Global Container Terminals Deltaport Expansion Berth Four Project
Project Documents: Studies & Field Work

GCT continues to advance desktop studies to evaluate the wealth of publicly available information and is committed to working with academia, stakeholders, Indigenous nations and others to continue to build on the extensive body of knowledge that exists for Roberts Bank and surrounding areas. GCT is committed to engaging with regulators and Indigenous nations on the scope and methods used to conduct future studies, the results of which will be presented in the Project's assessment. Where available and with permission, traditional use information and Indigenous Knowledge, including information related to Indigenous rights and interests will be incorporated into the Impact Assessment. This list will be updated as new studies and field work is commenced in the region.

Marine Subtidal Sediment Survey

Sediment quality is an important indicator of environmental quality. Changes in the physical and chemical characteristics of sediments can have direct and significant effects on aquatic life, particularly epibenthic (e.g., Dungeness crab) and infauna (i.e., invertebrates living in the sediments).

Water Quality and Oceanography

Water quality is also an important indicator of environmental quality, and changes in water quality can, directly and indirectly, affect aquatic life. In the coastal marine environment, water quality is significantly influenced by tidal cycles and seasonal changes such as the discharge of the Fraser River. The water quality characterization is focused on the conditions in the berth area and the immediate vicinity, these conditions will be important for characterizing potential effects to aquatic life.

Seasonal Fish Assemblage

Marine fish are critical components of estuarine and marine food webs, influencing the structure and function of nearshore and offshore ecosystems, and contributing to overall ecosystem health. Many species are also of social, economic, and cultural importance to local communities and Indigenous groups that use the Fraser River Estuary. The studies outlined in this work plan are designed to answer the following question: How will fish habitat use and productivity be altered by the potential DP4 footprint?

Adult Crab Survey

Dungeness crabs are a vital part of the marine food web, serving as both predators and prey throughout their life cycle. Estuaries are important nursery habitats for juvenile Dungeness crabs, and thus are essential to produce future adult stocks for fisheries. Dungeness crab is one of the main harvested invertebrate species for Tsawwassen First Nation, whose Fishing Area includes parts of the Fraser River estuary and Boundary Bay and encompasses the Project footprint (Blakley et al. 2018). The Dungeness Crab Productivity work plan is designed to address the following question: How might the habitats potentially affected by the DP4 footprint affect habitat utilization and abundance of Dungeness crabs?

Shorebird Migration Survey

Despite the importance of the Fraser River Estuary (FRE), and specifically the Roberts Bank area, to shorebirds, the population status and trends of many shorebird species that use the site remain uncertain. Surveys of shorebirds and their diet conducted for this Project will allow characterization of existing conditions in the FRE and provide a basis for assessing potential Project effects.

Shorebird Fecal Survey

Fecal counts are an effective means of accurately assessing sandpiper density on mud and sand flats and provide a measure of habitat use (e.g., location, abundance, timing, duration). Laboratory analysis of fecal samples reveals diet information (e.g., composition and abundance/quantity) for different shorebird species that use upper intertidal habitats. Fecal counts can be compared to visual surveys of birds, and samples of infauna and biofilm, to determine links to important feeding areas.

Intertidal Benthic Infauna Survey

Benthic infaunal (organisms living within sediment) invertebrates (e.g., annelids, arthropods, molluscs) comprise a vital component of shorebird diets.

Biofilm Distribution and Quality Survey

A layer of biofilm often forms on the top 2 mm of intertidal mud and sandflats in the Pacific Northwest and is an important food source for shorebirds. Changes to the quantity and quality of biofilm at Roberts Bank could have a negative impact on the high densities of shorebirds that use the mud and sandflats to rest and refuel during migration. Prior data (i.e., from the Roberts Bank Terminal 2 assessment) indicates that biofilm was more abundant north of the Roberts Bank causeway.

Marine Intertidal Habitat Mapping

The main objective of the intertidal vegetation aerial imagery and ground-truthing surveys is to map all intertidal vegetated and non-vegetated marine-influenced areas, which provide habitat and food sources for other biota (e.g., crabs, salmonids), that may be affected by the Project. Understanding the overall area and value of habitats within the LAA is necessary for determining how the Project will affect intertidal habitats, which habitat types are the most vulnerable, what permitting is required, and how to offset potential effects.

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