

Boundary Bay Conservation Committee (BBCC)
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Cindy Parker
Panel Manager, Roberts Bank Terminal 2 Project
Panel.RBT2@ceaa.gc.ca

About the Boundary Bay Conservation Committee (BBCC)

The Boundary Bay Conservation Committee (BBCC) was established in 1988 to enhance public awareness of the Fraser River delta and estuary. We have worked with other conservation groups to obtain protection and recognition for this world class ecosystem.

Comments on Request Packages 7 through 13

It is difficult to wade through layer upon layer of input to the Roberts Bank Terminal 2 -Environmental Impact Statement (RBT2-EIS). CEAA staff has obviously done their best to put information in comprehensible order but the threads are spread throughout many documents so finding a summary of a specific issue in sequential order is difficult and very time consuming. For this reason it is incomprehensible to the general public.

It is not clear why the Review Panel chose to focus in on certain elements of the EIS in their requests for information. The understanding is that the Review Panel made requests for information because they decided numerous points in the original Environmental Impact Statement were insufficient.

In fact, there have been so many flaws that the EIS should have been found totally insufficient at an earlier stage.

The BBCC notes that further input on some insufficient information was not requested by the Review Panel. In addition, the responses by the Vancouver Fraser Port Authority remain insufficient on many issues.

One key insufficiency of the RBT2 EIS is the failure to realistically recognize the importance of the Roberts Bank ecosystems:

- how Roberts Bank is interactive, interdependent, ecosystems vital to the health of the globally-significant Fraser River Estuary
- how historic and ongoing developments have degraded over 80% of this magnificent gift to mankind
- how RBT2 Project will act cumulatively to further degrade Roberts Bank, and the whole estuary, as the area is an integral part of the Fraser River Estuary ecosystems where fresh and salt water blend to support species of international importance and foster human health

Of this there can be no doubt.

By presenting the components of the RBT2 Project without genuinely considering the impacts to the sustenance of the Fraser River Estuary, the EIS fails to credibly identify the permanent, significant, residual, damaging environmental effects of RBT2.

While the public is invited to participate in analyzing and commenting on endless pieces of the RBT2-EIS, the big picture is effectively ignored.

Insufficient Evidence of no harm to components of the RBT2-EIS

1. Insufficient Information on Coastal Birds, Heritage Resources, Habitat Loss, Marine Fish, Marine Vegetation, Marine Sediment, Biofilm, Marine Invertebrates, Juvenile Salmon, Marine Water Quality, Coastal Birds Air Quality, Human Health Risk Assessment, Marine Vegetation, Physical and Cultural Heritage, Current Use, Cumulative Effects Assessment
- The EIS fails to identify, address, and incorporate the valued ecosystem components of the Fraser River Estuary, British Columbia's greatest estuary:
- estuaries and lagoons make up only 10-20% of the coastline along the Pacific Coast of North America
 - largest estuary on the Pacific coast of North America (21,703 hectares)
 - intertidal wetlands, alone, cover roughly 17,000 hectares
 - freshwater flows from the river are so great that, technically, the entire southern Strait of Georgia is an estuary
 - 17 million tonnes of nutrient-rich sediment that pass through and deposit on the delta and into the Strait of Georgia each year (McLean and Tassone 1991)
 - 2-3 million cubic meters of coarser sand
 - supports largest salmon runs in the world including six species of Pacific salmon - chinook, coho, chum, pink, steelhead and sockeye
 - famous for endangered white sturgeon and eulachon
 - more than two billion juvenile salmon spend days, weeks or months in the estuary before going to the ocean—most of any river in the world
 - the riches of the Fraser River and estuary, including sandy beaches, mudflats, eelgrass meadows, marshes, bogs, farmland and woodlands create a unique ecosystem that is recognized with international, national and provincial designations.
- The EIS fails to identify and meaningfully address the RBT2 Project in context of provincial, federal and international designations that recognize the importance of the ecosystems of the Fraser Estuary:



International Designations

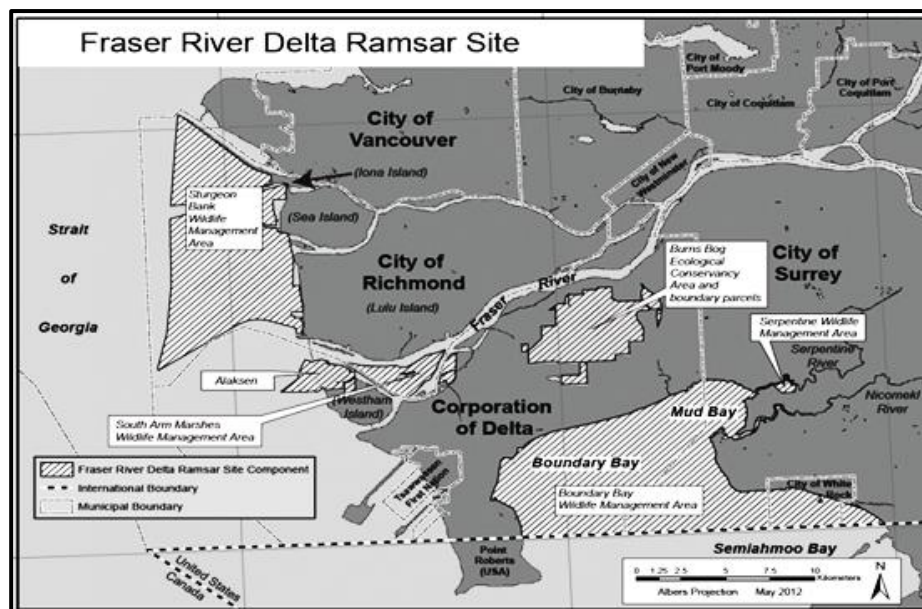
Fraser Delta RAMSAR site

On September 22, 2012, the Ramsar Convention on Wetlands announced the designation of 20,682 hectares of land as a Ramsar Wetland of International Significance, the highest designation for the protection of wetlands. The Fraser River Delta Ramsar Site includes:

- Burns Bog
- Wildlife Management Areas of Sturgeon Bank, South Arm Marshes, and Boundary Bay
- Serpentine
- Alaksen Ramsar Site

With the declaration of the RAMSAR site, most of the Fraser Delta was included **with the exception of the Roberts Bank Wildlife Management Area and the rich eelgrass beds around the Deltaport Coal and Container Terminals. Deltaport activities are seriously degrading habitats that are not found elsewhere in the estuary due to the particular mix of salt and fresh water at Deltaport. The omission of Roberts Bank is purely a political act which puts the health of the estuary at risk.**

<http://www.ramsar.org/news/canada-vastly-extends-vancouver-wetlands>



Canada's Top Three Important Bird Areas - IBAs

International recognition from BirdLife International for Canada's three top sites in the Fraser estuary:

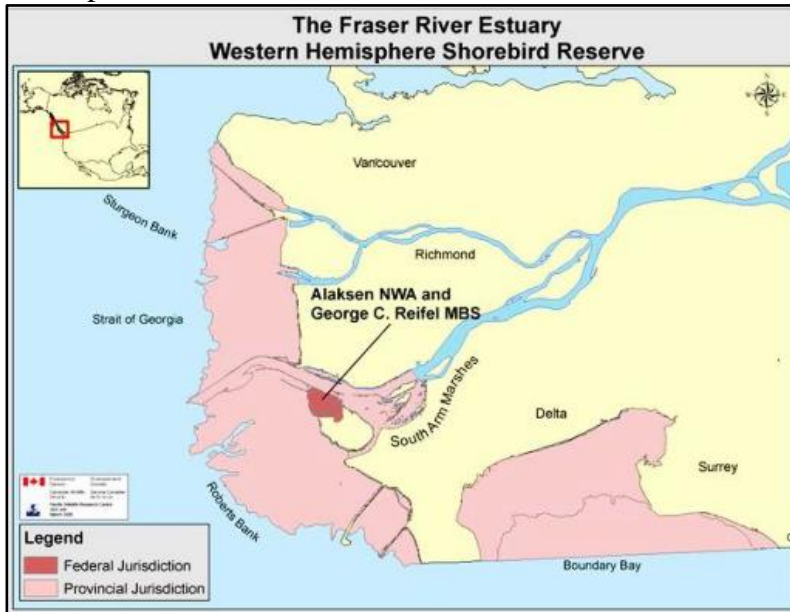
- Roberts Bank
- Sturgeon Bank
- Boundary Bay

Designated in 2001, the estuary is the most significant Important Bird Area (IBA) out of 597 sites in Canada.

***The estuary was listed as one of the "Global IBAs in Danger" in 2015

Western Hemispheric Shorebird Reserve Network Site - WHSRN

In 2004, the Western Hemisphere Shorebird Reserve Network (WHSRN) gave the Fraser Estuary its highest designation as a Hemispheric WHSRN Site. (www.whsrn.org) It is one of only eight Hemispheric Sites.



Federal Designations

Canadian Heritage River – designation of the Fraser River in 1998 in recognition of its exceptional natural, cultural and recreational values – the Fraser has the largest estuary on North America’s Pacific Coast:

“– the largest river in British Columbia, ...the greatest salmon river in the world – is a river of superlatives...

...it merges with the Pacific Ocean among vast wetlands, internationally recognized as an important staging and nesting area for shorebirds and waterfowl

http://www.chrs.ca/Rivers/Fraser/Fraser_e.php

Alaksen National Wildlife Area

The Alaksen National Wildlife Area, established in 1972, is a protected area located on Westham Island. A section of the Alaksen National Wildlife Area overlaps with the George C. Reifel Migratory Bird Sanctuary.

George C. Reifel Migratory Bird Sanctuary - established in the 1960s for the protection and conservation of migratory birds.

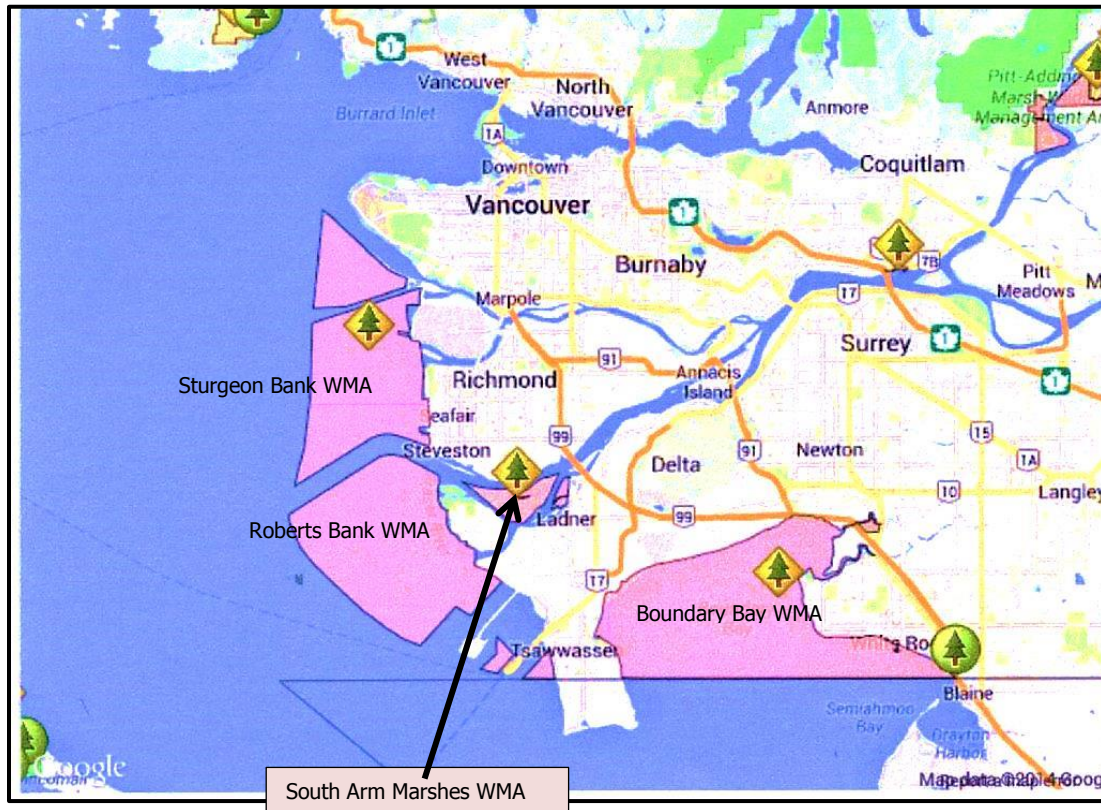
Joint Designations (federal, provincial, regional, municipal)

Burns Bog Ecological Conservancy Area

In March 2004, the Governments of Canada, British Columbia, Metro Vancouver, and the Corporation of Delta purchased 2,042 hectares (5,045 acres) of Burns Bog. The Burns Bog Ecological Conservancy Area was formed with a registered protective Covenant. A Management Plan was completed in May 2007

Provincial designations

4 Wildlife Management Areas (WMA) in the Lower Fraser Estuary



Map of Wildlife Management Areas in Fraser Estuary

<http://www.env.gov.bc.ca/fw/habitat/conservation-lands/wma/map.html>

- **South Arm Marshes Wildlife Management Area** was declared on May 31, 1991 for the management of critical habitat for waterfowl, shorebirds, raptors, songbirds and small mammals.
- **Boundary Bay Wildlife Management Area (WMA)** was declared on June 21, 1995 as internationally significant habitat for year-round and migrating waterfowl and shorebirds as well as important critical fish and marine mammal habitat. It was identified as an important link of the Pacific Flyway.
- **Sturgeon Bank Wildlife Management Area** established 1998 for conservation of critical, internationally significant habitat for year-round, migrating and wintering waterfowl populations, as well as fish habitat.
- **Roberts Bank Wildlife Management Area** declared on September 7, 2011 for management of critical habitat for fish, waterfowl, shorebirds, raptors and other species. It is the vital central link in the chain of inter-connected and protected estuary habitats.

The provincial government deliberately left out key habitat areas of the Roberts Bank Wildlife Management Area to enable the construction of the container Terminal 2 at Roberts Bank. The large gap in the Roberts Bank Wildlife Management Area is vital habitat with unique nutrients due to tides, temperatures and a particular mix of salt and fresh water. The richness and abundance in this location is unparalleled anywhere else in the estuary. Similar habitats can be located but their nutrient value is not as high and their interactive values cannot be duplicated.

Environment and Climate Change Canada addresses these designations in Submission #1091 with important information for the Review Panel.

- The Roberts Bank Terminal 2 (RBT2) Regional Assessment Areas (RAA) for Marine Vegetation and Coastal Birds valued components overlaps three internationally designated sites: the Fraser River Delta Ramsar Site (FRDRS), the Fraser River Estuary Western Hemispheric Shorebird Reserve Network (WHRSN) site, and the Fraser River Estuary Important Bird Area (IBA).
- The Fraser River Delta Ramsar Site was designated because of its importance to migratory birds. Specifically, it is recognized as internationally critical migratory stopover habitat for Western Sandpiper and provides feeding and roosting sites for approximately 250,000 migrating and wintering waterfowl and 1 million shorebirds. The site is also of high importance for non-avian marine life.
- Canada has a unique responsibility with respect to shorebirds in that more than half of their breeding range occurs in Canada. The Fraser River Estuary is a site that has been designated as being of hemispheric importance for shorebirds
- The Fraser River Estuary has been recognized as an important bird area. The recognition of an area as an IBA is meant to be a ‘conservation currency that transcends international borders and promotes international collaboration for the conservation of the world’s birds’
- There is also federal legislation with protective provisions for fish and wildlife, and their associated habitats, that have potential bearing to these designated sites including the Species at Risk Act, Fisheries Act, Migratory Birds Convention Act, 1994 (MBCA), and the Canadian Environmental Protection Act, 1999. Information on these pieces of legislation and on the Federal Policy on Wetland Conservation can be found in ECCC’s June 23, 2016 submission to the panel (CEAR# 450).
- The RBT2 EIS predicts that the Project would result in habitat loss, including 55.6 ha of intertidal and 113.0 ha of subtidal habitat permanently lost due the project footprint, and 17.4 ha of subtidal habitat due to dredging or densification. The Proponent proposes habitat offsetting to address residual adverse effects, including effects to Marine Vegetation and Coastal Bird functional groups.
- There is a high likelihood that proposed Project offsetting would not be fully successful, even in the long term. In particular, technical measures are not currently available to offset biofilm impacts. ECCC advises that substantial technical challenges exist to achieving successful offsets in terms of replacing wetland habitat types and wetland functions. Finally, a high level of uncertainty remains on biofilm-shorebird ecology and the potential impacts that this Project may have on biofilm production
- Although the designated sites’ conservation priorities were considered through Project siting (i.e. identified in the Project’s Alternatives Assessment), the RBT2 EIS does not adequately consider these conservation priorities in the following area: - Predicted changes in salinity and associated potential effects to lipid-rich biofilm and shorebirds

- Cumulative Effects Assessment: Although the designated sites' conservation priorities were considered through Project siting (i.e. identified in the Project's Alternatives Assessment), the RBT2 EIS did not adequately consider these conservation priorities in relation to the following areas: - Historical wetland losses in combination with losses predicted with the Project; and, - Potential Project implications on the efficacy of future adaptive management actions to address predicted future effects, in particular climate change driven sea-level rise, in the RAA.
- The RBT2 EIS notes that expanding intertidal marsh and biomat will result in 'encroachment of two different marine vegetation types in areas of biofilm, and the gradual loss of suitable biofilm habitat in the future'; that 'climate change will play an increasingly large role in shaping Roberts Bank tidal flats in the future'; and, that 'adverse changes to habitats supporting coastal birds, such as biofilm, from sea level rise could be extensive and will occur irrespective of the Project'.
- These likely future effects are important considerations for the cumulative effects assessment, and highlight the importance of conserving remaining wetland habitats within the LAA (*Local Assessment Area*) and RAA (*Regional Assessment Area*). Further, the Project, if it were to proceed, has important implications on the efficacy of future adaptive management actions to address predicted future effects, in particular climate change driven sea-level rise, in this area. In this regard, the RBT2 EIS does not include an evaluation of potential Project implications to these broader ongoing wetland conservation issues.

The five maps on pages 17 to 21 are very important as they show the importance of Roberts Bank even though the area was politically omitted from recognition. The maps show that the marine vegetation at Roberts Bank area is a vital area of the Fraser River conservation areas.

- The EIS fails to identify and describe the impacts of historic developments at Roberts Bank and the surrounding area, all of which have degraded the environmental values of the Fraser River Estuary.

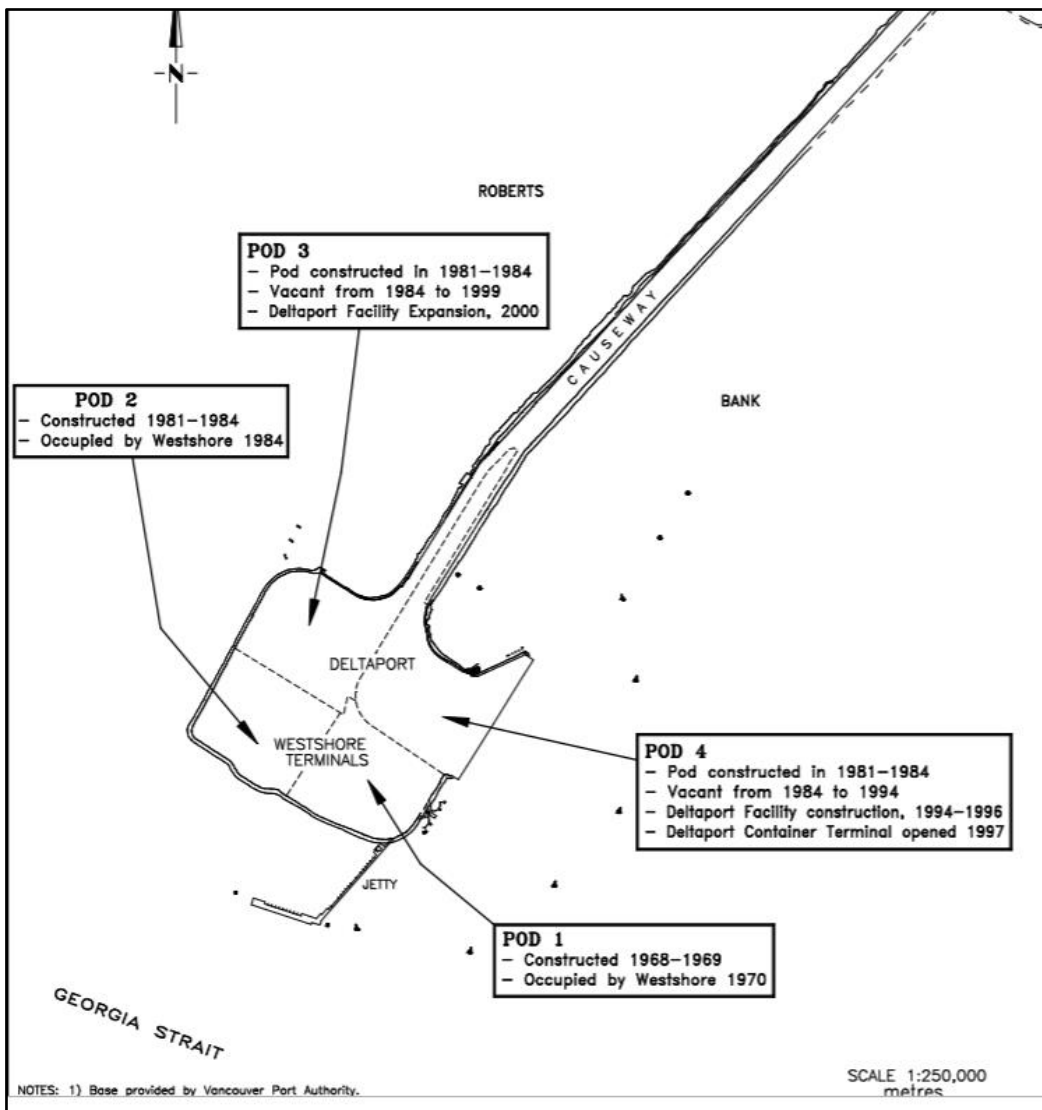
The value of Roberts Bank to wildlife was first recognized when some 27,200 acres (11,007 ha) of crown land and waterlots were protected under a provincial Order-in-Council in 1961. This Provincial Order-in-Council Reserve No. 2374 was established "for game management purposes". The Reserve included Crown (Provincial) land, foreshore, and land covered by water. The 2011 declared area is for 21,670 acres (8,770 ha).

5,530 acres were removed from legal protection for the Tsawwassen First Nation Treaty and for port expansions at Deltaport. The provincial government transferred 2,851 acres of crown waterlot to the federal government for the Deltaport expansions. There are plans to transfer an additional 665 acres of crown waterlot for Roberts Bank Container Terminal 2 with 3 new berths. These waterlots are being leased to the Port of Vancouver for container shipping.

The Chronology of developments at Roberts Bank raises flags about incremental infill of the Fraser River Estuary for decades without appropriate consideration and protection of irreplaceable estuarine life.

Chronology of Filling the Fraser River Estuary for Transportation and Industrial Purposes

- 1958: Tsawwassen Ferry Terminal
After the Ferry Terminal was built, the provincial government recognized the wildlife values and moved to protect Roberts Bank
- 1968-69: Federal Government allowed construction of the Coal Terminal (Pod 1) and Causeway
Originally 20 hectares (49.4 acres)
- 1977: Provincial Order-in-Council 908 made area subject to environmental impact assessment
- 1977: Proposal to expand Roberts Bank Coal Terminal
- 1979: Federal Minister of Environment, the Honourable Len Marchand at a news conference stated:
"full expansion of the port would present an unacceptable threat to the Roberts Bank ecosystem"
- 1979: The 1979 Federal Environmental Assessment Review (FEAR) Panel that had reviewed the proposal to expand the Roberts Bank Terminal recommended:
"that approval for the full expansion as proposed not be granted".
The Panel:
"concluded that the potential impacts on the Fraser River estuary, ... are too great to recommend that the port expansion be approved as proposed. The extent and ecological significance of the Fraser River estuary, particularly its use by fish and wildlife, make it Unique in North America."
(FEARO 1979)
- 1981-1984: Roberts Bank Terminal was expanded to widen the causeway and create Pods 2, 3 and 4 without an environmental assessment
- 1997: Container Terminal built on Pod 4 at Roberts Bank
- 2000: Container Terminal expanded on Pod 3
- 2006: Construction of Deltaport Third Berth was completed
- 2019: Plans to more than double the existing infill structures at Roberts Bank with a new island and expanded tug basin and causeway



➤ The EIS fails to provide information of historic, scientific evidence of incremental harm at Roberts Bank

Historic scientific evidence is not properly documented and the valuable information is completely ignored:

One example: A Study in the 1990s by Ron Kistriz (*reported in the Vancouver Sun, September, 1993*) found a significant loss of Fraser River estuary habitat, in spite of a federal program that was supposed to conserve foreshore habitat for juvenile salmon and prevent further loss of habitat. The study documented loss due to increase in river traffic and trade-offs such as B.C. Ferries and developments at Roberts Bank. The study documents loss of:

- 903,000 square metres of sub-tidal habitat
- 41,000 square metres of mud and sandflats habitat
- 19,400 square metres of marsh habitat
- 2,600 square metres of wooded riverbank

Another Study urged protection of the Roberts Bank in the Fraser River Estuary to prevent loss of water quality:

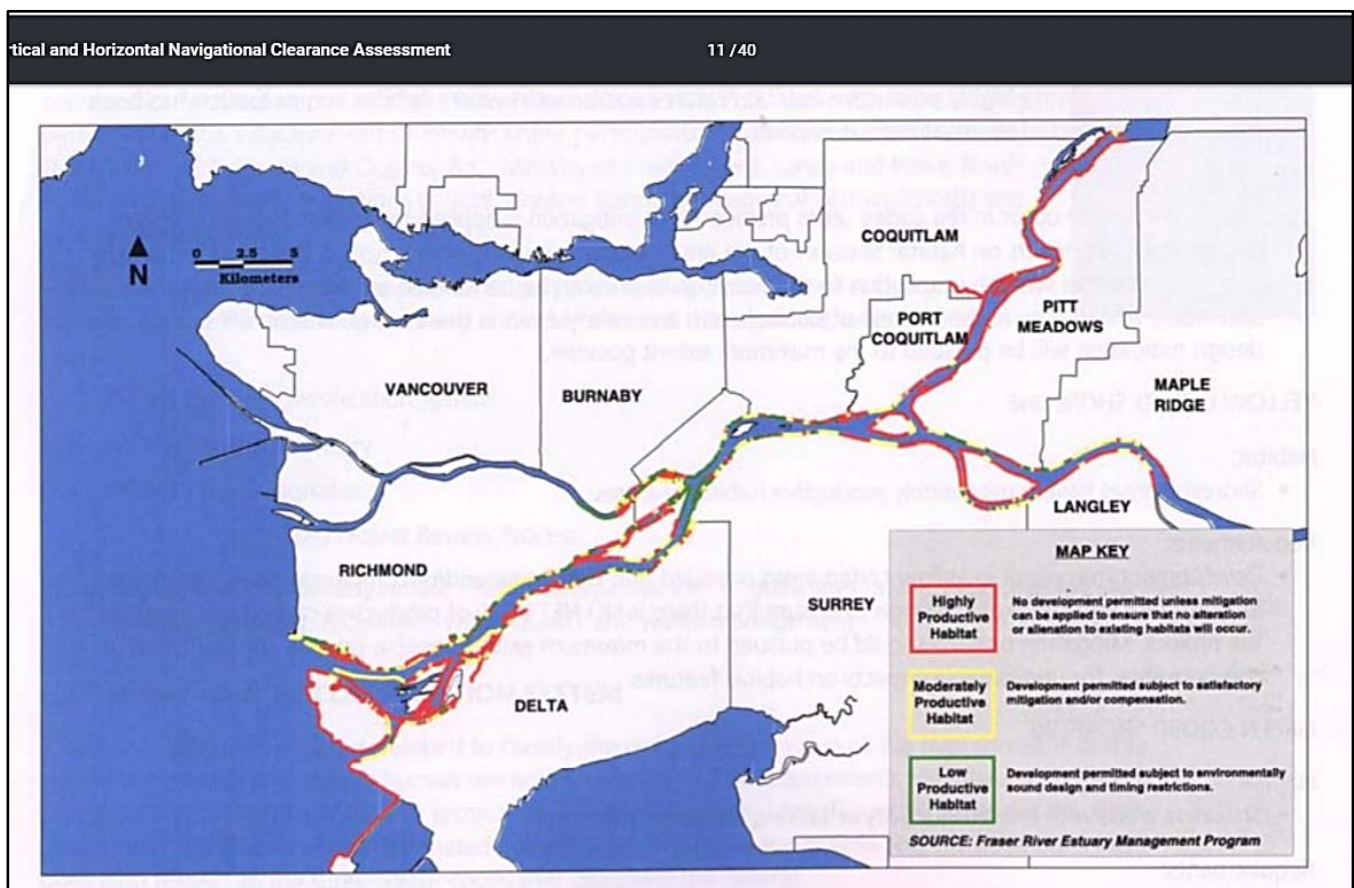
“the quality of water in the Fraser River, its estuary and associated marine environment should not be further degraded...
...Many of the internationally-significant species will be maintained only if healthy habitats are preserved. Important areas, such as Roberts Bank and Boundary Bay, must be vigorously protected.”¹

Numerous reports by government experts in the Department of Fisheries and Oceans are ignored along with mapping and reports by the Fraser River Estuary Management Program (FREMP)

The Map of Shoreline Sensitivity from the Fraser Estuary Management Plan (FREMP) is missing. The map shows Roberts Bank as red zone where the VFPA plans to widen the causeway and expand the area around the existing terminal. The red zone is identified as High Productivity Habitat which states:

“No development permitted unless mitigation can be applied to ensure that no alteration or alienation to existing habitats will occur.”

Fraser River Estuary Management Program (FREMP) Map showing Shoreline Sensitivity

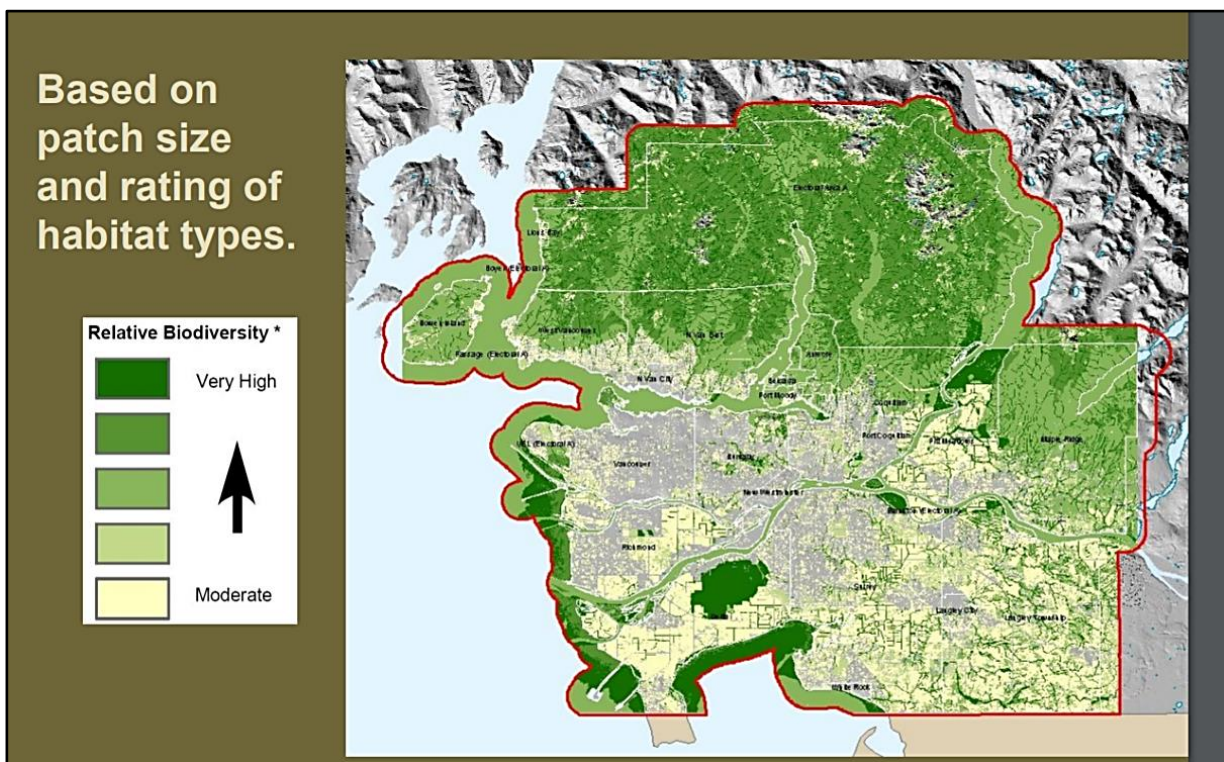


¹ Canadian Wildlife Service such as #65, *The birds of the Fraser River delta: populations, ecology and international significance*, by R.W. Campbell and K.W. Campbell, 1986, page 63:

RBT2 plans include filling in 123 acres of waterlot for the widened causeway and around the existing terminal. This red-coded area, as shown in the map above, has high productive habitat features which will be destroyed.

The FREMP Habitat Classification system was developed to classify the overall habitat value of the river shoreline and to specify requirements for future human use and development. The requirements were based on federal and provincial legislation utilized to regulate the use of land and to protect aquatic and riparian habitat. Development was legally required to address the impacts of any works on these designations as identified by FREMP.

The following map shows the “very high” rating of Roberts Bank habitat and its importance to regional biodiversity:



Burrard Inlet Environmental Action Plan: BIEAP-FREMP Habitat Inventory

All of these laws and policies have been ignored. It is ironic that the red zone at Roberts Bank is in the area left out of the RAMSAR site and the Roberts Bank Wildlife Management Area. The federal and provincial governments have worked against the public interest in protecting the Fraser River Estuary by ignoring past laws, regulations and policies and by failing to include Roberts Bank in provincial and international designations. These were deliberate political actions against environmental protection that had been identified as crucial for decades.

2. Insufficient consideration of effects of RBT2 on Marine Fish

- The EIS fails to openly disclose the size and extent of the RBT2 and impediments to migrating fish species. The Vancouver Fraser Port Authority submitted a recent report to the Review Panel.²

Page 29/36 states:

“The terminal would sit on 108 hectares of new industrial land, created mainly from sand that is released in the Fraser River ...”

The document also mentions a widened causeway and expanded tug basin but fails to provide the size of filled waterlot. It would have been honest of the VFPA to report that the Project is 186 hectares of fill, not 108 hectares.

186 hectares = 460 acres **almost half the size of Stanley Park** (1001 acres)

equivalent to 348 football fields

Project Component	Sub-component Area (ha)	Component Area (ha)
Marine Terminal		133.5
• Terminal including slope, toe of slope, and three-berth wharf	116.1	
• Berth pocket and marine approach areas	17.4	
Widened Causeway		49.4
• Causeway including slope and toe of slope	42.4	
• Overpass and road tie-ins on existing causeway	6.0	
• Rail tie-ins and emergency access road tie-in on mainland	1.0	
Expanded Tug Basin		3.1
Total Project Area		186.0

Note: Useable land area for the terminal is approximately 108 ha, and for the widened causeway is approximately 36 ha, due to the differences between the crest and the toe of slope elevations.

Is the Review Panel aware of just how massive this Project will be? It will be more than double the existing infill structures at Roberts Bank.

Existing Filled in Fraser River Estuary at Roberts Bank for Port Facilities

Westshore Terminals: 80 hectares (198 acres) - bulk handling coal port facility

Deltaport: 85 hectares (210 acres): three container terminals

Plans to fill in Fraser River Estuary for Roberts Bank Container Terminal 2 to more than double existing site

Planned Terminal: 186 hectares (460 acres)

² ‘Roberts Bank Terminal 2 Project Overview and Rationale, October, 2018’.

<https://www.ceaa-acee.gc.ca/050/documents/p80054/125977E.pdf>

- The EIS fails to effectively address the 80 species of fish and shellfish from an ecosystem approach
 - the information provided is too fragmented and does not adequately address the issue of survival of fish species depending on complex interactive and interdependent processes in the estuary
- The EIS states unsubstantiated conclusions about expected changes and conditions with the RBT2 Project.
 - lack of evidence for the statement that dredging and filling the Fraser Estuary for the RBT2 Project is not expected to change conditions in the estuary and/or introduce pollutants

How can a Project this size NOT impact the conditions in the estuary?

- The EIS fails to adequately address the impacts to migrating fish:
 - Terminal 2 will be like a dam across the river
 - Serious disruption to fish movements
 - Fish will be more susceptible to predators
 - Effects of substantial increase in lighting
 - Effects of noise
 - Effects of air pollution
 - Effects of changes to water quality
 - Dredgate fill is not properly tested for toxins
- The EIS fails to credibly incorporate the findings and recommendations of the Cohen Commission on *'The Uncertain Future of Fraser River Sockeye, October 2012'*:
 - Based on the evidence I heard, DFO is not achieving its goal of net gain of productive fish habitat. Nor is it achieving No Net Loss – the guiding principle of the first goal of the 1986 Habitat Policy. Further, DFO measures neither habitat loss nor gain.
 - Notwithstanding repeated findings that DFO has not met the objectives of its 1986 Habitat Policy, the evidence before me is that the department has not yet undertaken to complete the policy's implementation. Instead, I heard that DFO aims to develop a new habitat policy. Based on the evidence I heard, the 1986 Habitat Policy is a valuable tool for the protection of productive Fraser River sockeye habitat. In my view, DFO does not need a new habitat policy; rather, it needs to complete implementation of the 1986 Habitat Policy
 - The 1986 Habitat Policy recognizes that the cumulative impact of development projects (due to the collective effect of habitat degradation and loss arising from multiple projects in an area) is a serious concern, but DFO considers proposed projects only on a project-by-project basis. On the evidence, I find that cumulative impact is one of the key factors that negatively affect fish habitat. DFO needs to manage this cumulative incremental harm, which, over time, could have a substantial effect on Fraser River sockeye habitat. The habitat management system DFO has in place does not address these harms adequately.
 - Downsizing within DFO and at the provincial level – and the disengagement of British Columbia in many joint habitat management activities with DFO – have resulted in the department placing greater reliance on streamlining processes to manage impact on fish habitat.

I heard convincing evidence from several DFO Habitat Management Program staff that these streamlining processes and budget reductions have had a negative impact on DFO's ability to protect Fraser River sockeye freshwater habitat.

- The Department of Fisheries and Oceans should undertake or commission research on Fraser River sockeye salmon smolts at the mouth of the Fraser River estuary, before they enter the Strait of Georgia, to determine stock / Conservation Unit abundance, health, condition, and rates of mortality
- The Department of Fisheries and Oceans should consider the cumulative effects of stressors on Fraser River sockeye health and habitat in its management of fisheries and fish habitat.
- The Department of Fisheries and Oceans should undertake or commission research, in collaboration with academic researchers and, if possible, the Pacific Salmon Commission or another appropriate organization, into where and when significant mortality occurs in the nearshore marine environment, through studies of the outmigration from the mouth of the Fraser River through to the coastal Gulf of Alaska, including the Strait of Georgia, Juan de Fuca Strait, the west coast of Vancouver Island, Johnstone Strait, Queen Charlotte Sound, and Hecate Strait. Studies should examine
 - abundance, health, condition, and rates of mortality of Fraser River sockeye salmon;
 - biological, chemical, and physical oceanographic variables, including water temperature, the presence or absence of harmful algal blooms, and disease;
 - predators, pathogens, competition, and interactions with enhanced salmon affecting Fraser River sockeye salmon; and
 - contaminants, especially contaminants of emerging concern, endocrine-disrupting chemicals, and complex mixtures

The Review Panel is empowered to seek input from experts. The information from the Cohen Commission outlines the questions that should be asked and answered about the impacts of Roberts Bank Terminal 2 on the survival of sockeye salmon. The Review Panel should be requesting that the Vancouver Fraser Port Authority and the Department of Fisheries and Oceans report on how they are meeting the recommendations of the Cohen Commission in reference to the impacts of the RBT2 Project on the ongoing stressors on the sockeye salmon.

The public deserves, and expects, this level of scrutiny considering the tax dollars that have been spent on the Cohen Commission and the Department of Fisheries and Oceans and considering the environmental values of the Fraser River Estuary.

3. Insufficient evidence to assess cumulative effects of RBT2 on the Fraser River Estuary

- On July 5, 2004, Environment Canada wrote that there had never been a cumulative effects assessment of all the developments at Roberts Bank, the original construction and expansion phases. In consequence, there is no information on the long-term effect of previous expansions and historical losses.
- As the RBT2 Project addresses only the Project footprint, it fails to address cumulative effects and their impacts on the region and cross jurisdictional boundaries which will be significant.

- The public has the right to know how the RBT2 Project will affect the local area, the whole Fraser River Basin and all Canadians because this is one of the world's most important estuaries.
 - The documentation of cumulative effects of the RBT2-EIS is piecemeal and fragmented which is illogical because it is the accumulation of all the damage that is destroying the Fraser Estuary and the species that rely on the health of the river, the estuary and the Salish Sea.
 - The cumulative effects as stated in the RBT2 are based on assumptions, not evidence. Models are tools for assessment, but they are not evidence because the input is limited and cannot consider all the complexities of interactive, interdependent ecosystems.
 - The cumulative effects fail to credibly apply the Precautionary Principle.
 - The effects on eelgrass, fish, birds, sedimentation, erosion, water quality, salinity, mudflats, sandflats, marsh habitat, sub-tidal habitat, are interactive and interrelated. Species in the area and throughout the Fraser River and Salish Sea depend on the ongoing health of these habitats. How is it possible to state there will be no residual significant environmental damage?
 - The cumulative effects assessment will be invalid as the Scope of the RBT2 has failed to appropriately include the effects on the endangered Southern Resident Killer Whales in the decision-making process.
4. Insufficient evidence to ensure that Compensation and Mitigation plans are sufficient to avoid significant residual adverse effects.
- Recent submissions from the Department of Fisheries and Oceans and Environment Canada are long dissertations on pros and cons of various habitat compensation and mitigation plans. The Vancouver Fraser Port Authority expresses plans to piggyback existing habitats and place offsets in strange locations. It is too much to ask the public to wade through the information. However, it appears to have moved beyond a serious look at inevitable damage. This process cuts out effective public participation.
 - Compensation plans are defined after the EIS and lip service is paid to public follow-up.
 - Habitat Compensation and Mitigation Plans and actions take place behind closed doors after approval of a Project. There is no public disclosure or accountability. This subverts any acceptable notion of transparency and credible ecological planning and protection.
 - Adaptive Management Strategies are ongoing and ineffective. You can't build a project of this size without monumental environmental impacts.
 - The BBCC had to go through the process of Freedom of Access to Information to find out what happened with after-the-fact compensation and mitigation for the Deltaport Third Berth. Eventually there was a published report with the usual statements of success. However, no credible scientific evidence was provided.

- The Freedom of Information Request confirmed the Deltaport Third Berth Project was continuing the ongoing pattern of habitat destruction at Roberts Bank. A provincial government expert wrote:

“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.”

- As for monitoring, in 2010, the B.C. Government expert reporting on ‘Reporting Updates from the Port’s Consulting Firm’ were:

“grossly incomplete (despite repeated input over the last two years)”
(Email acquired through Access to Freedom of Information)

This information confirms lack of cohesiveness in actions after a Project is approved, proving that compensation/mitigation plans are ineffective.

- The on-site compensation for the intercauseway was not implemented leading to the continuing loss and erosion of mudflat, biofilm and eelgrass features caused by ongoing port activities. And this is where the tug basin expansion is planned for RBT2.
- When it came to implementing the “Plan”, the Agencies concluded (several years later) that the compensation/mitigation plans for the intercauseway between the Tsawwassen Ferry Terminal and the Roberts Banks ports might not be successful and, furthermore, might cause, further damage.
- As a result, the plan was abandoned. It was replaced with a last-minute scramble for offsite compensation which was a totally different set of interactive environmental processes and habitat. It was so-called enhancement of existing, protected habitat so there was a net loss of habitat.
- The result is ongoing habitat loss in the intercauseway. There was no transparency.
- There was no disclosure with respect to the dendritic channels in the intercauseway and continuing loss and erosion of mudflat, biofilm and eelgrass features.
- Compensation money for loss of fish habitat at Deltaport was given to Ducks Unlimited to improve habitat that is already owned and protected by Nature Trust and the B.C. Government. This was all arranged behind closed doors during the Environmental Assessment process of the Deltaport Third Berth.
- During the process, it was announced that the Vancouver Port Authority, the Canadian Wildlife Service, and the Department of Fisheries and Oceans were entering agreements to give Ducks Unlimited and the Pacific Salmon Foundation \$1.5 million for off-site compensation for habitat loss at Roberts Bank.
- The loss of habitat at Roberts Bank at the mouth of the Fraser River is irreplaceable and it is unconscionable that off-site habitat compensation was not a duplicate of the lost habitat

- Habitat compensation was on Rose-Kirkland Island in the South Arm Marshes. The island was purchased in 1960 and managed as a private hunting club. In 1989, the Nature Trust and the Pacific Estuary Conservation Program purchased the island and subsequently leased it to the B.C. Ministry of Environment. “The ministry, in turn, licenced annual agriculture management and production to the Kirkland Island Waterfowl Society to attract and support migrant waterfowl. In exchange, the society received exclusive use of the islands as a hunting club.” Ducks Unlimited Canada has been involved since 1993 in “making the islands more productive to the thousands of waterfowl that uses the island during the winter.”
- Ducks Unlimited received the precious habitat compensation money to enhance the protected area that is still used exclusively for hunting.
- The Third Berth destroyed 21.9 hectares of fish habitat at Roberts Bank. How can anyone say creating a new channel in an area that is already protected is credible compensation? No credible scientific information was ever provided to support this action. We lost fish habitat at Roberts Bank that is gone forever. Enhancing areas that are already protected doesn’t begin to replace that which is lost.
- Compensation and mitigation plans are not carried out with credible scientific evidence, transparency or fairness. It is tragic that they are after-the-fact measures. They have become contributing elements of the devastating incremental loss of globally-valued habitats at Roberts Bank.

The Review Panel members may be limited in options of addressing habitat and mitigation plans. However, they are in a position to make strong statements about credible versus incredible plans.

There is no doubt that there will be irreplaceable, irreparable harm to the Roberts Bank ecosystems with the RBT2 Project.

RBT2- EIS Process is not public-friendly

The layers of requests and responses are so complicated in this EIS process that the public has been effectively cut off from meaningful input and participation. The Review Panel and the Canadian Environmental Assessment Agency could learn from looking at the work of the Review Panel for Roberts Bank in 1979. It was a straight forward process that was comprehensible to the public. It showed respect for the public and for the complexities of the Fraser River Estuary ecosystems.