Quiet Sound: a new program to protect Southern Resident Killer Whales from the acoustic and physical impacts of large commercial vessels

Rachel Aronson
Todd Hass
Kathleen Hurley

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A collaborative, non-regulatory program to reduce the impacts to Southern Resident Killer Whales from large commercial vessels.
74 southern resident killer whales remain
Disturbance from vessel presence and noise is a major threat to SRKWs
While there are plenty of naturally occurring sounds in the ocean, an increase in commercial vessel traffic is the main reason for increased underwater noise.\(^1\)

Sound travels 4.5 TIMES FASTER in water than in air.

In the North Pacific Ocean, underwater noise has been DOUBLING in intensity EVERY DECADE for the past 60 YEARS.\(^2\)

WHERE VESSEL NOISE COMES FROM
- ENGINE AND ONBOARD MACHINERY
- DRAG FROM POOR HULL MAINTENANCE
- BOW/STERN THRUSTERS
- PROPELLER
- CAVITATION

Most underwater noise from large vessels is caused by propeller cavitation.\(^3\)

Graphic Credit ECHO/Port of Vancouver
“Promote implementation of and compliance with... guidelines for...vessels to protect orca...Research, develop, and implement quieter propulsion alternatives for boats and other vessels; expand the pool of observers and technologies that provide real-time orca sightings to the Whale Report Alert System through Quiet Sound and key partners”
– Puget Sound Partnership Action Agenda 2022-2026
We can make changes in the maritime industry to protect whales from noise pollution and ship strikes.
Who are you hearing from today:

Rachel Aronson, Quiet Sound Program Director
Kathleen Hurley, Port of Seattle, Quiet Sound Leadership Committee
Todd Hass, Puget Sound Partnership, Quiet Sound Leadership Committee
The development of Quiet Sound

1. 2018: Gov. Inslee signs Executive Order 18-02 to establish the Southern Resident Orca Task Force

2. Orca Task Force learns about threats and identifies solutions


4. 2019: Workshop to address how to move #22 forward

5. 2020: Quiet Sound Planning Team formed and develops proposal for implementation

6. 2021: The Quiet Sound program is funded
The goal of the Quiet Sound program

To better understand and reduce the cumulative effects of acoustic and physical disturbances from large commercial vessels on Southern Resident Killer Whales throughout their range in Washington State
Quiet Sound Funding in Year I, June 2021- June 2022

- Bonneville Environmental Foundation: $15,000
- Ports of Seattle and Tacoma: $100,000
- NOAA: $25,000
- EPA: $50,000
- Washington State: $240,000
Key elements of Quiet Sound

Voluntary
Science-based
Respectful of treaties
Equity
Collaborative
Transparent
Data-driven

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Quiet Sound Leadership Committee Members
**Leadership Committee**
- Northwest Indian Fisheries Commission
- Makah Tribe
- Port of Seattle
- Port of Tacoma
- The Northwest Seaport Alliance
- Washington State Ferries
- Puget Sound Partnership
- Marine Exchange
- Pacific Merchant Shipping Association
- National Oceanic and Atmospheric Administration
- Seattle Aquarium
- Natural Resources Defense Council
- Washington Maritime Blue
- US Coast Guard (advisory role)

**Program Staff**
- Program Director: Rachel Aronson
- Other Staff: WA Maritime Blue

**Monitoring Whales & Vessel Noise Work Group**
- Chairs: Puget Sound Partnership, NOAA and Seattle Aquarium

**Whale Notification System Work Group**
- Chair: Washington State Ferries

**Vessel Operations & Incentives Work Group**
- Chairs: Marine Exchange and Pacific Merchant Shipping Association

**Innovation & Vessel Quieting Work Group**
- Chair: Washington Maritime Blue

**Evaluation and Adaptive Management for Tribal Treaty Rights and SRKW Objectives Work Group**
- Chairs: Puget Sound Partnership, National Oceanic and Atmospheric Administration
Project 1: Further Develop the Whale Report Alert System

Getting real-time whale alerts in the hands of commercial mariners

- Connecting WRAS to other sources of georeferenced data, such as Whale Alert
- Enable Washington sightings groups like Orca Network to add whale sightings to WRAS
Project 2: Trial a Voluntary Vessel Slowdown

Recommending scientifically-informed, realistic and safe whale-protective practices for vessels

○ Work with mariners to propose a trial voluntary slowdown in Puget Sound when SRKW are present
○ Communicate the plan to ship owners, agents, operations centers, captains and pilots
○ Measure participation and noise reduction
Projects 3 & 4: Research underwater noise

Learning more so we can act effectively

- Advise Port of Seattle on a “Desktop study” of Washington's underwater noise sensing capacity
- Support Oceans Initiative’s hydrophone study of the current underwater vessel noise environment (including community science)
Project 5: Support Maritime Innovation

Supporting the next generation of whale-sensing and vessel-quieting technologies

○ Quiet Sound is the lead evaluator for the US Navy’s Whale Challenge: $75,000 challenge prize for a system that can look for whales and prevent whale-vessel collisions
<table>
<thead>
<tr>
<th>Project</th>
<th>When</th>
<th>Who</th>
<th>Funding</th>
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<tbody>
<tr>
<td>Improve Whale Report Alert System in WA for commercial mariners</td>
<td>Ongoing</td>
<td>Ocean Wise; ECHO; WA Sightings Networks</td>
<td>NOAA; National Fish and Wildlife Foundation</td>
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<tr>
<td>Gap analysis of current underwater noise sensing; lay groundwork for future hydrophone investments</td>
<td>2022–June 2023</td>
<td>Monitoring Whales &amp; Vessel Noise Work Group; Port of Seattle; UW; NOAA</td>
<td>Port of Seattle</td>
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<tr>
<td>Puget Sound underwater noise study</td>
<td>Summer 2022</td>
<td>Monitoring Whales &amp; Vessel Noise Work Group; Oceans Initiative</td>
<td>Bonneville Environmental Foundation (and PSEMP)</td>
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Contact Quiet Sound
Rachel Aronson – Quiet Sound Program Director
rachel@maritimeblue.org
www.QuietSound.org