

Proposed Westham Island Canoe Pass Tidal Marsh Project Standwatch Bird Surveys – Winter 2014

Report Date	July 7, 2014
Survey Dates & Times	<p>Five standwatch bird surveys were conducted on a biweekly basis from January 31 to March 31, 2014. The objective of these surveys was to characterize overwintering bird use of the proposed Westham Island/Canoe Pass Tidal Marsh Project site, with an emphasis on waterbirds and raptors. Survey times were centered on peak daytime low tide, as described in more detail below (see <i>Weather & Tidal Conditions</i>).</p> <p>The following is a summary of the survey dates and associated times:</p> <ul style="list-style-type: none"> • January 31, 2014 – 09:15 to 11:20 • February 16, 2014 – 11:40 to 13:57 • March 3, 2014 – 12:05 to 14:08 • March 16, 2014 – 13:30 to 15:35 • March 31, 2014 – 12:12 to 14:18
Weather & Tidal Conditions	<p>All surveys were conducted during wind speeds less than 28 km/hour and in the absence of rain. As surveys were centered on daily low tides, the first half of each survey was conducted during a falling low tide, with the latter half of each survey conducted during a rising low tide.</p> <p>The following is a more detailed summary of the weather conditions (general conditions and temperature) and tides on each of the survey dates, for the associated times:</p> <ul style="list-style-type: none"> • January 31, 2014 – partly cloudy; average temperature: 3.5 degrees Celsius; low tide of 3.0 m at 11:51 and high tide of 4.3 m at 17:01 • February 16, 2014 – overcast skies; average temperature: 6.0 degrees Celsius; low tide of 2.7 m at 12:39 and high tide of 3.9 m at 18:05 • March 3, 2014 – overcast skies; average temperature: 8.3 degrees Celsius; low tide of 1.9 m at 13:04 and high tide of 4.1 m at 19:10 • March 16, 2014 – partly cloudy; average temperature: 8.2 degrees Celsius; low tide of 2.3 m at 12:29 and high tide of 4.0 m at 18:25 • March 31, 2014 – partly cloudy; average temperature: 10.2 degrees Celsius; low tide of 1.5 m at 12:51 and high tide of 4.2 m at 19:21 <p>Weather data from Government of Canada hourly climate data for Vancouver International Airport: http://climate.weather.gc.ca/climateData/hourlydata_e.html?timeframe=1&Prov=BC&StationID=51442&hlyRange=2013-06-11%7C2014-06-11&cmdB1=Go&Year=2014&Month=3&Day=31&cmdB1=Go#</p> <p>Tide data from Government of Canada 7 days tidal predictions for Sand Heads: http://www.waterlevels.gc.ca/eng/station?type=0&date=2014%2F03%2F31&sid=7594&tz=PDT&pres=1</p>

Survey Areas	<p>Port Metro Vancouver's (PMV's) Habitat Enhancement Program –Westham Island Canoe Pass Tidal Marsh, Delta, BC.</p> <p>The proposed enhancement site is located on the north bank of the Canoe Pass, on the south side of Westham Island. The proposed enhancement area is approximately 550 m long (west to east) and 200 m wide (north to south). The standwatch bird surveys encompassed the full limits of the enhancement site, which was divided into east and west standwatch stations which were surveyed independently (Figure 1).</p>
Survey Team	Andrew Venning, Biologist (Hemmera); Vanessa Sadler, Biologist (Hemmera)
Scope of Work	<p>The proposed project will involve converting an existing unvegetated intertidal area (predominantly sandflat) into a more productive brackish marsh, thereby improving the productivity of the site. This will be accomplished through construction of a containment berm followed by the placement of fill material to the appropriate elevation for the establishment of intertidal marsh vegetation. The Project will result in the creation of approximately 40,200 m² (4.0 ha) of high-quality intertidal marsh habitat. Standwatch bird surveys were conducted biweekly from January 31, 2014 to March 31, 2014. The purpose of these surveys is to document pre-restoration avian use of the tidal freshwater marsh restoration sites. All bird species within the enhancement site were documented. Reconnaissance-level bird surveys were conducted April 24, and May 4-6, 2014 to document pre-restoration avian use of the tidal freshwater marsh restoration site and adjacent areas. The surveys focused on use of the area by shorebirds, waterfowl, and raptors, however all species interacting with the restoration and reference sites were documented.</p>
Survey Methods	<p>One surveyor conducted 1-hour long standwatches at each of the two stations (east and west) during each survey. Surveys were conducted from Westham Island, documenting all birds in front of surveyor (southward) and 100 meters behind surveyor.</p> <p>Binoculars and spotting scope (Photo 2) were used to identify birds within the proposed marsh creation site and immediately adjacent areas. For each bird documented, the following information was recorded: species, number, time, behavior, and flyover direction.</p> <p>Numbers of birds presented may not reflect actual abundance of birds present as some birds may have been counted more than once. In the situation where a bird was counted in the west survey area and moved to the east survey area with the observer, then bird was counted in each of the two survey areas.</p>
Results	<p>Results from each survey are presented in Tables 1-5. A summary of all species observed is presented in Table 6. Total abundance of species groups is presented in Figure 2.</p> <p>At Westham Island Canoe Pass, the majority of observations were comprised of Gulls and Terns (n=661), Dabbling Waterbirds (n=479) and Geese (n=212) (Figure 2). The most common species observed at South Westham Island were Unidentified Gull (<i>Larus sp.</i>)(393), American Wigeon (<i>Anas Americana</i>)(n=367), and Glaucous-winged Gull (<i>Larus glaucescens</i>)(n=226)(Table 6).</p> <p>The majority (79% of observations) of gulls and terns were observed flapping and circling above the enhancement site; 17% of gulls and terns were observed standing on the unvegetated intertidal flats. The majority of dabbling waterbirds were observed swimming (39%) and flapping (30%). 210 of the 212 geese observed comprised a single flock of Snow Geese (<i>Chen caerulescens</i>) flying northwards overhead.</p>

Summary & Recommendations	<p>In summary, the proposed enhancement site supports a variety of different bird species interacting with the site in various ways. The most abundance species groups at Canoe Pass were Gulls and Terns, Dabbling Waterbirds, and Geese. The majority of behavioral observations consist of flying (flapping, circling, soaring, etc.), swimming, and loafing/resting. The vegetated island and surrounding intertidal flats appear to serve primarily as a roosting site for overwintering waterfowl. No shorebirds were documented on the island or adjacent intertidal flats.</p> <p>The standwatch surveys undertaken early in 2014 and described in this document appear to provide a sufficient baseline description of overwintering bird use of the project site.</p>
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Tables

Table 1. Species observed at proposed Westham Island Canoe Pass during January 31, 2014 standwatch surveys; Delta, BC.

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
East	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping	1	1
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	loafing/resting	17	18
		Green-winged Teal	<i>Anas crecca</i>	walking, loafing/resting	1	
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	flapping, landing, loafing/resting	16	153
		Mew Gull	<i>Larus canus</i>	standing, preening	1	
		Unidentified Gull	<i>Larus sp.</i>	flapping, landing	136	
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, perched in live tree	2	2
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	feeding, singing/calling	1	3
Red-winged Blackbird		<i>Agelaius phoeniceus</i>	singing/calling	2		
West	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	swimming, loafing/resting	20	30
		Green-winged Teal	<i>Anas crecca</i>	feeding	10	
	Diving	Red-breasted	<i>Mergus</i>	swimming	2	2

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
	waterbirds	Merganser	<i>serrator</i>			
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	loafing/resting	3	191
		Unidentified Gull	<i>Larus sp.</i>	flapping	188	
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, harassing another	3	4
		Red-tailed Hawk	<i>Buteo jamaicensis</i>	flapping, soaring	1	
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	standing, singing/calling	1	2
		Red-winged Blackbird	<i>Agelaius phoeniceus</i>	perched in live tree, singing/calling	1	
	Swans	Trumpeter Swan	<i>Cygnus buccinator</i>	flapping	6	6

Table 2. Species observed at proposed Westham Island Canoe Pass during February 16, 2014 standwatch surveys; Delta, BC.

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
East	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping	1	1
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	landing	25	25
	Diving waterbirds	Bufflehead	<i>Bucephala albeola</i>	flapping, landing, loafing/resting	6	15
		Common Goldeneye	<i>Bucephala clangula</i>	feeding, hunting	5	
		Red-breasted Merganser	<i>Mergus serrator</i>	feeding, hunting	4	
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	standing, preening	52	54
		Mew Gull	<i>Larus canus</i>	standing, preening	2	
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, hovering	2	2
	Songbirds	Marsh Wren	<i>Cistothorus</i>	walking, feeding	1	2

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
	(breeding birds)		<i>palustris</i>			
		Song Sparrow	<i>Melospiza melodia</i>	singing/calling	1	
West	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping, loafing/resting	4	4
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	flapping, loafing/resting, landing	36	38
		Mallard	<i>Anas platyrhynchos</i>	flapping	2	
	Diving waterbirds	Bufflehead	<i>Bucephala albeola</i>	loafing/resting, hunting, feeding	3	12
		Common Goldeneye	<i>Bucephala clangula</i>	hunting, feeding	2	
		Red-breasted Merganser	<i>Mergus serrator</i>	hunting, feeding	7	
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	flapping	12	15
		Unidentified Gull	<i>Larus sp.</i>	flapping	3	
	Raptors	Northern Harrier	<i>Circus cyaneus</i>	gliding, hunting	1	1
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	singing/calling	1	3
		Northern Flicker	<i>Colaptes auratus</i>	perched in live tree, flapping	1	
		Song Sparrow	<i>Melospiza melodia</i>	walking	1	

Table 3. Species observed at proposed Westham Island Canoe Pass during March 3, 2014 standwatch surveys; Delta, BC.

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
East	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping, swimming, landing	2	2
	Dabbling waterbirds	Mallard	<i>Anas platyrhynchos</i>	flapping, singing/calling	10	10
	Diving waterbirds	Bufflehead	<i>Bucephala albeola</i>	swimming, diving	3	20
		Common Goldeneye	<i>Bucephala clangula</i>	swimming, diving	9	
		Red-breasted Merganser	<i>Mergus serrator</i>	swimming, diving	8	
	Gull and	Glaucous-	<i>Larus</i>	swimming, flapping,	4	66

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group	
	Terns	winged Gull	<i>glaucescens</i>	loafing/resting			
		Mew Gull	<i>Larus canus</i>	standing, preening	39		
		Unidentified Gull	<i>Larus sp.</i>	flapping, standing	23		
	Herons	Great Blue Heron	<i>Ardea herodias</i>	standing, loafing/resting	1	1	
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, gliding	1	4	
		Northern Harrier	<i>Circus cyaneus</i>	hovering, harassing another	2		
		Red-tailed Hawk	<i>Buteo jamaicensis</i>	perched on pole, taking off	1		
	Songbirds (breeding birds)	Black-capped Chickadee	<i>Poecile atricapillus</i>	singing/calling	1	5	
		Red-winged Blackbird	<i>Agelaius phoeniceus</i>	singing/calling	1		
		Song Sparrow	<i>Melospiza melodia</i>	singing/calling, walking, feeding	2		
		Spotted Towhee	<i>Pipilo maculatus</i>	singing/calling	1		
	West	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping, swimming	5	5
		Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	swimming	2	9
Mallard			<i>Anas platyrhynchos</i>	flapping	5		
Unidentified Duck			<i>Anas sp.</i>	flapping	2		
Diving waterbirds		Common Goldeneye	<i>Bucephala clangula</i>	swimming	8	8	
Gull and Terns		Glaucous-winged Gull	<i>Larus glaucescens</i>	standing, flapping	111	117	
		Unidentified Gull	<i>Larus sp.</i>	flapping	6		
Herons		Great Blue Heron	<i>Ardea herodias</i>	landing, standing	1	1	
Raptors		Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping	1	4	
		Northern	<i>Circus cyaneus</i>	gliding, hunting	1		

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
		Harrier				
		Red-tailed Hawk	<i>Buteo jamaicensis</i>	perched on guy wire	2	
	Songbirds (breeding birds)	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	singing/calling, perched in live tree, perched in shrub/hedge	3	3

Table 4. Species observed at proposed Westham Island Canoe Pass during March 16, 2014 standwatch surveys; Delta, BC.

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
East	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	swimming, diving	1	1
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	flapping, landing, swimming	28	82
		Mallard	<i>Anas platyrhynchos</i>	flapping, swimming	24	
		Unidentified Duck	<i>Anas Sp.</i>	flapping	30	
	Diving waterbirds	Common Goldeneye	<i>Bucephala clangula</i>	swimming, diving	2	2
	Geese	Snow Goose	<i>Chen caerulescens</i>	flapping, singing/calling	210	210
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	loafing/resting, flapping	6	11
		Unidentified Gull	<i>Larus sp.</i>	flapping, loafing/resting	5	
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, perched on piling, landing, standing	4	4
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	singing/calling	1	2
Red-winged Blackbird		<i>Agelaius phoeniceus</i>	flapping	1		
West	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping, landing, swimming, diving	6	6
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	flapping, landing, swimming	62	74

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
		Mallard	<i>Anas platyrhynchos</i>	flapping, swimming, landing	12	
	Diving waterbirds	Bufflehead	<i>Bucephala albeola</i>	swimming	3	6
		Red-breasted Merganser	<i>Mergus serrator</i>	swimming, diving	3	
	Grebe	Western Grebe	<i>Aechmophorus occidentalis</i>	swimming, diving	1	1
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	flapping	3	3
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	flapping, soaring	2	3
		Northern Harrier	<i>Circus cyaneus</i>	gliding, hunting	1	
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	singing/calling	1	4
		Red-winged Blackbird	<i>Agelaius phoeniceus</i>	flapping	3	

Table 5. Species observed at proposed Westham Island Canoe Pass during March 31, 2014 standwatch surveys; Delta, BC.

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
East	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping	1	1
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	flapping, landing	30	38
		Gadwall	<i>Anas strepera</i>	swimming	2	
		Mallard	<i>Anas platyrhynchos</i>	flapping	3	
		Unidentified Duck	<i>Anas sp.</i>	flapping	3	
	Geese	Canada Goose	<i>Branta canadensis</i>	standing, preening	2	2
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	flapping, standing	3	11
		Unidentified Gull	<i>Larus sp.</i>	flapping, gliding	8	
	Herons	Great Blue	<i>Ardea herodias</i>	flapping,	3	3

Station	Species Group	Common Name	Latin Name	Behaviour	Abundance of Species	Abundance of Species Group
		Heron		harassing another		
	Other Passerines	Northwestern Crow	<i>Corvus caurinus</i>	flapping, singing/calling	3	3
	Raptors	Northern Harrier	<i>Circus cyaneus</i>	gliding	1	1
	Shorebirds	Killdeer	<i>Charadrius vociferus</i>	singing/calling	1	1
	Songbirds (breeding birds)	American Robin	<i>Turdus migratorius</i>	singing/calling	1	5
		Marsh Wren	<i>Cistothorus palustris</i>	singing/calling	3	
		Song Sparrow	<i>Melospiza melodia</i>	perched in live tree	1	
West	Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	flapping	1	1
	Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	landing, swimming, taking off	147	152
		Green-winged Teal	<i>Anas crecca</i>	landing, swimming	1	
		Mallard	<i>Anas platyrhynchos</i>	landing, swimming	4	
	Diving waterbirds	Common Goldeneye	<i>Bucephala clangula</i>	swimming, diving	6	8
		Common Merganser	<i>Mergus merganser</i>	swimming	2	
	Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	swimming, circling	12	33
		Unidentified Gull	<i>Larus sp.</i>	circling	21	
	Hérons	Great Blue Heron	<i>Ardea herodias</i>	flapping, landing, standing	2	2
	Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	soaring, flapping	3	6
		Red-tailed Hawk	<i>Buteo jamaicensis</i>	soaring, circling	3	
	Songbirds (breeding birds)	Marsh Wren	<i>Cistothorus palustris</i>	singing/calling	2	6
		Rufous Hummingbird	<i>Selasphorus rufus</i>	perched in live tree	2	
		Song Sparrow	<i>Melospiza melodia</i>	perched in shrub/hedge, standing	2	
Swallows	Violet-green Swallow	<i>Tachycineta thalassina</i>	flapping	1	1	

Table 6. Summary of species observed at proposed Westham Island Canoe Pass Project site (east and west data pooled) during winter 2014 standwatch surveys; Delta, BC.

Common Name	Latin Name	Number	Species Group
Unidentified Gull	<i>Larus sp.</i>	393	Gulls and Terns
American Wigeon	<i>Anas americana</i>	367	Dabbling waterbirds
Glaucous-winged Gull	<i>Larus glaucescens</i>	226	Gulls and Terns
Snow Goose	<i>Chen caerulescens</i>	210	Geese
Mallard	<i>Anas platyrhynchos</i>	62	Dabbling waterbirds
Mew Gull	<i>Larus canus</i>	42	Gulls and Terns
Double-crested	<i>Phalacrocorax auritus</i>	40	Cormorants
Unidentified Duck	<i>Anas sp.</i>	36	Unidentified Duck
Common Goldeneye	<i>Bucephala clangula</i>	32	Diving waterbirds
Red-breasted Merganser	<i>Merqus serrator</i>	24	Diving waterbirds
Bald Eagle	<i>Haliaeetus leucocephalus</i>	22	Raptors
Bufflehead	<i>Bucephala albeola</i>	15	Diving waterbirds
Marsh Wren	<i>Cistothorus palustris</i>	13	Songbirds (breeding birds)
Green-winged Teal	<i>Anas crecca</i>	12	Dabbling waterbirds
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	11	Songbirds (breeding birds)
Trumpeter Swan	<i>Cygnus buccinator</i>	9	Swans
Great Blue Heron	<i>Ardea herodias</i>	7	Hérons
Northern Harrier	<i>Circus cyaneus</i>	7	Raptors
Red-tailed Hawk	<i>Buteo jamaicensis</i>	7	Raptors
Song Sparrow	<i>Melospiza melodia</i>	7	Songbirds (breeding birds)
Northwestern Crow	<i>Corvus caurinus</i>	3	Other Passerines
Canada Goose	<i>Branta canadensis</i>	2	Geese
Common Merganser	<i>Merqus merganser</i>	2	Diving waterbirds
Gadwall	<i>Anas strepera</i>	2	Dabbling waterbirds
Rufous Hummingbird	<i>Selasphorus rufus</i>	2	Songbirds (breeding birds)
American Robin	<i>Turdus migratorius</i>	1	Songbirds (breeding birds)
Black-capped Chickadee	<i>Poecile atricapillus</i>	1	Songbirds (breeding birds)
Killdeer	<i>Charadrius vociferus</i>	1	Shorebirds
Northern Flicker	<i>Colaptes auratus</i>	1	Songbirds (breeding birds)
Spotted Towhee	<i>Pipilo maculatus</i>	1	Songbirds (breeding birds)
Violet-green Swallow	<i>Tachycineta thalassina</i>	1	Swallows
Western Grebe	<i>Aechmophorus occidentalis</i>	1	Grebe

Figures



Figure 1. Proposed Westham Island Canoe Pass Tidal Marsh Project – Areas assessed during winter 2014 standwatch surveys; Delta, BC. East and west survey areas are outlined in red.

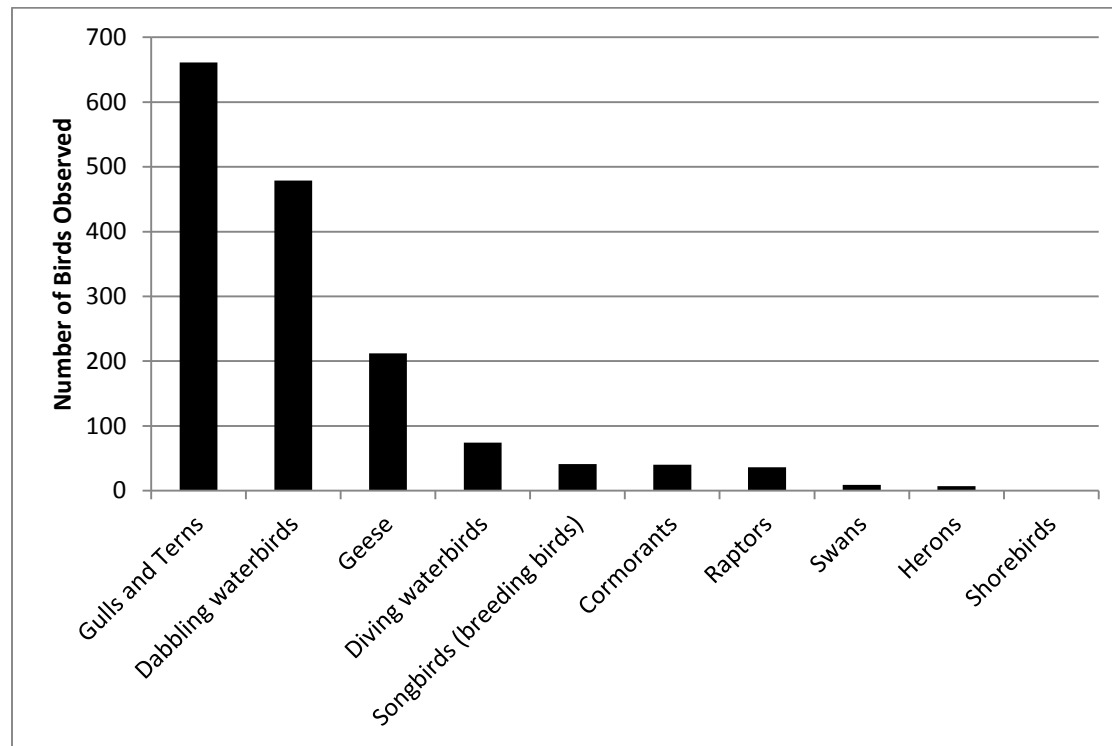


Figure 2. Abundance of species groups observed at proposed Westham Island Canoe Pass during winter 2014 standwatch surveys; Delta, BC.

Photos



Photo 1. East survey area, showing north bank marsh, intertidal flats, and wetland “island”; facing southward (March 19, 2014).



Photo 2. West survey area, showing north bank marsh, intertidal flats, and wetland “island”; facing southward. Spotting scope that is visible in photo was used to identify birds (March 19, 2014).