphins, would no longer be "in scope;" that is, they would not qualify to be certified under the revised Standard. MSC-certified fisheries that catch tuna in association with dolphins would likely lose the MSC certification if the proposed Scope Change is approved.

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<sup>1</sup> The author is an international expert with 40 years of experience in global tuna fisheries and markets. Mr. Gómez's experience covers activities as a government official at the Mexican Fisheries Ministry, in academia as a professor of fisheries economics, and as a fisheries consultant with Gomez-Hall Associates, providing strategic advice to industry, governments, non-governmental environmental organizations, and tuna Regional Fisheries Management Organizations (RFMOs). Mr. Gómez worked for the MSC as the International Tuna Specialist from 2003 to 2005 and as the MSC fisheries outreach specialist for Spain and Portugal in 2005-2008. As the MSC tuna specialist, he was tasked with promoting the MSC program across the global tuna industry and was instrumental in bringing the first tuna fishery to the achievement of MSC certification. As a consultant for an industry client, he served as the MSC Coordinator between the client group and the CAB. In that capacity, he successfully brought two tuna fisheries to achieve MSC Certification: The Mexican Baja California Pole and Line tuna fishery for yellowfin and skipjack tunas (2011) and the Northeastern Pacific Mexican Purse Seine Fishery for yellowfin and skipjack tunas (2017). The comments expressed in this document are his personal views on the proposed changes to the Revised MSC Standard and his comments do not represent the views of existing or prior clients.

## Organization and Content of the Document

This document consists of two Parts and one Appendix.

Part I provides comments on the proposed Scope Change on marine mammals. This section covers several themes:

- The lack of a scientific basis for the proposed Scope Change
- The likely ecosystem effects the Scope Change would have if current purse seine fishing in association with dolphins were to be replaced by fishing in association with Fish Aggregating Devices (FADs)
- The implications that the Scope Change would have on the fisheries management regime in the Eastern Pacific
- The lack of transparency and due process that has been followed for the adoption of the proposed Scope Change; and, finally,
- We assess the Scope Change against the MSC's own Impact Assessment Framework.

At the end of Part I, we present some conclusions and recommendations

Part II of this paper presents some comments on the proposed revisions to the MSC Standard as it relates to FADs and ghost fishing gear. We discuss how proposed modifications to the Standard as it relates to FADs continue to fail to address many of the most significant negative impacts of catching tunas on FADs such as:

- Adverse impacts on the targeted tuna stocks (due to increased catches of juveniles);
- Adverse impacts on the by-catch of many Endangered, Threatened, and Protected (ETP) species of sharks, turtles, and rays; and
- Adverse impacts caused by abandoned and lost FADs that damage sensitive ecosystems of coral reefs, beaches, and mangroves and contribute to overall pollution.

Some general conclusions and recommendations are also given at the end of Part II.

Finally, Appendix A provides some background on the purse seine fishery in the Eastern Pacific Ocean (EPO), which is the area of competence of the IATTC. Appendix A presents some basic statistics on how much tuna is caught, numbers of active vessels in the fishery, how these vessels deploy their nets around tuna schools, and how "set types" are classified by the IATTC.

GOMEZ-HALL



ASSOCIATES

## PART I

### Comments on the MSC Proposed Scope Change to Marine Mammals

#### A. Considerations Regarding the Proposed Scope Change to Marine Mammals

It is not the purpose here to present in detail the MSC proposed change in Scope with respect to marine mammals, nor to discuss what may have led the MSC Governance bodies to seek this change. It appears that members of the Board of Trustees may have been concerned about the fact that the Northeastern Tropical Pacific Purse Seine Yellowfin and Skipjack Tuna Fishery from Mexico achieved MSC certification in 2017.

This fishery catches tunas in association with dolphins. Our understanding is that the Board was concerned with the reputational risk to the MSC of having certified a fishery that encircles dolphins during the process of catching tunas, even though the dolphins are subsequently released alive. This, even though, from a sustainability outcome perspective, the method represents the most sustainable way to catch tunas in the world, with the least ecosystem impacts to other species, and particularly to many endangered, threatened, and protected species.

With the intent of seeking evidence of “intentionality” or the “harassment” of marine mammals in several fisheries and other human interactions with marine mammals, the MSC commissioned two studies: *“Review on global, commercial, wild-capture fisheries intentionally harassing or killing marine mammals”*, by Caterina M. Fortuna (July 2019) and *“Marine Stewardship Council and the Fisheries Standard Review: Identifying out of scope fisheries”* by Russell Smith and Caterina M. Fortuna (July 2021).

Arguments developed by these studies, which did not address the critical larger scientific context of impacts in all form of tuna fishing, were also flawed in other ways, and lack connection to the actual fisheries. Despite these flaws, they were used to support the current proposed Scope Change.

## **B. What are the Major Problems with the MSC Proposed Scope Change Associated with Marine Mammals?**

The principal problem with the MSC proposed Scope Change is that, if approved, the ramifications and consequences of its adoption are likely to be far broader than anticipated. The arbitrary nature of a change outside of the stated scope of the MSC's Principles and Criteria, represents a risk to the very nature of the MSC focus on protecting ecosystems: it would affect accessibility, and would seed mistrust among certified fisheries already in the program that issues currently out of scope of the standard could be introduced through media and campaigning pressure.

We believe that the proposed Scope Change would cause irreversible damage to the fisheries and to the MSC program. The following sections provide support to these conclusions.

### ***1. The proposed Scope Change is not supported by science and fisheries sustainability criteria***

If the proposed Scope Change is intended to “protect” marine mammals, it would be unsuccessful; in fact, if approved, the result would likely be more damaging to these species. In addition, it would be dangerous to tuna stocks, shark stocks, turtles, and other species in at least one ocean, the Eastern Pacific.

One sustainable fishery that appears to be the target of this Scope Change is the Northeastern Pacific Mexican Yellowfin Tuna Fishery, which received its MSC certificate in 2017. The fishery met all the MSC standard sustainability criteria, most at the SG 80 level and some with conditions, consistent with the bar for certification. An stakeholder-response-based Scope Change to the MSC standard, targeted specifically at marine mammal welfare – whether those species are affected at a population level or not – may, at best, prevent the fishery from retaining its certification on V3.0 of the proposed Draft Standard, and at worst, sets a dangerous precedent for managing fisheries around the welfare of charismatic species, the misguided fishery management approach that the MSC ecosystem-based standard was created to prevent.

Some of the arguments supporting the proposed Scope Change indicate that catching tuna in association with dolphins is inconsistent with “Best Practices” and implying that such fisheries should switch to catching tunas with FADs and suggesting that FAD fishing for tunas represents a “superior” Best Practice for sustainably catching tunas.<sup>2</sup>

To start, fishing for tunas on FADs results in catching significant juvenile individuals of yellowfin and bigeye tuna. Catching juvenile tuna directly impacts the condition of the tuna stocks

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<sup>2</sup> Globally, nearly all purse seine fisheries catch tunas on FADs, although they may also encircle free-swimming schools. Currently, it is economically infeasible to limit fishing to only free schools.

(yellowfin and/or bigeye), affecting the reproduction ability of these species. Adding FAD fishing to the Eastern Pacific will exacerbate difficulties in managing the stocks.

Catching tuna using FADs also produces significant bycatch of sharks, turtles, and rays, many of which are returned harmed or dead back to the sea. Many of these bycatch species are endangered, threatened, or protected (ETP) species - and switching this fishery to FADs would further threaten several of these species.

Furthermore, lost and abandoned FADs represent a major challenge to fisheries management; four out of ten FADs released by tuna fishing vessels are deliberately abandoned or lost and drift through marine protected areas, become enmeshed on sensitive coral reefs, and become “ghost fishing gear” while continuing to harm ETP species in the process. FADs affect the behavior of attracted species as defined in the proposed Scope Change, affecting a large number of tuna and ETP species with respect to feeding, migration, breeding, etc.

Furthermore, FADs tend to attract juvenile tuna, which has significant implications for the condition of tuna stocks. Both free school and FAD sets remove juveniles prior to maturity, whereas fishing tunas in association with dolphins allows only the removal of consistently large, mature individuals that will have already contributed reproductively to the population.

In general, fishing on mature tuna is far more biologically sustainable than fishing on juveniles.

### Dolphin sets vs. FAD sets

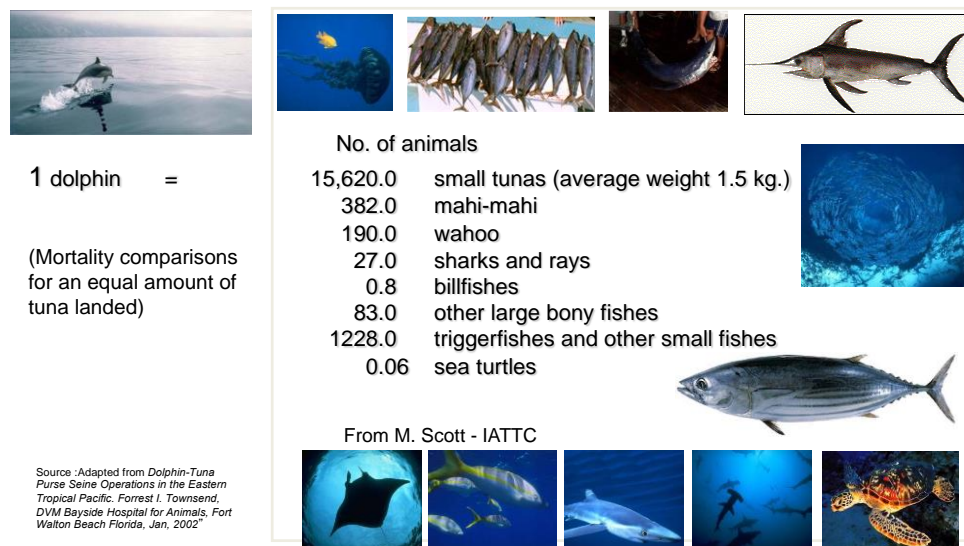


Figure 1. Estimates by IATTC of the relative non-target catch equivalencies between dolphin-associated sets versus FAD sets.

In addition to the four out of ten that are lost or abandoned, three out of ten FADs planted are stolen by other boat owners, and only three of ten FADs remain to be monitored by the original

vessels that planted them<sup>3</sup>. Consequently, suggesting that shifting from catching tunas in association with dolphins (with an established, detailed and internationally recognized management system that documents all aspects of outcomes), to fishing on FADs (which disproportionately lack effective management in all RFMOs) as a means of shifting tuna fisheries to "a superior best practice alternative", is simply wrong, as well as irresponsible.

## ***2. Tuna Regional Fisheries Management Organizations (RFMOs) lack effective systems to control and manage an increasing number of FADs.***

There are four tuna RFMOs that are tasked with the responsibility of managing tropical tuna stocks (yellowfin, bigeye, and skipjack) and associated species in the Pacific, Atlantic and Indian Oceans. These are the Inter-American Tropical Tuna Commission (IATTC) which manages tunas in the Eastern Pacific Ocean (EPO); the Western and Central Pacific Fisheries Commission (WCPFC); the International Commission for the Conservation of Atlantic Tunas (ICCAT); and the Indian Ocean Tuna Commission (IOTC), which manage tunas in their corresponding ocean areas.

None of the aforementioned RFMOs knows: (1) how many FADs are released and operate each year within their areas of competence; (2) who they belong to; and (3) where they are fishing (attracting fish). Neither do they know if FADs are released within or outside the Exclusive Economic Zones of Coastal States, legally or illegally (IUU), with or without these countries' prior authorization, or whether they transit through or beach within marine protected areas.

In addition, the owners or operators of tuna vessels that are using FADs are not mitigating the negative ecosystem impacts of their FADs and are not held liable for the damage they cause; in the Pacific, these adverse impacts most often affect coastal and island States. Some of these fisheries on FADs have been certified and others are likely to achieve this goal under the revised MSC Standard, however, none of these fisheries are really mitigating the ecosystem impacts as required by Principle 2 of the MSC.

Conversely, fishermen that are currently catching tuna in association with dolphins are doing so on a sustainable basis – under a transparent, internationally recognized dolphin conservation program, whereby each vessel is assigned a very low “Dolphin Mortality Limit” (DML) within an overall limit, that if exceeded, results in that vessel having to immediately stop fishing on dolphins for the remainder of the season and receiving the consequence of a rescinded DML in subsequent years.

Suggesting that this type of managed, effective, sustainable fishery does not pass the bar of “Best Practices”, when the primary alternative technique for fishing tuna in this ocean is fishing on FADs, which is both unsustainable and seriously damaging to the ecosystem, is problematic.

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<sup>3</sup> Gomez et.al. [The IUU Nature of FADs: Implications for Tuna Management and Markets](#), *Coastal Management*, Volume 48-Issue 6, 2020, 5344-558. DOI: [10.1080/08920753.2020.1845585](https://doi.org/10.1080/08920753.2020.1845585)

We are not MSC process experts, but based on our own lay reading of how the MSC process is supposed to work, we believe that this approach is:

- **Antithetical to the MSC's overall principles for sustainable and well managed fisheries.** In particular, this is inconsistent with the intent of the MSC Standard V2.01, which states that for:
  - i. **"Principle 1:** *A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery."*
  - ii. **"Principle 2:** *Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends."*
- **Inconsistent with the MSC's commitment to evidence-based science<sup>4</sup>,** which is upheld by ISEAL's Credibility principles and the expectation that *"the requirements reflect best scientific or current understanding of good practice and are written to enable an objective assessment of compliance, focusing on outcomes rather than approach."* Under the proposed change, an "anticipated" and "potential" interaction that affects behaviors of any marine mammal – regardless of whether it is harmful to population-level viability – is sufficient to preclude the opportunity for a fishery to demonstrate its performance.

In particular, the preamble to the original MSC Principles and Criteria is explicit that:

*"The Principles represent the overarching philosophical basis for this initiative in stewardship of marine resources: the use of market forces to promote behaviour which helps achieve the goal of sustainable fisheries. They form the basis for detailed Criteria which will be used to evaluate each fishery seeking certification under the MSC programme. Although the primary focus is the ecological integrity of world fisheries, the principles also embrace the human and social elements of fisheries. Their successful implementation depends upon a system which is open, fair, based upon the best information available and which incorporates all relevant legal obligations. The certification programme in which these principles will be applied is intended to give any fishery the opportunity to demonstrate its commitment to sustainable fishing and ultimately benefit from this commitment in the market place."*

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<sup>4</sup> FCP 2.2, p. "The science-based MSC environmental standard for sustainable fishing offers fisheries a way to confirm sustainability, using a credible, independent third-party assessment process."



- **Counter to the MSC's Theory of Change and the organization's commitment to due procedure:** the MSC's definition of "sustainability" has always approached the concept from a Brundtland Commission<sup>5</sup> sense, i.e., related to inter-generational population-level viability in the long term.

Instead, this change relates to individual-level welfare considerations, which are not relevant to population persistence, and are also not related to items currently in the articulated scope of the MSC Standard V2.01, as given by FCP 2.2. Section 7.4.2. Our understanding of shark finning requirements – which could be perceived as a welfare consideration – is that they follow the FAO's Code of Conduct for Responsible Fishing (CCRF) and the desire that “*States and users of aquatic ecosystems should minimize waste, catch of non-target species, both fish and nonfish species*”.

Furthermore, these appear as a requirement within the standard, rather than as a scope eligibility consideration, precluding assessment.

If the standard holder (MSC) would like to expand the scope of the standard to encompass welfare considerations and/or concepts outside the FAO CCRF, such a substantial change would need to be done in rigorous compliance with all aspects of the ISEAL Standards Setting Code of Good Practice V6.0, including all Credibility Principles, General Provisions and clauses for Standards Development and Revision.

The MSC would then also need to justify the arbitrary nature of how it has selected effects on marine mammals as a primary consideration versus not just non-lethal interactions, while higher and more predictable mortalities of other, often more endangered species groups (many sea turtle species, apex sharks, and large seabirds, for example) were not selected. As a consequence, the MSC would logically need to demand observer programs be installed in all fisheries to monitor and evaluate these effects in keeping with what already exists for marine mammals in best performing fisheries.

- 3. *Unintended consequences: The MSC proposed Scope Change on marine mammals does not appear to have taken into consideration the impacts and ramifications that the Scope Change, if approved, would have on the IATTC, the regional fishery, and the MSC itself.***

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<sup>5</sup> [https://en.wikipedia.org/wiki/Brundtland\\_Commission](https://en.wikipedia.org/wiki/Brundtland_Commission)

a. Impacts on the IATTC

It appears that the MSC has failed to carefully analyze the impact that modifying the scope would have on international fisheries management. Take for example, the tuna management regime of the Inter-American Tropical Tuna Commission (IATTC) which, since its inception in 1949, has been dealing with the strong association that tuna have with dolphins in the Eastern Pacific Ocean, based on the unique characteristics of the area.

Indeed, since the passage by the United States of the Marine Mammal Protection Act in 1972, the IATTC has been successfully addressing the tuna-dolphin interactions in the regional fishery with one main goal in mind: to reduce the high dolphin mortality (over 150,000 of dolphin per year) that the international fleet caused, down to the present-day level, which, in 2021, consisted of a total dolphin mortality of 356 animals<sup>6</sup>. These successful efforts have included the Dolphin Conservation Program (also known as the La Jolla Agreement of 1992), which was replaced in 1999 by the current Agreement for the International Dolphin Conservation Program (AIDCP) in 1999.

One of the reports commissioned by the MSC while evaluating the proposed Scope Change for marine mammals made a very positive reference to the AIDCP program under the IATTC<sup>7</sup>. However, the report failed to provide any analysis of the effects and repercussions that the MSC's proposed Scope Change for marine mammals could have to the AIDCP program, the effectiveness of the IATTC to continue to manage the fishery using data-driven approaches, and ultimately, the impact that such change could have on not only dolphin populations but the health of the fishery in the Eastern Pacific Ocean.

In fact, it does not appear that the MSC, in considering a proposed Scope Change, sought input from the Director of the IATTC or its scientific staff - the very experts in the science of this fishery.

From a credibility and impacts perspective, the MSC would benefit greatly from assessing what ramifications the proposed Scope Change for marine mammals could have on the following:

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<sup>6</sup> IATTC/AIDCP, International Review Panel, August 16, 2021.

<sup>7</sup> See: [https://www.msc.org/docs/default-source/default-document-library/stakeholders/fsr-consultant-reports/global-review-on-intentional-harassment-of-marine-mammals---fortuna-c-\(2019\).pdf?sfvrsn=ddb7a207\\_6](https://www.msc.org/docs/default-source/default-document-library/stakeholders/fsr-consultant-reports/global-review-on-intentional-harassment-of-marine-mammals---fortuna-c-(2019).pdf?sfvrsn=ddb7a207_6). This report briefly reviews the measures taken by the IATTC with respect to dolphins. It states: *The first objective of the Agreement on the International Dolphin Conservation Program (AIDCP) is to reduce incidental dolphin mortalities in the purse-seine fishery in the eastern Pacific Ocean to levels approaching zero. The total mortality of dolphins in the fishery has been reduced from about 132,000 in 1986 to a low of 683 in 2017. The AIDCP framework is the most developed in term of management measures put in place to minimise bycatch and harassment to dolphins, including the label (dolphin-safe) and certificate to document compliance by Eastern Pacific Ocean purse seine vessels with prescribed measures to govern dolphin mortality. The label is applied to tuna caught in sets where no dolphins were injured or killed, and it serves as an incentive to eliminate mortality to add value to the catches.*

- The IATTC’s ability to continue to manage the health of the fishery and its interactions with marine mammals.
- The effectiveness of the IATTC in achieving approval of conservation and management measures in the fishery under a more controversial environment where stakeholders in the fishery would differentially embrace the MSC Scope Change if adopted.
- Undermining the very science of ecosystem-based management that the MSC was founded to promote.

It is unclear, at least for now, how the proposed Scope Change may or may not be embraced by the Commission or its 21 members and, if the IATTC may consider adopting new resolutions as a result of the MSC proposed change, if approved. It is possible, and in fact likely, that the IATTC would continue managing the fishery under the status quo or “business as usual,” allowing fishermen to continue to catch tunas in association with dolphins, regardless of whether the MSC adopts the proposed Scope Change.

In the past, member countries at the IATTC have promoted and advocated for aspects of the MSC standard to be met specifically so that tuna fisheries could align to this standard and achieve MSC certification.<sup>8</sup> For example, the IATTC has adopted Limit Reference Points and Harvest Control Rules for some of the species under its authority.

Should the MSC’s proposed Scope Change be adopted, it would put substantial pressure on member countries of the IATTC to also embrace the new scope, which would likely result in substantial internal conflict within the organization. Because the IATTC’s governing structure requires that all measures be adopted by consensus, a serious lack of consensus among its members on such a critical issue could render the IATTC incapable of managing the fishery.

In addition, the goals of other candidate fisheries (TUNACONS and AGAC, which are currently in the full assessment process), as well as fisheries under Fisheries Improvement Projects (FIPs) with the aim of achieving MSC Certification, could be at risk, if the MSC’s proposed Scope Change for marine mammals is embraced by the IATTC, as explained below.

Both MSC-certified fisheries and fisheries in assessment would be at risk, due to the likely implications that the proposed Scope Change would have on the ability of the IATTC to remain an effective tuna RFMO, able to successfully adopt conservation and management measures, particularly for co-managed tropical tunas. A failed IATTC would mean that these candidate fisheries could not meet all basic criteria under MSC Principle 3.

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<sup>8</sup> Three albacore fisheries (American Albacore Fisheries Association (AAFA), Western Fish Boat Owners Association (WFOA), and British Columbia Tuna Fishermen Association [BCTFA]); the Mexican Pole and Line Fishery; and the Northeastern Pacific Mexican Yellowfin Tuna Fishery – Pacific Alliance for Sustainable Tuna (PAST).

The uncertainties surrounding the continuation of the AIDCP dolphin conservation program if the MSC Scope Change is adopted are significant. Such uncertainty could also extend to the continued existence of overall observer programs that have contributed to both lowering incidental dolphin mortalities to its lowest ever level of 356 dolphins in 2021, and the 100% Class 6 purse seine coverage that supports management of all the main tropical tuna species and many non-target species.

Finally, a crippled IATTC/AIDCP could also impact the Pacific Bluefin tuna fishery. This fishery is currently under a rebuilding program and catches are under a quota monitored by the IATTC observer program. The progress achieved in improving the conditions of the stock could be jeopardized.

b. Impacts on Dolphin-Related Scientific Research.

Two major research programs that were funded as the result of an MSC action plan to assess the health and welfare of the dolphin population in the Eastern Pacific will likely be canceled if this arbitrary scope change is adopted.

The first research project entails assessing any impact there may be from fishing in association with dolphins on dolphin cow-calf interactions. This research project would provide answers to never proven questions as to whether there are relevant impacts to cow and calf dolphins when tuna purse seine vessels are fishing.

The second research project involves a new assessment of the dolphin population levels in the Eastern Pacific. Due to lack of funding, there have been no surveys to estimate the dolphin populations since 2006. Through an MSC action plan associated with the certification of the northeastern tropical Pacific purse seine yellowfin and skipjack tuna fishery, this survey is being funded – a significant win for the RFMO, the MSC, and the body of science related to marine mammals.

Should the MSC Scope Change be adopted, resulting in rescinding this tuna fishery's certification, there would be no motivation for this fishery to invest in a multi-million-dollar study. This research is a good example of why including sustainable fisheries in performance plans is good for science and the environment. These surveys are the only science that can be used to determine if there is any risk to dolphin populations in the Eastern Pacific, and represent a more effective approach to protecting marine mammals than the proposed Scope Change. If, indeed, the dolphin populations are shown not to be healthy, the fishery would then lose its certification, consistent with a well-functioning MSC. With the proposed Scope Change, the MSC would undermine its own, effective system of relying on data and science.

c. Impacts on the IATTC/AIDCP Observer Programs

Since the early 90s, the IATTC/AIDCP observer program has been a model for international collaboration and for effective observer programs. The program places human observers on

100% of all large tuna purse seine vessels (Class 6 vessels, which have a well capacity greater than 363 cubic meters). This covers nearly 88% (240 vessels of a total of 273) of the purse seine vessels active in the fishery. Vessels with a capacity of less than 363 cubic meter currently do not carry observers.

The current system alternates observers from the IATTC program itself with observers from the national observer programs in its placement of observers onboard the large purse seiners. The main function of the observers is to ensure compliance with the dolphin conservation program under the AIDCP.

If adopted, the proposed Scope Change could bring the IATTC AIDCP program to an end: if the costs and rigor of such a program are *de facto* branded as poor international practice by the MSC, there remains little incentive to contribute the significant funding necessary for this observer program (a cost currently borne by select member nations of the IATTC). At the same time, the AIDCP would cease to act as a model for the genesis of further such programs (as noted in the findings of the MSC's July 2019 expert-commissioned study entitled "*Review on global, commercial, wild-capture fisheries intentionally harassing or killing marine mammals*", by Caterina M. Fortuna). In the absence of the AIDCP observer coverage, dolphin mortality will be unmonitored.

#### d. Potential Impacts on the IATTC Budget

The adoption of the proposed Scope Change could have significant budgetary implications for the IATTC. If the Scope Change is adopted, a potential loss in IATTC/AIDCP budget would have a major impact on the organization's ability to operate and manage the fishery.

The IATTC annual budget for 2022 totals approximately US \$13.9 million dollars. This comprises three separate components. The first is the IATTC operating budget of US \$8.520 million dollars. The second component is the AIDCP program, estimated at around US \$3 to 4 million per year, if one considers the budget for the national observer programs.<sup>9</sup> The third component of the IATTC 2022 budget is associated with the US \$1.4 million-dollar program that places observers to specifically track transshipments of tuna from longline vessels.

The 2022 AIDCP program comprises approximately 3 to 4 million dollars. The IATTC, tasked with managing the program, contributes approximately US \$782,000 dollars from its overall operating budget of 8.5 million dollars. Contracting parties contribute an additional US \$2.5 million dollars and are assessed depending on the carrying capacity of each country's fleet. Finally, the operating budget of the AIDCP is complemented by other contributions that

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<sup>9</sup> Countries that have national observer programs are Colombia, Ecuador, the EU, Mexico, Nicaragua, Panama, and Venezuela. These countries cover some of the operating cost of the national programs, outside the AIDCP budgetary process. Their contributions represent approximately US \$720,000 dollars.

countries with observer programs make at the national level (outside the budgetary process of the AIDCP itself).

If the proposed Scope Change is approved and countries fishing on tuna associated with dolphins no longer care to contribute to the program, nearly one third of the overall budget of the IATTC could be at risk or lost – over US \$ 4.0 million dollars per year.

e. Impacts to the MSC Theory of Change

It appears that in proposing the Scope Change, the MSC did not consider the impacts that, if approved, the change could have on the IATTC's budget, and the research projects related to dolphin populations and welfare that the Northeastern Tropical Pacific Purse Seine Yellowfin and Skipjack Tuna Fishery is committed to contributing via the IATTC. However, and perhaps equally important, the MSC also appears to have failed to assess the impact and repercussions of the proposed Scope Change on its own mission.

The MSC's Theory of Change says that the MSC will provide a science-based sustainability standard and credible, accessible systems of traceability and engagement, eventually resulting in improved fisheries management, healthy ecosystems, and an increased supply of sustainable seafood.

If the MSC adopts the proposed Scope Change, which is not in keeping with what current science shows to optimize ecosystem management, it would be undermining its own system of promoting healthy ocean ecosystems. Here are some examples of the consequences of adopting the Scope Change under the MSC Theory of Change.

- The MSC Theory of Change was designed to improve and strengthen the way fisheries are managed. If adopted, the proposed Scope Change would cripple the IATTC by reducing its effectiveness in adopting conservation and management measures.
- By undermining the MSC Theory of Change with this welfare-based change, the Scope Change would diminish and make irrelevant the existing effective AIDCP program, which has managed to reduce incidental dolphin mortality to the lowest historic levels since the beginning of the tuna fishery. This would likely mean that dolphin mortalities in the fishery would no longer be monitored, enforced, or observed. Under the new scope (if adopted), the Theory of Change would result in the dolphin populations being worse off than before, putting these populations at a higher risk. It could also create reverse incentives, undermining efforts to monitor marine mammal interactions transparently and accurately in global fisheries.
- Should the proposed change be adopted, the MSC Theory of Change, which is supposed to lead to a more sustainable use of fisheries resources and the protection of the ecosystems that support these fisheries, would likely result in an increased use of FADs in the Eastern

Pacific, with all the likely negative effects we have discussed. The MSC Theory of Change would bring with it:

- Increased catches of juvenile yellowfin and bigeye tunas, placing these stocks at higher risk of over-exploitation (as has proven to be the case in the Eastern Atlantic and currently in the Western Indian Ocean), therefore, reducing the ability of the stocks to generate maximum sustainable yields.
- Increased catches of ETP species of sharks, turtles, and rays, associated with FADs, placing them at higher risk in the Eastern Pacific Ocean.
- The loss of the MSC-certified yellowfin fishery in the Eastern Pacific, one of the most sustainable and transparently managed tuna fisheries in the world.
- The potential negative impacts that a failed AIDCP program could have on other conservation programs in the tuna RFMOs, particularly the Western and Central Pacific Fisheries Commission (WCPFC) which, jointly with the IATTC, are cooperating to manage resources and fleets in the overlapping region where the two organizations' areas of competence coincide.

By not conducting an in-depth assessment of the ramifications that the proposed change in Scope could cause to tuna markets according to the Theory of Change:

- An MSC-certified tuna fishery would no longer be able to serve overseas markets, where nearly one quarter of its total catch is purchased by buyers that demand MSC-certified tuna.
- Three MSC-certified albacore tuna fisheries could also lose access to markets in the US, Europe, the UK, and Japan, because the sustainability of their fisheries could be questioned if a crippled IATTC is unable to adopt conservation and management measures due to lack of consensus of its members in an increasingly contentious environment resulting from the MSC's proposed Scope Change for marine mammals.
- Tuna fisheries in the Eastern Pacific that are currently operating under FIPs in the Eastern Pacific and are in assessment for MSC certification are selling around 350,000 metric tons of tunas in the EU and US markets. These fisheries could see their markets closed if their FIPs or MSC certifications fail because of ineffective IATTC dynamics caused by the proposed MSC Scope Change.
- The ISEAL Standard Setting Code of Conduct V6.0 is also clear that any standards revisions must be "*....sufficiently inclusive, participatory and transparent so as to avoid creating unintentional barriers to trade.*" The MSC's impact assessment has not addressed this consideration and the reality that the proposed change would be a barrier to trade.

f. Failure to Assess Market Implications

If the goal of the proposed Scope Change to marine mammals is to exclude fishing for tuna in association with dolphins, it fails to take into consideration that the MSC goal is to generate market mechanisms to promote sustainability.

If the Scope Change is adopted, tuna fishing in association with dolphins will continue, but without any market incentive for improvement. Instead of implementing the Action Plan associated with MSC certification, these fisheries would be incentivized to give up any attempt to continue to improve their sustainability.

**4. Assessing the Proposed Scope Change to Marine Mammals against the MSC's own Impact Assessment Framework**

The MSC has developed an Impact Assessment Framework to evaluate the proposed Scope Criteria Changes and has produced a report, entitled "Scope Criteria. Fisheries Standard Review. Impact Assessment Report".<sup>10</sup> The framework for assessing the proposed Scope Changes is evaluated against a set of criteria and the report, in its last two sections, (Consultations and Discussion and Conclusion) presents the following findings:

***"4.5.3 Consultation***

*Whilst there have been discussions internally and consultation with MSC governance groups and the MSC BoT there has been no public consultation on the proposed option."*

This completely undermines the MSC's own commitment to science and potentially violates the commitments of a standard holder to due process.

Secondly, the final section of the report, states:

***"4.6 Discussion and Conclusion***

*A new scope requirement precluding fisheries from MSC certification on the basis that they intentionally harass or intentionally kill marine mammals will ultimately reduce reputational risk and be largely acceptable to stakeholders, fishery partners and wider supply chain. The preferred approach has been built on substantive research, is auditable and will not have major feasibility or accessibility impacts."*

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<sup>10</sup> SCOPE CRITERIA Fisheries Standard Review Impact Assessment Report, Tim Davies, Shaun McLennan & Karin Mundnich, November 2021, [https://www.msc.org/docs/default-source/default-document-library/stakeholders/consultations/impact-assessments/msc-fisheries-standard-review---impact-assessment---scope-criteria-\(nov-2021\).pdf?sfvrsn=d8de1d5d\\_6](https://www.msc.org/docs/default-source/default-document-library/stakeholders/consultations/impact-assessments/msc-fisheries-standard-review---impact-assessment---scope-criteria-(nov-2021).pdf?sfvrsn=d8de1d5d_6)



This completely undermines the MSC's own commitment ecosystem sustainability and its ability to commit to scientific principles to assure long-term population viability, even when gears or methods may be controversial with some groups. Furthermore, it demonstrates that the organization is susceptible to bending its commitment to science in the face of political pressure.

At the risk of being repetitive in some areas, the Impact Assessment Report findings are at best, superficial and, at worst, demonstrating a lack of understanding of how the proposed Scope Change would impact the ecosystem (i.e., the populations of tunas, dolphins, sharks, and turtles) in the Eastern Pacific and how those impacts would reverberate in world tuna fisheries and markets.

Furthermore, it does not fully assess the impact that the proposed change, if adopted, would have on the integrity of the MSC's own program, its partners, and the potential for many fisheries to enter and remain in the program.

Based on the points raised in this document, below are our findings when we assess the proposed Scope Change against the MSC's own criteria.

a. ***Effectiveness***

- The proposed change, while perhaps effective at appeasing the most vocal of stakeholders (not the mission of the MSC), would be ineffective in mitigating the reputational risks to the MSC program, because it is likely to result in greater risks and harm to the dolphin populations than the alternative option of "business as usual".

The MSC should also not be seen to be responsive to a small number of highly vocal stakeholders in ways that are inconsistent with its mission, its Theory of Change, and its commitment to science. Scientists, governments, and market players may be quieter stakeholders but are nonetheless essential stakeholders as well.

- If MSC is inconsistent with its own values and subject to making arbitrary changes to bend to activists, the trustworthiness of the system will also be undermined.
- Mission discipline and the confidence to uphold the Theory of Change are critical attributes of a mature and sober organization committed to sustainability.
- Is the MSC ready to bear the responsibility for the likely outcome of a failed tuna RFMO and the resumption of a significant increase of incidental dolphin mortalities if the AIDCP becomes redundant?

- The MSC's reputation for promoting transparency via rigorous management and monitoring is inconsistent with undermining the most effective observer program in the world.

**b. *Acceptability***

How can the Board consider the Scope Change to be more acceptable if it results in the following?

- A crippled and failed RFMO unable to get its constituents to adopt conservation and management measures for tunas and dolphins.
- An increase in the use of FADs in the fishery with the associated impact on juvenile tunas and other bycatch ETP species.
- The undermining and potential dissolution of an observer program that is upheld by many, including experts commissioned by the MSC, as an example of best practice.
- The demotivation of key fisheries that may be excluded from the MSC standard.
- The likely result of an increase in the incidental mortalities of dolphins due to destabilization of tuna populations and an observer program that has been undermined by the MSC.

It remains to be seen if the MSC Board of Trustees chooses to bear these responsibilities and, in the process, a dramatic abandonment of its core principles of scientific integrity and ecosystem-based approaches, as well as a higher risk to the MSC's reputation.

**c. *Feasibility***

Is implementation of the proposed Scope Change feasible? The short answer is no, particularly if the proposed change is to take place within the context of the IATTC Eastern Pacific tuna fishery.

- First, existing MSC fisheries in the program and in the pipeline would not necessarily find the proposed change feasible, particularly since, to remain certified or to achieve certification, the existence of a solid fisheries governance RFMO, is required under Principle 3. As explained before, the proposed change would cripple, weaken, and make the IATTC an ineffective management organization.
- Second, some would say that embracing the proposed Scope Change is technically feasible, just extremely costly to transition from fishing on dolphins to fishing on FADs. There is more to the feasibility issue, however, as explained below.

- Deploying FADs in the same areas where tunas are currently caught in association with dolphins (i.e., within the Mexican EEZ or adjacent areas in the northeastern Pacific) would not result in the mature fish switching from being associated with dolphins to associating with FADs. If fleets stop fishing in association with dolphins, fishing effort would shift from larger, more mature dolphins to juveniles that tend to associate with FADs.
  - FADs released off the Mexican EEZ would not aggregate tunas in that region; they would likely drift towards the equatorial areas.
  - There, competition between the existing fleets that fish on FADs and the “newcomers” fishing this way would reduce the overall availability of FAD-associated catches for the entire fleet, resulting in increased costs to all and negatively impacting the resource, as more juvenile tunas would be caught.
  - Consequently, if adopted, fishing for tuna would become more costly to all, including fishermen, processors, retailers, and consumers.
- Thirdly, under the business-as-usual context, the IATTC has enough difficulties in reaching consensus to adopt conservation and management measures during its actual course of business<sup>11</sup>. Under the new scope, this situation would become even more difficult.
  - If adopted, the proposed Scope Change would likely require the IATTC to transition from a fishery that allowed setting on dolphins to a new fishery that no longer does. This would require the consensus of all contracting parties to the IATTC.
  - Not only is it highly unlikely that such consensus could occur, but if it does, it would be after several years of conflict within a diminished tuna RFMO, whose effectiveness would be questioned.

Is the Board of Trustees ready to assume responsibility for potentially having consumers pay higher prices for MSC-certified tuna, given increased costs? Is it important for the Board of Trustees to reduce the risk of the organization having a reputation as being elitist, serving only those who can pay top prices for MSC-certified seafood?

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<sup>11</sup> The IATTC was able to reach consensus on CMM for 2022 and 2023. The CMM establishes limits on the amounts of bigeye that vessels that fish on FADs can take. If such amounts are exceeded, the seasonal closures for those vessels expand from the current 72 day to additional days.

**d. Accessibility and Retention**

There are four MSC-certified tuna fisheries under the management framework of the IATTC. Two or three others that currently operate under FIPs are presently in full assessment.

- Even though the proposed change is seemingly targeted at the Northeastern Tropical Pacific Yellowfin Tuna Fishery, three additional albacore fisheries may not be able to be retained under the MSC program and two or three candidate tuna fisheries on FADs would not be able to succeed in acceding to it.<sup>12</sup>
  - If the proposed Scope is adopted, all these fisheries may be at risk, given the likely inability of a failed IATTC to exercise effective governance over the fisheries under its charter. Some of these fisheries would be excluded based on scope eligibility, while other fisheries could become non-compliant with the standard if the IATTC is considered to be a weak management framework for them.

**e. Simplification**

Would the proposed Scope Change simplify life for Conformity Assessment Bodies (CABs)?

The proposed change would not simplify the MSC process for CABs or for clients as indicated in the MSC's own Impact Assessment report (page 16) "CABs may be challenged to identify appropriate types of evidence to confirm scope criteria are met but MSC training/calibration will help with this in the longer term". These issues represent business impediments to CABs for building proposals for clients and for conducting assessments.

**f. Auditability**

**Counter to ISEAL's Standard setting code of best practice**, the proposed Scope Change has been handled in a less-than-transparent way.

It appears to have been the subject of internal discussions and consultation within the MSC governance groups and the Board of Trustees, and, until recently, the public has not had an opportunity to provide input into the process.

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<sup>12</sup> There are essentially two possible categories of fisheries that could be affected by the proposed Scope Change: a) those fisheries that would be excluded based on scope eligibility due to the ability to anticipate disruptions in behavior of marine mammals; and b) fisheries that might become non-compliant with the standard if the IATTC were to collapse and there was a weakened/absent management framework to uphold scoring.

- It is possible that the CABs and Accreditation Services International (ASI) are satisfied and can claim that the process has been transparent all the way through, but some CABs may not find the proposed changes to be clearly auditable or may be concerned that the scope change will affect a large number of fisheries.
- However, and contrary to ISEAL requirements, it appears that none of the major stakeholders in the MSC-certified fisheries or those in assessment that catch tunas in association with dolphins were consulted, nor was the key competent authority – the IATTC.

Given the negative findings above of our evaluation of the proposed Scope Change according to the MSC's own Impact Assessment Framework, it appears that significant doubts and unanswered questions remain as to the robustness of the proposed Scope Change. If the reputational risks to the MSC are to be minimized, the adoption of the proposed Scope Change should either be postponed until full due diligence is performed or fully dismissed.

## **PART I CONCLUSIONS AND RECOMMENDATIONS**

### ***CONCLUSIONS***

Since the late 1980s, the MSC has continued to grow and has achieved a recognition that is second to none in the seafood ecolabel landscape, due entirely to its scientific credibility with regard to protecting oceans as ecosystems, understanding of fisheries systems, and operating responsibly as a standard holder.

Nothing is gained by adopting the proposed Scope Change associated with marine mammals and much could be lost.

If the goal is to protect marine mammals, adopting the proposed Scope Change would likely result in the opposite. If the fishery of concern were to switch to fishing with FADs, tuna stocks would be at risk of overexploitation, and dolphins would be worse off and at higher risk due to the decline of observer programs, as would other species.

If the goal is to minimize the reputational risks to the MSC, the proposed Scope Change would increase the reputational risk for the organization, since by its own initiative, it would be introducing significant scope changes with insufficient consultation. Such a change could also be responsible for crippling one of the five global tuna RFMOs, reducing the effectiveness of the IATTC to manage both tunas and dolphins in the Eastern Pacific.

It would also increase the perception that the MSC has limited capacity to maintain a steady focus on its own mission and Theory of Change, which are embodied in scope eligibility requirements.

If there is to be an open conversation on modifications of scope at large, then these should again be primarily aligned with the organizational mission and ISEAL requirements, where additional considerations related to carbon emissions, plastic pollution, etc. are likely to bring about substantially greater environmental and ecosystem improvements than changes designed to ostracize a single certified fishery that has already met all performance requirements.

This is also consistent with ISEAL's requirements that "*the standard-setting organisation shall ensure in its standard that: 1. criteria are included to address all of the defined social, environmental and economic outcomes; and 2. only criteria that are relevant to meeting these outcomes are included.*"

Embracing the approach of driving Scope Change behind closed doors sets a dangerous precedent for industry and market players, who have supported the system on the basis of an understanding of the values and core scope considerations of the MSC. Fisheries will logically question whether their system could be next for scope exclusion based on even non-lethal interactions with much-loved birds or turtles, if stakeholders repeat what were clearly effective, Board-targeted, campaign tactics.

In addition, a failure of the IATTC AIDCP could well cause negative repercussions in other tuna RFMOs, for instance the WCPFC. Removing incentives for sustainable practice by undermining the science of fisheries management in one region may create other destabilization, including drawing regulated vessels fishing in the WCPFC to migrate to the east.

It is up to the MSC's CEO, governance bodies and Board of Trustees to better explain to its critics and campaigners why the continuation of the existing fisheries associated with dolphins is the preferred option over the proposed Scope Change.

Putting the MSC's reputation at stake for failing to conduct a careful "due diligence" assessing the implications of the proposed Scope Change involving marine mammals seems unwarranted: the main currency of a standard holder is its ability to competently follow the procedures associated with standard holding and revision.

Clearly, the conclusions reached by the MSC Impact Assessment Report indicate deep process flaws. The proposed change would currently introduce process-associated reputational risks to the MSC, while also missing acceptability to many stakeholders, fishery partners and the wider supply chain.

## **RECOMMENDATIONS**

We believe the business-as-usual option, consistent with evaluating population-level outcomes for sustainability with respect to marine mammals, is a superior alternative to the proposed Scope Change. Consequently, we urge the MSC's CEO, Governance Bodies, Staff, and Board of Trustees, to dismiss the proposed Scope Change.

At the very least we recommend that the MSC postpone the change and follow due process as a standard holder. This includes a) an ISEAL-consistent consultation process, b) an examination of impacts in the context of all the main forms of tuna fishing relative to one another, with c) the participation of all relevant stakeholders, to better understand the impacts of the proposed change or alternative routes forward that more squarely accomplish the MSC's objectives in this process.



## PART II

### **Comments on the Revised MSC Standard as it Relates to Fish Aggregating Devices (FADs) and Ghost Fishing Gear**

#### **MSC Standard and FADs and Ghost Fishing Gear**

The reputation of the Marine Stewardship Council (MSC) has been challenged and significantly criticized as it relates to how the Standard has been applied to certified tuna fisheries, particularly, tuna fisheries that use purse seine vessels.

Many of the tuna fisheries in the Western Central Pacific area were able to achieve MSC certification because of the process known as “Compartmentalization,” where the MSC certification Standard was applied only to sets (that is, the process of deploying the net around a school of tuna) that were not associated with a FAD.

These sets became known as “FAD-free” sets or sets made around free schools of tuna, that is, unassociated with any floating object, whether it be natural (such as log) or a man-made FAD.

Furthermore, for a fishery to achieve MSC certification, it was necessary that the vessels’ owners in the Unit of Certification/Unit of Assessment follow a strict Chain of Custody (CoC) requirement, segregating the catches obtained from FAD-free sets in separate fish wells from those catches obtained while setting the net around a FAD. By doing this, the FAD-free tuna was able to be sold in the marketplace as MSC-certified tuna, opening and increasing the availability of MSC-certified tuna in major markets. Retailers embraced the concept of FAD-free tuna, telling consumers that these fish originated from MSC-certified sustainable and well managed fisheries.

However, it did not take too long before stakeholders involved in global tuna fisheries realized that the compartmentalized MSC approach was not really meeting the MSC Standard’s high bar for a sustainable and well managed fishery. Not all tuna caught on the same fishing trip met the MSC certification requirements. On a same trip, the tuna vessel was rewarded with the MSC certificate for only that portion of the catch that was “certifiable” under the MSC Standard, while tunas caught on FADs did not meet the MSC Standard.



The MSC Standard was revised and now the entire fishing trip, whether the vessel makes sets on FADs, unassociated schools, or natural floating logs, needs to meet the MSC Standard to be certified, so FAD sets and FAD-free sets will be assessed together at the same time.

Despite this welcome change, we believe the MSC Standard as applied to tuna purse seine fisheries on FADs still leaves many basic sustainability requirements unfulfilled, if this is to be truly considered as tuna coming from an MSC sustainable and well managed fishery.

### **What is missing from the MSC Revised Standard?**

I. FADs are not considered part of the fishing gear and are not included in the Unit of Assessment/Unit of Certification<sup>13</sup>

For some unknown reason, the MSC Standard does not include FADs as fishing gear and part of the Unit of Assessment (UofA), the Unit of Certification (UofC) or both, even though FADs are an integral part of the fishing effort exerted in any tuna purse seine fishery that uses FADs. The purse seine vessel's fishing capacity is closely linked to the number of FADs deployed, monitored, and used by the vessel. The vessel fishing efficiency is almost entirely dependent upon the FADs attracting and collecting fish, since most vessels could not catch the quantities of tuna they do, without the use of FADs. In tuna purse seine fisheries where there already is too much fishing capacity, not considering FADs as part of this capacity is wrong from any fishery management perspective.

Therefore, it is critical for the MSC Standard to first consider FADs as fishing gear and recognize them as a part of the UofA or UofC or both.

II. Clear ownership of FADs needs to be established

There are many reasons why, from a fisheries management perspective and from the perspective of the MSC Standard, it is important to determine who deploys, owns, and uses FADs. From the perspective of tuna RFMOs, it is also of critical importance because at the present time, not a single tuna RFMO knows the answers to the following questions.

- How many FADs are deployed and active in their corresponding areas of competence?
- Who deploys how many FADs and where?
- Who does each FAD belong to?

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<sup>13</sup> Gomez-Hall Associates has recurrently asked MSC staff about this issue and the responses received are that indeed FADs are not considered fishing gear under the UofA/UofC. CABs conduct assessments that include FAD use but confront significant limitations regarding the accuracy of the information.

- Who is or should be liable for entangling FADs that harm or kill endangered, threatened, or protected (ETP) species, such as sharks, turtles, rays, and/or marine mammals that get enmeshed in FADs?
- Who commits an infraction when an unauthorized FAD drifts and enters the Exclusive Economic Zone (EEZ) of a coastal State while aggregating and collecting fish?
- Who may be violating national or international laws or contravening conservation and management measures adopted by RFMOs, when FADs drift and transit through areas closed to fishing or marine protected areas while aggregating and collecting fish?
- Who should be responsible for FADs that are deliberately abandoned by their owners and drift into and enmesh sensitive coral reefs?
- Who should be responsible for abandoned FADs that become “ghost fishing” gear?
- Who should be responsible for FADs that become pollution on beaches and the sea floor?

The increasing use of FADs is already impacting tuna resources in many regions because juvenile yellowfin and bigeye tunas are intensively caught in association with FADs. This puts at risk the reproductive ability and sustainability of the stocks in question.

When tuna fisheries that use FADs become certified, mitigating all the negative impacts mentioned above should be the responsibility of those boat owners or operators who deploy the FADs. However, at the present time, not a single tuna RFMO requires that ownership of FADs be established such that any mitigation measures be the responsibility of the owner who first planted the FAD.

Ideally, each tuna purse seiner should only fish on its own FADs, and fishing on or stealing someone else’s FADs should be considered illegal. In this way, responsibility for mitigating FAD impacts would clearly be in the court of the owner of the vessel that originally deployed the FAD.

Ideally too, RFMOs should have a FAD registry, just like there is a vessel registry, so they would increase their ability to manage the FADs within their area of competence.

Under the revised MSC Standard, not only are FADs not considered fishing gear and part of the Unit of Certification/Unit of Assessment, but there are no requirements for the UofC or UofA to be responsible for mitigating the negative impacts associated with FADs. Under MSC Principle 2, if ownership of FADs were required by RFMOs or were part of the MSC Standard, the candidate fishery could develop Action Plans to deal with these issues.

### III. FADs as IUU fishing

Lack of ownership responsibility of FADs, the fact that FADs are not considered as fishing gear, and the reality that FADs drift without prior authorization through the EEZs of coastal States while attracting fish or “fishing<sup>14</sup>”, makes FADs serious candidates to be considered IUU fishing. There are specific scenarios in which the FADs may be considered illegal (I), others in which the FADs are unreported (U) and even more instances in which FADs are unregulated (U). The interaction of tuna vessels with these potentially IUU FADs, could qualify the tuna purse seine vessels as engaging in IUU fishing<sup>15</sup>.

From the MSC Standard perspective, no fishery can achieve certification if the Unit of Assessment engages in IUU fishing activities. As discussed above, it appears that FADs are, indeed, engaged in IUU fishing activities in many situations. It would be reasonable for the MSC to carefully look at the Revised MSC Standard and make the necessary adjustment regarding the FAD-related matters that have been discussed. It is particularly important with respect to MSC-certified tuna purse seine fisheries on FADs already in the program or in the pipeline, so that these fisheries do not get certified or lose their certificate if any IUU fishing activity could be traced back to IUU FADs.

The reputational risks for the MSC regarding certified tuna fisheries associated with FADs are immense for the organization, the program, its partners, and the markets.

### IV. Ghost Fishing

Even though the Revised Standard does not currently consider FADs as fishing gear, the Revised MSC Standard does consider FADs as ghost fishing. So, there appears to be a clear contradiction within the revised Standard. How can non-fishing gear be ghost fishing gear?

It appears that the MSC, in seeking to address the multiple negative impacts associated with FADs, is trying to address the matter by suggesting that tuna RFMOs treat FADs as ghost fishing gear. However, as we discussed before, the tuna RFMOs are ill prepared to manage FADs or to deal with ghost fishing FADs, when they not only cannot determine the ownership of the many thousands of FADs, but do not have the mandate to prosecute those who deliberately or accidentally abandon FADs.

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<sup>14</sup> Depending on the definition of “fishing” in the legislation of the coastal State or other regulatory body.

<sup>15</sup> A discussion about the IUU nature of FADs can be found in: Gomez et.al. [The IUU Nature of FADs: Implications for Tuna Management and Markets](#), Coastal Management, Volume 48-Issue 6, 2020, 5344-558.

DOI: [10.1080/08920753.2020.1845585](https://doi.org/10.1080/08920753.2020.1845585)

## PART II CONCLUSIONS AND RECOMMENDATIONS

We have three basic recommendations:

1. ***Establish clear FAD ownership and liability.*** Only by doing so can ecosystem impacts be addressed and mitigated. Failing to do so would undermine the credibility of MSC certification on FAD and non-FAD sets.
2. ***Establish a FAD registry at the RFMO level.*** Only by knowing how many FADs are out there and who owns them can the RFMOs effectively manage FADs and make tuna fisheries sustainable. The MSC cannot realistically certify any tuna fishery associated with FADs if RFMOs do not have effective FAD management measures and programs in place.
3. ***Include FADs as part of the Unit of Assessment/Unit of Certification.*** FADs need to be considered as an integral part of the fishing operation and should be considered as fishing gear. They are part of the fishing effort/fishing capacity and are key to the efficiency of the fishing operation. The MSC Standard needs to include them as such.

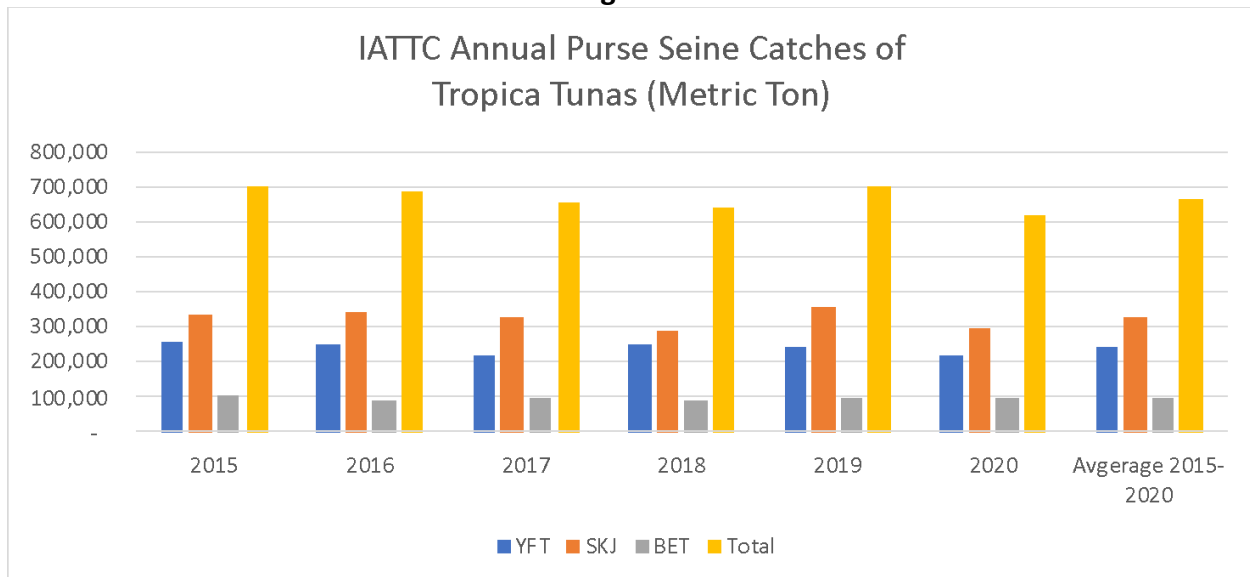
## Appendix A

### Basic Background on the Purse Seine Tuna Fishery in the IATTC Area of Competence

#### The Purse Seine Catch in the IATTC

The purse seine catches of tropical tunas (yellowfin, skipjack, and bigeye) in the Eastern Pacific tuna fishery have averaged 661,131 metric tons over the 2015-2020 period. (Figure 1)

Figure 1

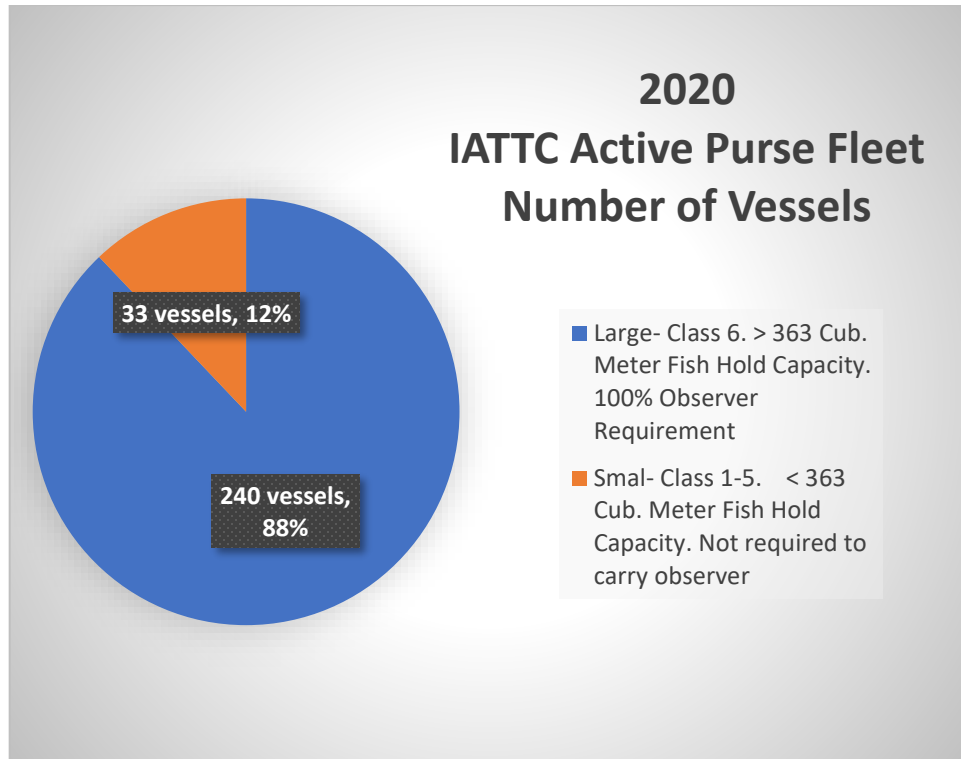


Source: [https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021\\_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf](https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf)

#### The Active Purse Seine Fleet

In 2020, 273 purse seiners were active in the fishery. The fleet was comprised 240 of Class 6 vessels (cubic fish hold capacity > 365 cubic meters) and 33 smaller vessel Classes 1-5 (fish hold capacity < 363 cubic meters).

Figure 2



Source: [https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021\\_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf](https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf)

All Class 6 vessels (100%) are required to carry human observers on board while fishing in the IATTC area of competence; Class 1-5 vessels are not required to do so.

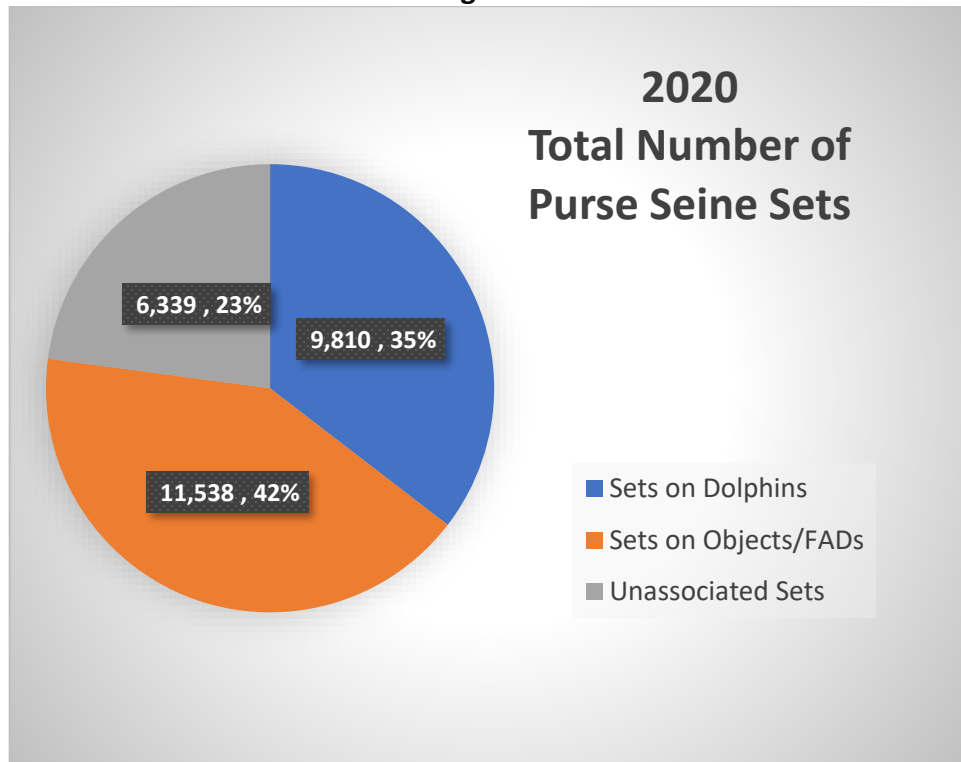
#### How are tunas caught by the Purse Seine fleet recorded?

The IATTC records the catches of the active purse seine fleet according to set type (i.e., the way the purse seine nets are deployed around the schools of tunas). The IATTC uses three different set types: **Dolphin Sets**, when tunas are caught in association with dolphins; **Object Sets** when the nets are deployed around floating *natural objects* (i.e., logs, dead animals) or man-made objects, i.e., *Fish Aggregating Devices (FAD)*; and **Unassociated Sets** - sets that are made around free swimming schools of tuna.

#### How many sets were made in 2020 by the Purse Seine fleet?

In 2020, the fleet made a total of 27,687 sets (all types). Figure 3 shows the total numbers and percentages of each set type.

**Figure 3**

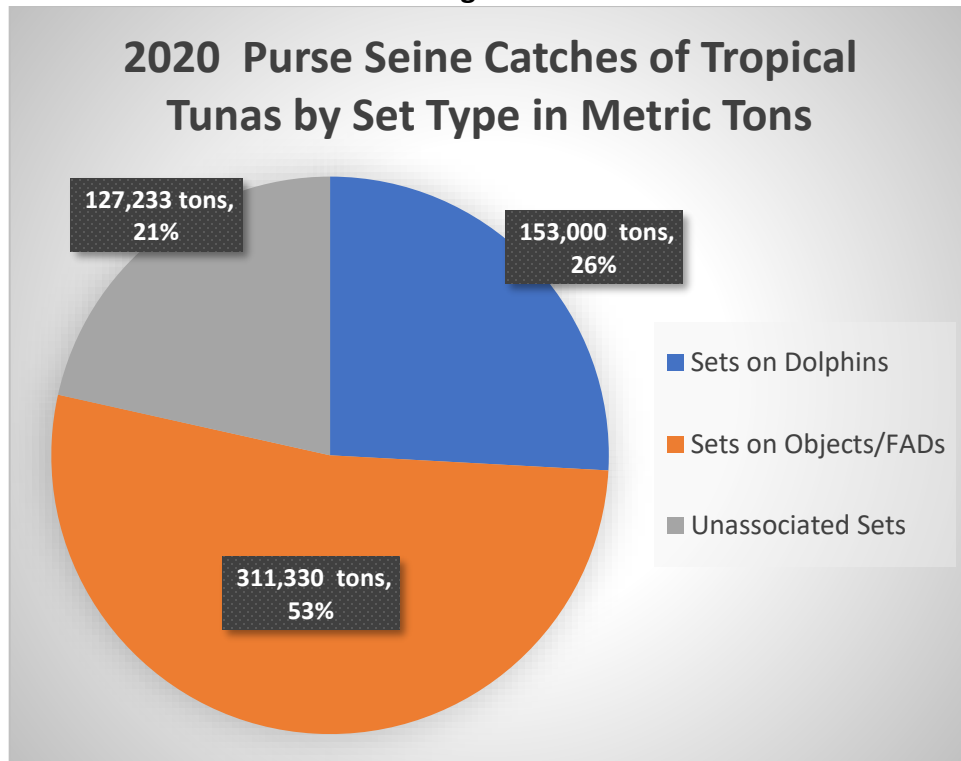


Source: [https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021\\_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf](https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf)

### **How much tuna was caught by Set Type in 2020?**

The active purse seine fleet caught 592,000 metric tons of tropical tunas in 2020. Figure 4 shows the catches of tropical tunas by set type.

Figure 4



Source: [https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021\\_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf](https://www.iattc.org/PDFFiles/FisheryStatusReports/English/No-19-2021_Tunas%20billfishes%20and%20other%20pelagic%20species%20in%20the%20eastern%20Pacific%20Ocean%20in%202020.pdf)



## Proposed Revision of the MSC Certification Standard and Dolphin-Associated Tuna Fishing in the EPO

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### Introduction

The MSC (Marine Stewardship Council) certification is recognized worldwide as the leading certification for sustainable fisheries, based on the best available science.

As outlined on the official MSC webpage,

*“The MSC Fisheries Standard is used to assess if a fishery is well-managed and sustainable. The Standard reflects the most up-to-date understanding of internationally accepted fisheries science and management. We review and develop the MSC Fisheries Standard in consultation with scientists, the fishing industry and conservation groups.”*

With respect to the impact on the environment, the MSC Standard states that fishing activity must be managed carefully so that other species and habitats within the ecosystem remain healthy.

Recently, the MSC proposed a revision of its certification standard and submitted for public review new requirements (MSC, 2022) that include, notably, the instruction:

*The CAB shall interpret the term “harasses” in the context of 1.1.2.3. as any act of pursuit, torment, or annoyance which:*

*i. has the potential to injure a marine mammal in the wild, or*

*ii. has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.*

In this paper, we provide science-based information on dolphin-associated fishing activities in the Eastern Pacific Ocean (EPO), and fishing carried out by vessels associated with the Pacific Alliance for Sustainable Tuna (PAST). This information indicates that these fishing activities do not currently have a negative impact on dolphin stocks in the EPO. We also include a historical overview of research-based scientific evidence that conclusively shows that the practice of dolphin-associated yellowfin tuna fishing has been and remains sustainable, and that there is no scientific basis or evidence of negative effects on the stocks of dolphins naturally associated with tuna in the EPO.

We also highlight the importance of dolphin-associated tuna fishing in the EPO, while briefly discussing any possible effect from harassment and the potential implications of discouraging sustainable fishing.

## Associative behavior of yellowfin tuna

Yellowfin tuna (*Thunnus albacares*) is found across the world in tropical surface waters, and the EPO is no exception. Surface stocks may comprise immature individuals, medium-sized juveniles or adults of large average size, and are therefore highly heterogeneous. However, in most of the world's oceans, surface waters contain chiefly immature and juvenile-sized tunas. Schools found at the surface are highly homogeneous in their size structure. Indeed, most are made up of just one age class; sometimes there are two and very rarely three. This can be explained by the fact that, like in other seas, in the EPO the size of yellowfin in catches is partly related to the type of school: "dolphin-associated", "breezer (unassociated)", "log (associated with a natural or artificial floating object)" or "skipjack-associated"<sup>1</sup>.

Fishing on floating objects and free-swimming schools catches small yellowfin (< 60 cm) while dolphin-associated fishing catches large tunas that have reached sexual maturity (110-150 cm). It is in the EPO that association between dolphins and tunas is most common, and this has facilitated dolphin-associated fishing. Larger yellowfin tunas are generally fished with longlines in deep waters near to or below the thermocline (between 100 and 150 m), from stocks always made up of adult individuals that, like dolphin-associated tunas, have already reached sexual maturity. However, the EPO constitutes an exception for longline tuna fishing, as catches of yellowfin have historically ranged from 5% to 3% of total catch.

In addition to target species like yellowfin tuna, skipjack (*Katsuwonus pelamis*), bluefin tuna (*T. orientalis*), bigeye (*T. obesus*), and albacore (*T. alalunga*), the purse-seine tuna fishery in the EPO also catches incidentally other species of commercial interest like black skipjack (*Euthynnus lineatus*), frigate tuna (*Auxis thazard*), and bonito (*Sarda chiliensis*). Catches of these species vary according to the type of set and in dolphin-associated fishing, schools are composed almost entirely of yellowfin tuna, with perhaps minimal amounts of skipjack that account for no more than 1% of total skipjack catch.

Sets on free-swimming schools catch yellowfin and skipjack tuna, and fishing on floating object-associated schools accounts for practically 100% of bigeye catch and most skipjack catch, with the percentage for yellowfin ranging in recent years between 20% and 25% of total yellowfin catch. Because these are small tunas (< 40 cm) in the IATTC equatorial zone, these catches have a substantial negative effect on the stock status.

Other bycatch includes dolphins, billfishes, sea turtles, sharks, and dorado, among other fishes. Catches of non-target species, not including dolphins, are highly significant in floating object sets, can be considered moderate in sets on "breezers", and are minimal in sets on dolphin-associated schools<sup>2</sup>.

## Tuna-dolphin association in the EPO

In the EPO, several species of dolphin, primarily those of the genus *Stenella*, are commonly found to be simultaneously present and to associate with yellowfin tuna. Together with this association, a number of species of seabirds are also commonly

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<sup>1</sup> IATTC, 2021, [SAC-12-03 The tuna fishery in the EPO in 2020 \(iattc.org\)](#)

<sup>2</sup> Hall, M., & M. Roman. Bycatch and non-tuna catch in the tropical tuna purse seine fisheries of the world. FAO Tech. Pap. 568. 249 pp.

observed, forming a natural ecological association used since the early days of the fishery as an indication of the likely presence of tuna, given that dolphins can be easily observed from tuna vessels. Although purse-seine vessels fish for dolphin-associated schools of tuna, the association between tunas and dolphins has been known since the beginning of the pole-and-line fishery, in the first half of the 20<sup>th</sup> century. This interaction was used by fishers to locate and set in place the tuna, given that dolphins normally remained around the school being fished<sup>3</sup>.

Tuna fishers in the EPO soon learned that tuna associated most frequently with spotted dolphins (*S. attenuata*), but also associated with other species like spinner dolphins (*S. longirostris*) and, albeit in smaller numbers and only in a specific area of the EPO, common dolphins (*Delphinus delphis*). Commercial fishing of tropical tunas has benefited greatly from this natural association. However, despite much research on the subject, scientific and biological questions remain about why this association occurs, whether it is obligatory or facultative in nature, and why it occurs more commonly in the EPO than in other oceans.

A number of researchers have shown that this association is neither obligatory nor permanent, and that the benefits obtained are not informed solely by oceanographic features or certain feeding advantages of the species involved. Research has also examined whether this association reduces the risk of predation through the formation of large, mixed groups of yellowfin tuna and one or more species of dolphins. This association is prevalent when the habitat exhibits certain physical and oceanographic characteristics, including the mixing of warmer surface water and the presence of a shallower thermocline compared to other oceans, at a depth of less than 60 m, which in turn is compressed from below by a zone with minimal amounts of oxygen. This physically and physiologically limits and reduces the distribution area available for tunas, creating an environmental vertical boundary for yellowfin and forcing it to remain in near-surface, oxygen-rich waters, which also enables tuna-dolphin association<sup>4</sup>.

Encirclement of dolphins and whales in tropical tuna fishing has also been widely documented in other oceans (Scott et al., 2012; Escalle et al., 2015)<sup>5</sup>. Research conducted in areas outside the EPO has found that tuna-dolphin association occurs in certain areas with oceanographic characteristics similar to those of the EPO: warm surface water temperature, a shallow thermocline usually less than 60 m deep, and a dense layer of water below with minimal oxygen levels.

### **Sustainability of dolphin-associated tuna fishing**

For decades, fishers have used tuna-dolphin association to catch larger yellowfin tuna, generally individuals that have already reached sexual maturity. As a result of these catch sizes, dolphin-associated yellowfin fishing provides the highest yield-per-recruit values. This is important as it has been shown that if this type of fishing remains

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<sup>3</sup> National Research Council, 1992. Dolphins and the Tuna Industry. National Academy Press. 175pp.

<sup>4</sup> Scott, M.D., Susan J. Chivers, Robert J. Olson, Paul C. Fiedler, Kim Holland. Pelagic predator associations: tuna and dolphins in the eastern tropical Pacific Ocean MARINE ECOLOGY PROGRESS SERIES Vol. 458: 283–302, 2012.

<sup>5</sup> Escalle, L. A. Capietto, P. Chavance, L. Dubroca, A. Delgado De Molina, H. Murua, D. Gaertner, E. Romanov, J. Spitz, J. J. Kiszka, L. Floch, A. Damiano, B. Merigot. 2015. Cetaceans and tuna purse seine fisheries in the Atlantic and Indian Oceans: interactions but few mortalities. Mar Ecol. Prog. Ser. Vol. 522: 255–268, 2015.

predominant for yellowfin in the EPO, the maximum sustainable yield (MSY) will increase. Otherwise, if this method of fishing is not encouraged, the MSY will fall by 30%<sup>6</sup>.

### **Sustainability of dolphin stocks in the EPO**

The effect of tuna fishing on dolphin stocks in the EPO has been assessed and is generally considered sustainable. Under the Agreement on the International Dolphin Conservation Program (AIDCP), dolphin mortality limits (DMLs) and annual mortality limits have been set based on the Potential Biological Removal (PBR), determined following a method developed by scientists at the National Marine Fisheries Service in the United States. In addition, these limits have been precautionarily reduced to account for uncertainties in estimations of abundance.

Indeed, estimates of abundance show that stocks of the two species most commonly associated with yellowfin tuna, the spotted dolphin and the spinner dolphin, are recovering<sup>7</sup> – even without considering the bias present in estimates<sup>8</sup> and the fact they underestimate abundance. This recovery indicates that any unrecorded mortality due to a potential impact from the catch and encirclement of dolphins would be sustainable. It should be noted that the estimated mortality for 2020 was 0.07 per set for a total of 689 dolphins, which represents between 0.01% and 0.02%, respectively, of the best estimates of abundance for the two main dolphin species associated with tuna in the EPO: the spotted dolphin and the spinner dolphin<sup>9</sup>.

### **Management of the tuna fishery in the EPO**

The tuna fishery in the EPO is managed under the framework of the Inter-American Tropical Tuna Commission (IATTC). The main objective of tropical tuna management is to keep stocks at levels capable of producing maximum sustainable yields (MSYs), using management objectives based on MSYs or related reference points, such as fishing mortality, which produces the MSY ( $F_{MSY}$ ).

Additionally, by establishing limits on the fishing capacity of the purse-seine fleet, the Commission maintains fishing effort at levels equivalent to  $F_{MSY}$ . To keep fishing effort at the levels recommended by scientific staff, the Commission has adopted temporal closures for purse-seine vessels, which have increased from 42 days in 2007 to 72 days in 2018 and subsequent years. In 2021, considering the health of the bigeye stock, the Commission adopted catch limits for bigeye, in addition to maintaining the days of closure<sup>10</sup>.

Recommended management measures are adopted by consensus between all members of the Commission, on the basis of background information and advice

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<sup>6</sup> Maunder, M. 2002. The relationship between fishing methods, fisheries management and the estimation of maximum sustainable yield. *Fish and Fisheries* 3, 251-260

<sup>7</sup> Punt, A. E. 2013. Análisis independiente de la evaluación de las poblaciones de delfines en el océano pacífico oriental IATTC, Informe Especial 21. 19pp. [No-21-2013-PUNT, ANDRE E. Independent review of the eastern Pacific Ocean dolphin population assessment.pdf \(iattc.org\)](#)

<sup>8</sup> Barlow, J. 2015. Inferring trackline detection probabilities,  $g(0)$ , for cetaceans from apparent densities in different survey conditions. *MARINE MAMMAL SCIENCE*, 31(3): 923–943 (July 2015).

<sup>9</sup> APICD, 2021. Report on the international dolphin conservation program document. AIDCP-43-02 REV. [AIDCP-43-02 Report on International Dolphin Conservation Program \(iattc.org\)](#)

<sup>10</sup> IATTC, 2021. Res. C-21-04 [Tuna Conservation 2022-2024 \(iattc.org\)](#)

provided by the Commission's scientific staff and Scientific Advisory Committee. In addition to managing tropical tuna fisheries, and in its capacity as secretariat to the AIDCP, the Commission manages the participation of observers in purse-seine vessels, monitors compliance with regulations adopted in the Agreement, and prepares reports on dolphin-associated fishing.

## **Harassment**

In October 2002, in its report to the United States Secretary of Commerce, the IATTC concludes there is no credible evidence that stress associated with the chase and capture of dolphins has an adverse effect on stocks (Appendix 1). The report highlights the findings of studies by the Southwest Fisheries Science Center, which focus on the presence of possible indications of muscle damage in dolphins that were chased and encircled, from which blood samples were taken. The results show:

*“There is no credible evidence that stress associated with the chase and encirclement of dolphins has had a significant adverse impact on the populations. In fact, all the data presented in the SWFSC report support the hypothesis that there has been no significant adverse impact. The SWFSC report focuses on the indications of muscle damage in dolphins that were chased, encircled, and then grabbed by swimmers and placed in a raft for blood sampling. However, they showed that the stress hormones and enzymes are at levels from which the dolphins would fully recover from chase and encirclement, and the necropsy study showed that healed heart and muscle lesions are not life-threatening and are commonly seen in dolphins in the wild that are not associated with the purse-seine fishery. The SWFSC relies on speculation to come to the heavily qualified conclusion that findings from stress research “support the possibility that purse seine fishing involving dolphins may have a negative impact on the health of some individuals.”*

With respect to the possible separation of mothers and calves, the report by the Commission to the Secretary of Commerce stresses:

*“The SWFSC report provides evidence that mothers and calves are separated when mortality of the mothers, but not the calves, occurs during sets. This is based on observations of dead lactating females without calves during 1973-1990. Given the current low mortality rates, even in the worst-case scenario, the addition of this cause of unobserved mortality would be sustainable by the population under the same Potential Biological Removal (PBR) limit criteria required for US fisheries. The SWFSC report goes on to speculate that mothers and calves may be separated during the chase, that the mothers may become separated from the calves, and that the calves then may die. There is no evidence to support this contention, and much evidence that refutes it from well-known observations of mammalian mothers staying with and protecting their young at the risk of their own lives to the tracking studies of female spotted dolphins with calves demonstrating that the mother-calf bond remained intact even after seven sets over seven days”.*

In 2012, the IATTC updated its report to the United States Secretary of Commerce (Appendix 2), concluding:

*“The best available scientific evidence supports the conclusion that the purse-seine fishery is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean, specifically that the intentional deployment on or encirclement of dolphins with purse seine nets is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean. This evidence does not support a finding that the purse-seine fishery is having a significant adverse impact on any dolphin stock in the eastern tropical Pacific Ocean. This statement is based on the information presented in the SWFSC report, and our independent analyses of the status of dolphin stocks and observations of their interactions with the tuna fishery over the last 30 years.”*

### **Consequences of the new proposed standard on dolphin-associated fishing**

We believe the MSC should continue to advance the objectives of sustainable fishing and minimal ecosystem impact as a key foundation of its certification standard, but that approving this new standard would discriminate against dolphin-associated fishing in the EPO. This new standard is centered on the effects on an individual, and therefore – aside from the fact that many fisheries would lose or should not qualify for the certification – it violates the principle that all fishing activity has an effect on the ecosystem and denies the fishery the opportunity to achieve a trade-off that maintains it with a sustainable target species and minimal bycatch of non-commercial species, with minimized incidental mortality that does not compromise the sustainability of the species.

The fishing activity carried out by vessels associated with PAST is sustainable and targets schools of yellowfin tuna associated with dolphins. It is also very clean, these vessels having voluntarily committed not to catch bluefin. Similarly, they don't catch tuna associated with natural or artificial floating objects, so no bigeye is caught by the PAST fleet. This commitments ensure the prevention of non-sustainable catch of these species, and incidental capture of non-commercial species like sharks, sea turtles, billfishes, and manta rays has been eliminated or minimized to negligible levels.

Attention should be drawn to the fact in 2020, the average weight of dolphin-associated catches in the northern region of the EPO, where the PAST fleet fishes, was 30.9 kg, but due to non-dolphin-associated fishing the average weight of tuna caught, for all three types of sets combined throughout the EPO, was 10.6 kg – and less in previous years when dolphin-associated catch has been lower, such as in 2016 when the average weight was just 6.3 kg.

If the new standard is approved and PAST loses its certification, PAST fishing activity may cease to be sustainable, going against the MSC's core principle of promoting sustainable fisheries through certification. This would lead PAST vessels to change their fishing technique to catch tuna associated with floating objects and free-swimming schools, with a high concentration of juvenile tunas, which would jeopardize the sustainability of yellowfin tuna and bigeye tuna. The increase in bycatch would also result in a greater impact on the ecosystem.

Research has still not determined the full extent of the harm caused to the ecosystem by the increase in fishing on floating objects in the EPO, and in particular, the increase in the number of sets on fish-aggregating devices (FADs), which jumped from 5,788 to

16,825 between 2002 and 2018, a temporary decrease in 2019 and 2020<sup>11</sup> – likely due to the health crisis – notwithstanding. That said, some indications of this impact, such as the effect on bigeye stock and the decreased presence of sharks in sets on FADs, are already known. Recently, a reduction in the mean size at sexual maturity of yellowfin tuna in the EPO – a widely acknowledged indicator of overfishing – has also become clear. This has been largely caused by fishing on schools associated with floating objects, and offers yet another reason to push for the sustainability of yellowfin tuna.<sup>12</sup>

Encouraging fishing on floating objects would also increase pressure on the bigeye population, which is currently delicate, according to the most recent assessments.<sup>13</sup>

Dolphin-associated yellowfin tuna fishing is sustainable, and dolphins caught incidentally remain healthy and safe within the net. Under the AIDCP, the fishery implements strict management measures: an annual limit, fishing mortality limits for individual vessels (DMLs), stock mortality limits ( $N_{min}$ )<sup>14</sup>, certification for fishing captains, a performance review of fishing captains and vessels, regulations on fishing gear (mandatory use of a safety panel) and dolphin release procedures, regulations on certain types of sets, and a transparent performance review.

Eliminating the certification by approving the new standard would jeopardize the AIDCP, an agreement that has proven effective in reducing dolphin mortality to negligible levels in the EPO and which forms the basis for the sustainability of dolphin-associated fishing. The new standard is based on the potential effect of fishing activity on an individual and not on the stock. This change, if introduced across the board, will make it impossible to certify any other tuna fishery in other oceans, as it has been widely shown that there are interactions with dolphins and whales in other oceans, and even though the sets may be classed as accidental or non-intentional, they would still qualify as:

*“...any act of pursuit, torment, or annoyance which:*

*i. has the potential to injure a marine mammal in the wild, or*

*ii. has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”*

By no means could it be argued that a Cetacean, dolphin or whale encircled in a set classed as “accidental” does not endure torment or annoyance, that it cannot potentially be injured or that its behavior cannot potentially be disturbed, affecting its migration, breathing, nursing, breeding or sheltering.

The encirclement of dolphins in the EPO fishery could be considered intentional, but mortality is incidental, because dolphins remain in perfect condition within the purse seine, which provides them with sufficient space. In addition, all the measures and regulations to avoid potential mortality are put in place. In the case of any “accidental”

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<sup>11</sup> IATTC, 2021, [SAC-12-03 The tuna fishery in the EPO in 2020 \(iattc.org\)](#)

<sup>12</sup> Schaefer K. M., & D. W. Fuller. 2022. Spatiotemporal variability in the reproductive biology of yellowfin tuna (*Thunnus albacares*) in the eastern Pacific Ocean. Fisheries Research: 248.

<sup>13</sup> IATTC, 2021. Recomendaciones del personal sobre la ordenación y la recolección de datos, 2021 [Staff recommendations for management and data collection, 2021]. Doc. IATTC-97-02.

<sup>14</sup>  $N_{min}$ , AIDCP, Annex III, “Per-stock, per-year dolphin mortality caps.”

sets that occur in other seas, capture could be said to be incidental, but mortality is intentional as there is no requirement to use a safety panel or follow adequate marine mammal release procedures.

As for fisheries that record “accidental” catches of marine mammals, if the new proposed standard is approved, the MSC would be required to deny or revoke their certification to be consistent with its declaration in the proposed MSC Fisheries Standard.

*If the CAB determines that an entity that belongs to a certified client group intentionally harasses or intentionally kills marine mammals, the CAB shall consider the entity as having become out of scope and shall withdraw it from the certificate or client group.*

The MSC recently commissioned research into possible definitions of “intent” and “harassment of marine mammals” with a view to adopting these definitions<sup>15</sup>. It is clear from this research that the ban on interaction with marine mammals relates to marine sanctuaries, or in the case of RFMOs and most countries, is applicable in the event of a lack of sustainability of stocks. One other finding from this study is that the catch of marine mammals is implicitly linked to the taking of marine mammals, which does not occur in the EPO fishery.

In the EPO, 17 parties to the AIDCP have requested a total of 109 DMLs for the 2022 fishing season: Colombia 12, Ecuador 14, Mexico 47, Nicaragua 4, Panama 14, El Salvador 1, United States 1 and Venezuela 16<sup>16</sup>. It is clear that these parties authorize fishing on dolphin-associated schools of tuna in line with AIDCP standards and therefore view this fishery as sustainable.

If the MSC adopts this new standard and this only impacts tuna commercialization in the EPO, IATTC’s management of this fishery will also be compromised because as yellowfin and bigeye tuna stocks are fished in association with floating objects at levels exceeding  $F_{MSY}$ , these catches will become unsustainable at current fishing capacity levels, and the Commission will be compelled yet again to extend the closure period or propose a reduction in fishing capacity, making it impossible to achieve consensus and compromising the management of all the marine resources currently under the responsibility of the Commission.

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<sup>15</sup> Smith Russell, & C. Fortuna. 2021. Marine Stewardship Council and the Fisheries Standard Review: Identifying out of Scope.

<sup>16</sup> AIDCP, 2021. Doc. IRP-68-02 REV. DMLs Requested for 2022. [Solicitudes LMD-DML Requests 2022 \(iattc.org\)](https://www.iattc.org/Solicitudes-LMD-DML-Requests-2022)



# COMISION INTERAMERICANA DEL ATUN TROPICAL INTER-AMERICAN TROPICAL TUNA COMMISSION

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October 30, 2002  
Ref.: 0653-800

The Honorable Donald Evans  
Secretary of Commerce  
United States Department of Commerce  
Herbert C. Hoover Building  
14<sup>th</sup> and Constitution Avenue NW  
Washington, DC 20230

Dear Secretary Evans,

The International Dolphin Conservation Program Act requires that studies be undertaken to address the question of whether the purse-seine fishery for tunas is having a significant adverse impact on any depleted dolphin stock in the eastern Pacific Ocean (EPO). In making a finding on this, the Act calls upon you to consider, in addition to the above studies, information obtained under the International Dolphin Conservation Program, and any other relevant information.

The Act also requires that, in the conduct of this study, the Secretary consult with the Inter-American Tropical Tuna Commission (IATTC) and the Marine Mammal Commission. In this regard, on September 18, 2002, I received from Dr. Michael Tillman, Director of the Southwest Fisheries Science Center (SWFSC) of the National Marine Fisheries Service (NMFS), a copy of the “Report of the Scientific Research Program under the International Dolphin Conservation Program Act” (SWFSC report) for review and comment by the IATTC.

The IATTC is an international organization that has for more than 50 years been responsible for research into the tuna fisheries of the EPO, and since 1978 it has assumed responsibility for research of the effects of the fishery on dolphin stocks and the means of mitigating those. The members of the IATTC are Costa Rica, Ecuador, El Salvador, France, Guatemala, Japan, Mexico, Nicaragua, Panama, Peru, the United States, Vanuatu, and Venezuela.

The best available scientific evidence supports the conclusion that the purse-seine fishery is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean, specifically that the intentional deployment on or encirclement of dolphins with purse seine nets is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean. This evidence does not support a finding that the purse-seine fishery is having a significant adverse impact on any dolphin stock in the eastern tropical Pacific Ocean. This statement is based on the information presented in the SWFSC report, and our independent analyses of the status of dolphin stocks and observations of their interactions with the tuna fishery over the last 30 years. We have prepared, for your consideration, as part of the process in making your finding, a Scientific Report setting forth the IATTC analysis of the status of the dolphin stocks in the EPO. The Scientific Report is attached to this letter.

The SWFSC report seems to suggest that there is a significant adverse impact on certain dolphin stocks, despite its data that show that these dolphin stocks are increasing, and that, if their recovery is being hindered, the cause is not related to the fishery. The SWFSC report argues that the stocks are not recovering at an “expected” rate, and that a plausible explanation for this is unobserved mortality due to the fishery, but it emphasizes only evidence that there may be an impact from the fishery, and discounts evidence that there is not, and relies on highly-speculative assumptions about what was and is taking place. Moreover, its conclusions are based on a small amount of data, which, as the report itself admits, cannot be used to draw reliable inferences on population levels. The data in the report that suggest that fishing is not having a significant adverse impact were largely ignored. In any case, the SWFSC conclusion that some unobserved mortality is the reason for low population growth rates requires that the unobserved mortality be more than 20 times (2,000 percent) the observed mortality. It is highly unlikely that this could be the case. Further, the results from the abundance surveys undertaken by the SWFSC indicate that the dolphin stocks have been stable or increasing for more than 20 years.

An additional point that this Commission believes you should take into account is the standard the United States uses, the Potential Biological Removal (PBR) system, mandated by the Marine Mammal Protection Act, for conserving marine mammal populations associated with fisheries. The current mortalities associated with the fishery are well below the PBR limits calculated in the SWFSC report that are considered sustainable under US management policy. Also, if it were concluded that the purse-seine fishery for tunas is having a significant adverse impact on the dolphin stocks, it would mean that virtually all of the many US fisheries with marine mammal associations are having even more deleterious impacts, calling into fundamental question the validity of the US approach to management of its fisheries.

I would be remiss if I did not bring to your attention one non-scientific point that is important to consider in addressing this matter. That is the fact that any development that leads to the continued closure of the US market to tuna labeled as dolphin-safe under the program of the Agreement on the International Dolphin Conservation Program (AIDCP) would put the AIDCP, which is recognized as one of the most successful international marine conservation programs in the world, in jeopardy, as it is not clear that all the governments would continue with its stringent regulations to protect dolphins if the catches could not be marketed as dolphin safe. Any weakening of the program could lead to increased dolphin mortality and to a reduction in information available for research necessary to conserve dolphins.

It has been well documented by this Commission<sup>1</sup> that if the tuna fisheries associated with dolphins shifted to the other main method of capture, fishing on floating objects, the effect on the marine ecosystem as a whole could be devastating, given the large catches of juvenile tunas and other species, such as sharks, billfishes, and sea turtles, which result from this alternative fishing method. I recognize that this matter is not directly relevant to the finding, but it is an important backdrop to the issue and a principal impetus behind the passage of the International Dolphin Conservation Program Act in 1997.

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<sup>1</sup> Joseph, J. 1994. The Tuna-Dolphin Controversy in the Eastern Pacific Ocean: Biological, Economic, and Political Impacts. *Ocean Development and International Law*, Vol. 25, pp 1-30.

Hall, M. A. 1998. An ecological view of the tuna-dolphin problem: impacts and trade-offs. *Reviews in Fish Biology and Fisheries* 8, 1-34.

In summary, it is the IATTC's conclusion that the purse-seine fishery for tunas is not having a significant adverse impact on any of the dolphin stocks in the EPO. The Commission is aware that the report that you have received from the SWFSC does not appear to share our conclusion. However, once the speculations have been winnowed from the report, and the focus shifts to that which we *do* know and *can* demonstrate scientifically, you will find that the data support a finding of no significant adverse impact. While it is logical to think that the fishery is one of several factors that could be having some impact on the stocks, since some dolphin mortality does occur, there is simply no evidence to conclude that this impact is *significant*, particularly in light of the very low mortality levels and no information showing problems from stress on these dolphin stocks. We are, of course, aware that "significant adverse impact" is not defined, and that you therefore have considerable discretion in deciding the meaning of these words in terms of what is happening with the dolphin stocks.

In the course of preparing this report, the scientific staff of the Commission and the Parties to the IATTC Convention conducted an extensive analysis of not only the SWFSC report and documents, but also the underlying comments from outside experts and the available body of relevant research. Importantly, the attached IATTC report has been reviewed by, and incorporates the scientific views and comments of two eminent scientists (Professor S. Buckland, St. Andrews University, Aberdeen, Scotland, and Dr. A. Parma, Centro Nacional Patagónico, Puerto Madryn, Argentina) who are very familiar with this subject and are widely recognized as experts in the scientific disciplines relevant to this analysis.

The Commission appreciates the opportunity to present its views to you. Attached is the Commission's *Scientific Report on the Status of the Dolphin Stocks in the EPO*, which I trust you will give due consideration to in examining the information available to you as you make your finding.

Yours sincerely,

A handwritten signature in black ink that reads "Robin Allen". The signature is written in a cursive, flowing style.

Robin Allen  
Director

## INTER-AMERICAN TROPICAL TUNA COMMISSION

### SCIENTIFIC REPORT OF THE ON THE STATUS OF DOLPHIN STOCKS IN THE EASTERN PACIFIC OCEAN

#### EXECUTIVE SUMMARY

1. The SWFSC survey results show that the populations of northeastern spotted dolphins and eastern spinner dolphins are increasing slowly, and that, if recovery is being hindered, the data are inconsistent with a fishery-related cause. The simplest of the SWFSC's models of population change shows estimates of northeastern offshore spotted and eastern spinner dolphins growing at rates of 1.7% and 1.4% per year, respectively. The more complex two-stage interpretation of the abundance estimates indicates an increase in the two stocks during the late 1980s and declines or stability during the 1990s. This interpretation, taken at face value, would exclude the fishery as a cause of the presumed lack of recovery. For the period 1979-2000, the largest research survey estimates of abundance of the stocks of north-eastern offshore spotted and eastern spinner dolphins (1988-89) occurred just after the highest estimates of fishery mortality (1985-87) and the greatest numbers of sets on dolphin-associated tuna. During the late 1980s and early 1990s the mortalities of dolphins due to the fishery declined dramatically, and the number of dolphin sets (the presumed cause of any hypothetical unobserved mortality) declined by about 25%, and yet the dolphin populations declined or remained stable. It is difficult to explain how the dolphin populations could flourish when subjected to high mortalities and yet decline as the fishing pressures eased if setting on dolphins were having an adverse impact. The SWFSC abundance data demonstrate that, even if the populations are not currently increasing rapidly, it is not because the fishery is responsible for this.
2. In fact, the survey results, taken at face value, indicate that the dolphin stocks have been quite stable over the last 20 years. Also, the SWFSC report notes that for northeastern offshore spotted dolphins, none of the model runs in which fishery mortality was hypothetically increased performed better than the base model, which included actual reported mortality, and if the future mortality were set at zero, the estimated future population trajectories would be indistinguishable from those with the current mortality level projected into the future. In other words, a level of mortality equal to the current reported level has no detectable impact on the stocks.
3. The IATTC has some concerns about the analysis of the research vessel survey data. In particular, the use of different models fitted to the sighting data for each year probably affected the annual estimates of population density. This will have affected the comparison among years, affecting estimates of population growth rates. The estimated precision of the research survey abundance estimates is likely to be an underestimate of the true uncertainty. The effects of large rounding errors in the bearing measurements, inadequate survey coverage of the range of the stock in some years, and unexplained large variability in herd size within the same survey period have not been adequately incorporated into the estimates of survey precision. It is likely that the precision of the estimates of abundance is overstated, resulting in an overestimate of confidence in population growth rates.
4. There is no credible evidence that stress associated with the chase and encirclement of dolphins has had a significant adverse impact on the populations. In fact, all the data presented in the SWFSC report support the hypothesis that there has been no significant adverse impact. The SWFSC report focuses on the indications of muscle damage in dolphins

that were chased, encircled, and then grabbed by swimmers and placed in a raft for blood sampling. However, they showed that the stress hormones and enzymes are at levels from which the dolphins would fully recover from chase and encirclement, and the necropsy study showed that healed heart and muscle lesions are not life-threatening and are commonly seen in dolphins in the wild that are not associated with the purse-seine fishery. The SWFSC relies on speculation to come to the heavily-qualified conclusion that findings from stress research “*support the possibility that purse seine fishing involving dolphins may have a negative impact on the health of some individuals.*” [italics added]

5. The SWFSC report provides evidence that mothers and calves are separated when mortality of the mothers, but not the calves, occurs during sets. This is based on observations of dead lactating females without calves during 1973-1990. Given the current low mortality rates, even in the worst-case scenario, the addition of this cause of unobserved mortality would be sustainable by the population under the same Potential Biological Removal (PBR) limit criteria required for US fisheries. The SWFSC report goes on to speculate that mothers and calves may be separated during the chase, that the mothers may become separated from the calves, and that the calves then may die. There is no evidence to support this contention, and much evidence that refutes it from well-known observations of mammalian mothers staying with and protecting their young at the risk of their own lives to the tracking studies of female spotted dolphins with calves demonstrating that the mother-calf bond remained intact even after seven sets over seven days.
6. The SWFSC calculations of PBR shows that the observed mortality is 36% of PBR for eastern spinner dolphins and 28% of PBR for northeastern spotted dolphins. Thus, even if the unobserved mortality increased the mortality by almost 300% relative to the observed mortality, the total mortality in the fishery would still be below the PBR for these stocks. In other words, the level would be acceptable in the risk-averse approach that the NMFS uses in every other case in which there is an interaction between a commercial fishery and marine mammal populations. However, in calculating the PBR as per NMFS guidelines, the SWFSC adopts the observed values of population growth (1.7% and 1.4% for northeastern spotted and eastern spinner dolphins) as the maximum population growth rates, effectively undermining the argument made in the report that the expected rate should be 4%.
7. The SWFSC report compares the observed population growth rates with an “expected” maximum recovery rate of 4% per year. However, no dolphin population has been known to increase at a rate that high. Further, the law does not require a 4% recovery rate; a lower rate would be acceptable, so long as the fishery was not having a “significant adverse impact.” The SWFSC assumption that the growth rate should be 4%, plus extrapolation from the estimated population sizes from 1979 back to 1959, using the assumed mortality rates discussed in paragraph 8, and the absence of any recognized (by the SWFSC) environmental changes that might significantly affect dolphin stocks, leads to the conjecture of an unreported mortality of thousands of dolphins. These conjectures are first presented in the SWFSC report as being credible, and subsequently are used as an expectation, and then a standard that cannot be achieved.
8. The SWFSC tested its population dynamics models against three separate hypotheses of actual mortality: 1) that the actual mortality is the observed mortality, 2) that the actual mortality is 150% of the observed mortality, and 3) that the actual mortality is 200% of the observed mortality. Of the three, the hypothesis that fit best with the population models was the actual mortality observed in the fishery. While the preference was slight, it clearly

demonstrates the speculative leap required to reach the conclusion that SWFSC appears to believe likely, that is, that the actual mortality is more than 20 times [2,000 percent] that observed, or 14,400 offshore spotted dolphins and 11,300 eastern spinner dolphins.

9. Assumptions about the status of the stocks over 40 years ago drive the conclusions reached about whether “recovery” to these hypothetical levels is occurring. The SWFSC report suggests the dolphin stocks are not recovering at the “expected” rate, based on assumptions that the mortality rates in the early years of the fishery were as high as previously assumed. Given the stable sizes of these populations and the stable age distribution of northeastern spotted dolphins, the assumption and the related conclusion that six million dolphins were killed in the tuna fishery during the past 40 years must be re-examined. The high mortality estimates from the early years of the fishery (1959-1972) are based on extrapolations from a small sample of 20 fishing trips. Only three of those were made before 1971, and the data from them were not collected in the framework of a scientific sampling scheme. Thus a very significant decision may hinge on data judged to be of “little or no statistical value” by a committee convened by the National Research Council’s Commission on Life Sciences<sup>2</sup> to review scientific and technical information relevant to the fishery.
10. One alternative to the fishery having a significant adverse impact on dolphin populations is that changes in the ecosystem have had significant effects on those populations. Although the SWFSC report concluded that it was unlikely that there has been sufficient change in the eastern Pacific ecosystem to cause low population growth rates for spotted and spinner dolphins, the SWFSC abundance data and the IATTC fishery data demonstrate that large changes have indeed occurred for other species of upper-level predators. Based on the survey data, we estimate that over 200,000 more pilot whales, over 750,000 more common dolphins, over 7,000 more Bryde’s whales, and more than 70% more yellowfin tuna were added to the ecosystem from 1986-2000. The increases of these populations of large predators could increase competition for fish and squid that the spotted and spinner dolphins feed upon. The SWFSC discounted the likelihood of environmental changes being great enough to affect the dolphin stocks. However, the observations of ecosystem changes are consistent with the views of the members of the NMFS expert panel on Ecosystem Effects. All of the members of the Panel agreed that ecosystem variation clearly could have a significant impact on dolphin populations in the eastern Pacific Ocean, and three of them perceived the changes as having a depressing effect on the populations.

*“...such changes provide a credible explanation for at least part of the observed slow recovery of dolphin stocks ...” Landry*

*“Consequently, the argument is persuasive that the carrying capacity of the ETP, relative to the ecologies and life histories of northern offshore spotted dolphins and eastern spinner dolphins, is lower now (and the past several or more years) than it was prior to and during the early phase of the fishery.” Stewart*

*“... require that we do not rule out the possibility that the carrying capacity of the ETP for dolphins has declined and that this has affected the recovery of the population.” Barber*

Attached are several appendices that elaborate upon our analysis.

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<sup>2</sup> page 54 NRC 1992. Dolphins and the Tuna Industry. National Academy Press. 176 p.

## Appendix 1. Estimation of Stock Sizes

### *General comment*

A great deal of work has been carried out to improve the line transect estimation procedures for the research vessel surveys, but there are still difficulties associated with the quality of the data and the techniques of analysis. Differences between the old and new series of estimates of absolute abundance of the northeastern offshore spotted dolphin (Figure 1.1), and of the eastern spinner dolphin, depend on assumptions that have not been substantiated, and the standard errors of the new estimates do not account for the differences caused by the choices of model assumptions. It is therefore difficult to know how well the power analyses of trends capture the true ability of these time series to detect different levels of population changes. These points lead us to the view that the estimates are still subject to change, depending on the choices made by the analysts, and that precision of the surveys is likely to be overestimated.

### *Specific comments*

1. Horizontal bearing data suggest some preferential rounding. Horizontal sighting angles for the 1998-2000 surveys show a large proportion of sightings at 5° and 10° (Kinzey *et al.*, 2002: Figure 1a). Rounding to 5° is evident across the full range of sighting angles, and smearing was used to adjust for the effects of rounding to 5° increments. However, from the data shown, rounding to 5° increments does not appear to be an entirely random process because of the high frequency of sighting angles reported at 5° and 10°. It is not clear that smearing is the appropriate technique to deal with this preferential rounding. The cause of this preferential rounding was not discussed, and it is not known if the cause was identified.
2. A half-normal model is used for the detection function without adequate justification. An excess of offshore spotted and/or spinner dolphin sightings near the trackline can be seen in the perpendicular distance data for 1979, 1980, 1983, 1987, 1998, 1999, and 2000 (Gerrodette and Forcada, 2002: Figures 5-6). Forcada (2002, p. 19) cautions that "...research on the problem of why the data is spiked may discard or justify the use of models that over fit, such as the hazard rate." and "In the example analysis, however, it is not clear whether the spike was purely a sampling artifact or if the true detection function was in fact spiked." Gerrodette and Forcada (2002: p. 10) used the half-normal model for the detection function, apparently because "Fitting the probability density function to this spike with exponential or hazard-rate models gave unreasonable values for the effective strip width." However, the "unreasonable" values of effective strip width were not presented or discussed. No analysis of the perpendicular-distance data to support a claim that the excess of detections near the line was, in fact, a sampling artifact is in the report. Thus, it has not been established that fitting this excess in detections near the line is an undesirable property. Comparison of half-normal models and hazard-rate models (Forcada 2002: Table 1a-c,) shows that, for the example data used, the difference in  $f(0)$  for the hazard-rate, as compared to the half-normal (same covariates), was often greater than the range of  $f(0)$  estimates based on the half-normal model (different covariates), but was less than the range of  $f(0)$  estimates obtained with the hazard-rate model (different covariates). In addition, with the exception of 1983, the effective strip widths estimated from the hazard-rate model (Wade, 1994) and mixed hazard-rate, half-normal model (Gerrodette, 1999, 2000, core area) are between 1.8 and 4.3 km, similar to the range of effective strip widths of 2-4 km presented by Gerrodette and Forcada (2002). Thus, it is not clear whether it is the use of the hazard-rate model, or the use of the

hazard rate model with multiple covariates, that gives unreasonable estimates of the effective strip width. Comparison of pooled estimates of  $f(0)$  for 1979-1999, based on the hazard-rate model (or mixed models) to pooled estimates based on the half-normal model showed differences of approximately -50% to +40%, with an average difference of approximately -10% (estimates from: Wade, 1994: Table 3.4, northeastern spotted; Gerrodette 1999, 2000, Table 3, offshore spotted, core area; Gerrodette and Forcada, 2002: Table 4, northeastern spotted), suggesting that the choice of the form of the detection function may be important. Choice of the hazard-rate model or the half-normal model must be based on an analysis of whether the excess of sightings near the trackline was the result of a sampling artifact.

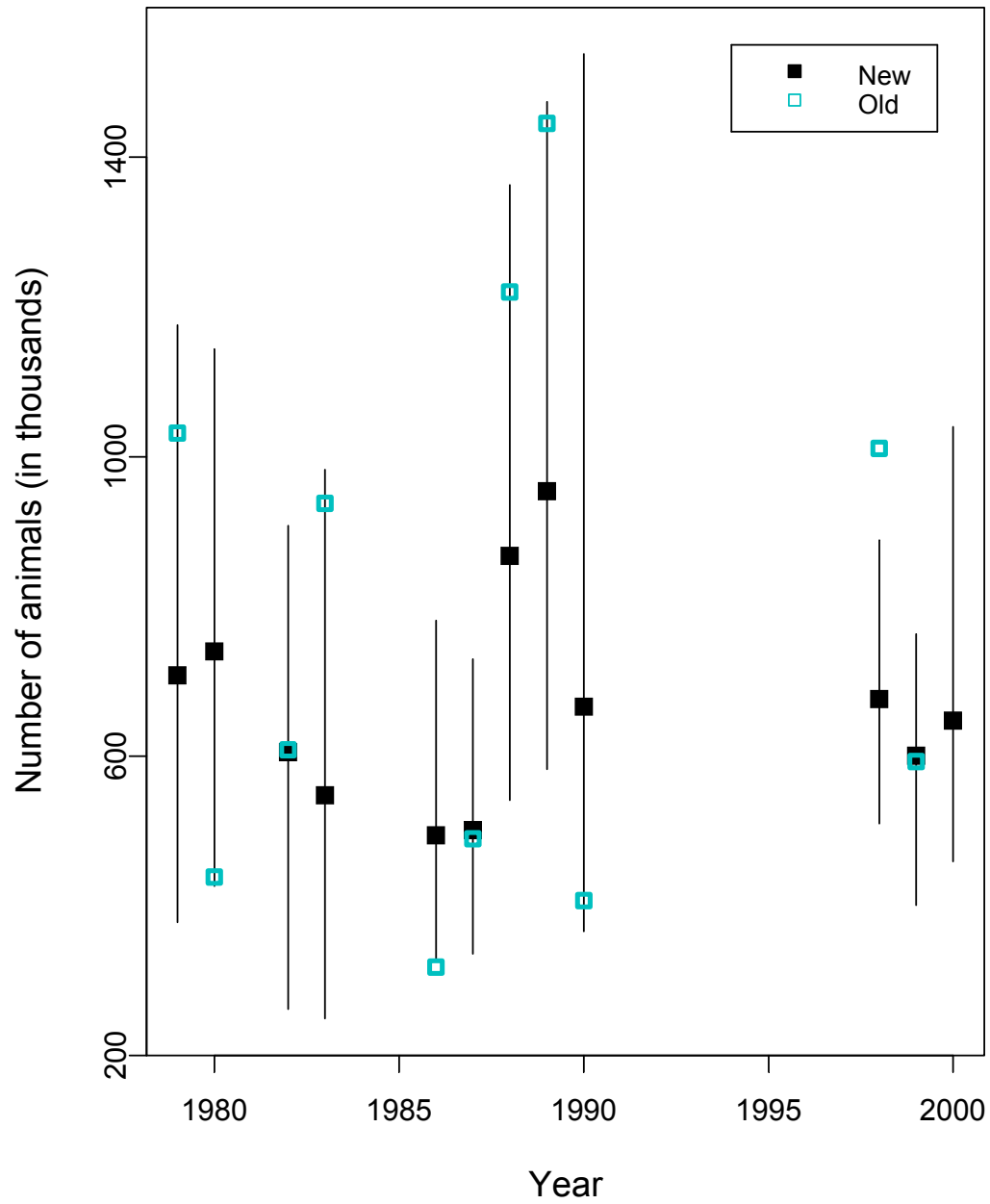
3. Different covariate models fitted to the detection data for each year possibly added unwanted inter-annual variability to the estimates of  $f(0)$ . Although the SWFSC scientists use the same form for the detection function (half-normal) in all years, different sets of covariates are selected in each year. Thus, the models fitted to the perpendicular distance data do not remain the same across years. It is not clear to what extent the use of different models in different years contributed to inter-annual variability in the estimates of  $f(0)$ . A better choice for building a covariate model for the detection function would be to pick a common “best” set of covariates for all years based on a statistic such as the Aikike’s Information Criterion, and extensive data analysis focused on understanding correlation between the independent variables and the relationships between independent variables and probability of detection. Stability of the “best” model could be explored through cross-validation or “bagging” (Brieman, 2001 and references therein).
4. Large inter-annual within-survey-period fluctuations in herd size remain unexplained. While inter-annual variability in the abundance estimates among years has been greatly reduced with the new methodologies, the greatest inter-annual variability among estimates of abundance for the northeastern spotted dolphin still occurs within the 1986-1990 survey period. No explanation is offered for this inter-annual within-survey variability by either Wade (1994) or Gerrodette and Forcada (2002). It would appear from the data presented in Table 4 of Gerrodette and Forcada (2002) that the increase in abundance of northeastern spotted dolphins in 1988-1989 is due largely to an increase in herd size—approximately 40% increase in those two years, as compared to the other years within the same survey. It is surprising that such inter-annual variability in herd size was not investigated.
5. The sampling coverage of spatial strata used to estimate the abundance of the eastern spinner dolphins has not been consistent among surveys. In particular, as noted in the recommendations made by the line transect expert group to the IATTC Scientific Working Group Review of Dolphin Abundance Estimates, held on October 19-20, 2000, in La Jolla, California, there was insufficient survey effort in the outer area stratum in 1999. The panel noted that “In 1998, around 20% of the abundance estimate of eastern spinner dolphins was in the outer area,” and that the lack of sightings in the outer area in 1999 was likely caused by lower survey effort in that stratum. It does not appear that the sensitivity of the abundance estimates to sampling inadequacies was explored by Gerrodette and Forcada (2002).
6. The revisions to the abundance methodologies and to the data led to considerable changes in the estimates of abundance, and it is therefore surprising that the authors do not attempt to determine which changes made the most difference and why. While a number of the revisions were well-motivated (but see (1)-(3) above), and simulations were used to give guidance in selecting among estimation procedures, it would appear from these manuscripts



that no detailed dissection of the contributions of the various modifications to the changes in the estimates of abundance was undertaken with the complete data. Such analyses are essential before the new estimates can be regarded as being improvements over the previous estimates.

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**Figure 1.1.** Estimates of abundance of northeastern offshore spotted dolphin, and approximate 95% confidence intervals, based on the new methodologies (Gerrodette and Forcada, 2002) and old methodologies (Wade, 1994; Gerrodette, 1999 and 2000).

## Appendix 2. Analysis of Stress and Other Fishery Effects

To provide a fair basis for his decision, the SWFSC should present the Secretary not only evidence that suggests that a significant adverse impact might be occurring, but also evidence that it is not. The SWFSC emphasized in the Executive Summary of its report only evidence that suggested that unreported mortality might be occurring; negative evidence is buried in the Appendices or individual reports and not compiled in support of the hypothesis that the fishery has no significant adverse impact. In this section, we discuss the evidence that the SWFSC has presented in favor of the hypothesis that unobserved mortality is occurring, but also a list of the evidence that supports the alternative view that the fishery has no significant adverse impact.

### *Evidence Supporting a Finding of a Significant Adverse Impact*

The SWFSC marshaled the evidence that may be interpreted as supporting a finding of a significant adverse impact on page 25 of its report:

“However, in the aggregate, the findings from the available data *support the possibility* that tuna purse-seining activities involving dolphins *may have* a negative impact on *some* individuals. [italics added for emphasis] Some evidence was found for potential stress-related injury or unobserved mortality of dolphins involved in purse seine fishing operations, based on the combined documentation of: (a) moderately elevated stress hormones and enzymes indicative of muscle damage observed in live dolphins examined in the nets; (b) evidence of past (healed) muscle and heart damage in dolphins killed during fishing operations; and (c) fatal heart damage in virtually all fishery-killed dolphins, which most likely was related to elevated catecholamines. The responses observed in the samples of live animals were well within those ranges from which dolphins are expected to recover fully; however, it is possible that some dolphins may experience stronger responses, such as during occasional ‘catastrophic’ aspects of fishery operations when dolphins may become trapped under a canopy in the net.”

First, this heavily-qualified conclusion is so laden with uncertainties that a finding of significant adverse impact cannot be based on it. The conclusion is based on a mixture of data and speculation. But the data cited (as opposed to the speculation) do not support a finding of significant adverse impact. On the contrary, all the data mentioned indicate that no significant adverse impact is occurring. The stress hormones and enzymes are at levels from which the dolphins would fully recover from chase and encirclement; the healed heart and muscle lesions are not life-threatening and are commonly seen in dolphins in the wild that are not associated with the purse-seine fishery. Thus they cannot be attributed with any certainty to purse-seine fishery interactions (Cowan and Curry 2002), nor assumed to result in the stress-related mortality of dolphins. The rest of this conclusion is based on speculation.

Second, the report cites the conclusion by Archer *et al.* (2001) that separation of mothers and calves is occurring, and that this could result in deaths of the calves and a significant adverse impact on the population. Again, this conclusion is based on a mixture of data and speculation. The data indicate that in one sample collected during 1973-1990 it appeared that calves were orphaned after their mothers were killed in the fishery, but that even in the worst-case scenario, the resulting additional mortality would be inconsequential and the total mortality would still be sustainable and well below the Potential Biological Removal (PBR) limits that are currently used to manage US fisheries (2,367 northeastern spotted and 1,298 eastern spinner dolphins). In

2000, this would amount to an additional mortality of 117 calves out of a population of 641,153 northeastern spotted dolphins.

The speculative part of the SWFSC report's argument is that perhaps a large number of mothers and calves are separated during the chase, that the mothers may become separated from the calves, and that the calves may then die. However, there is no evidence that supports this contention, and much evidence that refutes it. In general, mammalian mothers are known to go to extreme lengths to stay with and protect their young, even while being chased by predators. Whalers have used the protective behavior of mothers toward their calves to increase their catches (Caldwell and Caldwell, 1966). Adult dolphins have been observed defending young calves against sharks, despite the risk to themselves (Springer, 1967). Thirty years of short chases and encirclement of bottlenose dolphins in Florida have not resulted in any permanent separations of mothers and calves; even when one member of the pair was temporarily encircled and the other was not, the free dolphin remained just outside the net until the encircled one was released. Capture-recapture studies of three female spotted dolphins with calves showed that the mother-calf bond remained intact, even after up to seven sets over seven days (Chivers and Scott, 2002).

### ***Evidence Refuting a Finding of a Significant Adverse Impact***

The SWFSC Chase Encirclement Stress Studies (CHESS) cruise conducted some studies examining various aspects of stress, and the results of most of these studies were either negative (no evidence of significant stress-related injury) or equivocal. The studies showing no significant adverse impact are listed and described.

**Behavioral studies** – The study of the behavior of spotted dolphins encircled by purse seines noted that these dolphins are well-habituated to set operations (Santurtún and Galindo 2002). This corroborates the findings of the IATTC (1986) and Pryor and Kang-Shallenberger (1991) that indicate that the dolphins have learned behaviors that reduce the risk of entanglement and allow them to anticipate events in the fishing operations.

**Heat stress studies** - One of the CHESS studies (Pabst *et al.* 2002) examined the thermal stress by measuring deep-core temperatures and surface temperatures and heat flux from the dorsal fins of the dolphins (the dorsal fin functions as a radiator to release excess heat). None of these measurements showed any indications that adverse impacts due to heat stress were occurring. The data for one dolphin were puzzling because it displayed the highest deep-body temperature after being involved in the shortest chase (12 min.) of the study. It is most likely that the temperature reading was confounded by the long process (17 min.) required to capture this particular dolphin just prior to sampling.

**Lymphoid study** - A study of the lymphoid organs conducted as part of the SWFSC Necropsy Program (Romano *et al.* 2002) showed no signs of stress or of a compromised immune system.

**Blood analysis study** – Analyses of the blood collected from dolphins captured during the CHESS studies were largely equivocal, being hampered by small sample sizes and few recaptures of tagged and sampled dolphins (St. Aubin 2002). In general, “certain changes were noted signaling a stress response, but none that suggested distress at the time of second capture.” The SWFSC report suggests that capture myopathy may be a cause of delayed mortality (p. 68), but the blood analyses during the CHESS cruise reported by Forney *et al.* (2002) indicated that recaptured dolphins had lower values of the muscle-specific enzyme CK, rather than the higher

values that would be encountered if capture myopathy were occurring.

**Population modeling study** - Models of the population “that included simple mortality terms did not perform as well as the models without the additional mortality,” indicating that “undocumented mortality is unlikely to have occurred” (SWFSC report: p. 68).

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### Appendix 3. Population Modeling

#### *General conclusions*

To be able to conclude, from the population modeling used in the SWFSC study, that the tuna fishery is having an adverse impact (suggested in the SWFSC papers being demonstrated by the rate of recovery being less than expected) on the dolphin populations four conditions are required:

1. The dolphin population has a current productivity rate of  $X$ .
2. If the current productivity rate is  $X$ , then the maximum productivity rate is  $Y$ .
3. The expected maximum productivity rate is 0.04.
4. If  $Y$  is less than 0.04 it is due to the effect of the tuna fishery.

All four of these conditions are unknown for the eastern spinner dolphin and northeastern offshore spotted dolphin populations. The estimates of the current productivity rates are dependent on highly-uncertain estimates of abundance obtained from surveys. The surveys show unrealistic changes from year to year and change with the assumptions made in the analyses. The estimate of the maximum productivity rate is based on assumptions, uncertain estimates of population depletion, and assumptions about density dependence for which there are few empirical data and uncertain theoretical foundations. The expected maximum productivity rate of 0.04 is based on very few data, and could be even less than 0.02. The analyses presented by the SWFSC indicate that no additional mortality can be attributed to the tuna fishery. Furthermore, the methods used for inference can substantiate multiple interpretations when the information provided by the data is insufficient, as in these applications. Finally, the assumptions about the prior distributions may influence the results.

We agree with the referee (McAllister 2002), who stated that “Disappointingly, no useful insights can be gathered from this stock assessment regarding potential changes in growth rates, carrying capacity, and unobserved mortality rates due to chase and encirclement.”

The details behind our conclusions are given in the following sections, one for each of the required conditions and one for the inference methodology. ES is used to represent eastern spinner dolphin and NEOS is used to represent northeastern offshore spotted dolphin.

#### **1. The dolphin population has a current productivity rate of $X$**

All three models used by the SWFSC scientists produce similar estimates of current productivity rates, around 0.010 and 0.017 for ES and NEOS dolphins, respectively (Wade *et al.* 2002). These estimates are dependent on the survey data providing reliable estimates of biomass. The limitations of the survey data are discussed in Appendix 1 of this report, Estimation of Stock Sizes. Additional comments are presented below.

#### *Comparison of trends in mortality and abundance*

Comparison of mortality and abundance trends (Figure 3.1) for NEOS shows that the abundance decreased from 1977 to 1987, during a period of low mortality (1977-1984), and then increased from 1987 to 1989, just after a period of high mortality (1985-1987). This indicates that (1) the mortality is not a main factor driving the observed trends in survey estimates of abundance or (2) the estimates of the population sizes are unreliable (see next paragraph). If the mortality is affecting a portion of the population that is not part of the survey, but which becomes part of that

population at a later date (e.g. juveniles), then models that do not assume time lags (exponential and general logistic) are inappropriate for modeling this population. The fits to the survey abundance estimates show an opposite trend to those for the data for 1980-1989, illustrating the above points (Figure 3.2). A pattern in residuals, as seen for the NEOS, is used as an indication of inadequate assumptions in the analysis, suggesting that “an alternative model might be appropriate” (Wade *et al.* 2002).

*Either the population models are inadequate or the survey does not adequately represent the abundance.*

#### ***Unrealistic changes in abundance estimates***

The change in abundance from 1986 and 1987 to 1988 and 1989 for the NEOS is unrealistic. The estimates of population size nearly double in one year, which is inconsistent with a population that is suggested to have a maximum population increase of 4% per year. The abundance estimates have large uncertainty, and this change does not appear to be statistically significant. However, the rate of increase between 1986 and 1989 estimated from these data is significantly higher than 0.04 (95% confidence intervals of 0.09 and 0.46). Alternatively, given the low growth rate of the population, consecutive years can be considered to be estimates of similar quantities. If 1986 and 1987 are used to estimate one abundance level and 1988 and 1889 are used to estimate a second abundance level, then this produces an even greater difference between these years that is not consistent with 0.04 (95% confidence intervals of 0.21 and 0.99).

*Either there is more uncertainty in the abundance estimates than acknowledged, or there is considerable bias in some of the abundance estimates, or there is considerable movement of dolphins into and out of the survey area.*

#### ***Changes over time***

The SWFSC analysis based on the exponential model with two productivity rates estimates that the growth rate of the population was much greater before 1990 or thereabouts (0.04 and 0.026 for ES and NEOS, respectively) than after 1990 (-0.021 and 0.002 for ES and NEOS, respectively) (Wade *et al.* 2002). The difference may have been even greater if the productivity rate were not restricted to be less than 0.08: “The 2-slope model would have fit these estimates even better if it had been allowed to, but the prior distribution did not allow the population to grow at [a rate] greater than 0.08, which is considered an extreme upper limit to the potential growth rate of a dolphin with its life history (Reilly and Barlow 1986)”.

*Either the productivity rate has large temporal variability or the survey data do not produce adequate measures of abundance.*

#### ***Changes in estimates***

The survey estimates of abundance provided by the SWFSC scientists have changed several times. These changes have caused the assessment results to change from being consistent with a maximum productivity rate of 0.04 (Alvarez-Flores 2002) to estimates that are less than expected (Wade *et al.* 2002). This indicates that the results are dependent upon key assumptions made in the analyses of the survey data. It would be informative to know what changes in assumptions caused these differences, but this cannot be determined from the SWFSC report.

Another example is provided by the results presented in the review by Haddon (2002), which differ from those presented in the final report: “In the exponential model, the 2-slope model

predicts an initial population increase of 9.5%, while the density dependent model had the eastern spinner dolphins expanding in the early years at 8% per annum. These rates of increase appear high in terms of dolphin biology” (Haddon 2002). Using the SWFSC scientists’ argument that if the estimate of the maximum rate of 0.02 is too small compared to the expected 0.04, then the rate of 0.08 is too high, indicating that the survey data may be biased.

*Estimates of production are sensitive to assumptions made in the analysis of the survey data.*

## **2. If the current productivity rate is $X$ , then the maximum productivity rate is $Y$**

The estimate of the maximum productivity rate is dependent on the estimated or assumed density dependence and the current depletion level. If the population is highly depleted then it should be growing at a rate close to the maximum productivity rate. If the population is only moderately depleted, then the population should be growing at only a fraction of the maximum productivity rate. The amount that the productivity is reduced depends on the amount of density-dependent effects that are occurring at that population size. Therefore, if we know the current productivity rate we need to know the amount of density-dependent effects that are occurring at the current abundance level to estimate the maximum productivity rate.

### ***Depletion level***

Due to the form of the production function and the density dependence that it represents, the closer the population is to the carrying capacity, the lower the productivity rate (as a proportion of the maximum productivity rate) (Figure 3.3). The SWFSC estimates that the current depletion levels are around 0.33 and 0.20 for eastern spinner and northeastern offshore spotted dolphins, respectively. These depletion levels are highly dependent on the historical mortality levels. A committee convened by the National Academy of Sciences of the United States (National Research Council 1992) discussed the early mortality estimates as follows:

“Few data are available for the early years of the fishery (Lo and Smith, 1986). Former crewmembers who were concerned about high dolphin mortality provided data for the first two trips, and a government observer provided data for the third. Thus the data do not come from any valid sampling design. Trips were not selected at random or according to any pattern. The accuracy of the data is questionable because no standard procedure was used to collect information, and interpretation of the data cannot be determined to be correct. Estimating the standard errors is especially difficult.

A substantial problem also exists with statistical bias in ratio estimates when sampling coverages are low. Using statistical simulations (IATTC, 1989c), the positive bias produced by ratio estimates at low sampling coverage results in overestimates of up to 4%-5% at 5% coverage even after a bootstrap procedure has been applied to reduce bias. It is likely that the overestimates were even greater at the much lower coverage—about 0.1%—used earlier and when no procedures to reduce bias were applied.

In summary, the mortality estimates for the period before 1973 (peak values of up to 350,000-653,751 in a year by Perrin, 1968, 1969; Smith, 1979, 1983; Lo and Smith, 1986) **have little or no statistical value**, and the only conclusion that can be based on the data available is that mortality was very high. After a long hearing, the administrative law judge, Hugh Dolan, concluded that many errors had caused



dolphin mortality to be seriously overestimated and dolphin abundance to be seriously underestimated by SWFSC in the 1960s and 1970s (Dolan, 1980).

Nonetheless, these mortality data were used to calculate estimates of dolphin abundance for 1959-1970; these estimates were used later to conclude that some stocks of dolphins were depleted or were at a given proportion of their original abundance.”

The main objections stated above remain valid. The more recent revised estimates of mortality (Wade, 1995) did not address the issues identified by the committee. Any attempt to use estimates of mortality for the years before the regular observer programs started will be limited by the lack of information from that period.

The IATTC staff has consistently maintained there was not enough information available to make reliable estimates of mortality for 1959 to 1970. Compounding the fact that the only data available for that period are from three fishing trips made before 1971, the data were provided in two cases by former crew members who were concerned at the high mortality, there was no sampling design for any of those data, there is no record in the vessel logbook data as to whether backdown was used, and there are too few data available to allow geographical stratification of the mortality rates.

Data for years after 1972 have been considered to be not representative of those for the earlier years due to the introduction of the Marine Mammal Protection Act of 1972, which is assumed to have changed the fishermen’s behavior. In summary, the mortality estimates for 1959-1971, which have a large influence on the estimates of the current depletion level and the carrying capacity, are based on the assumption that the 20 trips (368 sets) carried out in 1971 and 1972 are representative of the 85,000 sets carried out during 1959-1971. The change in estimated mortality that occurred in 1973 could be due to (1) the fishermen being more motivated to save dolphins (Wade 1993), (2) 1971 and 1972 being anomalous years, or (3) the data for the early years being unrepresentative of the average mortality. The explanation based on the motivation of fishermen, which is preferred by the SWFSC, is only speculative. There is evidence of high inter-annual variation in the estimates (Wahlen 1986), which supports (2). Punsly (1983) showed that the proportion of sets on dolphins changes with area and time of year, so it is also likely that school size and mortality per set differ by area and time of year. The analysis of mortality per set did not include stratification by area and time of year, indicating support for (3).

Although the SWFSC scientists conducted sensitivity analyses to increased levels of mortality of 50% and 100% for the entire period and a 100% increase for 1992-2001, they did not consider any sensitivity analysis that reduced the historical mortality estimates. A 100% increase in the mortality before 1973 implies an increase in the average mortality per set from 65.8 to 131.6 for small vessels using the backdown procedure and from 130.8 to 261.6 for vessels not using the that procedure. If the values for 1973, for which there were twice as many samples obtained as there were for all years combined before 1973, were used for small vessels using the backdown procedure, which made up around half of the fleet for the early years, the mortality per set for these vessels would be reduced from 65.8 to 13.1. This would reduce the total mortality by about half. If such reduced early mortality estimates were used to fit the models, current abundance would increase relative to the unexploited population size. The higher the current abundance is relative to the carrying capacity, the higher the estimate of maximum productivity, which would bring the value closer to the expected value of 0.04.

*The estimates of historical mortality have little or no statistical value, so estimates of the depletion level are highly uncertain.*

Once it is acknowledged that the early mortality estimates are so problematic, we can look at the data without preconceptions about the level of depletion and the expected population growth rate. The survey results, if taken at face value, indicate stable or slightly increasing population trends (Gerrodette and Forcada 2002). The life history data suggest that the age distribution of the northeastern spotted dolphins is stable (Archer and Chivers 2002). The IATTC observer data show that the observed mortality rates are low, and the SWFSC Chase Encirclement Stress Studies and necropsy studies do not show any evidence of significant unobserved mortality (see Appendix 2). All of these data suggest that the populations are much closer to their carrying capacities than has been previously assumed.

### ***Density dependence***

Density dependence in the assessment models is controlled by the shape parameter  $z$ .  $z$  is not an interpretable value, so it is usually transformed into MNPL/K (Maximum Net Productivity Level as a proportion of the carrying capacity of the habitat), which is the abundance level relative to the carrying capacity that produces the greatest amount of additional abundance each year. However, the abundance level at maximum production is the most difficult model parameter to estimate (Pella and Tomlinson 1969), especially given the fact that during the period for which data are available there is no contrast in the abundance (Hilborn and Walters 1992). To estimate the value of  $z$ , values of production are needed for different levels of abundance. Because the estimates of abundance for both ES and NEOS populations from the survey data are all at similar levels, there is no information on the value of  $z$  (“there is little information about density dependent effects” (Haddon 2002)). The SWFSC scientists have assumed that MNPL/K (and the associated value of  $z$ ) lies between 0.5 and 0.8 in their assessments. (see ***Bayesian Methodology*** for a description of the bias that the SWFSC prior distribution has for the higher portion of this range). The current production rate as a proportion of the maximum production rate is a function of  $z$  (Figure 3.4). Within the range of values assumed by the SWFSC scientists, as the abundance increases from highly depleted levels, the production rate decreases only moderately. Therefore, under those assumptions, the current estimates of the production rate are not consistent with a maximum production rate of 0.04. If, instead, the maximum production rate is fixed at 0.04 and  $z$  estimated, the estimate of  $z$  corresponds to a MNPL/K values of 0.42 and 0.43 for NS and NEOS, respectively. These values are only slightly less than the lower range of the values assumed by the SWFSC scientists. In other words, current estimates of the production rate could be consistent with a maximum of 0.04 if a different form of density dependence was assumed in the assessment models.

We agree with the reviewers that “It remains uncertain whether this particular functional form [of density dependence] conforms closely to the actual surplus production function for ETP dolphins” (McAllister 2002). “...no empirical evidence exists to limit the range of values expected” (Taylor and DeMaster 1993). There is also “... a lack of sound theoretical basis for choosing from a variety of models that vary markedly in their prediction of MNPL or MNPL/K” (Ragen 1995). Analyses have shown that it is possible for MNPL/K to be less than 0.5 (Taylor and DeMaster 1993). There is also theory based on spatial distribution of habitat that supports levels less than 0.5 (MacCall and Tatsukawa 1994). This has caused some to suggest that “In fact, the lack of estimates for other species argues that MNPL is not a practical measure” (Ragen 1995).

It should be noted that the SWFSC definition of PBR uses the factor  $0.5R_{max}$  because this is the expected rate of production at Optimal Sustainable Population for a logistic model (Wade 1998). For the generalized logistic model with maximum production occurring slightly above 60% of the carrying capacity, the expected rate of production at Optimal Sustainable Population is 76% of  $R_{max}$ . This indicates that the assumptions made by the SWFSC scientists for the assessment of ES and NEOS are not consistent with the definitions of PBR.

*The level of density dependence for the ES and NEOS populations is unknown.*

### **3. The expected maximum productivity rate is 0.04.**

The expected maximum productivity rate can be estimated by using either theoretical calculations based on the population dynamics or empirical data for the rate of increase at low population size. “Determining “the expected rate” of recovery is also difficult, given a lack of biological information” (Haddon 2002). This is because of the difficulty in estimating all of the life history parameters for marine mammals (Wade 1998). There is also considerable variability in the estimates from empirical data (Wade 1998). However, Wade (1998) states that “The lack of evidence of higher rates suggests that 4% is probably a suitable default value for odontocetes and that 2% represents a reasonable worst-case scenario. However, some caution is required, as so few data exist on observed rates of increase of odontocetes. Also, although several odontocete populations have apparently declined from human-caused mortality, none have been observed to recover. Although this may be due to the difficulty in monitoring odontocete populations, it also suggests that maximum rates of increase for some odontocetes could be even lower than 2%.”

*The expected maximum productivity level is uncertain, and the levels estimated by the SWFSC scientists for ES and NEOS may be unreasonable.*

### **4. If $Y$ is less than 0.04 it is due to the effect of the tuna fishery.**

The analyses presented by the SWFSC scientists support the view that the low level of recovery was **not** due to additional unreported or unobserved mortality in the tuna fishery. Increasing the mortality by 50% and 100% degraded the fit to the data for both ES and NEOS. The inclusion of additional mortality based on the number of sets per dolphin was about 80% less probable than without this additional mortality.

*There is no support in the results presented by the SWFSC scientists for unobserved or unreported mortality attributed to the tuna fishery.*

### **5. Bayesian Methodology**

Wade *et al.* (2002), who used Bayesian analysis, considered this to be the most appropriate method of inference. A review by McAllister (2002) supports the use of this methodology. It may be true that Bayesian methodology is the most appropriate, but, like all inference methods, there are limitations to its use<sup>3</sup>, which must be considered when it is applied. Results from

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<sup>3</sup> Reference Guide on Statistics, in Reference Manual on Scientific Evidence, Second Edition, Federal Judicial Center 2000) "Although such posterior probabilities can pertain directly to hypotheses of legal interest, they are necessarily subjective, for they reflect not just the data but also the subjective prior probabilities - that is, the degrees of belief about various hypotheses concerning the coin [or the dolphin population dynamics in this instance] specified prior to obtaining the data. Such analyses have rarely been used in court, because "The results of the analyses may be substantially influenced by the prior probabilities, which in turn may be quite arbitrary." Pages 132-133

Bayesian analyses can be interpreted in many ways. Wade *et al.* (2002) chose to present medians of the marginal posterior distributions. However, other estimators, such as modes or averages, are also available. In analyses for which the data are uninformative, these estimates can differ substantially, and can be influenced by assumptions about prior distributions. This sensitivity is illustrated in Figure 4b of Wade *et al.* (2002), for which the upper bound of the prior distribution for the rate parameter of the early period of the two-rate exponential model has caused the median estimate (0.04) to be much less than the mode of the marginal (integrated across the other model parameters) posterior distribution (about 0.05). This, again, is different from the maximum likelihood estimate, which can be calculated from the mode of the joint posterior distribution when all priors have uniform distributions. If the upper bound of the prior distribution is increased to 0.15, the median estimate increases by about 25% (to around 0.05). Unfortunately, when the models become more complex (*e.g.* the general logistic or the age-structured model), it is difficult to determine the influence of prior distributions on the results from the information presented by Wade *et al.* (2002). One prior distribution that may have a large influence on the results is that for the shape parameter of the general logistic or the fecundity function in the age-structured model. There is no information about this parameter in the data, and therefore all the results are based on integrating across the prior distribution for this parameter for which the bounds are set at levels that give MNPL/K values of 0.5 to 0.8. The median estimate was at the middle of the bounds, and the 95% confidence intervals were at the lower and upper bounds of the prior distribution. In addition to the problems with setting the bounds of the prior distribution, there is the problem of invariance to parameter transformation. For example, the results obtained by using a uniform prior distribution on MNPL/K values between 0.5 and 0.8 will be different from those obtained by using a uniform prior distribution on  $z$  between the values of  $z$  that produce MNPL/K at 0.5 and 0.8. Wade *et al.* (2002) used a uniform prior on MNPL/K for the generalized logistic model and a uniform prior on  $z$  for the age-structured model, which gives higher probability to higher values of MNPL/K. This inconsistent use of priors is probably due to the difficulty of implementing a uniform prior on the MNPL/K for the age-structured model. The priors used in both models conflict with the findings of Taylor and DeMaster (1993), who suggested that MNPL/K value should be at the lower portion of the range. In these situations it is useful to provide results from analyses with MNPL/K set at several values to give an idea of the sensitivity to this parameter. Wade *et al.* (2002) did not provide a sensitivity analysis to the prior distributions used in the analysis (they do not even provide information about all the prior distributions that are used, and the information that they do provide can be obtained only from comments dispersed throughout the document). Therefore, the validity of the analysis cannot be determined, particularly considering that the data are totally uninformative about some of the model parameters, whose estimates are almost the same as the prior assumptions.

The use of the prior distribution for estimating unobserved mortality illustrates the preconception of the SWFSC analysis. The prior distribution provides a degree of belief that there is a significant amount of unobserved mortality. An indication of this problem with the interpretation of the Bayesian analysis is the point made by one of the reviewers (McAllister) that when using Bayesian factors there is evidence against the hypothesis of unobserved mortality, but the 95% confidence intervals for the parameters describing the unobserved mortality does not include zero. This result is probably obtained because there is little information in the data to determine the value of the parameter and because the prior distribution for this parameter has a lower bound of zero. Therefore, the 95% confidence interval has a lower

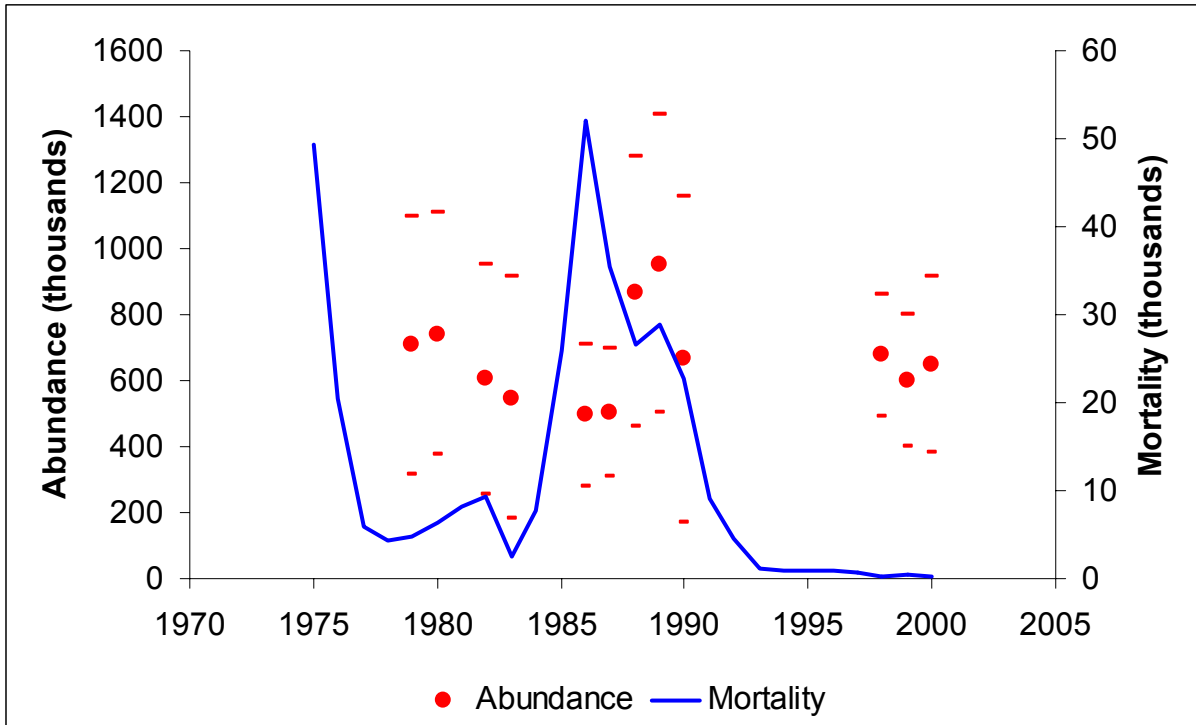
bound just above zero, a consequence of the prior and the use of two-sided confidence intervals, rather than information in the data. The analysis, therefore, produces results that seem to be illogical, and is erroneously reported in the SWFSC report as evidence supporting the existence of unobserved mortality.

*The inference technique used by the SWFSC scientists has several deficiencies and biases.*

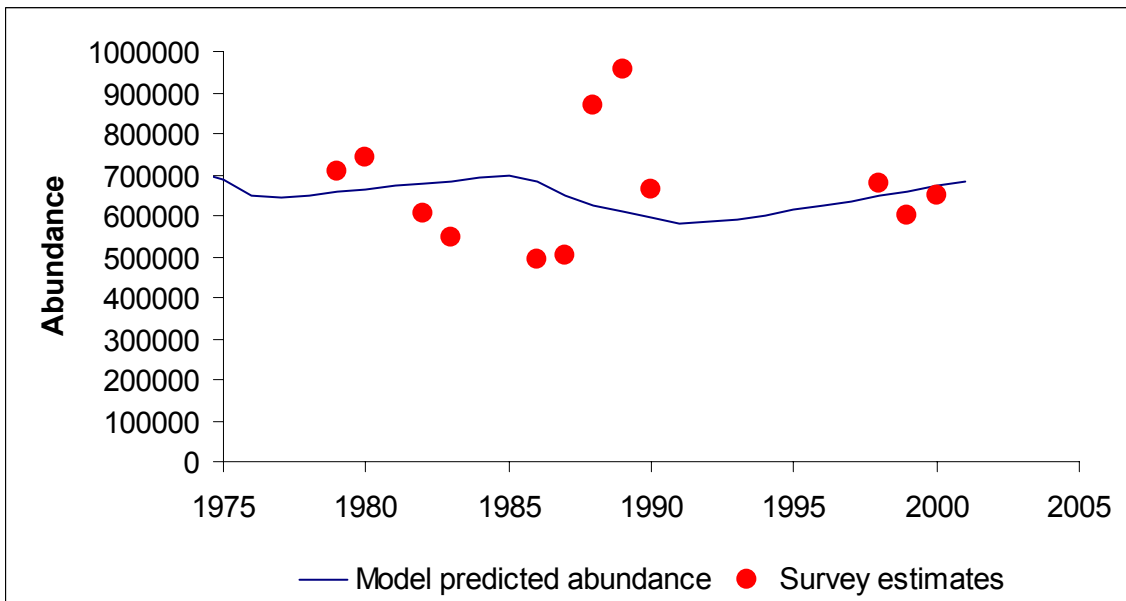
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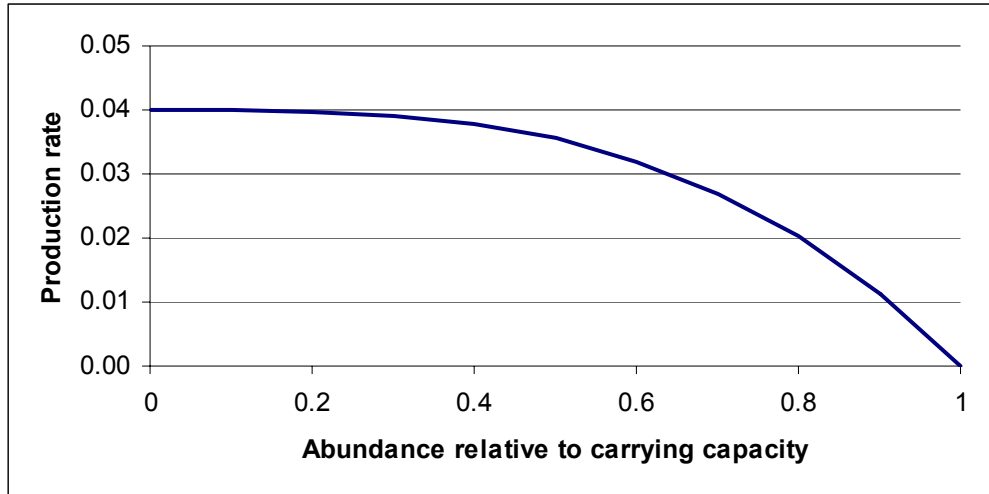
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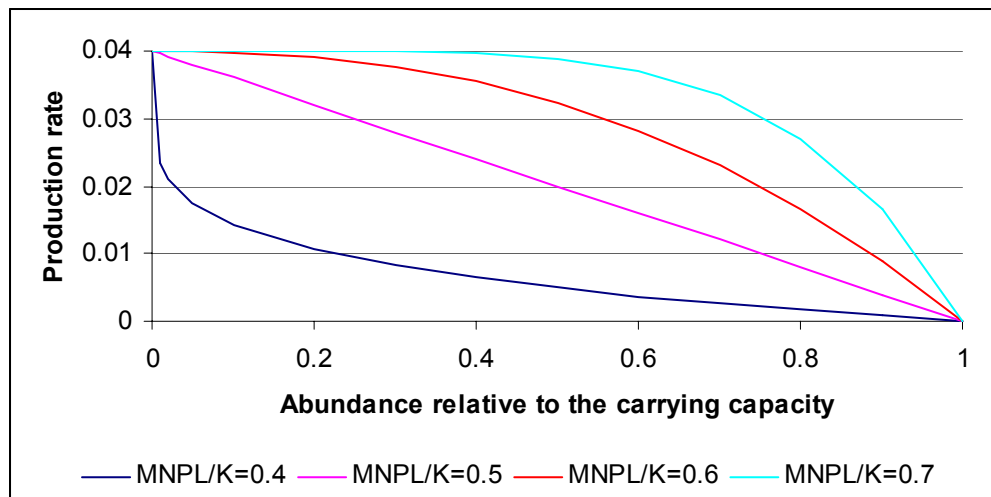
**Figure 3.1.** Abundance (with 95% confidence intervals) and mortality estimates for northeastern offshore spotted dolphins.



**Figure 3.2.** Generalized logistic fit to the abundance index data for northeastern offshore spotted dolphins.



**Figure 3.3.** The production rate at different abundance levels relative to the carrying capacity for a generalized logistic model with a maximum production rate of 0.04 and an abundance level at the maximum production level that is 0.635 of the carrying capacity.



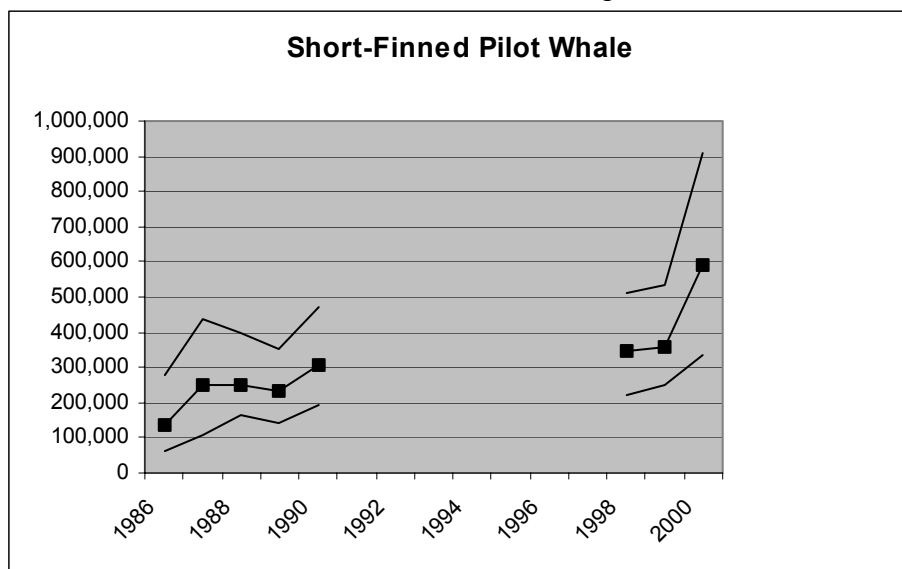
**Figure 3.4.** The production rate at different abundance levels relative to the carrying capacity for a generalized logistic model with a maximum production rate of 0.04 and for abundance levels at the maximum production level that are various levels of the carrying capacity.



#### Appendix 4. Ecosystem Changes and Population Trends

Scientists sometimes search for evidence of ecosystem change in long series of environmental variables. For instance, changes in upwelling intensity or sea-surface temperature may affect plankton populations, which, in turn, presumably affect the higher trophic levels. Based on such evidence, the SWFSC report concludes that “the information available indicates it is unlikely that the carrying capacity has been reduced to the degree required to explain the low growth rates of the depleted dolphin populations.” More direct evidence from species that are at about the same trophic level as spotted and spinner dolphins does indicate, however, that significant ecosystem change did occur. The SWFSC survey results showed significant changes in the abundances of dolphins, small whales, and large whales, and the IATTC has observed changes in the abundance of yellowfin tuna.

The time series of abundance estimates for the short-finned pilot whale is shown below.

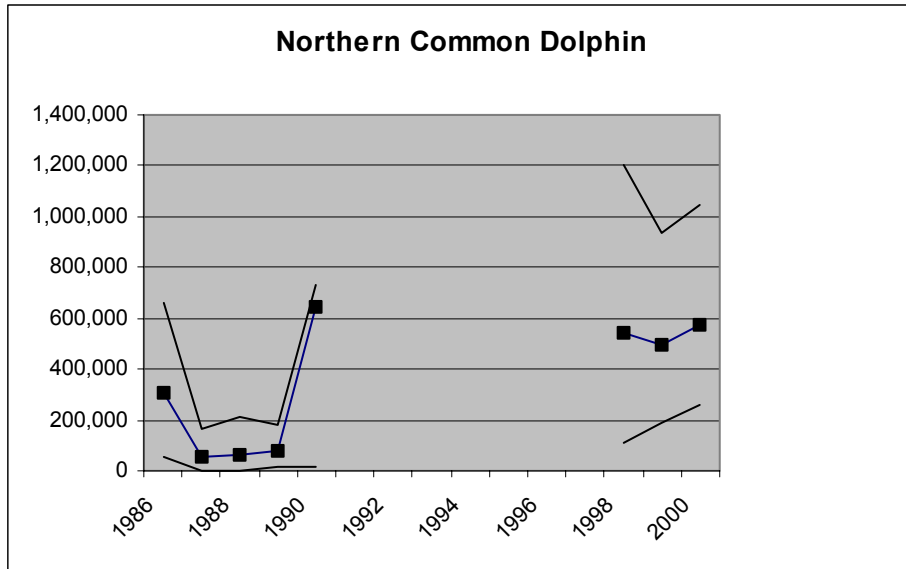


**Figure 4.1.** Trends in abundance for short-finned pilot whale (*Globicephala macrorhynchus*) from NMFS survey data, with 95% confidence limits.

There is no significant exploitation or bycatch of this species in the region, and thus there is no reason to expect a “recovery” of this population. Yet, it is showing a very clear and highly-significant increasing trend, which must be due to the effects of environmental variability. This population appears to have been growing quite steadily over the years surveyed at an annual rate of slightly more than 5%, possibly due to migration into the area (Gerrodette and Forcada 2002a). Fitting an exponential model of population growth to the survey data showed a significant increase of about 220,000 pilot whales from 1986-2000. The average mass of an adult short-finned pilot whale (926 kg; Kasuya and Matsui 1984), is about 12 times that of an adult spotted dolphin, and so the increase in biomass is equivalent to the biomass of about 2.5 million dolphins. As pilot whales consume 15-18 times their body weight per year (Mercer 1975), this increase in pilot whales would require several million metric tons of food per year more in 2000 than in 1986, and thus possibly affecting populations of spotted and spinner dolphins

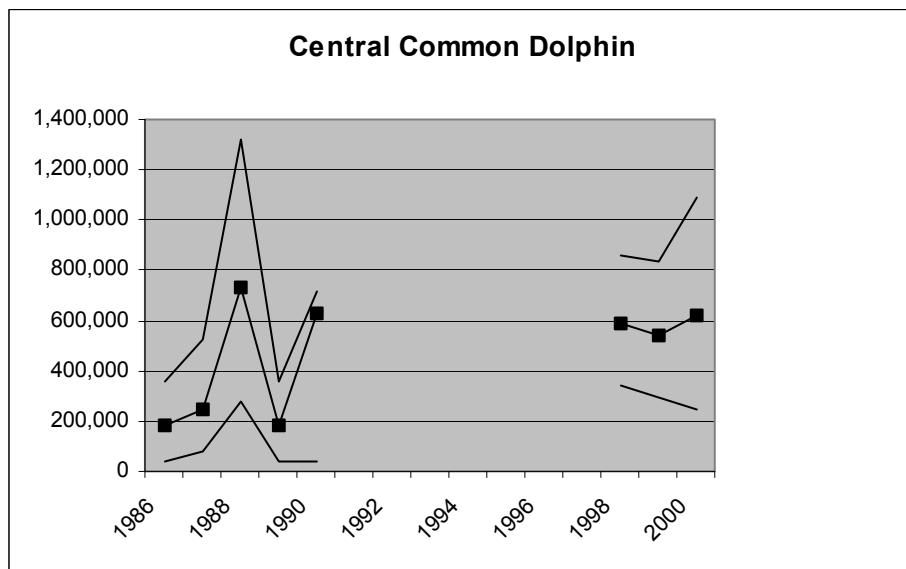
Another significant change is in the northern stock of common dolphins (Figure 4.2). The estimates range from a low of 50,000–70,000 in 1987–1988 to a high of more than 500,000 in 1998-2000. These changes are due to migration out of and into the area, presumably due to El

Niño-related environmental changes (Fiedler and Reilly 1994; Reilly and Fiedler 1994). We know this because SWFSC surveys off California showed a large increase in the numbers of this stock following a major El Niño event corresponding with low numbers off Baja California between 1986-1987, indicating that a large segment of the population moved to the north (Forney *et al.* 2000). The population returned in 1990, with population estimates off Baja California increasing from 80,000 in 1989 to 640,000 in 1990. Between the 1986-1990 and the 1998-2000 surveys, almost half a million more northern common dolphins moved back to the area in the area.



**Figure 4.2.** Trends in abundance for northern common dolphin (*Delphinus delphis*) from NMFS survey data, with 95% confidence limits.

This large increase in the common dolphin population in the northern section of the fishery and a similarly large increase of central common dolphins off Central America of over 300,000 (Figure 4.3), could have significantly affected the carrying capacity for spotted and spinner dolphins and hindered any recovery.



**Figure 4.3.** Trends in abundance for central common dolphins (*Delphinus delphis*) from NMFS survey data, with 95% confidence limits.

Another top predator that has experienced major changes is the yellowfin tuna. The IATTC staff has reported that the recruitment of yellowfin, and consequently the biomass of this species, increased after the mid 1980s. Currently, the estimated average stock size during 1985-2001 is more than 70% greater than during 1975-1984. In itself, this represents a marked change to the ecosystem.

The SWFSC report attempted to answer the question “Has the ecosystem changed substantially since the dolphin stocks were depleted?” and concluded that this was unlikely. The SWFSC data, however, clearly show that enough environmental change had occurred to allow the populations of several large predators to increase. If carrying capacities for these predators increased, why didn't other populations, particularly the northeastern spotted and eastern spinner dolphins, increase? Different species respond to environmental changes in different ways. While we do not understand those for this system, one point is that the populations that did increase were those whose distributions extended beyond the range of the surveys. These populations could respond rapidly to environmental changes by migrating into and out of the area. Spotted and spinner dolphins have more-tropical distributions in the eastern Pacific and do not range into the temperate waters, as do the common dolphins. The populations with the ability to migrate can respond quickly to more-favorable conditions than those populations that can increase their numbers only through reproduction. While the impact of these changes on the carrying capacity for northeastern spotted and eastern spinner dolphins cannot be assessed directly, it should be acknowledged that significant increases occurred in species that feed at similar trophic levels, and could compete for some prey items, and, in the case of pilot whales, may also feed directly on dolphin calves (Perryman and Foster 1980).

There are two ways to look at these data: (1) something changed in the ecosystem that allowed these increases which, in turn, could have affected the population growth rates of spotted and spinner dolphins; or (2) if a statistically-significant increase of this magnitude, for estimates with errors that are quite similar to the dolphin stocks affected by the purse-seine fishery is spurious, then the ability to detect changes in the ecosystem and the dolphin populations is problematic.

The SWFSC report acknowledges the existence of a Pacific-wide climate shift in the late 1970's and the fact that none of the indices used in its study includes data for years prior this shift. However, the SWFSC report concluded that the northeastern spotted and eastern spinner dolphins populations have failed to recover at expected rates and, thus, the populations must be well below current carrying capacities, because it was thought that it was unlikely that “relatively small changes in background physical conditions can have large ecological effects.” That conclusion deals with only one biological component of the ecosystem and ignores the possibility of switching of species composition, which can take place without large changes in total carrying capacity of the ecosystem. In this conclusion, the report ignored the opinions of three of the Ecosystem Expert Panel members who judged that lower carrying capacities were a credible explanation for the lower recovery rates. A fourth reviewer based his minority opinion on the assumptions that tuna stocks have declined over the last 50 years (they have actually increased – see above) and that the early estimates of dolphin mortality are valid (which, as the National Academy of Science Report has observed, is not the case).

Since the large-scale climate shift in the 1976, the northeastern spotted and eastern spinner dolphins have displayed stable population sizes (Gerrodette and Forcada 2002b) and the northeastern spotted dolphins have a stable age distribution (Archer and Chivers 2002), the known mortality rates are low, and evidence is lacking for any significant unknown mortality. The issues of the validity of using problematic mortality estimates and the assumption that the

current populations are not near carrying capacity must be re-examined.

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## INTER-AMERICAN TROPICAL TUNA COMMISSION

### UPDATED SCIENTIFIC REPORT OF THE ON THE STATUS OF DOLPHIN STOCKS IN THE EASTERN PACIFIC OCEAN

JANUARY 2013

In September, 2002, the Southwest Fisheries Science Center issued a [NMFS Scientific Report](#) to the Secretary of Commerce that summarized the results of studies that would bear upon the Secretary's decision whether or not to change the U.S. definition of "dolphin-safe" tuna. The IATTC presented the Secretary a [IATTC Scientific Report](#) with data and conclusions of its own to respond to those raised in the SWFSC Report.

The NMFS report expressed concerns that "the practice of chasing and encircling dolphins somehow is adversely affecting the ability of these depleted stocks to recover." However, its data showed that these dolphin stocks were slowly increasing, and that, if their recovery was being hindered, the cause was not related to the fishery. The SWFSC report argued that the stocks were not recovering at an "expected" rate, and that a plausible explanation for this was unobserved mortality due to the fishery. In response, the IATTC Report stated that the NMFS Report

"emphasizes only evidence that there may be an impact from the fishery, and discounts evidence that there is not, and relies on highly-speculative assumptions about what was and is taking place. Moreover, its conclusions are based on a small amount of data, which, as the report itself admits, cannot be used to draw reliable inferences on population levels. The data in the report that suggest that fishing is not having a significant adverse impact were largely ignored. In any case, the SWFSC conclusion that some unobserved mortality is the reason for low population growth rates requires that the unobserved mortality be more than 20 times (2,000 percent) the observed mortality. It is highly unlikely that this could be the case. Further, the results from the abundance surveys undertaken by the SWFSC indicate that the dolphin stocks have been stable or increasing for more than 20 years."

The IATTC Report concluded:

"The best available scientific evidence supports the conclusion that the purse-seine fishery is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean, specifically that the intentional deployment on or encirclement of dolphins with purse seine nets is not having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean. This evidence does not support a finding that the purse-seine fishery is having a significant adverse impact on any dolphin stock in the eastern tropical Pacific Ocean. This statement is based on the information presented in the SWFSC report, and our independent analyses of the status of dolphin stocks and observations of their interactions with the tuna fishery over the last 30 years."

Although little or no weight was given to the IATTC Report by Dr. Hogarth, the decision maker delegated by the Secretary, he did conclude that there was indeed no significant adverse impact and that the "dolphin-safe" definition could be changed to match that of the definition used under

the AIDCP ([Taking and Importing of Marine Mammals, 68 Fed. Reg. 2010-17; Jan. 15, 2003](#)). A U.S. Court decision, however, overturned this finding in 2004, arguing that “the best science that was available, while not conclusive, indicated that dolphins were adversely impacted by the fishery” and that the NMFS had failed to complete the necropsy study mandated by the U.S. Congress, a decision that was affirmed on appeal in 2007 ([9<sup>th</sup> U.S. Court of Appeals, 484 F.3d 1123](#)).

Since the NMFS and IATTC Reports were written, new research studies have been conducted, particularly on dolphin abundance and trends and the swimming dynamics of dolphin mothers and calves. This document will describe the research conducted since the 2002 Final Finding and discuss how these new results compare with previous data and conclusions.

### **Abundance and Trends**

*1998-2000 NMFS surveys.* From abundance estimates generated from surveys conducted in 1986-1990 and 1998-2000, the NMFS showed that populations of northeastern spotted dolphins and eastern spinner dolphins were increasing slowly, with northeastern offshore spotted (N = 641,153, CV = 0.17) and eastern spinner dolphins (N = 448,608, CV = 0.23%) growing at rates of 1.7% and 1.4% per year, respectively. A more complex two-stage interpretation of the abundance estimates indicated an increase in the two stocks during the late 1980s, but declines or stability during the 1990s. The NMFS interpreted this as a “failure to recover” because the increases were not statistically significant and because it was assumed that these populations should be growing at a maximum rate for delphinids, a rate thought to be 4% (Gerrodette and Forcada, 2005; Reilly *et al.* 2005; Wade *et al.* 2007). Because the growth rate was not 4%, the NMFS argued that there must be significant hidden fishery-related mortality that is hindering the recovery of these populations, and that this hidden mortality was related to fishing effort on tuna associated with dolphins (“dolphin sets”).

The IATTC argued that no dolphin population has been known to increase at a rate that high and that the temporal pattern in dolphin sets would exclude the fishery as a cause of the presumed lack of recovery. The IATTC noted that

“For the period 1979-2000, the largest research survey estimates of abundance of the stocks of north-eastern offshore spotted and eastern spinner dolphins (1988-89) occurred just after the highest estimates of fishery mortality (1985-87) and the greatest numbers of sets on dolphin-associated tuna. During the late 1980s and early 1990s the mortalities of dolphins due to the fishery declined dramatically, and the number of dolphin sets (the presumed cause of any hypothetical unobserved mortality) declined by about 25%, and yet the dolphin populations declined or remained stable. It is difficult to explain how the dolphin populations could flourish when subjected to high mortalities and yet decline as the fishing pressures eased if setting on dolphins were having an adverse impact. The SWFSC abundance data demonstrate that, even if the populations are not currently increasing rapidly, it is not because the fishery is responsible for this.”

The SWFSC tested its population dynamics models against three separate hypotheses of actual mortality: 1) that the actual mortality is the observed mortality, 2) that the actual mortality is 150% of the observed mortality, and 3) that the actual mortality is 200% of the observed mortality. Of the three, the hypothesis that fit best with the population models was the actual mortality observed in the fishery. While the preference was slight, the IATTC Report argued

that “it clearly demonstrates the speculative leap required to reach the conclusion that SWFSC appears to believe likely, that is, that the actual mortality is more than 20 times [2,000 percent] than observed, or 14,400 offshore spotted dolphins and 11,300 eastern spinner dolphins.”

A more-recent study (Wade *et al.* 2007) found little or no difference among models testing the effects of different degrees of mortality, population growth rates, and carrying capacities.

*2003 NMFS survey.* An additional survey was conducted by the NMFS in 2003 and the preliminary estimates calculated for northeastern spotted dolphins (N = 737,000, CV = 0.15) and eastern spinner dolphins (N = 613,000, CV = 0.22) were both higher than previous estimates. The preliminary growth rates were 0.6% for northeastern spotted dolphins and 1.1% for eastern spinner dolphins (Gerrodette *et al.* 2005). The two-stage growth rate model was found to be an invalid interpretation of the data. Again, the growth rates were not statistically different from zero, but the authors stated that “the higher preliminary 2003 estimates are encouraging, it would be premature to conclude that the populations are now beginning to recover.”

The authors concluded:

“Nevertheless, the preliminary estimates have influenced our perceptions of the status of these stocks. Wade *et al.* (2002) found that a model indicating a decline in eastern spinner dolphins was slightly more supported by the data than a model indicating a slight increase in recent years. With the 2003 abundance estimates, such a model would probably not be supported for eastern spinner dolphins, and this causes us to be more optimistic about the status of this stock than previously. Gerrodette and Forcada (2005) suggested that a possible explanation of non-recovery is a delay due to intra- and interspecific effects on dolphin population dynamics. There is uncertainty about the rates at which these stocks should recover, and more sophisticated modeling, using other data in addition to the population estimates (Wade *et al.* 2002, Hoyle and Maunder 2004), is needed to improve our assessments of these stocks. Further monitoring will be necessary to reveal whether the higher, 2003 estimates are statistical noise, or whether the populations of NE offshore spotted and eastern spinner dolphins are beginning to recover.”

*2006 NMFS survey.* During the analysis of the 2006 survey results it was discovered that a programming error had resulted in the underestimation of previous calculations of abundances for eastern and whitebelly spinner dolphins and northern common dolphins (Gerrodette *et al.* 2008). The most-recent estimates (2006) of abundance for northeastern offshore spotted dolphins (N = 857,884, CV = 0.23) and eastern spinner dolphins (N = 1,062,879, CV = 0.26) are higher than previous estimates (see also Table 1).

The growth rates were still modest over the 1986-2006 time period, with the northeastern spotted dolphins increasing at a rate of 1.0% and the eastern spinners dolphins increasing at a rate of 1.9%, however authors concluded that more-recent data showed:

“Over the 8-year period from 1998-2006 when reported dolphin bycatch was at low levels relative to population sizes, all 3 of the officially depleted dolphin stocks (coastal and northeastern offshore spotted and eastern spinner dolphins)

were estimated to be growing at rates considered to be near the 4-8% maximum possible for dolphins ...”

However, there was a corresponding decline in the abundance of the western/southern spotted dolphins, possibly indicating that the increase in the northeastern spotted dolphins could be a result of movements across the current geographic stock boundaries (Dizon *et al.* 1994).

**TABLE 1.** Abundance estimates (*N*) and coefficients of variation (CV) based on the 2006 NMFS survey (Gerrodette *et al.* 2008).

Species and stock	<i>N</i>	CV
<b>Spotted dolphin (<i>Stenella attenuata</i>)</b>		
Northeastern	857,884	0.23
Western/Southern	439,208	0.29
<b>Spinner dolphin (<i>Stenella longirostris</i>)</b>		
Eastern	1,062,879	0.26
Whitebelly	734,837	0.61

The IATTC staff used a logistics model with data from NMFS abundance estimates and IATTC mortality estimates to calculate growth rates, abundance estimates, and minimum abundance estimates that are the basis of Stock Mortality Limits used to manage dolphin populations (IATTC Scientific Advisory Board document [SAB-07-05](#); October 2009; Table 2). The abundance estimate projected to 2010 for northeastern spotted dolphins is 911,177 (CV = 0.15) and for eastern spinner dolphins is 790,613 (CV = 0.18). The growth rate for both stocks is 2.0%.

**TABLE 2.** Abundance estimates (*N*) for 2010, minimum abundance estimates (*Nmin*), and stock mortality limits (SML = 0.1% of *Nmin*) (from IATTC Scientific Advisory Board document [SAB-07-05](#); October 2009).

Species and stock	<i>N</i>	CV	<i>Nmin</i>	SML
<b>Spotted dolphin</b>				
Northeastern	911,177	0.15	793,466	793
Western/Southern	911,830	0.08	881,256	881
<b>Spinner dolphin</b>				
Eastern	790,613	0.18	655,562	655
Whitebelly	711,883	0.11	666,852	666

[Dizon, A. E., W. F. Perrin, and P. A. Akin. 1994.](#) Stocks of dolphins (*Stenella* spp. and *Delphinus delphis*) in the eastern tropical Pacific: A phylogeographic classification. NOAA Technical Report NMFS-119.

[Gerrodette, T. and J. Forcada. 2005.](#) Non-recovery of two spotted and spinner dolphin populations in the eastern tropical Pacific Ocean. Marine Ecology Progress Series 291: 1-21.

[Gerrodette, T., G. Watters, and J. Forcada. 2005.](#) Preliminary estimates of 2003 dolphin abundance in the eastern tropical Pacific. SWFSC Admin. Rep. LJ-05-05. 26 p.



[Gerrodette, T., G. Watters, W. Perryman, and L. Ballance. 2008.](#) Estimates of 2006 dolphin abundance in the eastern tropical Pacific, with revised estimates from 1986-2003. NOAA Tech. Memo. NMFS-SWFSC-422.

[Hoyle, S.D., and M.N. Maunder. 2004.](#) A Bayesian integrated population dynamics model to analyze data for protected species. *Animal Biodiversity and Conservation* 27.1:247-266.

[Reilly, S.B., M.A. Donahue, T. Gerrodette, K. Forney, P. Wade, L. Balance, J. Forcada, P. Fiedler, A. Dizon, W. Perryman, F.A. Archer, and E.F. Edwards. 2005.](#) Report of the scientific research program under the International Dolphin Conservation Program Act. NOAA Tech. Memo. NMFS-SWFSC-372, 101 p.

[Wade, P. R. 2002.](#) 2002. Assessment of the population dynamics of the northeastern offshore spotted and the eastern spinner dolphin populations through 2002. SWFSC Admin. Rep. LJ-02-13, 58 p.

[Wade, P.R., G.M. Watters, T. Gerrodette, and S.B. Reilly. 2007.](#) Depletion of spotted and spinner dolphins in the eastern tropical Pacific: modeling hypotheses for their lack of recovery. *Marine Ecology Progress Series* 343:1-14.

### **Observed Mortality**

Both the NMFS and IATTC Reports agreed that recent observed mortality estimates were well below the levels that are considered sustainable. Because of the difference between the observed and expected population growth rates, the NMFS Report speculated that there must be additional mortality occurring that is not reported by observers.

The observed mortality continues to be low, typically about 1000 dolphins per year (IATTC 2009). The IATTC has developed a data-screening procedure to identify unusual dolphin mortality (Lennert-Cody and Berk 2007). This procedure is being applied annually to the data of the IATTC, and on a voluntary basis to data of the national observer programs. IATTC and NMFS staffs also initiated a sampling program to monitor the unloadings of purse-seine vessels of less than 363 tons of carrying capacity to determine if large yellowfin tuna, the size typically caught in dolphin sets, are present in the catches.

[IATTC. 2009.](#) Annual Report of the Inter-American Tropical Tuna Commission 2007. La Jolla, CA.

[Lennert-Cody C.E., Berk R.A. 2007.](#) Statistical learning procedures for monitoring regulatory compliance: an application to fisheries data. *Journal of the Royal Statistical Society Series A* 170:1-19.

### **Potential unobserved mortality**

The NMFS Report discussed possible sources of unreported mortality: the observer's inability to see everything during the set, observer corruption, mortality caused by smaller purse seiners that are not observed, and mortalities that occurred outside the net due to the delayed effects of stress, or the mortality of calves separated from their mothers during the chase.

NMFS population models, however, did not support the notion that additional mortality was occurring, and any additional hidden mortality of orphaned calves was inconsequential and sustainable by the population. The SWFSC Report presented the results of three population dynamics models that assumed: 1) that the actual mortality was the observed mortality, 2) that

the actual mortality was 150% of the observed mortality, and 3) that the actual mortality was 200% of the observed mortality. Of the three, the hypothesis that fit best with the population models was the actual mortality observed in the fishery. The IATTC Report noted that this “clearly demonstrated the speculative leap required to reach the conclusion that SWFSC appears to believe likely, that is, that the actual mortality is more than 20 times [2,000 percent] that observed, or 14,400 offshore spotted dolphins and 11,300 eastern spinner dolphins.”

*Potential mortality of orphaned calves.* Archer *et al.* (2001; 2004) did report the mortalities of lactating mothers without associated calves, leading to the conclusion that many of these orphaned calves subsequently die. They calculated that mortality could be underestimated by 10-15% for spotted dolphins and 6-10% for spinner dolphins. The IATTC Report calculated an additional potential annual mortality of less than 120 dolphins due to this cause.

[Archer, F.T. Gerrodette, A. Dizon, K. Abella, and S. Southern. 2001.](#) Unobserved kill of nursing calves in the tuna purse-seine fishery. *Marine Mammal Science* 17:540-554.

[Archer, F.T. Gerrodette, S. Chivers, and A. Jackson. 2004.](#) Annual estimates of the unobserved incidental kill of pantropical spotted dolphin (*Stenella attenuata attenuata*) calves in the tuna purse-seine fishery in the eastern tropical Pacific. *Fishery Bulletin* 102:233-244.

*Cow-calf separation.* The NMFS Report also speculated that mothers and calves might become separated<sup>1</sup> during the chase, that calf mortality might result. While there was no evidence that mothers abandoned their calves prior to a set, and some evidence against it, it was speculated that this unobserved mortality might be responsible for the difference between the observed annual population growth rates of 1.7% for spotted dolphins and 1.4% for spinner dolphins and the 4% growth rate.

Since 2002, this has been a particularly active area of research. Studies have examined the spatial relationship between mothers and newborn calves, and the potential energetic costs to a mother of swimming in close association with a calf (Weihs 2004; Edwards 2006; Noren *et al.* 2006; 2008; Weihs *et al.* 2006; Noren and Edwards 2007; Noren 2008). These studies indicate that newborn calves (less than a month old) would be the most vulnerable to separation from their mother, and calves less than a year old would be at risk. The crucial question of “Would a mother abandon its calf during a chase?” still remains unanswered, however.

Ongoing research by the NMFS has expanded this topic to examine potential fetal mortality caused by fishery operations. Archer *et al.* (2010) also presented a method for estimating the exposure of dolphins to fishing operations.

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<sup>1</sup> Dolphin calves typically swim in their mother’s slipstream, allowing the calf to keep pace with relatively little effort. If the calf falls out of this “drafting” position, it is argued, there is a possibility that it could no longer keep up with the mother unless the mother slows down.

[Archer, F.I., J.V. Redfern, T. Gerrodette, S.J. Chivers, W.F. Perrin. 2010.](#) Estimation of relative exposure of dolphins to fishery activity. *Marine Ecology Progress Series* 410:245-255.

[Edwards, E.F. 2006.](#) Duration of unassisted swimming activity for spotted dolphin (*Stenella attenuata*) calves: Implications for mother-calf separation during tuna purse-seine sets. *Fishery Bulletin* 104:125-135.

[Noren, S. R. 2008.](#) Infant carrying behaviour in dolphins: Costly parental care in an aquatic environment. *Functional Ecology* 22(2):284–288.

[Noren, S.R., G. Biedenbach, and E.F. Edwards. 2006.](#) Ontogeny of swim performance and mechanics in bottlenose dolphins (*Tursiops truncatus*). *Journal of Experimental Biology* 209:4724-4731.

[Noren, S.R. and E.F. Edwards. 2007.](#) Physiological and behavioral development in delphinid calves: Implications for calf separation and mortality due to tuna purse-seine sets. *Marine Mammal Science* 23(1):15-29.

[S.R. Noren, G. Biedenbach, J.V. Redfern, E.F. Edwards. 2008.](#) Hitching a ride: the formation locomotion strategy of dolphin calves. *Functional Ecology* 22(2):278–283.

[Weihs, D. 2004.](#) Hydrodynamic of dolphin drafting. *J. Biology* 3:1-23.

[Weihs, D., M. Ringel, and M. Victor. 2006.](#) Aerodynamic interactions between adjacent slender bodies. *AIAA Journal* 44(3):481-484.

*Physiological stress.* Mammalian stress responses, with a focus on dolphins associated with the tuna purse-seine fishery were reviewed by Curry and Edwards (1998) and updated by St. Aubin (2002a). The NMFS Report summarized the case for physiological stress having a significant adverse impact on dolphin populations:

“However, in the aggregate, the findings from the available data *support the possibility* that tuna purse-seining activities involving dolphins *may have* a negative impact on *some* individuals. [italics added for emphasis] Some evidence was found for potential stress-related injury or unobserved mortality of dolphins involved in purse seine fishing operations, based on the combined documentation of: (a) moderately elevated stress hormones and enzymes indicative of muscle damage observed in live dolphins examined in the nets; (b) evidence of past (healed) muscle and heart damage in dolphins killed during fishing operations; and (c) fatal heart damage in virtually all fishery-killed dolphins, which most likely was related to elevated catecholamines. The responses observed in the samples of live animals were well within those ranges from which dolphins are expected to recover fully; however, it is possible that some dolphins may experience stronger responses, such as during occasional ‘catastrophic’ aspects of fishery operations when dolphins may become trapped under a canopy in the net.”

The IATTC Report argued:

“this heavily-qualified conclusion is so laden with uncertainties that a finding of significant adverse impact cannot be based on it. The conclusion is based on a mixture of data and speculation. But the data cited (as opposed to the

speculation) do not support a finding of significant adverse impact. On the contrary, all the data mentioned indicate that no significant adverse impact is occurring. The stress hormones and enzymes are at levels from which the dolphins would fully recover from chase and encirclement; the healed heart and muscle lesions are not life-threatening and are commonly seen in dolphins in the wild that are not associated with the purse-seine fishery. Thus they cannot be attributed with any certainty to purse-seine fishery interactions (Cowan and Curry 2002), nor assumed to result in the stress-related mortality of dolphins. The rest of this conclusion is based on speculation.”

A study of the lymphoid organs conducted as part of the SWFSC Necropsy Program (Romano *et al.* 2002a) showed no signs of stress or of a compromised immune system. Analyses of the blood collected from dolphins captured during the CHES studies were largely equivocal (Forney *et al.* 2002, Romano *et al.* 2002b, St. Aubin 2002b, St. Aubin *et al.* in press). St. Aubin *et al.* (in press) found that “chase and encirclement of dolphins by a tuna purse seiner results in a measurable stress response typical of odontocetes” but that “there were remarkably few changes in blood parameters in recaptured dolphins.” The blood analyses also contradicted the suggestion that capture myopathy was occurring because recaptured dolphins had lower values of the muscle-specific enzyme CK, rather than the higher values that would be encountered if capture myopathy were occurring (Forney *et al.* 2002).

[Cowan, D. F., and B. E. Curry. 2002.](#) Histopathological assessment of dolphins necropsied onboard vessels in the eastern tropical Pacific tuna fishery. SWFSC Admin. Rep., La Jolla, LJ-02-24C, 31 p.

[Curry, B.E., and E.F. Edwards. 1998.](#) Investigation of the Potential Influence of Fishery-Induced Stress on Dolphins in the Eastern Tropical Pacific Ocean: Research Planning. NOAA Technical Memorandum NOAA-TM-NMFS-SWFSC-254, 71 pp.

[Forney, K.A., D.J. St. Aubin, and S.J. Chivers. 2002.](#) Chase Encirclement Stress Studies on dolphins involved in eastern tropical Pacific Ocean purse seine operations during 2001. SWFSC Admin. Rep., La Jolla, LJ-02-32, 27 p.

[Romano, T., K. Abella, D. Cowan, and B. Curry. 2002a.](#) Investigation of the morphology and autonomic innervation of the lymphoid organs in the pantropical spotted, spinner, and common dolphins (*Stenella attenuata*, *Stenella longirostris* and *Delphinus delphis*) incidentally entangled and drowned in the tuna purse-seine fishery in the eastern tropical Pacific. SWFSC Admin. Rep., La Jolla, LJ-02-25C, 25 p.

[Romano, T., M. Keogh, and K. Danil. 2002b.](#) Investigation of the effects of repeated chase and encirclement on the immune system of spotted dolphins (*Stenella attenuata*) in the eastern tropical Pacific. SWFSC Admin. Rep., La Jolla, LJ-02-35C, 37 p.

[St. Aubin, D.J. 2002a.](#) Further assessment of the potential for fishery-induced stress on dolphins in the eastern tropical Pacific. SWFSC Admin. Rep., La Jolla, LJ-02-23C, 13 p.

[St. Aubin, D.J. 2002b.](#) Hematological and serum chemical constituents in pantropical spotted dolphins (*Stenella attenuata*) following chase and encirclement. SWFSC Admin. Rep., La Jolla, LJ-02-37C, 49 p.

[St. Aubin, D.J. K.A. Forney, S.J. Chivers, M.D. Scott, K. Danil, T.A. Romano, R.S. Wells and F.M.D. Gulland. 2013.](#) Hematological, serum, and plasma chemical constituents in pantropical

spotted dolphins (*Stenella attenuata*) following chase, encirclement, and tagging. *Mar. Mammal Sci.* 29(1):14-35.

*Thermal stress.* One of the CHESS studies examined the thermal stress that may be caused by chasing prior to encirclement (Pabst *et al.* 2002). They measured deep-core temperatures along with surface temperatures and heat flux from the dorsal fins of the dolphins (the dorsal fin functions as a radiator to release excess heat). None of these measurements showed any indications that adverse impacts due to heat stress were occurring.

Data for one spotted dolphin (“the hotter spotter”), however, were puzzling. It had displayed the highest deep-body temperature, yet it had been involved in the shortest chase of the study (12 min from the time the helicopter first flew over the herd to let go of the net), which occurred 1.8 hours prior to the thermal measurements. The most likely explanation was that the temperature reading was an artifact of the research activities, the chasing by swimmers in order to capture and sample the dolphins. This particular dolphin endured the longest chase by the swimmers (24 min) of any of the sampled dolphins. The IATTC argued that the most parsimonious explanation was that the higher temperature of this dolphin was a short-term effect of the research activities (the 24-min chase by the swimmers) immediately prior to the thermal measurements rather than an effect of the fishing operation (the 12-min chase) that was almost two hours prior to the temperature measurements.

NMFS, however concluded that the “hotter spotter” could “represent an anomaly or an indication that this individual may have been more prone to overheating following a prolonged chase.” In doing so, the NMFS ignored the field data that showed that the chase was not a prolonged one (in fact the shortest chase of the entire cruise) and that the research activities were a more proximate cause for the higher temperature, and consistently ignored the IATTC’s arguments. The effect of the “hotter spotter” was exaggerated even further when, in an Expert Opinion submitted to the NMFS and in a Declaration submitted to the US Ninth Court of Appeals, Dr. Robert Hofman (formerly of the U.S. Marine Mammal Commission) conjectured that as many as 9,500 dolphin mortalities could be occurring due to thermal stress caused by chase and encirclement by the tuna purse-seine fishery.

Since then, technical papers on the research methods used to study thermal regulation in the CHESS study have been published (Meagher *et al.* 2002; Westgate *et al.* 2007; Barbieri *et al.* 2010).

[Barbieri, M.M., W.A. McLellan, R.S. Wells, J.E. Blum, S. Hofman, J. Gannon, D.A. Pabst. 2010.](#) Using infrared thermography to assess seasonal trends in dorsal fin surface temperatures of free-swimming bottlenose dolphins (*Tursiops truncatus*) in Sarasota Bay, Florida. *Mar. Mammal Sci.* 26:53-66.

[Meagher, E.M., W.A. McLellan, A.J. Westgate, R.S. Wells, D. Frierson, D.A. Pabst. 2002.](#) Respiration, heart rate and heat flux across the dorsal fin in bottlenose dolphins, *Tursiops truncatus*. *J. Exp. Biol.* 205:3475–3486.

[Pabst, D. A., W. A. McLellan, E.M. Meagher, and A.J. Westgate. 2002.](#) Measuring temperatures and heat flux from dolphins in the eastern tropical Pacific: Is thermal stress associated with chase and capture in the ETP-tuna purse seine fishery? SWFSC Admin. Rep. LJ-02-34C, 54 p.

[Westgate A.J., W.A. McLellan, R.S. Wells, M.D. Scott, E.M. Meagher, D.A. Pabst. 2007.](#) A new device to remotely measure heat flux and skin temperature from free-swimming dolphins. *Journal of Experimental Marine Biology and Ecology* 346:45–59.

## **Life History**

A NMFS necropsy study found no or inconclusive evidence that stress was having a significant adverse impact on dolphin populations, but the sample sizes collected for these studies were low. The low sample size was cited as a reason by the U.S. District Court for overturning the Secretary of Commerce’s determination that there was no significant adverse impact, ruling that the NMFS had not completed the necropsy study mandated by the U.S. Congress.

Since 2002, additional papers on dolphin life history have been published (Archer and Robertson 2004; Perrin *et al.* 2005; Danil and Chivers 2006, 2007; Cramer *et al.* 2008; Larese and Chivers 2008, 2009). A study by IATTC and NMFS scientists of the movements and diving behavior of spotted dolphins has been published (Scott and Chivers 2009). NMFS has also developed a method to diagnose reproductive status of both male and female dolphins from the blubber attached to most skin biopsy samples (Kellar *et al.* 2006; 2009). Biopsy samples collected between 1999 and 2003 showed a female pregnancy rate of 11.8%, a lower rate than the pregnancy rate determined from fishery-killed females collected between 1973 and 1992 (Kellar *et al.* 2008).

NMFS researchers (Cramer *et al.* 2008) have also published a paper that argues on the basis of aerial photogrammetric measurements of dolphin herds that 1) the proportion of calves in northeastern spotted dolphin herds declined from 1987-2003; 2) the proportion of calves in eastern spinner dolphin herds remained stable from 1987-1993, but declined thereafter; 3) the length of disassociation (when the calf presumably becomes independent of the mother) decreased as the number of spotted dolphin sets for that same year increased, suggesting a fishery effect; and 4) a similar correlation was not found for eastern spinner dolphins.

If there is indeed a reduced reproductive output over time, this is difficult to reconcile with the survey results and population model trends (Gerrodette *et al.* 2008; IATTC Scientific Advisory Board document [SAB-07-05](#); October 2009) which show spotted and spinner dolphin populations have been slowly increasing throughout this same time period.

The discrepancy between these studies may be due to the Cramer *et al.*’s data-selection or sampling schemes. Herds greater than 600 dolphins were left out of the analysis because they “dominated the model fitting.” However, their model indicated that there was “a linear increasing effect for school size” and by discarding the largest herds, they also would eliminate the herds with the highest percentage of calves. Also, they used the total sets on all dolphin stocks as the index of fishery effort, rather than the specific number of sets for each stock. This assumes that the total sets is a reliable proxy of fishing effort for each individual stock, but the proportion of the total sets that involved northeastern spotted dolphin varied significantly for the years they sampled.

The unpublished age-at-length data for spotted dolphins at the heart of their age of disassociation vs. fishing effort analysis conflicts greatly with published life history literature. The authors estimated length for a two-year old is 126 cm is an anomaly. The published life history literature for spotted dolphins (Perrin *et al.* 1976; Hohn and Hammond 1985; Bright and Chivers 1991),

other delphinids (Sergeant et al. 1973; Kasuya 1972, 1976; Ross 1977; Kasuya and Brownell 1979; Hohn 1980; Perrin and Henderson 1984; Kasuya *et al.* 1986, 1988), and even the unpublished data they present for spinner dolphins all argue that 126 cm is the length one would expect of a 1-year-old spotted dolphin, and not a 2-year old. By greatly underestimating the length for a 2-year-old, they then would underestimate the number of calves in the sample, and call into question their conclusion that fishing effort correlates with a declining reproductive output of spotted dolphins. Interestingly, their estimate of the length of 2-year old spinner dolphins is not an anomaly, and there is no correlation between fishing effort and reproductive output for spinner dolphins.

The Scientific Advisory Board of the AIDCP has recommended reinstating a dolphin life-history sampling program by observers to look at trends in vital rates. This recommendation was approved by the Meeting of the Parties but funding has not yet been obtained to collect new samples from dolphins taken in the fishery.

[Archer, F.I. and K.M. Robertson. 2004.](#) Age and length at weaning and development of diet of pantropical spotted dolphins, *Stenella attenuata*, from the eastern tropical Pacific. *Marine Mammal Science* 20:232-245.

[Bright, A.M. and S.J. Chivers. 1991.](#) Postnatal growth rates: A comparison of northern and southern stocks of the offshore spotted dolphin, *Stenella attenuata*. SWFSC Admin. Rep. LJ-91-30, 24 p.

[Danil, K. and S.J. Chivers. 2006.](#) Habitat-based spatial and temporal variability in life history characteristics of female common dolphins *Delphinus delphis* in the eastern tropical Pacific. *Marine Ecology Progress Series* 318:277-286.

[Danil, K. and S.J. Chivers. 2007.](#) Growth and reproduction of female short-beaked common dolphins, *Delphinus delphis*, in the eastern tropical Pacific. *Canadian Journal of Zoology* 85:108-121.

[Hohn, A.A. and P.S. Hammond. 1985.](#) Early postnatal growth of the spotted dolphin, *Stenella attenuata*, in the offshore tropical Pacific. *U.S. Fish. Bull.* 83:553-566.

[Perrin, W.F., M.L.L. Dolar, S.J. Chivers, and C.M. Chan. 2005.](#) Length-weight relationships in the spinner dolphin (*Stenella longirostris*). *Marine Mammal Science* 21:765-778.

[Cramer, K. W. Perryman, and T. Gerrodette. 2008.](#) Declines in reproductive indices in two depleted dolphin populations in the eastern tropical Pacific. *Mar. Ecol. Prog. Series* 369:273-285.

[Kellar, N.M., M.L. Trego, C.I. Marks, and A.E. Dizon. 2006.](#) Determining pregnancy from blubber in three species of delphinids. *Mar. Mammal Sci.* 22:1-16.

[Kellar, N.M., M.L. Trego, C.I. Marks, S. Chivers, K. Danil, and F.E. Archer. 2009.](#) Blubber testosterone: A potential marker of male reproductive status in shortbeak common dolphins. *Mar. Mammal Sci.* 25:507-522.

Kellar, N.M., M.L. Trego, S.J. Chivers, and F.E. Archer. 2008. Pregnancy patterns of spotted (*Stenella attenuata*) and spinner dolphins (*S. longirostris*) in the eastern tropical Pacific and their correlations with the purse-seine tuna fishery. PhD dissertation, University of California at San Diego. 186 p.

Larese, J.P., and S.J. Chivers. 2008. Age estimates for female eastern and whitebelly spinner dolphins (*Stenella longirostris*) incidentally killed in the eastern tropical Pacific tuna purse-seine fishery from 1973-82. *Journal of Cetacean Research and Management* 10(2):169-177.

[Larese, J.P., and S.J. Chivers. 2009.](#) Growth and reproduction of female eastern and whitebelly spinner dolphins incidentally killed in the eastern tropical Pacific tuna purse-seine fishery. *Canadian Journal of Zoology* 87:537-552.

[Scott, M.D., and S.J. Chivers. 2009.](#) Movements and diving behavior of pelagic spotted dolphins. *Marine Mammal Science* 25:137-160.

### **Ecosystem effects**

To explain why some dolphin populations were not increasing at the rate NMFS expected (4%), the NMFS examined whether a change in the carrying capacity of the ecosystem could have occurred. The NMFS Report concluded that a such a change in the ecosystem was not likely, although there were significant increases in biomass during 1986-2000 for other ETP species, such as pilot whales, Bryde's whales, common dolphins, and yellowfin tuna. The IATTC Report calculated that over 200,000 more pilot whales, over 750,000 more common dolphins, over 7,000 more Bryde's whales, and more than 70% more yellowfin tuna were added to the ecosystem from 1986-2000. The increases of these populations of large predators could increase competition for fish and squid that the spotted and spinner dolphins feed upon, and thus reducing the population growth rates. A NMFS Expert Panel on the Ecosystem agreed that ecosystem variation could have a significant impact on dolphin populations in the eastern Pacific Ocean.

A population modelling study by Wade *et al.* (2007) could find no difference between models implicating fishery effects or environmental changes on dolphin populations.

A series of papers were published on the oceanography of the eastern Pacific (Fiedler and Lavin 2006; Redfern *et al.* 2008). NMFS is currently investigating the biological effects of the late 1970s climate shift on larval fish assemblages and seabird diets. The most-recent abundance estimates by Gerrodette *et al.* (2008) found significant increases in bottlenose dolphins. Because this species is rarely taken by the tuna purse-seine fishery, the authors suggested that this increase may be due to changes in their habitat.

NMFS and IATTC researchers have been working on multi-species population models that incorporate ecosystem data (*e.g.*, Watters *et al.* 2003). A study of the tuna-dolphin association has been conducted using tracking, food habits and observer and environmental data (Scott *et al.* 2012). Net-tow samples collected in the late 1960s ([EASTROPAC cruises](#)) and museum specimens collected prior to the climate shift will be compared with samples collected during the 1986-1990 and 1998-2006 cruises. A paper linking climate change to community structure in the ETP has been published (Vilchis *et al.* 2009). The distribution and encounter rates of cetaceans in Colobian waters have been linked with oceanographic features (Palacios *et al.* 2012). NMFS and IATTC staff are collaborating on a series of papers on multi-species models (*e.g.*, Hinke *et al.* 2004, Gerrodette *et al.* 2012) to describe the ecosystem impacts of different purse-seine set types and evaluate the impacts relative to the unfished ecosystem state and policy and management objectives.

[Barlow, J., M.C. Ferguson, E.A. Becker, J.V. Redfern, K.A. Forney, I.L. Vilchis, P.C. Fiedler, T. Gerrodette, and L.T. Ballance. 2009.](#) Predictive modeling of cetacean densities in the eastern Pacific Ocean. U.S. Department of Commerce, NOAA Technical Memorandum NMFS, NOAA-TM-NMFS-SWFSC-444, 206 p.

[Fiedler, P.C., and M.F. Lavin \(eds.\). 2006.](#) Review of eastern tropical Pacific oceanography Progress in Oceanography, Vol. 69. [Special issue on ETP oceanography]



[Gerrodette, T., R. Olson, S. Reilly, G. Watters, and W. Perrin. 2012.](#) Ecological metrics of biomass removed by three methods of purse-seine fishing for tunas in the eastern tropical Pacific Ocean. *Conservation Biology* 26(2):248-256.

[Hamilton, T.A., J.V. Redfern, J. Barlow, L.T. Ballance, T. Gerrodette, R.S. Holt, K.A. Forney, and B.L. Taylor. 2009.](#) Atlas of cetacean sightings from Southwest Fisheries Science Center cetacean ecosystem surveys: 1986-2005. U.S. Department of Commerce, NOAA Technical Memorandum NMFS, NOAA-TM-NMFS-SWFSC-440, 72 p.

[Hinke, J.T., I.C. Kaplan, K. Aydin, G.M. Watters, R.J. Olson, and J.F. Kitchell. 2004.](#) Visualizing the food-web effects of fishing for tunas in the Pacific Ocean. *Ecology and Society* 9(1): 10. [online] URL: <http://www.ecologyandsociety.org/vol9/iss1/art10/>

[Palacios, D.M., J.C. Herrera, T. Gerrodette, C. García, G.A. Soler, I.C. Avila, S. Bessudo, E. Hernández, F. Trujillo, L. Flórez-González and I. Kerr. 2012.](#) Cetacean distribution and relative abundance in Colombia's Pacific EEZ from survey cruises and platforms of opportunity. *Journal of Cetacean Research and Management* 12(1): 45–60.

[Redfern, J.V., J. Barlow, L.T. Ballance, T. Gerrodette, and E.A. Becker. 2008.](#) Absence of scale dependence in cetacean-habitat models for the eastern tropical Pacific Ocean. *Marine Ecology Progress Series* 363:1-14.

[Scott, M.D., S.J. Chivers, R.J. Olson, P.C. Fiedler, K. Holland. 2012.](#) Pelagic predator associations: Tuna and dolphins in the eastern tropical Pacific Ocean. *Marine Ecology Progress Series*.

[Vilchis, L.I., L.T. Ballance, and W. Watson. 2009.](#) Temporal variability of neustonic ichthyoplankton assemblages of the eastern Pacific warm pool: Can community structure be linked to climate variability? *Deep-Sea Research I* 56:125-140.

[Wade, P.R., G.M. Watters, T. Gerrodette, and S.B. Reilly. 2007.](#) Depletion of spotted and spinner dolphins in the eastern tropical Pacific: modeling hypotheses for their lack of recovery. *Marine Ecology Progress Series* 343:1-14.

[Watters, G.M., R. J. Olson, R.C. Francis, P.C. Fiedler, J.J. Polovina, S.B. Reilly, K.Y. Aydin, C.H. Boggs, T.E. Essington, C.J. Walters, and J.F. Kitchell. 2003.](#) Physical forcing and the dynamics of the pelagic ecosystem in the eastern tropical Pacific: Simulations with ENSO-scale and global-warming climate drivers. *Canadian Journal of Fisheries and Aquatic Sciences* 60:1161–1175.

## **World Trade Organization**

On September, 15, 2011, the World Trade Organization (WTO) ruled on a complaint brought by Mexico against the United States and its “dolphin-safe” policy. The WTO ruled in Mexico’s favor that the U.S. policy is “more trade-restrictive than necessary to achieve a legitimate objective, taking into account the risks that non-fulfillment would create.” The WTO, however ruled against Mexico’s argument that the U.S. policy was not discriminatory. Both the United States and Mexico appealed these rulings. On May 16, 2012, a WTO Appellate Body [decision](#) reversed both of these rulings. The Appellate Body now found that the U.S. policies were not are more trade restrictive than necessary. The Appellate Body also reversed the Panel on the discrimination issue, ruling that the U.S. Dolphin-Safe policy “is not even-handed in the manner in which it addresses the risks to dolphins arising from different fishing techniques in different areas of the ocean.”



2105 W Great Neck Road  
Virginia Beach VA 23451

## **K&A Seafood**

Dear Dr. Currey:

Attached please find the letter received from John F. Whiteside, Jr., general counsel, in reference to the proposed revised MSC Fisheries Standard v. 3.0.

My company, K&A Seafood, is in full support of the contents of Mr. Whiteside's letter.

I serve as an advisor to the Mid-Atlantic fishery management council, the ASMFC on spiny dogfish, and am an active member on FMAC for the Virginia Marine Resource Commission.

We are the ONLY packing house in Southern Virginia who packs spiny dogfish, and only 1 of 2 packing houses that pack them in the State of Virginia. The spiny dog stocks are in good shape and are sustainably fished and managed.

Unless the MSC Board strikes the ETP/005 automatic classification, it will cause the collapse of our fish house and all of the families employed.

Sincerely,

Scott W. MacDonald

Owner



April 1, 2022

Standards Review Team  
Marine House  
1 Snow Hill  
London  
EC1A 2DH

Sent via email: [standards@msc.org](mailto:standards@msc.org)

**Re: The Fishery Standard Review**

Dear Standards Review Team;

I submit this letter on behalf of Macduff Shellfish (Scotland) Ltd (hereafter “Macduff”) on the Fisheries Standard Review.

Macduff is a supporter of the MSC programme particularly the relatively new Pathway Projects for Fisheries Improvement Projects. Macduff is a funder and active supporter of Project UK, sitting on several FIP Steering Groups. Macduff is a wholly owned subsidiary of Clearwater Seafoods who have been a long-term supporter of the MSC programme and involved in several MSC certificates throughout eastern Canada. Clearwater will be providing additional feedback in their own submission. It is within the context of support for a robust standard that is rooted in practical application that we provide the following feedback.

Detailed feedback on specific elements outlined in the consultation document are provided below. However, as introduction I would like to highlight two primary concerns we have with the direction of the standard:

- The standard is becoming so complicated clients and those using it for FIPs can no longer understand it. I’ve been working with the MSC standard for 17 years and I now struggle to follow the specific meaning of the different sections of the standard and how it will be practically applied to the FIPs that I am working with now and in the future, as well as the MSC certificates I input to. Clearwater has been working with the MSC standards for 14 years and feel they have completely lost the ability to see their fisheries reflected against the standard. The MSC must wrangle with and succeed in incorporating new expectations and clarifications, without sacrificing the ability of clients to comprehend the standard. Having to hire a full-time MSC Standard Specialists simply to navigate a certification is a failure in the program and earns the MSC the reputation that is simply too labour intensive and expensive to be worthwhile. I invite you to interpret this feedback in the context of the specific project on making the standard more efficient, but it is also intended to be more broadly applied, as the most recent efforts on making the standard more consistently applied are resulting in sacrificing comprehension.
- This standard review has emphasised the overly high requirements set for FIPs through the MSC FIP guidance and the requirement to meet the 80 level for every PI within a 5 year timeline. The

standard review which will raise the bar in certain areas brings an almost unachievable level for FIPs to attain before they even enter the MSC programme, in fact a level higher than most already certified fisheries. The added complications and raised bar are likely to mean that groups considering MSC assessment and aiming for certification will not enter a formal FIP process and are therefore not transparent and cannot be held accountable for improvements, but also that FIPs already formed and nearing the end of their action plan and timeline are much less likely to make the transition from FIP into a Client Group to achieve certification. The complications, the lack of level playing field and the additional cost will all add to the likelihood that fewer FIPs will form and of those that do, a smaller number will progress from being a FIP to entering MSC assessment.

The remainder of this submission provides some detailed feedback on specific elements of the draft standard.

### Scope

We agree with the intent behind adding ‘marine mammal harassment’ and ‘conviction of serious crimes’ to the scope. However, there are further details needed.

#### *Marine Mammal harassment*

What defines an “entity?” If a client group member has an employee that takes part in marine mammal harassment on their own time, does that exclude the client group member from the certificate? Within the Canadian context, there are fish harvesters who take part seasonally in the Canadian seal hunt but at a different time of year make up crew on commercial fishing vessels. The scope definition should clearly state that it is the fishing activity within the UoC that is subject to the scope evaluation.

#### *Conviction of Serious Crimes*

Again, we require clarity on what defines an “entity?” If a client group member has an employee that takes part in any of these crimes, and is subsequently released from employment, will that be sufficient to retain their membership to the client group?

### Endangered Threatened Protected and Out-of-Scope (ETP/OOS)

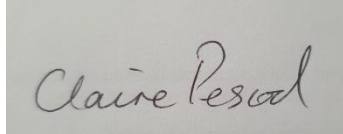
In extensive feedback submitted to MSC July 29, 2021, Clearwater provided our opinion that the reliance on CITES, CMS, and IUCN was problematic and did not achieve the stated desire of the MSC to increase consistency across assessments. In the current consultation draft the MSC standard retains the use of CITES, CMS, and IUCN listings and the MSC online survey specifically asks if the amendments proposed for ETP/OOS will be effective and feasible. It is our position that this proposal still does not achieve any of the stated intended objectives (consistency, effectiveness, feasibility). It adds additional complexity which will only serve to make more work for CABs.

### Evidence Requirement Framework (ERF)

We see this as potentially the most significant change in the new standard, especially as this interacts with other changes, such as the inclusion of all Out-of-Scope species in the ETP requirements. The ERF relies heavily on at-sea observer (AOS) coverage as the baseline definition of success for fishery independent data. While the draft acknowledges that equivalents to these ASO targets would be accepted, outside of a vague reference to electronic monitoring and reference fleets, there is no guidance as to what CABs may accept as equivalents. There is no justification given for why the proposed limits (20%, 30%, 65%, 100%) are chosen at different thresholds or how these percentages are to be calculated (of catch, of landings, of sea days, of trips). With these very precise limits for observer coverage, and very vague definitions for acceptable alternatives, it will be a very risky choice to pursue MSC certification if ASO are not currently deployed at the suggested thresholds. The inclusion of these elements in the late stages of the standard review process introduces significant uncertainty for current clients and those evaluating entry into the program. It also raises concerns that these thresholds were not sufficiently stress tested in real-life fisheries before inclusion in the draft standard.

We thank you for the opportunity to comment on these proposed changes and look forward to future engagement on Fishery Standard Review and work with MSC.

Kind Regards,



Claire Pescod  
Head of Sustainability & Science



## Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

March 30, 2022

Rohan Currey, PhD  
Chief Science & Standards Officer  
Marine Stewardship Council  
London, UK

Dear Dr. Currey:

I am writing to you on behalf of the Mid-Atlantic Fishery Management Council (Council) in response to the Marine Stewardship Council's (MSC) request for comments on the proposed revised MSC Fisheries Standard (Proposed Standard). The Council is one of eight regional fishery management councils responsible for managing fisheries in the Exclusive Economic Zone of the United States in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Council has primary management responsibility for fourteen species of fish and shellfish – five of which have attained MSC certification. We are familiar with the MSC standards and have more than a decade of experience supporting the certification process for our managed fisheries. The purpose of this letter is to convey our concerns about the potential impacts of the Proposed Standard on the U.S. Atlantic spiny dogfish (*Squalus acanthias*) fishery.

The spiny dogfish fishery is viewed by many as a textbook success story for U.S. fisheries management. After experiencing a steep decline in the late 1980s and 1990s, the Council established management of the stock and implemented a strict rebuilding plan in 2000. The stock was declared rebuilt in 2010 and has been maintained at sustainable levels ever since. The fishery attained MSC certification in 2012 and was re-certified in 2018. The most recent stock assessment information indicates that the stock is neither overfished nor experiencing overfishing.

The Council is concerned that the Proposed Standard would inappropriately classify spiny dogfish as an Endangered, Threatened, or Protected (ETP) or Out of Scope (OOS) species and would thus result in the de-certification of the fishery. Section SA3.1.7 of the Proposed Standard states that any fish or invertebrate species listed on certain conservation lists would automatically be classified as ETP/OOS. Spiny dogfish are listed on Appendix 2 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and would therefore, under the Proposed Standard, be considered ETP/OOS. Although this section provides a pathway for modification of certain ETP/OOS classifications based on life history, management status, and stock status, these provisions only apply to species listed under CITES Appendix 2, IUCN Red List of Endangered Species, or National ETP legislation. Furthermore, the proposed section SA3.1.7.1b specifically excludes shark species from reclassification. The rationale for these exclusions is unclear.

During the February 2022 webinar review of the Proposed Standard, Mr. Shaun McLennan, MSC Senior Fisheries Standard Manager, noted that the provisions for modifying ETP/OOS species lists were included “to ensure that sustainable, well-managed stocks are eligible for MSC certification and to allow assessors to make use of real-time data, because often we found that **some of these listings are**

**sometimes out of date by 10 or 20 years.”<sup>1</sup>** We agree and see no reason why shark fisheries should be subject to different standards from finfish and invertebrates or why CMS listed species are excluded from reclassification. To address our concerns, we recommend striking clause SA3.1.7.1b in its entirety and revising clause SA3.1.7.1 to allow for reclassification of CMS listed species. We believe these changes would result in more consistent application of MSC standards across fisheries, allow for the use of the best available science, and avoid creating arbitrary negative impacts for fishermen.

Also, conservation lists such as CMS, CITES, and IUCN may provide useful information which could indicate that additional investigation is warranted; however, we do not believe these lists should be used as the sole basis for automatic ETP/OOS classification. In the case of spiny dogfish, the Council believes the CMS Appendix 2 listing is inconsistent with the best available scientific information about the species’ stock structure. The Northeast and Northwest Atlantic spiny dogfish populations are distinctly separate, a point acknowledged in the original proposal for CMS listing which notes that the species’ distribution is “fragmented into distinct populations separated by deep ocean-tropical waters, or polar regions.”<sup>2</sup> Despite this fact, CMS Appendix 2 lists Northern hemisphere spiny dogfish as a single unit without distinguishing between the distinct populations.

The existing MSC certification documents provide ample evidence to demonstrate the sustainability of the U.S. spiny dogfish fishery and the safeguards in place to ensure the long-term health of the stock. These include:

1. Assessments of the spiny dogfish stock are routinely conducted by NOAA’s Northeast Fisheries Science Center through a scientific and peer reviewed process.
2. The Council’s risk policy accounts for scientific uncertainty inherent in stock assessments by increasing precaution to avoid overfishing if the stock is below optimum size.
3. The Council’s Scientific and Statistical Committee (SSC) makes binding, science-based catch limit recommendations based on stock status and evaluations of uncertainty to ensure overfishing remains unlikely.
4. The Council annually reviews recent stock status information, SSC recommendations, and fishery performance and adjusts management measures if needed.
5. The rebuilding requirements in U.S. law serve as a robust backstop if the stock happens to become overfished in the future.
6. U.S. law integrates conservation of habitat, bycatch, and protected species (e.g. marine mammals or other species listed as endangered).

Thank you for this opportunity to provide comments. We hope you will consider our suggested modifications to SA3.1.7 in the proposed revised MSC Fisheries Standard. Please contact me with any questions.

Sincerely,



Chris Moore

Attachment: Proposed Revised MSC Fisheries Standard v3.0 Excerpt – Section SA3.1.7 (p. 22-23)

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<sup>1</sup> MSC Fisheries Standard Review Webinar: [https://www.youtube.com/watch?v=PT23bUcw5\\_c](https://www.youtube.com/watch?v=PT23bUcw5_c)

<sup>2</sup> [https://www.cms.int/sites/default/files/document/cms\\_cop9\\_app\\_II-1\\_rev3\\_Squalus\\_acanthias\\_spiny\\_dogfish\\_ECU\\_e.pdf](https://www.cms.int/sites/default/files/document/cms_cop9_app_II-1_rev3_Squalus_acanthias_spiny_dogfish_ECU_e.pdf)

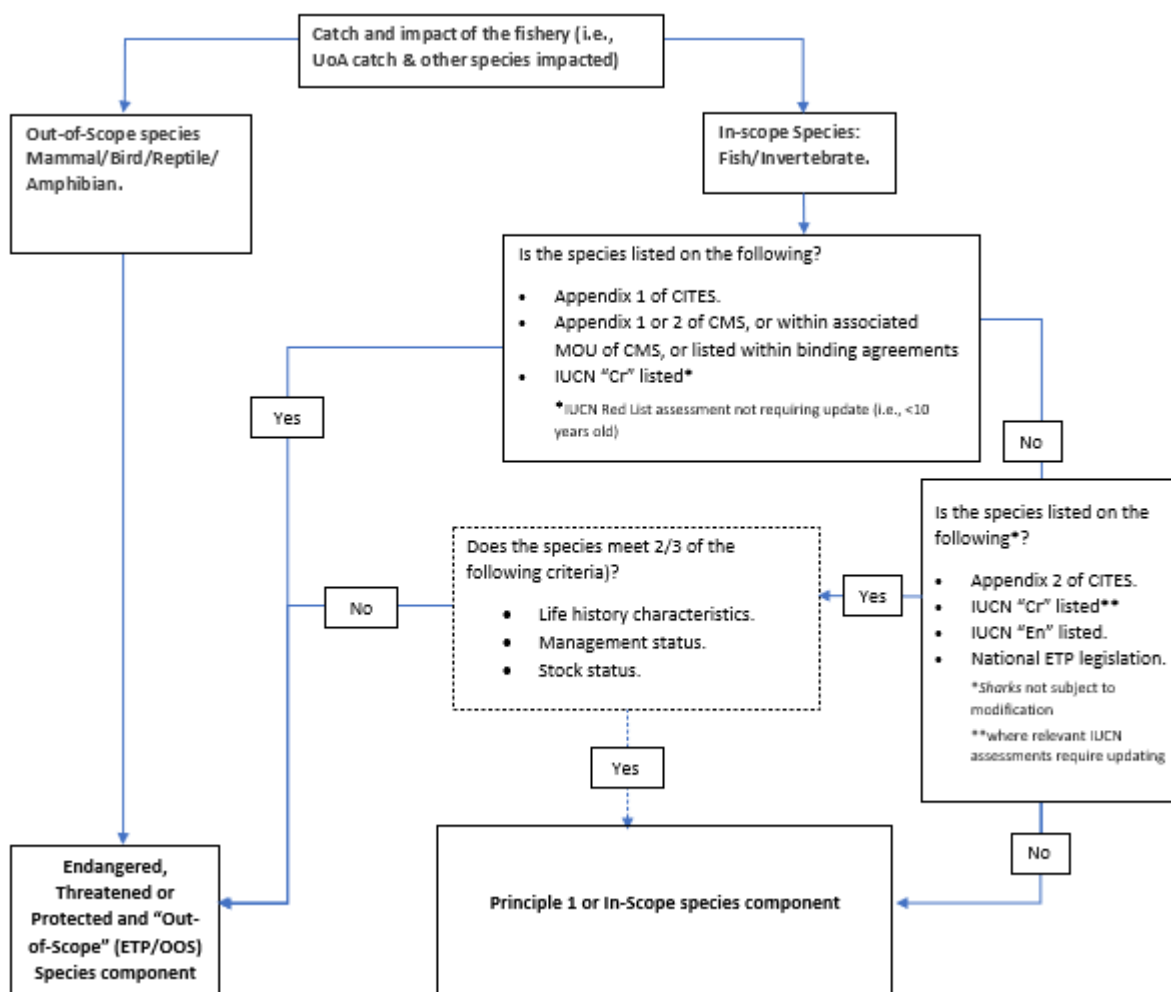


Figure SA3: Decision tree for ETP/OOS species

SA3.1.7 The team shall assign species as ETP/OOS in P2 as follows:

- a. Species impacted by the UoA that are classified as amphibians, reptiles, birds, or mammals.
- b. Species impacted by the UoA that are classified as fish or invertebrates and which are listed in any of the following, subject to modifications if relevant as per SA3.1.7.1-2:
  - i. Appendix 1 of the Convention on International Trade in Endangered Species (CITES).
  - ii. Appendix 2 of CITES.
  - iii. Appendix 1 or 2 (or listed within [CMS binding agreements] or associated 'Memoranda of Understanding') of the Convention on the Conservation of Migratory Species of Wild Animals Species (CMS).
  - iv. The International Union for Conservation of Nature (IUCN) Red list and classified as "Critically Endangered (Cr)".
  - v. The International Union for Conservation of Nature (IUCN) Red list and classified as "Endangered (En)".
  - vi. National ETP legislation.

SA3.1.7.1 The team shall make and document modifications as per SA3.1.7.3. to the species list generated through application of SA3.1.7.b (ii) and (v-vi) for the purposes of component reclassification (e.g. In scope or Principle 1).



- a. The team shall only make modifications to species listed on CITES Appendix 2 in cases where the species concerned are permitted to be exported and traded by relevant management authority(ies) concerned.
  - b. [The team shall not make modifications as per SA3.1.7.1 if the species is a “shark” as defined in SA2.4.3].
  - c. [The team shall only apply the modifications once per certification cycle at the beginning of each assessment (e.g., initial assessment; reassessment; transition assessment; scope extension assessment)]
- SA3.1.7.2 [The team shall make modifications to ETP listed as IUCN “Cr” (SA3.1.7.b.iv) as per SA3.1.7.3 in cases where the IUCN assessment is determined to be “needing update” as defined by the IUCN].
- a. [The team shall only implement modifications as per SA3.1.7.1. when the information supporting the modification criteria is more recent than the IUCN assessment].
- SA3.1.7.3 The team shall only make modifications as per SA3.1.7.1. when at least two of the following modification criteria are met:
- a. Life history characteristics: the species is inherently resilient to exploitation as demonstrated by high productivity attributes.
    - i. The team shall determine this criterion is met if the stock/species achieves an overall average productivity score of less than 2, using Table A8 (PSA productivity attributes and scores – MSC Fisheries Standard Toolbox).
  - b. Management status: the stock is subject to measures or management tools, reflected in either limit or target reference points (or equivalent), intended to achieve stock management objectives in response to directed exploitation.
  - c. Stock status: The stock is at a level which maintains high productivity.
    - i. The team shall determine this criterion is met if the stock is at or fluctuating around a level consistent with Maximum Sustainable Yield [consistent with achieving SG80 for PI 1.1.1, scoring issue (b)].
    - ii. The team shall make determinations as per SA3.1.7.3.c.i using information from stock assessment(s) which have been subject to peer review, consistent with achieving SG80 for PI 1.2.4, scoring issue (e).
- SA3.1.7.4 The team shall assign any invertebrate identified in SA3.1.7.b, and which is a benthic habitat-forming species (e.g. coral species), to the habitats scoring component.
- SA3.1.8 When assessing the impact of the UoA on all components within P2, including unwanted catch, the team shall assess mortality that is observed and mortality that is unobserved, including that from ghost fishing.
- SA3.1.8.1 The assessment of observed and unobserved mortality shall be documented in scoring rationales. ■
- SA3.1.9 The CAB shall take into account any impacts of fishing overcapacity and other issues resulting from subsidies, when considering the effectiveness of a management strategy and its ability to meet P2 outcomes.
- SA3.1.9.1 If overcapacity exists as a result of subsidies, the management system should be robust enough to deal with this issue and still deliver a sustainable fishery as per Principle 2.



## FISHERIES STANDARD REVIEW RESPONSE

Submitted by Email to [standards@msc.org](mailto:standards@msc.org)

**From: Sea Harvest Fishing Company (Sea Harvest Australia)**

**Date: 4 April 2022**

### **Introduction**

Sea Harvest Fishing Company (SHFC) owns various fishery licenses in Shark Bay, Western Australia, and operates in the Shark Bay Managed Prawn Fishery, as well as the Shark Bay Managed Scallop and – Crab fisheries.

The fishery's Western King and Brown Tiger prawns were first certified under the MSC Standard in 2015 and recertified in 2020. It is a multispecies tropical trawl fishery operating in a World Heritage Area. SHFC holds 10 of the 18 licenses operating in the Shark Bay Managed Prawn Fishery. The primary driver for entering into the MSC program was to demonstrate the sustainability of this fishery – especially as it operates in a World Heritage site.

SHFC wishes to make some comments on the proposed changes to the MSC Fisheries Standard. The Standard was quite difficult to understand and also difficult to ascertain what the impact on the fishery will be, and thus we have relied on our CAB for advice.

That advice and those discussions have suggested that the proposed changes may potentially result in a failure for us to meet re-certification requirements or at the very least, result in an increased cost of certification.

This submission from SHFC arises from various industry meetings with relevant stakeholders within the greater (MSC Certified) Australian Fishing Industry.

We refer specifically to the following areas:

### **Summary of Issues of Concern:**

#### **P2 Scoring Elements**

Advice received is that the scoring process, especially the reduction in species categories from 3 to 2 decreases the number of “scoring elements” in each and increases risk of lower scores.



### **New Classifications of OOS and Data Rich Fisheries**

New classifications will require an assessment of all OOS species with which the fishery interacts, even if only a little bit. Assessments will be more lengthy and costly, or using RBF may end up with excessively precautionary outcomes.

### **Evidentiary Requirements**

- Concern on Impact generally of changed requirements/wording.
- Interaction between evidentiary requirements and observer/observation coverage. Apparent setting of specific % levels.

In general, the evidentiary changes are difficult to apply. There is also a requirement to apply them at a scoring element level, which will add cost and time to assessments. Fisheries with adequate monitoring, but not meeting the prescribed thresholds will have trouble justifying the adequacy of monitoring and fisheries with more than adequate monitoring will still face higher assessment costs because of the requirement to apply the evidence framework to each scoring element.

It is difficult to ascertain what this ultimately means for our fishery if applied, other than increase costs of assessment due to the greater complexity and greater costs to provide more evidence i.e. observer percentage rates.

### **Marine Mammal Harassment and Killing**

This section is especially problematic with the wording especially confusing and convoluted. It is understood that this proposed change aims to exclude those intentionally harassing or killing marine mammals. As a tropical trawl fishery where dolphins follow vessels to feed off discards – and hardly ever caught – our concerns are interpretation of the Standard should this change be adopted.

### **Ghost Gear**

Participant concerns focused on wording and practical application. For example, possibility of low GG scores bringing the overall scores down, especially in areas such as unobserved mortality under the new evidence standards. There was uncertainty of the impact on cost and risk (for minimal benefit).



### **NEW ETP/OOS Structure**

- Concerns on the complexity of the changes.

### **VME now Habitats**

Appears a positive change but concern with interaction with new evidentiary rules. What would be required to meet is not clear to fisheries. More guidance in the Standard may be required on habitat definition and identification for the purposes of scoring.

As a fishery operating in a World Heritage Area, we are concerned that there will be a new requirement to define each specific habitat by substratum, geomorphology and biota, again adding greater cost to actual assessment and in areas ie habitat mapping, for little gain.

### **Risk Base Framework**

The concerns are that this will add cost and complexity to an already complex system and Standard.

### **Conclusions**

We are very concerned that these proposed changes will ultimately raise the bar too high for the SBPMF to continue to participate in the program. The SBPMF initially certified in 2015 under Version 2.0 and then re-certified in 2020 under Version 2.1. Prior to entering into re-assessment, the fishery undertook a gap analysis to ascertain if re-certification was likely under the newer version. It was pleasing that although the new version was more rigorous, we were able to achieve re-certification.

Advice from our CAB suggests that the SBPMF may not be well positioned to recertify should these changes be adopted for this next version and that we most certainly will be facing increasing costs –either through assessment or having to undertake more management and research to meet the changes ie evidence requirements.

We urge the MSC to recognize that there is a very real risk that sustainable fisheries could be driven out of this program if costs to participate become too high.

*Johann Botha*

Johann Botha

General Manager Fleet Operations: Sea Harvest Fishing Company

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April 27, 2022

Rohan Currey, PhD  
Science and Standards Director  
Marine Stewardship Council  
Via email only: [rohan.currey@msc.org](mailto:rohan.currey@msc.org)

Re: Proposed Revised MSC Fisheries Standard v. 3.0

Dear Dr. Currey:

I contact you on behalf of the members of the Sustainable Fisheries Association, Inc. (the SFA) the MSC client group for the U.S. Atlantic spiny dogfish fishery who submit the following comments in opposition to the adoption of the Proposed revised MSC Fisheries Standard (Proposed Standard).

If MSC adopts the Proposed Standard in its current form, MSC will unjustly seize the client group's certificate without any credible scientific basis despite the fishery being currently certified as sustainable under MSC's guiding principles.

The U.S. Atlantic spiny dogfish fishery was first certified by MSC as a sustainable fishery in August of 2012. The stock that was certified is the Northwest Atlantic stock of spiny dogfish. It was re-certified in May of 2018. By any measure, the U.S. Atlantic spiny dogfish fishery is sustainable.

The Northwest Atlantic stock of spiny dogfish are not endangered, threatened or protected. However, the Proposed Standard ignores this scientific fact and automatically classifies a species as Endangered, Threatened or Protected (ETP) or Out of Scope (OOS) if the species is listed on Appendix 1 or 2 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). (See p. 30, Figure SA3: Decision tree for ETP/OOS species) Spiny dogfish are listed on CMS Appendix 2 and are therefore automatically classified as ETP/OOS.

The Northeast and Northwest Atlantic spiny dogfish stocks are distinctly separate. CMS' listing of spiny dogfish refers only to the Northeast Atlantic spiny dogfish stock. <https://www.cms.int/en/species/squalus-acanthias> CMS ignored this undisputed scientific fact when it erroneously listed all spiny dogfish stocks in the Northern hemisphere without distinguishing between the Northeast and Northwest Atlantic stocks. If CMS had recognized the different stocks like IUCN (whom CMS refers to in the aforementioned citation) the Northwestern Atlantic stock would not be on Appendix 2. <https://www.iucnredlist.org/species/91209505/124551959>

The Proposed Standard's automatic classification of the U.S. Atlantic spiny dogfish fishery as ETP/OOS based solely on the specious listing by CMS is a prime example of why the ETP/OOS automatic classification should be stricken in its entirety. The automatic classification lacks even a scintilla of scientific foundation in its misapplication to the U.S. Atlantic spiny dogfish fishery.

**Sustainable Fisheries Association, Inc.**  
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We note the decision tree (Figure SA3) and accompanying clause SA3.1.7.3 provides for an exception to ETP/OOS listing for species other than sharks based on life history, management, and stock status. The management and stock status of the northwestern stock of spiny dogfish are why it is currently passing Principle 1 of the Standard and certified sustainable. We would accept as a solution to this problem, that commercially and sustainably harvested sharks such as spiny dogfish also be provided the exception in SA3.1.7.3, provided that clause SA3.1.7.1b is stricken.

The U.S. Atlantic spiny dogfish fishery continues to meet all the criteria of the MSC definition of sustainable fishing. Adopting the Proposed Standard in its current form would strip the fishery of its certification in a manner that is antithetical to MSC's goals.

Nearly 100% of U.S. Atlantic spiny dogfish are sold in the European Union (EU). Most buyers in the EU require the species of fish they buy come from MSC certified fisheries. If the MSC Board of Trustees adopts the Proposed Standard in its current form, US Atlantic spiny dogfish will no longer be eligible to be certified as a sustainable fishery under MSC. Revoking the MSC certification from the U.S. Atlantic spiny dogfish fishery will cause a collapse of the commercial market leaving it without any customers. This is directly at odds with the MSC's stated mission to use markets to incentivize sustainable fishing practices. The US spiny dogfish fishery has been proven to be sustainable vis a vis the MSC standard for a decade. The fishermen who currently fish for U.S. Atlantic spiny dogfish will have no outlet to sell to and will be forced to switch to other species.

U.S. Atlantic spiny dogfish permits are issued to over two thousand (2,000) vessels. The overwhelming majority of which are independently owned and operated by small day boat fishermen whose financial future the MSC Board of Trustees are imperiling with the Proposed Standard. But it's not just the thousands of permit holders who are imperiled - gurry companies that supply sustainable U.S. Atlantic spiny dogfish products to fertilizer companies, employees who process spiny dogfish and many other ancillary businesses that play vital roles in the distribution chain will all suffer unnecessary financial consequences. Unless the MSC Board strikes the ETP/OOS automatic classification, the Board will be the direct cause of severe economic impacts to families whose businesses rely on MSC certified U.S. Atlantic spiny dogfish.

For the reasons stated above, the MSC client group members of the Sustainable Fisheries Association implore the MSC Board of Trustees to: strike the ETP/OOS automatic classification in its entirety; or provide an exemption under SA3.1.7.3 and strike clause SA3.1.7.1b; or abandon the Proposed Standard completely.

Sustainable Fisheries Association, Inc.  
By

John F. Whiteside, Jr.  
General Counsel  
[John@JWhiteside.com](mailto:John@JWhiteside.com)

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## Additional Explanations and Details in Context to the online submission to the Consultation Survey from Sharkproject International on the following topics:

1. Changes to the scope of the MSC program
2. Clarifying best practice for reducing impacts on endangered, threatened and protected and out of scope species
3. Identifying further solutions to ensure MSC certified fisheries are not involved in shark finning
4. Supporting the prevention of gear loss and ghost fishing
5. Ensuring effective fisheries management systems are in place
6. Ensuring habitat performance indicators are clear and consistently applied
7. Ensuring ecosystem performance indicators are clear and consistently applied
8. Additional corrections and clarifications needed for several parts of the Standard

### 1. Changes to the scope of the MSC program

Topic	MSC Reference	Issue	Question / Proposal
Scope Harassment of marine mammals	1.1.2.3  1.1.2.3 c	The CAB shall confirm that the client or client group does not include any entity that intentionally harasses or intentionally kills marine mammals.  .... intentionally harasses or intentionally kills marine mammals, the CAB shall consider the entity as having become out of scope and shall withdraw it from the certificate or client group	....“The CAB shall make a determination as per 1.1.2.3.c. based on <b>information that has been independently verified</b> ”  This independent verification requires a clear definition and wording is not used consistently for similar events throughout the Standard/Guidance and should be harmonised (see also in the chapter for shark finning) requiring clear definition for what kind of information/evidence is going to be accepted and how the CAB needs to consider such information/evidence when provided from independent parties e.g. NGOs

We strongly endorse this proposal “to add a new scope criterion to exclude entities that intentionally harass or intentionally kill marine mammals whilst undertaking fishing activities (e.g. setting or deploying fishing gear) will be effective at ensuring that the MSC program excludes entities that intentionally harass or intentionally kill marine mammals.” This has been long time overdue and should now be introduced swiftly rather than waiting till the Standard comes into effect. Targeting an out of scope species to set nets around it in order to catch the UoA/target species should have been banned already a long time ago.

**Sharkproject** also supports the specification that UoA assessments shall include unobserved mortality, including from ghost gear and the definitions made in the Toolbox, that

- Consideration of post capture mortality (i.e. cryptic mortality) as “the chance that, if captured, a species would be released and able to survive”. It is further clarified that this includes not just capture but “any injury or mortality caused by direct interaction of the gear”.
- The assignment of “all air breathing species shall be considered default high risk for active and ghost gear set within the diving range of the species”.

**However, Sharkproject** is concerned that there are still several loopholes and deficiencies in the proposed Standard, its Guideline and the new Toolbox which will fail to deliver on the intent of the MSC to better protect ETP / OOS species, if not strengthened or improved.

- The methods that can be used to understand fishery impacts on marine mammals:
- The reference to ASCOBANS - The reference as a guideline is misleading and only partially reflects what ASCOBANS is actually calling for; the 1.7% reference in the MSC document is stated to be referring to bycatch alone. However, in 2020 ASCOBANS passed [UNEP/ASCOBANS/Resolution 8.5 \(Rev MOP9\)](#) in which the 1.7% addresses total anthropogenic removals not just bycatch. Further, the resolution reaffirmed an intermediate precautionary goal to reduce bycatch to less than 1 per cent of the best available population estimate;
- With regard to the use of SEFRA, a model proposed by the NZ government as an equivalent of PBR: The SEFRA approach has been widely criticised by cetacean experts, and Rmax, one of the key inputs is currently undergoing a major review by the International Whaling Commission. The MSC should not suggest that this model is in any way acceptable as a means of estimating a UoA's impact on a marine mammal population.
- **It is preferred that either an ASCOBANS limit or Potential Biological Removal (PBR) method be employed.** PBR has been used and tested for decades. However, the reference to PBR should be expanded to include the Zero Mortality Rate Goal (ZMRG) which is meant to reduce mortality and serious injury to insignificant levels approaching zero, defined as 10% of PBR
- Calanus/Calanidae are not included in the list of Key Low Trophic Level species. Although they would likely meet at least 2 of the sub criteria in SA2.2.9a.i–iii., given the importance of Calanus for the critically endangered North Atlantic right whale, and knowing that certification of Calanidae is being considered by fisheries, **there should be a specific inclusion of this species.**
- The proposed review of hindering recovery (defined as favourable conservation status being able to be achieved in the shorter time frame of 3 generations or 100 years) is of concern for cetaceans in that generation times for many small cetaceans are still unclear (please also refer to ETP/OOS species below). Also, which definition of generation will be used as a marker; for large whales generation estimates have been determined for both current and “pre-disturbance” (e.g. commercial whaling)? For some species this is significantly different. Current generation for North Atlantic right whales for example is 23.3 years while pre-disturbance generation was 35.7 years. Due to this, as stated previously, it is critical for fisheries to have recovery action milestones that are within reasonable management cycles (5 to 10 years)
- Table A8 of the Toolbox for PSA productivity attributes and scores for marine mammals needs significant review and editing



Table A8: PSA productivity attributes and scores for marine mammals

Productivity Attribute	High productivity Low risk (1)	Medium productivity Medium Risk (2)	Low productivity High Risk (3)
Average age at maturity: Age at first reproduction (female sexual maturity). Median or mean age at maturity. If range provided, use most precautionary (highest) value.	<5 years	5-15 years	>15 years
Average max age: Use reproductive lifespan of females. Median or mean age at maturity. If range provided, use most precautionary (highest) value.	<10 years	10 – 25 years	>25 years
Fecundity: Use number of calves/female per year instead of eggs.	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average max size (not scored for inverts)	<100 cm	100-300 cm	>300 cm
Average size at maturity (not scored for inverts)	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Trophic level	<2.75	2.75-3.25	>3.25

- In the Draft Guidance section for salmon fisheries, there is a reference in GSC3.14.1 Habitats management strategy that enhanced salmon fishery interventions may also include ‘removal of predators or competitors to maximise early stage salmon survival.’ This needs to be removed or at least redefined to ensure that this does not allow for killing of ETP/OOS species or a removal that includes the risk of injuring or harassing them, or otherwise affect their natural behaviour.
- The same should also apply for all ETP / OOS species.

<b>Scope</b> Conviction for a serious crime	1.1.2.4 a	<p>The CAB shall confirm that the client or client group does not include an entity that has been convicted of a serious crime for an offence listed in Table 1 in the last 2 years. ☐</p> <p>a. The CAB shall interpret ‘serious crime’ to mean conduct constituting an offence punishable by a maximum deprivation of liberty of at least four years or a more serious penalty.</p> <p>b. If an entity that belongs to a certified client group is convicted for a violation of law with respect to a serious crime, the CAB shall consider the entity as having become out of scope and shall withdraw it from the certificate or client group.</p> <p>c. If a conviction is determined, the CAB shall consider the entity as out of scope until 2 years have passed since the date of the conviction.</p> <p>Illegal fishing - Non-compliance with regulations specific to governing sustainable fishing practices</p>
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Sharkproject notes and is concerned, that

- this includes illegal fishing “Non-compliance with regulations specific to governing sustainable fishing practices” but firstly convictions of 4 years or more will hardly ever happen for such offenses and
- then removing only the entity rather than considering that there might be a systematic problem within the whole fishery appears rather weak
- and removing such an entity then for a mere 2 years is completely irrational.

Conviction of an entity within a fishery for serious crime should make the complete fishery non eligible and at least for 4 years, readmitting such fishery only after proof of substantial improvements in those matters that have been convicted for.

<p><b>Scope</b> Conviction for shark finning</p>	<p>1.1.2.5 a  GSA2.4.3– GSA2.4.4</p>	<p>The CAB shall confirm that the client or client group does not include an entity that has been convicted for a shark finning violation in the last 2 years.  Objective verifiable evidence could be any documented statement of fact based on observations, measurements, or tests that can be verified (FCP xxxx).</p>
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**Sharkproject** notes and requests clarification about

- „If an entity that belongs to a certified client group **is convicted for a violation of law with respect to shark finning**, the CAB shall consider the entity as having become out of scope and shall withdraw it from the certificate or client group.“

What happens if finning is not against the law in a jurisdiction? Since it is violating the FNA policy requirement this should be referenced here too. In addition this procedure of removing an entity for 2 years and then re-admitting it again afterwards is neither transparently verifiable nor generating an kind of deterrence.

At the very least this should not require a conviction but “information that has been independently verified” should suffice, while noting that the definition of this independently verified information remains also unclear.

- On the other hand the Guidance advises that the CAB should not certify or maintain certification in case of **objectively verifiable evidence that shark finning is taking place**. This appears to be much harsher as not requiring a conviction , however no comprehensive definition for ‘objectively verifiable’ is provided referring to the FCP instead, where such definition currently also seems absent. Why would MSC not use the same wording as for the harassment of marine mammals –‘ information that has been independently verified’ and why not provide a clear comprehensive definition consistent between different issues but same concerns?

<p><b>Enhanced Fisheries</b>  Habitat and ecosystem impacts</p>	<p>1.1.2.6</p>	<p>Using the criteria in Table 2, the CAB shall determine whether the fishery is an eligible enhanced fishery</p>
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**Sharkproject** notes, that if ‘any modifications to the habitat of the stock are reversible and do not cause serious or irreversible harm to the natural ecosystem’s structure and function.’ and such

modified habitats include fish attracting devices (FADs) than there should be a clear reference to explain what the consequences of this is.

What is the implication of FADs now being an eligible enhanced fishery and which additional measures are therefore needed, respectively do have to be scored? Please also refer to our comments in the ghost fishing section. Habitat modification should trigger a overall precautionary approach requesting the CAB to apply higher levels of scrutiny when scoring and at least evaluate the existence and compliance with globally acknowledged best practices for drifting FADs (please also see below)

## 2. Clarifying best practice for reducing impacts on endangered, threatened and protected and out of scope species

### a) ETP Species Designation

**Sharkproject** appreciates, that with new scoring in place for ETP species and Principle 2 'in scope' species there is potential in the new Standard for more rigorous requirements on fisheries that catch or interact with ETP designated species. The classification as 'Out-of-scope species' thereby requires all birds, mammals, reptiles can't be targeted and all OOS/ETP species will always have be scored by the CAB applying the same requirements even if their population is healthy. This is a real improvement.

It is also good to see that now all bait species even if purchased from outside the fishery area are considered in-scope and need to be scored as part of the fishery impact

**However**, in order to deliver on this intent we note that there are serious issues with the designation of ETP/OOS species according to the proposed decision tree for assignment.

While we appreciate that there is now a broader set of international agreements and the IUCN red list classification applied as baseline for identifying ETP species, there are serious shortcomings and flaws in the proposed designation decision tree that have to be addressed.

The following flaws in this designation remain a big concern and need to be resolved as proposed below

- All species classified as IUCN 'vulnerable' have to be included in baseline assignment as OOS/ETP species while the current proposal only recognises IUCN critically endangered (cr) and endangered (en) species. This is a severe flaw as also vulnerable species (vu) are part of the '**Threatened**' rating by IUCN and therefore should qualify as an 'Endangered, **Threatened** and Protected' species also at MSC
- The current proposal still does not recognize species that are assessed and classified as endangered or threatened by a domestic or international official science body, but not yet listed in national legislation or part of international binding treaties. For example, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is the national science body that undertakes assessments and classification of all species. If COSEWIC classifies as threatened or endangered that species will then be considered by the minister for listing on the national Species at Risk Act. The science body is officially part of the process and makes the assessment. The decision to list the species on the Act is a political decision and can take many years, if ever, especially for aquatic animals. It is the science assessment that should be recognized by MSC at both domestic and international levels. 'Organizations responsible for assessing the status of species' is wording used in other parts of the ETP section of the Standard and they could use that wording for this case.
- We strongly disagree with the proposed 3 Factors MSC provides for CABs allowing them to 'modify' the ETP species list. Those factors as stated are much too undefined and weak potentially leading to the potential assignment of a depleted and endangered or even CITES App II listed species of fish or invertebrate species as a target species in P1 or an in scope species in P2 with even less rigorous mitigation requirements, despite poor management or unrealistic 'recovery plans' or lack of data as part of the modification approach.

- MSC should err on the side of precaution and not allow for any modification of the ETP species at all. These are endangered and threatened animals that have by definition not yet recovered and should therefore not be allowed being labelled as sustainably certified fish. Having management plans/ recovery plans in place is not the same as effective recovery and out of experience many of these recovery plans are weak or completely ineffective.
- While it is good that bait is in-scope, does this mean that a bait species cannot be classified as ETP, if it is designated as such on one of the lists? MSC should also be clear that Out of Scope species, which may be used as bait in some fisheries, such as marine mammals, can never be considered 'in scope' bait species

b) Endangered, Threatened, and Protected (ETP) and Out of Scope Species Scoring Requirements

The key to delivering on the MSC's intent to strengthen protection for ETP/OOS species are that the fishery is not 'hindering recovery' and whether the catch of the ETP species is a 'non-negligible' part of the fishery's total catch. Therefore these definitions have to be absolutely clear and strong as otherwise they will result in improvements only on paper while the situation on the water does not change, because only if the catch is NOT considered to be 'non-negligible' must a fishery minimize mortality for this ETP/OOS species. In addition the requirements for 'minimized mortalities' are essential and require improvement, not leaving it to the discretion of the CAB how far mortality has to be minimised or not.

Having this in mind a fishery catching vulnerable, CITES II and CMS listed silky shark in the Indian Ocean as a bycatch will have silky shark listed as ETP/OOS species (CITES II, CMS, not subject to modification as it is a shark) by the CAB. However as this catch is e.g. for the Spanish fleet e.g. 500 t per year, so less than 2% of the total catch of more than 30,000 t in the Indian Ocean (please note that these are assumed figures as actual catch numbers unknown due to poor reporting) then this bycatch of silky shark will be treated as negligible and the fishery will not be required to minimise mortality e.g. by reviewing and introducing measures or gear modifications to do so – although such measures do exist and have demonstrated to reduce on board and post release mortality substantially.

Although the requirements to minimise mortality and to review measures for minimisation of mortality are very much appreciated **Sharkproject** is of the opinion that they have to be strengthened by clear and more stringent definitions. The focus should be to minimise mortality by the fishery towards complete elimination of fishing related mortality for these ETP/OOS and species. This has also been a key request from **Make Stewardship Count**, which is supported strongly by **Sharkproject**. Furthermore it must be ensured that information and evidence are available to confirm that a decline in interaction (due to successful bycatch avoidance) is not caused by the species population collapsing but an effect of successfully implemented and complied measures.

➤ Sharkproject also acknowledges, that

- MSC has made an effort to introduce a quantitative threshold to define recovery for ETP species. They are calling this 'Favourable Conservation Status': *a level equivalent to at least 50% carrying capacity, unless a higher level has been defined based on the life history characteristics of the ETP/OOS unit*

- 'Direct effects' of a fishery now includes injuries, sub lethal effects from both observed and unobserved interactions with gear or ghost fishing
- PI 2.2.1 ETP/OOS Species Outcomes

The quantitative threshold to define recovery is an improvement, but in practice will be very difficult to define for many ETP/OOS species and may mean that many ETP/OOS species ended up being scored under the MSC Risk Based Framework for data deficient species, which has a lot of holes still and is very complicated.

  - First barrier for change on the water - catch of a species by a fishery must get over the 'negligible' bar. In the proposed Standard, if the fishery's catch of an ETP/OOS species is considered 'negligible' then no further action is required to minimise mortalities or help with recovery of that species.
  - The associated definition of 'negligible mortalities' in PI 2.2.1 needs to be stronger or too many species will be designated negligible:
    - *Negligible mortalities by a fishery are less than 5 individuals or, for fish and invertebrate species, less than 2% of ETP unit (so, less than 2% of silky shark population, for example) AND*
    - *'the lower bound of estimated population size for the ETP/OOS unit is at least 5000 individuals' AND*
    - *The fishery has not conditions on information adequacy under 2.2.3a*
  - For bird species this definition does not work and instead should be 0.1% of breeding population.
  - For fish and invertebrates less than 2% can still be significant and have a significant impact on less species with low productivity such as amongst others sharks, rays the percentage threshold should be lower.
  - Having a cut off definition of negligible can make some practical sense, but for ETP species this is not 'minimizing mortality' to eliminating and so does not achieve the MSC intent in 2.2.2 c
  - Guidance doc page 62 needs to clarify whether weight (and not just individuals) can be used for ETP/OOS species amount of catch as it currently says weight can only be used for 'in scope' species catch estimates
  - The definition of whether a fishery is 'hindering recovery' also needs to be much stronger. Even if the amount of catch of an ETP/OOS species is considered 'non-negligible', if the fishery is not 'hindering recovery' there is no need to minimize mortalities or make any other changes to fishing practice in regard to ETP impacts. There are four ways a fishery can prove they are not hindering and they only need to be doing one. The two loopholes are that the fishery can show either:
    - That F is below FMSY OR
    - That *'the proportion of catch by the UoA [the fishery] relative to the total catch does not hinder recovery'*
  - Further details in the associated Guidance for 'hindering recovery' state:
    - *'If the component status is low, for whatever reason, the operative issue for the majority of the SGs in P2 assessments is whether the UoA is hindering recovery as defined in SA3.5.9. In these cases, the team should base the assessment on the marginal contribution that the UoA makes to the status or recovery of the*

*component under consideration. If the UoA is not the root cause of human impacts on the component, actions of the UoA cannot redress the situation. In any event the UoA is required not to hinder recovery or rebuilding.'*

- This 'proportionality' argument has been the excuse used by fisheries in all the MSC Standard Versions before - 'we are just a small proportion of the catch of this species, so we don't hinder recovery.' It leads to death by a thousand cuts and removes any requirements for fisheries to address their practices and do their part to reduce any impact possible of ETP species.
- MSC should focus on minimising mortalities towards elimination as their intent states, no matter whether that fishery is the main cause of depletion or not
- This loophole is combined with the shortcomings for assessing cumulative impacts of all MSC fisheries impacting that ETP species. Cumulative impacts is only scored at 80 (so it is not a failing scoring post and would not require conditions) AND all the MSC fisheries must totally account for catch of MORE than 30% of that ETP species catch across whatever the assessment range is. This is a very high threshold to meet and in the current version of the Standard it is the same and it is very, very rarely triggered, therefore, cumulative impacts rarely require any changes on the water. Even with this very high threshold of 30%, the Guidance goes on to state:

*'Even if the total catch of a species is clearly hindering recovery (e.g., total fishing mortality is not below FMSY ), the team may still determine a strategy is demonstrably effective between all MSC UoAs if the proportion of combined catch by the UoAs is effectively not hindering recovery.'*

- This is not acceptable. The threshold at which cumulative impact should be considered should be lowered AND the MSC fisheries should focus on minimising mortalities towards elimination no matter whether their fisheries are not the main cause or only cause of depletion. This will incentivize them to focus on what is in their control - their own fishing impacts and drive those fisheries to push for a level playing field of regulation that ensures other non-MSC fisheries must also put in place mitigation measures.

#### ➤ PI - 2.2.2 ETP/OOS Management Strategy

In PI 2.2.2b **Sharkproject** considers the requirement to minimize mortality on non-negligible ETP species could be a very significant scoring requirement.

**However, it** is now only scored at SG80. This means a UoA does not need to show evidence of reducing mortalities of ETP/OOS species to get certified. This should have a 60 scoring level that at least requires fisheries to 'reduce' mortalities and that should be defined as specific percentages of bycatch reduction from the baseline. Then 80 should be 'minimize' and 100 could be 'eliminated'

- The definition of 'minimized' for the scoring of 'minimizing mortalities' of ETP in PI 2.2.2a is currently a major loophole. Draft definition is:
  - *"Minimised" shall be interpreted in this context as reduced to the smallest possible level without affecting crew safety, altering the target catch level by more than 10% or negatively impacting other species or habitats.*

- There must be much more required for a fishery to argue that they simply cannot change fishing gear or practice due to changes in their target catch. If there are ETP species that the fishery is impacting and that are not recovering, the fishery should do
- When fisheries are found to be 'hindering recovery' of an ETP/OOS species the conditions set for action should include milestones of recovery actions that are within reasonable management cycles (5 to 10 years) to show progress towards the 'favourable conservation status' being achieved in the shorter of 3 generations or 100 years. Otherwise, there is little incentive for more immediate action.
- Furthermore, 3 generations or 100 years is far too long for many low productive species like marine mammals and sharks but also all deep sea species and some others. This should better say within the shortest possible timeframe. Even a 70% probability of recovery within 100 years is highly risky. **Sharkproject** therefore suggests to have a maximum of 2 generations and 50 years (with some exceptions for species with extremely low reproductivity) and in such cases propose to use the SG100 likelihood definition for these species then already at SG60. Everything else would be in strong contrast to a precautionary approach and to the MSC's intent.

➤ Cumulative Impacts for P2 In scope species PI 2.1.2 a

**Sharkproject** notes with regard to cumulative impacts

- This is **only scored at 80**, it should be clear that fisheries can still get a condition to address cumulative impact across MSC certified fisheries
- In order for any requirement to be triggered, all the MSC fisheries must totally account for catch of **MORE than 30%** of that species catch across whatever the assessment range is. This is a very high threshold to meet. In the current version of the Standard it is the same and it is very, very rarely triggered, therefore, cumulative impacts rarely require any changes on the water. Even with this very high threshold of 30%, the Guidance goes on to state:
  - *'Even if the total catch of a species is clearly hindering recovery (e.g., total fishing mortality is not below FMSY ), the team may still determine a strategy is demonstrably effective between all MSC UoAs if the proportion of combined catch by the UoAs is effectively not hindering recovery.'*
- **This is not acceptable.** The threshold for cumulative impact to be considered should be lowered AND the MSC fisheries should focus on minimising mortalities towards elimination no matter whether their fisheries are not the main cause or only cause of depletion. This will incentive them to focus on what is in their control - their own fishing impacts and drive those fisheries to push for a level playing field of regulation that ensures other non-MSC fisheries must also put in place mitigation measures.
- The wording of PI 2.1.2.a SG 80 is overly complex and difficult to understand it's relation to 2.1.1a - species outcome

➤ Minimize mortality definition for discards of P2 In-scope species PI 2.1.2 e

**Sharkproject** acknowledges the good intent that discards for catch, even populations of species that are not endangered, are required to be minimized. This can lessen wasteful practices and



has been a key request from Make Stewardship Count and the position paper of **Sharkproject** on a transformation of fishery to and ecosystem-based approach for all impacts of a fishery.

- Removing the possibility to modify the designation of a species as ETP/OOS species and the risk of those species being considered as 'in scope' P2 under this PI (see above), thereby is even more important
- Implementation of alternative measures (gear, practice, spatial changes, etc.) to minimize discards and mortalities of unwanted catch is only required at 80. So, no fishery could fail on this particular SG. That is not precautionary or responsible management, especially since the requirement is only to review possible mitigation measures to reduce discards ever 5 years. This should be at SG 60 - reducing discards, especially dead, is good management practice.
- Implementation of some measures should be required at SG 60 with more measures and evidence of effectiveness at SG80 and elimination of unwanted catch by 100.
- The definition of 'minimized mortality' for unwanted catch is very weak. Similar to our major concerns with 'minimize mortality' definition for ETP/OOS, but in the case of P2 'in scope' species there are more ways given in the Standard and Guidance draft for fishery to avoid change on the water. In particular, there are multiple economic and expense based arguments that will allow fisheries to avoid any fishing gear or practice changes as 'not plausible'. There are 2 pages of guidance discussing what constitutes 'cost prohibitive' including change in catch revenue, cost of gear, operational efficiency, access or restriction on fishing opportunity. There is a lot left up to the interpretation of fisheries and CABs and the list includes the most common objections to changes brought forward by industry.
- This Guidance will be used heavily by fishery clients and CABs to avoid any changes that would modify gear, shift gear types, shift practices in any significant way. If MSC allows these 'opt out' options to remain in the draft, they miss a very strong opportunity to incentivize actual substantive shifts in fishing gear and practice and to achieve their stated intent 'to reduce impact of fisheries on unwanted catch'. The Standard will continue to certify the status quo for many fisheries.

### **3. Identifying further solutions to ensure MSC certified fisheries are not involved in shark finning**

#### **a) MSC Definition of Shark and where it is used in the Standard**

The MSC has introduced a 'bespoke' definition of shark:

SA2.4.3.1 "The team shall interpret the term "shark" to refer to any species within the Selachimorpha and Rhinopristiphormes.

If the UoA is part of a management agency whose definition of "shark" includes additional species, the management agency's definition shall apply. "

While we accept this bespoke definition of sharks may be suitable for defining sharks when scoring the risk of finning. **However**, the proposed MSC bespoke definition of sharks is completely inappropriate and far too narrow for use in any other part of the Standard (i.e. ETP designation or scoring, or assignment as a main species or when fins are traded)

While we note that the relevant EU regulation defines sharks as all elasmobranchs and indeed when assessing their vulnerability to overfishing sharks should be considered in context with all chondrichthyes including all rays, skates and chimaeras.

In general the ETP scoring and guidance should be precautionary and strong enough for all inherently vulnerable fishes, including sharks.

- When referring to 'sharks' aside from the scoring indicators and the requirement for an FNA the definition should cover all elasmobranchs, if not all chondrichthyes
- The proposed text to require all sharks to be designated as 'main' species when they are P2 in-scope (if the fishery trades in fins) is an important precautionary approach. However, the proposed text is currently only in the non-binding Guidance and should therefore be included in the SA section of the Standard document.

#### **b) Position Statement: MSC's proposed revised Fisheries Standard and the newly proposed Toolbox will fail to deliver on the MSC's intent of 'zero tolerance' for finning unless they are strengthened and the excessive discretion for CABs removed**

##### Background

MSC banned finning in 2011 and repeatedly states that it takes a 'zero tolerance' approach towards the practice. However, many stakeholders view MSC's existing requirements, which allow for unattached fins to be present on certified vessels, as representing a significant loophole. To address that loophole, stakeholders have called for a Fins Naturally Attached (FNA) policy as a prerequisite for certification. An FNA policy requires that retained sharks are landed with their fins still attached to the carcass and thereby prohibits fisheries from removing fins on board of vessels. An FNA policy is globally acknowledged as the best practice to prevent finning. Additionally, stakeholders have called for a risk-based level of independent monitoring of compliance with such an FNA policy, whereby fisheries with a higher risk of non-compliance would require a higher degree of independent verification of compliance.

How does MSC's proposed Standard revision intend to prevent shark finning in certified fisheries?

Shark finning is assessed as a Scoring Issue (SI) under three different Performance Indicators (PIs): 1.2.1 (e); 2.1.2 (d); 2.2.2 (d), depending on whether sharks are the target species, an in-scope species or an endangered, threatened or protected (ETP) / out-of-scope (OOS) species. Under the new proposal, each of these SIs now has just one scoring guidepost (SG) namely SG60, which has to be met in order for the fishery to get certified. This reads: "It is **highly likely** that shark finning is not taking place".

The 'SA paragraphs' within the proposed Standard establish that the CAB assessing a fishery shall determine "that an FNA policy is in place for all retained sharks". The CAB shall additionally "apply the Evidence Requirements Framework in the proposed MSC Fisheries Standard Toolbox to establish that the information used to determine that a FNA or a non-retention policy is in place has a **high degree of accuracy**."

However, there is still a need for improvement and clarification in order to deliver on the intent of the FNA policy as a prerequisite for certification and on 'zero tolerance' for finning.

**A: Improvements to the proposed revised Fisheries Standard**

**(i) More stringent requirements for scoring at SG60, or at an added SG80 level which fisheries would need to achieve over the course of the first certification period.** Under the new proposal, each of the three finning SIs now has just one scoring guidepost (SG), namely SG60, which has to be met in order for the fishery to get certified. This reads: "It is **highly likely** that shark finning is not taking place". This is the wording of SG80 for the finning SIs in the existing Standard.

So, in effect, the wording otherwise applied at SG80 is being moved to SG60. Yet the wording of SG80 in the existing Standard is not the most stringent wording. This is found in SG100 of the existing Standard, and it reads as follows: "There is a **high degree of certainty** that shark finning is not taking place."

For a policy area where MSC's declared approach is one of 'zero tolerance', and for a revision of the Standard where MSC has decided to do away with all but a single scoring guidepost at SG60, it seems incoherent that MSC is not then proposing a requirement for 'a high degree of certainty' at SG60. The use of 'a high degree of certainty' would send a very clear message that MSC is serious about implementing its 'zero tolerance' approach.

If not already at SG60 then at least this more stringent requirement should apply to an additional SG80 level, which the fishery has to meet over the course of the certification. Thereby, conditions could be defined at SG60 requiring a higher degree of certainty at SG80 (as required at SG100 for other SIs) and this also presents an incentive for further improvement in line with MSC's Theory of Change. In particular, where there is no legislation regulating the management and catch of sharks or ratified RFMO conservation measures requiring compliance with FNA but where FNA is instead implemented as a UoA / company level code of conduct as described in GSA2.4.3–GSA2.4.4 of the guidance to the Standard, it will be important to have such an incentive for a higher degree of certainty over time.

**(ii) More stringent wording for the degree of accuracy required.** The wording of SG60 is accompanied by further requirements set out in 'SA paragraphs' within the proposed Standard. These require that the CAB assessing a fishery must determine that an FNA policy is in place for all retained sharks and that the CAB shall apply the evidence requirements set out in the proposed Toolbox, to establish that the information used to determine that an FNA policy is in place has a '**high degree of accuracy**'.

A 'high degree of accuracy' is required at SG80 for other SIs but applied already at SG60 in the proposed revised Standard for scoring the likelihood of finning occurring in a fishery. While this demonstrates the intent to increase stringency, this degree of accuracy sits between 'broadly understand' and 'very high degree of accuracy', in assessing the trueness of information used for scoring and is defined in the proposed Toolbox as follows:

**'high degree of accuracy':** *the nature and extent of potential bias in the information is understood and it is not considered to have a consequential effect on its trueness.*

**'very high degree of accuracy':** *there is limited potential for bias in the information, and where potential bias does exist, it is not considered to have a consequential effect on information trueness.*

The difference between these two definitions is that in the first, the potential for bias needs to be 'understood' but is generally accepted to exist, whereas in the second, the potential for bias needs indeed to be 'limited' meaning that there is little room left for it. At a 'very high degree of accuracy' also higher thresholds for independent monitoring of fishing activities apply as a 'very high level of precision' or less variability between all repeated measurements then has to be demonstrated.

As with point (i) above, for a policy area where MSC has a 'zero tolerance' approach, it seems incoherent that MSC is not proposing a requirement for the highest level of accuracy, i.e. a 'very high degree of accuracy' to evaluate the trueness and to limit the existence of bias in the information when assessing whether an FNA policy is in place.

Again at the very least at an SG80 scoring guidepost this should be required to be demonstrated.

**(iii) A clearer definition of FNA is needed inside the binding SA paragraphs of the proposed Standard**

a) Definition of 'FNA' should be in the SA paragraphs, not in the guidance. The guidance accompanying the proposed Standard defines FNA as:

*"Where reference is made to the requirement for FNA, in order to facilitate freezing and storage, the fishery could partially cut the fins, including for the purposes of draining blood to avoid ammonisation, and fold them around the carcasses. However, fins should be attached to a substantial part of the shark, not just some vertebrae, allowing the shark to be easily identified to the species level. If fins are removed and then artificially attached to the carcass via ropes or wire, or placed into a bag that contains that carcass and fins, this would not constitute FNA."*

This definition is central to the success of the new requirement that an FNA policy is to be in place. Therefore this definition should not be provided in the guidance document but in the SA paragraphs instead.

b) Definition of 'FNA' should be improved and include transshipment. As noted above, FNA is not defined in the Standard but in the guidance document instead. The proposed definition, that

*'An FNA policy requires that retained sharks are landed with their fins still attached to the carcass'*

lacks clarity in two aspects and should therefore be revised according to the definition used in existing legislation of the EU's Council Regulation No 1185/2003 on the removal of fins of sharks on board vessels and amended by Council Regulation No 605/2013, which prohibits 'the

removal of shark fins, retention on board, transshipment and landing of sharks or shark fins', providing a comprehensive definition of a FNA policy.

To address this, the definition for FNA should be revised in the (binding) SA paragraphs rather than in the (non-binding) guidance, reading as follows

**'An FNA policy requires that all retained sharks are landed with their fins still attached to the carcass, by prohibiting the removal of shark fins on board vessels, and the retention on board, transshipment or landing of shark fins.'**

- c) Definition of the term 'in place'. The wording of SG60 is accompanied by further requirements set out in 'SA paragraphs' within the proposed Standard. These require that the CAB assessing a fishery must determine that an FNA policy is in place for all retained sharks. But the term 'in place' is not defined. Does 'in place' mean, simply, that the policy exists or that the policy is fully and consistently complied with by all vessels within the fishery?

Certainly the latter should be the case. This is especially important to verify in cases where no binding legislation or ratified RFMO measure exists to require an FNA policy and where fisheries therefore have an internal FNA policy or code of conduct in place instead, a situation that clearly leads to a higher risk of non-compliance. A definition should therefore be provided in the (binding) SA paragraphs rather than in the (non-binding) guidance.

#### **B: The Implications of the proposed Toolbox for shark finning**

**First, it is a very positive starting point that the wording of SG60, when read in conjunction with the SA paragraphs, now requires all certified fisheries – without exemptions – to have an FNA policy in place**, unless they instead have a policy of non-retention of sharks. Additionally, for either non-retention or FNA, the proposed revised Standard requires determination of whether the chosen policy is truly in place.

However, the evidence requirements needed to demonstrate implementation of an FNA (or a non-retention) policy are set out in the proposed Toolbox meaning that, in practice, **the extent to which this Standard will succeed in preventing shark finning will ultimately come down to the requirements set out in the [Toolbox](#) and the application of that Toolbox by CABs.**

Given MSC's repeated commitments to 'zero tolerance' on finning, it would be reasonable to expect that the issue would receive special attention and that stringent measures would be set out. However, the evidence requirements set out in the proposed Toolbox for shark finning are far from achieving this as **they provide too much discretion for CABs.**

#### **How will the proposed Toolbox be applied and why does this create excessive discretion for CABs?**

- a) Table B6 in the proposed Toolbox (see extract below) sets out three **categories of information CABs should consider, as a minimum, in determining whether an FNA policy is in place**. These categories are entirely qualitative and very broad, meaning the CAB has a large amount of discretion to decide what actually constitutes the types of information referenced in this table and how far to go in looking for that information.

Table B6 Information to be considered in the evaluation of trueness.

PI/SI	Relevant information	Information categories
PI 1.2.1 SI (e) PI 2.1.2 SI (d) PI 2.2.2 SI (d)	Information to determine the implementation of a fins naturally attached (FNA) policy	<ul style="list-style-type: none"> <li>Records of interactions with sharks, including with the gear and when onboard</li> <li>Information on relevant monitoring and enforcement activities</li> <li>Records of infringements related to shark finning</li> </ul>

- b) A table in the guidance section of the proposed Toolbox (on [p.105](#)) then provides some further detail on potential sources of information for some of the categories above, suggesting for example that information on monitoring and enforcement might come from on-board observers, electronic monitoring, and / or interviews (amongst other sources). However, the guidance states that *'certain pieces of information may have greater significance in the context of the assessment, so teams should use their judgement in this respect'*, essentially giving CABs unlimited discretion as to how much weight to attach to any given piece of information.
- c) Furthermore, Table B7 (see [p.101](#); one example provided below for illustration) sets out four criteria and some accompanying 'considerations' to help CABs structure their evaluation. Once again, these are entirely qualitative and very broad. So there is substantial discretion allowed to the CAB in interpreting the wording – for example, what exactly is meant by 'independently collected and/ or verified' in the example below? The other criteria set out in Table B7 – 'relevance', 'completeness' and 'consistency' – are no more precise in their definition.

Table B7 Criteria used to structure the evaluation of information trueness.

Criteria	Considerations
Objectivity The extent to which information is free from conflict of interest	<p>To what extent has the information been independently collected and/or verified?</p> <p>To what extent is the veracity of the information likely to be affected by a conflict of interest?</p>

The Toolbox defines three levels of accuracy for determining which scoring guidepost is met (see B1.4.2 on [p.102](#)): 'broadly understand', 'establish with a high degree of accuracy', and 'establish with a very high degree of accuracy'. Whichever one of these three standards is eventually chosen by MSC for finning, the definitions of all three are qualitative and all provide discretion for CABs. Furthermore, the Toolbox (see B1.4.3) states that assessors 'should' (rather than 'shall') be precautionary in their assessment; the word 'should' indicates mere encouragement rather than a requirement.

### C: Solutions for Improvements of the Toolbox

'Accuracy' is defined in the proposed Toolbox in terms of 'trueness' in B1.2 (Toolbox)

- as *'the converse of bias, which is a systematic deviation from the truth. The greater the effect of a bias, the lower the trueness of the observation. The concept of trueness is appropriate whether the observation is made up of quantitative or qualitative information.'*

and in terms of 'precision' in **B1.3** (Toolbox)

- *as 'the variability between repeated measurements and corresponds to random error in statistical estimates. Greater variation between measurements indicates lower precision. This definition is suited to the evaluation of quantitative information, such as catch estimates.'*

In the case of the three finning SIs, there is no obligation under MSC's current proposals to look at any aspect of precision. Instead, there is only an obligation to consider trueness. The way the CABs are required to consider trueness involves merely qualitative assessments entailing excessive amounts of discretion for the CABs.

To strengthen MSC's proposals on finning, precision must be considered in addition to trueness by introducing quantitative requirements for monitoring that are informed by risk assessment.

#### Risk assessment

When it comes to finning, different fisheries and circumstances within a fishery present different levels of risk. For example, a fishery using longlines to target sharks and tuna presents a far higher risk of finning than a fishery using pots to target lobsters.

An assessment is needed to differentiate between a 'high', 'medium' or 'low' risk of finning happening in any given applicant fishery. A pre-defined list of factors relevant to the risk of finning should be provided, including, amongst other factors, target species, gear type and fishing practice, transshipment, and whether there are already legal requirements for an FNA policy existing in the fishing region. These factors could also be laid out in an easy-to-use decision tree, thereby providing the CABs with clear guidance for assignment of fisheries to the different risk categories. The assigned risk categories would in turn define the minimum level of independent monitoring that needs to be in place to provide a high level or very high level of confidence that an FNA policy is complied with on the water.

#### Quantitative requirements for independent monitoring

A fishery with a high risk of finning should be subject to a higher level of monitoring than a fishery with a medium or low risk of finning. In the proposed Toolbox, minimum levels of independent observation are already defined (in **B1.3**, on precision), but currently these relate only to the tasks of estimating catches of in scope or ETP/OOS species or estimating the extent of impact on habitats.

However, finning too needs minimum levels of monitoring to be established. After all, the scoring guidepost (SG60) for the finning SIs in the proposed Standard requires a high likelihood that finning is not taking place which Table SA8 defines for finning SIs to be 80% or more. Without an adequate level of independent observation, how can there be confidence that this level of likelihood and probability is being met?

The risk-based assignment of quantitative requirements for monitoring needed to score the fishery for the finning SIs should be carried out by means of the following steps.

- a) In Table **B5** in the proposed Toolbox, the finning SIs should be moved from Category 1 to Category 2. This means that the CAB should undertake both the process in **B1.2** (regarding trueness) and the process in **B1.3** (regarding precision).

- b) **B1.3** should be adapted so that as well as covering catch estimates and estimates of habitat impact it also covers assessment of compliance with an FNA policy (respectively a non-retention policy). This should be done by adding the finning SIs to Table **B8** and creating thresholds applicable to them. The wording of the thresholds will depend on what level of accuracy is established for the finning SIs by the SA paragraphs.

Currently the requisite level is just '*a high degree of accuracy*'. But if MSC is serious about its 'zero tolerance' approach, this should not be the maximum level of accuracy for the finning SIs. '*A high degree of accuracy*' could remain as the requirement at SG60, but then, SG80 should be introduced for the finning SI requiring '*a very high degree of accuracy*'. On that basis, thresholds specific to the finning SIs should be inserted into Table **B8** as follows:

**Threshold B (applicable to SG60 for the finnings SIs):** The monitoring programme in place is expected to provide an assessment, with a high level of precision, of whether there is compliance with the FNA policy (or non-retention policy).

**Threshold C (applicable to SG80 for the finning SIs):** The monitoring programme in place is expected to provide an assessment, with a very high level of precision, of whether there is compliance with the FNA policy (or non-retention policy).

This amendment to the proposed Toolbox is intended to avoid any need to redesign **B1.3** and, instead, to simply fit as a new row within the existing Table **B8** in **B1.3**.

In addition, the title of Table **B8** would need to be changed to 'Thresholds for precision'.

- c) Minimum levels of 'coverage rates' (see further below) of 'independent observation' would need to be established for each of the three different risk levels: at threshold B at SG60 and for threshold C at SG80.

	High risk	Medium risk	Low risk
<b>Threshold B</b>	65%	30%	20%
<b>Threshold C</b>	100%	65%	30%

These minimum levels of 'coverage rates' would need to be added into Table **B9** in **B1.3**.

- d) Clarity is needed about what exactly the minimum percentage levels in Table **B9** mean. Table **B9** currently has the following heading: '*Minimum required coverage rates of fishing days per year with independent observation*'. So the percentages are minimums; that is clear enough. But what is meant by '*independent observation*', '*fishing days per year*' and '*coverage rates*'?

#### Clarifying 'independent observation'

There is no definition in the proposed Toolbox of the term '*independent observation*'. (The term is not used in the proposed Standard or in the guidance accompanying it.) The only indication as to its meaning is found in the guidance section of the proposed Toolbox, which reads as follows:

*'Independent observation is specified as the resulting catch data are typically associated with a higher level of objectivity. This includes, but is not limited to, the use of fishery observers, cameras or sensors.'*

The term '*independent observation*' is very significant: it is the whole basis for bringing meaning to the minimum levels of 'coverage rates' set out in Table **B9** in **B1.3**.



When amending the Toolbox as described above '*independent observation*' is the means that will collect quantitative data for demonstrating compliance with an FNA policy at a 'high level of precision', respectively at a 'very high level of precision' for the information used by the CAB to evaluate the level of accuracy.

(In addition to the quantitative evaluation of compliance with an FNA policy also a qualitative evaluation of the information whether an FNA policy is in place has to be evaluated for each level of accuracy. However, this in the specific context of trueness – as opposed to precision – as covered by **B1.2** in the proposed Toolbox.)

However, on the basis of the extract above, all that is known about '*independent observation*' is that it is linked to objectivity and that three examples are '*fishery observers, cameras or sensors*'.

Therefore the CABs are left with discretion to decide on a case-by-case basis: (a) what means other than '*fishery observers, cameras or sensors*' are acceptable means of '*independent observation*'; (b) what quality control (e.g. training for observers or anti-tamper measures for sensors), if any, should apply to any given means; and (c) what makes any given means 'independent'.

Leaving discretion of this magnitude to the CABs is unacceptable. Monitoring is of critical importance, whether it is for catch estimates or quantifying habitat impacts or assessing compliance with an FNA policy, and it cannot be left to the CABs to decide matters such as '(a)', '(b)' and '(c)' above without any kind of constraint or guidance.

The situation is made worse by a provision in the guidance section of the proposed Toolbox headed '*Alternative methods of monitoring*', which reads as follows:

*'Where independent observation is absent, or does not achieve all of the specified coverage level, the team should consider if multiple sources of information can be combined in a methodology that it considered to be equivalent in terms of sampling rate and objectivity to the levels of independent observation in Table B9. In doing this, the team should consider the level of sampling achieved and the potential for bias in the resulting estimates.'*

So whereas Table **B9** in **B1.3** refers to independent observation, and establishes this as a requirement, the guidance, in allowing '*Alternative methods of monitoring*', completely undermines this requirement. In other words, according to the guidance, there can be an absence of independent observation, whereupon the CAB can '*consider if multiple sources of information can be combined in a methodology that it considered to be equivalent*' to what **Table B9** requires. This is a case of guidance eroding requirements and should therefore be deleted: if the requirements of **Table B9** cannot be met, the fishery should fail certification.

#### Clarifying '*fishing days per year*'

Table **B9** is entitled '*Minimum required coverage rates of fishing days per year with independent observation*'. It is important to know whether the term '*fishing days per year*' in the title means calendar days or vessel days. The former will lead to lower amounts of coverage of the fleet than the latter. Therefore MSC needs to clarify exactly what is meant by '*fishing days per year*'.

In addition, the guidance section of the proposed **Toolbox** states that:

*'Where a fishing day includes multiple smaller units of effort, it should be considered by the team to have had independent observation if at least 1 unit of effort was subject to independently observation.'*

It is not clear what is meant by '*multiple smaller units of effort*'. However, if, say, a single set is a unit of effort, and if there are, say, three sets by a vessel during a 24-hour period, does the extract above from the guidance mean that observation of just one of the three sets would count as observation of one vessel day? MSC needs to clarify this.

Clarifying '*coverage rates*'

Even if it were known clearly what is meant by '*independent observation*' and '*fishing days per year*', the term '*coverage rates*' still needs to be better understood and requires better descriptions and definitions of the acceptable means

- a) for remote electronic monitoring systems: e.g. positioning of cameras on board, measures to prevent fraud and percentage of review of stored footage need to be defined and evaluated
- b) in the context of fisheries observers the observed activities need to be defined: e.g. catch, processing, trans-shipment
- c) How will it be ensured that there is a randomised spread of coverage, representative of the entire fleet in terms of its fishing effort?

4. Supporting the prevention of gear loss and ghost fishing

MSC Reference	Issue
<p>P1 Harvest strategy P1.2.1</p> <p>SA2.4.5.2</p> <p>SA3.3</p> <p>P2 In scope species Management strategy 2.1.2</p> <p>P2 Habitats Management strategy 2.3.2</p>	<p>Ghost gear is considered under unwanted catch</p> <p>(f)</p> <p>Review of alternative measures</p> <p>When applying scoring issue (f) to target stocks in P1, the team shall include consideration of “alternative measures” directed at minimising mortality of unwanted catch from ghost gear.</p> <p>e. “If necessary”, in the management PIs, excludes the assessment of UoAs that do not impact the relevant component at these SG levels. ■</p> <p>i. In the case of ghost gear, this refers to whether or not the risk of ghost fishing or ghost gear impacts are either demonstrably absent or negligible</p> <p>(f) Ghost gear management strategy</p> <p>There are measures in place, if necessary, for the UoA that are expected to minimise ghost gear and its impact on all in scope species.</p> <p>There is a partial strategy in place for the UoA, if necessary, that is expected to minimise ghost gear and its impact on all in scope species.</p> <p>There is a strategy in place for the UoA that is expected to minimise ghost gear and its impact on all in scope species.</p> <p>There are measures in place, if necessary, for the UoA that are expected to minimise ghost gear and its impact on all habitats.</p> <p>There is a partial strategy in place for the UoA, if necessary, that is expected to minimise ghost gear and its impact on all habitats.</p> <p>There is a strategy in place for the UoA that is expected to minimise ghost gear and its impact on all habitats.</p> <p>Ghost gear management strategy ■</p> <p>The team shall only assess scoring issue (f) within the In scope scoring component if the corresponding ghost gear management scoring issue in the Endangered, Threatened or Protected/out-of-scope Species (ETP/OOS) scoring component is not scored.</p> <p>The team shall score scoring issue (f) if the risk of ghost fishing or ghost gear impact from the UoA is not demonstrably absent or negligible.</p>



elsewhere in the Standard. Since there is no need to implement any of such measures if impacting the target catch by more than 10% this potentially results in a pure paper exercise, and will not require such measures to be implemented.

- It is not clear why SA3.6.7 limits the scoring of a ghost gear management strategy to either only in scope species or only ETP species when saying: 'The team shall only assess scoring issue (f) within the In scope scoring component if the corresponding ghost gear management scoring issue in the Endangered, Threatened or Protected/out-of-scope Species (ETP/OOS) scoring component is not scored' This is completely irrational as ghost fishing impacts different species differently and to a different extent. Therefore, both in scope and ETP species should be scored for ghost fishing impacts
- In the respective guidance a partial strategy being in place for ghost fishing management as required for SG80 is defined to comprise at least two measures to prevent and/or remedy ghost fishing., This may be sufficient in case of the loss of fishing gear but certainly far from adequate let alone best practice to address ghost fishing impacts from gear that is routinely or even deliberately abandoned such as drifting FADs. For a partial strategy at least best practice measures as widely published for dFADs (see NGOTF, Blue Marine Foundation or IOTC Res 19/02) should be required, comprising prevention measures to reduce mortality from entanglement by the use of a completely lifetime non entangling design and biodegradable materials with management measures of limiting the number of FADs, active tracking of buoys in close to real time, and remediation measures such as polluter pays and mandatory retrieval of lost FADs
- The guidance describing drifting FADs in combination with anchored FADs is misleading with regard to the potential impact and the probability of such an impact - while anchored FADs may get sometimes lost in storms, drifting FADs get lost at a regular rate or are even abandoned deliberately with 8% of FADs beaching every year (Escalle 2020), damaging or destroying sensitive habitats like coral reefs. Furthermore dFADs are not only ghost fishing whether intently or non intently getting lost, but also while in normal operation. Entanglement of sharks, turtles and other ETP species in netting and meshed constructions contributes substantially to unobserved mortality as entangled animals are predated on and may drop out of the netting after some time and will therefore never be recorded. Filmlater had estimated that globally between 400,000 and 2,000,000 silky sharks get entangled in dFADs every year and Escalle confirmed in 2020 that entangling FAD constructions are still widely used.
- Also MSC's definition that ' FADs are not considered a gear type as such because they do not capture fish, but merely facilitate subsequent capture. FADs therefore may be included as a **functional part of certain fishing gear types** (e.g. purse seine, handline) as they are sometimes used to facilitate the capture efficiency of these gears.' is problematic as thereby FADs would not even be subject to gear marking as a management measure, one of the ghost gear management measures suggested by MSC; clearly not adding improved transparency or a management strategy; MSC should not downplay the impact and the extent of this impact caused by the use of dFADs but actively address those and include best practice management requirements for FADs for CABs to assess when scoring this PI.

## 5. Ensuring effective fisheries management systems are in place

Topic	MSC Reference	Issue
P3 SA49 Compliance and enforcement	PI (PI 3.2.3)	<p>Monitoring, control and surveillance mechanisms ensure the management measures <b>in the UoA</b> are enforced and complied with.</p> <p>(a) Monitoring, Controls and Surveillance (b) Sanctions (c) compliance information (d) compliance outcome</p> <p>In scoring issue (d), the team shall interpret “systematic non-compliance” to mean the recurring infringement of regulations specific to governing sustainable fishing practices at sea.</p> <p>In scoring issue (d), the team shall consider compliance with regulations associated with protected habitats and species SA4.9.2.1 The team shall interpret “protected habitats” to mean habitats, which have been afforded a level of protection by a competent authority. SA4.9.2.2 The team shall interpret “protected species” to mean species or stocks which have been listed in national ETP legislation</p>
	Guidance GSA 4.9	<p>At SG60, systematic non-compliance should be considered as the reoccurring infringement of regulations in a coherent and coordinated manner. For example, <b>if regulation(s) are not being complied with by a large number of fishers in the UoA on a regular basis, this should be regarded as systematic non-compliance.</b> Ad hoc infringements by individual fishers should not constitute systematic non-compliance. Systematic non-compliance demonstrates that the MCS enforcement mechanisms and sanctions in place are not effective in preventing frequent re-offence by the UoA. <b>When scoring SI (d) at SG60, systematic non-compliance is specific to those regulations governing sustainable fishing practices at sea.</b></p> <p><b>At SG80 and SG100, ‘majority of regulations’ is not restricted to regulations specifically governing sustainable fishing practices at sea (i.e. as defined at SG60). Instead, it should include all regulations associated with the 3 dimensions of routine fishing operations:</b></p> <p><b>Prior to fishing</b> <b>During fishing</b> <b>During landing of catch</b></p>

**Sharkproject** welcomes the introduction of this new approach to scoring of compliance and sees some strong potential in the evaluation of compliance of a fishery when scoring ‘Monitoring, control and surveillance mechanisms’ to ‘ensure the management measures **in the UoA** are enforced and complied with’ applying in PI 3.2.3 4 Scoring Indicators rather than only assessing systematic ‘non compliance’ as in the previous standard.

**However**, we note substantial loopholes and caveats in this new Monitoring Controls and Surveillance PI when scoring the SIs

- (a) Monitoring, Controls and Surveillance
- (b) Sanctions
- (c) compliance information
- (d) compliance outcome.

- All Scoring Issues are now only referring to the UoA, therefore strictly speaking **only this part of the fishery instead of the whole fishery** has to be evaluated for any of the 4 SIs while compliance and enforcement topics should obviously apply to the fishery as a whole as stated in the previous Standard version. Especially for mixed fisheries that are only going to have some species in the UoA this will be relevant
- For **MCS** at SG60 in the previous Standard at least a 'reasonable expectation of effectiveness was required while now a pure existence is sufficient – whether complied with or not, as this is only required at SG80 now to demonstrate compliance with regulation
- **Sanctions** to address non compliance in (b) only need to exist at SG60 and have to be applied only at SG80 - this should be reconsidered as without application of sanctions there is no incentive for fisheries to comply with any regulation that is cumbersome to them
- **Compliance Information** is scored applying the evidence requirement framework of the toolbox and evaluating information trueness broadly, with a high degree of accuracy or a very high degree of accuracy but not requiring any quantitative precision to demonstrate this compliance. Therefore they same concerns as to the lack of independent observation existing applies as for compliance with finning/FNA/non retention  
It needs to be understood that this P3 scoring however relates to ALL compliance topics and therefore will result in an overall evaluation rather than a specific outcome of non compliance e.g. with a non retention policy or FNA
- **Compliance (Outcome)** with 'regulations specific to governing sustainable fishing practices at sea is not evident within the UoA.' at SG60 requires only assessing whether '**systematic non compliance**' is **evident** while only at SG80 will the UoA have to be **likely to comply with the majority of regulations** and at SG100 do they have to comply with the majority of these regulations '**consistently**'. Thereby compliance with regulations specific to sustainable fishing practices does not really appear to be of importance to MSC. This definitely would have to be revised with SG80 wording applying to SG60 already – it should not be sufficient to score a fishery as sustainable if '**recurring infringement**' is not evident. There has to be at least highly likely that such systematic compliance does not occur.
- The Standard also states in the relevant SA sections that 'in scoring issue (d), the team shall interpret "systematic non-compliance" to mean the recurring infringement of regulations specific to governing sustainable fishing practices at sea' and . 'In scoring issue (d), the team shall consider compliance with regulations associated with protected habitats and species'

- SA4.9.2.1 The team shall interpret “protected habitats” to mean habitats, which have been afforded a level of protection by a competent authority.
- SA4.9.2.2 The team shall interpret “protected species” to mean species or stocks which have been listed in national ETP legislation

This makes the complete SI Compliance outcome even more dangerous as it **limits the compliance assessment for habitats and ETP species to those protected by competent authorities respectively national ETP legislation. This is unacceptable**, as ‘regulations specific to governing sustainable fishing practices at sea’ have to apply to all ETP species and habitats and not just those specifically protected by legislation.

- No level of independent monitoring of compliance as defined in the Toolbox by the precision level is required for any of the compliance SIs. How can compliance be evaluated without a minimum level of independent observation in place?
- Also for this we had suggested to introduce a risk based level of minimum level of coverage to ensure that high risk fisheries do need to have more independent monitoring (extent and intensity) in place while low risk fisheries should not have to undergo the same level of scrutiny
- In the Guidance ‘systematic non-compliance should be considered as the reoccurring infringement of regulations in a coherent and coordinated manner. For example, **if regulation(s) are not being complied with by a large number of fishers in the UoA on a regular basis, this should be regarded as systematic non-compliance.**’ this is relevant at SG60 and very concerning as it demonstrates what extent of non compliance is needed to fail a fishery from scoring SG60 - large number and regular basis **AND that this only applies to practices at sea**, while systematic non compliance at such scale ‘prior to fishing’ and during landing operations is not evaluated at all.
- In addition this wording in the guidance may most probably trigger an interpretation log request from CABs to the MSC seeking clarification on how big this number has to be and the interpretation log might then further weaken this compliance outcome SI



## 6. Ensuring habitat performance indicators are clear and consistently applied

## 7. Ensuring ecosystem performance indicators are clear and consistently applied

For these feedback topics **Sharkproject** considers the Toolbox, which now includes the evidence requirements as most important and therefore addresses the shortcoming of the toolbox as to providing adequate evidence to justify the CABs scoring of the related PIs and SIs. After two years of working on how to do this with many organizations calling for a risk based approach that requires a higher level of information independence, quality, and precision from high risk, high impact types of fisheries vs. low risk, low impact gear, small, etc. fisheries - the MSC has proposed instead this Evidence Toolbox. However, as evident from the report on this work stream within the FSR there hasn't been enough to finalize all the details, with much of the text still being in [square brackets] and also the available impact testing so far seems to demonstrate that this Toolbox is far from being ready.

We don't understand why MSC obviously at a rather late stage of the Review changed directions and decided to go for this toolbox approach when all previous consultations and stakeholder input has clearly preferred a risk based approach to the definition of how much and which quality of independent evidence is needed to assess different fisheries and score them for different PIs / SIs with some fisheries being higher risk than others and should therefore have to provide more and a higher quality of independent evidence. Although we note that there is a reference in the impact assessment saying that the risk based approach was deemed to be too time consuming and impractical we note that the now selected toolbox approach will be requiring at least as much time and effort to complete, if done properly, and is in addition very confusing and in-transparent, thereby awarding the CABs with a much higher level of discretion to decide what to evaluate and what to consider equivalent or adequate than will be needed to have a transparent and consistently applied Standard and scoring of different fisheries.

The real improvement of the MSC's approach to evidence requirement now reflected in the Toolbox is the clear definition of threshold levels of independent observation required as a quantitative minimum requirement of information required for scoring and basing these thresholds on statistically needed sample size for making such an evaluation. The tool consulted for deriving these thresholds is excellent but could indeed have been applied more widely and more transparently to define minimum sample size needed for assessing the precision of data on the one hand and the confidence in provided compliance data on the other hand.

Although the currently suggested precision thresholds are still in brackets we strongly recommend to now retain them and include these numbers as they are into the final wording, yet extending the applicability of a quantitative assessment of the information accuracy to more PIs, including compliance PIs/SIs.

Besides this excessively high degree of discretion for the CABs **Sharkproject** also heavily criticises the lack of the Toolbox to require a defined, quantitative amount of 'independent observation' or verification for all outcome SIs, and including the compliance with legislations, regulation or internal company policies. This has to be revised and both information 'trueness' and 'precision thresholds' for levels of 'independent observation' have to be required for all SIs/PIs, whereas we acknowledge that these precision thresholds may be different for different PIs depending on the fishery's overall risk for this PI. Assigning 'precision thresholds' to PIs and differentiating between 'high', 'medium' and 'low' risk fisheries based on clearly defined criteria would be a more straight forward, easier and indeed a more transparent approach.

In more detail we note the following

- The draft Toolbox set up is overly complicated
- The independent observation of catch should be assessed by CABs across the fishery for all scoring to do with catch information, information about impact of fishery on species, and compliance with regulations and policies, management plans, fleet codes of conduct, and measures to minimise mortalities unwanted catch/ETP/OOS
- The qualitative criteria for the other types of information should be weighted by importance and also assessed by CABs
- As repeatedly recommended by **Sharkproject**, Make Stewardship Count and many other stakeholders the Evidence Requirements for independent observation would be better guided via a clearly defined decision tree through which the level of risk of a fishery – i.e. selectivity and impact of gear on P2, Habitat, Ecosystem; scale and location of fishery is assessed as ‘high’, ‘medium’, or ‘low’ risk. For ‘high risk’ fisheries - more prescribed type of independent observation through observer coverage and EM systems should be required. The levels of observation in Table B9 should be required for medium and high risk fisheries, for example, while low risk, smaller fisheries could benefit from the flexibility given in the Guidance document on types of independent information CABs can accept
- It is important to note that the independent observation thresholds currently do not apply to any of the P3 3.2.3 compliance scoring, but this is precisely where they should be applied, too.
- As notes above these thresholds should also be applied to the shark finning PIs 1.2.1.e, 2.1.2d, 2.2.2d to ensure compliance with the required fins naturally attached policy is independently verified
- Definition of ‘independent observation’ - independent observation only names amongst others human observers, cameras, sensors, but leaves it entirely to the discretion of the CAB to decide which other methods to consider as adequate and it lacks the definition of minimum requirements needed for the listed types of ‘independent observation’ e.g. tamper proof requirements or analysis of footage when using electronic monitoring systems)
- Other definitions e.g. coverage rates, fishing days per year are too vague to requires that the coverage is representative of the complete fleet or respectively the UoA (the part of the fleet which aspires certification) and its complete activities
- The draft Toolbox has a number of large loopholes included that would allow for the undermining of the proposed observer level thresholds and allow instead for status quo levels to pass:

**Table B9 Minimum required coverage rates of fishing days per year with independent observation.**

Dispersion	Threshold B		Threshold C	
	ETP/OOS species	In scope species	ETP/OOS species	In scope species
Lower dispersion	[30%]	[20%]	[30-100%]	[20-100%]
Higher dispersion	[65%]	[20%]	[65-100%]	[20-100%]

The team shall determine that threshold B is met if:

- ☐ a. [There is independent observation of catch for the UoA at or exceeding the applicable level of coverage specified in Table B9]; or
- b. [There is a procedure in place for estimating catches using multiple sources of information that the team considers to be equivalent with (a) in terms of sample size and objectivity]; or
- c. [Catch estimates are likely to achieve a level of precision that has been prescribed by the management agency in order to achieve stock assessment or management purposes.]

- The Guidance c above should be removed. This will allow fisheries and managers to argue that any current observer levels (often only 5-10%) prescribed by a management plan are equivalent and the strong thresholds that MSC has in Table B9 will be moot.
- The Guidance b above needs to be tightened up to ensure that other independent information used to estimate catch - or indeed as requested also compliance with regulations - is indeed equivalent and sufficiently defined as to its adequacy and not thereby allowing the CAB to drop the need for the defined thresholds of independent observation at the discretion of the CAB.

## 8. Additional Clarifications and Errors

- SI for Finning in Section SC: Modifications to the default assessment tree for salmon fisheries – normative. This is not consistent with the PIs for finning in the other part of the Standard and should be corrected in this way
- Decision tree on ETP designation in the Standard: the \* notes used to identify that sharks are exempt from modification once assigned ETP/OOS status is currently still confusing and should be made clearer by a separate sentence saying so instead of the \*
- Definition of probability for highly likely in Table SA8 of the Standard – it should be made clear that the probability of in the 80<sup>th</sup> %ile also applies to the definition of 'highly likely' for all finning SIs adding these as separate rows for both P1 and P2. The current \*note is very confusing and prone to cause misinterpretation
- Toolbox Section A Risk Based Frame Work includes many wrong terminology and consistencies and needs to be completely scrutinised for scientific correctness for the different species and sections

## South Australian Sardine Industry Association Submission to the Marine Stewardship Council on the Fisheries Standards Review

Consultation closing 4 April 2022

The South Australian Sardine Industry Association (SASIA) represents the interests of licence and quota holders from the the South Australian Sardine Fishery (SASF), a purse seine fishery operating from 3 – 200nm off the coast of South Australia. Managed by Primary Industries and Regions South Australia, this fishery is the largest catch-by-volume fishery in Australia.

The South Australian Sardine Fishery received MSC Certification in 2018, as the highest scored fishery globally, without conditions. Audits since this time have followed the same line, with the first full re-assessment of the fishery due within the next 12 months.

SASIA write to MSC to outline, in the strongest possible sense, concerns regarding the reviewed MSC Fisheries Standard.

Two concerns of highest priority to SASIA are:

1. Changes in Fisheries Standard scope in relation to 1.1.2.3 “Intentional harassment or intentional killing of marine mammals”.
2. Increases in costs and complexities of assessment requirements and process.

The primary concern for the SASF, in regard to maintaining certification under the reviewed standard, relates to changes in scope criteria 1.1.2.3. The wording within this scope criteria is not consistent with confirmation advice offered in the *Guidance to the Fisheries Standard*. The standard and guidance should be aligned, with particular attention to the use of the word ‘anticipated’ when referring to intentional harassment or the death of a marine mammal.

*Example: The SASF follows a Code of Practice to minimise interactions with marine mammals. Therefore, the fishery ‘anticipates’ interactions with ETPs.* Interpretation under the proposed standard may result in preclusion of the SASF from MSC recertification.

Further concerns in relation to this scope criteria include harassment, annoyance and behavioural changes of marine mammals. Challenges to the SASF through this scope criteria may include:

- The use of acoustic deterrent devices by fishers.
- Habituation of the animal to the presence of vessels.
- Attraction of the animal to fishing activity.

Other concerns SASIA wish draw attention to include:

- Consolidation of non-target species categories, resulting in lower average scores across all fishery assessments, not reflective of the real performance of the fishery under Principle 2.
- The likelihood of increased number of objections to certification of fisheries.
- Disincentives to conduct research into increased understanding ecosystem effects of a fishery, as more information results in more onerous assessments and audits.
- Adding unnecessary complexity (and cost) to the certification process, with particular regard to the evidence based framework.
- Observation requirement effect on assessment scores is extremely ambiguous, which may result in fisheries with adequate observation facing unnecessary increases in observer program costs and assessment costs.

It is the view of SASIA that if MSC proceed in adopting the reviewed fisheries standards in their current form, sustainably operating fisheries will leave the MSC certification program. Due to the concerns outlined above, SASIA reject the proposed MSC Fishery Standards as they challenge the credentials of the SASF as a sustainably operating fishery without fair justification. There is a genuine possibility that, should the revised standards be adopted, the SASF will not be recertified under MSC in 2023.

Yours Sincerely,



South Australian Sardine Industry Association Inc.  
PO Box 2909, Port Lincoln, South Australia, 5606  
Mob. 0488 900384, [eo@sasardines.com.au](mailto:eo@sasardines.com.au)



Sean Kalling  
SASIA President

1 April 2022



## **Submission to the Marine Stewardship Council (MSC) on the Fisheries Standards Review**

The MSC Fisheries Standard is based on United Nations FAO guidelines for ecolabelling, and is reviewed at least every five years in line with the ISEAL Standard Setting Code of Best Practice. The Standard is reviewed to reflect the evolution and uptake of best practice in fisheries management as well as making changes to improve the implementation of the Standard and address stakeholder concerns. The MSC has developed a proposed revised Standard and has invited stakeholders to provide feedback.

The purpose of this submission is to respond to concerns with some of the changes in the proposed Standard that will impact the Spencer Gulf prawn fishery. We believe the adoption of the draft Standard and related documents would lead to sustainable fisheries becoming less likely to be certified, despite being leaders in sustainable fisheries management practices. For those that can be certified their costs will increase and the process of certification will become riskier.

The Spencer Gulf prawn fishery has been operating in the South Australian waters of the Spencer Gulf for 53 years with bottom twin prawn trawlers to catch Western King prawns (*Penaeus latisulcatus*). Catches are equivalent to when fishing started, and the fishery's footprint has not changed in 20 years. We are an input-controlled fishery with 39 licences, temporal closed periods, closed areas, and output controls such as size limits and nightly catch trigger limits.

We were the first prawn fishery to be certified as sustainable in Australia in 2011 and have remained certified with recertification as recently as 2021 with no conditions.

The Spencer Gulf prawn fishery's concerns are:

### **1. P2 Scoring Elements**

Eliminating "secondary species" in P2 and reducing non-target species categories from 3 to 2 increases the number of "scoring elements" in each and the risk of lower scores/lower average. Under the current version if Previously Primary spp scored 90, secondary scored 75, and ETP scored 80, the new scores will either be 75 for "in-scope"

and 80 for ETPOOS, or 90 for “in-scope” and 75 for ETPOSS, or worst case 75 for “in-scope” and 75 for ETPOOS.

## **2. New Classifications of OOS and Data Rich Fisheries**

Grouping non-target species into Primary and ETP/OSS is a potential challenge for our fishery. New classifications will require an assessment of all OOS species with which the fishery interacts. Assessments will be more lengthy and costly, or if using the Risk Base Framework, we may end up with excessively precautionary outcomes.

## **3. Evidentiary Requirements**

This is the biggest concern for our fishery. Concern is around the impact generally of the changes in requirements/wording and what that will mean.

- Impact of reference to Toolbox Appendix B. Including areas such as In scope species (SA3.7.2) and ecosystems/habitat (SA 3.12.3)
- Interaction between evidentiary requirements and observer/observation coverage. Apparent setting of specific % levels.

In general, the evidentiary changes are convoluted and difficult to apply. Further there is requirement to apply them at a scoring element level. This will add cost and time to assessments.

Fisheries such as the Spencer Gulf prawn fishery have zero monitoring and is one of the most well managed fisheries in the world. The management authority under which we operate in our jurisdiction provides sufficient management of this for our fishery and there should be a caveat within this section to allow those fisheries that satisfy monitoring requirements under their current management arrangement, to continue to do so. For many Australian fisheries this will not be based on observer coverage, so the Standard should not insist on a link between evidentiary requirements and observer coverage for all fisheries. This would make certification extremely risky for our fishery after being certified sustainable since 2011.

Fisheries with more than adequate monitoring will still face higher assessment costs because of the requirement to apply the evidence framework to each scoring element.

## **4. VME now habitats**

Appears a positive change but concern with interaction with new evidentiary rules. What exactly we would be required to meet is not clear. More guidance in the Standard may be required on habitat definition and identification for the purposes of scoring.

## **Conclusion**

The language of the Standard has become more complex, without a corresponding increase in certainty and clarity. Elements such as evidence requirements needs significant additional development and are at odds with their common language description in the Guidance. Other changes seem to be rooted in the experiences of

other jurisdictions with resultant changes likely to lead to unanticipated consequences in an Australian context (for example on evidence requirements).

These changes have raised the bar for accreditation without improving sustainability outcomes. In some cases, the unintended consequence would be to exclude Australian sustainable fisheries from accreditation. For those fisheries that might be accredited, the advice we have received is that risks and costs will be raised. These deficiencies outweigh the benefits of being certified as sustainable, which defeats the original purpose of the Standard.

## **Recommendations**

The complexity and deficiencies in this draft Standard have challenged our confidence as participants in the MSC consultation process. Given this is a last draft with no more public review steps is of great concern. Further transparent review steps are required, applying a more stringent approach to the degree to which changes meet MSC and Review objectives and then these be publicly available for comment. Approaches to some of the issues/concerns need to be substantively improved, re-written and further explained before confidence will be restored in the process. If such changes cannot be achieved in the time available, they should be dropped or made subject to further investigation leading into the next review.

In the view of the Spencer Gulf prawn fishery, if MSC proceed in adopting the Reviewed Fisheries Standard in its current form, world class sustainable fisheries will be eliminated from the MSC program due to the complexity and increased costs associated with trying to meet these convoluted new Standards.

We welcome the opportunity to further comment on a clearer, more improved version, despite the time already dedicated to reviewing this Standard as a fishery and as part of an Australian Fisheries group who was coordinated for the purpose of collectively reviewing the Standard. The Spencer Gulf prawn fishery is certainly supportive of MSC and its objectives but is not able to support the review in its current form.

If you have any questions relating to this submission, you can contact me via [eo@prawnassociation.com.au](mailto:eo@prawnassociation.com.au) or PO Box 8, Port Lincoln, South Australia, Australia, 5606.

Yours Sincerely



Kelly Pyke-Tape  
Executive Officer

# The Proposed Marine Mammal Scope Change Does Not Serve the MSC: Risks to Founding Principles, Ecosystem Mission and Theory of Change

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## Introduction/Background

The Pacific Alliance for Sustainable Tuna supports the stated mission of the MSC and its intent to promote ecosystem-based management and best practices in fisheries. We have engaged as stakeholders in good faith, and at great expense, in the Marine Stewardship Council process since 2015 and are writing because of our serious concerns associated to the proposed scope eligibility changes related to marine mammals, released in February of 2022.

### Who Are We?

The Pacific Alliance for Sustainable Tuna is an association of Mexico's three leading yellowfin and skipjack fishing companies – Grupomar, Pesca Azteca and Procesa – that joined together to ensure that we jointly manage yellowfin and skipjack tuna fisheries in the Eastern Tropical Pacific Ocean (EPO) sustainably, while acting responsibly as employers and community members. The Alliance gives our members a vehicle for collaboration and joint decision-making on all issues that affect the fishery, as well as improvements. Through the Alliance we have worked together to make significant environmental commitments including participating in MSC certification, which we successfully secured in 2017.

Together, our members represent over 90% of the yellowfin and skipjack industry in Mexico and provide approximately 90,000 MT of yellowfin and 14,000 MT of skipjack into international markets, annually. Our members operate in keeping with responsible, science-based sustainable practices that focus on protecting the full ecosystem, and all species within it. This includes not just marine mammals, sharks, rays, turtles, and other species but also, very importantly, the long-term viability of the tuna themselves. Our fishery chooses to continue our fishing technique because it is best practice for protection of the ocean ecosystems; despite the high costs we bear to protect our ocean and ecosystem, including the fish stocks.

We are deeply committed to ensuring the health of the fishery over the long term out of principle and because we recognize the EPO system is the foundation of our business.

We also believe that people are important – and we operate with respect, toward all of our employees and within the communities that we work<sup>1</sup>.

Being vertically integrated, our vessels also supply tuna processing facilities. Combined, our fishing and processing operations, provide 30,000 direct and indirect employment opportunities.

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<sup>1</sup> Our members ensure that all of their employees have a fair minimum wage and receive access to health care and benefits; and for crews-at-sea, our members provide full, free lodging, food, and transportation benefits to ensure that there are no costs at sea and that they are independent employees.

**Criteria that considers welfare versus population viability, and a biased approach.** The changes as proposed appear to be not only poorly conceived, but targeted in a pointed manner towards our fishery, the Northeastern Tropical Pacific Purse Seine Yellowfin and Skipjack Fishery. This, despite the fact that our fishery and fishing method have been regularly attributed as crucial for maintaining the health of tuna and shark stocks in the EPO. Furthermore, our fishery is in full and ongoing compliance with all of the performance requirements of the MSC standard and international recognition of best practices - amounting to a uniquely selective fishery (see Appendix I) targeting a sustainable stock of mature yellowfin tuna, with minimal bycatch concerns relative to other forms of tuna fishing.

To the best of our understanding, this change was driven by NGO interests rather than the science of the competent authority, the IATTC.

- [MSC Report on marine mammal harassment scope criteria](#)
- [Marine Mammal Harassment Review](#)

The MSC staff have stated that this *"option would address reputational risks to the MSC program by excluding fisheries that intentionally harass or kill marine mammals. This option would resolve issues beyond encirclement by also excluding fisheries that harass or kill marine mammals in other ways. The term "intentional" is used to differentiate from bycatch events assessed in the Standard. Since it can be difficult for CABs to clearly implement at the early stages of assessment, definitions on "intentional" and "harassment" have been added."*

In fact, the proposed changes add substantial reputational risk to the MSC program, while seemingly targeting our already-certified fishery which is troubling, given that the fishery operates in keeping with a model of international best practices in Ecosystem Based Fisheries Management (EBFM), bycatch monitoring and mitigation. Specifically, the proposed change represents;

- a) A departure from the core intent stated in the MSC Principles and Criteria, to promote fisheries practices in keeping with best ecosystem-based management. Instead, this represents mission creep by MSC into issues of animal welfare (in a subjective manner that prioritizes healthy populations of charismatic species<sup>2</sup> over equally critical and often more endangered species<sup>3</sup> – like North Atlantic Right Whale, multiple shark and turtle species, for example).
- b) A departure from the MSC's alignment with the 1995 FAO Code of Conduct for Responsible Fishing that underpins inter-governmental fisheries laws and multilateral commitments which makes no reference to welfare.

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<sup>2</sup> <https://www.pnas.org/doi/10.1073/pnas.0912771107>  
<https://www.tandfonline.com/doi/full/10.1080/03632415.2015.1024308>  
<https://www.istor.org/stable/26393299?seq=7>

<sup>3</sup> An ecological view of the tuna-dolphin problem: impacts and trade-offs, Martin Hall, PhD, IATTC, 1998.  
<http://www.martinhallfisheries.com/publications.html>

- c) A departure from supporting the attributes of FAO's Guidelines to Prevent and Reduce Bycatch of Marine Mammals in Capture Fisheries
- d) A departure from best practices as defined by the ISEAL Code of Conduct for Good Standard Setting Practices V6.0.

Collectively, these changes jeopardize MSC's Theory of Change and undermine sustainability objectives to protect ecosystems. We appreciate your attention to the below in which we outline how the proposed scope eligibility change is a unique departure from both the MSC's core mission and outside international norms, how it will shift fishing pressure towards fisheries with greater ecosystem impacts and how it does not serve the mission or reputation of the MSC. For these reasons, we believe these changes should be abandoned or heavily revised by the MSC Staff and Board of Trustees.

[The proposed Scope Eligibility Change](#) departs from considerations addressed by the [FAO Code of Conduct for Responsible Fisheries](#) and [MSC's Principles and Criteria](#).

According to the draft MSC Fisheries Standard V3.0, released for consultation in February 2022, there is a new scope eligibility criterion that has been introduced to the standard (Appendix II). This is the first time in the history of the MSC standard that an *environmental* scope eligibility criterion has been added, where all other changes related to environmental impacts have been made via modifications or incorporation of new *performance indicator language or requirements*.

Scope eligibility criteria are disproportionately powerful, because they have the power to preclude a fishery from assessment, **regardless of how it might perform against the actual requirements**.

It could be argued that social responsibility constituted a similar introduction of new scope eligibility requirements. However, social changes differed fundamentally from this proposed scope change related to marine mammals, in that all fisheries have crew, so were all affected. In contrast, this change:

- A) relates to the fundamental environmental mandate of the standard [traditionally introduced via updated performance requirements (the numbered compliance items in the standard) rather than through scope eligibility (up-front requirement that a CAB uses to decide whether a fishery is allowed at all, to be compared against the numbered performance requirements)].
- B) does not relate clearly to a thematic area of concern such as welfare, in an unbiased manner across all non-target species, in all fisheries.
- C) is gear and practice-specific. We note that the MSC previously has refused comparable requests by NGOs to deem other gear types - with known and highly destructive impacts such as bottom trawls - ineligible via scope eligibility. Recognizing that not the gear, but

the outcome, was the matter at hand, the MSC has a history of staying the course with respect to impact, rather than defaulting to prescriptive, exclusionary and effectively discriminatory environmental eligibility criteria.

D) Unlike social considerations, which as a thematic area, are clearly embedded in both the founding MSC Principles and Criteria<sup>4</sup>, and throughout the FAO Code of Conduct for Responsible Fishing (CCRF)<sup>5</sup>, the proposed welfare-related changes have no basis in the

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<sup>4</sup> Page 1. At the centre of the MSC is a set of Principles and Criteria for Sustainable Fishing which are used as a standard in a third party, independent and voluntary certification programme. These were developed by means of an extensive, international consultative process through which the views of stakeholders in fisheries were gathered.

These Principles reflect a recognition that a sustainable fishery should be based upon:

- The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, **social**, environmental and commercial aspects;

Page 2. They were developed assuming that a sustainable fishery is defined, for the purposes of MSC certification, as one that is conducted in such a way that:

- it is conducted in a **socially and economically fair** and responsible manner.

... Although the primary focus is the ecological integrity of world fisheries, the principles also embrace the **human and social elements** of fisheries.

Page 4-5: A. Management System Criteria:

- provide economic and **social incentives** that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;

<sup>5</sup> The Code recognizes the nutritional, economic, **social**, environmental and cultural importance of fisheries and the interests of all those concerned with the fishery sector.

**Article 2:** The objectives of the Code are to: 1a) establish principles, in accordance with the relevant rules of international law, for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, **social**, environmental and commercial aspects;

**6.4** Conservation and management decisions for fisheries should be based on the best scientific evidence available, also taking into account traditional knowledge of the resources and their habitat, as well as relevant environmental, economic and **social factors**.

**6.14** International trade in fish and fishery products should be conducted in accordance with the principles, rights and obligations established in the World Trade Organization (WTO) Agreement and other relevant international agreements. States should ensure that their policies, programmes and practices related to trade in fish and fishery products do not result in obstacles to this trade, environmental degradation or negative **social**, including nutritional, impacts.

**7.4.5** In order to ensure sustainable management of fisheries and to enable social and economic objectives to be achieved, sufficient knowledge of **social**, economic and institutional factors should be developed through data gathering, analysis and research.

**7.6.7** In the evaluation of alternative conservation and management measures, their cost-effectiveness and **social impact** should be considered.

**8.4.8** Research on the environmental and **social** impacts of fishing gear and, in particular, on the impact of such gear on biodiversity and coastal fishing communities should be promoted.

**9.1.5** States should establish effective procedures specific to aquaculture to undertake appropriate environmental assessment and monitoring with the aim of minimizing adverse ecological changes and related economic and **social** consequences

**10.2.2** In order to assist decision-making on the allocation and use of coastal resources, States should promote the assessment of their respective value taking into account economic, **social** and cultural factors.

**10.2.4** States, in accordance with their capacities, should establish or promote the establishment of systems to monitor the coastal environment as part of the coastal management process using physical, chemical, biological, economic and **social** parameters.

**10.2.5** States should promote multidisciplinary research in support of coastal area management, in particular on its environmental, biological, economic, social, legal and institutional aspects.

**11.1.5** States should give due consideration to the economic and social role of the post-harvest fisheries sector when formulating national policies for the sustainable development and utilization of fishery resources.

CCRF or any of the commitments that govern collaborative international fisheries management. They appear subjective, and seems rooted in species-centered fishery management of the 80s, rather than modern shifts to EBFM. In fact, the methods used by this fishery constitute best practice where marine mammals are concerned as highlighted by the FAO (See Figure 1).

Dolphin-associated Fishing Complies fully with the MSC Principles and Criteria: Dolphin-fishing in context.

The proposed scope eligibility change focuses on how fishing practices may disrupt marine mammals, out of all contexts with the MSC's founding Principles and Criteria, which were deliberately set out to steer the mission of the organization and its intended areas of impact.

It is critical for the MSC Board of Trustees to address the possible change from this perspective and with appropriate context. The Principles and Criteria are clear that managing ecosystem impacts – for ecosystems sustainability - is the core of the MSC system<sup>6</sup>. As such, any changes – particularly scope eligibility changes – should be considered holistically and remain consistent with the MSC's primary ecological objective as well as all four Principles.

*"The Principles represent the overarching philosophical basis for this initiative in stewardship of marine resource....These Principles reflect a recognition that a sustainable fishery should be based upon:*

- *The maintenance and re-establishment of healthy populations of targeted species;*
- *The maintenance of the integrity of ecosystems;*
- *The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects; and*
- *Compliance with relevant local and national local laws and standards and international understandings and agreements"*

It is therefore useful to examine the main forms of tuna fishing on the basis of each Principle of the MSC system. From the below, it becomes clear that fishing tuna in-association with dolphins, is most compliant among tuna fishing methods with the MSC's founding Principles.

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**12.1** States should recognize that responsible fisheries requires the availability of a sound scientific basis to assist fisheries managers and other interested parties in making decisions. Therefore, States should ensure that appropriate research is conducted into} all aspects of fisheries including biology, ecology, technology, environmental science, economics, social science, aquaculture and nutritional science. States should - ensure the availability of research facilities and provide appropriate training, staffing and institution building to conduct the research, taking into account the special needs of developing countries.

**12.9** States should ensure that the economic, social, marketing and institutional aspects of fisheries are adequately researched and that comparable data are generated for ongoing monitoring, analysis and policy formulation.

<sup>6</sup> "Although **the primary focus is the ecological integrity of world fisheries**, the principles also embrace the human and social elements of fisheries."

1. The maintenance and re-establishment of healthy populations of targeted species;

**The proposed scope change would not achieve this but undermine this goal: it would drive existing growth overfishing of BET in a jointly managed tuna fishery:** In the Eastern Tropical Pacific, the three species of tropical tunas (YFT, BET, SKJ) are managed under a single harvest strategy and under a joint Harvest Control Rule (HCR). The HCR aims to prevent fishing mortality from exceeding the MSY level for either BET or YFT, whichever species requires the strictest management (SKJ is managed by proxies, based on assumptions of the relative co-catch of SKJ with YFT and BET in different gear types).

Unless the MSC is suggesting that Mexico cease all skipjack and yellowfin fishing, which we would hope is not the case, we can only assume that the proposed change is suggesting that FAD fishing is a preference – were it not very clearly stated by the IATTC that adding FAD capacity would detrimentally affect tuna populations in the ocean.

There are substantial problems being faced by the harvest strategy caused by the increase of object-associated (FAD) fishing. *"When the expansion of the floating-object fishery began, the overall selectivity from all fleets combined shifted towards smaller individuals. Since bigeye tuna can grow close to 200 cm, catching them when they are small results in a loss of potential yield, i.e. the catches that could be taken by other gears that target larger individuals, such as longlining."*<sup>7</sup>

Effectively, too much (mainly) FAD-fishing of juvenile BET is causing depletion of the stock, and causing dissent among member nations about how to control removals. This dissent is challenging the ability of the Commission to reliably approve overarching measures for the fishery. Greater FAD-fishing is also causing increased uncertainty in the status of SKJ populations, which have traditionally been managed under assumptions that may no longer hold.

In contrast, the (EPO) YFT stock is healthy<sup>8</sup>, and the dolphin-associated fishery is selective for large mature YFT, that will have had the opportunity to reproduce and contribute to the population. Effectively, fishing in association for dolphins, targeting the healthy YFT stock, is helping management to maintain ecosystem balance by avoiding BET: this scope change, indirectly aimed at shifting Mexico's substantial purse seine fleet to FAD-fishing, would contribute to a growing pressure on an already depleted stock of BET, rather than keeping fishing effort appropriately and selectively on mature individuals of the healthy YFT stock.

2. The maintenance of the integrity of ecosystems;

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<sup>7</sup> <https://www.iss-foundation.org/research-advocacy-recommendations/our-scientific-program/scientific-reports/download-info/issf-2022-04-status-of-the-world-fisheries-for-tuna-march-2022/>

<sup>8</sup> According to the most recent risk analysis, there is a 12% probability that the stock is overfished ( $SSB < SSB_{MSY}$ ), and a 9% probability that overfishing ( $F > F_{MSY}$ ) is taking place.

**The proposed scope change would not achieve this: it would drive further fishing of gear types with greater impacts on more ETP species, and higher numbers of such impacts, degrading ecosystem integrity.**

Fishing in association with dolphins allows highly selective catches of mature adult yellowfin tuna and is best practice for managing the ocean ecosystem in the EPO. As part of maintaining that ecosystem, dolphin mortality is highly regulated<sup>9</sup>. This levels of oversight leads to highly certain<sup>10</sup> accounting, as opposed to sample-based estimates of all other non-target and ETP interactions. Furthermore, such mortalities comprise ~11%<sup>11</sup> of strict mortality limits set according to US methods for Potential Biological Removal levels used for marine mammals, which are themselves, highly conservative. This fishing technique is an important part of the composite of gears used in the IATTC to maintain healthy tuna, shark, turtle, and marine mammal populations – an ecosystem approach.

No other non-target species in the EPO ecosystem – even those that are Critically Endangered - are subject to PBRs, hard numeric limits, and limits executed at the vessel level which terminate a vessel's fishing season. In 2019, AICDCP reported that the highest relative mortality rate estimate was for the spinner dolphin at 0.03%; this is <1% of the established default maximum rate of increase (Rmax) for small cetacean species of 4% as calculated by Wade (1998)<sup>12</sup>.

**In summary, there is only evidence that even the dolphin stocks with most frequent vessel interactions, can not only sustain, but are also able to recover in concert with the limited and regulated bycatch in the EPO fishery.**

The MSC Principles determine that the MSC Board should consider all non-target interactions from an ecosystem perspective, comparing small numbers of extremely regulated cetacean interactions with the substantial non-target interactions of all other forms of tuna fishing – including free school purse seine sets, FAD purse seine sets and longlining.

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<sup>9</sup> Each dolphin-set is subject to requirements by AIDCP-trained observers to draw the configuration of pods relative to vessels, nets and infrastructure at multiple points during the execution of a set and back down. All efforts are made to release animals alive and unharmed.

<sup>10</sup> Northeastern Tropical Tuna Purse Seine Yellowfin and Skipjack Fishery Second Annual Surveillance Audit: "*With regard to the ability of the observers to monitor fishing activity and dolphin interactions effectively, the audit team was able to interview two active observers from the Mexican National Observer Programme at this year 2 audit. When asked specifically about their ability to monitor what was happening aboard the vessel and in the water, both observers noted that they took up positions on the vessels during different stages of fishing specifically to maximise their ability to monitor activity, CU MSC Surveillance Reporting Template v2.3 (1 st May 2020) (based on MSC Surveillance Reporting Template v2.01) QA: 3468R01D 33 including on the helicopter pad (which are required to be unobstructed and offer an all-round view). The observers also noted that they were familiar with activity patterns and would be able to discern if some attempt was being made to remove a dead dolphin from a net surreptitiously.*

*Senior representatives of the PAST fleet also noted that divers working inside the net to release dolphins or other animals would not cut the meshes deliberately to release a dolphin underwater in order to avoid it being counted towards a DML. It was reported that this was because, if cut, the pressure on the net generated during active fishing operations could result in the net splitting and the catch being lost. It was also noted that the individual and total DMLs have not been exceeded, and so there is no requirement or significant incentive to hide or disguise dolphin mortalities where they did occur."*

<sup>11</sup> In 2021.

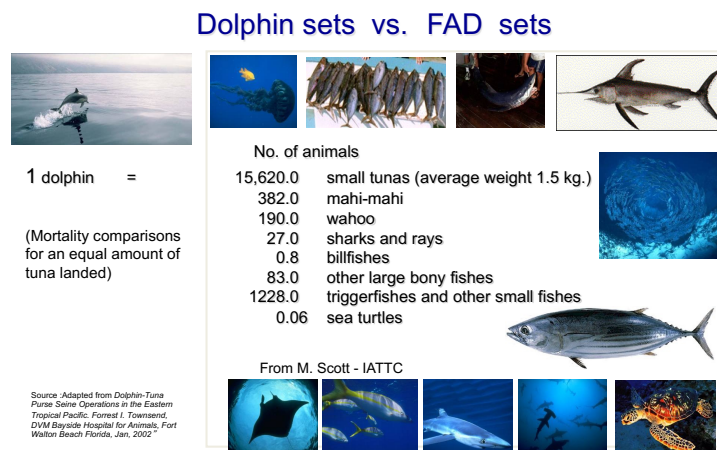
<sup>12</sup> <https://doi.org/10.1111/j.1748-7692.1998.tb00688.x>

Our fishing method is the most sustainable

All three of these of alternative forms of tuna fishing have substantially greater interactions with Endangered Threatened and Protected populations, both in terms of the diversity of ETP species encountered, and the number of mortalities (regardless of disruptions to their behavior, as proposed for marine mammals via this scope change) and at substantially more uncertain levels.

These species include Critically Endangered species such as Oceanic Whitetip sharks and scalloped hammerheads, Endangered whale sharks, Manta rays, Spinetail devil rays, Chilean devil rays, Vulnerable silky sharks, sea turtles all listed on CITES Appendix I (Leatherback turtles, Hawksbill turtles, Green turtles, Loggerhead turtles, Olive Ridley turtles), and diverse rays (Chilean devil ray, Smoothtail devil ray, Munk's devil ray).

Longline fishing and FAD fishing in particular have heavy and substantial interactions with ETP species. Furthermore, many of these mortalities may be substantially underestimated on longline vessels in particular, which are subject to only 5% observer coverage, and reported to IATTC at levels below this by a number of flag states.



**Figure 1. IATTC produced figure showing the relative non-target waste per comparable weight of tuna harvested in dolphin-associated fishing versus FAD purse seine operations in the EPO.<sup>13</sup>**

<sup>13</sup> Ibid. 3



3. The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects.

**The proposed change would not achieve this: it could destabilize the AIDCP, the ability for member nations of the IATTC to reach consensus on main management resolutions for the overall tropical tuna fishery, and will drive poorer economic use of tuna as a resource.**

As noted above, the dolphin-associated purse seine fishery in the EPO is also currently the least problematic of the forms of tuna fishing, in that it relieves pressure on BET driven by the other tuna gears. This pressure is driving increasing dissent among member nation states focused on different fishing gears and areas, over how to best manage effort controls in the fishery. In 2021, there was a break in the main resolution used to manage all tropical tunas. It made headlines when: "*The IATTC ended its Nov. 30–Dec. 4 virtual Commission meeting without keeping crucial "status quo" measures in place:*

- *First, the Commission could not agree to extend its current resolution for tropical tuna species for 2021, leaving the entire fishery for bigeye, yellowfin and skipjack tuna stocks without management measures. Fishing effort and catch limit provisions for these stocks are no longer in place.*
- *Second, IATTC did not extend into 2021 the requirements to limit the number of active FADs.<sup>14, 15</sup>*

Furthermore, both the need for fewer net removals and to remove fewer small fish, driven by non-dolphin associated purse seine fishing, is reducing economic yields. Findings from a recent study showed that "*substantially greater total revenue for the EPO tuna fishery can be obtained by modifying the amount of effort attributed to the (non-dolphin associated – our addition) purse-seine fishery, which land the majority of juvenile bigeye, and the longline fleets. For the same bigeye tuna biomass target levels, higher economic value can be obtained by increasing the longline effort and reducing the (non-dolphin associated – our addition) purse-seine effort.*<sup>16</sup>" Longline vessels in turn, are disproportionately implicated in ETP and human rights at sea violations.

The MSC's opposition to the single fishing method in the EPO that relieves pressure on this FAD purse seine and juvenile BET-driven situation will not achieve the desired objective of "*maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects*".

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<sup>14</sup> <https://www.iss-foundation.org/about-issf/what-we-publish/news/statements/issf-statement-iattc-fails-to-preserve-tuna-conservation-and-fad-measures-at-annual-meeting/>

<sup>15</sup> This break was rectified via a special meeting in late December 2020, which did not resolve outstanding issues but did roll over existing "status quo" regulations. Issues under discussion were materially resolved almost a year later via Resolution C-21-04 which was approved by consensus in Oct 2021. This Resolution established new catch limits on vessels catching large amounts of BET, that will affect the number of days such vessels are allowed to fish in subsequent seasons.

<sup>16</sup> [https://www.sciencedirect.com/science/article/pii/S0967064518303072#:~:text=Longline%20vessels%20catch%20large%20yellowfin,%2Daggregating%20devices%20\(FADs\).](https://www.sciencedirect.com/science/article/pii/S0967064518303072#:~:text=Longline%20vessels%20catch%20large%20yellowfin,%2Daggregating%20devices%20(FADs).)

4. Compliance with relevant local and national local laws and standards and international understandings and agreements.

**The proposed change would not achieve this: it could destabilize the AIDCP as an important international conservation agreement in the EPO.**

At present, the UoA fishery operates in full compliance with all laws, international understandings and the AIDCP agreement. The Mexican fleet is also a strong proponent of, and contributes to, the budget for the international Dolphin Conservation Program, executed under the legally-binding multilateral agreement, the AIDCP (Agreement on the International Dolphin Conservation Program). Should the MSC process publicly oppose the utility of such a program, contributing members may reconsider the costs involved. Expenses are currently viewed as the cost of best practice, but rigorous monitoring will face increasing challenges if funding is diminished, based on members questioning its public perception through challenges by organizations like MSC.

Other important obligations with respect to reporting the data to the IATTC are also clearly upheld by the Mexican fleet and competent authorities. Mexico is among a small handful of nation states with exemplary long term reporting behavior in the IATTC.

Table 2. Status of reporting of observer data by CPCs, by year. Cell color denotes whether a CPC reported operational observer data (green), intends to submit data in the near future (orange), nominated not to report, or were exempt from reporting (black), or have not reported and have not responded to the IATTC Director's request for clarification (red).

CPC	2013	2014	2015	2016	2017	2018	2019
BLZ	NR <sup>2</sup>	NR <sup>2</sup>	P	P	P	P	NR <sup>3</sup>
CHL							NA <sup>1</sup>
CHN							
CRI							NR <sup>2</sup>
ECU							
EU (Portugal)	NR	NR	NR		NR	NR	
EU (Spain)	NR	NR	NR	NR			
FRA							
GTM	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NA	NA	NA
JPN	NR <sup>1</sup>	NR <sup>2</sup>					
KOR							
MEX							
NIC					NA <sup>1</sup>		
PAN							
PER	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	
SLV	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	
TWN							
USA							
VEN					NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>
VUT							

In the above we have examined how the proposed change (does not) satisfy the MSC's founding Principles. In Appendix IV, we have also provided a brief assessment of how the main forms of tuna fishing in the EPO perform relative to the Operational Criteria of the MSC's Principle and Criteria. From Appendix III, it is possible to see that fishing in-association with dolphins also more completely satisfies the founding operational criteria of the MSC than other forms of tuna fishing.

Dolphin-associated Fishing is the Most Sustainable Technique for the EPO, and Complies with the FAO Code of Conduct for Responsible Fishing and Associated Guidelines for Best Practices in Bycatch Mitigation

During the MSC's Fisheries Standard Review process, two reports were commissioned. One reviewed policy mechanisms in global fisheries addressing marine mammal interactions and best practices<sup>17</sup>.

This report found that: "*The AIDCP framework is the most developed in term of management measures put in place to minimise bycatch and harassment to dolphins, including the label (dolphin-safe) and certificate to document compliance by Eastern Pacific Ocean purse seine vessels with prescribed measures to govern dolphin mortality. The label is applied to tuna caught in sets where no dolphins were injured or killed, and it serves as an incentive to eliminate mortality to add value to the catches.*"

The report also recommended that: "*In 2018, FAO convened the 'Expert Workshop on Means and Methods for Reducing Marine Mammal Mortality in Fishing and Aquaculture Operations' in Rome, Italy. This document, which was welcomed by COFI 33 (2018), contains a useful decision-tree that could be adopted by RFMOs to handle the marine mammal bycatch issue.*"

In 2021, FAO released Technical Guidelines<sup>18</sup> which contained an updated version of the original flowchart (Figure 1). The AIDCP program is fully compliant with all recommendations in the decision-tree endorsed by FAO 2021 (Figure 1) and the Northeastern Tropical Pacific purse seine fishery currently operates in full compliance with these FAO-recommended best practices for a data-rich situation.

FAO practices are based not on issues of welfare, but on the ability to obtain accurate information on impacts and to consider impacts relative to status, as required by the current version of the MSC standard and the fishery's Client Action Plan. It is therefore puzzling why the MSC is considering adopted a scope eligibility stance that differs in meaningful ways from FAO best practices and the advice of its consultant's findings.

Collectively, fishing tuna in-association with dolphins is the form of tuna fishing most compliant with:

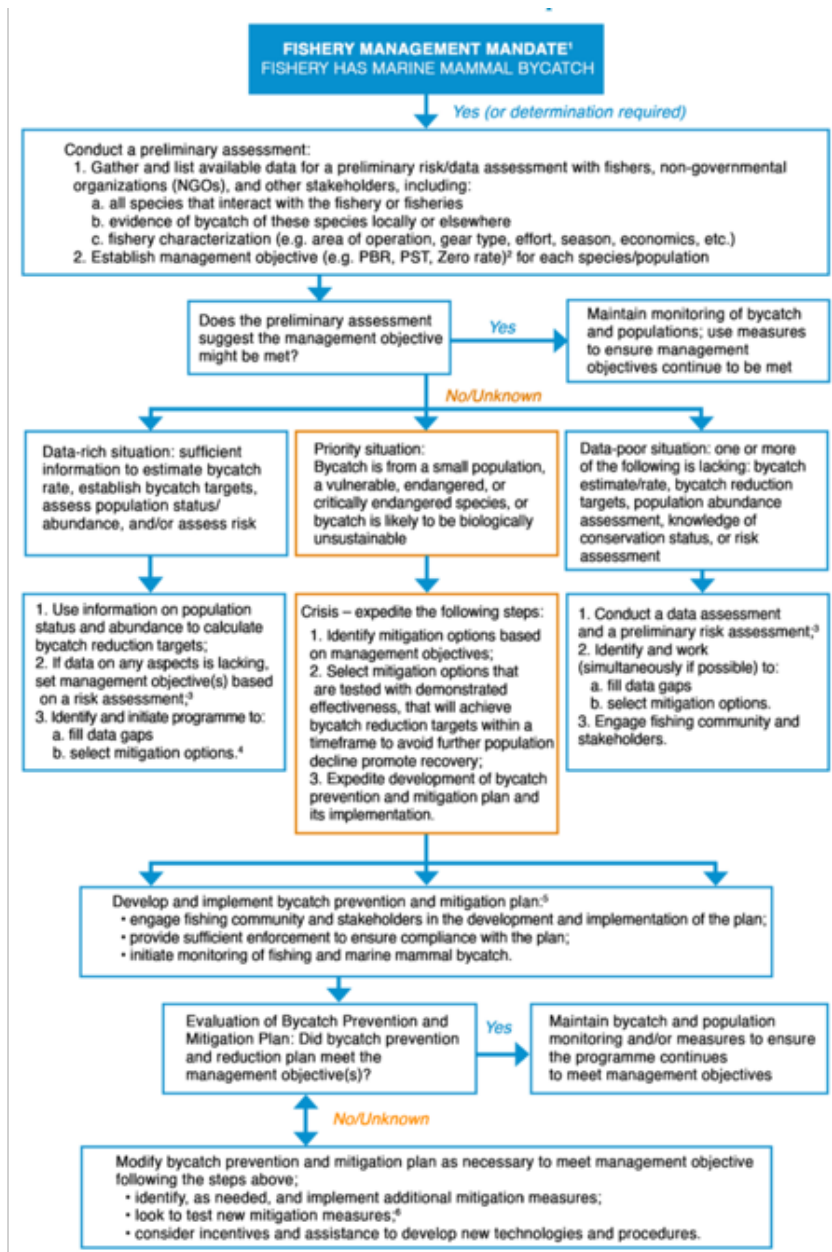
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<sup>17</sup> Fortuna, C. 2019. Review on global, commercial, wild-capture fisheries intentionally harassing or killing marine mammals. Pp. 61

<sup>18</sup> FAO. 2021. *Fishing operations. Guidelines to prevent and reduce bycatch of marine mammals in capture fisheries*. FAO Technical Guidelines for Responsible Fisheries No.1, Suppl. 4. Rome. <https://doi.org/10.4060/cb2887en>

1. The MSC Principles & Criteria, Principles 1-4,
2. The MSC Operational Criteria (Appendix III),
3. The FAO CCRF (relevant clauses are highlighted in Appendix IV) and,
4. The FAO Technical Guidelines for Responsible Fisheries No.1, Suppl. 4 (Figure 2).

The Northeastern Tropical Pacific purse seine tuna fishery, in keeping with the primary MSC objective, promotes best ecosystem-based practices. Many of these practices that minimize non-target and ETP interactions as well as fishing in a manner that selects for large mature tuna are not consistently seen in other tuna fleets in the EPO and elsewhere, which maintain MSC certification.



**Figure 2. Flowchart for developing a marine mammal bycatch prevention and reduction plan under the FAO Code of Conduct for Responsible Fisheries**

The Proposed Scope Changes Do Not Serve the MSC and Undermine the MSC Mission.

Credibility & Reputational Risks

The concerns expressed in the sections above represent meaningful credibility risks to the MSC system that should be heavily and appropriately considered by the MSC Board of Trustees.

**Threat to mission:** Primary among these is a threat to mission. The MSC's Principles and Criteria are clear that the main objective of the Marine Stewardship Council is to assure ecosystem-based fisheries management via a globally inclusive system. By adopting scope eligibility changes that reference the a) subjective issue of “welfare” without any population effect or any quantitative effect and b) apply such considerations only to marine mammals, the MSC is creating a serious structural impediment to its own primary objectives.

Any scope eligibility changes should be clearly grounded in international norms, conventions or other imperatives entirely embraced by the international fisheries community, and acceptable to members of both the private and public sector. Further, the MSC should not signal that returning to managing fishery around charismatic<sup>19</sup> species is best practice; it is not.

This change risks diverting the MSC from its mission while shifting fisheries in the system towards serious ecosystem impacts.

**Threat to access:** The proposed changes appear to reflect aspects of marine mammal protectionism often advanced by Developed/Global North countries in international fora. There are good reasons that, currently, diverse nations trust the MSC and its normal adherence to international norms such as guidelines developed by the UN-FAO – which speaks in an impartial manner for all nations.

It also appears that even the stringent measures advanced by the United States (which require nations exporting fish and fish products to the United States, be held to the same standards as U.S. commercial fishing) are substantially exceeded by expectations of this MSC proposal. Under the US Marine Mammal Protect Act, this risk remains limited to injuries or mortality, rather than the yet higher bar proposed by this scope change, related to the disruptions of most marine mammal behaviors in the wild.

**Threat to influence:** For emerging countries like Mexico, the MSC represents a reputable means of demonstrating responsible fisheries management, outside of special interests considerations such as welfare, without prescriptive operational mandates and traditionally, without assumptions about fiscal capacity to re-train and re-skipper extensive fleets (implied in MSC's Impact Assessment, which asserts fisheries should simply fish differently to re-enter certification). Should the MSC become seen to endorse impractical assumptions in changes to scope or requirements, these may cause members of both industry and government to look for best practice guidance elsewhere, affecting the current influence the MSC has steadily built in policy arenas.

**Threat to retention and growth:** Operating as a stable, science-based organization and acting in lockstep with internationally accepted norms is essential for credibility. Taking on subjective criteria will affect the views of fisheries currently in the MSC system. We suspect that other fisheries will take note of such willingness and become increasingly unsure of whether they too,

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<sup>19</sup> Ibid. 2.

may be affected by future changes, and whether the costs and risks of participation remain wise.

As growth of the MSC system has slowed through time, decisions that may affect attrition of existing participants or reduce the number of incoming fisheries, should be carefully considered by the Board. Furthermore, there are a suite of fisheries currently in the system that will be affected by this scope eligibility change, and are likely to be lost from the system. We have done a non-exhaustive review and found, as examples, at least ten fisheries who may lose scope eligibility, spanning diverse oceans and gears (Appendix VI). We have also identified at least, another ten fisheries whose scoring could be indirectly affected in unknown ways if IATTC systems are destabilized by diminished support for observer programs or by further pressure on Bigeye fisheries (Appendix VII).

#### Procedural Risks: ISEAL-defined Best Practice in Standard Setting

The proposed scope change should be reconsidered by the MSC Board, to assure procedural compliance with several aspects of ISEAL's Code of Good Practices for Standard Setting V6.0. We understand the MSC intends to move scope eligibility requirements into the standard (vs. Fisheries Certification Process-FCP), which is clearly governed by ISEAL requirements.

**Insufficient relevance:** Principle 3 of the ISEAL Code relates to Relevance and requires that standards "address the most significant sustainability impacts of a product, process, business or service; only include requirements that contribute to their objectives, reflect best scientific understanding and relevant international norms....focusing on outcome rather than approach".

The proposed scope change and associated imprecise language will result in addressing a welfare consideration that the MSC has not defined as among the most significant sustainability impact of seafood (rather, the Principles and Criteria define these as sound ecosystem based management and the long term viability of target and non-target populations). Further, the change does not reflect best scientific understanding of ecosystem needs, or FAO norms, and focus on approach rather than outcome. In contrast, the current ecosystem-based, FAO-aligned and outcome-based requirements are compliant with all aspects of Principle 3.

**Insufficient rigor:** Principle 4 of the ISEAL Code relates to Engagement and requires that "The standard is clear and adequate guidance documents are in place such that different, but equally competent auditors assessing the same enterprise would arrive at the same result".

The key requirements of the proposed scope eligibility change read as follows (the full requirements and associated guidance are found in Appendix II):

*1.1.2.3 The CAB shall confirm that the client or client group does not include any entity that intentionally harasses or intentionally kills marine mammals.*

a. The CAB shall interpret the term “intentionally” as any action which is not deemed to be “incidental” to fishing operations.

i. The term “incidental” describes consequences or results which were neither intended nor foreseeable.

b. The CAB shall interpret the term “harasses” in the context of 1.1.2.3. as any act of pursuit, torment, or annoyance which:

i. has the potential to injure a marine mammal in the wild, or

ii. has the potential to disturb a marine mammal in the wild by causing disruption of behavioural patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering

In the proposed draft V3.0 standard, the scope eligibility criteria are defined via two main requirements:

In the first (1.1.2.3 a), the MSC provides definition only for "incidental", to mean "*consequences or results which were neither intended nor foreseeable.*" Given that "intentional" is also defined as any actions that are not incidental, the functional definition provided for "intentional" is activities that are intended or that are foreseeable.

In the second (1.1.2.3 b), the MSC defines "harassment", "*as any act of pursuit, torment, or annoyance which either (i) has the potential to injure a marine mammal in the wild, or (ii). has the potential to disturb a marine mammal in the wild by causing disruption of behavioural patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering"*

At present, it is not at all clear how auditors would consistently interpret terms such as "annoyance", "foreseeable", "may injure" and "may behaviorally disrupt", along with sub-terms such as feeding, migration without reference to scale.

We also note that "intentional" (in relation to the current definition of incidental), is defined in a self-referential/circular manner because it includes the term "intended". For all of these reasons, this proposed change does not currently meet ISEAL requirements that "*different, but equally competent auditors assessing the same enterprise would arrive at the same result.*"

Most disturbing is the highly arbitrary application of a welfare criterion, unrelated to population or ecosystem effect, and applied only to one category of animals – which is directly in conflict with the MSC Theory of Change.

**Insufficient engagement:** Principle 5 of the ISEAL Code relates to Engagement and requires that:

*"The standard-setter proactively engages with stakeholder groups that are likely to have an interest in the standard or that are likely to be affected by its implementation, and provides them with mechanisms for participation that are appropriate and accessible."*



The MSC notes very clearly in its impact assessment that *"One certified fishery may lose their certification (and at least one more in pipeline would not be eligible) which will mean that current work on reducing marine mammal impact may stop – these fishery partners are understood to be against this proposal."*

**Despite clear acknowledgement of effect, the MSC did not contact the companies affected or their supply chain partners, the IATTC as the competent Regional Fisheries Management Organization, or the Conformity Assessment Body which audits our fishery.** This is directly contrary to obligations as a standard holder. This, despite the fact that there have clearly been intentions within the MSC to propose a potential scope change on this matter dating back as far as the time the Fortuna report was contracted (2017-2018).

It comes across as deliberately exclusionary that minimal<sup>20</sup> engagement efforts on this issue have been made towards our fishery that is in good standing, making demonstrated progress closing conditions, and has unusually, invested millions of dollars of certification-associated improvements.

**Insufficient accessibility:** Principle 8 of the ISEAL Code relates to Accessibility and requires that:

*"Standard-setters provide appropriate opportunities for stakeholders to participate in the standard-setting process. They identify and support disadvantaged stakeholders to participate through appropriate mechanisms, including regional visits and using local languages".*

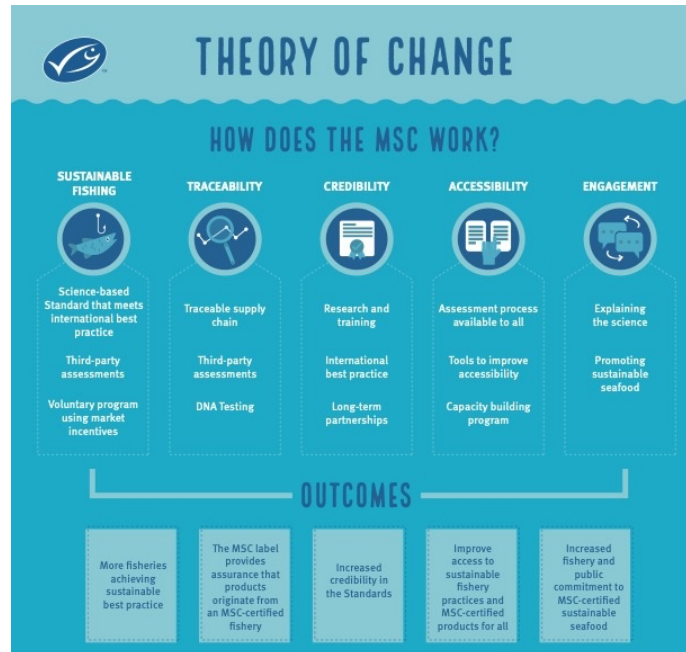
We recognize that NGOs are effective and vocal in the MSC system. Members of industry often may not be as vocal, or may not always operate primarily in English. We also recognize that the standards team is busy and works primarily with the weight of stakeholder input, and must wait for the staging of Technical Advisory Board and Stakeholder Advisory Committee discussions. In this case, our fishery is disproportionately affected by the proposed change. This is why it is particularly important for outreach to be extended through appropriate mechanisms – through discussions in Mexico, at the IATTC, and in Spanish. Please allow the standards team sufficient time to engage with the stakeholders in this systems and to appropriately consider how to address the full scope of these comments.

## Conclusion: The MSC Theory of Change and Outcome Risks

The MSC Theory of Change has five main pillars: the proposed scope change is clearly detrimental to four of these pillars and neutral to one.

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<sup>20</sup> The fishery client asked for a call in November with MSC officials, when part of the scope changes were shared by the outcome team from MSC Latin America. MSC officials made a brief online presentation to the client and made clear that key concepts remained undefined, such as definitions of harassment and incidental.



**Figure 3** - The MSC Theory of Change, showing five of the main pillars of the MSC system; sustainable fishing, traceability, credibility, accessibility and engagement.

**Sustainable Fishing:** The proposed scope change is likely to withdraw certificates from a number of fisheries with highly management marine mammal interactions, demonstrated by science to be either non-lethal or well within the ability for populations to sustain and in many cases, allow population growth.

If and when such fisheries change fishing practices, many will have greater ecosystem impacts on species that face significantly greater population-level risks.

Managing for welfare, by necessity, cannot be the priority in ecosystem-based fisheries management. EBFM manages trade-offs in context - to optimize the structure and function of the system overall, with particular attention to its most vulnerable components and assuring welfare wherever possible.

**Traceability:** Neutral

**Credibility:** The MSC risks its own credibility in terms of mission, influence, access, retention and growth with this scope change (see p. 16). As part of credibility, the MSC also values sound scientific research. The proposed scope change would represent an important lost opportunity for dolphins in the Eastern Tropical Pacific.

Abundance estimates that are costly and in need of updating are unlikely to proceed outside of certification. Without such estimates, the ability to set EPO dolphin mortality limits in keeping

with the size of populations will be reduced. The best route to responsible bycatch of dolphins in ongoing dolphin-associated tuna fishing is twofold:

1. Retain certificate-based incentives to collect strong science, and then base management (Dolphin Mortality Limits) on that science; and
2. maintain incentives through certification to maintain participation and funding for the AIDCP, which models a fully FAO-compliant marine mammal bycatch monitoring system.

The MSC could also be publicly called into question if it is associated with crippling a highly recognized and effective marine mammal bycatch program. The MSC's reputation is best served by remaining supportive of the type of information transparency and rigorous observer work modeled by only one tuna RFMO globally, in the AIDCP.

**Accessibility:** The proposed scope change represents a clear barrier to accessibility and trade (also counter to the FAO CCRF) based on animal welfare, rather than the current requirements that assess outcome-based performance and that do not represent a trade barrier. (See p. 19)

**Engagement:** The proposed scope change will affect a large number of fisheries who have not been duly consulted in keeping with ISEAL norms. This is likely to cause significant consternation with associated media statements calling into question the sufficiency of MSC's consultation processes and the optics of welfare as a new MSC priority.

At its core, the problem with the proposed change is that it precludes a fishery's ability to be assessed and to use evidence to determine whether a range of impacts that vary from small to large have outcomes with population-level sustainability outcomes. Rather, the possibility of an effect, whether meaningful or not, renders fisheries with any level of marine mammal interactions ineligible for assessment.

This scope eligibility requirement is incommensurate with MSC's Theory of Change - allowing best sustainability performers to meet a minimum evidence-based bar and to then to further improve through time. It also turns the MSC into a welfare standard for marine mammals, regardless of whether they are species of conservation concern, or whether interactions have meaningful sustainability effects.

## Final Considerations

We understand that the MSC has faced pressure to address concerns about fisheries interacting with marine mammals. We share the goal of protecting marine mammals, of minimizing interactions, and of ensuring that marine mammals are not deliberately used as bait<sup>21</sup>, food, or deliberately killed. Most importantly, and consistent with current MSC principles, interactions should not pose population-level risks.

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<sup>21</sup> Ibid 15.

At the same time, incidental mortality in tightly observed circumstances, with appropriate incentives to reduce mortalities, while also selectively fishing healthy stocks of adult tuna and protecting the ecosystem at large, represents sound EBFM.

#### Current Status of Improvements

Since acquiring our MSC certificate, the fishery has undertaken good faith efforts to fulfill the requirements of our Client Action Plan (CAP). At our most recent third surveillance audit (December 2021), Principle Two conditions related to sharks and rays (10 scoring-issue level conditions across the four UoAs) were all found to be On Target or Ahead of Target and included training of 979 skippers /crewmen from across the fleet. There were also four conditions set originally on other tuna species (bonitos and Pacific bluefin tuna) which were closed. For conditions related to dolphins (6 conditions), four were found to be on target or ahead of target, while two were considered to be behind target, as the required research was unable to advance due to failures in drone operation performance (conducted by independent researchers under the auspices of the IATTC) and further complicated by Covid-19 restrictions that complicate the ability to staff and operate a scientific vessel during that time. (Please note that despite Covid-19, all of our member vessels maintained 100% observer coverage in 2020-2021, making us one of the few global fleets that achieved this during the pandemic.)

With respect to marine mammals, our CAP established a series of milestones for two major research activities that pertained to 1) Dolphins abundance surveys in the Eastern Pacific Ocean (EPO), and 2) Further research on possible effects of calf-cow separation.

**Dolphin abundance surveys:** Based upon an RFP put out to competitive tender by IATTC to ensure complete independence, a research plan for conducting dolphin abundance surveys was developed by the IATTC's AIDCP program in collaboration with independent expert consultants, from the University of St. Andrew's<sup>22</sup>. The initial phase of work addressed the need to calibrate upcoming surveys with the methods of past surveys, to obtain comparable estimates of relative and absolute abundance. A 14 day trial cruise, costing \$2.5 Million USD<sup>23</sup> was undertaken in November 2019 aboard an INAPESCA research vessel, *Dr. Jorge Carranza Fraser*. Several components of the research plan were tested during the trial survey cruise, including the ability to:

- use the *Dr. Jorge Carranza Fraser* vessel as a survey platform,
- use drones to detect dolphin schools directly ahead of the survey vessel, to assess trackline detection probability (g(0)),
- collect data on the dolphin school size and species composition using video footage, and

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<sup>22</sup> [https://www.iattc.org/Meetings/Meetings2018/IATTC-93/Docs/English/MOP-37-02\\_Design%20of%20a%20survey%20for%20eastern%20tropical%20Pacific%20dolphin%20stocks.pdf](https://www.iattc.org/Meetings/Meetings2018/IATTC-93/Docs/English/MOP-37-02_Design%20of%20a%20survey%20for%20eastern%20tropical%20Pacific%20dolphin%20stocks.pdf)  
[https://www.iattc.org/Meetings/Meetings2019/IATTC-94/AIDCP-39/Docs/English/AIDCP-39-01-REV-03-Jul-19\\_Addendum%201%20Dolphin%20survey.pdf](https://www.iattc.org/Meetings/Meetings2019/IATTC-94/AIDCP-39/Docs/English/AIDCP-39-01-REV-03-Jul-19_Addendum%201%20Dolphin%20survey.pdf)

<sup>23</sup> [https://www.iattc.org/Meetings/Meetings2019/IATTC-94/AIDCP-39/PRES/English/AIDCP-39-PRES\\_Design%20of%20a%20survey%20for%20eastern%20Tropical%20Pacific%20dolphin%20stocks.pdf](https://www.iattc.org/Meetings/Meetings2019/IATTC-94/AIDCP-39/PRES/English/AIDCP-39-PRES_Design%20of%20a%20survey%20for%20eastern%20Tropical%20Pacific%20dolphin%20stocks.pdf)

- use machine-learning algorithm to calibrate estimates made by the ship-based observers.

This method was selected by independent experts to ensure accurate results and also to forge new research methodologies that would then be available and applicable for population studies in the future. Results of this previously untested and novel research approach, selected by the independent experts, indicated that while the research vessel was proven to be appropriate for undertaking the work, contrary to the research team's expectations/specifications, the drones operated by GTT Netcorp were unable to provide sufficient endurance; camera image resolution was too low; transmitted video footage was of insufficient quality due to compression and other issues; and there was no on-board back-up video storage capability.

Further, one drone was lost; and only one pilot was able to fly the drones successfully. Together, these issues meant that whilst some calibration of trackline detection and counts by species could occur, the test was not sufficiently successful to recommend undertaking a full survey of 120 days.

A further sea trial was proposed by the independent survey project team, using a different drone-camera system to provide improved image resolution and endurance capabilities (Oedekoven et al. 2020). Safety limitations posed by Covid-19 and work on the close quarters of vessels-at-sea meant that the second sea trial was not completed in 2021.

*The assessment team noted that "the client has clearly made considerable efforts to undertake the study... given the truly exceptional circumstances now faced by all parties, and the need to consider options going forward, as well as the difficulty of undertaking any further survey work at this time, it was considered appropriate to submit a variation request to the MSC, seeking an additional two years to meet the conditions (link). The variation request was granted by MSC."*

**Calf-cow separation:** As part of the Action Plan and at the bequest of stakeholders, we included efforts to secure funds for an investigation study to explore if calf and cows were separated by fishing operations. The IATTC staff developed a research plan<sup>24</sup> that was presented and approved on the 36th Meeting of the parties to the AIDCP in 2017. In 2018, the project was presented during the 37th meeting of the parties<sup>25</sup> for funding; the AIDCP did not approve the expenditure. The IATTC staff and the PAST continued efforts to secure funding for the project. During 2019, the preparations of the calf-cow project were put on standby as all efforts were put on the trial survey on dolphin abundance. As previously mentioned, both projects were delayed due to the effects of the Covid 19 pandemic, including delays on non-crucial seagoing trips, the closure of administrative offices delaying the required permits, and a series of other operational difficulties.

<sup>24</sup> 36th Meeting of the parties to the AIDPC 20171024: Minutes of the meeting (MOP-36-MINS\_36<sup>a</sup> Reunion de las Partes del APICD.pdf, MOP-36-MINS\_36th Meeting of the Parties to the AIDCP).

[Research proposals by IATTC STAFF \(MOP-36-06 Research-proposals-by-IATTC-staff.pdf\)](#)

<sup>25</sup> 37th Meeting of the parties to the AIDPC 20180817: Minutes of the meeting (MOP-37-MIN-DRAFT\_37<sup>a</sup> Reunion de las Partes del APICD.pdf, MOP-37-MIN-DRAFT\_37th Meeting of the Parties to the AIDCP). AIDCP unfunded research projects ([MOP-37-03](#) Proyectos de investigación no financiados.pdf, MOP-37-03\_Unfunded Research projects.pdf).

The methodology of the cow-calf project was updated during 2021 and it is scheduled to be carried out during 2022, led by the IATTC. According to the methodology, an experts' workshop will be held first, followed by the study.

The PAST has sent communications to the IATTC confirming its commitment to carry out this study and finance 100% of its cost (\$498,000 USD), in the absence of approval to be financed with the surplus of the AIDCP or through its budget. As a signal of our good faith, fifty percent of the total project cost has already been deposited with the IATTC.

### Alternative Proposal

We appreciate the Board considering whether a scope change is necessary and will achieve the desired impact or adverse and unintended consequences. If the Board advances a scope change, as stakeholders to this system, we hope that it:

- Aligns with the MSC mission of protecting ocean ecosystems
- Is applied in a consistent manner without targeting any one fishing gear or technique
- Generates appropriate incentives
- Is consistent with FAO recommendations, and
- Exhibits ISEAL-compliant engagement and consultation including consultation with the industrial actors – fisheries, their buyers, RFMO experts etc.

If a scope change is necessary, the findings of the MSC-commissioned Fortuna 2018 review provide a strong summary of current international best practice, concluding that:

*"Common traits of all codes of conduct and guidelines to mitigate the disturbance that anthropogenic activities provoke on marine mammals are the following:*

- *exclusion zones;*
- *restrictions on number of platforms around animals at any given time;*
- *limitation on exposure, in terms of time and in terms of sound;*
- *distance from the animals;*
- *speed of the platform operating around animals;*
- *movements/positioning around animals; and*
- *soft-start/ramp-up of noisy activities.*

*Almost all guidelines include the notion of data collection (before, during and after), particularly on sightings (temporal and spatial presence and distribution), to assess the impact of any activity on populations and species."*

**All of these requirements are met through the AIDCP.**

The report also points to a 2018 workshop, which led to the 2021 FAO Guidelines to Prevent and Reduce Bycatch of Marine Mammals in Capture Fisheries, with which our fishery complies.

We hope that the Board agrees that following the FAO's guidance as best practice is in the best interests of the MSC. The expert-informed findings of the FAO, focus on stringent monitoring and assessment of impacts relative to status.

We also hope that appropriate engagement, due consultation, as well as attention to both the founding Principles and Criteria of the MSC standard – focused on ecosystem protection not arbitrary measures related to charismatic species - and international norms will inform robust Board deliberations.

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## Appendixes

### **Appendix I: MSC History and the Fishery's Current Status**

The PAST began using the MSC framework to chart its existing sustainability initiatives in 2015. At that time the fishery undertook a preassessment with SCS Global Services, and entered into public full assessment in 2016. We achieved MSC certification in 2017 and continue to operate in compliance with an assertive Client Action Plan, with a certificate that expires in March of 2023. In 2022 the fishery will enter re-assessment to begin its next certificate cycle, the beginning of which will dovetail with the end of the previous certificate cycle.

Our Mexican fishery operates in full compliance with the Inter-American Tropical Tuna Commission (IATTC), the Regional Fishery Management Organization of which Mexico is a member. Importantly, the fishing fleet complies with the very rigorous and internationally-lauded Agreement on International Dolphin Conservation Program (AIDCP), a legally binding multilateral conservation agreement within the IATTC. The AIDCP was awarded the by the United Nations Food and Agriculture Organization in 2005 for its “unqualified success” in protecting dolphins and ensuring the sustainability of fishing in the EPO. The Margarita Lizárraga Medal is awarded every two years to an organization or person that has served with distinction in the application of the FAO Code of Conduct for Responsible Fisheries. The program is supported by global NGOs and governments as an example of one of the most rigorous and effective independent observer programs in the world.

The fishery is also subject to the national competent authority governing the fishery in Mexico, CONAPESCA, its associated scientific body INAPESCA, and a dedicated research unit that supports and monitors the AIDCP program, FIDEMAR.



## Appendix II - Tuna fishing in association with dolphins

To address this scope eligibility change, readers may find it relevant to understand the nature of dolphin-associated fishing.

The Northeastern Tropical Pacific purse seine yellowfin and skipjack tuna fishery, along with other national fleets fishing in the Eastern Tropical Pacific under the management of the IATTC, are tuna fisheries that fish in-association with dolphins. These fisheries are executed by Class 6 purse seine fishing vessels (>363 MT hold capacity) that are an average of 75 meters in length, stay at sea for 40-60 days and are staffed by a captain, an observer and 24 crew.

All vessels are obliged to carry 100% observer coverage, provided by both the international IATTC observer program as well as observers from national programs: for the vessels in question, national observers are provisioned by the Mexican national program (PNAPPD).

Observers ensure vessels gather scientific data for management of tuna, ETP species, and execute detailed observations of all interactions with dolphins using procedures set by the AIDCP that are both more detailed and extensive than traditional observer programs in other purse seine fisheries globally, including the WCPO.

Vessels target large, mature yellowfin tuna that naturally school under floating objects which often include natural log sets, flotsam and mobile marine mammals. Given the relative rarity of schools, tuna are spotted using some combination of spotter helicopters, bird radars, sonar and binoculars. Pods of dolphins, flock of sea birds or other sea life often gather in feeding aggregations that may all signal the potential presence of target tuna species.

When helicopters are used to increase search efficiency, they circle the boat in concentric circles, seeking out signs of tuna. Once a school is sighted, speed boats are lowered onto the water to keep the tuna from scattering as the slower moving purse seine vessel moves toward the school. Once at the fishing site, the net is lowered into the water and a small skiff is used to anchor one end of the net while the main mother ship drives in an arc around the school of tuna. Once encircled (the net is fully set), the bottom of the net is closed ("pursed") and when 2/3 of the net is retrieved, the vessel initiates a "backdown procedure" forming an elongated channel, that assists in releasing dolphins alive. The net used when fishing in-association is modified to address mitigation with: 1) a special arrangement of floats on the net to minimize surface entanglement of dolphins, and 2) a special safety panel at the end of the net, known as the "Medina Panel". The forward movement of the boat causes water to flow against the "Medina Panel," pushing it down and dropping the net several meters below the surface. Dolphins are swept out, or able to swim free. If necessary, trained divers in the water assist dolphins to exit the net.

## **Appendix III – Proposed scope eligibility change related to marine mammals in the Fisheries Standard V3.0**

The proposed scope eligibility change and associated guidance, read as follows:

*1.1.2.3 The CAB shall confirm that the client or client group does not include any entity that intentionally harasses or intentionally kills marine mammals.*

*a. The CAB shall interpret the term “intentionally” as any action which is not deemed to be “incidental” to fishing operations.*

*i. The term “incidental” describes consequences or results which were neither intended nor foreseeable.*

*b. The CAB shall interpret the term “harasses” in the context of 1.1.2.3. as any act of pursuit, torment, or annoyance which:*

*i. has the potential to injure a marine mammal in the wild, or*

*ii. has the potential to disturb a marine mammal in the wild by causing disruption of behavioural patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering*

*c. If the CAB determines that an entity that belongs to a certified client group intentionally harasses or intentionally kills marine mammals, the CAB shall consider the entity as having become out of scope and shall withdraw it from the certificate or client group.*

*i. The CAB shall make a determination as per 1.1.2.3.c. based on information that has been independently verified.*

*ii. The CAB shall confirm that any entity directed to withdraw, as per 1.1.2.3.c., cannot be eligible for MSC certification for a period no less than 2 years from the determination made in the context of 1.1.2.3.c.*

*iii. The CAB shall interpret the period of ineligibility, as defined in 1.1.2.3.c. ii., to be a period of no less than 2 years from the date of certification, if information supporting the determination is provided to the CAB prior to certification.*

*iv. The CAB shall interpret the period of ineligibility, as defined in 1.1.2.3.c.ii., to be a period of no less than 2 years from the date of publication of the relevant surveillance report/expedited report, if information supporting the determination is provided to the CAB following certification.*

### **GS1.1.2.3 Intentional harassment and intentional killing of marine mammals ▲**

*The intent of the requirement is to exclude entities which are determined to be intentionally harassing or killing marine mammals whilst undertaking fishing activities (e.g., setting or deploying fishing gear).*

*Examples of these practices may include the intentional pursuit and encirclement of marine mammals with fishing gear (e.g., purse nets) and vessels. Additionally, it is not the intent of this MSC that the following practices are ordinarily deemed to be forms of “intentional harassment or intentional killing”:*

*[The use of non-lethal deterrent devices aimed at marine mammals from damaging the catch, or gear, or otherwise deployed to reducing entanglement risk, unless it’s demonstrated that their continued deployment/use causes injury to marine mammals. These devices should not include firearms].*

*The intent of this requirement is that it should apply to specific vessels or groups of vessels as defined under FCP 7.24.5.2, which are implicated in the intentional harassment or killing of marine mammals.*

*Figure G1 illustrates the process for removing an entity from an MSC certified fishery. If an entity has been removed from a Unit of Certification due to the intentional harassment or killing of marine mammals, that entity may request to re-enter the Unit of Certification once they can demonstrate that 2 years have passed since the CAB determination. In this instance, the CAB should follow requirements in Section 7.27*

## Appendix IV – Alignment of Different forms of tuna fishing against the MSC's Operational Criteria

B. Operational Criteria Fishing operation shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

Operational Criteria	Issues	EPO Alliance UoAs	EPO Free school UoAs	EPO FAD UoAs	EPO LL UoAs
12. Make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;	Practices to avoid capture of non-target species.	Has practices designed to avoid the capture – and minimize the mortality - of non-target species	Has practices designed to avoid the capture – and minimize the mortality - of non-target species, many of which are juveniles.	Has practices designed to avoid the capture – and minimize the mortality - of non-target species, <u>many of which are ETPs.</u>	Has practices designed to avoid the capture – and minimize the mortality - of non-target species, <u>many of which are ETP.</u>
	Gear selectivity	Is most efficient tuna gear type able to avoid non-target size/age classes	Is poorly able to avoid non-target size/age classes of tuna	Is poorly able to avoid non-target size/age classes of tuna <u>and many ETP species.</u>	Is poorly able to avoid non-target size/age classes of tuna <u>and many ETP species.</u>
13. Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;	Habitat impacts	N/A	N/A	N/A	N/A
14. Does not use destructive fishing practices such as fishing with poisons or explosives;	Poisons or explosives	Use of explosives (flares) has occurred on vessels out of scope of the UoA and prior to 2016. Incidents were investigated at the time of full assessment by the CAB.	N/A	N/A	N/A

15. Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;	Target tuna waste	Very low levels of operational tuna waste, large mature individuals.	Low level of operational tuna waste (juvenile size classes are problematically marketable).	Low level of operational tuna waste (juvenile size classes are problematically marketable).	Low levels of operational tuna waste, large mature individuals.
	Non-target, and ETP waste	Low waste of non-target species and intermediate waste of ETP species.	Intermediate waste of non-target species and intermediate waste of ETP species	High waste of non-target and ETP species	High waste of non-target and ETP species
	Gear loss	No systematic loss of fishing gear	No systematic loss of fishing gear	High and intentional release/ loss of fishing gear.	No systematic loss of fishing gear
16. Be conducted in compliance with the fishery management system and all legal and administrative requirements; and	Observer coverage	100% observer coverage on all vessels and additional AIDCP program.	100% observer coverage on all vessels: no additional programs.	100% observer coverage on all vessels no observer coverage on non-instrumented FADs	5% observer coverage on all vessels: no additional programs.
	ETP limits	Small and strictly enforced numeric vessel-level cap on key ETP mortalities.	No vessel-level caps on key ETP mortalities.	No vessel-level caps on key ETP mortalities.	No vessel-level caps on key ETP mortalities.
	Observed transshipment (key traceability risk)	No unobserved high seas transshipment	No unobserved high seas transshipment	No unobserved high seas transshipment	Frequent unobserved high seas transshipment
	Voting history supporting key CMMs	National delegation of relevant UoA supports key CMMs	National delegations of relevant UoAs do/don't support key CMMs	National delegations of relevant UoAs do/don't support key CMMs	National delegations of relevant UoAs do/don't support key CMMs
16. Be conducted in compliance with the fishery management system and all legal and administrative requirements; and		High degree of cooperation via 100% observer coverage and additional information collected via AIDCP program.	High degree of cooperation via 100% observer coverage.	High degree of cooperation via 100% observer coverage.	Intermediate cooperation with 5% observer coverage.
17. Assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.		Full compliance reporting these data by Mexico flag state.	Intermediate reporting of these data by certified UoAs' flag states	Intermediate reporting of these data by certified UoAs' flag states.	Intermediate – low reporting of these data by certified UoAs' flag states.

## **Appendix V – Articles from the FAO Code of Conduct for Responsible Fishing for MSC to Consider with Respect to the Proposed Scope Change (underlining ours).**

Article 4.1 directs "All members and non-members of FAO, fishing entities and relevant sub- regional, regional and global organizations, whether governmental or non-governmental, and all persons concerned with the conservation, management and utilization of fisheries resources and trade in fish and fishery products should collaborate in the fulfillment and implementation of the objectives and principles contained in this Code."

6.4 Conservation and management decisions for fisheries should be based on the best scientific evidence available, also taking into account traditional knowledge of the resources and their habitat, as well as relevant environmental, economic and social factors. States should assign priority to undertake research and data collection in order to improve scientific and technical knowledge of fisheries including their interaction with the ecosystem. In recognizing the transboundary nature of many aquatic ecosystems, States should encourage bilateral and multilateral cooperation in research, as appropriate.

6.6 Selective and environmentally safe fishing gear and practices should be further developed and applied, to the extent practicable, in order to maintain biodiversity and to conserve the population structure and aquatic ecosystems and protect fish quality. Where proper selective and environmentally safe fishing gear and practices exist, they should be recognized and accorded a priority in establishing conservation and management measures for fisheries. States and users of aquatic ecosystems should minimize waste, catch of non-target species, both fish and non- fish species, and impacts on associated or dependent species.

7.6.4 The performance of all existing fishing gear, methods and practices should be examined and measures taken to ensure that fishing gear, methods and practices which are not consistent with responsible fishing are phased out and replaced with more acceptable alternatives. In this process, particular attention should be given to the impact of such measures on fishing communities, including their ability to exploit the resource.

7.6.5 States and fisheries management organizations and arrangements should regulate fishing in such a way as to avoid the risk of conflict among fishers using different vessels, gear and fishing methods.

7.6.9 States should take appropriate measures to minimize waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species. Where appropriate, such measures may include technical measures related to fish size, mesh size or gear, discards, closed seasons and areas and zones reserved for selected fisheries, particularly artisanal fisheries. Such measures should be applied, where appropriate, to protect juveniles and spawners. States and sub-regional or regional fisheries management organizations and arrangements should promote, to the extent practicable, the development and use of selective, environmentally safe and cost effective gear and techniques.

### 8.5 Fishing gear selectivity

8.5.1 States should require that fishing gear, methods and practices, to the extent practicable, are sufficiently selective so as to minimize waste, discards, catch of non- target species, both fish and non-fish species, and impacts on associated or dependent species and that the intent of related regulations is

not circumvented by technical devices. In this regard, fishers should cooperate in the development of selective fishing gear and methods. States should ensure that information on new developments and requirements is made available to all fishers.

8.5.2 In order to improve selectivity, States should, when drawing up their laws and regulations, take into account the range of selective fishing gear, methods and strategies available to the industry.

8.5.3 States and relevant institutions should collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies.

8.5.4 International cooperation should be encouraged with respect to research programmes for fishing gear selectivity, and fishing methods and strategies, dissemination of the results of such research programmes and the transfer of technology.

8.11.4 States should ensure that the authorities responsible for maintaining cartographic records and charts for the purpose of navigation, as well as relevant environmental authorities, are informed prior to the placement or removal of artificial reefs or fish aggregation devices.

**Appendix VI – Examples of fisheries with marine mammal interactions, directly affected by the proposed scope change.**

The fisheries in this table represent examples of MSC certified fisheries in which the proposed scope change will effect, given the marine mammal interactions that have occurred or continue to occur in these fisheries.

<b>Name of MSC Certified Fishery</b>	<b>Status (Certified/ In assessment)</b>	<b>Duration in MSC system (when first certified)</b>	<b>Gear type</b>	<b>Main target species</b>	<b>Species of marine mammal interacted with</b>	<b>Ocean Region</b>
<b>Joint Demersal Fisheries in the North Sea and Adjacent waters</b>	Certified	Certified 31 Oct 2019	10 types of demersal fishing gears	Angler Fish, Atlantic Cod, Haddock, Hake, Ling. Megrin. Plaice, Saithe, Dover Sole, Tusk, Whiting, Norway Lobster, Northern Prawn	Harbor Porpoise:	North Sea (Atlantic)
<b>Bering Sea and Aleutian Islands and Gulf of Alaska Pollock</b>	Certified	Certified 12/17/2020	Mid-water trawl	Pollock	29 species of marine mammal known to exist in the geographical area of the fishery; Bearded seal, Dall's porpoise, Fin whale, Harbor seal, Harbor seal, Humpback whale, Northern elephant seal, Northern fur seal, Ribbon seal, Ringed seal, Spotted Seal, Stellar sea lion	Bering Sea Aleutian Islands and Gulf of Alaska
<b>Australian Western Rock Lobster</b>	Certified	Certified 3/1/2000	Baited Pots	Rock Lobster	Humpback Whale, Southern right whales, sea lions,	Western Australia Southern Ocean
<b>US North Pacific Halibut and Sablefish</b>	Certified	Certified 4/18/2006	Bottom-set longline hook and line gear; longline pot gear	Halibut and Sablefish	Sperm whales; humpback whales	North Pacific



<b>Pacific Hake mid-water trawl</b>	Certified	Certified 11/19/2010	Mid-water trawl	North Pacific Hake	California Sea Lions, Stellar sea lions, elephant seals, harbor seals, Dall's porpoise, and up to 9 whales species including fin whales, killer whales and grey whales	North Pacific
<b>PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery</b>	Certified	Certified 12/21/2011	Purse Seine on FADs and Non-FAD sets	Skipjack, Yellowfin and Bigeye tuna	False killer whale , short-finned pilot whale, rough-toothed dolphin, Bryde's whale , sei whale.	West-Central Pacific
<b>Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna</b>	Certified	Certified 6/2/2016	Purse Seine :free school, anchored FAD, drifting FAD	Yellowfin and Skipjack tunas	Rough-toothed dolphin, Indo-pacific Bottlenose dolphin, Spinner dolphin, Common dolphin, Common bottlenose dolphin, False killer whale	West-Central Pacific
<b>ANABAC Atlantic unassociated purse seine yellowfin tuna</b>	Certified	Certified 6/25/2021	Purse Seine: Free school sets FSC	Yellowfin only	Baleen whales, humpback whales	Eastern Atlantic
<b>Sant Yago TF Unassociated purse seine Atlantic yellowfin tuna fishery</b>	Certified	Certified 3/5/2019	Purse Seine: Unassociated sets	Yellowfin	24 cetaceans of four species captured; Risso's dolphin; Short-finned pilot whales, Fin whales and Humpback whales	Eastern Atlantic
<b>Micronesia Skipjack, Yellowfin and Bigeye Tuna Purse Seine Fishery</b>	Certified	Certified 8/5/2021	Purse seine unassociated sets	Yellowfin, Skipjack and Bigeye	common dolphin, rough-toothed dolphin and spinner dolphin	West-Central Pacific

**Appendix VII – Fisheries that may be affected by the proposed scope change via changes in scoring, if there are impacts to IATTC management.<sup>26</sup>**

The tuna fisheries listed in Appendix VII, MSC Certified and/or In Assessment may also be affected by the proposed scope change via scoring issues, because of their impacts on the IATTC management regime.

<b>Name of MSC Certified Fishery</b>	<b>Status (Certified/In assessment)</b>	<b>Duration in system (when first certified)</b>	<b>Gear type</b>	<b>Main target species</b>
<b>AAFA and WFOA North Pacific Albacore fishery</b>	Certified	Certified 8/24/2007	Pole and Line; troll line	Albacore
<b>AAFA and WFOA South Pacific Albacore fishery</b>	Certified	Certified 9/4/2007	Pole and line; troll /Jig	Albacore
<b>AGAC four oceans Integral Purse Seine Tropical Tuna Fishery (Western and Central Pacific Ocean)</b>	In Assessment	NA	Purse seine on FADs FSC	Yellowfin, Skipjack and Bigeye
<b>PNG Fishing Industry Association's purse seine Skipjack &amp; Yellowfin Tuna Fishery</b>	Certified	Certified 5/11/2020	Purse Seine: unassociated sets (free school), anchored FAD sets, and drifting FAD sets	Skipjack, Yellowfin and Bigeye
<b>PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery</b>	Certified	Certified 12/21/2011	Purse Seine on FADs and Non-FAD sets	Skipjack, Yellowfin and Bigeye
<b>Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna</b>	Certified	Certified 6/2/2016	Purse Seine: free school, anchored FAD, drifting FAD	Yellowfin and Skipjack
<b>Eastern Pacific Ocean tropical tuna - purse seine (TUNACONS) fishery</b>	In Assessment	NA	FADs and free school sets	Yellowfin
<b>Micronesia Skipjack, Yellowfin and Bigeye Tuna Purse Seine Fishery</b>	Certified	Certified 8/5/2021	Purse seine unassociated sets	Yellowfin, Skipjack and Bigeye

<sup>26</sup> Many of the WCPFC fisheries operate in the WCPFC and IATTC overlapping area. Under a failed IATTC, their activities in the overlapping area could be considered unregulated (or IUU).

<b>Eastern Pacific Purse Seine Skipjack and Yellowfin tuna fishery (FSC and FAD set fishery)</b>	In Assessment	NA	Purse Seine on FADs and FSC	Skipjack and Yellowfin
<b>US Pacific Tuna Group Purse Seine FSC and FAD Set Fishery</b>	In Assessment	NA	Purse Seine on FADs and FSC	Skipjack, Yellowfin & Bigeye



**WAFIC** FISHING  
PEARLING  
AQUACULTURE

4 April 2022

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Dear Sir or Madam

### **MSC FISHERIES STANDARD REVIEW**

The Western Australian Fishing Industry Council (WAFIC) represents the interests of the Western Australian (WA) commercial fishing industry, which is conducted along 12,900kms of coastline.

The WA jurisdiction has been internationally recognised for its high global standards in relation to research, science and fisheries management. Importantly the state has repeatedly demonstrated its sustainability leadership, particularly with over 90% of the fisheries being accredited and managed under the Marine Stewardship Council (MSC) regime.

WAFIC **does not agree** with the efforts being applied to make Fins Naturally Attached (FNA) a global standard for sustainable shark fishing. We recognise there are serious shortcomings in the management of many international fisheries, particularly in the northern hemisphere and particularly with sharks. However, the excellent professional efforts of researchers, fisheries managers and commercial fishers with regard to sustainable shark fishing in WA should not be penalised by the lowest common denominator records of overseas jurisdictions.

There is no tropical WA shark industry in WA and the focus is instead on temperate fisheries where the purpose of the activity is high-quality shark meat for human consumption and the sale of fins is a minor by-product. As such the prime financial incentive is to retain the trunks as they are worth considerably more in the market than the fins. However, the burdensome FNA approach is supposedly designed by environmentalists to prevent the finning of sharks – that is the removal of fins for sale and the associated discard of the body trunks. Shark finning is illegal in WA and there have been no examples of its occurrence in living memory.

Furthermore, there are strict compliance schemes in place where inspectors regularly check to ensure the numbers of unattached fins retained can match the number of trunks, thereby verifying that nothing has been discarded. There is also a strong emphasis on research within the WA Department of Primary Industries and Regional Development (DPIRD) and Environmental Risk Assessments (ERA) are conducted to ensure a scientific basis to its sustainable management settings.

This may not be the case in other Australian or international jurisdictions who have introduced the FNA requirement, however WA should not be penalised for their management shortcomings.

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WAFIC has no objection to the MSC standard stating that **“the FNA standard should be applied in the absence of alternative scientifically-based compliance measures to eliminate the practice of shark finning”**.

Given Western Australia’s outstanding international record of sustainable fisheries management we trust you see the genuine nature of our position and seek your support for our position over this matter.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Darryl Hockey', with a stylized flourish at the end.

Darryl Hockey  
**CHIEF EXECUTIVE OFFICER**