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January 11, 2021 (By Email)

Re: Comments on the Government of Canada on Ocean Noise Strategy Discussion Document

World Wildlife Fund Canada (WWF-Canada) welcomes the opportunity to comment on the framework for the Ocean Noise Strategy. For over half a century, the World Wildlife Fund has worked to protect nature. WWF-Canada is the country's largest international conservation organization; it has the active support of more than 150,000 Canadians who care about nature, to help create the conditions to reverse the steep decline of wildlife, at home and internationally. To deliver long-term conservation impact, we work in places that are unique and ecologically important, with a focus on protecting Canada's marine ecosystems, to ensure that the ocean remains ecologically rich and economically prosperous. This includes protecting areas rich in biodiversity that are experiencing loss or are at high risk of loss and protecting species at risk.

Over the past decade, WWF-Canada has invested significant resources and time to increase the understanding and awareness of underwater noise impacts, and to broker solutions to underwater noise pollution. We see this ocean noise strategy as an important opportunity to address underwater noise pollution more effectively in Canada provided it is developed, structured and implemented with meaningful goals and objectives.

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General comments

We support the federal government's efforts to identify and reduce harm caused by underwater noise pollution, and this inter-agency initiative to coordinate efforts tackling this complex and important problem. Science, management, and communication, as outlined in the discussion document, are important underpinnings to advance knowledge of the problem. Missing, however, is an articulation of the concrete goals this strategy is meant to achieve.

The Government of Canada has laid out an ambitious strategy, but the strategy lacks three crucial elements:

1) How the information collected and communicated will be used to reduce the impacts caused by ocean noise, i.e., the link between research and meaningful action;

2) What regulatory and non-regulatory mechanisms exist, or are needed, for a comprehensive management of ocean noise at levels that do not cause irreparable harm to the marine ecosystem, especially sensitive and at-risk marine mammals; and

3) An overarching framework that articulates goals and targets for noise pollution prevention. This would help guide efforts for noise management and aid the government in assessing the overall effectiveness of this noise strategy.

Response to Questions in Discussion Document

WHAT IS THE MOST IMPORTANT THING THAT THE GOVERNMENT SHOULD DO TO BETTER UNDERSTAND AND MINIMIZE THE IMPACTS OF UNDERWATER OCEAN NOISE?

Noise impact should be assessed in context of all noise sources and integrated into existing assessment frameworks that inform planning, management and decision making. These include cumulative effects analyses, impact assessments, permitting, marine spatial planning, and bioregional marine protected area (MPA) network planning.

We further answer this question in two parts: understanding and minimizing.

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Understanding:

(a) The understanding of noise impacts should be driven by the need to develop thresholds and limits for noise pollution on ecological systems and their components. Research effort should be focused on understanding noise thresholds or limits for key species, habitats and ecosystem properties. Such a process can be adaptive and preliminary thresholds and limits can be updated as research and assessment advances. The articulation of such limits and thresholds can guide management measures and aid setting quantifiable goals for noise pollution management. Thresholds and limits can be set in a precautionary manner and the lack of knowledge or uncertainty should not stand as an impediment to defining such precautionary limits.

(b) Monitoring should be conducted in all areas that have already been identified as important for conservation, including MPAs, Other Effective Area-Based Conservation Measures (OECMs), Indigenous-led conservation areas and at-risk marine mammal habitat. Monitoring type and location should be adapted regularly, based on new information. Feedback loops including managers, rights holders and other stakeholders need to be established. For accountability and transparency, information collected should be publicly available and accessible in a timely manner. Dedicated resources and reporting timelines should be identified to facilitate open and accessible public data.

Minimizing:

(a) Minimizing noise impacts is not an appropriate goal without the consideration of biologically and ecologically based limits to noise pollution. Minimizing noise may only achieve what is possible with socio-economic constraints and is not necessarily ecologically or biologically grounded. Thus, we suggest that 'minimizing' be replaced with 'effectively managing'. Effectively managing underwater noise levels requires the consideration of both place-based and activity-based management efforts that achieve quantifiable reductions in noise pollution to levels objectively defined by biological limits.

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(b) Place-based management efforts need to consider at least two specific contexts that relate to underwater soundscapes.

i) Geographies that are heavily used and have multiple human impacts and ecosystem stressors are generally where anthropogenic noise levels are already high. Within these systems, the focus needs to be on targeted noise reductions. Examples of such geographies include the Salish Sea and the Estuary of the Gulf of St. Lawrence, which contain critical habitats for endangered whales and where existing noise from vessel traffic and other sources is excessive. Expansion of industrial activity in these areas is also occuring and there are proposals to add more activities that generate underwater noise. For such geographies, the soundscape is dominated by anthropogenic noise and it is critically important to focus management efforts on noise reduction and set noise reduction goals that move toward restoring a soundscape that has more natural character.

ii) In geographies that are relatively less impacted, and where human and industrial activities are new or rapidly developing, it is important to protect and preserve the natural soundscape. Examples of such geographies include northern British Colombia and the Arctic, in particular the Mary River Baffinland Mine area[1], where shipping activity and associated industrial activities are growing rapidly. The species and habitats in these geographies are currently less impacted by noise but are likely to face a trajectory of increased noise. It is key to set in place measures that place limits on the amount of anthropogenic noise that such species and habitats can be exposed to, in order to preserve and maintain a soundscape that is not dominated by anthropogenic noise.

For both these contexts, effectively managing noise requires a combination of area-based and source-based management efforts with related targets, thresholds

[1] https://nunatsiaq.com/stories/article/increased-shipping-stressing-out-narwhals-say-researchers/

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and limits as appropriate are required to effectively manage noise pollution and its associated impacts. We expand on this in a subsequent section.

c) Effective activity-based management efforts require that all activities with a large or disproportionate impact on underwater soundscape be formally managed for their noise outputs. Examples of such activities that are not formally managed include vessel traffic which is the dominant source of chronic noise in the global ocean, various acute and impulsive sound sources such as seismic exploration, sonar, underwater blasting and pile driving. Codes of practice or guidelines exist for some but not all activities that generate acute sources of noise. Such codes of practice and guidelines need to be strengthened and be given regulatory authority. There is also no overall management framework for managing the impacts of marine vessel traffic.

d) To effectively manage the impacts of underwater noise from marine vessel traffic, an Underwater Noise Management Plan (UNMP) (such as the one proposed by Transport Canada (TC)) should set standards and implement measures to achieve vessel-based noise targets in the context of broader area-based noise management targets.

We recommend that UNMPs be mandated for all commercial shipping, including tugboats and passenger vessels to the full extent allowable by the *Canada Shipping Act*, as amended, rather than be triggered when fleets are operating in the habitat of any at-risk marine mammal, for example critical habitat designated under the *Species at Risk Act*. At the same time, however, we believe that additional or alternative measures may be appropriate in sensitive marine and coastal areas.

Two sets of these targets and limits should be mandated: one that applies to overall noise performance for individual vessels and fleets, and one that applies specifically to new builds and, potentially, major retrofits. In developing these targets, the TC should consider the broader goals of spurring innovation in ship design and engineering, improving or not significantly detracting from fuel efficiency, reducing transits through sensitive habitat, and encouraging replacement or substantial noise mitigation of the noisiest vessels in each vessel class. Targets for new builds, and potentially for major retrofits,

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should aim to produce vessels that are "best in class" for underwater noise output. As shown in an analysis recently commissioned by TC,[2] it is currently possible to establish empirical targets for most vessel classes based on the ship signature data compiled over three years by the Port of Vancouver's Showing results for Enhancing Cetacean Habitat and Observation (ECHO) program. The analysis considered adopting, as targets, the median spectral output of the existing noise distribution for each vessel class, since achieving those noise levels would be practicable for the industry while reducing average ambient noise across the measured region. A median target also has the benefit of being generally consistent with the five sets of "quiet ship notation" standards currently available from the major ship-classification societies, as noted in the same study. Standards should include not only Canadian waters, but also those areas outside of the Canadian Exclusive Economic Zone, (the high seas) where Canadian vessels operate.

DO YOU AGREE WITH THE TWO GUIDING PRINCIPLES (SUSTAINABLE DEVELOPMENT AND A PRECAUTIONARY APPROACH BASED ON RISK) THAT HAVE BEEN PROPOSED TO GUIDE THE DEVELOPMENT OF THE STRATEGY? ARE THERE OTHER GUIDING PRINCIPLES THAT SHOULD BE INCLUDED?

Sustainable development and a precautionary approach are good guiding principles. An important part of sustainable development relevant here is the **polluter pays principle**.

Noise is pollution is encompassed, but not legally acknowledged, in the United Nations Convention on the Law of the Sea's definition of pollution. It should be defined as such in Canadian regulation and managed accordingly. The federal government has an important role to play through coordinating national strategies such as this one, through regulation, and through permitting of activities. However, the polluters, are the actors with the most opportunity and the most responsibility to measure and mitigate the damage they cause.

DO YOU AGREE WITH THE THEMES AND OBJECTIVES THAT HAVE BEEN PROPOSED TO GUIDE THE DEVELOPMENT OF THE OCEAN NOISE STRATEGY? ARE THERE OTHER THEMES AND OBJECTIVES THAT SHOULD BE CONSIDERED?

[2] Hannay, D. 2019. Modeling of new thresholds and class society silent notations. Two-part presentation given at Technical Workshop on Quieting Ships to Protect the Marine Environment, International Maritime Organization Headquarters, London, UK, Jan. 30 to Feb. 1, 2019.

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A noise reduction strategy needs to include an overarching guiding framework that articulates the noise prevention and reduction goals and how those goals will be achieved. Among other things it should identify the levels at which noise pollution prevention and reduction targets will be set, and how those targets may be implemented, monitored and assessed. The strategy must also provide a clear timeline for implementation, and the responsibilities of various arms of government to implement different aspects of it.

A noise reduction strategy needs to be anchored in regulation or other ministerial authority like the regulatory tool it is modelled on, pollution prevention plans established under the *Canadian Environmental Protection Act*. To compliment and aid in the operationalizing of the strategy, the Government of Canada should conduct a comprehensive regulatory review to identify what mechanisms and authorities exist and to develop a full inventory of available regulatory tools to implement comprehensive limits on ocean noise regionally and nationally.

WITH RESPECT TO HUMAN-INDUCED UNDERWATER NOISE, ARE THERE ANY MARINE ECOSYSTEMS OR SPECIES, TECHNOLOGIES, AND/OR AREAS OF SCIENCE RESEARCH THAT YOU THINK SHOULD BE CONSIDERED AS FUTURE PRIORITIES?

Prioritize areas with identified conservation objectives such as MPAs, Indigenous use areas and critical habitat for noise-sensitive at-risk species

Areas identified for the conservation of biodiversity which require higher levels of risk aversion, such as MPAs and OECMs, should be prioritized, especially if they contain sound-sensitive species. Additionally, critical habitat, especially that which has been designated for at-risk species for whom noise poses a risk to their recovery, should be prioritized.

Quiet MPAs should be considered for protected areas where conservation objectives include species that are sensitive to the risks of anthropogenic noise.[3] At a minimum, MPAs should be monitoring for noise, to help understand potential impacts and if sound

[3] Williams, R., Erbe, C., Ashe, E., & Clark, C. W. (2015). Quiet (er) marine protected areas. *Marine pollution bulletin*, *100*(1), 154-161.

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levels are growing in MPAs over time so that threats to species can be adaptively managed. Indigenous Knowledge along with science should guide the development of Early Warning Indicators, thresholds and management triggers in these areas to support ongoing adaptive management.

Potential mitigations could include implementing noise limits for areas with identified conservation objectives, prohibiting certain noise-producing activities such as seismic activity or shipping, or introducing measures such as ship speed reductions. Seismic activities, in particular, should be prohibited from these areas. Seismic and sonar testing, used for oil and gas exploration and other purposes, can have harmful effects that must be considered in areas within and adjacent to MPAs. Options that currently exist to mitigate the impacts of seismic testing, primarily monitoring, are largely unproven in their effectiveness. The Science Advisory Secretariat Science Advisory Report *Review of the Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment* states that business-as-usual mitigations are not sufficient to avoid unnecessary impacts on marine species.[4] The potential noise impacts from shipping should also be taken into consideration and mitigated as part of the management process.

As the discussion document notes, the Arctic is a special case. This habitat, where noise will likely increase greatly in the coming decades due to less ice cover, and one where people rely on marine mammals, warrants heightened attention. This means a proactive approach that addresses key knowledge gaps about noise-sensitive species, systematically monitors underwater soundscapes, and holds noise at safe levels for biodiversity. Climate change-induced effects on underwater soundscapes, ecosystem processes, and the distribution of biodiversity in time and space must also be accounted for.

For the Salish Sea, and other areas where underwater noise is already excessive and increasing, a regional framework that sets out a desired noise reduction target consistent with what would prevent harm and enable recovery of Southern Resident killer whales and other marine indicator species and habitats is needed. As previously noted, an explicit goal in such regions would be to begin to restore the soundscape that is dominated by

[4] http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2020/2020_005-eng.pdf

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anthropogenic noise to one that is more natural. Such a framework would identify region wide environmental quality levels for noise. Attaining these noise levels would require activity management for all sectors that generate anthropogenic underwater noise. Noise reduction goals and targets would be adaptively set for these sectors, as a means to achieve regional targets for noise reduction and management.

WHAT KINDS OF ENGAGEMENT AND COMMUNICATION APPROACHES ARE NECESSARY TO ENSURE THE EFFECTIVE AND COLLABORATIVE DEVELOPMENT OF AN OCEAN NOISE STRATEGY FOR CANADA?

A multi-pronged approach is important to ensure collaborative and inclusive development of an Ocean Noise Strategy for Canada. Transparency in decision-making, publicly available data, and feedback loops throughout the process are key. In order encourage a balance of voices, the government should provide financial (travel or technical) assistance to enable a range of constituents to engage. Because noise sources, transmission, and receptors differ from location to location, regional-level engagement is important.

Thank you for providing the opportunity to comment on the framework for the Ocean Noise Strategy.

Sincerely,

Sigrid Kuehnemund

Sigrid Kuehnemund
Vice President, Wildlife and Industry