

ENVIRONMENTAL IMPACT ASSESSMENT

Roberts Bank Terminal 2 Expansion Project

Ecological, Indigenous-rights, and cumulative-effects analysis of a proposed Salish Sea container terminal

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Introduction

The Roberts Bank Terminal 2 (RBT2) Project is a proposed marine container terminal located near Delta, British Columbia, approximately 35 kilometers south of Vancouver. Spearheaded by the Vancouver Fraser Port Authority, the project is designed to address the growing demand for container capacity on Canada's west coast, with an anticipated throughput of 2.4 million twenty-foot equivalent units annually (Government of Canada, 2019). The terminal will be constructed as an artificial island adjacent to the existing Deltaport and Westshore terminals at Roberts Bank, an area recognized for its ecological sensitivity and critical role in regional biodiversity.

The proposal includes the construction of a three-berth terminal, an expanded tug basin, and other supporting infrastructure, along with extensive changes to marine and terrestrial environments. It has been under assessment since 2013 under the Canadian Environmental Assessment Act, 2012, and later the Impact Assessment Act due to the significant environmental and social concerns it raises. The appointed review panel for the project had, after four years of assessments, concluded that the project would likely cause significant adverse and cumulative effects on the local environment, ecosystem, resident health, as well as the quality of life, traditional activities, and cultural heritage (Government of Canada, 2020). Nonetheless, in April 2023, the federal government approved the project, imposing 370 stringent conditions to mitigate environmental risks (Government of Canada, 2019), creating controversies over the project, with opposition from environmental groups, Indigenous communities, and certain public stakeholders citing unresolved ecological and cultural impacts.

Roberts Bank is part of the Salish Sea, a critical estuarine ecosystem supporting diverse marine and avian species. The region is a major stopover site for migratory birds, including the Western Sandpiper, which depends on biofilm—a unique, organic layer on intertidal mudflats—found in this habitat (Environment and Climate Change Canada [ECCC], 2022). Roberts Bank also provides critical habitat for at-risk species, including Southern Resident Killer Whales and Chinook salmon, which are already under significant pressure from climate change, habitat loss, and industrial activities.

Indigenous groups, such as the Tsartlip, Songhees, and Tsawout First Nations, whose traditional territories overlap with the project site, have expressed mixed reactions (Government of Canada, 2019). While some have conditionally supported the project, contingent on mitigation measures and compensation, concerns persist about potential infringements on constitutionally protected treaty rights, particularly those related to fishing and marine resource use (Songhees

Nation, 2022). The project also raises broader questions about the adequacy of consultation processes and whether Indigenous voices are meaningfully integrated into decision-making.

From an environmental perspective, one of the most pressing concerns is the impact on the region's salinity balance, a key factor affecting biofilm production and, thus, the survival of migratory bird populations (Tsartlip First Nation, 2022). The project is also expected to result in habitat fragmentation, increased underwater noise pollution, and heightened greenhouse gas emissions (Environment and Climate Change Canada [ECCC], 2022). Despite recognizing its "significant adverse environmental effects," the federal decision to approve the terminal has prompted legal challenges from environmental organizations and further polarized public opinion. These challenges argue that the project contravenes federal conservation laws, including the Species at Risk Act, by putting endangered species and fragile ecosystems at greater risk.

Discussion

Indigenous Rights and Perspectives

The RBT2 project directly intersects with Indigenous territories, including areas protected under Douglas Treaty rights, which guarantee Indigenous peoples the right to fish as formerly. Indigenous groups, including the Tsartlip, Songhees, and Tsawout First Nations, have expressed conditional support for the project, contingent on compensation and mitigation efforts (Songhees Nation, Tsartlip Nation and Tsawout Nation, 2022). The report also stated they included Indigenous consultation in the planning phase, which aligns with the Impact Assessment Act (IAA, 2019) which recognizes the importance of integrating Indigenous knowledge into EIA processes. Sections 19(3) and 22(1) specifically require the incorporation of Indigenous perspectives alongside scientific data. However, the conditional nature of Indigenous consent suggests that the process may not have fully addressed their concerns, particularly regarding fishing rights.

Fishing Rights

The project risks altering marine ecosystems that sustain key fish populations, particularly Chinook salmon, a critical food source for Indigenous communities and endangered Southern Resident Killer Whales (SRKWs). Fishing rights are constitutionally protected for many Indigenous communities under Section 35 of the Canadian Constitution Act (1982). Additionally, specific treaties, such as the Douglas Treaties on Vancouver Island, ensure that Indigenous groups retain the right to fish "as formerly" (Government of Canada, 1850). These rights extend to traditional and contemporary practices, including the use of marine resources for food, cultural, and commercial purposes. For Indigenous communities in the Roberts Bank area,

such as the Tsartlip, Songhees, and Tsawout First Nations, fishing is not only a livelihood but also a cornerstone of cultural identity and spiritual practice.

Wildlife Impacts

Since the project is situated on the Fraser River estuary, a globally significant ecological area, providing habitat for migratory birds, fish and marine mammals, several community groups on top of Indigenous Nations have voiced their concerns. The Georgia Strait Alliance, David Suzuki Foundation, Raincoast Conservation Foundation, and Western Canada Wilderness Committee filed a joint application for judicial review of the case with Canada's federal court (Government of Canada, 2022).

Salinization Effects

The waters surrounding Roberts Bank provide essential habitat for Chinook salmon and Dungeness crab species. Therefore, salinization of the area is a primary concern for conservation groups because the project's construction could alter the salinity levels in the surrounding waters, impacting the conditions necessary for biofilm production. Salinity change refers to alterations in the concentration of dissolved salts in a body of water. Increased salinity from changes to water circulation and freshwater flow could lead to biofilm degradation.

Salinity is critical in aquatic ecosystems because it determines species distribution, ecosystem function, and water density. Many marine organisms are susceptible to salinity changes as they are adapted to specific ranges. Even small shifts can disrupt species' survival and reproduction. For example, juvenile salmon, which depend on brackish water during their estuarine migration, struggle to thrive in areas where salinity increases beyond tolerable levels. Chinook salmon, a critical species for Indigenous fisheries and SRKWs, depend on the Fraser River estuary for migration and spawning (Tsartlip First Nation, 2022).

Further changes in salinity, sedimentation, and water flow caused by terminal construction could degrade these habitats, reducing salmon populations. Ecosystem functions, including nutrient cycling and primary productivity, are also influenced by salinity, which directly affects the growth of critical resources such as biofilm (ECCC, 2022). Additionally, salinity impacts water density, altering circulation patterns and mixing, which is vital for maintaining habitat conditions.

Moreover, birds such as the Western Sandpiper rely on biofilm for energy during migration. As salinity directly affects ecosystem health and biodiversity, understanding and mitigating these changes is crucial, particularly in sensitive environments like Roberts Bank, where natural processes support diverse species and habitats (Tsartlip First Nation, 2022).

Southern Resident Killer Whales (SRKWs)

SRKWs, an endangered population of orcas residing in the Salish Sea, face significant risks from the Roberts Bank Terminal 2 (RBT2) project. With fewer than 75 individuals remaining, SRKWs are highly vulnerable to environmental changes and anthropogenic impacts (ECCC, 2022). The RBT2 project could exacerbate several existing threats to their survival, including prey depletion, underwater noise, and pollution.

Chinook salmon (*Oncorhynchus tshawytscha*), the SRKWs' primary food source, is already experiencing population declines due to habitat loss, overfishing, and climate change. The Fraser River estuary is a critical rearing and migration corridor for Chinook salmon. Construction and operation of the RBT2 terminal are expected to degrade this habitat through habitat loss and cumulative effects.

SRKWs also rely heavily on echolocation for hunting, navigation, and communication. Increased vessel traffic from RBT2 operations will likely raise underwater noise levels in their critical habitat. Consistent underwater noise disrupts feeding and resting patterns, possibly displacing habitat (ECCC, 2022). Although the RBT2 environmental assessment proposes noise reduction measures, such as speed restrictions and quieter ship technologies, these are unlikely to fully mitigate the noise levels associated with increased vessel traffic.

Another primary risk is pollution, where increased industrial activity in the Roberts Bank area may heighten the risk of water contamination. Pollutants like heavy metals, pesticides, and microplastics introduced through dredging and increased shipping can enter the food chain, leading to bioaccumulation in Chinook salmon and SRKWs (ECCC, 2022).

Ultimately, the worst-case scenario would be vessel collisions or spills that could release toxic substances into the marine environment, contaminating SRKW habitat and bioaccumulating their prey. Research has shown that SRKWs are highly contaminated with persistent organic pollutants, affecting their immune and reproductive systems. Further contamination would exacerbate these effects and reduce population viability (Government of Canada, 2019).

Recommendations

Strengthen Indigenous Fishing Rights

1. Greater Indigenous-led collaboration: Establish co-management frameworks for monitoring impacts on marine ecosystems.
2. Enhanced habitat protection: Prioritize salinity management and proven methods for conserving Chinook salmon habitats over experimental mitigation strategies.

3. Co-management agreements: Establish Indigenous-led co-management frameworks to ensure active participation in monitoring and decision-making.
4. Access guarantees: Develop navigation and operational protocols that maintain physical access to traditional fishing areas.
5. Stronger cumulative impact assessments: Include more robust analyses of cumulative impacts to species critical for Indigenous fisheries.

Bolster Wildlife Protections

Mitigating Salinity Risks

1. Improved hydrodynamic modeling: Use advanced, high-resolution models to simulate salinity changes and their long-term effects under various scenarios.
2. Protecting freshwater flows: Collaborate with water management agencies to ensure adequate freshwater inflows, particularly during dry seasons or droughts.
3. Ongoing monitoring: Establish a comprehensive monitoring program for salinity, biofilm, and species health before, during, and after construction.
4. Adaptive management: Develop flexible management plans to adjust to observed salinity changes and implement additional mitigation as needed.

Mitigating Risks to SRKWs

1. More robust noise mitigation: Enforce stricter speed limits for vessels and mandate the use of advanced quiet-ship technology for all terminal-related traffic.
2. Pollution prevention: Develop robust oil-spill response plans and ensure funding for emergency containment measures, along with monitoring and limiting contaminants introduced through dredging and vessel activity.
3. Critical habitat protection: Designate additional protected areas within SRKW ranges and restrict vessel activity in high-use zones.

Conclusion

Ultimately, while the RBT2 project offers potential economic benefits, its approval must align with Canada's commitments to biodiversity conservation, climate change mitigation, and reconciliation with Indigenous peoples. The project can only avoid irreparable harm to this vital estuarine ecosystem through rigorous and inclusive planning and ensure a sustainable and equitable future. The Roberts Bank Terminal 2 (RBT2) project encapsulates the tension between economic growth and environmental sustainability, highlighting significant challenges in balancing industrial development, ecological preservation, and protecting Indigenous rights.

While the project is intended to address growing demands for container capacity on Canada's west coast and bolster the nation's trade competitiveness, it raises substantial concerns regarding its impacts on biodiversity, treaty rights, and ecosystem health.

The Fraser River estuary, where RBT2 is proposed, supports a rich tapestry of marine and avian life, including critical habitats for Chinook salmon, Western Sandpipers, and Southern Resident Killer Whales (SRKWs). The project risks altering this delicate balance through habitat fragmentation, salinity changes, and increased pollution and noise, jeopardizing the survival of these species. Moreover, the degradation of biofilm, essential for migratory birds, and the depletion of Chinook salmon, a keystone species for both SRKWs and Indigenous fisheries, underscores the project's far-reaching ecological consequences.

References

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