

# MARINE VEGETATION

**Study geographic boundaries:** Marine terminal PDA, PEAA, CCAA.

**Study time boundaries:** Construction and operations phases.

**Project works and activities considered in the study\*:**  
 Construction – on-shore infrastructure site preparation (clearing, burning, grading, blasting); in-water infrastructure site preparation (dredging, blasting, pile drilling); in-water infrastructure construction (marine terminal, permanent jetty, construction jetty, pile installation); construction support vessels (barges, tugs, ocean disposal barges); ocean disposal (waste overburden, drill cuttings); on-shore site restoration; in-water

infrastructure site restoration; decommissioning support vessels. Operations – physical footprint of in-water infrastructure; marine vessel traffic, tanker traffic, tug traffic.

**Study methods:** Intertidal surveys were completed in 2005/6 and 2008 to characterize the shoreline communities along approximately two kilometres of the shoreline near the marine terminal. A standard quadrat and transect methodology was used

to collect information. No specific fieldwork was undertaken for marine riparian vegetation; rather, a review of literature and aerial photographs were used to determine the presence and extent of riparian vegetation along the shoreline around the terminal.

VEC	Key Issues	KIR	Baseline Results	Measurable Parameter	Potential Project Effects**	Proposed Mitigation	Residual Effects	Cumulative Effects				
Marine Vegetation	<p>Eelgrass is an ecologically important species to the region. The plants can form extensive sub-tidal beds that serve as habitat for juvenile and adult invertebrates and fish. Eelgrass beds provide cover from predation, reduce local current regimes (allowing for settlement of organisms) and add to overall ecosystem productivity. Eelgrass beds are extremely sensitive and are threatened by coastal development worldwide.</p> <p>Out of all the seaweed species on the North Central Coast, rockweed has the largest biomass in the region. It provides food and shelter to a number of near-shore organisms that make up intertidal and subtidal communities in the region.</p> <p>Despite being located on the land, marine riparian vegetation plays an important role as incubation, rearing and migratory habitat for several commercially important fish species, such as salmonids. Although there is limited research on marine riparian vegetation, it is thought to be important for food production, temperature regulation, wave energy absorption and provision of habitat structure in coastal environments.</p>	Eelgrass	The surveys revealed small patches of eelgrass close to the terminal, but no eelgrass beds in the immediate vicinity of the terminal. The largest eelgrass bed found during surveys was in the Bish Creek Estuary.	Direct mortality. Changes in habitat quality. Change in habitat availability.	Changes in water quality resulting from increased sedimentation or exposure to contaminants from re-suspended sediments, bilge water or runoff may affect the growth, survival and recovery potential of eelgrass.	Currently being assessed.	No eelgrass beds are located near the terminal, and computer modeling indicates that the dredging sediment plume will not extend to sensitive areas such as the eelgrass bed in Bish Cove.	Not applicable.				
		Rockweed	The surveys also indicated that rockweed populations are widespread and abundant. Rocky shores were found to be common, providing ample rockweed habitat. Additionally, rockweed is capable of growing on man-made structures and is expected to grow on the underwater terminal structures.	Direct mortality. Changes in habitat quality. Change in habitat availability.					Changes in water quality resulting from increased sedimentation or exposure to contaminants from re-suspended sediments, bilge water or runoff may affect the growth, survival and recovery potential of rockweed.  Construction activities present the greatest risk in terms of potential disturbance to marine vegetation.	Currently being assessed.	Because rockweed is very common in the region and dredging activities will be a considerable distance away from the largest eelgrass bed in the area, no measurable environmental effects on marine vegetation is anticipated.	Not applicable.
				Marine riparian vegetation								

\*Refer to Figure 3.3 in section 3, Project description, for the full list of physical works and activities. \*\*The effects of spills and malfunctions will be included in the update for the supplemental filing.