

The background is a dark blue gradient representing an underwater scene. At the top, there are stylized, wavy purple lines representing the surface of the water. Below this, the water is a deep navy blue, dotted with small white circles representing bubbles or light reflections. At the bottom, there are stylized, light blue and purple coral-like structures. The main title is centered in the upper half of the image.

SOUND POLLUTION AND SOUTHERN RESIDENT KILLER WHALE

By Shareen Esmail

ACTIVITY!

We will be starting off with the activity first!
sharenesmail.com

WHAT IS SOUND POLLUTION?

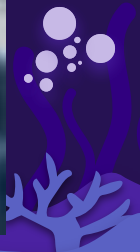
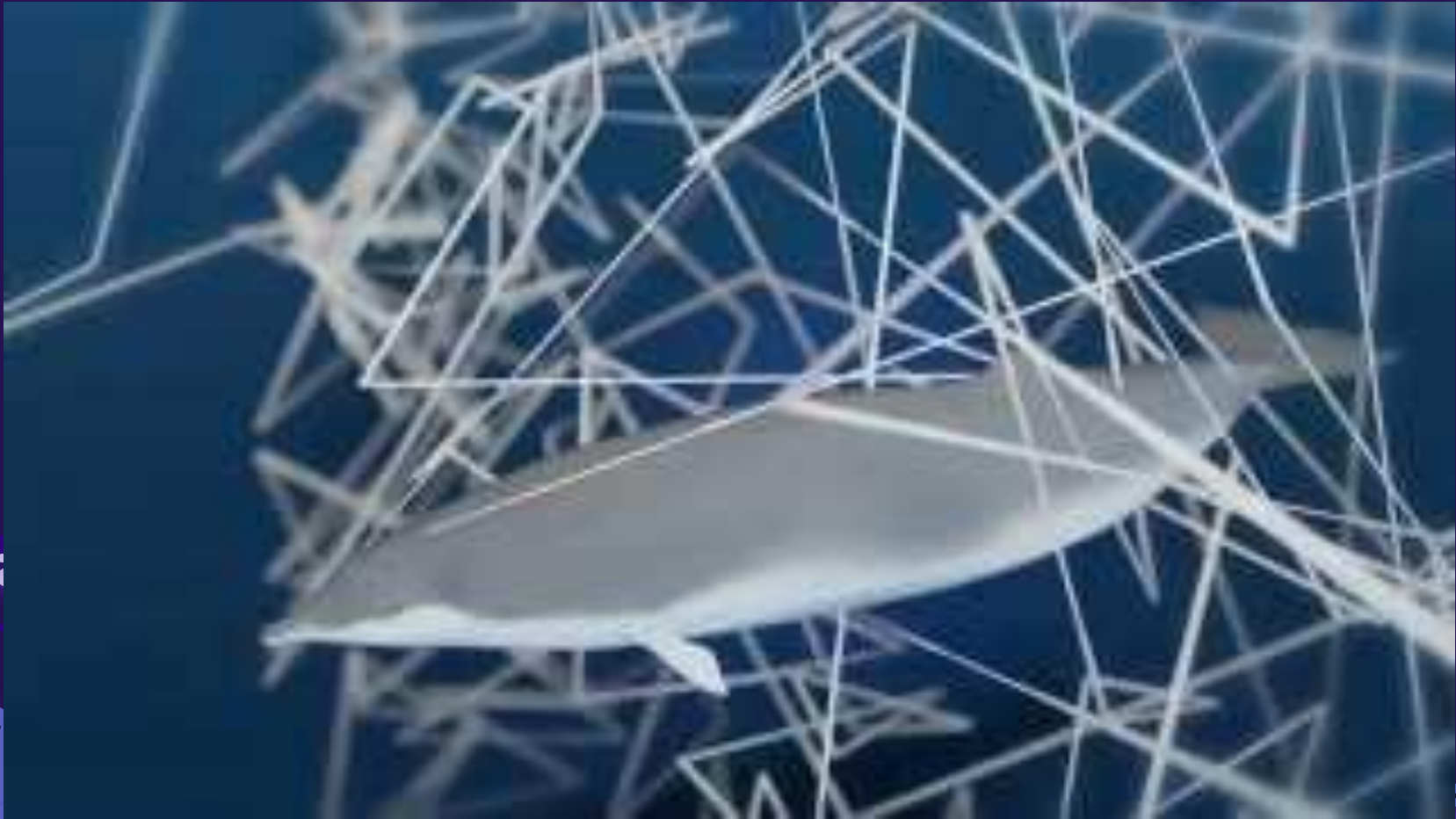
“Following the industrial revolution, human activities have increasingly introduced incredible amounts of noise into an already cacophonous world. This is occurring both intentionally and unintentionally as nations and scientists work to understand and exploit the landscape and resources that lie beneath the waves.”

“Noise from activities relating to construction, pile driving, dredging, sonar, and all vessel movements introduce noise pollution into the aquatic realm and thereby threaten to interfere with natural biological processes and reduce acoustic signal propagation for marine organisms globally.”

-Whalesounds.ca

“Today’s oceans are a tumult of engine roar, artificial sonar and seismic blasts that make it impossible for marine creatures to hunt or communicate. We could make it stop, so why don’t we?”

-David George Haskell (the Guardian)



WHO DOES IT AFFECT?



TOOTHED WHALES

“The toothed whale suborder communicates using high frequency clicks and whistles. Single clicks are typically used for echolocation while multiple clicks are often used to communicate to other whales/dolphins in the area. When in a large group or pod distinct frequencies can be heard from individual members of the pod. These unique frequencies can be thought of in a similar manner to people having conversations in large room. Each person has a different vocal pitch and speed so that they can easily identify who is speaking in the room. The same goes for the toothed whale suborder and it is believed that these differences help individual members keep track of one another. This can be especially important for female toothed whales keeping track of their children or when multiple pods gather together and eventually need to separate back into their individual pods.”



BALEEN WHALES

“The baleen whale communicates using long, low-frequency sounds and some species such as the humpback and blue whale produce deep melodic tones which scientists and researchers refer to as whale songs due to the fact that these sounds create melody’s similar to music composed by humans. These loud low pitched sounds can be heard miles away and allow baleen whales to communicate with one another over great distances. This is essential for helping them find other pod members, keep track of the location of other whales during migration trips, look for a mating partner, claim their territory or communicate a multitude of other important things to one another. Unlike the toothed whale suborder baleen whales are born with baleen plates that have bristles attached to the plates rather than possessing teeth. The baleen whale suborder is made up almost exclusively of large whales.”

ORCA'S AND SOUND POLLUTION

“Killer whales are viewed as an indicator species for the Salish Sea. The decline in local killer whale populations may indicate stressors that eventually will affect the whole ecosystem. Since 2006, the population has generally declined and has not shown signs of recovery, with only 74 individuals as of December 2020. This trend, along with the biological condition and health of the current Southern Resident Killer Whale (SRKW) population; acoustic stressors; vessel impacts; the consistently low availability of Chinook salmon; and exposure to contaminants, indicate that this population is facing increasing threats to its recovery and even survival.”

-canada.ca Salish Sea Ecosystem Health Report

“We've had issues of boats zooming through pods, sometimes even between the mother and calf," Hamran said. "It's also quite loud on the hydrophone, even loud enough that you want to turn the volume down, but the whales are not able to go in and modify how loud the boats are. And I don't think people are aware of this issue." Orcas communicate with whistles, calls, buzzes and clicks. Maarten van Rouveroy for Business Insider Today. Boat noise can overpower whale calls — "it could mask the vocalizations that they can't be able to communicate with each other nearby or find a mate," she said. And it can scare away the fish orcas feed on, too. "They spend quite a lot of time rounding up the herring to feed, and then a boat could come way too close and now disperse the fish," she said.”

-Elizabeth McCauley and Ellyne Hamran businessinsider.com

The background is a dark blue gradient with stylized purple coral at the bottom and small white bubbles scattered throughout. The text is centered and reads:

WHY IS NOISE
POLLUTION A
PROBLEM?

ENDANGERED SOUTHERN RESIDENT KILLER WHALE

- steadily declining population since 1998. With just 74 individuals left, the population is nearing its historical low size of 71.
- Declared endangered for over a decade
- Three human-caused threats have brought J, K and L pods to the edge of extinction: lack of salmon, toxin accumulations, and noise and disturbance from vessels.
- Prolonged exposure to noise and disturbance, such as the 12+ hours experienced by the orcas in summer, reduces foraging efficiency, social cohesion and reproductive capacity.
- HB 1580 and SB 5577 contain bold, precautionary measures to reduce noise and disturbance around the orcas: a suspension of whale-watching on the southern residents by all vessels for the next 3 years, and a limited entry permitting system for commercial whale-watch operators starting in 2021.
- Governor Inslee supported these recommendations, which were near-unanimously supported by the Task Force on SRKW Recovery.
- The bills are currently in committee. Both bills are in grave danger of not passing, or of being weakened.
- We need people to speak up for the orcas now, before the committees meet again on 2/21. Tell committee members the orcas matter, and that you want them to recover and thrive for generations to come. Our insatiable desire to get close to these whales is costing them their lives, and their future. Enough!



<https://www.ecosong.band/loud-1>

LISTEN TO LOUD MUSIC VIDEO ON YOUTUBE BY ECOSONG

HOW TO **SOLVE** IT?



“ After the release of the final recovery plan, 20 marine scientists came together to pen a letter to Prime Minister Justin Trudeau and federal ministers of Fisheries, Environment and Transport calling on Ottawa to compel a reduction in shipping noise in the Salish Sea by at least three decibels in the next 10 years, with a further reduction by 10 dB in the next 30 years. It’s an achievable goal, but one that will require design and engineering solutions, as well as mandatory speed limits for ships in the orcas’ critical habitat. It would bring Canada in line with international recommendations for reductions in ocean noise. And most importantly, quieting the oceans would create a key condition for a successful orca recovery. Time is running out for the orcas of the Salish Sea. Despite releasing a weak recovery plan, the federal government still has a chance to take action to save this species. Twenty scientists are making the case that a 3 dB reduction in ocean noise is the very least we have to do. We should listen.”



-WWF.ca

HOW THIS AFFECTED **ME**



COOL WEBSITES TO CHECK OUT

<https://www.orcasound.net/>

<https://whalesound.ca/ocean-noise/>

<https://naturalhistory.si.edu/exhibits/critical-distance>



The background is a dark blue gradient with wavy lines at the top and bottom, suggesting water. It features several light blue fish of different sizes, white bubbles of various sizes, and stylized coral or seaweed shapes in shades of blue and purple. A large white exclamation mark is positioned at the bottom center.

THANKS

CREDITS: This presentation template was created by [Slidesgo](#), and includes icons by [Flaticon](#), and infographics & images by [Freepik](#)

SOURCES USED IN SLIDES

- <https://www.codewithfaraz.com/content/262/how-to-create-a-speed-typing-game-with-html-css-and-javascript>
- <https://www.noaa.gov/explainers/soundcheck-ocean-noise>
- <https://www.theguardian.com/environment/2022/apr/12/ocean-of-noise-sonic-pollution-hurting-marine-life>
- <https://www.youtube.com/watch?v=t0DHEldqflc>
- <https://www.whalefacts.org/how-do-whales-communicate/>
- <https://www.businessinsider.com/orcas-noise-pollution-boats-norway-l-ofoten-islands-whales-2020-9>
- <https://www.canada.ca/en/environment-climate-change/services/cumulative-effects/salish-sea-ecosystem/health-report.html>
- <https://www.ecosong.band/loud-1>
- <https://wwf.ca/stories/worlds-orca-experts-demand-noise-reduction-salish-sea/>

OTHER HONOURABLE MENTIONS

- <https://www.fisheries.noaa.gov/feature-story/potential-impacts-noise-endangered-beluga-whales-cook-inlet>
- <https://www.bbc.com/future/article/20220712-how-to-fix-our-ocean-noise-pollution-problem>
- <https://oceanservice.noaa.gov/facts/whalesounds.html>
- <https://www.bbc.co.uk/newsround/64846776>
- <https://whalesound.ca/ocean-noise/>
- <https://www.bbc.com/future/article/20221130-the-hidden-ocean-pollution-killing-marine-mammals>
- <https://www.ifaw.org/journal/interview-ocean-noise-pollution-impact-marine-animals>
- <https://wwf.ca/stories/worlds-orca-experts-demand-noise-reduction-salish-sea/>
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