

<u>Zone 5</u>								
Shore	north							
Total Surveys	14							
Start Point	Beluga Slough Outlet							
Start Lat/Long								
End Point	Mariner Park Lagoon Outlet, below the berm							
End Lat/Long								
Dates Walked	1987-88, 90-92, 98-2006							
Spring Surveys	5							
Fall Surveys	13							
First Walked	1987							
Last Walked	2006							
Total Person-Hours	160.5							
Total Trash Bags Collected	25							
Total Estimated Weight of Trash Collected	250							
<u>General Info</u>								
Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
Start Time			1815	915		1030	1900	1540
End Time			2115	1115		1215	2000	1840
Lowest Tide								
	at time							
Temperature (F)						50	45	41
Sky						cloudy	partly sunn	cloudy
Vertical Zones Walked:								
	High	x				x		x
	Middle					x	x	
	Low	x				x		
# of Observers	4	10	2	2	1	2	8	3
Hours Spent	1	1.5	3	2	1	1.75	1	3
Person-Hours	4	15	6	4	1	3.5	8	9
Shoreline Walked (miles)	1	2	0.5	2.5		0.75		0.75
Total Trip Mileage	1							
Did Observers . . .								
	Hike?	x	x	x	x	x	x	x
	Kayak?							

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
Other (specify)?								
Trash Bags Collected			2	10				
Estimated Weight of Collected Trash (in pounds)								
<u>Wildlife</u>								
<i>Birds</i>								
Loons								
Sea Ducks	3					67		5
Other Ducks and Geese		2						9
Bald Eagles								
Adults		4					1	3
Immatures								1
Nests								
Shorebirds			300			1		3
Seabirds	50	76	230	6		155	50	32
Crows and Ravens	50	3		6		153		200
Others (see separate Bird list)						1		2
Dead Birds								
<i>Domestic Mammals</i>								
Cattle								
Horses						3		2
Dogs	1	1	2	1	2	5	6	3
Other								
<i>Land Mammals</i>								
Moose								
Adults		1						
Calves								
Black Bears								
Brown Bears								
Land/River Otters								
Red Squirrels								
Tracks Identified				dog				
Other								
<i>Marine Mammals</i>								
Sea Otters		5				36	1	

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
Ridged Neptune								
Channeled Dogwinkle								
Emarginate Dogwinkle								
Friiled Dogwinkle								
File Dogwinkle								
Big-mouth Whelk								
Nudibranchs						x		
Maned Nudibranch								
False Sea Lemon (False Lemon Peel)								
Orange-tipped Nudibranch								
Opalescent Nudibranch								
Bushy-backed Nudibranch								
Clams		x	x	x		x		
Nuttal's Cockle								
Northwest Ugly Clam								
Arctic Rock Borer								
Baltic Macoma								
Stained Macoma								
Pacific Surf Clam								
Truncated Mya								
Steamer Clam (Pacific Littleneck Clam)								
Butter Clam								
Razor Clam								
Mussels	x	x	x	x		x		x
Horse Mussel								
Pacific Blue Mussel								
Scallops								
Pink Scallop								
Jingles								
Rock Jingle								
Cephalopods								
Giant Pacific Octopus								
Stubby Squid								
Arthropods								
Barnacles			x	x		x	x	x
Acorn Barnacle						x		

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
<u>Beach Substrate</u>								
Type	rocky, sand, coal		rocky, sand	all		pebbles, sand	sand	sand
<u>Bluff and Cliff Erosion</u>								
Erosion present								
Comments	moderate to severe		severe	moderate to severe		severe	moderate	severe
<u>Human Activities</u>								
Walking								
	Signs of		2		1		6	6
	Actual observation	2					6	5
Camping								
	Signs of		2					
	Actual observation					3		
Partying								
	Signs of							
	Actual observation							
Fire Pits								
	Signs of							
	Actual observation							2
Trash Accumulations								
	Signs of							
	Actual observation	2	1		1			
Clamming								
	Signs of							
	Actual observation				1			
Fishing								
	Signs of		1					
	Actual observation							
Coaling								
	Signs of							
	Actual observation							
Picnicking								

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
<u>Archaeological Sites</u>								
Shell Middens								
Other (specify)								
<u>Outfalls or Pipes</u>								
Number	3	9	7	1		13		11
Comments								
<u>Toxic Pollution</u>								
Fuel (oil, gas, etc.)								
Lubricating Oil	1					1		1
Paint								
Batteries						1		
<u>Trash & Debris</u>								
(from International Coastal Cleanup Data Card)								
<i>Shoreline and Recreational Activities</i>								
Bags/Food Wrappers						5		
Balloons						1		
Beverage Bottles, plastic, 2-liter or less								
Beverage Bottles, glass		3				1		2
Beverage Cans		5				21	1	15
Caps, Lids								
Clothing, shoes						1		1
Cups, Plates, Forks, Knives, Spoons								
Diapers								
Fast-food Containers								
6-pack Holders								
Pull Tabs								
Shotgun Shells/Wadding						2		
Straws, Stirrers								
Toys						1		
								flag
<i>Ocean/Waterway Activities</i>								
Bait Containers/Packaging						2		1

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
Bleach/Cleaner Bottles								
Buoys/Floats								2
Crab/Lobster/Fish Traps				1				
Crates								
Fishing Line								
Fishing Lures								1
Fishing Nets								1
Light Bulbs/Tubes								
Oil/Lube Bottles						1		
Pallets								
Plastic Sheeting/Tarps						3		
Rope		6				12		1
Strapping Bands						2		
<i>Smoking-Related Activities</i>								
Cigarettes/Cigarette Filters								
Cigarette Lighters						1		
Cigar Tips								
Tobacco Packaging/Wrappers								
<i>Dumping Activities</i>								
Appliances (refrigerators, washers, etc.)								
Batteries								
Cars/Car Parts	2	10		2				3
Construction Materials								
55-gallon Drums		7						
Tires	1	3						
<i>Medical/Personal Hygiene</i>								
Syringes								
Condoms								
Tampons/Tampon Applicators								
<i>Debris Items of Local Concern</i>								
<i>Styrofoam Pieces</i>								
<i>Plastic Pieces</i>								

Date	25-Apr-87	30-Apr-88	4-May-90	29-Apr-91	??-??-92	23-Sep-98	24-Sep-99	24-Sep-00
<i>Metal Pieces</i>								
								42 styro
<i>Entangled Animals</i>								
Type of Animal								
Form of Entangling Debris								
Comments								
<i>Most Peculiar Item Collected?</i>								
<i>Comments</i>			Glass uncc	Glass rare, aluminum		Most of tras	Very little tr	More garba
<u>Additional Observations and Comments</u>						Heavy vehi	Tidal pool i	Erosion alo
	the beach offshore from the eroding bluff had been altered by installtion of a seawall.							

Date	29-Sep-01	7-Oct-01	7.10.02	4.10.03	10.3.04	10.6.05	10.06.05	10.06.05	09.26.06
Other (specify)?									
Trash Bags Collected		3	2	2	1	3	0	0	2
Estimated Weight of Collected Trash (in pounds)			60	55	5	100			30
<u>Wildlife</u>									
<i>Birds</i>									
Loons			0	1	1	0		1	
Sea Ducks	9	30	105	160	16	0		119	
Other Ducks and Geese			0			0			
Bald Eagles					56				
Adults	1		2	2	4	1	1	2	3
Immatures	2								
Nests									
Shorebirds		1	0	3					
Seabirds	36	59	68	191		x	x	17	
Crows and Ravens			0						
Others (see separate Bird list)	perigrine falcon hunting and loafing below high tide line, savannah sparrow							Merlin hawk, sparrow	
Dead Birds									1
<i>Domestic Mammals</i>									
Cattle				0					
Horses				0					
Dogs			1	0	7				
Other				0					
<i>Land Mammals</i>									
Moose				0					
Adults				0					
Calves				0					
Black Bears				0					
Brown Bears				0					
Land/River Otters				0					
Red Squirrels				0					
Tracks Identified				0					
Other				0					
<i>Marine Mammals</i>									
Sea Otters			2	2					

Date	29-Sep-01	7-Oct-01	7.10.02	4.10.03	10.3.04	10.6.05	10.06.05	10.06.05	09.26.06
Ridged Neptune	x				shell				
Channeled Dogwinkle	x								
Emarginate Dogwinkle									
Friiled Dogwinkle									
File Dogwinkle		x	x		x				
Big-mouth Whelk									
Nudibranchs									
Maned Nudibranch									
False Sea Lemon (False Lemon Peel)									
Orange-tipped Nudibranch									
Opalescent Nudibranch									
Bushy-backed Nudibranch									
Clams									
Nuttal's Cockle	x				shell				
Northwest Ugly Clam									
Arctic Rock Borer		x			shell				
Baltic Macoma					shell				
Stained Macoma									
Pacific Surf Clam	x	x	x	shell	shell				
Truncated Mya									
Steamer Clam (Pacific Littleneck Clam)	x	x	shells	shell	shell				x
Butter Clam		x	shells	shell	shell				x
Razor Clam	x	x		shell					
Mussels									
Horse Mussel	x			shell					
Pacific Blue Mussel	x	x	x	x	x				
Scallops									
Pink Scallop									
Jingles									
Rock Jingle	x				shell				
Cephalopods									
Giant Pacific Octopus									
Stubby Squid									
Arthropods									
Barnacles									
Acorn Barnacle	x	x	x	x	x		x		x

Date	29-Sep-01	7-Oct-01	7.10.02	4.10.03	10.3.04	10.6.05	10.06.05	10.06.05	09.26.06
Daisy Brittle Star									
Sea Urchins									
Green Sea Urchin			x						
Red Sea Urchin									
Sea Cucumbers									
Silky Burrowing Cucumber									
Orange Cucumber (Red Cucumber)									
Tar-spot Cucumber (Black Cucumber)									
Sand Dollars									
Green-spined Sand Dollar (Northern Sand Dollar)									
<u>Chordates</u>									
Tunicates									
Colonial Tunicate (Sea Pork)			washed up		washed up				
Sea Peach									
<u>Seaweeds</u>									
Green Seaweed									
Band									
Attached						x	x		
Washed Up						x			x
Red Seaweed									
Band				x		x			
Attached					x		x		
Washed Up		x		x	x	x			x
Rockweed									
Band	x					x	x		
Attached									
Washed Up	x	x			x	x			x
Kelps									
Band	x			x		x	x		
Attached			x						
Washed Up	x	x		x	x	x			x
Eelgrass									
Band	x					x			
Attached									
Washed Up	x					x			x

Date	29-Sep-01	7-Oct-01	7.10.02	4.10.03	10.3.04	10.6.05	10.06.05	10.06.05	09.26.06
<u>Archaeological Sites</u>									
Shell Middens									
Other (specify)									
<u>Outfalls or Pipes</u>									
Number		13	14	8	6				
Comments		also 3 small tide stones south of seep visible to us due to seawall							
<u>Toxic Pollution</u>									
Fuel (oil, gas, etc.)		among rocks in mid/high tide zone south of seawall							
Lubricating Oil									
Paint		only on wood							
Batteries		1							
<u>Trash & Debris</u>									
(from International Coastal Cleanup Data Card)									
<i>Shoreline and Recreational Activities</i>									
Bags/Food Wrappers		10	2		2	3			10
Balloons			0		1	0			
Beverage Bottles, plastic, 2-liter or less		8	9	4	5	24			15
Beverage Bottles, glass	2	2	1	11		1			2
Beverage Cans		5	10	5	5	2			14
Caps, Lids		12	18	29	12	27			13
Clothing, shoes	14	5	1	6		4			6
Cups, Plates, Forks, Knives, Spoons		2	5	2	3	6			1
Diapers			0						
Fast-food Containers		1	9	12	6	25			19
6-pack Holders			0			1			
Pull Tabs			0	1					
Shotgun Shells/Wadding			3		4	1			4
Straws, Stirrers			2			1			2
Toys					2	4			
gging, pill container, chapstick, construction mask, tennis ball									
<i>Ocean/Waterway Activities</i>									
Bait Containers/Packaging		4	0	4	1	1			

Date	29-Sep-01	7-Oct-01	7.10.02	4.10.03	10.3.04	10.6.05	10.06.05	10.06.05	09.26.06
Metal Pieces									10
	ofoam pieces, 2 paper	pieces, 50	, 113 styrofoam	1 writing pen	pieces, 30	plastic pieces			
Entangled Animals									
Type of Animal									
Form of Entangling Debris									
Comments									
Most Peculiar Item Collected?				small pink plastic baby	hunting stub	Japanese cigarette & tin			got infested
				children's book, jumper	cable clips				
Comments	As we got closer to the bluff, clothing litter increased.								
Additional Observations and Comments	bluff recorded construction materials (both with and without paint) along the highest ridge. Weals of the Numerous pieces of seawall construction related tyvar were collected. That last panels of the wall were								

<u>Zone 5</u>									
Shore									
Total Surveys									
Start Point									
Start Lat/Long									
End Point									
End Lat/Long									
Dates Walked									
Spring Surveys									
Fall Surveys									
First Walked									
Last Walked									
Total Person-Hours									
Total Trash Bags Collected									
Total Estimated Weight of Trash Collected									
<u>General Info</u>									
Date	09.26.06								
Start Time	10:00								
End Time	1:30								
Lowest Tide	0.9								
	at time	11:30pm							
Temperature (F)	45								
Sky	cloudy								
Vertical Zones Walked:									
	High								
	Middle	x							
	Low	x							
# of Observers	3								
Hours Spent	3.5								
Person-Hours	10.5	0	0	0	0	0	0	0	0
Shoreline Walked (miles)	0.5								
Total Trip Mileage	1.5								
Did Observers . . .									
	Hike?	x							
	Kayak?								

Date	09.26.06								
Ridged Neptune									
Channeled Dogwinkle									
Emarginate Dogwinkle									
Frilled Dogwinkle									
File Dogwinkle									
Big-mouth Whelk									
Nudibranchs									
Maned Nudibranch									
False Sea Lemon (False Lemon Peel)									
Orange-tipped Nudibranch									
Opalescent Nudibranch									
Bushy-backed Nudibranch									
Clams	x								
Nuttal's Cockle									
Northwest Ugly Clam									
Arctic Rock Borer	x								
Baltic Macoma	x								
Stained Macoma									
Pacific Surf Clam									
Truncated Mya									
Steamer Clam (Pacific Littleneck Clam)	x								
Butter Clam	x								
Razor Clam									
Mussels									
Horse Mussel	x								
Pacific Blue Mussel	x								
Scallops									
Pink Scallop									
Jingles									
Rock Jingle									
Cephalopods									
Giant Pacific Octopus									
Stubby Squid									
Arthropods									
Barnacles									
Acorn Barnacle	x								

Date	09.26.06								
<u>Archaeological Sites</u>									
Shell Middens									
Other (specify)									
<u>Outfalls or Pipes</u>									
Number									
Comments									
<u>Toxic Pollution</u>									
Fuel (oil, gas, etc.)									
Lubricating Oil									
Paint									
Batteries									
<u>Trash & Debris</u>									
(from International Coastal Cleanup Data Card)									
<i>Shoreline and Recreational Activities</i>									
Bags/Food Wrappers				32					
Balloons				2					
Beverage Bottles, plastic, 2-liter or less				65					
Beverage Bottles, glass				25					
Beverage Cans				83					
Caps, Lids				111					
Clothing, shoes				38					
Cups, Plates, Forks, Knives, Spoons				19					
Diapers				0					
Fast-food Containers				72					
6-pack Holders				1					
Pull Tabs				1					
Shotgun Shells/Wadding				14					
Straws, Stirrers				5					
Toys				7					
				0					
<i>Ocean/Waterway Activities</i>									
				0					
Bait Containers/Packaging				13					

Date	09.26.06								
Bleach/Cleaner Bottles			14						
Buoys/Floats			14						
Crab/Lobster/Fish Traps			5.5						
Crates			0						
Fishing Line			4						
Fishing Lures			7						
Fishing Nets			5						
Light Bulbs/Tubes			3						
Oil/Lube Bottles			10						
Pallets			4						
Plastic Sheeting/Tarps			19						
Rope			113						
Strapping Bands			18						
			0						
<i>Smoking-Related Activities</i>			0						
Cigarettes/Cigarette Filters			12						
Cigarette Lighters			4						
Cigar Tips			0						
Tobacco Packaging/Wrappers			6						
			0						
<i>Dumping Activities</i>			0						
Appliances (refrigerators, washers, etc.)			4						
Batteries			1						
Cars/Car Parts			32						
Construction Materials			82						
55-gallon Drums			11						
Tires			10						
			0						
<i>Medical/Personal Hygiene</i>			0						
Syringes			0						
Condoms			1						
Tampons/Tampon Applicators			1						
			0						
<i>Debris Items of Local Concern</i>			0						
<i>Styrofoam Pieces</i>			27						
<i>Plastic Pieces</i>			38						

Date	09.26.06								
<i>Metal Pieces</i>			10						
			0						
			0						
			0						
<i>Entangled Animals</i>			0						
Type of Animal			0						
Form of Entangling Debris			0						
Comments			0						
			0						
<i>Most Peculiar Item Collected?</i>	sea otter, toilet brush		0						
			0						
<i>Comments</i>			0						
<u>Additional Observations and Comments</u>	ted 151 gulls (mostly Glaucous-winged) and about 300 northwester crow: e being added whlie we walked this zone.								