The Boundary Bay Conservation Committee (BBCC) continues to raise major concerns about the Roberts Bank Terminal 2 Project.

Just yesterday, October 27, 2016, the World Wildlife Fund (WWF) published a warning the world will lose two-thirds of wild animals by 2020:

“worldwide populations of mammals, birds, fish, amphibians and reptiles have plunged by almost 60% since 1970s as human activities overwhelm the environment.”


The proposed Roberts Bank Terminal 2 Project is a classic example of a human activity that will overwhelm the environment. There is no place on earth that duplicates the interactive ecosystems of the Fraser River estuary.

Global Significance and Designations

Western Hemispheric Shorebird Reserve Network Site
Ramsar Site as a Wetland of International Significance
Canada’s Major Stopover for Migratory Birds of the Pacific Flyway
Canada’s Most Important Bird Area and listed under Birdlife International as “in danger”
Where else in the world is there an amazing estuary with a shallow salt water bay nearby (Boundary Bay) and farmland in between creating a corridor for migrating birds of the Pacific Flyway? The shallow bay and farmland provide protected roosting areas, food supply, and shelter during bad weather.

Much has changed since this 2001 aerial photo, looking out over historic farmland towards Deltaport

“The Fraser estuary supports the highest concentration of migratory birds in Canada, up to 1.4 million during peak migration times. More than two billion juvenile salmon spend weeks or months in the estuary before beginning their ocean migration, making the Fraser the greatest salmon producing river on earth…” (Estuaries in B.C. March, 2006, B.C. Ministry of Environment)

It is the interactive habitats that create unique ecosystems supporting Canada’s largest numbering of wintering shorebirds, waterfowl and birds of prey. The Fraser River delta has been declared a Ramsar site, a wetland of international significance. This area exceeds the Ramsar criteria – sixty times for shorebirds and thirty times for waterfowl. How amazing is that! And yet, when the Ramsar site was declared, the provincial and federal governments agreed to leave a hole in the site. Guess where? Yes, at Roberts Bank. How irrational is that when Roberts Bank is central to the interactive, interdependent habitats of the Fraser River estuary and delta.

Roberts Bank is vital to the survival of the migratory birds and the migrating salmon. There can be no doubt it was a political decision to leave a gaping hole in the Ramsar site. It was a political decision that raises questions about government integrity in terms of placing value on Canada’s internationally-significant habitat. It also raised serious questions about the decision-making processes for the Roberts Bank Terminal 2 Project.

The Roberts Bank Terminal 2 Project puts the whole area at risk. It needs to be documented in the Environmental Impact Statement that 80% of the Lower Fraser River wetlands have been destroyed and only 20% of the marsh, mudflats, eelgrass, and river habitats remain.

80% of the Lower Fraser River wetlands have been destroyed

There are only 20% of the marsh, mudflats, eelgrass, and river habitats remaining along the Lower Fraser River that existed 100 years ago.
Cumulative Effects

BBCC concurs with the submission of B.C. Nature, November 6, 2012 that lists concerns that have not been sufficiently addressed:

a) The port causeway has radically changed the pattern of sediment deposition at the mouth of the Fraser River. There has been no feasibility study of breaching the causeway to restore tidal flushing and intertidal function to southern Roberts Bank.

b) Migratory birds regularly are killed in collisions with the power lines along the causeway yet studies are still incomplete, many years after the problem was identified, and no opportunity has been taken during previous multimillion dollar upgrades of the causeway and terminals to bury the lines.

c) It is far from clear that the Third Berth Compensation projects have been effective in creating new, replacement, habitat that will have the longevity required to ensure continued use by wildlife. For example, unsuitable plantings along the causeway have died. As far as we know, there has been no comparative study made public on the use of compensation areas by wildlife, prior to and post construction.

d) The effectiveness of claiming that holes in the foundation caissons are suitable compensatory fish habitat, as done for the Third Berth and recommended for Terminal 2, requires scientific scrutiny. This is not salmonid habitat.

e) Risk of introduced alien species. For example, the Spartina problem is increasing, not declining.

f) Compensation for loss of farmland habitat associated with cumulative impacts from the port’s expansions, notably South Fraser Perimeter Road (SFPR) and the Road and Rail Improvement Project. By avoiding a true cumulative impact assessment of all these facets of the port’s expansion, compensation and mitigation for their environmental impacts were avoided. For example, the SFPR was constructed on farmland that was used by waterfowl and shorebirds in winter, yet no compensation was levied of the type required by YVR for their parallel runway project.

Canadian Environmental Assessment Act

19. (1) The environmental assessment of a designated project must take into account the following factors:

(a) the environmental effects of the designated project, including the environmental effects of malfunctions or accidents that may occur in connection with the designated project and any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;

The cumulative residual adverse environmental effects of the Project are not presented in a comprehensible professional format in the numerous documents.

The EIS does not provide scientific evidence indicating how the Terminal 2 Project will act cumulatively with historic changes that have resulted from past projects such as the causeways, coal terminal, ferry terminal, Iona sewage outlet, road and rail upgrades and increased shipping.
The EIS does not provide scientific evidence indicating how the Terminal 2 Project will act cumulatively with planned projects such as the Jet Fuel Project, the LNG WesPac Tilbury Marine Jetty Project, the Surrey Fraser Docks Coal Project, the new Fraser Crossing, and any others.

The EIS does not provide scientific evidence indicating how the Terminal 2 Project will act cumulatively with the Pacific Gateway Strategy Action Plan of 2006 and the Gateway Transportation Collaboration Forum.

The EIS does not provide scientific evidence to confirm that the Precautionary Principle was applied to assessment of the valued components.

Developments to date on Roberts Bank have done tremendous damage to the Fraser River Estuary and there has been no convincing attempt to restore lost habitat.

Piecemeal destruction of marshes, mudflats and sub tidal habitats is ongoing leading to degradation of the entire Fraser River estuary. There is a callous disregard for environmental sustainability at Roberts Bank.

The EIS fails to present a list of all past projects and the cumulative effects of these projects as required under Section 19.1(a) of the Canadian Environmental Assessment Act. The list should include biophysical, economic, social, heritage and human values that have been impacted by these projects and their cumulative effects.

Each chapter in the EIS has failed to scientifically support statements of ‘no residual effects’ or ‘negligible effects’. Each chapter has failed to include significant adverse residual environmental effects of the Terminal 2 Project in combination with past and future projects.

The lack of this information has been ongoing as stated by a government expert in 2010:

“Notwithstanding the parameters related to mitigating the impacts of the DP3 project, this continuing habitat loss and erosion of mudflat, biofilm and eelgrass features are a defacto port-development aretefact.”

(Email, March 15, 2010, acquired through Freedom of Information)

**Wildlife Impacts**

Public and Government experts have made submissions to the Roberts Bank Terminal 2 Project identifying major flaws in the Environmental Impact Statement and expressing concerns of residual adverse environmental effects which cannot be mitigated or compensated.

Environment and Climate Change Canada, October 11, 2016

“ECCC concludes that there is a risk of significant adverse environmental effects to biofilm and consequently, migratory shorebirds in particular Western Sandpiper. Resultantly, the predicted effectiveness of the proposed monitoring and follow-up program is insufficient.
Changes to biofilm composition at Roberts Bank have the potential to affect nutrient availability at Brunswick Point during the key spring migratory period, which could have species-level consequences to migratory birds. ECCC would consider species-level impacts to migratory birds to be significant.  

Environment and Climate Change Canada, October 14, 2016

“The Proponent’s estimates for marine emissions in the EIS and MSA contain inaccurate assumptions that may not reflect the potential Project-related effects from marine emissions.

Further, the regional study area is too small to assess air emissions from road and rail transportation associated with the Project. As well, the EIS lacks information on mitigation measures for emissions from road, rail, and cargo handling equipment.

The EIS indicates that Project construction will result in considerable re-suspension of sediments, and changes in distribution patterns of natural TSS (Total Suspended Solids) from Fraser River discharges due to terminal infrastructure are also expected. As a result, the EIS indicates that the Project will result in an increase in TSS loadings in the intertidal area of Roberts Bank.

ECCC’s assessment is that there are substantive issues, omissions, and uncertainties within the EIS related to biofilm and shorebirds. Such uncertainties cast reasonable doubt on the Proponent's conclusions with respect to potential effects of the Project on shorebirds, in particular the Western Sandpiper. If the migration chain is compromised, the long-term viability of Western Sandpipers as a species would be adversely affected given Roberts Bank’s importance as a stopover site during northward migration.”

It is clear the studies on the biofilm and the use of modeling did not meet scientific standards of assessment.

The Roberts Bank Terminal 2 Project will impact numerous interactive, interdependent habitats with negative effects:

- Marine habitat will be destroyed and altered from dredge-and-fill, spills, disposal at sea, noise, light, and air pollution.
- Dungeness crab areas will be decimated.
- Migrating salmon will be impeded on their journey making them susceptible to predation.
- Vital areas of nutrient-rich biofilm will be lost threatening the survival of shorebirds.
- Fill laced with PCBs or other toxins will pollute the area.
- Contaminants to sediments, plant life and crab fisheries will release higher levels of arsenic, cadmium and selenium into the food chain.
- Dredging and filling will negatively impact the entire area ecosystems changing tidal flats, water flows, habitats and species dependent on the unique biomass formed where the fresh water flows into the sea.
- Dredging will cause transboundary sediment dispersion leading to direct mortality and damage to marine life.
- Disposal at sea will release persistent contaminants affecting water and sediment quality.
- There will be cumulative health impacts to the Metro Vancouver area from noise and air quality due to increased volume of trucks, trains and marine vessels.
• There will be significant effects on human health from particulate matter and from secondary ozone which is formed when nitrogen oxide and volatile organic compounds react in sunlight.
• The Project threatens the future of agricultural lands which are vital to the B.C. economy and human health. The uplands support Canada’s number one habitat for wintering shorebirds, waterfowl and birds of prey. Speculators (including B.C. Rail), have purchased lands OR are placing options on nearby properties in the Agricultural Land Reserve.

**Shipping Addendum**

The Shipping Addendum is incomplete and lacks scientific information. The BBCC raises concerns that the conclusions that “no adverse cumulative effects are anticipated” is not based on evidentiary science. The use of the word “anticipated” is inappropriate language in a document that is supposed to present conclusions based on credible science.

The BBCC is also concerned that the significant impacts to endangered southern resident killer whales have not been appropriately addressed. To avoid accountability to endangered southern resident killer whales by stating ongoing significant adverse cumulative effects “are expected to remain significant” does not qualify as an environmental assessment of the impacts of shipping associated with the Terminal 2 Project. Not only is the conclusion irrational in terms of the environmental assessment requirements, it displays a lack of understanding of the gravity of this serious issue. As mentioned in a previous submission, members of the BBCC suggest this statement alone should be sufficient to deny approval of Terminal 2.

Numerous documented concerns are not being addressed as CEAA is allowing Port Metro Vancouver (the Proponent) to claim the port is not accountable beyond the project footprint.

Despite legal submissions advising that this contravenes the *Canadian Environmental Assessment Act* (2012), CEAA supports a disclaimer in the Terms of Reference stating the **effects of the Project on marine shipping are not environmental effects of the Project and will not be included in the Minister of Transport’s decision on the Project.**

There will be far-reaching effects beyond the project footprint as the container ships will be traveling in the ecologically sensitive estuary and narrow shipping channels to the Pacific. This route, Orca Pass, is also the route of the endangered Southern Resident Killer Whales. Large ships emit sounds in the range of 160 to 210 decibels (dB). The Recovery Strategy for the endangered Southern Resident Orcas says: "sounds in excess of 160 dB have the potential to disrupt marine mammal behaviour, and sounds in excess of 180 decibels may cause physical injury".

This intent to slip past due diligence provides a reason to terminate this flawed process under the *Canada Marine Act*, the *Canadian Environmental Assessment Act*, the *Species at Risk Act*, and the *Environmental Protection Act*. 
Orca population are registered as a Species at risk under Canada’s Species at Risk Act SARA). The members of this population feed on Roberts Bank at least twice a week from April to October and members of J Pod potentially all year round. All three Pods (J, K and L) of the Southern Resident Orcas spend the late spring, summer, fall and early winter in Juan de Fuca Strait, Haro Strait, Boundary Pass and southern Georgia Strait. It has been acknowledged by both the American and Canadian governments as well as many Non-Government Organizations in both countries that this area, often called “Orca Pass”, is “critical habitat” for this endangered group of Orcas.

**Accidents and Malfunctions**

It is unclear how the conclusion was reached that “the likelihood of accidents or malfunctions has been assessed as very low.” Considering recent information, this conclusion lacks validity. The recent accident, October 13, 2016, of a tugboat near Bella Bella sends a clear message that there is a high likelihood of accidents. If a mere tugboat accident can spill diesel fuel into an area of enormous ecological, economic and cultural significance to the Heiltsuk Nation, a similar accident can, and is very likely, in the Fraser estuary and the narrow shipping lanes to the Pacific.

This accident demonstrates how unprepared B.C. is for this type of accident, or worse.

Given the location of the proposed Terminal 2, the current Deltaport Terminals and the Westshore Coal Port on Roberts Bank just north of the BC Ferry Terminal whose ferries run across the path of the all these commercial ships, the worst case must include such an accident. Further, the proposed LNG vessels will be travelling the same route a most horrifying worst case but sadly possible
Compensation and Mitigation

There is no scientific information to support claims that mitigation and compensation can reduce the risks of the Roberts Bank Terminal 2 Project. Already there are ongoing sources of mortality and disruptions to wildlife due to current operations at Deltaport and recent expansions of road and rail infrastructure.

There are ongoing and future risks and impacts including:

- loss and impacts to mudflats
- changes and loss of intertidal habitat along the causeway
- direct loss of marine and tidal habitats
- loss of biofilm habitat
- loss and disturbance of fish habitat
- increasing obstacles to migrating salmon
- increased predation of migrating salmon
- Increased shipping
- ongoing road and rail expansions
- increased light and noise pollution
- increased introduction of alien species
- ongoing impacts to adjacent upland habitat

The past and ongoing habitat banking activities of the Port in hopes of getting approval for Terminal 2 are manipulative. It sends a message that Terminal 2 is a “done deal”. It is also inappropriate of government agencies to be collaborating with the Port on such a controversial issue and on controversial compensation.

No credible science was presented in the compensation plans for the Deltaport Third Berth Project. Lost habitat was not scientifically replaced. Channels created up the river cannot be equated with the habitats at the mouth where the fresh water and salt water mix to create unique habitats. Original mitigation and compensation plans were considerably altered after the fact.

The plans and implementation for Adaptive Management of the Deltaport Third Berth have never been summarized, scientifically supported, or even been made public.

So-called compensation activities by the Port over the last few years have not received independent evaluation. Unfortunately the Port has been destroying existing habitats and creating different habitats without scientific evidence or any accountability to the public. The result is a Net Loss. This cannot be credibly accepted as compensation for destroyed habitat at Roberts Bank.

Provincial Environmental Assessment

The Canadian Environmental Assessment Agency failed to include the B.C. Environmental Assessment requirements in the Terms of Reference and the opportunity for the public to comment on the provincial requirements.
The Province of BC is not participating actively and as a result provincial accountability is missing in the Environmental Impact Assessment (EIA). The B.C. Minister of Environment has accountability to B.C. legislation and cannot improperly delegate responsibilities for protection and conservation to the federal government without ensuring B.C. environmental assessment requirements are met. This is missing in the EIA.

The accountability of the B.C. Government should be specifically included in the EIA with identification of responsibilities. The B.C. Government has commitments under Species at Risk Act, Recovery Strategy for the Northern and Southern Killer Whales (Orcinus orca) in Canada. The Southern Resident Killer Whales are listed as endangered.

BC Government has commitments under the Species at Risk Act, Recovery Strategy for the endangered White Sturgeon- the largest, longest-lived freshwater fish species in North America.

There is combined federal and provincial accountability to listed species:
Special Concern: Green Sturgeon, Cutthroat Trout
Endangered: Eulachon

The B.C. Government and the Government of Canada should disclose a list of the species (including listed species) that will be impacted by this Project and show how the Precautionary Principle is being applied to their protection.

The Environmental Impact Assessment needs to disclose cooperative agreements that are relevant to this project – with the federal government and with the US Government, including but not limited to:

- Canada-British Columbia Agreement on Species at Risk
- Accord for the Protection of Species at Risk
- Fraser River Estuary Management Plan
- B.C. Environmental Management Act
- Integrated Salmon Management Plan
- Marine Mammal Regulations on Disturbance
- B.C. Roberts Bank Wildlife Management Area
- B.C. South Arm Marshes Wildlife Management Area
- B.C. Marine Oil Spill Contingency Plan
- Environmental Cooperation Agreement between B.C. and Washington State
- The Georgia Basin Action Plan
- B.C. - Washington Environmental Cooperation Council and the Environment Canada-Environmental Protection Agency Statement of Cooperation on the Georgia Basin and Puget Sound Ecosystem
- Ecosystem-wide initiatives such as the Georgia Basin Ecosystem Initiative in British Columbia and the Puget Sound Water Quality Action Team in Washington State are supporting on-the-ground action to begin addressing these complex problems through partnerships and capacity building.
- Joint Statement of Cooperation on the Georgia Basin and Puget Sound Ecosystem - Environment Canada and United States Environmental Protection Agency

Concerns being addressed in these initiatives are not included in the Environmental Impact Assessment.
There is no excuse for building a second container terminal at Roberts Bank due to the ecological significance of the site. There are alternatives at other B.C. ports which have natural deep sea harbours and plenty of room to accommodate any growth in the container business.

The valued components at Roberts Bank are of international value and cannot be replaced, mitigated or compensated due to the complexity of the interactive, interdependent habitats formed by the Mighty Fraser entering the sea creating a unique, amazing estuary.