

# SANCTUARY ADVISORY COUNCIL



*Linda Sturgis, Chair  
Casey Dennehy, Vice-Chair  
Steve Shively, Secretary*

January 20, 2023

## *Representation*

*Citizen-At-Large  
Conservation  
Education  
Fishing  
Marine Industry  
Research  
Tourism/Economic  
Development*

*Tribal Government:  
Hoh Tribe  
Makah Tribe  
Quileute Tribe  
Quinault Indian Nation*

*Local Government:  
Clallam County  
Jefferson County  
Grays Harbor County*

*Washington State:  
Dept. of Ecology  
Dept. of Fish and  
Wildlife  
Dept. of Natural Resources  
Coastal Marine Resource  
Committees*

*Federal Government:  
NOAA Fisheries  
Olympic National Park  
U.S. Coast Guard  
U.S. Fish and Wildlife Service  
U.S. Geological Survey  
U.S. Navy*

*Artwork: David Sones*

Dear Superintendent Grant,

At the September 30, 2022 Olympic Coast National Marine Sanctuary (OCNMS) Advisory Council (AC) meeting council members accepted the final report of the Whale Reporting Working Group (WRWG). The recommendations were generally but not fully endorsed by all members of the council. Dissenting opinions are noted in the attached addendum.

The AC is interested in the protection of threatened and endangered whale species that depend on OCNMS habitats for critical life processes. The timing is relevant given recent management actions taken to improve Southern Resident Killer Whale (SRKW) conservation, e.g., critical whale habitat designation that overlaps OCNMS waters, ongoing US Navy Northwest Testing and Training activities with potential acoustic impacts, the US Coast Guard West Coast Port Access Route Study, and the voluntary vessel slow-down at the entrance to the Strait of Juan de Fuca.

While the primary purpose of the working group was to evaluate near-term activities that would reduce acoustic impacts to critical species, the charter allowed for additional whale conservation recommendations. The final 12 recommendations put forth by the WRWG are listed below and explained in the attached report.

### *Recommendations related to shipping and the reduction of acoustic impacts*

1. Vessel Slowdowns\*
2. Vessel Traffic Studies\*
3. Habitat Modeling
4. Whale Desk

### *Recommendations on monitoring*

5. Data sharing and management support
6. Passive Acoustic Monitoring

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7. Visual Surveys
8. Entanglements

*Recommendations on reporting networks*

9. Reporting networks
10. Citizen Science

*Recommendations on coordination*

11. Coordination with Quiet Sound
12. Juan de Fuca Entrance Transboundary Committee for Whale Protection

As the OCNMS AC, we represent a diverse group of constituencies that have a strong interest in sanctuary and marine resource management in the Olympic Coast region. Our role is to advise OCNMS' Superintendent on sanctuary management topics and concerns. We volunteer our time to assist OCNMS in maintaining a transparent, interdisciplinary, and comprehensive management structure for the sanctuary. The opinions and findings of this publication do not necessarily reflect the position of Olympic Coast National Marine Sanctuary, the Office of National Marine Sanctuaries, the National Oceanic and Atmospheric Administration, or the Department of Commerce.

Sincerely,

Linda Sturgis, Chair,  
Olympic Coast National Marine Sanctuary Advisory Council

Attachments: C2 - Makah Addendum, C3 - Whale Reporting Working Group Final Report

## **Makah Addendum to Olympic Coast National Marine Sanctuary Whale Reporting Working Group Recommendation memo**

During the September meeting of the Advisory Council, the Makah Tribal representative expressed concerns of impacts to Makah Fisheries from vessel slowdowns and vessel traffic studies and provided additional recommendations related to the recommendations as a whole. The Makah tribe suggests that prior to implementing the recommendations, OCNMS conduct an analysis and review to ensure consistency with the sanctuary's authority and responsibility, identify where recommendations duplicate existing whale protection efforts, and feasibility of implementation based on sanctuary capacity.

# **Olympic Coast National Marine Sanctuary's Advisory Council Whale Reporting Working Group Recommendations**

September 16, 2022

## **Whale Working Working Group Members**

Rich Osborne (chair), AC-Conservation representative  
Alannah Biega, DFO Species at Risk Marine team  
Alexis Haifley, Sitings Coordinator, Whale Museum of Friday Harbor  
Alisa Lemire Brooks, Orca Network  
Brad Hanson, NOAA NWFSC Ecosystem Science Program  
Brendan Harris, Chief, Waterways Management Branch  
Candice Emmons, NOAA NWFSC  
Cory Sonnega, USCG  
Dan Ayres, AC-WDFW  
David Wiley, NOAA SBNMS  
Dawn Grebner, AC-Naval Undersea Warfare Center Division Keyport  
Donna Sandstrom, Founder/Executive Director, The Whale Trail  
Fred Felleman, Port of Seattle  
Grace Ferrara, Acting Branch Chief, Protected Resources Division, West Coast Region  
Hanna Miller, NOAA Protected Resources Division, West Coast Region  
Hannah Wellman, Knauss Fellow, Marine Mammal Commission  
Howard Garret, Co-founder, Director and President of the Board for the Orca Network  
Jason Wood, SMRU Consulting  
Jeff Pelton, Regional Manager, Whales Initiative Transport Canada  
Jennifer Hagen, Quileute Natural Resources  
Jenny Atkinson Executive Director, The Whale Museum of Friday Harbor  
Jenny Waddell, NOAA OCNMS  
Jess Morten, NOAA CINMS  
Jessica Scott, Ocean Wise  
John Calambokidis, Cascadia Research  
John Moriarty, USCG  
John Veentjer, Puget Sound Marine Exchange  
Julie Watson, WDFW  
Kendra Moore, DFO Acting Regional Manager, Marine Mammals  
Krista Trounce, Vancouver Fraser Port Authority - ECHO Program  
Leila Hatch, NOAA ONMS  
Linda Sturgis, AC-Maritime Industry representative  
Lindsey Peavey-Reeves, West Coast Region Sanctuary Soundscape Monitoring Project  
Coordinator  
Lynn Barre, Branch Chief, Protected Resources Division, West Coast Region  
Marla Holt, NOAA NWFSC  
Michael Carver, NOAA GFNMS  
Nadine Einarson, Transport Canada Quiet Vessel Initiative

Olympic Coast National Marine Sanctuary's Advisory Council  
Whale Reporting Working Group Recommendations

Orla Robinson, Vancouver Fraser Port Authority - ECHO Program  
Peter Thomas, Executive Director, Marine Mammal Commission  
Pike Spector, NOAA OCNMS  
Rachel Aronson, Quiet Sound Program Director, Maritime Blue  
Rangyn Lim, DFO Species at Risk Program Recovery Planner for Resident Killer Whales  
Regan Nelson, NRDC Senior Advocate, Oceans Marine Mammal Protection Project  
Ryan Ford, Vancouver Fraser Port Authority - ECHO Program  
Samara Haver, Oregon State University; NOAA NMFS  
Scott Veirs, Coordinator, Orcasound hydrophone network; Chair, PSEMP Marine Mammal Work Group  
Sean Hastings, NOAA CINMS  
Sonia Simard, Vancouver Fraser Port Authority - ECHO Program  
Sonja Henneman, Manager/Senior Policy Advisor at Transport Canada  
Stephanie Sleeman, AC-US Navy representative  
Susan Berta, Orca Network  
Tara Galuska, Orca Recovery Coordinator, Governor's Salmon Recovery Office  
Vanessa Zobell, Scripps Whale Acoustic Lab, Scripps Institution of Oceanography  
Victoria Knorr, WDFW  
Virgil Zetterlind, Conserve.iO

**OCNMS Staff Support**

George Galasso, OCNMS Deputy Superintendent  
Chris Butler-Minor, OCNMS AC Coordinator  
Kennedy Cameron, OCNMS Americorps

**Preamble**

The Whale Reporting Working Group (WRWG) was established by the Olympic Coast National Marine Sanctuary (OCNMS) Advisory Council (AC) to provide recommendations on the protection of threatened and endangered whale species that depend on OCNMS habitats for critical life processes. It was determined that OCNMS had a need for such a working group to advise on potential involvement of the sanctuary in whale conservation efforts. The timing is relevant given recent management actions taken to improve Southern Resident Killer Whale (SRKW) conservation, e.g., critical whale habitat designation that overlaps OCNMS waters, ongoing US Navy Northwest Testing and Training activities with potential acoustic impacts, the US Coast Guard West Coast Port Access Route Study, and the voluntary vessel slow-down at the entrance to the Strait of Juan de Fuca.

While the primary purpose of the working group was to evaluate near-term activities that would reduce acoustic impacts to critical species, the charter allowed for additional whale conservation recommendations. Since the beginning of the WRWG, additional significant management actions have been taken, such as the implementation of the Swiftsure inbound and outbound slowdown trial. The working group attempted to incorporate these recent external developments of policy and regulation in the final recommendations.

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## Recommendations

The following section lists and describes each of the final recommendations in sequence 1-12, by progressing through the four recommendation areas in order: 1) Shipping and Acoustic Impacts, 2) Monitoring, 3) Reporting Networks, and 4) Coordination. Each recommendation is accompanied by a short editorial paragraph in *italics* that provides context on levels of agreement for the recommendation, and key points of group discussion.

### Recommendations related to shipping and the reduction of acoustic impacts

#### 1. Vessel Slowdowns

Support and continue to be engaged in the ongoing Swiftsure Bank voluntary seasonal vessel speed reduction efforts, for both outgoing traffic and the addition of inbound lanes.

*The working group discussed the ongoing ECHO effort, for which there was a high degree of support. Additional steps including mandatory measures were discussed, but did not receive as high a level of agreement. The use of incentive programs was discussed, and may be worthwhile to investigate.*

#### 2. Vessel Traffic Studies

Work with both the United States Coast Guard and Transport Canada, on current efforts, including the USCG Port Access Routes Study and Transport Canada's Traffic Separation Scheme (TSS) Feasibility Study, to consider changes to vessel traffic routing to reduce acoustic and ship strike impacts on whales within the OCNMS.

*Additional discussion included moving coastal commercial shipping traffic further offshore from OCNMS to reduce acoustic and ship strike impacts on whales within the sanctuary, and to consider the potential impact and feasibility of slowing other vessel types down outside of the shipping lane.*

#### 3. Habitat Modeling

Support and build upon existing whale habitat modeling work to identify when and where voluntary vessel speed reductions can be the most effective.

*The working group had presentations on SRKW critical habitat designations by both Canada and the United States. The current voluntary vessel speed reduction measures are based on the Canadian Science Advisory Secretariat, Science Advisory Report 2021/025.*

#### 4. Whale Desk

Sanctuary should support any efforts for collection of whale presence data, and distribution to commercial mariners in US waters. Build on Canadian Coast Guard efforts to create a marine mammal whale desk.

*A new Canadian Coast Guard service, referred to as the Marine Mammal desk, reports whale sightings in real time and advises vessel traffic by providing enhanced situational awareness of the activities of Southern Resident Killer Whales and other cetaceans, such as humpback and gray whales.*

## **Recommendations on monitoring**

### **5. Data sharing and management support**

Work with existing data-sharing partnerships that are collecting acoustic and visual data on whales for both research and management objectives.

*Sanctuary participation should consider needed infrastructure, e.g., cloud storage, database management, staffing, and reporting.*

### **6. Passive Acoustic Monitoring**

Maintain current regional archival passive acoustic monitoring program at the entrance to the Strait of Juan de Fuca, providing data to regional researchers. Work with partners to establish a real-time passive acoustic monitoring program, i.e., mooring with telemetry, cabled hydrophones, or an AUV (e.g., wave glider, solar-powered, or saildrone).

*A distinction was made between archival and real-time passive acoustic monitoring, noting the cost and complexity of the two approaches. Archival monitoring stores data and is post processed, and is useful for seasonal management, but not dynamic management. This is the approach of current efforts by OCNMS, NMFS and Fisheries and Oceans Canada, and is critical to continue. Discussions on coordinating these efforts among working group members have been occurring. The working group noted that the recent discussions on coordination by US and Canadian researchers should continue. Focusing efforts at the entrance to the Strait of Juan de Fuca was discussed, but was not specifically recommended.*

### **7. Visual Surveys**

Maintain direct visual monitoring of whale occurrence in the sanctuary to ensure there is a method to identify where whale concentrations overlap with ship traffic.

*The working group noted the design of new efforts should generate results that are comparable to previous studies within and near the OCNMS, and the goal of incorporating the OCNMS RV Storm Petrel as a scheduled platform for sampling.*

### **8. Entanglements**

Address OCNMS whale entanglement issues by supporting Washington State Department of Fish and Wildlife's (WDFW) related efforts, and other efforts and coordination along the U.S. West Coast aimed at minimizing and mitigating interactions with fishing gear.

*WDFW presented on "Addressing Marine Life Entanglements in Dungeness Crab Gear" at the March meeting. They explained that in response to increases in marine life entanglements, they are working to bring the Dungeness Crab fishery into compliance with federal regulations and reduce its impact on protected marine species. WDFW has committed to submitting an Incidental Take Permit application and working with the Washington Dungeness crab industry to develop an accompanying Conservation Plan (CP).*



## **Recommendations on reporting networks**

### **9. Reporting networks**

Encourage the use of whale reporting applications in the sanctuary and support ongoing efforts to integrate data from the whale reporting applications into the Whale Report Alert System (WRAS).

*The working group had presentations on both the Whale Alert App and the Whale Report Alert System (WRAS). Significant work is currently being done related to data collection and reporting networks, including efforts of WRWG members independent of the working group.*

### **10. Citizen Science**

Encourage community involvement in reporting whale sightings in and near OCNMS using the Whale Alert App or other methods that feed into WRAS. Ensure data collection surveys include data quality reviews and incorporate sighting effort-correction factors via established methodologies

*While not originally characterized as a citizen science effort, the effort to increase the use of opportunistic Whale Alert App sightings could be accomplished using such an approach.*

## **Recommendations on coordination**

### **11. Coordination with Quiet Sound**

Taking advantage of overlapping interests and geography, coordinate with Quiet Sound on reducing the impacts to Southern Resident Killer Whales from large commercial vessels.

*Quiet Sound is well positioned to address many of the issues addressed by the working group.*

### **12. Juan de Fuca Entrance Transboundary Committee for Whale Protection**

Recommend the OCNMS whale working group evolve beyond its current mission and become a standing ad hoc committee that would support the ongoing transboundary collaboration on marine mammal activities at the western entrance of Juan de Fuca Strait and surrounding area.

*The committee could continue as a regional table for organizations to share, collaborate and plan future acoustic and marine mammal monitoring and management efforts in this transboundary zone. The group could meet annually or more often as transboundary coordination needs arise.*

### **Purpose**

Following the Charter document for the Whale Reporting Working Group (WRWG), its mission was to review the current status of threatened and endangered whales in and adjacent to OCNMS, for the purpose of identifying near-term conservation measures.

To accomplish this the working group reviewed the status of OCNMS area endangered whales and critical habitats, reviewed current monitoring activities within or adjacent to OCNMS, reviewed vessel traffic reporting networks and regional whale reporting networks, and explored how OCNMS operations could interface with existing programs.

The primary focus was to evaluate near-term activities that could reduce acoustic impacts to critical species, and examine related issues associated with ship strikes, entanglements and monitoring critical species presence.

## Meetings

All meetings were conducted remotely using the Google Meet platform. The WRWG met five times on:

- November 12, 2021
- January 13, 2022
- March 9, 2022
- May 13, 2022
- July, 18, 2022

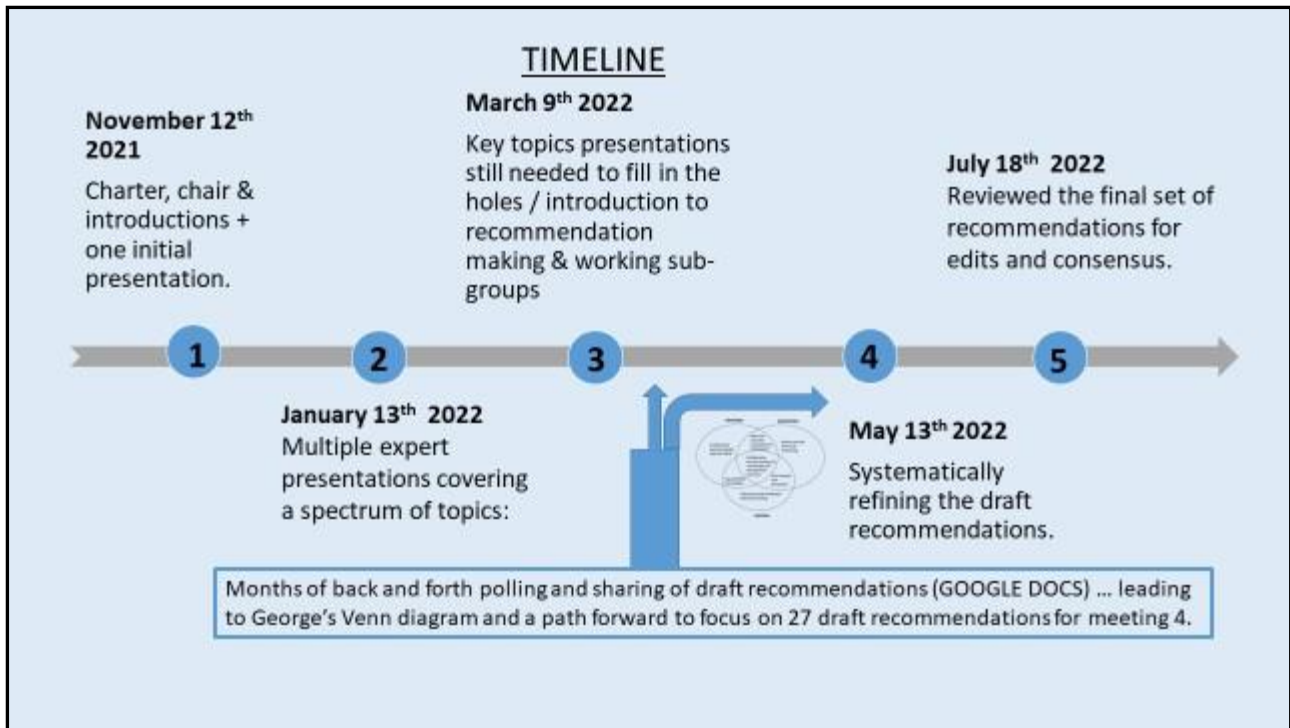
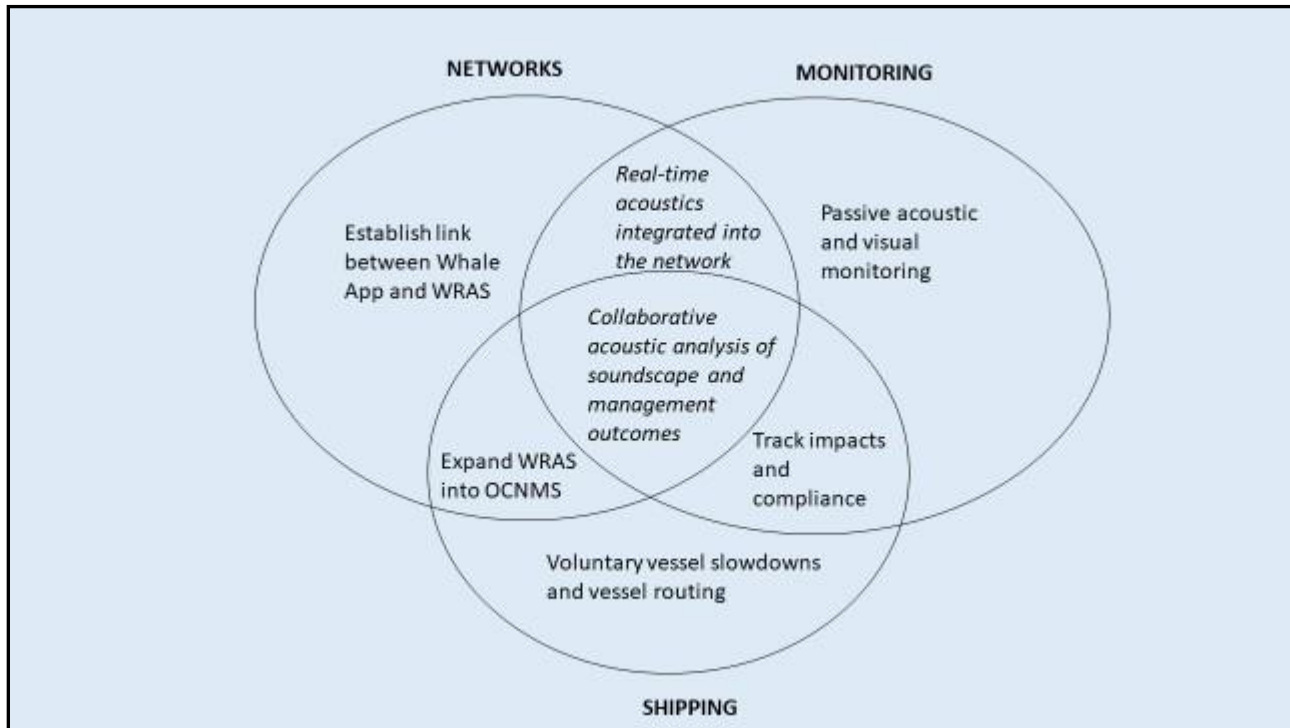


Figure 1 Timeline of the five meetings and their key topics.

## Refining the Recommendations

The transition from the [second iteration](#) of working group recommendations to the third was the core refining process after background presentations and brainstorming, and was primarily accomplished through polling members between meetings. The initial 27 recommendations were lumped together into 12 edited recommendations, in the same four categories: (1) related to shipping and the reduction of acoustic impacts, (2) monitoring, (3) reporting networks, and (4) coordination. A Venn diagram was created to help understand how these categories and their subcomponents fit together with overlaps (Figure 2).



**Figure 2** Venn diagram illustrating links and overlaps for the initial 27 recommendations.

Input for combining categories came from emails, responses to polls, edits to draft documents, and meeting discussions. OCNMS staff reviewed the responses, combining/separating some comments, for clarity and brevity.

The first poll was emailed on 2/10/2022, and was discussed at the 3/9/2022 meeting. Following the March meeting, a form was sent on 3/10/2022, asking working group members if they were willing to be involved in a smaller group to discuss a subset of recommendations. Categories listed were reporting networks, reducing acoustic impacts, and monitoring. A response was requested by 3/18/2022. On 3/23/2022, the poll was reopened, with additional opportunity to provide recommendations, and to join a subgroup. On 3/30/2022, three separate emails were sent to subgroup members, with a list of draft recommendations related to the group.

On 4/12/2022 a 5 page document was shared with the subgroups outlining the working group's preliminary recommendations. The document included both original comments from emails and polls. Subgroup members made recommended changes and provided comments. They were used to create an edited version 2, dated 5/2/2022.

On 5/6/2022, the working group was sent a poll with the edited 27 draft recommendations. They were able to share their level of support for the recommendation, and provide comments. The draft recommendations and the result of the poll were discussed at the 5/13/2022 meeting.

We recommended using the OCNMS Advisory Council [Vessel Incident Working Group final report](#) as a guide for our report to the Advisory Council, and that format was accepted.

## Summary

The need for more collaboration and coordination on whale conservation issues in OCNMS and its adjacent waters was in clear agreement from the working group. Additionally clear was the need to incorporate existing whale conservation efforts under expansion on the Canadian side of the border, as well as the Salish Sea, and National Marine Sanctuaries in California.

The timing for these recommendations is relevant given recent management actions to improve Southern Resident Killer Whale conservation, e.g., critical whale habitat designation that overlaps OCNMS waters, ongoing US Navy Northwest Testing and Training activities with potential acoustic impacts, the US Coast Guard West Coast Port Access Route Study, and the voluntary vessel slow-down protocols at the entrance to the Strait of Juan de Fuca.

The scope of individual and institutional participation in the working group was impressive, provided many perspectives on each topic, lots of discussion, and comfortable levels of consensus; with caveats where noted (see Appendix A). Overall there was definite support for OCNMS's continued participation going forward.

The number of recommendations is larger than originally anticipated and we realize that the sanctuary has a small staff and has many demands on its time. We recommend that the sanctuary consider these recommendations and to continue to work with partners, including working group participants, to consider these recommendations when developing their annual operating plan, and reviewing their management plan.

## Enclosure 1: Overview of Comments and Polling on each Recommendation

The transition from the [second iteration](#) of working group recommendations to the third was the core of the process with the group, and was primarily accomplished through polling members between meetings. The initial 27 recommendations were lumped together into 12 edited recommendations, in the same four categories: (1) related to shipping and the reduction of acoustic impacts, (2) monitoring, (3) reporting networks, and (4) coordination.

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### Recommendations related to shipping and the reduction of acoustic impacts

#### 1. Vessel Slowdowns

##### Reworded Recommendation

Support and continue to be engaged in the ongoing Swiftsure Bank voluntary seasonal vessel speed reduction efforts, for both outgoing traffic and the addition of inbound lanes.

*The working group discussed the ongoing ECHO effort, for which there was a high degree of support. Additional steps including mandatory measures were discussed, but did not receive as high a level of agreement. The use of incentive programs was discussed, and may be worthwhile to investigate.*

**Based on 2nd draft recommendations 3, 6, 7, 9, 10**

3. Support the ongoing transboundary collaboration on marine mammal activities including the ECHO program Swiftsure Bank voluntary seasonal vessel speed reduction efforts, for both outgoing traffic and the proposed addition of inbound lanes.
6. Consider mandatory speed restrictions in areas where there is an unavoidable overlap between high levels of ship traffic and areas of high whale density.
7. Consider the use of incentives in support of vessel speed reductions, similar to those used by California national marine sanctuaries and Protecting Blue Whales and Blue Skies VSR programs.
9. Based on whale distributions, consider seasonal mandatory slowdowns during periods of unavoidable high overlap with high density whale distributions and voluntary slowdowns during periods of lower whale densities.
10. For mandatory slowdowns, determine a level of fine or other consequence of non-compliance that is likely to result in a behavioral change and adherence with the rule.

**Discussion**

**Comments from 2nd draft recommendation 3**

- The ECHO program is excellent
- It should be emphasized that monitoring of the ship noise levels and ideally also the response of whales to VSR efforts is important. This is because if the source level of a vessel is high enough, slowing down could increase impacts on species that are affected more by a low received level for a long duration than a brief exposure to a higher receive level.
- Including continuing to collect and analyze data from OC02.

**Comments from 2nd draft recommendation 6**

- I support it, but is there any such place within the Sanctuary?
- I think this is entirely appropriate within and adjacent to a Sanctuary, and given recent trends in baleen whale occupancy within the Salish Sea, possibly more generally in the region.
- I need more information, this is a big effort to succeed.
- I would like to learn pros/cons of implementation from the ECHO Program's mandatory speed restriction trial at Swiftsure bank before proceeding with this recommendation, although I think it is a good consideration.
- mandatory speed restrictions will be in place north of the TSS. in the TSS should be similar to rec 1 or 2 referencing collaboration with USCG / TC/CCG
- This requires engagement with IMO, and there is sanctuary staff working on this, as well as quieting technology for retrofits and new construction. Those are good things for the sanctuary to support, but more detail is needed for this recommendation re: how OCNMS will approach this.
- Support with safety measures or mitigation options in place

**Comments from 2nd draft recommendation 7**

- I'd also include the amazing certificate programs implemented for North Atlantic Right Whales on the eastern seaboard.
- The use of incentives for voluntary slowdowns should be considered a lower tier option since they are less likely to result in a behavior change.

- not sure of these other programs
- This may not be required in this region for participation, like in CA (which has been an evolution, trying to pinpoint what motivated participation). A feasibility analysis would need to come first, this may not be a one-size-fits-all. Positive PR may be enough without monetary incentives.

#### **Comments from 2nd draft recommendation 9**

- Again need to understand more on the implications of "Mandatory"
- how will whale density be determined? From historical patterns? From real-time sightings reaching a certain threshold? In my experience, mariners will not respond to mandatory slowdowns well if there are, in fact, no whales present.
- somewhat connected to 4, 5 and 6
- The sanctuary can't regulate commercial ship speed or enforce a mandatory slowdown. This has to come from IMO and be enforced by Coast Guard and other agencies with authority.

#### **Comments from 2nd draft recommendation 10**

- I'm a fan of starting with carrots, but also having sticks available.
- In general I am not supportive of mandatory slowdowns.
- I like the inclusion of "or other consequences of non-compliance" because there are some actors that will simply add the fine into their costs of doing business. Fines can disproportionately impact smaller businesses in this way, while sometimes still falling short of achieving desired outcomes. Careful consideration of the social science literature on this is important, including case studies where these restrictions have been implemented elsewhere in the US (e.g., on the East Coast).
- This is outside the scope of my knowledge, but I generally support it.
- Need better understanding of the implications of mandatory
- Recommendation needs to consider what types of vessels would be regulated and who would regulate.
- may be different in the sanctuary or in the US but in Canada the amounts are often already prescribed in existing legislation
- There are barriers to a mandatory slowdown, so this recommendation seems to be building on a program that isn't yet in place. Seems to be an over-reach for the task of this working group.

## **2. Vessel Traffic Studies**

### **Reworded Recommendation**

Work with both the United States Coast Guard and Transport Canada, on current efforts, such as the USCG Port Access Routes Study and Transport Canada's Traffic Separation Scheme (TSS) Feasibility Study, to consider changes to vessel traffic routing to reduce acoustic and ship strike impacts on whales within the OCNMS.

*Additional discussion included moving coastal commercial shipping traffic further offshore from OCNMS to reduce acoustic and ship strike impacts on whales within the sanctuary, and to consider the potential impact and feasibility of slowing other vessel types down outside of the shipping lane.*

### **Based on 2nd draft recommendations 1, 2, 5**

1. OCNMS should work with both the United States Coast Guard and Transport Canada, on current efforts, such as the USCG Port Access Routes Study and Transport Canada's current vessel traffic separation scheme feasibility study, to consider changes to vessel traffic routing to reduce acoustic and ship strike impacts on whales within the OCNMS.

2. OCNMS should work with the United States Coast Guard to shift coastal commercial shipping traffic further offshore from OCNMS to reduce acoustic and ship strike impacts on whales within the sanctuary.

5. Where appropriate, explore the potential impact and feasibility of slowing other vessel types down outside of the shipping lane.

## Discussion

### Comments from 2nd draft recommendation 1

- Observation from shore of tug tows in the area where whales are present is a reality. Farther offshore there is tanker and cargo traffic that potentially are also interacting with whales, analysis through the PARS could guide alternative seasonal routes.

### Comments from 2nd draft recommendation 2

- Rec #1 with 9 and 13 might be more important as sanctuary boundary in and of itself isn't necessarily whale-specific or centric; how do we know that shifting commercial shipping traffic further offshore won't impact more whales?
- I don't understand fully who has jurisdiction on who, but think this recommendation could be broadened to include any class of vessel (not just "coastal commercial shipping traffic"), or other recommendations could be added pertaining to each additional class of vessel (e.g., fisheries vessels, tugs, research vessels, etc.?).
- This recommendation assumes that whale densities are higher in OCNMS than further offshore. If this is true, then I support this recommendation, not, then I don't.
- "Further offshore" needs to be defined and supported with information about areas where few(er) whales occur
- I would like to see analysis of acoustic pattern data that is available.
- I'm not sure which section of traffic this is referring to. The TTS or traffic offshore of that? If the latter, is this feasible economically?
- Just wondering about feasibility and any safety issues. Otherwise, makes sense.

### Comments from 2nd draft recommendation 5

- This could be broadened to include not just slowing down, but lateral offsets, as well as other operational or technological mitigations of strike and noise impacts.
- In choosing where to spend resources I am not convinced of the relevancy.
- The sanctuary will take on working with non-commercial shipping boaters to do this? It's unclear who will do this, which boaters will be targeted, and why (what are the objectives of this recommendation?).

## 3. Habitat Modeling

### Reworded Recommendation

Support and build upon existing whale habitat modeling work to identify when and where voluntary vessel speed reductions can be the most effective.

*The working group had presentations on SRKW critical habitat designations by both Canada and the United States. The current voluntary vessel speed reduction measures are based on the Canadian Science Advisory Secretariat, Science Advisory Report 2021/025.*



#### **Based on 2nd draft recommendation 4**

4. Conduct habitat modeling work to identify when and where voluntary VSR programs can be implemented to be the most effective.

#### **Discussion**

##### **Comments from 2nd draft recommendation 4**

- And share results with Quiet Sound, please!
- Probably should spell out VSR to avoid acronym jargon...
- Identify potential experts for habitat modeling for this recommendation to inform the recommendation.
- habitat use work has been underway, some of which is published in DFO SAR 2021/025
- However this would need to be something the sanctuary supports, not owns (e.g., raises funds to support Point Blue Conservation in completing this work).

#### **4. Whale Desk**

##### **Reworded Recommendation**

Advocate for a whale desk in US waters modeled after the one in Canada.

*A new Canadian Coast Guard service, referred to as the Marine Mammal desk, reports whale sightings in real time and advises vessel traffic by providing enhanced situational awareness of the activities of Southern Resident Killer Whales and other cetaceans, such as humpback and gray whales.*

##### **Based on 2nd draft recommendation 19**

Advocate for a whale desk in US waters modeled after the one in Canada.

#### **Discussion**

##### **Comments from 2nd draft recommendation 19**

- I totally support the involvement of the USCG and/or other Federal or State agencies in improving how whale location data is communicated to various types of vessels, managers, and other end-users... BUT it is not clear to me whether the approach taken in Canada should necessarily be followed in the U.S. because community science cultures, boater behavior and regulations, ports and their incentive mechanisms, commercial shipping and pilot associations, and history of Federal/Non-Federal partnerships all differ across the International boundary.
- The Canadian Marine Mammal desk is relatively new, would be nice to get a report of its success and challenges in near future.
- As written, I don't know what a whale desk does so cannot provide an opinion on whether or not the sanctuary should use resources to advocate for one (from what org?) in the US.

## Recommendations on monitoring

### 5. Data sharing and management support

#### Reworded Recommendation

Work with existing data-sharing partnerships that are collecting acoustic and visual data on whales for both research and management objectives.

*Sanctuary participation should consider needed infrastructure, e.g., cloud storage, database management, staffing, and reporting.*

#### Based on 2nd draft recommendations 11

11. For both acoustic and visual sightings of whales, establish or join an existing data-sharing partnership. This should consider needed infrastructure, e.g., cloud storage, database management, and staffing.

#### Discussion

##### Comments from 2nd draft recommendation 11

- I think this recommendation should refer to the July, 2020, NOAA Data Strategy publication and highlight that storing OCNMS data \*solely\* within a Canadian data silo would be detrimental to some end-users in the United States. The recommendation could call out and support specific goals of the NOAA Data Strategy, including to "Promote equitable and appropriate access to NOAA data in open, machine-readable form and through multiple mechanisms" and to "Develop NOAA Data Licensing Guidance to ensure NOAA's data are by default open"...
- Overall I support the concept of data sharing but with opportunistic sightings, it is important to have a data request process to reduce the potential of data misuse (i.e. a lack of sightings in an area is often representative of the number of observers in that area and not the number of whales). In some cases, supplying effort corrected data to researchers is required.

### 6. Passive Acoustic Monitoring

#### Reworded Recommendation

Work with partners to establish a real-time passive acoustic monitoring program, i.e., mooring with telemetry, cabled hydrophones, or an AUV (e.g. wave glider, solar-powered, or saildrone).

*The working group noted that the recent discussions on coordination by US and Canadian researchers should continue. Focusing efforts at the entrance to the Strait of Juan de Fuca was discussed, but was not specifically recommended.*

#### Based on 2nd draft recommendation 12, 14

12. Recommend the sanctuary work with partners to establish a real-time passive acoustic monitoring program, i.e., mooring with telemetry, cabled hydrophones, or an AUV (e.g., wave glider, solar-powered, or saildrone). Recommend the focus be in the northern portion of the sanctuary near the shipping lanes.

14. US and Canadian researchers should continue to meet to discuss ongoing efforts, with details such as hydrophone locations, sampling rates, existing and proposed analysis. Identify areas of coordination

that support multiple research goals, and where appropriate, seek collaborative funding approaches. When appropriate, analysis and methods should be standardized to facilitate collaboration.

## Discussion

### Comments from 2nd draft recommendation 12

- This is a good idea but the main challenge will be adequate funding to establish and maintain the program
- Recommending that the focus of PAM efforts be directed in the northern portion of the sanctuary may result in a relative dearth of data to support other areas of the coast. While shipping lanes are certainly important, a significant amount of vessel traffic also occurs on a north-south route along the West Coast, and my concern is that the threat this may pose to whales could be underestimated. And if monitoring efforts are more scant in certain areas by design, it could perpetuate this underestimation.
- I do not think it should be sanctuary centric, this needs to come out of partnerships
- This is a very, very expensive recommendation. It would be wonderful and amazing if this were to exist, but it's not low-hanging fruit for the sanctuary; it's not the most tangible tasks for the sanctuary to support. If Benioff Ocean Initiative or some organization with the means to install approaches the sanctuary with interest in making this type of investment, then this could be revisited.

### Comments from 2nd draft recommendation 14

- I would be excited to continue serving in such meetings. I can also offer existing mechanisms that could be leveraged during such meetings or provide members of this Working Group additional coordination mechanisms, including: the PSEMP Marine Mammal Work Group and its committees (one focused on each species), and/or its Acoustics committee.
- This recommendation could include concrete products like an interactive geospatial map with monitoring locations and associated metadata.

## 7. Visual Surveys

### Reworded Recommendation

Maintain direct visual monitoring of whale occurrence in the sanctuary to ensure there is a method to identify where whale concentrations overlap with ship traffic in heightened and critical ways.

*The working group noted the design of new efforts should generate results that are comparable to previous studies within and near the OCNMS, and the goal of incorporating the OCNMS RV Storm Petrel as a scheduled platform for sampling.*

### Based on 2nd draft recommendations 13, 15

13. Maintain some level of direct survey/monitoring of whale occurrence to ensure there would be a method that would identify where whale concentrations overlap with ship traffic in heightened and critical ways. If possible, design any new efforts to generate results that are comparable to previous studies within and near the OCNMS.

15. OCNMS should utilize the enhanced capability of the new sanctuary vessel Storm Petrel to improve whale monitoring efforts in the sanctuary. Specifically, taking partners and marine mammal experts during mooring servicing trips (covering ~130 miles of the coast; approximately one week per month between May and October).

## Discussion

### Comments from 2nd draft recommendation 13

- I'd like to propose additions to it to include potential coordination regarding risk of fishery entanglements, for example, as follows: "Maintain some level of direct survey/monitoring of whale occurrence to ensure there would be a method that could identify where whale concentrations overlap with ship traffic and other potential threats, especially when risk is heightened and critical. If possible, design any new efforts to generate results that are comparable to previous studies within and near the OCNMS."
- Recommendation seems to overlap a couple other recommendations. Does this effort want to repeat previously conducted visual and or acoustic surveys, so it is an ongoing effort in future?
- This could be simplified, or have an addition that specifies OC02 continuous monitoring (no duty cycling) either 6 mos. or year-round as the appropriate listening site and approach to accomplish this. Visual surveys could augment to provide an additional presence-only observation method (limitations to each; can't say anything about whales you don't hear (aren't vocalizing) that may be present or that you don't see that may be present subsurface). As resources and partnerships allow, may consider adding tagging and/or eDNA sampling.

### Comments from 2nd draft recommendation 15

- This should be transparently analyzed with other ocean monitoring priorities/needs of the region.
- Concerns that OCNMS could support this effort (cost/schedule).

## 8. Entanglements

### Reworded Recommendation

Address OCNMS whale entanglement issues through support of Washington State Department of Fish and Wildlife's (WDFW) efforts to secure a marine mammal protection act incidental take permit for the Dungeness Crab fishery, and the development of a related conservation plan for humpback and blue whales.

*WDFW presented on "Addressing Marine Life Entanglements in Dungeness Crab Gear" at the March meeting. They explained that in response to increases in marine life entanglements, they are working to bring the Dungeness Crab fishery into compliance with federal regulations and reduce its impact on protected marine species. WDFW has committed to submitting an Incidental Take Permit application and working with the Washington Dungeness crab industry to develop an accompanying Conservation Plan (CP).*

### Based on 2nd draft recommendations 20, 27

20. Support WDFW efforts to engage the public and establish a monitoring plan for their Dungeness Crab Fishery Conservation Plan.

27. The sanctuary should work with partners to support the use of acoustic data, to support management efforts, such as the WDFW Incidental Take Permit and Conservation Plan on humpback and blue whales.

## Discussion

### Comments from 2nd draft recommendation 20

- This seems like something the fisheries SAC representatives could weigh in on, in terms of feasibility and next steps.

### Comments from 2nd draft recommendation 27

- Coordination that makes voluntary compliance as easy as possible for mariners to follow
- I'd suggest appending a clause like "while recognizing that the mission of Quiet Sound -- ship noise reduction for SRKWs -- is only a subset of the OCNMS goals of reducing noise, impact, and spill risks for all cetaceans within and near the Sanctuary."
- more discussion
- Makes sense, it would be strange and counterproductive not to coordinate the efforts.

## Recommendations on reporting networks

### 9. Reporting networks

#### Reworded Recommendation

Encourage the use of the Whale Alert App in the sanctuary and support ongoing efforts to integrate data from the Whale Alert App into the Whale Report Alert System (WRAS).

*The working group had presentations on both the Whale Alert App and the Whale Report Alert System (WRAS). Significant work is currently being done related to data collection and reporting networks, including efforts of WRWG members independent of the working group.*

#### Based on 2nd draft recommendations 16, 17, 18

16. OCNMS should coordinate with other area groups in efforts to integrate data from the Whale Alert App into the Whale Report Alert System (WRAS).

17. Explore how both visual and passive acoustic observations can be used to detect whales and provide real-time whale locations to the Whale Report Alert System (WRAS).

18. Investigate the use of AIS in alerting mariners to the presence of whales.

## Discussion

### Comments from 2nd draft recommendation 16

- partnership development, I am not sure if OCNMS should be in the coordination role, depends on how it fits in regional monitoring priority needs.
- If this is a doable option...notifications from 1 source are always easier to track than more than 1 source.

### Comments from 2nd draft recommendation 17

- I think this phrase could be appended -- "and other dynamic systems that reduce strike, noise, and spill impacts on species that utilize the OCNMS, including integration of real-time data within the NOAA's Environmental Response Management Application (ERMA)."
- The NOAA Protected resources division should take lead.

- The sanctuary doesn't have capacity to implement real-time observation; can this recommendation become more specific to how the sanctuary would support this? And what are the benefits of real-time detections (users, decisions made using real-time data, etc.) versus a broader understanding of patterns gleaned from archival data collection?
- I have mixed feelings about real time whale alerts going to the general public vs. mariners of commercial vessels.

#### **Comments from 2nd draft recommendation 18**

- Just flagging that Conserve.io has in the past integrated Whale Alert with shipboard displays of AIS data, including via the ship's local area network rather than the VHF transmissions themselves.
- AIS is specific to vessel-to-vessel interaction for at seas safety.
- I don't understand how this would work. I think it's trying to address the "how do we communicate with ship operators" but it's unclear. I think it would be wise to learn from colleagues in CA regarding what has worked and not worked re: communicating information and requests to operators, and what the results and benefits are from investing in that kind of communication.

## **10. Citizen Science**

### **Reworded Recommendation**

Encourage community involvement in reporting whale sightings in and near OCNMS using the Whale Alert App or other methods that feed into the Whale Alert App. Ensure data collection surveys include data quality reviews and incorporate effort-correction via established methodologies

*While not originally characterized as a citizen science effort, the effort to increase the use of opportunistic Whale Alert App sightings could be accomplished using such an approach.*

### **Based on 2nd draft recommendations 21, 22, 23**

21. Encourage community involvement in reporting whale sightings using the Whale Alert App.
22. Work with others to find a way to "effort correct" the opportunistic sightings and stress the entry of information into the Reporting systems that allows for the analysis of sightings in a meaningful way.
23. Promote and improve both opportunistic and effort surveys within the sanctuary, conducted by OCNMS staff, volunteers, and partners. Explicitly promote the use of opportunistic survey methods and tools to detect presence and sound data for informing real time alerts, while separately promoting the use of effort surveys for computation of densities, abundance estimates, and/or habitat maps.

### **Discussion**

#### **Comments from 2nd draft recommendation 21**

- I very much support "Encourage community involvement in reporting whale sightings" but is it necessary to specific Whale Alert? The reasoning behind that choice is not clear to me.
- This should probably be paired with information about how the OCNMS utilizes Whale Alert data, as well as the end-users of Whale Alert data in the U.S. and (eventually, soon?) Canada.
- Please consider The Whale Trail a primary partner for this work. We have advocated the use of Whale Alert since 2014, and promote it explicitly on our signs and other messaging.
- Public, boaters, whale watching companies

- Yes, as long as public data is vetted, and again, similar concerns of real time data for mariners vs going public
- I support this, but also feel other methods of whale sighting reports should also be supported - Orca Network feels we will get some sightings through the Whale Alert App, but we also promote our Sightings Network in general which receives sightings in many other ways, including phone, email, facebook, and website. With potential Quiet Sound funding, we would have the staffing to input all these sightings into the Whale Alert App and into WRAS via the Acartia Data Cooperative. The Apps are great, but not all people who see whales will be using those to report whales, so there should be some recognition of other Sightings Network efforts and the ways they receive sightings reports.

#### **Comments from 2nd draft recommendation 22**

- I'm not sure what the purpose of this recommendation is, and I'm not sure what criteria is used to determine that a system "allows for analysis of sightings in a meaningful way"
- An alternative, or additional recommendation, could be to generically support systematic (rather than opportunistic) surveys by community and professional scientists in which effort-correction is built in via established methodologies.
- Equal emphasis should be spent on training observers (citizen scientists) and providing a smart UI so that the quality of data is high without need for correction.
- This should be a part of the previous recommendation about encouraging use of community whale sightings.

#### **Comments from 2nd draft recommendation 23**

- It might clarify to replace "detect presence and sound data" with "detect presence acoustically and/or visually"...
- Please consider The Whale Trail a primary partner in this work. Our shore-based locations are fixed points for visual observations and surveys.
- More discussion on the appropriate lead, NOAA Protected Resources Division
- This could become very costly and not practical for OCNMS. Opportunistic data inputs anytime they occur from any vessel, etc., and effort surveys that are not annual but maybe a few years in between?
- in both 22 and 23 it seems like having consistent approaches to effort correction and habitat use would be the aspiration. on both sides of the border.
- Who will use the opportunistic data? How will it be standardized and analyzed, and disseminated? I think the working group recommendations should focus on the 'biggest bang for the buck' type of work, and this doesn't qualify, in my opinion.

## **Recommendations on coordination**

### **11. Coordination with Quiet Sound**

#### **Reworded Recommendation**

Taking advantage of overlapping interests and geography, coordinate with Quiet Sound on reducing the impacts to Southern Resident Killer Whales from large commercial vessels.

*Quiet Sound is well positioned to address many of the issues addressed by the working group.*

### **Based on 2nd draft recommendations 8, 25, 26**

8. Coordinate with Quiet Sound voluntary vessel speed reduction initiatives in Washington Waters.

25. OCNMS should work with NOAA's Protected Resources Division so that the agency's participation in Quiet Sound can represent OCNMS perspectives.

26. OCNMS should coordinate any voluntary vessel speed reduction program within the sanctuary with Quiet Sound's Vessel Operations and Incentives Workgroup.

### **Discussion**

#### **Comments from 2nd draft recommendation 8**

- Again, I think this could be broadened to include general support and alignment with Quiet Sound initiatives. This could include specifically: technological innovations (e.g., Navy challenge), underwater noise measurements, and community science (visual and acoustic detections of cetaceans).
- Starting with voluntary I can support, not sure what all is involved.

#### **Comments from 2nd draft recommendation 25**

- I don't understand why this recommendation is necessary; what is the need that is driving it? I assume that OCNMS has an ongoing relationship with NOAA's Protected Resources Division already. How would this recommendation help, or change that? Also, perhaps OCNMS have its own direct relationship with Quiet Sound, by becoming part of its advisory group(s), for example.

#### **Comments from 2nd draft recommendation 26**

- Coordination that makes voluntary compliance as easy as possible for mariners to follow.
- I'd suggest appending a clause like "while recognizing that the mission of Quiet Sound -- ship noise reduction for SRKWs -- is only a subset of the OCNMS goals of reducing noise, impact, and spill risks for all cetaceans within and near the Sanctuary."
- More discussion
- Makes sense, it would be strange and counterproductive not to coordinate the efforts.
- Voluntary speed restrictions are not very effective so hate to see more effort go into those.

## **12. Juan de Fuca Entrance Transboundary Committee for Whale Protection**

### **Reworded Recommendation**

Recommend the OCNMS whale working group evolve beyond its current mission and become a standing ad hoc committee that would support the ongoing transboundary collaboration on marine mammal activities at the western entrance of Juan de Fuca Strait and surrounding area.

*The committee could continue as a regional table for organizations to share, collaborate and plan future acoustic and marine mammal monitoring and management efforts in this transboundary zone. The group could meet annually or more often as transboundary coordination needs arise.*

### **Based on 2nd draft recommendation 24**

24. Recommend the OCNMS whale working group continue beyond its current timeline and become a standing committee that would support the ongoing transboundary collaboration on marine mammal



activities at Swiftsure Bank and surrounding area. We suggest the committee continue as a regional table for organizations to share, collaborate and plan future acoustic and marine mammal presence monitoring activities, and underwater noise reduction efforts for large commercial vessels. To reflect the transboundary nature of the committee and the geographic area of interest, we would offer a suggestion to consider renaming the committee to something such as "Swiftsure Bank Transboundary Committee for Whale Protection".

## Discussion

### Comments from 2nd draft recommendation 24

- Not going to lie, as the director of Quiet Sound it's a bit weird to hear that there's a recommendation for NOAA to start a standing transboundary committee that more or less has the mission statement of Quiet Sound! If this is something that OCNMS is really committed to, I'd love to meet with you and discuss what role Quiet Sound can play in moving this forward.
- It might be appropriate to encompass more of the outer coastal shelf communities and territory by inviting members of the Quileute, Makah, Nitinaht, and Nuu-chah-nulth Tribes to join the working group and name it. This could complement the transboundary management efforts for inland waters of WA and BC (east of a line connecting roughly Clallam Bay and Jordan River), now known as the Salish Sea.
- More discussion warranted
- I need more information before responding. I think in principle this sounds interesting, but can't answer for TC at this stage
- However, a narrow group of representatives from active projects or that offer expertise specific to the final recommendations. Participation can be fluid, as needed.

## Enclosure 2: Links to Presentations

### 1<sup>st</sup> Meeting (November 12, 2021):

- [Overview of WRAS and ECHO Program and Swiftsure Bank Slowdown](#) - Melanie Knight.

### 2<sup>nd</sup> Meeting (January 13, 2022):

Status of OCNMS area endangered whales and critical habitats:

- [Fisheries and Oceans Canada \(DFO\)](#) - Rangyn Lim.
- [NOAA West Coast Region Protected Resources Division](#) - Grace Ferrara and Hanna Miller

Current acoustic monitoring activities within or adjacent to National Marine Sanctuaries:

- [SanctSound](#) and [NRS](#) - Lindsey Peavey Reeves & Samara Haver.
- NOAA Northwest Fisheries Science Center sensors - Brad Hanson.

Outer Coast whale reporting networks:

- [Application of Whale Alert for NMS management](#) - Virgil Zetterlind
- [Washington/British Columbia sighting networks](#) - Rich Osborne

Examples of NOAA management:

- [NOAA Northern Atlantic right whale management](#) - Dave Wiley
- [NOAA Southern California management](#) - Sean Hastings

### 3<sup>rd</sup> Meeting (March 9, 2022):

- [Quiet Sound update](#) (Rachel Aronson)
- [Update on proposed Swiftsure Bank inbound vessel slowdown](#) (Melainie Knight)
- [Research on potential ship strikes](#) (John Calambokidis)
- [WDFW whale entanglement conservation plan](#) (Victoria Knorr)
- [WhaleReport Alert System \(WRAS\) Update and Plans for 2022](#) (Jess Scott)

### 4<sup>th</sup> Meeting (May 13, 2022):

- Regional work on Data Cooperative (Scott Veirs)