SHORELINE AREA (Reach Code): Marine 13- Marine Park			REACH NUMBER: 39
Land Use	Current Land Use		Marine Park, open area associated with Sewer treatment property, parking and small amount of single family residential (bluff). (Ref# 8, 54, 71)
	Zoning		12.9 acres public, 11.9 acres water, 0.3 acres residential, 0.2 acres industrial (Ref# 54)
Potential Species Present	Wildlife species		18.2 acres mustelid and 7.9 acres pinneped habitat; great blue heron colony south of treatment plant. (Ref# 3, 70, 71, 105)
	Fish species		Surf smelt and sand lance spawning areas in front of Marine Park, offshore shrimp and crab populations. Presumed presence of Coho and Bull trout. (Ref# 3, 70, 71, 105)
	PHS species/habitat		Surf smelt and sand lance, great blue heron colony(Ref# 3, 70, 71, 105)
	TSE species		Chinook in bay, federally threatened ESU (FT & SC). Coho (FCo) and Bull trout (FT) presumed. (Ref# 97, 98)
	Invasive wildlife/fish species		No data
Physical Environment	Acres of land in reach		25.3 acres total with 12.6 acres of land and 12.7 acres of water. (Ref# 13)
	Aquatic vegetation		7.2 acres eelgrass, 1.2 acres green algae, 0.6 acres mixed algae, 0.4 acres marsh (Ref# 97, 98)
	Slope		0-5% slopes dominate; 20-35% slopes are also present, mostly in the southern extent of the reach. (Ref# 47, 103)
	Buildings		8 buildings with 1.34 acres of coverage(Ref# 16)
	Culverts/stormwater utilities		2 sewer main lines touch reach. 1 storm drain outfall in lagoon. One rail crossing (bridge) at mouth of lagoon. (Ref# 40, 41, 42)
	Geology		Continental sediment deposits and alluvium. Land slide hazard area is indicated on slopes 15-35% or greater in the southern extent of the reach. A seismic hazard area (man-made fill) is indicated in the northern extent of the reach. (Ref# 21, 51, 63)
	Tributary Creeks		None indicated (Ref# 8, 42, 71)
	Impervious surface		51% semi-pervious, 45% impervious, 4% pervious (Ref# 12)
	Invasive plant species		No data
	Roads/transportation		0.1 miles roads (0.1 acres) , 0.5 miles rail (Ref# 34, 44, 46)
	Soils		Infiltration rates: 11.3 acres with very slow infiltration and high runoff potential (Hydrologic soil Group D), 3.2 acres high infiltration and low runoff potential (Group A). Erosion potential: 22.2 acres severe erosion risk, 3.2 acres slight erosion risk. (Ref# 51, 63)
	Topography		0’ to 69’ range; 8’ mean(Ref# 47)
	FEMA		18.3 acres 100 year floodplain, no floodway in reach (Ref# 19)
	Terrestrial Vegetation		Vegetation cover limited to low herbaceous cover with scattered shrubs in lower areas. Mixed deciduous forest on the bluffs at south end of reach. (Ref# 8, 71)
Marine Aquatic Function	Aquatic substrate type		4.0 acres mixed coarse, 3.8 acres mixed fines, 2.5 acres sand, 1.4 acres artificial (rock bulkhead) (Ref# 3, 99)
	Creosote structures		Treated pilings under trestle to lagoon. (Ref# 71, 73, 74, 99)
	In-water structures		No docks, except rail crossing at lagoon mouth. Some creosote piles. (Ref# 71, 73, 74, 99)
	Bulkheads		Most of reach armored with rock bulkhead. Natural shoreline exists within the lagoon away from the rail bed. Railroad- rock rip rap and gravel ballast. Concrete Rip rap bulkhead in park is being replaced with foreshore habitat. (Ref# 71, 73, 74, 99)
	DOE 303(d)		Inner Bay, no data. Outer Bay – Category 5 for dissolved O2, Category 2 for pH, Category 1 for Fecal coliform, pH, and temperature. (Ref#81)

SHORELINE AREA (Reach Code): Marine 13- Marine Park		REACH NUMBER: 39
	Toxic sites/land fills	**Port of Bellingham Harris Ave Shipyard site**: Sediments (confirmed): metals (arsenic, cupper, lead, mercury zinc), EPA priority pollutants (metals and cyanide), polychlorinated biPhenyls (PCB's), bis(2-ethylhexyl)phthalate, Polynuclear Aromatic Hydrocarbons (PAH), and phenolic compounds. Groundwater (suspected): EPA priority pollutants, metals, PCB's, and PAH. (Ref# 79, 80)
	Bathymetry	-9.0' to 0.00' range; mean -1.2' (Ref# 25, 31)
	Wave energy	2.9 acres lagoon, 8.7 acres open (Ref# 3, 99)
	Point source pollution	No data
	Waterways/dredge beds	No data
	Drift cells	No data
Marine Foreshor	Beach characterization	No data
	High-Low tide lines	2.4 acres beach, 2.9 acres of lagoon.
	Erosion/accretion zones	No data
Historic & Cultural	Historic aerials	See waterfront futures website. (Ref# 99)
	Archeological sites	No data
	Historic sites	None indicated (Ref# 77)
	Parks & public access	Marine park and associated open space at sewer treatment plant(Ref# 33, 34, 36, 48)
Function Analysis	**Reach Function**	(Ref# for the following 1, 2, 5, 69, 70, 71)
	• Hydrologic	Impaired by rip rap along shoreline of Marine Park and railroad tracks and railroad berm resulting in confined opening to lagoon.
	• Shoreline Vegetation	Impaired – vegetation absent or lawn
	• Habitat	• Terrestrial – impaired by lack of cover • Intertidal Habitat – slightly impaired by railroad rip rap, but significant habitat exists • Shallow and deepwater habitat – Unimpaired in open areas, slightly impaired.
	Limiting Factors	• Railroad track berm blocking lagoon, altering shoreline hydrology and reducing intertidal habitat. • Limited shoreline vegetation along most of reach. • Off leash dog area results in trampling shoreline vegetation, impacts wildlife use in lagoon and has resulted in localized erosion and sediment entering water.
	Functions	
	• Sustainable	All functions with some limitations associated with railroad features.
	• Not Sustainable	Some hydrological functions reduced by rail rip rap.
	Priority Actions	• See preservation/ enhancement section. Action # 26 was rated as a high priority action and Action # 27 was medium. (Ref# 73) • Conserve eelgrass bed. (Ref# 1)
	C**urrent Enhancement Projects**	Rock and concrete material along the shoreline of Marine Park have been removed and backshore habitat is being created.
	Preservation/Enhancement Opportunities	• Excavate selected upland habitats to create small open water embayments with eelgrass (BBDP action # 26). (Ref# 73) • Modify existing structure under railroad crossing to lagoon to open it and increase tidal flushing. Remove existing concrete and rock debris and creosote structures (BBDP action #27) (Ref# 73)