



SECOND MEETING OF THE OCEAN MODELING FORUM WORKING GROUP ON MARINE MAMMAL BYCATCH NOVEMBER 19-21, 2018 KIRKLAND, WASHINGTON

OVERVIEW

The Ocean Modeling Forum's working group on marine mammal bycatch

The Ocean Modeling Forum has formed a Working Group to develop scientific tools to assess data sets and methods for evaluating the rates and impacts of bycatch on marine mammal populations, in support of nations working to comply with the Marine Mammal Protection Act (MMPA) Import Provisions issued by the National Oceanic and Atmospheric Administration (NOAA). Under this new rule, nations that export fish and fish products to the U.S. are asked to adhere to bycatch standards comparable to those of the U.S.

Working Group Charge

The Working Group will produce scientific tools aimed at assisting nations in their efforts to apply to NOAA for a comparability finding. Led by Dr. André Punt, University of Washington (UW) and the UW Ocean Modeling Forum, and co-chaired by Dr. Tessa Francis, UW Tacoma and Dr. Rob Williams, Oceans Initiative, the Working Group will identify and recommend data sets and methods that could be used to assess marine mammal bycatch and its impacts, with a focus on data-poor fisheries and/or poorly monitored marine mammals. The Working Group will meet four times over 2018 and 2019, and will also develop user-friendly software that nations can tailor to their needs and use to evaluate potential management strategies.

For detailed project outlines and a summary of the first workshop, please visit [our project page](#).

Second Workshop Summary

The Working Group members met for the second time on November 19-21, 2018, in Kirkland, Washington. Workshop participants included Working Group members, invited management experts from NOAA, and several observers from government and NGOs.

Day one of the agenda included presentations and updates from each project lead followed by feedback and discussion. Additionally, members and invited experts from NOAA updated the group on relevant legislation and communications, including the [project webinar](#) held by the Working Group co-chairs that occurred between meetings. Day two of the workshop included presentations from the Lenfest

Ocean Program, observers and Working Group members to provide additional context for the Working Group, followed by break-out groups dedicated to fleshing out outlines and making progress on each project. Finally, during day three, participants identified next steps for each project, including writing assignments, and ended with a productive discussion, presentations and feedback from meeting observers.

The Working Group will meet again in June 2019 to discuss full product drafts.

Working Group Project Updates

During the workshop, the Working Group discussed progress made since the first meeting in May 2018 and continued to move forward on individual products through presentations, group discussions, and break-out groups.

Project 1: Abundance estimation methods best practices

Lead: Philip Hammond

Product: A synthesis document

In this project, the Working Group will produce a comprehensive synthesis of methods that can be used to estimate marine mammal abundance, with the aim of providing a “best practices” resource for users. During the second meeting, project lead Dr. Philip Hammond expanded the project outline and identified Working Group members who will be responsible for writing sections of the document.

Discussion for this project focused on:

- The intended audience, which includes scientists, technical advisors, and managers with a range of experience in estimating marine mammal abundance. To address this, the synthesis document will include technical and non technical information.
- Enhancing the accessibility and utility of the product for end-users.
- Incorporating a decision tree that will guide users through the document and potential approaches based on their unique situation and available resources.

Project 2: Best practices for marine mammal bycatch estimates

Lead: To Be Determined

Product: A synthesis document

In this project, the Working Group will synthesize methods and provide an overview of best practices used to estimate rates and levels of marine mammal bycatch in fisheries, meaning the number of pinnipeds, cetaceans, and other marine mammals that die entangled in fishing nets or as a result of interactions with other fishing gear. Projects 1 and 2 will have a similar structure so they can be used in concert and published as companion pieces.

During the second meeting, the Working Group developed a detailed document outline and identified Working Group members who will be responsible for writing sections of the document.

Discussion for this project focused on:

- The intended audience, which includes scientists, technical advisors, and managers with a range of experience in estimating marine mammal bycatch. To address this, the synthesis document will include technical and non-technical information.
- Enhancing the accessibility and utility of the product for end-users.
- Incorporating a decision tree that will guide users through the document and potential approaches based on their unique situation and available resources.



Project 3: A user-friendly app for exploring bycatch rates

Lead: Margaret Siple

Product: Web-based app

For this project, the Working Group is developing a user-friendly, interactive tool that allows users to visually explore the impacts of different bycatch-related management actions on marine mammal abundance, given limited information about the fishery or the marine mammal of interest (i.e., abundance, current bycatch, and productivity).

During the second meeting, project lead Dr. Margaret Siple presented the latest version of the Web-based app, which is still in its development phase. Dr. Siple also highlighted the motivation for this project, which is to improve assessment capabilities for countries that have limited data or a lack of access to a formal assessment capacity. The desired outcome of this project is behavioral change, on the scale of individual fisheries or at the national level, based on the information explored in the app.

Discussion centered around establishing these actions items for the next meeting:

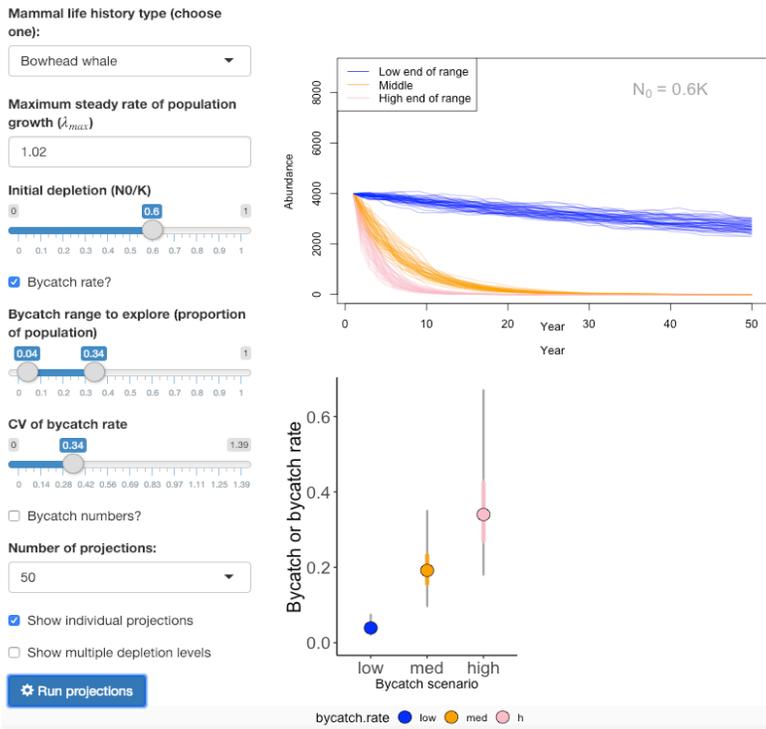
- Incorporate a wider breadth of marine mammal life history parameters available for selection by users.
- Expand the ways in which users will be able to interface with the app, allowing for more flexibility in how users can add information. This includes offering multiple tabs that are designed for a range of information input by users, from all defaults to an abundance of individualized information.
- Enhance the usability of the product, including.
 - App development via product testing by potential users.
 - Multilingual versions
 - A glossary tab that provides definitions of relevant words and parameters used in the app so it is accessible to users with a variety of backgrounds and experience levels.
 - Ways to package and communicate the app to other countries, through webinars, workshops, etc.



Figure 1

BYCATCH IMPACTS EXPLORATION TOOL

Sample visualization



Project 4: Extended evaluation of the PBR approach

Lead: André Punt

Product: A publication in an academic journal

The Potential Biological Removals (PBR) approach is widely used to provide management benchmarks for human-induced removals of top predators, in particular marine mammals. In this project, we will further evaluate the PBR approach by exploring the implications of scenarios that include environmental as well as demographic stochasticity, catastrophic events, and trends in biological parameters such as carrying capacity and expected natural survival.

During the second meeting, project lead Dr. André Punt reviewed the model used to further evaluate PBR and demonstrated possible scenarios that can be explored.

Discussion centered around establishing actions items for the next meeting:

- Incorporate scenarios into the model to connect and inform management. This discussion was informed by presentations by Maritza Sepulveda and Guðjón Sigurðsson who reviewed Chilean and Icelandic (respectively) case studies regarding marine mammal bycatch. They highlighted available data to establish “real-world” scenarios that can be tested.
- Extend and enhance input parameters so the model can be run for multiple species of marine mammals.

ADDITIONAL PRIORITY NEEDS

The working group identified two additional projects as high priority. While these projects are beyond the budget and capacity of this effort, the Working Group agreed it would be extremely valuable if these projects are undertaken at some point.



Project 5: Fisheries characterization and bycatch exploration tools

Lead: Paul Wade

Fisheries Characterization and Bycatch Exploration Tools (FICBET)

Products: Two tools

1. A Fisheries Characterization Tool, to help organize information about fisheries that will be needed by countries requesting a comparability finding.
2. A Bycatch Exploration Tool, which would use the information aggregated and organized in the Fisheries Characterization Tool to explore potential levels of bycatch in a country's fisheries.

During the second meeting, members reviewed the project scope and explored potential funding avenues. The group also discussed project audiences, including fisheries managers and scientists interested in contextualizing their conservation priorities. Active items for this project include:

- An updated narrative
- Exploration for funding
- Development of a formal pre-proposal

Project 6: Area-Based management tools

Lead: Rob Williams

Product: A publication in an academic journal

Area closures offer a practical way for countries to demonstrate bycatch reduction in the absence of marine mammal abundance estimates requiring costly systematic surveys. The Working Group saw value in exploring a case study (e.g., porpoise and dolphin bycatch in BC salmon gillnet fisheries) in which there is spatially explicit data on marine mammal density and fishing effort. This could be used to estimate the proportion of an area that would have to be closed to fishing effort (without displacing fishing effort outside of closure areas) to reduce bycatch to a level below PBR.

During the second meeting, members reviewed the project scope and explored potential funding avenues.

Action items for this project include:

- An updated narrative
- Exploration for funding
- Development of a formal pre-proposal

COMMUNICATIONS AND OUTREACH

This workshop had multiple discussions about developing an outreach and communication strategy for the Working Group products to ensure that they are meaningful and accessible to the intended users. In collaboration with the Lenfest Ocean Program, the Working Group will develop a strategy that lays out how best to message and package products, a roll out plan, and options for dissemination.

This discussion focused on:

- Identifying product end-users and involving them in product testing.
- Creating an outreach and communication strategy that highlights specific communication products.
- Establishing networks to disseminate the work being done by the group.
- Ensuring that products are packaged in a way that makes them globally accessible.
- Identifying activities, including workshops, webinars, classes, that will be useful to disseminate the work.

The next Marine Mammal Bycatch Working Group meeting will be in June, 2019, in Iceland.

WORKSHOP PARTICIPANTS

Working group members

- André Punt, Chair, University of Washington
- Tessa Francis, Co-Chair, University of Washington Tacoma
- Rob Williams, Co-Chair, Oceans Initiative
- Philip Hammond, University of St. Andrews
- Jeffrey Moore, NOAA Southwest Fisheries Science Center
- Andrew Read, Duke University (not present)
- Randall Reeves, Okapi Wildlife Associates
- Maritza Sepulveda, University of Valparaiso
- Margaret Siple, University of Washington
- Genoa Sullaway, Assistant, University of Washington
- Gisli Vikingsson, Marine and Freshwater Research Institute (not present)
- Paul Wade, NOAA National Marine Mammal Laboratory
- Alex Zerbini, Contractor, NOAA National Marine Mammal Laboratory

Invited experts

- Kristy Long, NOAA Fisheries, Office of Protected Resources

Observers

- Katie Dekis, AIS Observers
- Matt Gummery, Marine Stewardship Council
- Dennis Heinemann, Marine Mammal Commission
- Ellen Hines, San Francisco State University
- Jason Landrum, Lenfest Ocean Program
- Miki Takada, Marine Stewardship Council
- Sarah Uhlemann, Center for Biological Diversity
- Colleen Weiler, Whale and Dolphin Conservation

CONTACT

The Marine Mammal Bycatch Working Group is a collaboration between the Ocean Modeling Forum and Oceans Initiative, and is funded by the Lenfest Ocean Program. For any questions, please contact Tessa Francis, Managing Director, the Ocean Modeling Forum, at tessa@uw.edu, or Emily Knight, Manager, Lenfest Ocean Program, at eknight@lenfestocean.org.

The next meeting of the working group will be in June, 2019.



The Ocean Modeling Forum helps managers, scientists, and the ocean community use models to take on complex ocean issues. We bring expert modelers together with scientists and participants across disciplines. We help managers frame questions, understand the strengths and limitations of different models, and learn how to incorporate models in their work. By creating an environment for experimentation and learning, the OMF is building the innovative models needed to tackle the ocean challenges of the future, and a community to support that exploration. Visit us at www.oceanmodelingforum.org and follow us [@oceanmodeling](https://twitter.com/oceanmodeling).



The Lenfest Ocean Program is a grantmaking program that funds scientific research that informs decisions about the world's oceans. Supported research projects target science needs related to pressing ocean policy and management challenges, generating adaptive recommendations, seeding innovation, and empowering people with information. The Program was established in 2004 by the Lenfest Foundation and is managed by The Pew Charitable Trusts. Visit us and sign up for our newsletter at www.lenfestocean.org, and follow us [@lenfestocean](https://twitter.com/lenfestocean).

901 E Street NW,
Washington DC 20004

E info@lenfestocean.org
P 202.540.6389

lenfestocean.org

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SUPPORTING SCIENCE
AND COMMUNICATING
RESULTS.