

**Point Grey Tidal Marsh Project  
 Standwatch Surveys – February 20, 2014 to March 26, 2014**

<b>Report Date</b>	July 22, 2014
<b>Survey Dates &amp; Times</b>	<p>Six surveys were conducted on a weekly basis, from February 20 – March 26, 2014. The objective of these surveys was to characterize overwintering bird use of the proposed Point Grey Tidal Marsh Project site during the latter half of the 2013/14 winter, with surveys focusing primarily on waterbirds and raptors. Survey times were centered on peak daytime low tide, as described in more detail below (see <i>Weather &amp; Tidal Conditions</i>).</p> <p>The following is a summary of the survey dates and associated times:</p> <ul style="list-style-type: none"> <li>• February 20, 2014 – 14:35 to 17:00</li> <li>• February 27, 2014 – 8:45 to 11:25</li> <li>• March 6, 2014 – 14:24 to 16:57</li> <li>• March 12, 2014 – 9:05 to 11:33</li> <li>• March 21, 2014 – 14:10 to 16:30</li> <li>• March 26, 2014 – 8:18 to 10:37</li> </ul>
<b>Weather &amp; Tidal Conditions</b>	<p>All surveys were conducted when wind speeds were less than 19 km/hour. With the exception of light rain on March 6, 2014, all surveys were conducted 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"> <li>• February 20, 2014 – partly cloudy; average temperature: 7.7 degrees Celsius; low tide of 1.7 m at 15:17 and high tide of 3.5 m at 21:52</li> <li>• February 27, 2014 – partly cloudy; average temperature: 5.3 degrees Celsius; low tide of 2.9 m at 10:01 and high tide of 4.0 m at 15:06</li> <li>• March 6, 2014 – overcast skies with rain; average temperature: 9.5 degrees Celsius; low tide of 1.4 m at 15:26 and high tide of 3.8 m at 22:32</li> <li>• March 12, 2014 – partly cloudy; average temperature: 7.8 degrees Celsius; low tide of 2.9 m at 10:36 and high tide of 3.4 m at 15:12</li> <li>• March 21, 2014 – clear skies; average temperature: 8.1 degrees Celsius; low tide of 1.2 m at 15:37 and high tide of 3.9 m at 22:49</li> <li>• March 26, 2014 – overcast skies; average temperature: 9 degrees Celsius; low tide of 2.9 m at 09:10 and high tide of 3.5 m at 13:49</li> </ul> <p>Weather data from Government of Canada hourly climate data for Vancouver International Airport:  <a href="http://climate.weather.gc.ca/climateData/hourlydata_e.html?timeframe=1&amp;Prov=BC&amp;StationID=51442&amp;hlyRange=2013-06-11%7C2014-06-11&amp;cmdB1=Go&amp;Year=2014&amp;Month=3&amp;Day=31&amp;cmdB1=Go#">http://climate.weather.gc.ca/climateData/hourlydata_e.html?timeframe=1&amp;Prov=BC&amp;StationID=51442&amp;hlyRange=2013-06-11%7C2014-06-11&amp;cmdB1=Go&amp;Year=2014&amp;Month=3&amp;Day=31&amp;cmdB1=Go#</a></p>

	Tide data from Government of Canada 7 days tidal predictions for Sand Heads: <a href="http://www.waterlevels.gc.ca/eng/station?type=0&amp;date=2014%2F03%2F31&amp;sid=7594&amp;tz=PD&amp;pres=1">http://www.waterlevels.gc.ca/eng/station?type=0&amp;date=2014%2F03%2F31&amp;sid=7594&amp;tz=PD&amp;pres=1</a>
<b>Survey Areas</b>	<p>Port Metro Vancouver's (PMV's) Habitat Enhancement Program – Proposed Point Grey Tidal Marsh Project site, Vancouver, BC.</p> <p>The proposed enhancement site is located on the north side of the North Arm of the Fraser River. The site is located northwest of Vancouver International Airport (YVR) and south of the University Endowment Lands Ecological Reserve. The site was divided into four standwatch survey areas, which were assessed from standwatch stations located at the shoreline: Control West, Control East, Treatment West, and Treatment East (<b>Figure 1</b>).</p>
<b>Survey Team</b>	Andrew Venning, Biologist (Hemmera)
<b>Scope of Work</b>	<p>As part of Port Metro Vancouver's Habitat Enhancement Program, the creation of a brackish tidal marsh is proposed at the Point Grey Booming Grounds site in Vancouver, B.C. The historic booming grounds, where the project is proposed be located, consists of mudflats which have been impacted by years of log boom storage (e.g., woodwaste, sediment compaction and scoured channels from prop wash). The project will help restore tidal marsh habitats within the North Arm of the Fraser River, where considerable areas of natural brackish marsh have been lost over the past 70 to 80 years through land development and other human activities.</p> <p>The proposed project is located between a natural brackish marsh to the southeast and extensive mudflats to the northwest. In order to better understand bird use of mudflats which overlap with the project site, six standwatch bird surveys were conducted on a biweekly basis from February 20 to March 26, 2014. Waterbirds and raptors were the focal species groups for these standwatch surveys, however use by all bird species was also recorded.</p>
<b>Survey Methods</b>	A single surveyor conducted 30-minute long standwatches at each station from shoreline locations, as illustrated by the red circles in Figure 1. All detectable bird species were documented approximately 800 meters southwards (open water or mudflat, dependent on tidal inundation) and approximately 100 meters northwards (marsh or mixed forest). Binoculars and a spotting scope were used to identify birds located near or interacting with the proposed marsh creation (treatment) and reference (control) sites. For each bird documented, the following information was recorded: species, number, time, direction (in front or behind observer), distance from observer, and behaviour.
<b>Results</b>	<p>Total abundance of each species documented is presented in <b>Table 1</b>. Over the four survey areas (control and treatment), the most abundant species observed were dunlin (n=1,727), American wigeon (n=925), and mallard (n=614). Shorebirds (n=2,211) were the most abundant species group observed, followed by dabbling waterbirds (n=2,143) and 'gulls and terns' (n=246), respectively.</p> <p>At the control areas, shorebirds were the most abundant species group, followed by dabbling waterbirds, and diving waterbirds, respectively (<b>Figure 2</b>). At the treatment areas, dabbling waterbirds were the most abundant species group, followed by shorebirds, and 'gulls and terns', respectively (<b>Figure 3</b>). Dabbling waterbirds were the most abundant species group at both east and west treatment sites. However, more shorebirds were observed at Treatment West (<b>Figure 4</b>) relative to Treatment East (adjacent marsh) (<b>Figure 5</b>).</p>

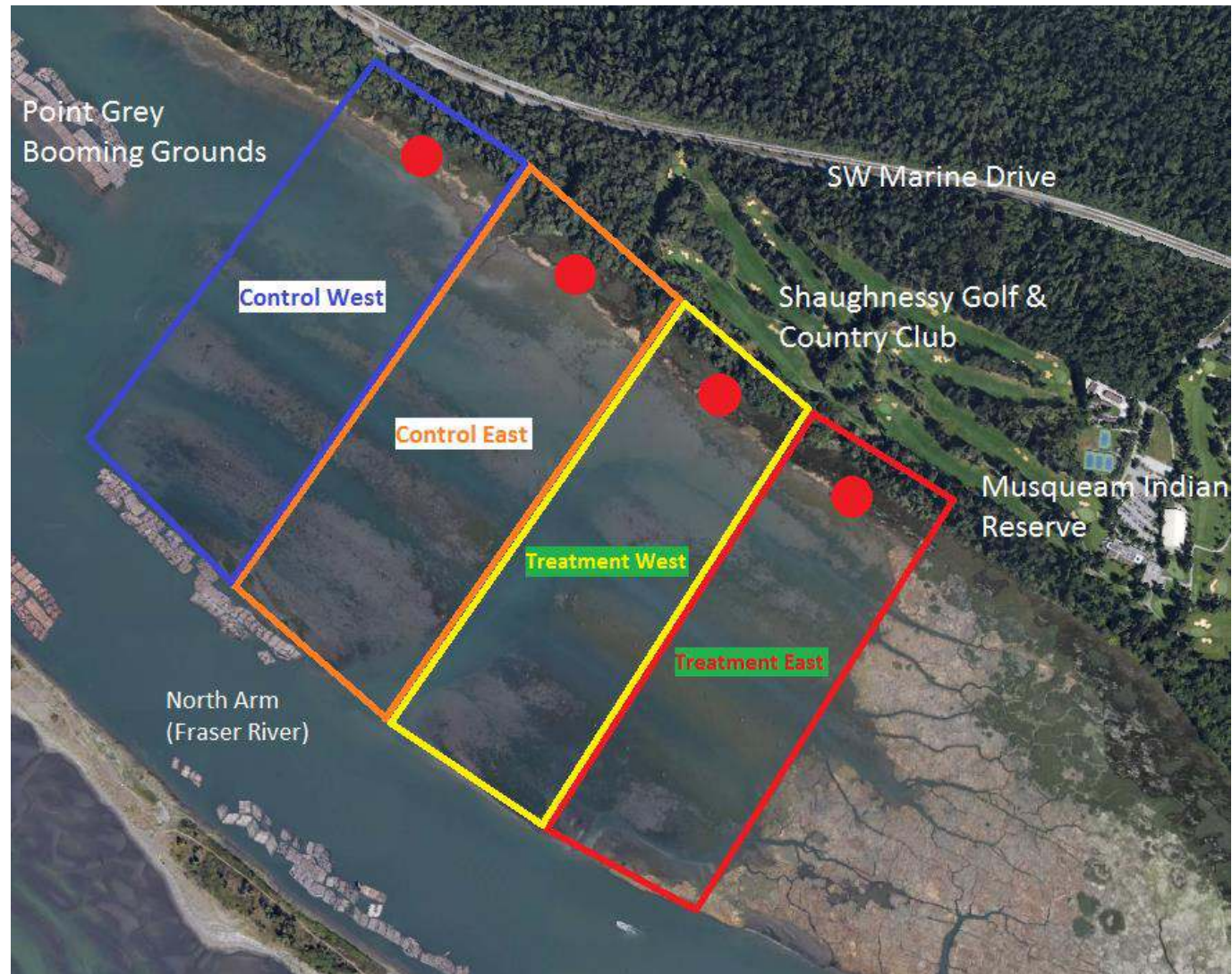
## Tables

**Table 1.** Species observed at Point Grey during winter 2014 reconnaissance standwatch surveys, Vancouver, BC.

Species Group	Common Name	Latin Name	Abundance of Species					Abundance of Species Group
			Control West	Control East	Treatment West	Treatment East	Total	
Cormorants	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	34	11	1	0	46	50
	Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>	1	0	3	0	4	
Dabbling waterbirds	American Wigeon	<i>Anas americana</i>	2	192	483	248	925	2,143
	Eurasian Wigeon	<i>Anas penelope</i>	0	0	2	2	4	
	Gadwall	<i>Anas strepera</i>	0	0	1	6	7	
	Green-winged Teal	<i>Anas crecca</i>	5	0	0	22	27	
	Mallard	<i>Anas platyrhynchos</i>	18	185	173	238	614	
Diving waterbirds	Northern Pintail	<i>Anas acuta</i>	0	65	185	316	566	160
	Bufflehead	<i>Bucephala albeola</i>	32	41	31	8	112	
	Red-breasted Merganser	<i>Mergus serrator</i>	36	5	7	0	48	
Geese	Canada Goose	<i>Branta canadensis</i>	15	18	21	20	74	74
Gull and Terns	Glaucous-winged Gull	<i>Larus glaucescens</i>	0	6	1	5	12	246
	Mew Gull	<i>Larus canus</i>	32	18	52	0	102	
	Unidentified Gull	<i>Larus sp.</i>	8	0	31	93	132	
Herons	Great Blue Heron	<i>Ardea herodias</i>	0	1	0	1	2	2
Loons	Common Loon	<i>Gavia immer</i>	1	0	1	0	2	2
Other Passerines	Common Raven	<i>Corvus corax</i>	0	0	0	2	2	16
	Northwestern Crow	<i>Corvus caurinus</i>	1	2	0	11	14	
Raptors	Bald Eagle	<i>Haliaeetus leucocephalus</i>	8	7	6	10	31	36
	Peregrine Falcon	<i>Falco peregrinus</i>	0	0	1	0	1	

Species Group	Common Name	Latin Name	Abundance of Species					Abundance of Species Group
			Control West	Control East	Treatment West	Treatment East	Total	
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	3	3	
	Rough-legged Hawk	<i>Buteo lagopus</i>	0	0	0	1	1	
Shorebirds	Black-bellied Plover	<i>Pluvialis squatarola</i>	134	139	130	31	434	2,211
	Dunlin	<i>Calidris alpina</i>	598	574	505	50	1727	
	Greater Yellowlegs	<i>Tringa melanoleuca</i>	0	0	0	10	10	
	Sanderling	<i>Calidris alba</i>	20	20	0	0	40	
Songbirds	American Robin	<i>Turdus migratorius</i>	0	0	3	3	6	106
	Black-capped Chickadee	<i>Poecile atricapillus</i>	2	0	2	1	5	
	Golden-crowned Kinglet	<i>Regulus satrapa</i>	4	1	0	0	5	
	House Finch	<i>Haemorhous mexicanus</i>	0	0	0	3	3	
	Marsh Wren	<i>Cistothorus palustris</i>	15	19	12	14	60	
	Northern Flicker	<i>Colaptes auratus</i>	1	0	0	0	1	
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	0	0	3	4	
	Song Sparrow	<i>Melospiza melodia</i>	7	6	5	2	20	
Spotted Towhee	<i>Pipilo maculatus</i>	0	1	1	0	2		
Swans	Unidentified Swan	<i>Cygnus sp.</i>	0	0	0	51	51	51
Unidentified Duck	Unidentified Duck	<i>Anas sp.</i>	5	8	52	13	78	78
Unidentified Bird	Unidentified Bird	-	0	0	0	14	14	14

## Figures



**Figure 1.** Proposed Point Grey Tidal Marsh Project – Standwatch Bird Survey areas assessed during winter 2014 reconnaissance surveys; Vancouver, BC.

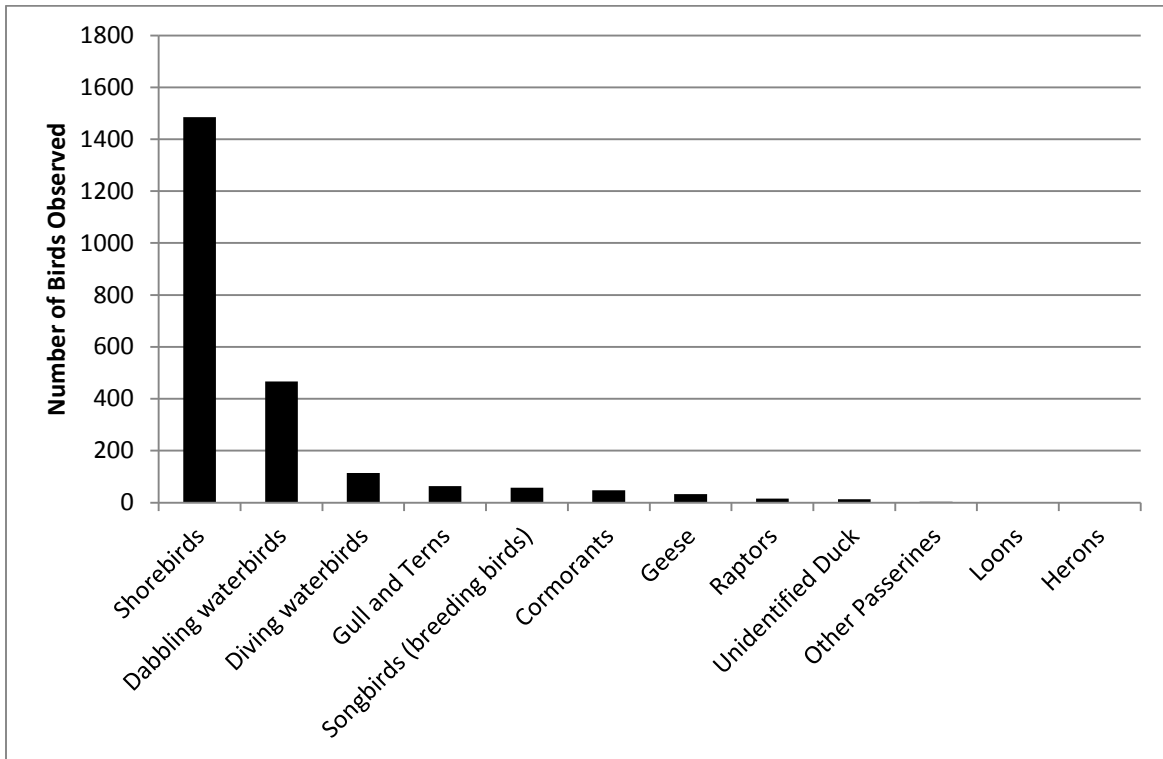


Figure 2. Abundance of species groups observed at Point Grey control areas; Vancouver, BC.

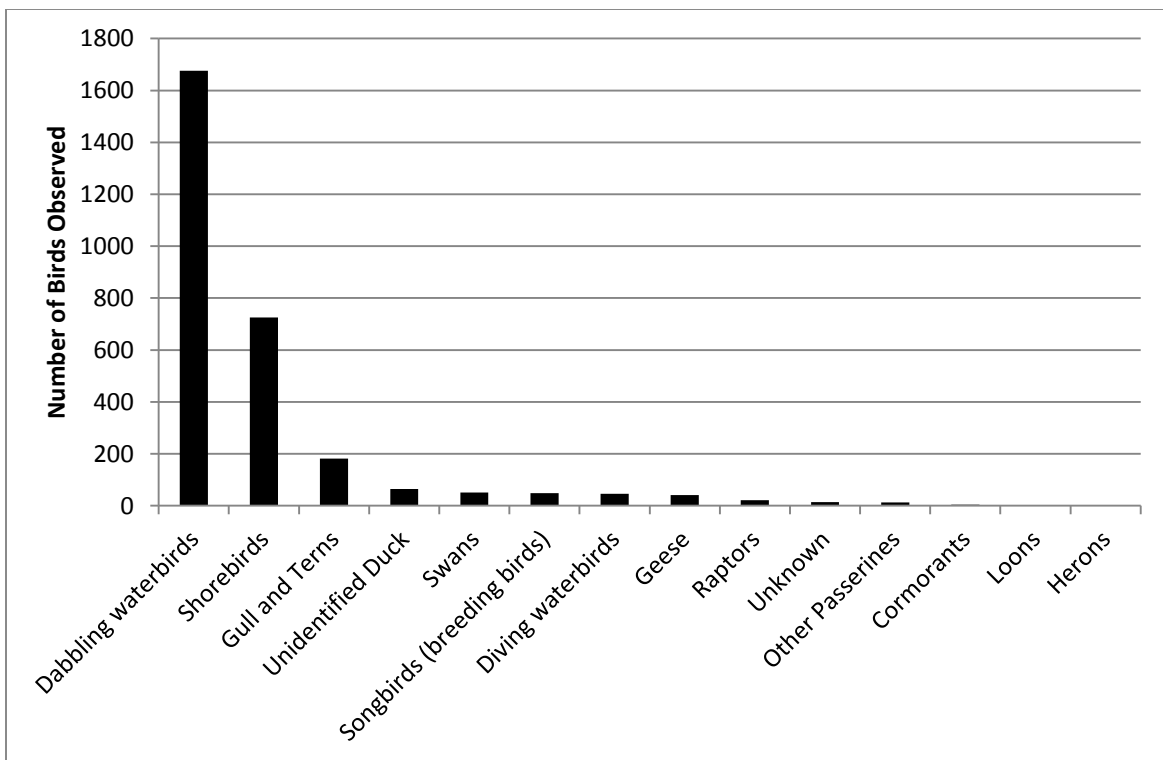


Figure 3. Abundance of species groups observed at Point Grey treatment areas; Vancouver, BC.

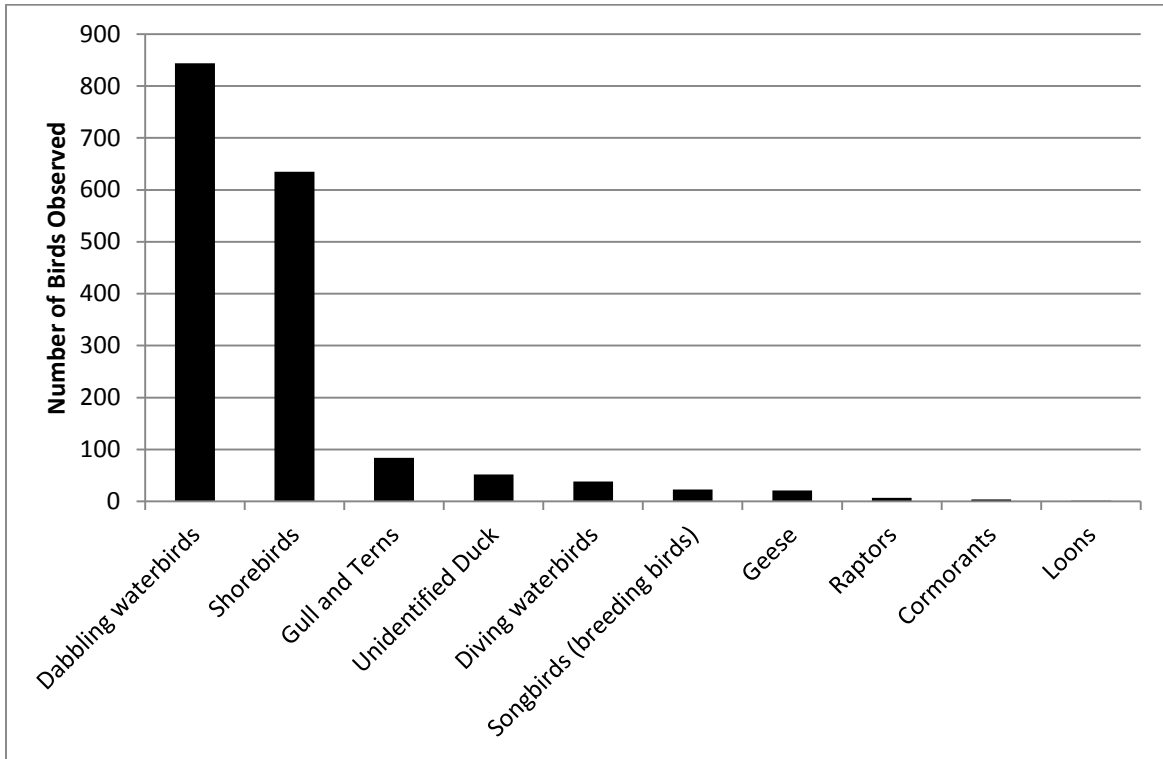


Figure 4. Abundance of species groups observed at Point Grey Treatment West; Vancouver, BC.

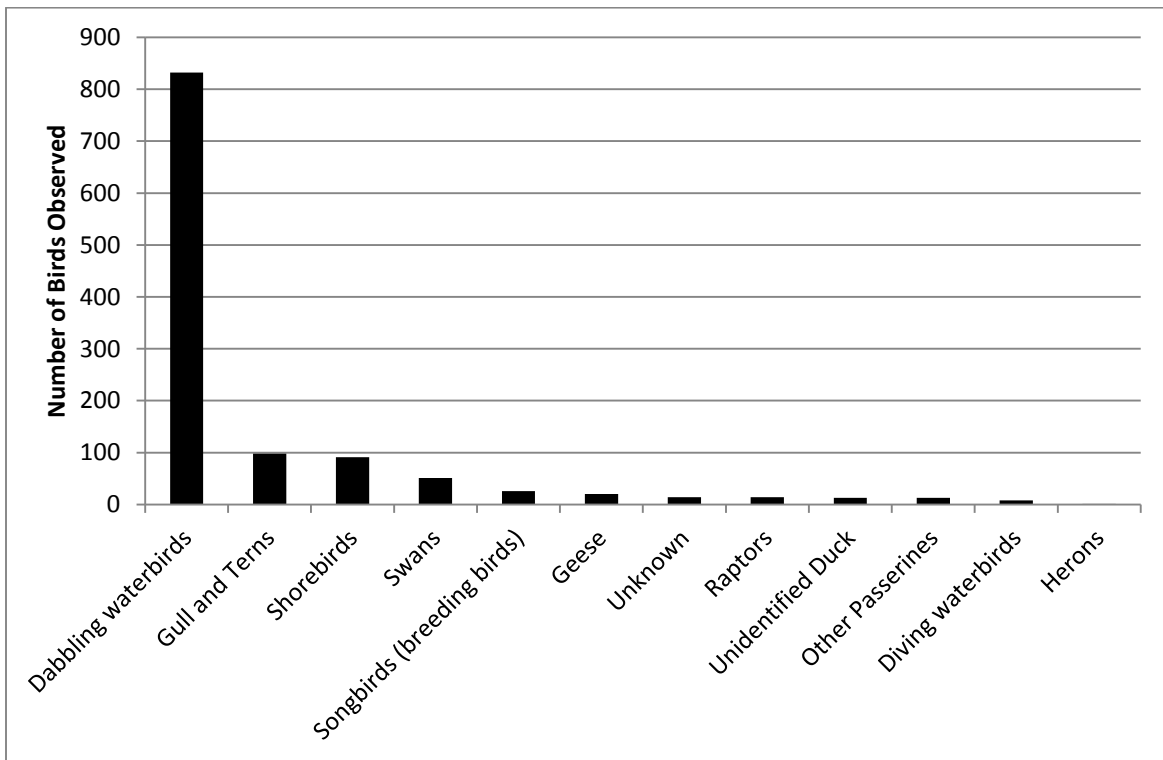


Figure 5. Abundance of species groups observed at Point Grey Treatment East, adjacent marsh; Vancouver, BC.

## Photos



**Photo 1.** Overview of treatment areas associated with the proposed Point Grey Tidal Marsh Project site (March 21, 2014).



**Photo 2.** Observer's view of exposed mudflats at the proposed Point Grey Tidal Marsh Project study area, facing southwest (March 21, 2014). Note that the conditions at the control and reference sites were very similar.