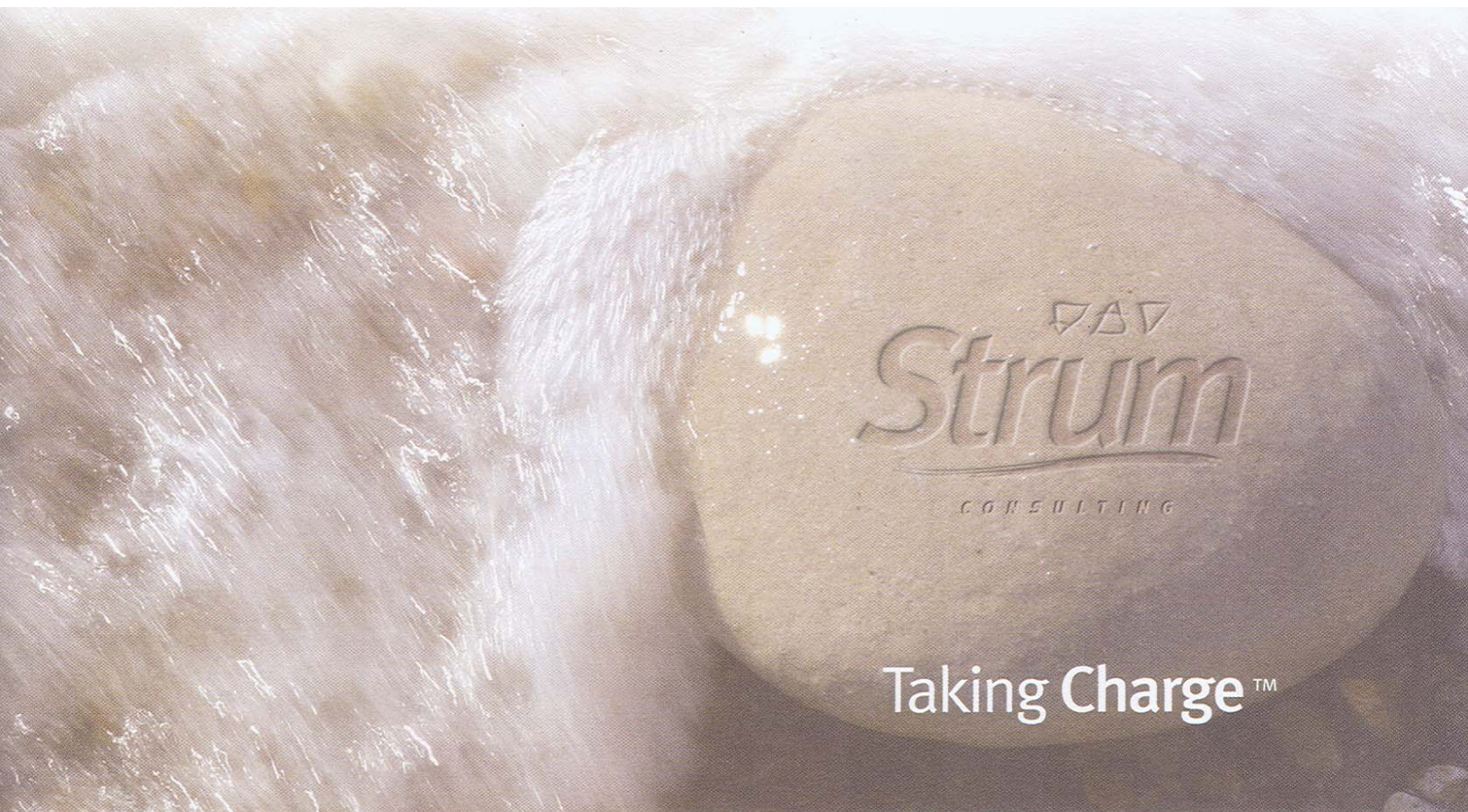




## CANSO CAUSEWAY BIRD STUDY

January 6, 2015





January 6, 2015

**Mr. Glenn Goudey**  
**Nova Scotia Power Inc.**  
1223 Lower Water Street  
Halifax, NS B3J 3S8

Dear Mr. Goudey,

**Re: Canso Causeway Bird Study**

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Attached is the Canso Causeway Bird Study report. The report documents our observations and findings.

We trust this report to be satisfactory at this time. Once you have had opportunity to review this correspondence, please contact us to address any questions you may have.

Thank you,

A blue ink signature of Andy Walter, consisting of a stylized 'A' followed by a horizontal line.

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## **EXECUTIVE SUMMARY**

Strum Consulting completed a bird interaction study (the Study) at the Canso Causeway location in Port Hawkesbury, NS in 2014. This study was conducted to assess the bird community (abundance and species composition), and to gauge bird behavioural responses to, and interaction with, NSPI infrastructure. Other potential mortality factors, including vehicular traffic, were also assessed.

The scope of the study included two main field components: active observations; and carcass searches which consisted of bi-weekly surveys within two, six-week periods (late spring and fall) when birds traditionally congregate in the area. The surveys were performed over two consecutive days.

The following key findings have been identified:

- A total of 3,093 birds were observed, comprising 73 species during the spring component of the study. The most common species observed were Herring Gull, Double-crested Cormorant, Common Tern, and Great Black Backed Gull.
- Terns were commonly observed carrying food from the south side of the Causeway and then heading north, suggesting that a possible nesting colony exists north of the Causeway.
- Foraging activities appeared concentrated in two areas. Gulls were commonly foraging along the north side of the Causeway extending to Auld's Cove, whereas cormorants appeared to forage further north of the Causeway.
- A total of 21,502 birds were detected, comprising 54 species during the fall component of the study. The most common species observed were Double-crested Cormorant, Herring Gull, Great Black Backed Gull, and Bonaparte's Gull.
- In comparison to spring bird activity, a significant increase in Double-crested Cormorants and gulls were noted. Cormorants were observed flying in large numbers (flocks of several hundred) from north to south in the morning and back again in the evening.
- Flight path adjustments in response to NSPI infrastructure included backtracking and completing several circles to achieve sufficient height needed to pass safely over the wires; hesitation before flying through the power lines; and increased nervousness on windy days especially with lighter species, such as terns.
- Successful areas for crossing the Causeway appeared to be near the northeastern most tower where the lines are higher.
- Several injuries and/or deaths were observed when species attempted to fly between the wires as opposed to under or over.
- A risk factor exists for species that would normally fly low over the water, such as terns and sea ducks. Upon approaching the Causeway these species are forced upward and either fly low over vehicular traffic or over the power lines thereby increasing their risk of collision with the lines and/or vehicles.
- Highest risk during the spring breeding season is to terns due to the increased numbers and observed difficulties with passing through the lines.

- During the fall migration, the highest risk is to cormorants due to the volume passing through; however ducks and terns are especially vulnerable as they normally fly low over the water.
- Duck species numbers are expected to increase into late October/November.
- A larger number of close calls were observed during the fall surveys in comparison to spring. The majority of collisions observed during September and October were a result of large flocks of birds, especially Double-crested Cormorants, passing back and forth through the Causeway.
- Mortality events were higher in fall (8 collisions) than those observed during the spring active observation surveys (1 collision).
- A total of 69 carcasses were identified during the spring and fall carcass searches. Most common carcasses observed were Double-crested Cormorant and Herring Gull.
- Scavenging rates appear to be high as the majority of carcasses observed were already partially consumed, however remnants (i.e. skeletons) generally remained present for multiple surveys.
- No vehicle-related bird mortalities were observed; however, traffic was shown to influence the behavior and flight pattern of birds passing through the Causeway.

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## **1.0 INTRODUCTION**

Strum Consulting completed a bird interaction study (the study) at the Canso Causeway location in Port Hawkesbury, Nova Scotia in 2014. The purpose of the study was to characterize the bird community (abundance and species composition) at the Canso Causeway during key periods when birds traditionally congregate in the area; and to gauge bird behavioural responses to, and interaction with, NSPI infrastructure. Other potential mortality factors, including vehicular traffic, were also assessed.

## **2.0 SITE DETAILS**

The Canso Causeway is a rock-fill Causeway which crosses the Strait of Canso, connecting Cape Breton and Mainland Nova Scotia (Drawing 1, Appendix A). The Causeway is approximately 1,372 m in length across the water with a surface width of 24.3 m. A 93.9 m swing bridge allows vessels to pass through the Strait. The Causeway has been in operation since 1955.

The Study Area encompasses the entire Causeway and surrounding viewscales. The Causeway comprises a set of two paired transmission towers separated by a distance of approximately 330 m (Drawing 1). The southwestern tower connects to an additional tower located approximately 450 m to the southwest, which is located on the face of a steep topographical incline. The northeastern tower connects to an additional tower located approximately 480 m to the northeast, and is off-set approximately 85 m from the Causeway itself. The Cape Breton and Central Nova Scotia Railway runs parallel to the Causeway, along the northwestern side.

Suitable vantage points affording complete views of the Causeway were selected for watch count surveys, while carcass searches involved walking the entire Causeway, in amongst NSPI infrastructure.

## **3.0 METHODOLOGY**

The study involved two main components: active observations and carcass searches. Details of each component are provided in the following sections.

### **3.1 Active Observations**

Bird activity around NSPI infrastructure at the Causeway was evaluated by an expert birder. The survey program was completed in 2014 and consisted of bi-weekly surveys within two, six-week periods (late spring and fall) when birds traditionally congregate in the area. The surveys were performed over two consecutive days. Surveys were conducted on the following dates:

June 5 and 6, 2014;  
June 12 and 13, 2014;  
June 18 and 19, 2014;

June 27 and 28, 2014;  
July 6 and 7, 2014;  
July 18 and 19 2014;  
September 17 and 18, 2014;  
September 22 and 23, 2014;  
October 4 and 5, 2014;  
October 11 and 12, 2014;  
October 15 and 16, 2014; and  
October 25 and 26, 2014.

The purpose of the surveys was: (1) to characterize the bird community (abundance and species composition) at the Causeway during these key periods; and (2) to gauge bird behavioural responses to, and interaction with, NSPI infrastructure that result in mortality. Other potential mortality factors, including vehicular traffic, were also assessed.

Surveys employed the watch count methodology (EC 2007) and were carried out from a suitable vantage point affording a complete view of the Causeway. Watch counts included a morning period (one half hour after sunrise until 10:00 AM) and an afternoon period (2:00 PM to 7:00 PM), to reflect the foraging ecology of different bird guilds expected to occur in the area. To reduce bias associated with observer distance (*i.e.*, to ensure the entire Causeway area is adequately surveyed), survey locations were alternated within a given week.

Information recorded during each survey included:

- Environmental/climatic conditions potentially influencing bird activity and/or detectability
  - Wind direction and speed
  - Visibility
  - Precipitation
- Bird species composition and daily abundance estimates
- General behaviour observations of birds in the area
  - Subsurface foraging
  - Scavenging
  - Roosting
  - Transiting
- Bird responses to NSPI infrastructure (*i.e.*, height, path) and behaviours, (including any avoidance behaviour)
- Bird interactions and behaviour to other variables and possible mortality factors, including vehicular traffic, food sources, etc.
- Observed mortality events, such as collisions with NSPI infrastructure.

### **3.2 Carcass Searches**

Carcass searches were carried out along the Causeway to estimate bird mortality trends in the area during the study period. These searches were completed in the interim between morning and afternoon watch counts. Whenever possible, mortality resulting from injury (*i.e.*, collision

with motor vehicles) was distinguished from that resulting from collision with NSPI power lines. The locations of all observed carcasses were recorded using a GPS capable of sub-5 m accuracy. All details relating to the carcass observation were recorded, including species, evidence of scavenging/decomposition, and obvious gross lesions. Representative photos were taken of each observed carcass.

Observed carcasses were left *in situ* and re-visited during subsequent searches to estimate general scavenging rates (*i.e.*, removal/consumed). Based on these observations, general scavenging activity/trends were estimated to account for birds killed but not observed.

## **4.0 RESULTS**

The Strait of Canso provides a migratory pathway for bird species, specifically those following coastal routes, wintering in areas south of Nova Scotia. Cormorants, terns, and gulls tend to nest in coastal colonies often amidst one another, where access to an abundant fish supply is present (NSDNR 2013). Each year Atlantic Saury (a.k.a. billfish, needlefish, skipjack) migrate from the Gulf of St. Lawrence to the eastern seaboard of the United States in late fall/early winter (Chaput and Hurlbut 2010). Historically the Strait of Canso provided a passageway for the fall migration; however the construction of the Causeway created a barrier for fish passage resulting in dense aggregations of Atlantic Saury along the northern portion of the Causeway (Canadian Heritage Information Network 1998). A large variety of gulls, waterfowl, gannets, and Bald Eagles congregate here for several weeks while the Atlantic Saury are migrating.

The following sections summarize the results of the bird interaction study.

### **4.1 Observed Bird Community**

#### **4.1.1 Spring Observations**

During the spring component of the study, a total of 3,093 birds were detected, comprising 73 species. The most common species observed were Herring Gull (*Larus argentatus*), Double-crested Cormorant (*Phalacrocorax auritus*), Common Tern (*Sterna hirundo*), and Great Black Backed Gull (*Larus marinus*). Terns were commonly observed carrying food from the south side of the Causeway and then heading north, suggesting that a possible nesting colony exists north of the Causeway. Tern traffic through the Causeway appeared heaviest during the morning and evening.

Several passerines were noted on the Cape Breton side of the Causeway including several rarities, especially during the early June surveys. This suggests that the area may be a migration path for passerines.

Several Osprey were observed hovering over the Causeway, many times carrying nesting material. During two separate surveys (June and July), Osprey were observed to be placing nesting material on top of a tower along the Causeway. However, these birds were not successful at establishing a nest.



Crows, ravens, and gulls were regularly observed perching on top of the bridge and towers and scavenging along the Causeway. Invasive species, namely pigeons and European starlings were observed to be nesting in the Causeway bridge.

Foraging activities appeared concentrated in two areas. Gulls were commonly foraging along the north side of the Causeway extending to Auld's Cove. Cormorants mainly foraged several hundred metres to several kilometres north of the Causeway.

The most commonly observed species during the spring surveys are provided in Table 1. A complete list of all species observed during each spring survey is provided in Tables A1-A13 (Appendix B).

**Table 1. Most Commonly Observed Species (Spring 2014)**

<b>Species</b>	<b>Number of Individuals Observed</b>
Herring Gull	677
Double-crested Cormorant	628
Common Tern	623
Great Black-Backed Gull	407
Northern Gannet	177
European Starling	113
American Crow	72
Common Raven	37
Rock Dove	29
Bald Eagle	28
Cedar Waxwing	28
American Robin	21
Osprey	20
Common Loon	19
American Goldfinch	18
Yellow Warbler	16
Great Blue Heron	15
Song Sparrow	13

An increase in the bird community occurred during the July 6 and 7 surveys due to a 15 m beached whale a few hundred metres east of the Causeway's swing bridge. The whale, which was first sighted on July 3, washed ashore below the Port Hastings visitor information centre where it began to decompose until it was removed a week later on July 10.

One sighting of a Bank Swallow (*Riparia riparia*) was recorded on July 19. The Bank Swallow is listed as "Threatened" under the Nova Scotia *Endangered Species Act* (NS ESA). No other species with legal protection under the *Species at Risk Act* (SARA) or the NS ESA were observed during the spring surveys.

#### 4.1.2 Fall Observations

During the fall component of the study, a total of 21,502 birds were detected, comprising 54 species. The most common species observed were Double-crested Cormorant, Herring Gull, Great Black Backed Gull, and Bonaparte's Gull (*Chroicocephalus philadelphia*).

In comparison to spring bird activity, a significant increase in Double-crested Cormorants and gulls was noted. Cormorants were observed flying in large numbers (flocks of several hundred) from north to south in the morning and back again in the evening. Traffic was heaviest within a half hour after sunrise then about one and a half hours before dusk. Flocks appeared more sporadic and smaller in the evening.

Northern gannet traffic was lower than expected which is possibly attributed to lower than normal billfish numbers, which often run through the area in late October/November (Pepper 2014).

Similar to the spring surveys, crows, ravens, and gulls were commonly perched on top of the bridge and towers and engaged in scavenging along the Causeway. Pigeons and European starlings were observed to be nesting in the Causeway bridge.

Foraging activities appeared consistent to spring observations with gulls foraging immediately north of the Causeway and cormorants foraging further north of the Causeway.

Birds counts were significantly higher during early fall (September/early October) with a noticeable decline mid-late October.

The most commonly observed species during the fall surveys are provided in Table 2. A complete list of all species observed during each fall survey is provided in Tables B1-B13 (Appendix B).

**Table 2. Most Commonly Observed Species (Fall 2014)**

<b>Species</b>	<b>Number of Individuals Observed</b>
Double-crested Cormorant	16,848
Herring Gull	906
Great black-backed Gull	796
Gull sp.	670
Bonaparte's Gull	531
Blue Jay	303
American Robin	264
Common Eider	221
American Crow	146
Common Merganser	143
Duck sp.	97
Bald Eagle	75

Species	Number of Individuals Observed
Surf scoter	66
Great Blue Heron	63
Common Grackle	50
European Starling	50
Pigeon	40

Two provincially protected species were observed during the fall surveys: the Harlequin Duck (*Histrionicus histrionicus*) and the Savannah Sparrow (*Passerculus sandwichensis*). The Harlequin Duck is listed as “Special Concern” under SARA and “Endangered” under NS ESA. The Savannah Sparrow is listed as “Special Concern” under SARA. No other species with legal protection under SARA or the NS ESA were recorded.

#### **4.2 Bird Responses to NSPI Infrastructure**

The following bird responses to NSPI infrastructure were observed.

##### 4.2.1 General Observations

During the spring and fall surveys, general changes in behaviour of birds were noted in relation to the power lines. This included adjustments to flight paths, usually involving backtracking and completing several circles to achieve sufficient height needed to pass safely over the wires; hesitation before flying through the power lines; and increased nervousness on windy days especially with lighter species, such as terns. Birds that would normally fly low over the water, such as terns and ducks, are pushed up by the Causeway and forced to either fly low over traffic or over the power lines, thereby increasing their risk of collision with the lines and/or vehicles. These observations are detailed in Tables A1-A13 and B1–B13 in Appendix B. Bird responses which resulted in close contact to NSPI infrastructure and/or vehicles using the causeway are highlighted in yellow. Instances where species collided with NSPI infrastructure are highlighted in red.

Wind direction and speed seem to be factors in choosing routes over or around the Causeway. As would be expected, windy conditions exacerbate avoidance and nervous/hesitation behaviour. In high wind conditions, many birds, including cormorants, approach the Causeway near the bridge where the power lines are highest, but at the last minute detour to a land route to the east of the Causeway on the Cape Breton side. Other birds, especially gulls and terns, opt instead to fly with the wind towards the lines, turn into the wind and gain elevation, and then catch wind and ‘slingshot’ over the lines, sometimes upside down or backwards. This approach often required birds to kick their feet out at the last moment to slow themselves while crossing the line. Observations of gulls with severed feet and lame legs were noted during the active observation surveys, in addition to encountering several foot remnants along the Causeway during the carcass surveys.

Birds, mostly gulls, foraging over the Causeway are often blown towards the wires. Many fly towards the wires quickly but typically evade the wires at the last possible opportunity. Individuals that choose to fly through the wires either come very close to touching them or

collide with the infrastructure. Gulls appear to be more aware of the wires in comparison to other species. On a few occasions gulls would experience close calls with vehicular traffic or the power lines while fighting over food.

Successful areas for crossing the Causeway appeared to be near the northeastern most tower where the lines are higher, in addition to areas in the vicinity of the bridge and ship canal (Drawing 1). The southwestern portion of the Causeway appeared more difficult for individuals to cross due to slack power lines. At this location species would often hesitate and turn around.

During the spring surveys there was a fairly even distribution of birds flying over and beneath the lines, while significantly fewer chose to fly between the lines. One Common Tern struck the lines while travelling in a north to south direction during the June 27, 2014 survey.

Fall surveys observed a large proportion of birds travelling beneath the lines opposed to over. Cormorants in particular commonly flew under lines by a high spot near the northeastern most tower. Between the lines was the least favoured route, and resulted in several injuries and/or deaths when attempted. The following altercations were observed:

- September 17, 2014 – Double-crested Cormorant hit the wires;
- September 18, 2014 – Double-crested Cormorant flying south to north between the lines struck the wires;
- October 4, 2014 – Double-crested Cormorant hit the wires;
- October 12, 2014 – Double-crested Cormorant hit the wires;
- October 16, 2014 – Double-crested Cormorant flying south to north between the lines hit the wires;
- October 16, 2014 – Great Black-backed Gull flying south to north between the lines hit the wires.

Several close calls were also observed, predominantly for Herring Gulls, Double-crested Cormorants, and terns. Very few individuals were able to regain composure and fly off after striking a line.

No vehicle-related bird mortalities were observed; however, traffic was shown to influence the behaviour and flight pattern of birds passing through the Causeway. Several birds which would approach the Causeway at a lower elevation would become deterred by passing vehicles and turn around. Alternatively, approaching birds would circle back, sometimes multiple times to gain the altitude needed to pass over traffic. Double-crested Cormorants were observed to be monitoring traffic and would proceed under the transmission lines once a break in traffic was available. Herring Gulls, Double-crested Cormorants, Great Black-backed Gulls, and terns were all observed to adjust their flight pattern in response to vehicular traffic.

#### 4.2.2 Terns

Terns had difficulties crossing the Causeway, especially in high winds. They appear less comfortable flying beneath the wires, yet struggle to move forward when flying high enough to

go over lines. Terns will often fly over land east of the Causeway on the Cape Breton side, where an elevated area of forested land exists, possibly providing some shelter from the wind. When approaching wires facing the wind, terns often hesitate and drop back slightly multiple times as if nervous to cross the wires. When approaching wires with the wind they often turn to face the wind just before the wires, then hover in front of wires to gain altitude. When they are high enough they catch the wind with their wings and sail backwards, often turning as they cross the wires. Gulls use this technique as well. On many occasions birds came very close to the wires while completing this manoeuvre.

#### 4.2.3 Cormorants

Cormorants exhibited greater difficulty flying with the wind and in very low wind conditions, in comparison with flying against the wind. They would often approach wires in an attempt to fly over, hesitate, then back-track, commonly making multiple approaches until acquiring enough height to pass over wires. Several minutes were typically spent circling and back-tracking to distances up to a kilometre at times. It appears riskier decisions were made after multiple approaches. Cormorants appeared prone to following others and on several occasions it was apparent after multiple attempts were made to go over the wires that the cormorants would observe a species fly under the wires and proceed to follow. When flying in large flocks, the pathway selected by the lead bird is typically the route attempted by the remaining flock. This often results in many birds making last second manoeuvres to avoid colliding with the wires.

#### 4.2.4 Sea ducks

Sea ducks had difficulty crossing the Causeway, often hesitating when approaching lines. Sea duck observation numbers were very low, but they became more frequent later in October. Their numbers would have likely continued to increase into late October / November.

### **4.3 Observed Mortalities**

Several line-related fatalities were witnessed during the active observation surveys completed. In general, most birds that hit the line were flying with the wind and/or attempting to pass in between the wires. A Common Tern hit the wires and landed in the ship canal with a broken wing. Double-crested Cormorants were witnessed hitting the wires on six separate occasions. On three of the occasions, the cormorants were attempting to fly between the lines. A Great Black-backed Gull, also attempting to fly between the lines, clipped its wing and fell into the water.

During the spring surveys, a greater number of close calls were witnessed on June 28, July 6, and July 18. A total of 26 events occurred during the 3 surveys, the majority of which involved terns and gulls attempting to cross either between or over the lines. High wind conditions (>50 km/h) were present during the June 28 and July 6 survey which was believed to be a causing factor for the increased occurrence of close calls.

A larger number of close calls were encountered during the fall surveys in comparison to spring. The majority of collisions observed during September and October were a result of large flocks of birds, especially Double-crested Cormorants, passing back and forth through the Causeway.

A flock of duck species also encountered difficulties upon approaching the lines, resulting in several close calls. Wind was not observed to be a factor in the fall surveys.

As a result of increased bird activity during the fall surveys, mortality events were also higher in fall (8 collisions) than those observed during the spring active observation surveys (1 collision).

Other fatalities presumed, but not confirmed, to be caused by the power lines were noted during the carcass searches. These include:

- a Common Tern noted in the water under the lines;
- a Northern Gannet noted on the Causeway under the lines; and
- an Ovenbird (*Seiurus aurocapillus*) discovered between the rocks on the Causeway, under one of the towers.

Additional fatalities directly related to the power lines (*i.e.*, deceased birds stuck in the lines) were noted and included a Double-crested Cormorant and another unidentified bird. Both the cormorant and gannet noted in the water were found the day after a big storm suggesting that wind was probably a factor in the collision. The majority of collisions witnessed resulted in birds falling into the ocean; therefore carcasses were not able to be identified.

A total of 69 carcasses were identified during the spring and fall carcass searches and are summarized in Table 3. A detailed account of observed carcasses is provided in Table C (Appendix B).

**Table 3. Observed Mortalities**

<b>Species</b>	<b>Number of Carcasses Identified</b>
American Crow	1
Common Eider	5
Common Merganser	1
Common Tern	1
Double-crested Cormorant	17
Great Black-backed Gull	6
Great Blue Heron	1
Gull sp.	6
Herring Gull	10
Northern Gannet	5
Savannah Sparrow	1
Ovenbird	1
Unknown/Unidentifiable Remnants	14
<b>TOTAL</b>	<b>69</b>

In many instances (particularly for gulls and ducks) fresh carcasses were found during the carcass surveys, however collisions were not observed the previous day. It is assumed these mortality events likely occurred at night. Alternatively, collisions that were observed during the active observation surveys did not result in an identifiable carcass during the carcass surveys due to the majority of individuals falling to the ocean. On average, approximately five close calls of birds colliding with wires were witnessed a day. Numbers increased during the fall surveys when large flocks of cormorants, in particular, were flying over the Causeway.

Raccoon, fox, and mink were noted along the Causeway, likely scavenging, in addition to crows, ravens, and gulls which were regularly patrolling the Causeway. Scat was also observed in the vicinity of the carcass piles. Scavenging rates appear to be high as the majority of carcasses observed were already scavenged, however remnants (i.e. skeletons) generally remained present for multiple surveys. Typical scavenging activities recorded during the surveys are listed below.

- A Double-crested Cormorant that hit the wires on September 17 was discovered on the road on September 18. During the September 23 survey the bird was still present, but had since been reduced to bones and feathers.
- Several carcasses were noted in close proximity to one another on two occasions. On June 13, 2014 a group of four Common Eiders were found within 20 m of one another along the rocks on the south side of the Causeway. On October 4, 2014 a pile of four to five Double-crested Cormorants and one to two gulls were observed and remained in the pile until October 16, 2014. It is our understanding that these individuals were placed at the location by Nova Scotia Department of Natural Resources (NSDNR) staff as part of a carcass study. Remnants of the birds were scattered around the pile, assumed to have been dragged by scavengers.
- A decapitated Double-crested Cormorant was observed October 11 and remained in the same condition during the October 15 and October 16 carcass searches.
- On October 25, a fresh Common Eider carcass was observed and upon return to the site the following day (October 26) the Eider was still present but the chest had been eaten.
- Of the few fresh carcasses that were available for tracking on subsequent visits, it was apparent that scavenging took place within the first 24 hours of mortality. Once species were reduced down to skeletal remains, these remnants remained present for several subsequent visits. The majority of the carcass sightings throughout the spring and fall surveys were remnants.

Observations made during the carcass surveys indicate that apart from individuals who fell directly into the ocean, carcass observations whether fresh or old, are thought to be an accurate reflection of mortality trends at the site as a result of existing Causeway infrastructure.

## **5.0 DISCUSSION**

There are multiple variables to consider when discerning the cause and probability of avian collision with transmission lines. The infrastructure type and design can significantly impact interactions with birds. Specifically, the height of power lines with respect to flight paths can be extremely important. Transmission lines (18.3–58 m) may be a greater threat to birds while flying at higher altitudes (e.g., migratory flights), while distribution lines (6.4–14.6 m) may become dangerous during lower altitude local flights (APLIC 2012). A flight path between the lines was the least favoured route, and resulted in several injuries and/or deaths when attempted. Causeway infrastructure appearing to cause the most difficulties was the uppermost guide wire of the taller power line which appears to be relatively thin (and perhaps less visible) in comparison with other lines.

Pandey et al. (2008) also found that the middle span of power lines was the most common place for collisions, which suggests that birds might aim for the point equidistant from the more visible poles. The Canso Causeway site comprises a set of two paired transmission towers separated by a distance of approximately 330 m. The southwestern tower connects to an additional tower located approximately 450 m to the southwest, which is located on the face of a steep topographical incline. The northeastern tower connects to an additional tower located approximately 480 m to the northeast, and is off-set approximately 85 m from the Causeway itself. Although the span of powerlines between the southern-most towers is 450 m, the steep rock face of the Porcupine Mountain Quarry extends into the Strait of Canso, creating a narrow passageway for birds approaching from the south. The two northern-most towers provide the greatest span of lines (480 m) and opportunity for crossing between towers. Results from the study indicate the northeastern side of the Causeway to be the favoured pathway for birds in comparison to the southwestern side. In addition, higher mortality and close calls for collisions with NSPI infrastructure were observed in the vicinity of the southwestern tower.

Species flight behaviour also influences the risk of collisions with NSPI infrastructure. Species that flock, have rapid flight, and are large with slow manoeuvrability (high wing loading and low wing aspect ratio) are especially vulnerable (Bevanger 1998; Crowder and Rhodes 2002; Erickson et al. 2001; Manville 2005). Based on the study results, flocks of cormorants and duck species were at a greater risk for collisions. These species tend to congregate together in flight and upon approaching the transmission lines become hesitant, nervous, and often panic and turn around. Last minute manoeuvres tend to result in close calls and in some instances a collision. Waterfowl and waterbirds typically struggle when manoeuvring between the lines, due to their large bodies and small wings which create a rapid flight pattern. In addition, these species normally fly low over the water creating further vulnerability for collisions as they are forced upward upon approaching the Causeway and must either fly low over vehicular traffic or gain sufficient altitude to pass over the power lines.

From a seasonal perspective, the highest risk during the spring breeding season is to terns due to the increased numbers and observed difficulties with passing through the lines. During the fall migration, the highest risk is to cormorants due to the volume passing through; however



ducks and terns are especially vulnerable as they normally fly low over the water. Although only a few duck species were observed, numbers are expected to increase into late October/November.

Power lines are often difficult for birds to see and can sometimes appear invisible due to background or low light conditions. Birds with eyes in the front of their head (hawks, raptors) likely have better depth perception and were not observed to hit power lines during the studies. Birds with eyes in the side of their heads (ducks, gulls, cormorants, terns) have reduced depth perception which is a likely contributor to higher collision rates and was a trend witnessed during this study. Similarly, waterfowl may also be more vulnerable for collision due to adaptations for underwater vision. Many waterfowl are emmetropic, which causes nearsightedness above water (Jones et al. 2007, APLIC 2012). During the study period, waterfowl observation numbers were very low, but they became more frequent later in October. Numbers would have likely continued to increase into late October/November.

Although uncontrollable, weather associated with poor visibility, such as fog, cloud, and precipitation, is also associated with higher collision rates (APLIC 2012). Evidence suggests that wind was a factor in close calls or mortality events at the Canso Causeway likely due to a lack of control in the flight path. Many birds approach the power lines near the bridge, but decide on land route once getting closer, possibly trying to avoid the Causeway in the wind. No notable variations in mortality rates were observed when comparing poor visibility and good visibility conditions at the Canso Causeway. However, due to the inability for direct observations to be made during poor visibility events by the assessor, confirmation of mortality rate trends during such conditions was unattainable.

## **6.0 SUMMARY**

The following key findings have been identified:

- A total of 3,093 birds were observed, comprising 73 species during the spring component of the study. The most common species observed were Herring Gull, Double-crested Cormorant, Common Tern, and Great Black Backed Gull.
- Terns were commonly observed carrying food from the south side of the Causeway and then heading north, suggesting that a possible nesting colony exists north of the Causeway.
- Foraging activities appeared concentrated in two areas. Gulls were commonly foraging along the north side of the Causeway extending to Auld's Cove, whereas cormorants appeared to forage further north of the Causeway.
- A total of 21,502 birds were detected, comprising 54 species during the fall component of the study. The most common species observed were Double-crested Cormorant, Herring Gull, Great Black Backed Gull, and Bonaparte's Gull.
- In comparison to spring bird activity, a significant increase in Double-crested Cormorants and gulls were noted. Cormorants were observed flying in large numbers

(flocks of several hundred) from north to south in the morning and back again in the evening.

- Flight path adjustments in response to NSPI infrastructure included backtracking and completing several circles to achieve sufficient height needed to pass safely over the wires; hesitation before flying through the power lines; and increased nervousness on windy days especially with lighter species, such as terns.
- Successful areas for crossing the Causeway appeared to be near the northeastern most tower where the lines are higher.
- Several injuries and/or deaths were observed when species attempted to fly between the wires as opposed to under or over.
- A significant risk factor exists for species that would normally fly low over the water, such as terns and sea ducks. Upon approaching the Causeway these species are forced upward and either fly low over vehicular traffic or over the power lines thereby increasing their risk of collision with the lines and/or vehicles.
- Highest risk during the spring breeding season is to terns due to the increased numbers and observed difficulties with passing through the lines.
- During the fall migration, the highest risk is to cormorants due to the volume passing through; however ducks and terns are especially vulnerable as they normally fly low over the water.
- Duck species numbers are expected to increase into late October/November.
- A larger number of close calls were observed during the fall surveys in comparison to spring. The majority of collisions observed during September and October were a result of large flocks of birds, especially Double-crested Cormorants, passing back and forth through the Causeway.
- Mortality events were higher in fall (8 collisions) than those observed during the spring active observation surveys (1 collision).
- A total of 69 carcasses were identified during the spring and fall carcass searches. Most common carcasses observed were Double-crested Cormorant and Herring Gull.
- Scavenging rates appear to be high as the majority of carcasses observed were already partially consumed, however remnants (i.e. skeletons) generally remained present for multiple surveys.
- No vehicle-related bird mortalities were observed; however, traffic was shown to influence the behavior and flight pattern of birds passing through the Causeway.

## **7.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS**

This Report (the "Report") has been prepared by Strum Environmental ("Consultant") for the benefit of Nova Scotia Power Inc. ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations, and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations")
- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports
- may be based on information provided to Consultant which has not been independently verified
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
- was prepared for the specific purposes described in the Report and the Agreement
- in the case of subsurface, environmental, or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental, or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

The Report is to be treated as confidential and may not be used or relied upon by third parties, except:

- as agreed in writing by Consultant and Client
- as required by law
- for use by governmental reviewing agencies

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This Statement of Qualifications and Limitations forms part of the Report and any use of the Report is subject to the terms hereof.

Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report. This report was prepared by by Andy Walter, BSc., Environmental Specialist and Megan Henley, BSc., Environmental Specialist., and was reviewed by Shawn Duncan, BSc., Vice President.

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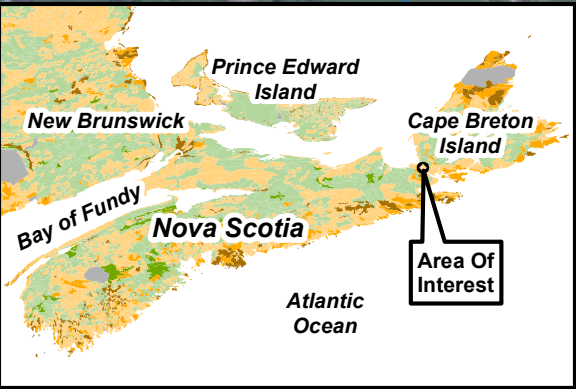
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## APPENDIX A

### DRAWING

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- Notes:**
1. Reference: Digital Topographic Mapping by Nova Scotia Geomatics Centre.
  2. Projection: NAD83(CSRS), UTM Zone 20 North.
  3. ESRI Online Satellite Imagery.

**Canso Causeway  
Aerial Imagery**



Date: Nov. 2014	Project #: 14-5063
Scale: 1:5,000	Drawing #: <b>1</b>
Drawn By: H. Serhan	
Checked By: M. Henley	

APPENDIX B  
BIRD SPECIES OBSERVATION TABLES

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#### Active Observation Survey - Colour Legend



-  Yellow: An observed close call interaction between the bird and Canso Causeway infrastructure and/or vehicular traffic.
-  Red: An observed interaction between the bird and Canso Causeway infrastructure and/or vehicular traffic, resulting in injury and/or fatality.

Table A1: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 5, 2014
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Time of Day	Common Name	Scientific Name	No of individuals	Species Behaviour
Very foggy, 9 deg celcius, wind 5-10km/hr.				
05:15:00	Yellow Warbler	Setophaga petechia	3	Singing in area
	Song Sparrow	Melospiza melodia	2	Singing in area
	Purple Finch	Haemorhous purpureus	2	Singing in area
	American Robin	Turdus migratorius	3	Singing in area
	Rock Dove	Columba livia	10	Living in bridge
	European Starling	Sturnus vulgaris	25	Living in bridge
05:45:00	Common Tern	Sterna hirundo	2	Foraging south of causeway.
06:15:00	Common Raven	Corvus corax	2	Being chased by crows over lines S to N
	American Crow	Corvus brachyrhynchos	2	Chasing Ravens over lines south to north.
06:30:00	Black-capped Chickadee	Poecile atricapillus	2	Singing in area
06:45:00	Common Grackle	Quiscalus quiscula	1	Foraging near causeway.
07:00:00	Chestnut Sided Warbler	Setophaga pensylvanica	1	Singing in area
07:15:00	Alder Flycatcher	Empidonax alnorum	1	Foraging near causeway.
	American Crow	Corvus brachyrhynchos	3	Perching on towers.
07:30:00	Cedar Waxwing	Bombycilla cedrorum	16	Travelling from mainland to Cape Breton. Flying low(10m) over water.
07:45:00	American Goldfinch	Spinus psaltria	2	Seen on Cape Breton side of causeway.
08:00:00	Ruby-throated Hummingbird	Archilochus colubris	1	Looked like it came from mainland to CB.
08:15:00	Eastern Bluebird	Sialia sialis	1	Seen on CB side of causeway.
	Chipping Sparrow	Spizella passerina	1	Singing in area
08:30:00	Tree Swallow	Tachycineta bicolor	2	Foraging near bridge
	Double-crested Cormorant	Phalacrocorax auritas	1	Flew between lines awkwardly. Had to make last minute adjustments.
	Arctic Tern	Sterna paradisaea	1	Foraging near bridge
09:00:00	Double-crested Cormorant	Phalacrocorax auritas	4	Circling north of causeway. Flew just under power lines north to south.
	Herring Gull	Larus argentatus	1	South to North under lines.
09:15:00	Great Black-backed Gull	Larus marinas	1	South to North under lines.
	Tree Swallow	Tachycineta bicolor	2	Foraging near bridge
09:30:00	Bald Eagle	Haliaeetus leucocephalus	1	Flew across water south of causeway.
09:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flew over lines south to north. Lowered altitude after crossing wires.
	Common Tern	Sterna hirundo	1	Flew under lines through ship canal.
	Great Black-backed Gull	Larus marinas	1	Over lines south to north. Had to gain altitude to cross wires.
Afternoon Survey: Cloudy, Wind 10-20 km/h NW				
14:00:00	American Goldfinch	Spinus psaltria	1	Singing in area
	American Redstart	Setophaga ruticilla	1	Singing in area
	American Robin	Turdus migratorius	1	Singing in area
	Blue Headed Vireo	Vireo solitarius	1	Singing in area
14:30:00	Bald Eagle	Haliaeetus leucocephalus	1	Flew East to West across water, aprox. 1Km North of causeway.
	Herring Gull	Larus argentatus	1	Foraging North of causeway.
14:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flew North to South under lines.
15:00:00	Herring Gull	Larus argentatus	2	Flew North to South high over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	Flew North to South over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	Flew towards wires, turned around and made a big circle to gain altitude, then decided to go under. Seemed like it was having trouble deciding what to do.
15:15:00	Common Raven	Corvus corax	1	Circling over quarry
16:00:00	Great Black-backed Gull	Larus marinas	1	Flew South to North under lines through ship canal.
	Great Black-backed Gull	Larus marinas	1	Flew North to South over wires.
16:30:00	Osprey	Pandion haliaetus	1	Soaring over water.
17:00:00	Great Black-backed Gull	Larus marinas	2	Foraging on North side of Causeway
17:15:00	Double-crested Cormorant	Phalacrocorax auritas	3	Flying North to South over lines. All three having difficulty gaining height.
	Great Black-backed Gull	Larus marinas	1	Circling south of causeway.
17:30:00	Herring Gull	Larus argentatus	1	Circling south of causeway.
	Whale on north side of causeway		1	Diving
	Great Black-backed Gull	Larus marinas	1	Foraging on North side of Causeway
	Great Black-backed Gull	Larus marinas	1	Flew North to South, gained some altitude but not nough to go over wires so it went between them. Looked nervous and awkward.
18:00:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flew South to North high above wires.
18:15:00	Great Black-backed Gull	Larus marinas	1	Flew North to South over wires.
18:45:00	Herring Gull	Larus argentatus	1	Soaring well high above wires
	American Crow	Corvus brachyrhynchos	1	Picking at gravel on road shoulder.
	Great Black-backed Gull	Larus marinas	1	Foraging south of causeway.
	Double-crested Cormorant	Phalacrocorax auritas	1	Foraging south of causeway.

Species	Number of Individuals Observed
Alder Flycatcher	1
American Crow	6
American Goldfinch	3
American Redstart	1
American Robin	4
Arctic Tern	1
Bald Eagle	2
Black-capped Chickadee	2
Blue Headed Vireo	1
Cedar Waxwing	16
Chestnut Sided Warbler	1
Chipping Sparrow	1
Common Grackle	1
Common Raven	3

Date	June 5, 2014
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Species	Number of Individuals Observed
Common Tern	3
Double-crested Cormorant	14
Eastern Bluebird	1
European Starling	25
Great Black-backed Gull	11
Herring Gull	6
Osprey	1
Purple Finch	2
Rock Dove	10
Ruby-throated Hummingbird	1
Song Sparrow	2
Tree Swallow	4
Yellow Warbler	3
TOTAL	126

Table A2: Spring Active Observation Survey, Canso Causeway Bird Study

DateJune 6, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Foggy, wind 10-15km/hr North in morning. Fog cleared in afternoon, wind 25-30km/hr				
05:15:00	Alder Flycatcher	Empidonax alnorum	1	Singing
	Yellow Warbler	Setophaga petechia	1	Singing
	Song Sparrow	Melospiza melodia	1	Singing
05:30:00	European Starling	Sturnus vulgaris	25	Nesting in bridge
	Rock Dove	Columba livia	10	Nesting/roosting in bridge
06:00:00	American Crow	Corvus brachyrhynchos	3	Flew high above lines South to North
06:15:00	Great Black-backed Gull	Larus marinas	1	Following lobster boat
06:45:00	Cedar Waxwing	Bombycilla cedrorum	3	Flew across water towards Cape Breton.
07:00:00	Tern Sp.	Sterna sp	1	Flew between wires north to south. Not much difficulty.
	Double-crested Cormorant	Phalacrocorax auritas	1	Flew under wires North to South.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires
07:15:00	American Robin	Turdus migratorius	3	Foraging near causeway
	Common Tern	Sterna hirundo	1	Fishing on North side of causeway
07:30:00	Herring Gull	Larus argentatus	2	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
07:45:00	Herring Gull	Larus argentatus	2	South to North over wires. Had to gain altitude to cross.
08:00:00	Common Tern	Sterna hirundo	1	North to South under wires. Had to manoeuvre to avoid traffic.
	American Robin	Turdus migratorius	2	Flying West to East high above wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires.
08:15:00	Double-crested Cormorant	Phalacrocorax auritas	2	North to South, one went over wires, one went under wires.
	Herring Gull	Larus argentatus	2	South to North over wires. Had to gain gain altitude to cross.
	Tern Sp.	Sterna sp	1	South to North over wires. Looked like it was going to go under wires but got spooked by traffic. Had trouble gaining altitude.
	Great Black-backed Gull	Larus marinas	1	North to South high above wires.
	Willet	Catoptrophorus	1	Circling 100 meters South of wires. Flying same height as wires.
08:30:00	Canada Goose	Branta canadensis	8	Southwest to Northeast. Had to adjust flight to clear wires.
	Song Sparrow	Melospiza melodia	2	Nesting near causeway.
08:45:00	Great Black-backed Gull	Larus marinas	1	South to North under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires, through ship canal.
09:00:00	Herring Gull	Larus argentatus	1	South to North under wires
09:15:00	Common Tern	Sterna hirundo	1	North to South high above wires.
	Herring Gull	Larus argentatus	1	North to South. Had to make circle to get enough height to clear wires.
	Red-breasted Merganser	Mergus serrator	2	Foraging South of Causeway.
09:30:00	Double-crested Cormorant	Phalacrocorax auritas	1	North to South above wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South above wires.
	Herring Gull	Larus argentatus	2	South to North over wires. Had to gain altitude to cross.
09:45:00	Magnolia Warbler	Setophaga magnolia	1	Singing
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South high above wires.
Afternoon Survey				
14:00:00	Red-eyed Vireo	Vireo olivaceus	1	Singing in area
	American Redstart	Setophaga ruticilla	1	Singing in area
	Chestnut Sided Warbler	Setophaga pensylvanica	1	Singing in area
	American Robin	Turdus migratorius	1	Singing in area
	Yellow Warbler	Setophaga petechia	1	Singing in area
14:15:00	Great Black-backed Gull	Larus marinas	1	North to South above wires.
15:00:00	Herring Gull	Larus argentatus	1	South to North high above wires.
	Herring Gull	Larus argentatus	25	Following lobster boat approx. 1km North of causeway.
15:30:00	Double-crested Cormorant	Phalacrocorax auritas	7	Foraging South of Causeway.
16:00:00	Common Raven	Corvus corax	1	Soaring over quarry
	Great Black-backed Gull	Larus marinas	1	Soaring South of Causeway
16:15:00	Rock Dove	Columba livia	1	South to North high above wires.
16:30:00	Herring Gull	Larus argentatus	1	Soaring South of Causeway
	Herring Gull	Larus argentatus	3	South to North over wires.
17:00:00	Great Black-backed Gull	Larus marinas	1	South to North above wires.
	Great Black-backed Gull	Larus marinas	1	North to South above wires.
17:30:00	Spotted Sandpiper	Actitis macularis	1	Seen on boulders along causeway
	Blue Headed Vireo	Vireo solitarius	1	Singing in area
17:45:00	Great Black-backed Gull	Larus marinas	1	South to North over wires. Had to gain altitude to cross.
18:15:00	Great Black-backed Gull	Larus marinas	2	South to North over wires.
18:30:00	Great Black-backed Gull	Larus marinas	1	South to North above wires.
18:45:00	Common Raven	Corvus corax	1	South to North between wires. Had minor difficulty.

Species	Number of Individuals Observed
Alder Flycatcher	1
American Crow	3
American Redstart	1
American Robin	6
Blue Headed Vireo	1
Canada Goose	8
Cedar Waxwing	3
Chestnut Sided Warbler	1
Common Raven	2
Common Tern	3

Date	June 6, 2014
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Species	Number of Individuals Observed
Double-crested Cormorant	17
European Starling	25
Great Black-backed Gull	11
Herring Gull	40
Magnolia Warbler	1
Red-breasted Merganser	2
Red-eyed Vireo	1
Rock Dove	11
Song Sparrow	3
Spotted Sandpiper	1
Tern Sp.	2
Willet	1
Yellow Warbler	2
TOTAL	146

Table A3: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 12, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Mostly clear, wind 5-10km/h N in morning. Increasing cloud cover in afternoon, wind 10-20km/h N.				
5:35:00	Pigeon	-	2	-
5:39:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying low to N of causeway
5:41:00	Herring Gull	Larus argentatus	5	No avoidance behavior
5:48:00	Gull sp.	Larus sp.	3	Flying high over lines to N
5:49:00	Herring Gull	Larus argentatus	3	Flying N over lines
5:50:00	Herring Gull	Larus argentatus	1	Flying to N above lines
5:58:00	Herring Gull	Larus argentatus	1	Flying N over lines
6:10:00	Great Black-backed Gull	Larus marinas	1	Flying to N, same height as lines, no avoidance
6:14:00	Herring Gull	Larus argentatus	1	Flying to N above lines, approached slowly
6:27:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying to N well under lines
6:45:00	Common Tern	Sterna hirundo	1	Flying at heigh of lines, elevated to rise above lines on approach
6:57:00	American Robin	Turdus migratorius	1	Flying low
7:02:00	Herring Gull	Larus argentatus	1	Approach from S, made 2 attempts to climb above lines, circled back then successfully flew over lines on 3rd attempt
7:06:00	Herring Gull	Larus argentatus	1	Approach from S, attempted to climb above lines, circled back then successfully flew over lines on 2nd attempt
7:08:00	European Starling	Sturnus vulgaris	1	Avoided tower
7:11:00	Herring Gull	Larus argentatus	1	Approach from S, made 2 attempts to climb above lines, circled back then successfully flew over lines on 3rd attempt
7:31:00	European Starling	Sturnus vulgaris	numerous	Active at base of towers on N Side of causeway
	Pigeon			
	American Robin	Turdus migratorius		
	American Crow	Corvus brachyrhynchos		
7:38:00	Tern sp.	Sterna sp.	1	Foraging (diving) on S side of causeway
7:52:00	Great Black-backed Gull	Larus marinas	1	Flying low to N of causeway, no attempt to cross. Crossed road on W side of causway parallel to lines
7:47:00	Great Black-backed Gull	Larus marinas	1	Flying low over water on N side of causeway
7:48:00	American Crow	Corvus brachyrhynchos	1	Flying low on rock on N side of causeway, possibly scavenging
7:53:00	American Crow	Corvus brachyrhynchos	1	Flying low over road, landed on S side of causeway
7:55:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying N low under lines
7:57:00	American Crow	Corvus brachyrhynchos	1	Same crow as above, flying low over roadway, foraging
8:00:00	Common Tern	Sterna hirundo	1	Flying low over water on S. side of causway (hunting)
8:04:00	Herring Gull	Larus argentatus	1	Approached lines from S, circled back twice before flying over lines to N
	Common Merganser	Mergus merganser	2	Feeding pair flying low in straight path under lines to S
8:10:00	Common Tern	Sterna hirundo	1	Flying low under lines
8:11:00	Herring Gull	Larus argentatus	1	Juvenile; flying S over lines, direct flight
8:13:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying under lines on direct flight N-S
	Great Black-backed Gull	Larus marinas	1	Flying low over water on N side of causeway
8:17:00	Herring Gull	Larus argentatus	2	Lands on water on N side of causeway
8:21:00	Great Black-backed Gull	Larus marinas	2	Juvenile; approach line from S, circle back once before ascending to pass over
	Double-crested Cormorant	Phalacrocorax auritas	1	Flying low S-N under lines
8:24:00	Common Tern	Sterna hirundo	1	Foraging again in same area
	Double-crested Cormorant	Phalacrocorax auritas	1	Flying N-S under lines
8:26:00	Herring Gull	Larus argentatus	4	Approach on direct flight from S, ascent and slow flight down to glide over lines
8:35:00	Common Tern	Sterna hirundo	1	Flying S-N under lines, direct flight
8:41:00	Herring Gull	Larus argentatus	1	Gliding/soaring low over rocks on N side of causeway (foraging)
8:48:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying S-N direct flight well under lines
	American Crow	Corvus brachyrhynchos	1	Flying low over causeway, lands on roadside along ?
8:50:00	Common Tern	Sterna hirundo	1	Direct flight S-N well under lines
8:52:00	Common Tern	Sterna hirundo	2	Flying very low over causeway from S-N to forage on N side
8:59:00	American Crow	Corvus brachyrhynchos	1	Flying low over causeway, crows regularly perch on bases of line towers
9:06:00	Double-crested Cormorant	Phalacrocorax auritas	1	On water N side of causeway, flew off to N
9:11:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flew S-N direct flight well under line
9:13:00	American Crow	Corvus brachyrhynchos	1	Flying low over causeway
9:14:00	American Crow	Corvus brachyrhynchos	1	Perched on sign
9:19:00	Great Black-backed Gull	Larus marinas	1	Flying under line along N side of causeway heading W
9:23:00	Double-crested Cormorant	Phalacrocorax auritas	2	Not together, flying direct fligh S-N well under line
9:25:00	Great Black-backed Gull	Larus marinas	1	Flying under line along N side of causeway heading W
9:26:00	Common Tern	Sterna hirundo	1	Foraging in water to S of causeway
9:32:00	Double-crested Cormorant	Phalacrocorax auritas	2	Together, flying S-N at line height, slightly altered flight to avoid line
Wind 15 km/h, sunny, clear				
9:34:00	American Crow	Corvus brachyrhynchos	1	Flying low over rock on N side of causeway, scavenging
9:36:00	Double-crested Cormorant	Phalacrocorax auritas	2	Direct flight S-N well under lines
	Common Tern	Sterna hirundo	1	Direct flight S-N very slow, slightly above lines
9:44:00	Double-crested Cormorant	Phalacrocorax auritas	1	Fly S-N glided to descend and fly under line
9:47:00	Double-crested Cormorant	Phalacrocorax auritas	2	Together, direct flight S-N well under line
9:48:00	Common Tern	Sterna hirundo	1	Foraging in water to S of causeway
9:53:00	Double-crested Cormorant	Phalacrocorax auritas	1	Fly N-S at line height, no avoidance
9:57:00	American Crow	Corvus brachyrhynchos	1	Flying very low over causeway
Afternoon Survey: Sunny, partly cloudy, fog starting to roll in from N, wind 20 km/h N				
14:07:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying low over water to N of causeway
14:17:00	Great Black-backed Gull	Larus marinas	1	Soaring/gliding low over rocks on N side of causeway, foraging, no attempt to cross

Table A3: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 12, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
14:22:00	Common Tern	<i>Sterna hirundo</i>	1	Flying direct S-N well under line
14:30:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Soaring/gliding low over rocks on N side of causeway, foraging, no attempt to cross
14:31:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying high at line level S-N
14:39:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Still foraging
14:47:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Juvenile; flying S-N appeared to easily ascend over top line of lines
14:53:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Together; flew S-N under line
	Herring Gull	<i>Larus argentatus</i>	1	
14:57:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Still foraging
14:59:00	Herring Gull	<i>Larus argentatus</i>	1	Direct flight S-N over line
15:25:00	Great Black-backed Gull	<i>Larus marinas</i>	3	Together; direct flight, well over line
15:31:00	Herring Gull	<i>Larus argentatus</i>	1	Direct flight S-N well above line
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Juvenile; soaring above water to S of causeway, high above lines
15:49:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	On water N of causeway
16:03:00	Great Black-backed Gull	<i>Larus marinas</i>	3	Together; flying direct N-S at line height
Increasing cloud cover, wind 10 km/h N				
16:19:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Juvenile; flying high above water to S of causeway
16:27:00	Herring Gull	<i>Larus argentatus</i>	1	Flying S-N well above line
16:37:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Foraging in water N of causeway
16:50:00	Herring Gull	<i>Larus argentatus</i>	1	Approached then maneuvered between lines
16:54:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	Pair; flying to the E of the causeway
17:05:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Juvenile; soaring high to N of causeway
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1	
17:46:00	Great Black-backed Gull	<i>Larus marinas</i>	3	Together; ascend to rise over lines flying N-S
17:47:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Foraging in water N of causeway
17:52:00	Gull sp.	<i>Larus sp.</i>	1	Flying direct N-S above line
17:53:00	Herring Gull	<i>Larus argentatus</i>	1	Direct flight N-S over line
18:08:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying low over water on N side of causeway
18:14:00	Great Black-backed Gull	<i>Larus marinas</i>	2	Flying S-N ascend gradually to pass over top of line
18:19:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Fly in from N to forage low around rocks on N side of causeway
18:23:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying low over water on N side of causeway
18:42:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Approached from N, made several small circles to get elevation then ascend over line
18:53:00	Herring Gull	<i>Larus argentatus</i>	1	Approach S-N, ascend over top of line
Mostly cloudy, wind 10 km/h N				

Species	Number of Individuals Observed
American Crow	9
American Robin	1
Bald Eagle	5
Common Merganser	2
Common Tern	12
Double-crested Cormorant	25
European Starling	1
Great Black-backed Gull	28
Gull sp.	4
Herring Gull	30
Pigeon	2
Red-tailed Hawk	1
Tern sp.	1
TOTAL	121

Table A4: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 13, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Overcast, foggy south of causeway, wind 5-7km/h S in morning. Clearing and sunny in afternoon, wind 20km/h ESE.				
5:51:00	American Crow	Corvus brachyrhynchos	1	Perched on base of tower on E side of causeway
5:57:00	Double-crested Cormorant	Phalacrocorax auritas	1	Fly low under lines N-S
6:01:00	American Crow	Corvus brachyrhynchos	1	Fly in from S, perches on tower
	Common Raven	Corvus corax	1	Flying from S, perches on upper part of tower, actively avoids lines in process
6:05:00	Common Raven	Corvus corax	1	Perches on botom part of same tower
6:06:00	Common Raven	Corvus corax	1	Raven from top of tower moves to adjacent tower
6:08:00	Common Raven	Corvus corax	3	Congregate on S side of causeway (possible carcass)
6:12:00	Common Raven	Corvus corax	1	Flies low along road, almost hit by car
6:14:00	Great Black-backed Gull	Larus marinas	1	Direct flight S-N, well over line
6:16:00	Common Raven	Corvus corax	3	Continue to move across causeway, perch on towers, forage on ground
6:32:00	Herring Gull	Larus argentatus	1	Direct flight S-N approaches at height above line
6:34:00	Double-crested Cormorant	Phalacrocorax auritas	1	Lands on water N of causeway
6:36:00	Tern sp.	Sterna sp.	1	Flying over water to S of causeway, foraging/hunting
6:39:00	Great Black-backed Gull	Larus marinas	1	Direct flight S-N over line, sufficient height in approach, gentle ascent, glide to cross line
6:58:00	American Crow	Corvus brachyrhynchos	1	Flying low over roadway, lands on N side of road
7:00:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flight N-S under line
7:06:00	Herring Gull	Larus argentatus	1	Flying low over water to N of causeway
7:11:00	Great Black-backed Gull	Larus marinas	1	Direct flight S-N over line
7:23:00	Blue Jay	Cyanocitta cristata	1	Perched on tower on E Side of causeway
7:32:00	Common Loon	Gavia immer	1	Direct flight S-N over line
7:37:00	Great Black-backed Gull	Larus marinas	1	Direct flight S-N, well over line
7:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	Direct flight under line S-N, approx 10m above road
7:48:00	American Crow	Corvus brachyrhynchos	1	Perched low in tower on E side of causeway
7:52:00	Herring Gull	Larus argentatus	1	Flying low over water on N side of causeway
	Great Black-backed Gull	Larus marinas	1	Flying low over water on N side of causeway
8:04:00	American Crow	Corvus brachyrhynchos	1	Flying low over roadway, lands on tracks on S side of road
	Bald Eagle	Haliaeetus leucocephalus	2	Pair; perched in dead tree on SE side of causeway
8:46:00	Osprey	Pandion haliaetus	1	Perched on top tower on causeway (S side of road), 2nd tower from west, flew off to the E
8:54:00	Great Black-backed Gull	Larus marinas	1	Juvenile;flight direct N-S above line
8:57:00	Double-crested Cormorant	Phalacrocorax auritas	2	Together; flying N-S under line
9:05:00	Double-crested Cormorant	Phalacrocorax auritas	1	S-N, glide to descent below line
Sunny break, fog lifted, wind 7 km/h SSE				
9:22:00	Herring Gull	Larus argentatus	2	One flew N-S, other S-N, direct flights above line
9:23:00	Great Black-backed Gull	Larus marinas	1	Lands on rocks on N side of causeway
9:25:00	Blue Jay	Cyanocitta cristata	1	Flew out from top tower on E side of causeway, circled, returned to perch the flew off to E
9:32:00	Double-crested Cormorant	Phalacrocorax auritas	2	Together; flying S-N low under line
9:33:00	American Crow	Corvus brachyrhynchos	1	On rocks on N side of causeway
9:34:00	Double-crested Cormorant	Phalacrocorax auritas	1	Lands on water N of causeway
9:36:00	Double-crested Cormorant	Phalacrocorax auritas	1	Fly S-N low under line, just above road
9:39:00	Herring Gull	Larus argentatus	1	Approached from S, turned back then passed over line when gained more height on 2nd attempt
9:44:00	Double-crested Cormorant	Phalacrocorax auritas	1	Fly N-S low under line
9:45:00	Tern sp.	Sterna sp.	1	Foraging in water S of causeway
9:47:00	Tern sp.	Sterna sp.	1	Flew under line from N, then turned and flew back under line S-N
9:57:00	Tern sp.	Sterna sp.	1	Flew low under line N-S then low over roadway
Afternoon Survey: Sunny, mostly clear, wind 20 km/h S				
14:14:00	Tern sp.	Sterna sp.	1	Flying over water S of causeway, flew towards causeway then turned back to gain elevation before flying over line
14:17:00	Herring Gull	Larus argentatus	1	Approached causeway from N, slowly gained elevation, rapid wing beats to climb over line, then glide after crossing
	Double-crested Cormorant	Phalacrocorax auritas	1	Fly into water N side of causeway
14:27:00	Herring Gull	Larus argentatus	2	Flying S on S side of causeway
14:30:00	Double-crested Cormorant	Phalacrocorax auritas	1	Foraging in water N of causeway, flew off to N low over water
14:35:00	Great Black-backed Gull	Larus marinas	1	Approached from S, turned to forage in water S of causeway
14:41:00	Pigeon		1	Flew over line at rapid pace
14:42:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying S-N, gradually gained height by rapid wing beats to climb over line then glide
14:46:00	Herring Gull	Larus argentatus	1	Circling over water on S side of causeway before flying to the S
14:49:00	Great Black-backed Gull	Larus marinas	1	Still circling low over water S of causeway
14:56:00	Double-crested Cormorant	Phalacrocorax auritas	2	Flying low over watwer N of causeway, lands
14:59:00	Great Black-backed Gull	Larus marinas	1	Foraging S of causeway, circling then swooping down to water surface
15:06:00	Double-crested Cormorant	Phalacrocorax auritas	1	Approach causeway from S turned back once to gain more height the climbed over line
	Great Black-backed Gull	Larus marinas	1	Flying N-S, slowed pace and climbed upon approach to line, paused over top of line
15:11:00	Herring Gull	Larus argentatus	3	Together; flying S over waters to S of causeway
15:18:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying N-S over line, direct flight
15:20:00	Herring Gull	Larus argentatus	2	Together; flying N-S slow pace and climb with rapid wingbeats to ascend over line
15:22:00	Great Black-backed Gull	Larus marinas	1	Approach from S, fly S-N at line height, slight climb to pass over
15:26:00	Herring Gull	Larus argentatus	1	Flying S-N, climb without losing pace to pass over line the descend and glide
15:32:00	Great Black-backed Gull	Larus marinas	3	Together; flight direct over line N-S
15:41:00	Herring Gull	Larus argentatus	2	Together; flying to S over water S of causeway
15:55:00	Great Black-backed Gull	Larus marinas	1	Fly direct S-N over line



Table A4: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 13, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
16:00:00	American Crow	<i>Corvus brachyrhynchos</i>	2	Together; flying over water to S of causeway
	Great Black-backed Gull	<i>Larus marinas</i>	1	Landed on water N of causeway, then flew low under line (5m above road) to S side of causeway
16:04:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Flew back across causeway to N between line. Slow avoidance manuevres.
16:06:00	Great Black-backed Gull	<i>Larus marinas</i>	2	Gliding above rocks on S side of causeway
	American Crow	<i>Corvus brachyrhynchos</i>	2	Fighting in same area S side of causeway (carcass?)
16:10:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Gliding cont'd
16:12:00	American Crow	<i>Corvus brachyrhynchos</i>	2	On rocks along roadside on N side of causeway
16:21:00	American Crow	<i>Corvus brachyrhynchos</i>	1	Flying S-N low over roadway
16:23:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Foraging cont'd
16:27:00	Herring Gull	<i>Larus argentatus</i>	1	Fly S-N climbing when close to ascend over line without losing pace
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying low over water to N of causeway
16:33:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	Pair; soaring high above water to S of causeway
16:48:00	Herring Gull	<i>Larus argentatus</i>	1	Flying E above water to S of causeway
16:50:00	Herring Gull	<i>Larus argentatus</i>	1	Flying N-S, turned back 4 times until able to ascend over line, rapid wing beats, then glide to descend, CLOSE contact
17:02:00	Herring Gull	<i>Larus argentatus</i>	1	Flying low unde line N-S
Sunny, Wind 20 km/h ESE				
17:08:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Circling/gliding over rocks on S side of causeway
17:11:00	Herring Gull	<i>Larus argentatus</i>	3	Direct flight S-N over top of line
17:15:00	Osprey	<i>Pandion haliaetus</i>	1	Perched on top of tower towards E side of causeway
17:19:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Fly well above line S-N
17:28:00	Osprey	<i>Pandion haliaetus</i>	1	Still on tower, appears to be feeding
17:44:00	Tern sp.	<i>Sterna sp.</i>	1	Flying N over water N of causeway
	Osprey	<i>Pandion haliaetus</i>	1	No longer perched on tower
17:51:00	Herring Gull	<i>Larus argentatus</i>	4	Together; flying over water to N of causeway, all circled back then 2 flew N-S above line, other 2 turned and flew back N
Wind 5-10 km/h ESE gusts 15 km/h				
17:55:00	Herring Gull	<i>Larus argentatus</i>	2	Other 2 flew N-S, few strong wing beats to ascend over line, slight loss of pace then glide to descend
17:57:00	Great Black-backed Gull	<i>Larus marinas</i>	2	Flying over rocks and water on S side of causeway, soar to E side. One circled twice to gain elevation then used rapid wing beats to climb over line S-N
	Gull sp.	<i>Larus sp.</i>	1	Juvenile; direct flight S-N above line
18:09:00	Great Black-backed Gull	<i>Larus marinas</i>	2	Together; direct flight S-N above line. One descended to glide after crossing
18:11:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying along rocks/water on S side of causeway
18:18:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Fly N-S between lines
18:26:00	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying parallel to N side of causeway

Species	Number of Individuals Observed
American Crow	13
Bald Eagle	4
Blue Jay	2
Common Loon	1
Common Raven	10
Double-crested Cormorant	20
Great Black-backed Gull	31
Gull sp.	1
Herring Gull	31
Osprey	4
Pigeon	1
Tern sp.	6
TOTAL	124

Table A5: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 18, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Sunny, light wind in morning, started raining in afternoon Wind increasing, 40-50km/hr. Getting worse in evening.				
05:15:00	American Redstart	Setophaga ruticilla	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
	Red-eyed Vireo	Vireo olivaceus	1	Heard singing
	Song Sparrow	Melospiza melodia	1	Heard singing
	American Goldfinch	Spinus tristis	1	Heard singing
	Blackburnian Warbler	Dendroica fusca	1	Heard singing
	Herring Gull	Larus argentatus	1	Foraging south of causeway
05:30:00	Common Raven	Corvus corax	1	Flying south of causeway
	American Crow	Corvus brachyrhynchos	5	Loitering on causeway
05:45:00	Common Tern	Sterna hirundo	1	Flew south to north between wires. Had some difficulty.
06:00:00	Double-crested Cormorant	Phalacrocorax auritas	1	Foraging south of causeway
06:15:00	Ruby-throated Hummingbird	Archilochus colubris	1	Flying east to Cape Breton
	Yellow Warbler	Setophaga petechia	1	Heard singing
	Dark-eyed Junco	Junco hyemalis	1	Heard singing
06:45:00	Cedar Waxwing	Bombycilla cedrorum	4	Seen in area
	Common Tern	Sterna hirundo	1	Flying south to north. Was flying toward wires, turned back, gained altitude and went over wires.
07:00:00	Common Loon	Gavia immer	1	Flying north to south. Had to gain altitude to go over wires.
07:15:00	Double-crested Cormorant	Phalacrocorax auritas	1	North to south over wires
07:30:00	Common Tern	Sterna hirundo	1	Carrying food south to north over wires. Had to gain altitude.
07:45:00	Yellow-bellied Sapsucker	Sphyrapicus varius	1	Travelling east to Cape Breton
	Common Tern	Sterna hirundo	1	Carrying food south to north over wires
	Osprey	Pandion haliaetus	1	Flying south to north over wires
	Common Tern	Sterna hirundo	2	Foraging north of causeway
08:00:00	Common Tern	Sterna hirundo	1	North to south over wires
	Tree Swallow	Tachycineta bicolor	1	Foraging north of causeway
	Belted Kingfisher	Megaceryle alcyon	1	Foraging south of causeway
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Great Black-backed Gull	Larus marinas	1	South to north over wires
	Common Tern	Sterna hirundo	1	Flying north to south. Had to gain altitude to go over wires.
08:15:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying north to south over wires
	Common Tern	Sterna hirundo	1	Carrying food north to south over wires. Had to gain altitude
	Common Tern	Sterna hirundo	2	Fishing south of causeway. Two adults, one feeding the other
08:30:00	Great Black-backed Gull	Larus marinas	1	Flying south to north. Had to gain altitude to go over wires
08:45:00	Common Tern	Sterna hirundo	4	North to south over wires. At least one carrying food.
	Herring Gull	Larus argentatus	1	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	Fishing north of causeway
09:00:00	Double-crested Cormorant	Phalacrocorax auritas	1	Flying over wires north to south
09:15:00	Herring Gull	Larus argentatus	1	Over wires south to north
	Great Black-backed Gull	Larus marinas	1	North to south over wires
09:45:00	Common Raven	Corvus corax	1	Soaring over quarry
Afternoon Survey				
14:00:00	European Starling	Sturnus vulgaris	12	Loitering on bridge
	Rock Dove	Columba livia	6	Loitering on bridge
	Yellow Warbler	Setophaga petechia	1	Heard singing
	Common Tern	Sterna hirundo	5	Flying north to south over wires. All had to gain altitude
14:15:00	American Robin	Turdus migratorius	1	Heard singing
14:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	Over wires north to south
15:00:00	Common Tern	Sterna hirundo	1	South to north over wires
	Common Tern	Sterna hirundo	1	South to north over wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Herring Gull	Larus argentatus	1	North to south over wires
	American Crow	Corvus brachyrhynchos	4	Loitering on wharf
15:15:00	Common Tern	Sterna hirundo	1	South to north over wires
	Common Tern	Sterna hirundo	2	One over wires and one between wires south to north
15:30:00	Common Tern	Sterna hirundo	4	Flying north to south. One went between wires, three gained altitude and went over.
	Great Black-backed Gull	Larus marinas	2	North to south under wires through ship canal
15:45:00	Common Tern	Sterna hirundo	2	North to south over wires. Had to gain altitude.
16:00:00	Double-crested Cormorant	Phalacrocorax auritas	3	North to south under wires
	Common Tern	Sterna hirundo	1	South to north over wires. Had to struggle and gain altitude.
	Common Tern	Sterna hirundo	1	South to north over wires. Had to struggle and gain altitude.
16:15:00	Great Black-backed Gull	Larus marinas	1	South to north over wires
	Common Tern	Sterna hirundo	1	North to south over wires. Had to gain altitude.
	Herring Gull	Larus argentatus	1	Hovering over causeway. Wind blowing it back close to wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
16:30:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires. Struggling against wind.
16:45:00	Double-crested Cormorant	Phalacrocorax auritas	6	North to south under wires
	Great Black-backed Gull	Larus marinas	1	Hovering over causeway
	Common Tern	Sterna hirundo	2	North to south under wires
	Great Black-backed Gull	Larus marinas	1	North to south over wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Common Tern	Sterna hirundo	1	North to south over wires
17:00:00	Common Tern	Sterna hirundo	2	North to south over wires. Struggling to gain altitude.
	Common Tern	Sterna hirundo	1	North to south under wires

Table A5: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 18, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
17:15:00	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
17:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
Wind increasing				
18:00:00				Birds becoming scarce
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
18:15:00	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
18:45:00	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires. Struggling with wind.

Species	Number of Individuals Observed
American Crow	9
American Goldfinch	1
American Redstart	1
American Robin	2
Belted Kingfisher	1
Blackburnian Warbler	1
Cedar Waxwing	4
Common Loon	1
Common Raven	2
Common Tern	47
Dark-eyed Junco	1
Double-crested Cormorant	18
European Starling	12
Great Black-backed Gull	8
Herring Gull	6
Osprey	1
Red-eyed Vireo	1
Rock Dove	6
Ruby-throated Hummingbird	1
Song Sparrow	1
Tree Swallow	1
Yellow Warbler	2
Yellow-bellied Sapsucker	1
TOTAL	128

Table A6: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 19, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Light rain, wind 50 km/hr+				
05:15:00	Yellow Warbler	Setophaga petechia	1	Heard singing
	Alder Flycatcher	Setophaga petechia	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
05:30:00	Great Black-backed Gull	Larus marinas	1	Hovering over causeway searching for food
	Common Tern	Sterna hirundo	2	Carrying food South to North over wires. Having trouble getting over wires in high wind.
05:45:00	Common Tern	Sterna hirundo	1	South to North under wires
	Common Loon	Gavia immer	1	North to South over wires
	Herring Gull	Larus argentatus	1	North to South under wires
	Common Loon	Gavia immer	1	North to South over wires
	Common Loon	Gavia immer	3	Flying South to North. One looked like it went between the wires, the other two appeared hesitant and turned around.
06:00:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires. Struggling to gain altitude and move forward in high wind. Appeared very apprehensive crossing wires.
06:15:00	Common Tern	Sterna hirundo	3	Carrying food, flying east over land. Couldn't see final approach to wires.
	Herring Gull	Larus argentatus	1	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	9	North to South over wires. One had to circle to gain enough height to cross wires.
06:30:00	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires. Had to circle to gain enough height to cross wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North. Was heading toward ship canal, decided to go East over land. Couldn't see final approach to wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires
06:45:00	Common Tern	Sterna hirundo	1	South to North. Went over land east of causeway.
	Common Tern	Sterna hirundo	5	South to North. Went over land east of causeway. One was carrying food.
07:00:00	Common Tern	Sterna hirundo	1	Carrying food South to North. Was heading toward ship canal, decided to go East over land.
	Common Tern	Sterna hirundo	1	Carrying food South to North under wires through ship canal.
07:15:00	Common Tern	Sterna hirundo	2	South to North under wires
	Herring Gull	Larus argentatus	2	Hovering over causeway searching for food. Flying close to wires
	Double-crested Cormorant	Phalacrocorax auritas	2	South to North under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	3	South to North under wires
07:30:00	Common Tern	Sterna hirundo	1	South to North over wires.
	Common Tern	Sterna hirundo	1	North to South over wires. Terns not commonly seen flying in this direction today. Possibly taking another route South.
07:45:00	Common Tern	Sterna hirundo	1	Carrying food, flying east over land. Couldn't see final approach to wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	South to North, had to gain height to get over wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
	Common Tern	Sterna hirundo	1	North to South over wires
08:00:00	Common Tern	Sterna hirundo	1	Carrying food South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
	Common Tern	Sterna hirundo	1	Carrying food North, flying over land East of Causeway. Couldn't see final approach to wires.
	Common Tern	Sterna hirundo	2	South to North. Went over land east of causeway. One was carrying food.
08:15:00	Common Tern	Sterna hirundo	1	Carrying food North, flying over land East of Causeway. Couldn't see final approach to wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires
	Common Tern	Sterna hirundo	1	Carrying food North, flying over land East of Causeway. Couldn't see final approach to wires.
08:30:00	Common Tern	Sterna hirundo	1	Fishing South of causeway
	Herring Gull	Larus argentatus	2	South to North over wires.
08:45:00	Herring Gull	Larus argentatus	1	North to South over wires
	Common Tern	Sterna hirundo	1	Carrying food North to South over wires. Had to turn back and make a second approach to gain altitude.
09:00:00	Common Tern	Sterna hirundo	1	Carrying food North over wires, flying over land East of Causeway. Had to gain height to cross wires
	Herring Gull	Larus argentatus	2	South to North over wires, flying over land East of causeway.
	American Goldfinch	Spinus tristis	6	Flying North.
	Common Loon	Gavia immer	1	North to South over wires
09:15:00	Common Tern	Sterna hirundo	2	South to North over wires, flying over land East of causeway. One was carrying food.
	Common Tern	Sterna hirundo	1	Fishing North of Causeway, flew over causeway South but was almost blown into wires by wind.
09:30:00	Common Tern	Sterna hirundo	1	Carrying food North, flying over land East of Causeway. Couldn't see final approach to wires.
	Common Tern	Sterna hirundo	2	South to North over wires.
09:45:00	Common Tern	Sterna hirundo	2	Carrying food North, flying over land East of Causeway. Couldn't see final approach to wires.
	Common Tern	Sterna hirundo	1	South to North over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires

Table A6: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateJune 19, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Afternoon Survey: wind diminished considerably, 25-30km/hr, drizzling.				
14:00:00	American Redstart	Setophaga ruticilla		Heard singing
14:15:00	Herring Gull	Larus argentatus	3	South to North over wires
14:30:00	Common Raven	Corvus corax	2	One flying North to South between wires, other loitering in quarry.
	Herring Gull	Larus argentatus	1	South to North over wires. Had to gain altitude to get over wires.
14:45:00	Herring Gull	Larus argentatus	1	North to South over wires. Had to gain altitude to get over wires.
15:00:00	Common Raven	Corvus corax	2	Flying between wires around causeway searching for food.
15:15:00	Common Tern	Sterna hirundo	1	Carrying food South to North over wires, flying over land East of Causeway.
15:30:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires
	Great Black-backed Gull	Larus marinas	1	South to North under wires
	Great Black-backed Gull	Larus marinas	3	South to North high above wires
16:00:00	Common Tern	Sterna hirundo	1	South to North over wires. Had to stall to gain altitude.
16:15:00	Common Tern	Sterna hirundo	2	North to South over wires, having difficulty. One tern crossed and appeared to wait for the other one.
	Common Tern	Sterna hirundo	2	Carrying food South to North over wires, flying over land East of Causeway.
16:30:00	Common Tern	Sterna hirundo	2	South to North under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North above wires. Had to back off and make second approach to gain necessary height.
16:45:00	Common Tern	Sterna hirundo	1	Carrying food South to North through ship canal.
	Great Black-backed Gull	Larus argentatus	1	South to North over wires
17:00:00	Bald Eagle	Haliaeetus leucocephalus	1	Soaring over quarry.
17:15:00	Herring Gull	Larus argentatus	1	North to South over wires
	Great Black-backed Gull	Larus marinas	3	Foraging along causeway.
17:30:00	Herring Gull	Larus argentatus	2	North to South over wires
	Tree Swallow	Tachycineta bicolor	1	Foraging in ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires
	Common Tern	Sterna hirundo	2	Fishing South of causeway
	Red Eyed Vireo	Vireo olivaceus	1	Heard singing
	Common Tern	Sterna hirundo	1	Carrying food South to North through ship canal.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
17:45:00	Osprey	Pandion haliaetus	1	South to North over wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
	Common Tern	Sterna hirundo	1	Carrying food North over wires, flying over land East of Causeway.
	Belted Kingfisher	Megaceryle alcyon	1	Carrying food North through ship canal.
	Common Tern	Sterna hirundo	1	Carrying food North over wires, flying over land East of Causeway.
18:00:00	Great Black-backed Gull	Larus marinas	1	South to North over wires. Had to gain altitude to get over wires.
	Common Tern	Sterna hirundo	2	South to North over wires. One backtracked to gain height to cross wires.
	Common Tern	Sterna hirundo	2	North to South over wires. One had to make two approaches to gain enough height to cross wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	Heading North towards wires. Turned west at last second, flew parallel to wires to gain more height, then went over.
	Northern Parula	Setophaga americana	1	Heard singing
	Common Raven	Corvus corax	1	Flying between wires around causeway searching for food. Has very little trouble with wires.
18:15:00	Common Tern	Sterna hirundo	5	South to North over wires
	Common Tern	Sterna hirundo	1	Over wires South to North.
	Tern sp	Sterna sp	1	Over wires South to North. Looked like an Artic Tern
18:30:00	Common Tern	Sterna hirundo	1	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	carrying food North over wires, had to stall to gain altitude over wires.
	Common Tern	Sterna hirundo	2	Carrying food North over wires, had to gain altitude.
	Common Tern	Sterna hirundo	1	North to South under wires
18:45:00	Common Tern	Sterna hirundo	1	South to North over wires over land east of causeway.
	Great Black-backed Gull	Larus marinas	1	North to South over wires

Species	Number of Individuals Observed
Alder Flycatcher	1
American Goldfinch	6
American Redstart	1
American Robin	1
Bald Eagle	1
Belted Kingfisher	1
Common Loon	6
Common Raven	5
Common Tern	78
Double-crested Cormorant	24
Great Black-backed Gull	11
Herring Gull	17
Northern Parula	1
Osprey	1
Red Eyed Vireo	1
Tern sp	1
Tree Swallow	1
Yellow Warbler	1
TOTAL	158



Table A7: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 27, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy/foggy, light wind from North, 10-20km/hr.				
05:00:00	Spotted Sandpiper	Actitis macularis	1	Feeding along rocks on side of causeway
	Yellow Warbler	Setophaga petechia	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
	Song Sparrow	Melospiza melodia	1	Heard singing
	Magnolia Warbler	Setophaga magnolia	1	Heard singing
	American Crow	Corvus brachyrhynchos	5	Loitering on causeway
	Double-crested Cormorant	Phalacrocorax auritas	1	Flying south to north under wires through ship canal
	Herring Gull	Larus argentatus	1	North to south over wires
	Alder Flycatcher	Setophaga petechia	1	Heard singing
05:15:00	Double-crested Cormorant	Phalacrocorax auritas	2	North to south over wires
	Great Black-backed Gull	Larus marinas	2	Foraging south of causeway
	Common Loon	Gavia immer	2	Flying north to south high over wires
	Northern Flicker	Colaptes auratus	1	Heard calling
05:30:00	Common Tern	Sterna hirundo	2	Flying south to north over wires. Had to gain altitude.
05:45:00	Herring Gull	Larus argentatus	1	South to north over wires
	Great Black-backed Gull	Larus marinas	1	Flying south to north. Intended to go over wires but failed to gain altitude and made adjustment, flew between wires.
06:00:00	Common Tern	Sterna hirundo	1	Carrying food south to north over land east of causeway
	Common Tern	Sterna hirundo	1	South to north over wires. Had to gain altitude.
	Common Loon	Gavia immer	1	Flying high over wires south to north
	Common Raven	Corvus corax	1	Flying over causeway under wires
	Great Blue Heron	Ardea herodias	1	Flying north to south high over wires
	Great Black-backed Gull	Larus marinas	2	Flying north to south over wires. Both had to gain altitude.
	Common Tern	Sterna hirundo	1	Flying south to north. Made two approaches and went over wires.
06:15:00	Common Tern	Sterna hirundo	2	Flying north to south over wires. One had to make two approaches.
	Great Black-backed Gull	Larus marinas	1	Flying south to north. Had to gain altitude to get over wires.
	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Pine Siskin	Spinus pinus	several	Heard in area
	Common Loon	Gavia immer	1	Flew between wires south to north
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	3	South to north under wires
	Bald Eagle	Haliaeetus leucocephalus	1	North to south over wires
	Great Black-backed Gull	Larus marinas	2	Flying south to north. One had to gain altitude to go over wires, other gull went under wires.
06:30:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Chipping Sparrow	Spizella passerina	1	Heard singing
	Great Blue Heron	Ardea herodias	1	Flying north
06:45:00	Various gulls		5	Foraging in ship canal
	Common Tern	Sterna hirundo	1	North to south under wires
	Great Black-backed Gull	Larus marinas	2	South to north under wires
	Common Tern	Sterna hirundo	2	South to north over wires. One carrying food
07:00:00	American Black Duck	Anas rubripes	1	North to south over wires
	Herring Gull	Larus argentatus	10	Flying south to north near quarry.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Northern Gannet	Morus bassanus	1	South to north over wires. Had to gain altitude.
	Common Tern	Sterna hirundo	2	South to north over wires. Had to gain altitude.
07:15:00	Northern Gannet	Morus bassanus	1	South to north over wires
	Common Loon	Gavia immer	1	North to south over wires
	Northern Gannet	Morus bassanus	2	Foraging north of causeway
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Herring Gull	Larus argentatus	2	North to south over wires. Had to gain altitude.
	Common Tern	Sterna hirundo	1	South to north over wires. Had to stall to gain altitude.
07:30:00	American Black Duck	Anas rubripes	1	South to north over wires
	Belted Kingfisher	Megaceryle alcyon	1	North to south under wires
	Northern Gannet	Morus bassanus	4	Over wires north to south. All had to gain altitude.
	Black-and-white Warbler	Mniotilta varia	1	Heard singing
	Herring Gull	Larus argentatus	1	North to south over wires. Had to gain altitude.
07:45:00	Herring Gull	Larus argentatus	2	North to south over wires
	Northern Gannet	Morus bassanus	1	Foraging north of causeway
	Merlin	Falco columbarius	1	Carrying young starling into eastern treeline
	Northern Gannet	Morus bassanus	20	Foraging one kilometre north of causeway
08:00:00	Great Black-backed Gull	Larus marinas	1	Over wires south to north. Had to make two approaches.
	Northern Gannet	Morus bassanus	2	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Common Tern	Sterna hirundo	2	One north to south over wires, one north to south under wires
	Blackburnian Warbler	Setophaga fusca	1	Heard singing
	Common Tern	Sterna hirundo	1	Flying south to north. Flew parallel with wires until it gained sufficient altitude to fly over wires.
	Common Tern	Sterna hirundo	1	Flew under wires north to south. Foraging along causeway, tried to kite to other side, came very close to hitting wires.
	Bald Eagle	Haliaeetus leucocephalus	1	North to south over wires
08:30:00	Common Tern	Sterna hirundo	1	Carrying food under wires south to north
	Herring Gull	Larus argentatus	1	North to south under wires
	Common Tern	Sterna hirundo	2	Carrying food south to north. One over wires and one under wires.
	Common Tern	Sterna hirundo	2	One carrying food. Both south to north over wires.
	Herring Gull	Larus argentatus	1	North to south over wires

Table A7: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 27, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
08:30:00	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires. Had to make flight adjustments.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
08:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	2	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires. One had to gain altitude.
09:00:00	Northern Gannet	<i>Morus bassanus</i>	5	Well over wires south to north
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north over wires. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires. Had to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires. Had to gain altitude.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
09:15:00	Osprey	<i>Pandion haliaetus</i>	1	South to north over wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Had to gain altitude.
	Blue-headed Vireo	<i>Vireo solitarius</i>	1	Heard singing
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
09:30:00	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	Flying north to south. Turned into wind as it approached lines then sailed over top.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
09:45:00	Northern Gannet	<i>Morus bassanus</i>	30	Foraging one kilometre north of causeway
	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	East to west over water
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
Afternoon Survey: Wind picked up 40-50 km/h N				
14:05:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	2	North to south over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires. One had to gain altitude.
	Bald Eagle	<i>Colaptes auratus</i>	1	Over water east to west
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Northern Gannet	<i>Morus bassanus</i>	2	Over wires north to south. Both had to gain altitude.
	Ring-necked Duck	<i>Aythya collaris</i>	1	Flew between wires north of ship canal
14:15:00	American Crow	<i>Corvus brachyrhynchos</i>	3	Loitering on causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Northern Gannet	<i>Morus bassanus</i>	11	High above wires north to south
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north. Flew parallel with wires until it gained sufficient altitude to go over.
14:30:00	Common Tern	<i>Sterna hirundo</i>	2	Both carrying food south to north. One headed east over land, the other over wires near ship canal. Both had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	2	South to north over wires. Had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	Kited between wires backwards. Came very close to hitting wires.
	Common Tern	<i>Sterna hirundo</i>	1	Flying south to north. Awkwardly flew between wires.
14:45:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires carrying food. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
15:00:00	Various gulls			Foraging north of causeway. No birds near wires for 25 minutes.
15:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to north over wires. Had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
15:45:00	Herring Gull	<i>Larus argentatus</i>	3	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
16:00:00	American Goldfinch	<i>Spinus tristis</i>	2	Heard singing in area
16:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to north high over wires
Wind decreasing 30-40km/hour				
16:15:00	Northern Gannet	<i>Morus bassanus</i>	20	Foraging one kilometre north of causeway
	Common Tern	<i>Sterna hirundo</i>	5	Flying south to north – two under wires, one of them carrying food, other three turned and made a second attempt to gain altitude over wires, one of them carrying food as well.
	Common Tern	<i>Sterna hirundo</i>	2	Flying south to north carrying food. One made two attempts to get over wires, the other needed four to get over wires.
16:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying north to south towards wires. Tried to stop but had too much momentum. Ended up flying very awkwardly between wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	4	North to south over wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south, awkwardly flew between wires.
16:45:00	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	2	Both south to north over wires. One had to gain altitude.
17:00:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires, needed two attempts.
	Herring Gull	<i>Larus argentatus</i>	3	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
17:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires. Had to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires

Table A7: Spring Active Observation Survey, Canso Causeway Bird Study

Date	June 27, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
17:30:00	Common Tern	<i>Sterna hirundo</i>	2	Flying north to south. One went over, other hit wires and fell into ship canal with an apparent broken wing. Remained alive, but incapable of flight.
18:00:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	Common Tern	<i>Sterna hirundo</i>	2	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	2	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	5	North to south under wires
18:45:00	Herring Gull	<i>Larus argentatus</i>	5	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
19:00:00	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over land east of causeway
	Northern Mockingbird	<i>Mimus polyglottos</i>	1	Looked like it had recently come across causeway

Species	Number of Individuals Observed
Alder Flycatcher	1
American Black Duck	2
American Crow	8
American Goldfinch	2
American Robin	1
Bald Eagle	4
Belted Kingfisher	1
Black-and-white Warbler	1
Blackburnian Warbler	1
Blue-headed Vireo	1
Chipping Sparrow	1
Common Loon	5
Common Raven	1
Common Tern	61
Double-crested Cormorant	37
Great Black-backed Gull	22
Great Blue Heron	2
Herring Gull	44
Magnolia Warbler	1
Merlin	1
Northern Flicker	1
Northern Gannet	107
Northern Mockingbird	1
Osprey	1
Pine Siskin	0
Ring-necked Duck	1
Song Sparrow	1
Spotted Sandpiper	1
Yellow Warbler	1
TOTAL	311



Table A8: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 28, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy, Wind 20km/hr north				
05:00:00	Yellow Warbler	Setophaga petechia	1	Heard singing
	Song Sparrow	Melospiza melodia	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
05:15:00	Double-crested Cormorant	Phalacrocorax auritas	3	Flying high over wires north to south
	Herring Gull	Larus argentatus	2	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	2	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south over wires
05:30:00	Common Tern	Sterna hirundo	2	Foraging south of causeway
	Herring Gull	Larus argentatus	1	Flying north towards wires, turned around at last second, went over wires on second approach.
	Common Loon	Gavia immer	1	North to south over wires
	Common Tern	Sterna hirundo	1	Flew between wires north to south, tried to stop at last second, did awkward spin through wires. Close call.
	Northern Gannet	Morus bassanus	1	South to north over wires
	Common Tern	Sterna hirundo	1	Carrying food south to north. Appeared to come very close to hitting wires.
	Herring Gull	Larus argentatus	2	Foraging under wires near causeway
05:45:00	Double-crested Cormorant	Phalacrocorax auritas	2	Under wires south to north
	Common Tern	Sterna hirundo	1	Carrying food south to north. Backed off lines first approach. Made it over wires on second try.
	Northern Gannet	Morus bassanus	1	North to south over wires
	Osprey	Pandion haliaetus	2	Harassing Bald Eagle. Eagle below wires, Osprey flying between them. Osprey close to wires but no incident.
	Bald Eagle	Haliaeetus leucocephalus	1	Being harassed by Ospreys. Flew under wires.
06:00:00	Northern Gannet	Morus bassanus	1	South to north over wires
	Common Tern	Sterna hirundo	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Common Tern	Sterna hirundo	1	South to north under wires through ship canal
	Herring Gull	Larus argentatus	1	North to south over wires. Had to make two approaches.
	Herring Gull	Larus argentatus	1	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Herring Gull	Larus argentatus	1	South to north over wires
06:15:00	Double-crested Cormorant	Phalacrocorax auritas	3	South to north under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north over wires
	Ruby-throated Hummingbird	Archilochus colubris	1	Chasing starlings near causeway
	Common Tern	Sterna hirundo	1	South to north under wires
	Common Loon	Gavia immer	1	South to north between wires, tried to stop but had too much momentum. Went through awkwardly. Close call.
	Common Grackle	Quiscalus quiscula	1	Flew between wires east of causeway
06:30:00	Bald Eagle	Haliaeetus leucocephalus	1	South to north under wires
	Magnolia Warbler	Setophaga magnolia	1	Heard singing
	White-throated Sparrow	Zonotrichia albicollis	1	Heard singing
	Common Tern	Sterna hirundo	1	South to north under wires
06:45:00	Double-crested Cormorant	Phalacrocorax auritas	2	South to north under wires
	Common Loon	Gavia immer	1	South to north over wires
	Common Loon	Gavia immer	1	South to north under wires
	American Redstart	Setophaga ruticilla	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
06:45:00	Blue Jay	Cyanocitta cristata	1	Heard calling
	Spotted Sandpiper	Actitis macularius	1	Seen on rocks near causeway
07:00:00	Bald Eagle	Haliaeetus leucocephalus	1	North to south under wires
	Common Tern	Sterna hirundo	1	Approached wires from the north, backed off at last second three times, finally went over north to south.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Common Loon	Gavia immer	1	South to north over wires
07:15:00	Red Crossbill	Loxia curvirostra	9	Circling above wires, lost track of direction
	Great Black-backed Gull	Larus marinas	1	North to south over wires. Made several approaches.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires
07:30:00	Common Tern	Sterna hirundo	1	South to north over wires
	Herring Gull	Larus argentatus	2	Flying high over wires north to south
	Common Tern	Sterna hirundo	1	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires through ship canal
	Common Loon	Gavia immer	1	South to north over wires
07:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	3	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Tree Swallow	Tachycineta bicolor	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	4	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires
	Common Tern	Sterna hirundo	1	Carrying food south to north over wires
08:00:00	Common Tern	Sterna hirundo	1	South to north over wires. Struggled to gain altitude.
	Double-crested Cormorant	Phalacrocorax auritas	15	North to south over wires
	Common Tern	Sterna hirundo	2	One carrying food under wires south to north, other struggled to gain altitude over wires south to north
	Common Tern	Sterna hirundo	1	Carrying food south to north over wires
08:15:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north over wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Double-crested Cormorant	Phalacrocorax auritas	2	North to south over wires
	Common Tern	Sterna hirundo	1	South to north under wires

Table A8: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 28, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north, had trouble getting over wires.
	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
08:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying South to North over wires. Had to gain alt
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to North between wires, had some difficulty manoeuvring between wires.
09:00:00	Common Tern	<i>Sterna hirundo</i>	2	Both carrying food south to north over wires. Both had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>larus argentatus</i>	1	North to south over wires. Looked like it came close to wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	2	Carrying food over land east of causeway, south to north over wires.
	Osprey	<i>Pandion haliaetus</i>	3	Loitering on tower, one bird placing sticks on top as if building a nest.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Had to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north over wires
09:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	1	Flying towards wires from South, flew parallel to power lines until it gained enough height to cross, went north.
09:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires through ship canal.
09:30:00	Black-throated Green Warbler	<i>Setophaga virens</i>	1	Heard singing
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food over land east of causeway, south to north over wires. Had to gain altitude to get over wires.
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires, had to gain altitude to cross wires.
09:45:00	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires, made several approaches before crossing.
	Common Tern	<i>Sterna hirundo</i>	2	South to north over wires. Had to gain altitude.
	Northern Gannet	<i>Morus bassanus</i>	1	North to South over wires. Circled to gain enough height to cross wires.
	Common Tern	<i>Sterna hirundo</i>	2	North to south over wires, both made several approaches before crossing.
Afternoon Survey: Sunny, wind 40 - 50 km/h N				
14:00:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	2	Flying south towards wires. One turned around when approaching wires, the other spun in between wires. Looked like it was very close to contacting wires.
14:15:00	Common Tern	<i>Sterna hirundo</i>	1	Flew north to south towards wires, turned into wind, followed parallel to wires until it gained enough height to cross.
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
14:30:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Struggled in wind to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	2	Both flying North, fighting wind to gain altitude. One awkwardly flew between wires, nearly contacting them. The other backtracked, then flew under wires with less trouble.
14:45:00	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
15:00:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires through ship canal
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Northern Gannet	<i>Morus bassanus</i>	4	Foraging south of causeway
	Northern Gannet	<i>Morus bassanus</i>	1	Flying North to South, tried to stop before it came to wires but had too much momentum. Awkwardly went over while making strange noises.
	Northern Gannet	<i>Morus bassanus</i>	1	North to South over wires. Circled to gain enough height to cross wires.
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
15:15:00	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires. One struggled to gain enough height to cross wires.
	Common Tern	<i>Sterna hirundo</i>	1	Foraging under wires near causeway
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires through ship canal.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires

Table A8: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	June 28, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
15:30:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Had to gain altitude.
	Northern Gannet	<i>Morus bassanus</i>	5	Foraging roughly 2km north of causeway.
	Common Tern	<i>sterna hirundo</i>	1	Flying North to South. Turned into wind when approaching wires and sailed backwards over wires like a high jumper.
15:45:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north, had trouble getting over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires. Had to make two approaches.
16:00:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south over wires. Both struggled to gain enough height to cross wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires, had to gain altitude to cross wires.
	Common Tern	<i>Sterna hirundo</i>	2	South to north under wires during traffic break on causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Under wires south to north. Had to avoid traffic.
16:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	2	Flying North to South. Turned into wind when approaching wires and sailed backwards over wires.
16:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North, had to circle to gain enough height to cross wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
16:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	looked like it was trying to get over wires, dropped altitude at last minute and went under.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires. Had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north, had to gain height to get over wires. Looked like it came close to contacting wires.
17:00:00	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	2	South to north under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	9	Foraging north of causeway
	Herring Gull	<i>Larus argentatus</i>	7	Foraging north of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north over wires
17:15:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires. Had to flap frantically at last minute to clear wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires, had to gain altitude to cross wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires, had to gain altitude to cross wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, circled to gain enough height to go over wires.
Wind decreasing – 30-40km/hour				
17:30:00	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	2	Both approached low from north, turned and faced wind, gained altitude slowly, then went over lines south. One came close to hitting wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	looked like it was trying to get over wires, dropped altitude at last minute and went under.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires. Had to gain altitude.
17:45:00	Common Tern	<i>Sterna hirundo</i>	1	North to South over wires. Circled to gain enough height to cross wires.
	Great Blue Heron	<i>Ardea herodias</i>	1	Flying high over wires north to south
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Under wires south to north
18:00:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires. Had to make three approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>		North to south over wires. Both circled to gain altitude, didn't have enough, so both went under wires at last second.
Wind decreasing, 20km/hr				
18:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying North to South, looked like it wanted to go over wires, cut down and to the east on a sharp angle to go under wires at last second.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
18:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Northern Gannet	<i>Morus bassanus</i>	5	Four immatures and one adult approached wires from south, adult went over immediately, the four younger birds hesitated and circled, made a second attempt which they aborted as well. All immatures remained south of causeway.
18:45:00	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	2	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires

Date	June 28, 2014
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Species	Number of Individuals Observed
American Redstart	1
American Robin	2
Bald Eagle	3
Black-throated Green Warbler	1
Blue Jay	1
Common Grackle	1
Common Loon	6
Common Tern	68
Double-crested Cormorant	83
Great Black-backed Gull	12
Great Blue Heron	1
Herring Gull	40
Magnolia Warbler	1
Northern Gannet	26
Osprey	5
Red Crossbill	9
Ruby-throated Hummingbird	1
Song Sparrow	1
Spotted Sandpiper	1
Tree Swallow	1
White-throated Sparrow	1
Yellow Warbler	1
TOTAL	266



Table A9: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 6, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy, Wind NW 40-50km/hr				
05:00:00	Song Sparrow	Melospiza melodia	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
	Great Black-backed Gull	Larus marinas	3	North to South over wires
	Herring Gull	Larus argentatus	2	Foraging near causeway
05:15:00	Common Tern	Sterna hirundo	1	South to north under wires
	Arctic Tern	Sterna paradisaea	1	Carrying food south to north over wires. Had to struggle to gain altitude.
	Common Tern	Sterna hirundo	1	South to north over wires. Struggled to gain altitude in wind.
05:30:00	Common Raven	Corvus corax	1	Being chased by crows near ship canal
	Great Black-backed Gull	Larus marinas	1	North to South over wires
06:00:00	Herring Gull	Larus argentatus	2	South to north. One over wires one under wires.
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Herring Gull	Larus argentatus	1	North to south under wires
	Herring Gull	Larus argentatus	1	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires
	Great Black-backed Gull	Larus marinas	1	North to South over wires
	Common Tern	Sterna hirundo	2	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires. Struggled to gain altitude over wires.
	Herring Gull	Larus argentatus	2	South to north over wires
	Herring Gull	Larus argentatus	1	South to north over wires. Having trouble in wind.
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal. Getting blown around in wind.
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal. Getting blown around in wind.
06:15:00	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	2	South to north under wires
	Herring Gull	Larus argentatus	1	South to north under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal.
	Herring Gull	Larus argentatus	1	North to South over wires
	Herring Gull	Larus argentatus	1	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
	Herring Gull	Larus argentatus	3	South to north over wires
06:30:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Great Black-backed Gull	Larus marinas	1	South to North under wires through ship canal.
	Great Black-backed Gull	Larus marinas	1	north to South over wires, had to gain altitude to cross.
	Common Tern	Sterna hirundo	1	Flying North to South. Turned into wind when approaching wires, gained altitude, then sailed backwards over wires.
06:45:00	Common Tern	sterna hirundo	1	Carrying food South to North over wires.
	Herring Gull	Larus argentatus	2	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North under wires.
	Herring Gull	Larus argentatus	1	South to north over wires
	Common Merganser	Mergus merganser	1	South to North over land East of Causeway.
	Double-crested Cormorant	Phalacrocorax auritas	2	South to North over wires. Had to gain height to cross wires.
	Common Tern	Sterna hirundo	1	South to north under wires
	Common Tern	Sterna hirundo	1	South to North over land East of Causeway.
	Great Black-backed Gull	Larus marinas	1	Hovering under wires, over causeway.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires
07:00:00	Herring Gull	Larus argentatus	2	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Herring Gull	larus argentatus	1	South to north under wires
	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Great Black-backed Gull	Larus marinas	2	South to north over wires
	Herring Gull	Larus argentatus	1	North to South over wires
07:15:00	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Bald Eagle	Haliaeetus leucocephalus	1	North to South over wires
	Common Tern	Sterna hirundo	1	Flying North towards wires. Flew beside wires when it got closer to them, looked as if it couldn't decide to go over or under. Stuttered a few times before going under wires. Looked like it was very close to contacting wires.
07:30:00	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Common Tern	Sterna hirundo	2	Carrying food south to north under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires

Table A9: Spring Active Observation Survey, Canso Causeway Bird Study

Date	July 6, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
07:30:00	Great Black-backed Gull	<i>Larus marinas</i>	25	Sitting on wharf South of causeway and hanging around dead whale.
	Herring Gull	<i>Larus argentatus</i>	30	Sitting on wharf South of causeway and hanging around dead whale.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	5	Sitting on wharf South of causeway.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, over land East of causeway.
07:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, over land East of causeway.
	Common Tern	<i>Sterna hirundo</i>	2	South to north under wires
	Common Tern	<i>sterna hirundo</i>	1	Carrying food South to North, over land East of causeway.
08:00:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires.
	Herring Gull	<i>Sterna hirundo</i>	1	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. Had to gain height to cross wires.
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
08:15:00	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to North over wires. Had to gain height to cross wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Great Black-backed Gull	<i>larus marinas</i>	1	North to south under wires
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires through ship canal.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	3	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	3	Foraging under wires near causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	Caught in wind, almost pushed into wires.
Wind increasing, 60-70km/hr				
08:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, over land East of causeway. Having a lot of trouble with wind.
08:45:00	Common Tern	<i>Sterna hirundo</i>	1	South to North over land East of Causeway. Having a lot of trouble with wind.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	2	South to north under wires
09:00:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, over land East of causeway.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
09:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to North over land East of Causeway. Having a lot of trouble with wind.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying North, looked like it was trying to go over wires. Circled twice, then went under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires. 1 had to gain height to get over wires.
09:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	3	Circling North of causeway, trying to gain altitude. All three went over wires north to South after several circles.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Rock Dove	<i>(Columba livia</i>	2	North to south under wires. One came close to hitting wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
09:45:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food over wires South to North, over land East of causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	2	Both carrying food South to North over land East of causeway. Both having trouble getting over wires in wind.
	American Crow	<i>Corvus brachyrhynchos</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to North over wires. Had to gain height to get over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Common Grackle	<i>Quiscalus quiscula</i>	1	Flying North towards wires, backtracked to get more height then went over wires flying North.
09:45:00	Red Crossbill	<i>(Loxia curvirostra</i>	Several	Heard calling

Table A9: Spring Active Observation Survey, Canso Causeway Bird Study

Date	July 6, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Afternoon Survey: Sunny, Wind 50-60km/hr nw				
14:00:00	Great Black-backed Gull	Larus marinas	1	Hovering under wires, over causeway. Tried to sail from North to South and came very close to hitting wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires. Struggling with wind to get over wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires. Struggling with wind to get over wires.
	Herring Gull	Larus argentatus	1	North to South over wires. Turned, faced wind, then sailed over.
	Common Tern	Sterna hirundo	1	Flying South towards wires, turned into wind and tried to sail over wires. Ended up going between wires with last minute flight adjustments to avoid a collision.
	Great Black-backed Gull	Larus marinas	1	Hovering under wires, over causeway.
14:15:00	Common Tern	Sterna hirundo	2	South to North over land East of Causeway. Having a lot of trouble with wind. Went over wires
	Herring Gull	Larus argentatus	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	Hovering over causeway. Tried to sail to the South, looked like it unintentionally flew between wires with last second flight adjustments. Came very close to contacting wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	Approached wires from the North, turned into wind, slowly gained height then made a wide turn and flew over wires.
	Common Tern	Sterna hirundo	1	North to South over wires
14:30:00	Common Tern	Sterna hirundo	2	Carrying food south to north under wires through ship canal.
	Common Tern	Sterna hirundo	1	South to North under wires.
	Common Tern	Sterna hirundo	1	Carrying food South to North, over land East of causeway.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North, over land East of causeway.
	Great Black-backed Gull	Larus marinas	1	North to south under wires
14:45:00	Common Tern	Sterna hirundo	1	Flying North to South. Turned into wind when approaching wires, gained altitude, then sailed over.
	Herring Gull	Larus argentatus	1	Flying South towards wires, turned into wind to sail over wires. Almost made contact with wires on way over.
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Great Black-backed Gull	Larus argentatus	1	Flying North to South. Turned into wind when approaching wires, gained altitude, then sailed over.
	Common Raven	Corvus corax	1	Hovering under wires, over causeway.
	Common Tern	Sterna hirundo	1	Carrying food over wires South to North, over land East of causeway.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal.
15:00:00	Great Black-backed Gull	Larus marinas	1	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires. Had to gain height to get over wires.
	Great Black-backed Gull	Larus marinas	1	South to North under wires.
	Great Black-backed Gull	Larus marinas	2	North to south under wires
15:15:00	Common Tern	Sterna hirundo	1	Carrying food over wires South to North, over land East of causeway.
	Common Tern	Sterna hirundo	1	North to South over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	2	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	South to North under wires through ship canal.
15:30:00	Herring Gull	Larus argentatus	2	Flying high over wires South to North.
	Great Blue Heron	Ardea herodias	1	North to south under wires. Looked like it tried to stop when it saw wires but had too much momentum.
	Common Tern	Sterna hirundo	1	Carrying food over wires South to North, over land East of causeway. Having some trouble with wind.
15:45:00	Great Black-backed Gull	Larus marinas	2	South to North under wires.
	Osprey	Pandion haliaetus	1	North to South over wires
16:00:00	Common Tern	Sterna hirundo	1	South to North over wires. Frantically flapping it's wings to gain enough height to cross wires.
	Herring Gull	Larus argentatus	1	Flew North over first set of wires, hesitated at the second set and flew back towards the South.
	Black and White warbler	Mniotilta varia	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
	Blue headed Vireo	Vireo solitarius	1	Heard singing
	Yellow Warbler	Setophaga petechia	1	Heard singing
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Herring Gull	Larus argentatus	1	North to south under wires
16:15:00	Common Tern	Sterna hirundo	1	North to South over wires
Wind has slowed down, 35-45km/hr				
16:15:00	Herring Gull	Larus argentatus	1	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
16:15:00	Common Tern	Sterna hirundo	1	South to North over wires.



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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
16:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires. Had to gain height to get over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	2	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	Hovering under wires, over causeway. Tried to sail from North to South and came very close to hitting wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	2	South to North over land East of Causeway. Went over wires
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Soaring high above causeway.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	North to South over wires
16:45:00	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South. Turned into wind when approaching wires, gained altitude, then sailed over. Came very close to contacting wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
17:00:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires. Was close to colliding with a car on the causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to South over wires. Circled to gain altitude before flying over wires.
Wind has slowed down, 25-35km/hr				
17:15:00	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires. Flew close to traffic.
	Dark eyed Junco	<i>Junco hyemalis</i>	1	Heard singing
	Black throated Green Warbler	<i>Setophaga virens</i>	1	Heard singing
	Golden-crowned Kinglet	<i>Regulus satrapa</i>	1	Heard singing
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
17:30:00	Ruby-crowned Kinglet	<i>Regulus calendula</i>	1	Heard singing
	Blackburnian Warbler	<i>(Setophaga fusca</i>	1	Heard singing
	Yellow Warbler	<i>Setophaga petechia</i>	1	Heard singing
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus argentatus</i>	1	South to North under wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	north to South over wires, had to gain altitude to cross.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires. Had to gain height to get over wires.
17:45:00	Common Tern	<i>Sterna hirundo</i>	1	Flying high over wires South to North.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. Had to gain height to get over wires.
18:00:00	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to South over wires. Circled to gain altitude before flying over wires.
Wind has slowed down, 15-20km/hr				
18:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Foraging along North side of causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires. Had to gain height to get over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North, over land East of causeway.
18:30:00	Common Tern	<i>Sterna hirundo</i>	1	Foraging along North side of causeway.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires



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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
18:30:00	Great Black-backed Gull	Larus marinas	1	South to North over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Herring Gull	Larus argentatus	1	North to South over wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Double-crested Cormorant	Phalacrocorax auritas	3	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal.
	Common Tern	Sterna hirundo	2	One flew under wires through ship canal, the other between the wires near the ship canal.
18:45:00	Herring Gull	Larus argentatus	1	South to North over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	3	One flew awkwardly between wires, one flew under wires and one flew over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Great Black-backed Gull	Larus marinas	1	North to South over wires
	Herring Gull	Larus argentatus	1	North to South over wires
	Herring Gull	Larus argentatus	1	South to North over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires. Angled it's flight towards wires, most likely to buy time to gain altitude.
19:00:00	Great Black-backed Gull	Larus marinas	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food over wires South to North, over land East of causeway.
	Great Blue Heron	Ardea herodias	1	North to South over wires
	Herring Gull	Larus argentatus	2	South to North over wires. One had to gain altitude.

Species	Number of Individuals Observed
American Crow	1
American Robin	2
Arctic Tern	1
Bald Eagle	2
Black and White warbler	1
Black throated Green Warbler	1
Blackburnian Warbler	1
Blue headed Vireo	1
Common Grackle	1
Common Merganser	1
Common Raven	2
Common Tern	90
Dark eyed Junco	1
Double-crested Cormorant	67
Golden-crowned Kinglet	1
Great Black-backed Gull	78
Great Blue Heron	2
Herring Gull	94
Osprey	1
Red Crossbill	0
Rock Dove	2
Ruby-crowned Kinglet	1
Song Sparrow	1
Yellow Warbler	2
TOTAL	354

Table A10: Spring Active Observation Survey, Canso Causeway Bird Study

DateJuly 7, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy, Wind 20km/hr NW				
05:00:00	Alder Flycatcher	Empidonax alhorum	1	Heard singing
	American Robin	Turdus migratorius	1	Heard singing
	Yellow Warbler	Setophaga pechia	1	Heard singing
	Song Sparrow	Melospiza melodia	1	Heard singing
	Common Tern	Sterna Hirundo	1	Carrying food South to North under wires, through ship canal.
05:15:00	Common Tern	Sterna Hirundo	1	North to South over wires.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North over wires.
	Common Tern	Sterna Hirundo	1	Carrying food South to North under wires through ship canal.
	Common Tern	Sterna Hirundo	1	South to North under wires through ship canal.
05:30:00	Herring Gull	Larus argentatus	1	Found itself between both sets of power lines. Seemed to have trouble finding a safe way out of predicament.
	Great Black-backed Gull	Larus marinas	1	North to South under wires, through ship canal
	Herring Gull	Larus argentatus	1	South to North under wires through ship canal.
	Great Black-backed Gull	Larus marinas	1	South to North under wires.
	Great Black-backed Gull	Larus marinas	1	South to North over wires.
	Ring-billed Gull	Larus delawarensis	1	Loitering on grass near ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South over wires.
	Herring Gull	Larus argentatus	1	South to North over wires. Had to make two approaches.
	Great Black-backed Gull	Larus marinas	1	North to South under wires.
	Herring Gull	Larus argentatus	1	North to South under wires.
05:45:00	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires, through ship canal
	Great Black-backed Gull	Larus marinas	1	South to North under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	6	South to North over wires. One veered off and made angled approach, presumably to get more height before flying over wires.
	Common Tern	Sterna Hirundo	1	Carrying food South to North over wires.
	Double-crested Cormorant	Phalacrocorax auritas	8	South to North under wires. Two of them had to make minor flight adjustments.
	Osprey	Pandion haliaetus	1	Hovering over causeway, carrying nest material.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Common Tern	Sterna Hirundo	1	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	Larus argentatus	2	South to North over wires.
06:00:00	Herring Gull	Larus argentatus	2	South to North under wires.
	Blackburnian Warbler	Setophaga fusca	1	Heard singing
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires, through ship canal
	Herring Gull	Larus argentatus	1	North to South over wires.
	Herring Gull	Larus argentatus	1	North to South under wires, through ship canal
	Common Tern	Sterna Hirundo	2	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	Larus argentatus	1	North to South under wires, through ship canal
	Herring Gull	Larus argentatus	1	South to North over wires. Had to gain height to make it over wires.
	Great Black-backed Gull	Larus marinas	1	North to South over wires.
	Herring Gull	Larus argentatus	6	South to North over wires. Two of them made 2 approaches before going over.
06:15:00	Herring Gull	Larus argentatus	1	North to South over wires, had to gain height to clear wires.
	Great Black-backed Gull	Larus marinas	2	North to South over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Great Black-backed Gull	Larus marinas	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	South to North under wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	North to South over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires.
	Herring Gull	Larus argentatus	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	North to South over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires.
06:30:00	Great Black-backed Gull	Larus marinas	1	North to South over wires.
	Osprey	Pandion haliaetus	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	South to North over wires.
	Great Black-backed Gull	Larus marinas	1	South to North under wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires, through ship canal
	Common Tern	Sterna Hirundo	2	South to North under wires.
	Herring Gull	Larus argentatus	1	Found itself between both sets of power lines. Seemed to get out with less difficulty this time.
	Common Tern	Sterna Hirundo	1	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North over wires. Had to make two approaches.
	American Black Duck	anas rubripes	2	North to South over wires.
06:45:00	Northern Gannet	Morus bassanus	2	North to South over wires, had to gain height to clear wires.
	Great Black-backed Gull	Larus marinas	1	South to North under wires.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Herring Gull	Larus argentatus	2	South to North over wires.
	Common Tern	Sterna hirundo	1	North to South under wires.

Table A10: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 7, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:45:00	Osprey	<i>Pandion haliaetus</i>	1	Placing nest material on one of the short towers.
	American Redstart	<i>Setophaga ruticilla</i>	1	Heard singing
	Common Raven	<i>Corvus corax</i>	3	North to South under wires.
07:00:00	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flew between wires, North to South. Appeared to have some trouble.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires. Had to make three approaches.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	40	Loitering at Northern end of ship canal.
07:15:00	Herring Gull	<i>Larus argentatus</i>	6	North to South over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	5	Loitering at Southern end of ship canal.
	Common Tern	<i>Sterna Hirundo</i>	1	Carrying food South to North over wires. Had some trouble gaining height to clear wires.
	Common Tern	<i>Sterna Hirundo</i>	1	Carrying food South to North over wires. Had to make two approaches.
07:30:00	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	3	North to South over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	4	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	Flying high over wires, North to South.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires.
07:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to North over wires. Both made two approaches.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Great Blue Heron	<i>Ardea herodias</i>	1	North to South over wires.
08:00:00	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flew between wires South to North.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires.
08:15:00	Wind shifted, coming from West. Still light, 15-20km.			
	Herring Gull	<i>Larus argentatus</i>	3	South to North over wires. One veered off and made angled approach, presumably to get more height before flying over wires.
	Herring Gull	<i>Larus argentatus</i>	4	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires, through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires. One had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	3	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	3	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	3	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	<i>larus argentatus</i>	1	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Northern Parula	<i>Setophaga americana</i>	1	Heard singing
	Red-eyed Vireo	<i>Vireo olivaceus</i>	1	Heard singing
08:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	South to North under wires.
	Common Tern	<i>Sterna Hirundo</i>	2	North to South over wires. One had to make two approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	American Robin	<i>Turdus migratorius</i>	1	North to South under wires.
09:00:00	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying North to South. Flew under first set of wires, then went over second set with a great amount of difficulty.
	Northern Gannet	<i>Morus bassanus</i>	1	Flew between wires South to North.
	Herring Gull	<i>Larus argentatus</i>	4	South to North over wires.
	Osprey	<i>Pandion haliaetus</i>	1	Flew between wires South to North. Had minor difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires.

Table A10: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 7, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
09:15:00	Common Tern	<i>Sterna Hirundo</i>	1	Carrying food South to North over wires. Had some trouble gaining height to clear wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. Had to make two approaches.
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires. One had to make two approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires.
09:30:00	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Common Tern	<i>Sterna Hirundo</i>	3	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. approach at an angle, presumably to buy time to gain altitude.
	Common Tern	<i>Sterna Hirundo</i>	1	South to North over wires. Circled, then approached at an angle, presumably to buy time to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	2	South to North under wires.
09:45:00	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	4	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
Afternoon Survey: Sunny, Wind 15-20km/hr west.				
14:00:00	Common Tern	<i>Sterna Hirundo</i>	2	North to South under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
14:15:00	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Northern Gannet	<i>Morus bassanus</i>	1	North to South over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires. Had to gain height to make it over wires.
	Herring Gull	<i>Larus argentatus</i>	3	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
14:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	South to North under wires.
14:45:00	Common Tern	<i>Sterna Hirundo</i>	1	North to South under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires. Having some trouble with wind.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires. Had to make two approaches.
15:00:00	Common Tern	<i>Sterna Hirundo</i>	1	North to South under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires, had to gain height to clear wires.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Ring-billed Gull	<i>Larus delawarensis</i>	1	Flew between wires South to North. Came close to contacting wires.
15:15:00	Great Black-backed Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Common Tern	<i>Sterna Hirundo</i>	1	South to North under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires, turned into wind and sailed over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Common Tern	<i>Sterna Hirundo</i>	2	North to South over wires, turned into wind and sailed over wires.
15:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Common Tern	<i>Sterna Hirundo</i>	1	North to South over wires. Had to make four approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South over wires. Both made angled approach
Wind increasing, 30-35km/hr				
15:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Spotted Sandpiper	<i>Actitis macularius</i>	1	On shoreline near bridge.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
15:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	4	North to South under wires.
	American Kestrel	<i>Falco sparverius</i>	1	North to South over wires.
16:00:00	Herring Gull	<i>Larus argentatus</i>	4	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires, had to gain height to clear wires.
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires.

Table A10: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 7, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
16:15:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
16:30:00	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
16:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	2	South to north over wires. One carrying food.
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
17:00:00	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. Had to gain altitude.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	2	North to south over wires. Both made two approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires. Circled to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flew between wires north to south. Came close to contacting wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south over wires. Both had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
17:15:00	Herring Gull	<i>Larus argentatus</i>	3	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires. Had to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
17:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Had to circle to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires
17:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South over wires. One approached at an angle, other circled to gain altitude, then went over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Raven	<i>Corvus corax</i>	3	Loitering on towers
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires. Circled to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
18:00:00	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires. Had some difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires. Had some difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires. Had some difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North under wires through ship canal.
18:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires.
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires



Table A10: Spring Active Observation Survey, Canso Causeway Bird Study

DateJuly 7, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
18:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires. Over land east of causeway.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to North over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to north over wires. One made two approaches, one made three approaches.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires
18:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Foraging along north side of causeway
	Northern Gannet	<i>Morus bassanus</i>	1	Foraging just south of causeway
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flew between wires South to North. Had minor difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires. Had some difficulty.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	4	North to south over wires. Some had difficulty.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
18:45:00	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires. Had to make two approaches.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	5	North to south over wires. Two had to gain altitude.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to South over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires

Species	Number of Individuals Observed
Alder Flycatcher	1
American Black Duck	2
American Kestrel	1
American Redstart	1
American Robin	2
Blackburnian Warbler	1
Common Raven	6
Common Tern	68
Double-crested Cormorant	145
Great Black-backed Gull	76
Great Blue Heron	1
Herring Gull	157
Northern Gannet	5
Northern Parula	1
Osprey	4
Red-eyed Vireo	1
Ring-billed Gull	2
Song Sparrow	1
Spotted Sandpiper	1
Yellow Warbler	1
TOTAL	477

Table A11: Spring Active Observation Survey, Canso Causeway Bird Study

DateJuly 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Overcast, Wind west 10km/hr				
05:15:00	Song Sparrow	Melospiza melodia	1	Heard singing
	Yellow Warbler	Setophaga pechia	1	Heard singing
	Northern Parula	Setophaga americana	1	Heard singing
	Great Black-backed Gull	Larus marinas	Several	Loitering around causeway
	Herring Gull	Larus argentatus	20	Loitering around causeway
05:30:00	Common Tern	Sterna hirundo	2	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food over wires south to north, had to gain altitude
	Herring Gull	Larus argentatus	3	Over wires north to south
	Great Black-backed Gull	Larus marinas	1	Under wires south to north
05:45:00	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Herring Gull	Larus argentatus	1	North to south under wires through ship canal
	Great Black-backed Gull	Larus marinas	7	Under wires south to north through ship canal
	Herring Gull	Larus argentatus	1	South to north under wires
	Herring Gull	Larus argentatus	1	North to south under wires
	Herring Gull	Larus argentatus	1	North to south over wires, had to gain altitude
	Herring Gull	Larus argentatus	1	North to south over wires, had to gain altitude. Came close to wires.
	Great Black-backed Gull	Larus marinas	1	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	2	North to south under wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Herring Gull	Larus argentatus	1	South to north over wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Herring Gull	Larus argentatus	1	North to south over wires
	Great Black-backed Gull	Larus marinas	1	North to south under wires through ship canal
	Herring Gull	Larus argentatus	2	South to north over wires
	Great Blue Heron	Ardea herodias	1	Fishing by causeway
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south over wires
	Herring Gull	Larus argentatus	2	South to north over wires
	Herring Gull	Larus argentatus	1	South to north under wires
	Common Tern	Sterna hirundo	1	North to south under wires
06:00:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	1	Fishing in ship canal
	Common Tern	Sterna hirundo	1	Carrying food under wires through ship canal
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Herring Gull	Larus argentatus	6	South to north under wires
	Herring Gull	Larus argentatus	3	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north, flew parallel to wires struggling to gain altitude
	Northern Gannet	Morus bassanus		Flying high over wires South to North.
	Great Black-backed Gull	Larus marinas	2	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food South to North between wires. Had some difficulty.
	Common Raven	Corvus corax	2	Patrolling causeway.
	Herring Gull	Larus argentatus	1	South to north over wires
06:15:00	Northern Gannet	Morus bassanus	7	Diving south of causeway
	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	8	Flying north to south. 3 flew under wires, 3 flew over wires with some difficulty, 2 backed off wires.
	Common Tern	Sterna hirundo	1	North to south over wires. Struggled to gain altitude.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
				Terns, Gulls, Cormorants, foraging in ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires, had to gain altitude.
	Herring Gull	Larus argentatus	3	South to north over wires
	Great Black-backed Gull	Larus marinas	3	Loitering around causeway
	Spotted Sandpiper	Actitis macularis	1	Near causeway
	Common Tern	Sterna hirundo	1	North to south over wires. Needed 4 approaches.
	Cedar Waxwing	Bombycilla cedrorum	Several	Heard not far from causeway.
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Herring Gull	Larus argentatus	2	South to North under wires through ship canal
	Great Black-backed Gull	Larus marinas	1	South to North under wires through ship canal
	Common Tern	Sterna hirundo	1	South to north under wires
	Herring Gull	Larus argentatus	1	North to south over wires, needed 2 approaches
	Great Black-backed Gull	Larus marinas	1	North to south over wires, had to gain altitude
	Common Tern	Sterna hirundo	1	South to north over wires
06:30:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Great Black-backed Gull	Larus marinas	1	South to north over wires
	Gannets, Terns, Cormorants and Gulls		many	Foraging North of Causeway.
	Common Tern	Sterna hirundo	1	South to North under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Northern Gannet	Morus bassanus	1	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	2	North to south over wires
	Herring Gull	Larus argentatus	1	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to north under wires
	Northern Gannet	Morus bassanus	2	South to north over wires

Table A11: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:45:00	Northern Gannet	<i>Morus bassanus</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires, had some difficulty
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires, had some difficulty, 3 approaches
	Northern Gannet	<i>morus bassanus</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north over wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires, needed 2 approaches
	Herring Gull	<i>Larus argentatus</i>	2	South to North under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
07:00:00	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	2	South to North under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Great Blue Heron	<i>Ardea herodias</i>	2	Near causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying north to south. Stuttered 6-7 times before going over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
07:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food over wires south to north, needed 4 approaches
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires, needed 2 approaches
	Double-crested Cormorant	<i>phalacrocorax auritas</i>	1	South to North under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
07:30:00	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Blackburnian Warbler	<i>Setophaga fusca</i>	1	Heard singing
	Swainsons Thrush	<i>Catharus ustulatus</i>	1	Heard singing
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
07:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires, had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north over wires
08:00:00	Common Tern	<i>Sterna hirundo</i>	1	South to North under wires through ship canal
	Wind increasing, 20-25km/hr North			
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind, flew parallel to wires gaining altitude, made several approaches before going over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	3	South to north under wires
	Great Blue Heron	<i>Ardea herodias</i>	3	Flying North away from causeway.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
08:15:00	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	2	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	4	South to north over wires
	American Crow	<i>Corvus brachyrhynchos</i>	15	Foraging around causeway
08:30:00	Osprey	<i>Pandion haliaetus</i>	1	Fishing north of causeway
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Alder Fycatcher	<i>Empidonax alnorum</i>	1	Heard singing
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires, had to gain altitude
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
08:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind, stuttered several times before going over wires.
	Common Tern	<i>Sterna hirundo</i>	2	North to south over wires, had to gain altitude
09:00:00	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind, gained altitude, flew over wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to north over land east of causeway.
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	American Goldfinch	<i>Spinus tristis</i>	Several	Heard flying overhead



Table A11: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
09:00:00	Herring Gull	<i>Larus argentatus</i>	2	North to south under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires, over land East of causeway.
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Mourning Dove	<i>Zenaida macroura</i>	1	Flew towards mainland, got halfway there and flew back.
	Herring, Black Backed gulls	<i>Larus sp</i>	80	Loitering around causeway.
09:30:00	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires, had to gain altitude.
	Common Tern	<i>sterna hirundo</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Foraging along North side of causeway. Caught fish, carried it North.
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind, gained altitude, flew over wires.
	Herring Gull	<i>Larus argentatus</i>	1	Flying North to South, turned into wind, flew parallel to wires gaining altitude, over wires.
09:45:00				Lots of Herring and Black Backed gulls foraging around causeway.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North under wires near ship canal.
Afternoon Survey: Sunny, hot, wind 15-20km/hr N.				
14:00:00	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
				Several juvenile and adult gulls foraging along causeway, fledged young crows near causeway as well. No other bird activity.
14:15:00	Common Tern	<i>Sterna hirundo</i>	2	North to south under wires near ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	1	Catching fish along north side of causeway
14:30:00	Common Tern	<i>Sterna hirundo</i>	1	Foraging on north side of causeway
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	3	One between wires – had difficulty. One circled and made two attempts, then over wires. One circled and made three attempts then over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal
14:45:00	Whale species		1	Seen north of causeway
	Common Tern	<i>Sterna hirundo</i>	1	North to south through ship canal
	Common Tern	<i>Sterna hirundo</i>	3	North to south under wires
15:00:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	2	North to south under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires, had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires, had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	2	North to south under wires through ship canal
15:15:00	Great Black-backed Gull	<i>larus marinas</i>	1	South to North under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	North to south under wires
15:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires, had to gain altitude.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, Turned into wind, stuttered before sailing over.
15:45:00	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires
	Spotted Sandpiper	<i>Actitis macularis</i>	1	On rocks near causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
16:00:00	Great Black-backed Gull	<i>Larus marinas</i>	2	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Soaring high over wires
	Northern Gannet	<i>Morus bassanus</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	2	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over land east of causeway, had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	2	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
16:15:00	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Fishing in ship canal
	Herring Gull	<i>Larus argentatus</i>	3	South to north under wires
16:30:00	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	Common Eider	<i>Somateria mollissima</i>	3	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires

Table A11: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
16:30:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires, over land east of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	2	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires, barely made it over
	Tree Swallow	<i>Tachycineta bicolor</i>	2	Foraging in area
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food over wires south to north
	Common Raven	<i>Corvus corax</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	Between wires south to north. Appeared close to contacting wires.
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	Several	Heard in area
	Magnolia Warbler	<i>Setophaga magnolia</i>	1	Heard singing
16:45:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires. Zig zagged to gain altitude. Had difficulty.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
	Common Raven	<i>Corvus corax</i>	2	Patrolling causeway.
17:00:00	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	South to North under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Flying north to south, stuttered, turned into wind, gained altitude, then sailed over wires. Appeared fairly close to contacting wires.
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
17:15:00	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind, gained altitude, flew over wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	North to south over wires
17:30:00	Great Black-backed Gull	<i>Larus marinas</i>	2	Chasing each other north to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	Hovering under lines, appeared fairly close to being struck by automobile
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying north to south, turned into wind, tried to sail over wires north to south, appeared very close to contacting wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south over wires
	Common Tern	<i>Sterna hirundo</i>	1	South to north over wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north over wires
	Northern Gannet	<i>Morus bassanus</i>	1	Diving just north of causeway
17:45:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north over wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Fishing in ship canal. Seems to be a regular occurence today
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	Patrolling causeway. Appeared very close to contacting wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to south under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south under wires
	Willet	<i>Tringa semipalmata</i>	1	Circling north of causeway, then headed south under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	Flying north to south between wires, made last second adjustment, appeared very close to contacting wires
	Common Tern	<i>Sterna hirundo</i>	1	North to south over wires
18:00:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	3	Two terns chasing another tern, went over and under wires several times.
	Common Tern	<i>Sterna hirundo</i>	1	Flying north to south, stuttered many times, finally went over wires, looked fairly close to contacting wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to south under wires
18:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to north under wires
	Great Black-backed Gull	<i>Larus marinas</i>	1	North to south under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	Flying north to south, both stopped abruptly before wires. One circled, then went over wires, other flew back north
	Great Black-backed Gull	<i>Larus marinas</i>	1	Fishing by causeway
	Great Black-backed Gull	<i>Larus marinas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Eider	<i>Somateria mollissima</i>	7	South to north over wires

Table A11: Spring Active Observation Survey, Canso Causeway Bird Study

Date	July 18, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
18:15:00	Herring Gull	Larus argentatus	1	North to south between wires. Appeared fairly close to contacting wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Common Tern	Sterna hirundo	2	North to south under wires through ship canal
	Common Tern	Sterna hirundo	1	North to south under wires
18:30:00	Common Tern	Sterna hirundo	1	North to south under wires near ship canal
	Common Tern	Sterna hirundo	1	South to north over wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires through ship canal
	Herring Gull	Larus argentatus	1	South to north over wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Herring Gull	Larus argentatus	3	North to south over wires
	Northern Gannet	Morus bassanus	1	South to north over wires
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	1	North to south under wires
	Common Tern	Sterna hirundo	2	North to south under wires
	Northern Gannet	Morus bassanus	1	North to south over wires
	Common Tern	Sterna hirundo	1	South to north under wires near ship canal
	Herring Gull	Larus argentatus	1	North to south under wires
	Common Tern	Sterna hirundo	1	North to south under wires through ship canal
18:45:00	Great Black-backed Gull	Larus marinas	1	South to north under wires
	Common Tern	Sterna hirundo	1	Fishing in ship canal
	Great Black-backed Gull	Larus marinas	1	North to south under wires
	Common Tern	Sterna hirundo	1	North to south under wires
	Common Tern	Sterna hirundo	1	South to north under wires
	Common Tern	Sterna hirundo	1	Flying north to south, turned into wind, stuttered several times before sailing over, appeared very close to contacting wires.
	Common Tern	Sterna hirundo	1	South to north under wires
	Northern Gannet	Morus bassanus	2	North to south over wires, had to gain altitude
	Common Tern	Sterna hirundo	1	North to south over wires
	Double-crested Cormorant	Phalacrocorax auritas	2	South to north under wires

Species	Number of Individuals Observed
Alder Fycatcher	1
American Crow	15
Bald Eagle	1
Blackburnian Warbler	1
Common Eider	10
Common Raven	5
Common Tern	109
Double-crested Cormorant	76
Gannets, Terns, Cormorants and Gulls	0
Great Black-backed Gull	65
Great Blue Heron	6
Herring Gull	110
Herring, Black Backed gulls	80
Magnolia Warbler	1
Mourning Dove	1
Northern Gannet	18
Northern Parula	1
Osprey	1
Song Sparrow	1
Spotted Sandpiper	2
Swainsons Thrush	1
Tree Swallow	2
Whale species	1
Willet	1
Yellow Warbler	1
TOTAL	510

Table A12: Spring Active Observation Survey, Canso Causeway Bird Study

DateJuly 19, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Overcast, Wind 0km/hr				
05:00:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	1	North to South under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	1	Fishing in Ship canal
	Herring Gull	Larus argentatus	1	North to South under wires
	Great Black-Backed Gull	Larus marinas	1	North to South under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
05:30:00	Common Tern	Sterna hirundo	10	Fishing on South side of causeway
	Common Tern	Sterna hirundo	1	Carrying food south to north between wires. Had some difficulty.
				Over 30 gulls, 2 ravens and 5 crows all loitering near causeway
	Common Tern	Sterna hirundo	2	Flying South to North under wires through ship canal. 1 Carrying food.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Common Tern	Sterna hirundo	2	Carrying food South to North over land East of causeway.
	Common Tern	Sterna hirundo	1	North to South under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	3	South to North under wires.
	Double-crested Cormorant	Phalacrocorax auritas	5	North to South over wires.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	2	North to South under wires
05:45:00	Common Tern	Sterna hirundo	2	Carrying food South to North over wires. Both zig-zagged back and forth while approaching wires to gain altitude.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	5	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North over wires
	Double-crested Cormorant	Phalacrocorax auritas	4	North to South under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal
	Great Black-Backed Gull	Larus marinas	1	South to North over wires, had to gain altitude to get over wires
	Common Tern	Sterna hirundo	1	Carrying food South to North over land East of causeway.
	Great Black-Backed Gull	Larus marinas	1	North to South over wires.
	Northern Gannet	Morus bassanus	1	North to South over wires.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North over wires, had to gain altitude to get over wires
	Herring Gull	Larus argentatus	1	North to South under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Double-crested Cormorant	Phalacrocorax auritas	2	North to South under wires
	Northern Gannet	Morus bassanus	2	North to South over wires.
06:00:00	Song Sparrow	Melospiza melodia	1	Heard Singing
	Yellow Warbler	Setophaga pechia	1	Heard Singing
	American Goldfinch	Spinus tristis	1	Heard Singing
	Bald Eagle	Haliaeetus leucocephalus	1	North to South over wires.
	Herring Gull	Larus argentatus	1	North to South under wires
	Great Black-Backed Gull	Larus marinas	2	North to South under wires
	Herring Gull	Larus argentatus	1	North to South over wires.
	Herring/Black-Backed Gull	Larus sp	15	Loitering on Bridge. All flew North under wires.
06:15:00	Northern Gannet	Morus bassanus	1	South to North over wires
	Double-crested Cormorant	Phalacrocorax auritas	3	South to North under wires.
	Herring Gull	Larus argentatus	1	North to South under wires
	Great Black-Backed Gull	Larus marinas	1	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	5	South to North under wires through ship canal.
06:30:00	Double-crested Cormorant	Phalacrocorax auritas	2	South to North over wires
	Herring Gull	Larus argentatus	2	South to North under wires.
	Osprey	Pandion haliaetus	1	Sitting on tower
	Great Black-Backed Gull	Larus marinas	1	South to North over wires
06:45:00	Herring Gull	Larus argentatus	2	South to North over wires
	Herring Gull	Larus argentatus	1	South to North under wires.
	Common Tern	Sterna hirundo	2	North to South under wires
	Herring Gull	Larus argentatus	1	South to North over wires
07:00:00	Herring Gull	Larus argentatus	1	North to South under wires
	Herring Gull	Larus argentatus	9	Loitering near causeway
	Great Black-Backed Gull	Larus marinas	16	Loitering near causeway
	Double-crested Cormorant	Phalacrocorax auritas	4	South to North under wires.
	Great Black-Backed Gull	Larus marinas	1	South to North under wires.
	Herring Gull	Larus argentatus	2	North to South over wires.
	Whimbrel	Numenius phaeopus	1	Flying high above wires heading South.
	Spotted Sandpiper	Actitis macularis	1	On rocks near causeway
	Common Tern	Sterna hirundo	1	North to South over wires.
	Common Tern	Sterna hirundo	1	North to South under wires
	Belted Kingfisher	Megaceryle alcyon	1	Fishing near causeway
07:15:00	Chipping Sparrow	Spizella passerina	1	Heard Singing
	Great Black-Backed Gull	Larus marinas	1	Flying South to North, went over wires. Had to make 5 approaches. Struggled to gain height with no wind.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal

Table A12: Spring Active Observation Survey, Canso Causeway Bird Study

Date July 19, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
07:15:00	Common Tern	<i>Sterna hirundo</i>	1	South to North under wires.
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires, needed three approaches
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Alder Flycatcher	<i>Empidonax alnorum</i>	1	Heard Singing
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Flying north to south over wires. Circled first, needed two attempts
Wind picking up 15-20km/hour from the north				
07:30:00	Hermit Thrush	<i>Catharus guttatas</i>	1	Heard Singing
	Black-throated Green Warbler	<i>Setophaga virens</i>	1	Heard Singing
	Dark-eyed Junco	<i>Junco hyemalis</i>	1	Heard Singing
	White-throated Sparrow	<i>Zonotrichia albicollis</i>	1	Heard Singing
	Northern Parula	<i>Setophaga americana</i>	1	Heard Singing
	Magnolia Warbler	<i>Setophaga magnolia</i>	1	Heard Singing
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North over wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	North to South under wires
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	1	Heard calling
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
07:45:00	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Northern Flicker	<i>Colaptes auratus</i>	1	Heard calling
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to North over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Common Tern	<i>Sterna hirundo</i>	2	South to North over wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South under wires
08:00:00	Great Blue Heron	<i>Ardea herodias</i>	1	Fishing along causeway
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	South to North under wires through ship canal.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires over land East of causeway.
	Great Black-Backed Gull	<i>Larus marinas</i>	1	South to north under wires
08:15:00	Common Tern	<i>Sterna hirundo</i>	1	North to South under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	South to North under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	Foraging along north side of causeway
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	5	Four south to north under wires. One backed off wires
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Great Blue Heron	<i>Ardea herodias</i>	1	South to north under wires
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food south to north over wires. Struggled to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying south to north, went over first set of wires and under second set, looked like it had difficulty.
08:45:00	Northern Gannet	<i>Morus bassanus</i>	1	North to South over wires.
	Herring Gull	<i>larus argentatus</i>	1	North to South under wires
	Blue-headed Vireo	<i>Vireo solitarius</i>	1	Heard Singing
	Blackburnian Warbler	<i>Setophaga fusca</i>	1	Heard Singing
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	5	Heard in area
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	2	South to North over wires
	Herring Gull	<i>Larus argentatus</i>	1	South to north under wires
09:00:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South over wires.
	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	5	Heard east of causeway
	Purple Finch	<i>Haemorhous purpureus</i>	5	Heard in area
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Common Tern	<i>Sterna hirundo</i>	3	North to South over wires.
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	North to South over wires.
	Great Blue Heron	<i>Ardea herodias</i>	1	North to South over wires.
09:15:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Common Tern	<i>Sterna hirundo</i>	1	Fishing along North side of causeway
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
09:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Semipalmated Plover	<i>Charadrius semipalmatus</i>	1	Seen along shore close to causeway
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	Flying north to south over wires. Appeared fairly close to contacting wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to north under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Bank Swallow	<i>Riparia riparia</i>	1	South to north through ship canal
	Northern Gannet	<i>Morus bassanus</i>	3	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.



Table A12: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateJuly 19, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
09:45:00	Lesser Yellowlegs	Tringa flavipes	1	South to north under wires
	Common Raven	Corvus corax	1	Loitering on causeway with fledged young
	Herring Gull	Larus argentatus	1	North to South over wires.
	Great Black-Backed Gull	Larus marinas	1	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North over wires
	Double-crested Cormorant	Phalacrocorax auritas	2	South to North over wires
	Great Black-Backed Gull	Larus marinas	1	North to south between wires
	Common Tern	Sterna hirundo	1	Foraging on north side of causeway
Afternoon Survey: Sunny, wind 25-30 km/hr N.				
14:00:00	Common Tern	Sterna hirundo	1	North to South under wires through ship canal
	Common Tern	Sterna hirundo	1	Fishing along South side of causeway
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires. Both zig-zagged back and forth while approaching wires, struggling to gain altitude.
	Herring Gull	Larus argentatus	1	South to North under wires.
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires through ship canal.
14:15:00	Northern Gannet	Morus bassanus	2	Foraging well north of causeway.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
14:30:00	Herring Gull	Larus argentatus	1	South to North over wires
	Herring Gull	Larus argentatus	1	South to North under wires.
	Great Black-Backed Gull	Larus marinas	1	North to South over wires.
14:45:00	American Goldfinch	Spinus tristis	5	Heard calling
	Song Sparrow	Melospiza melodia	1	Heard Singing
	American Crow	Corvus brachyrhyncos	8	Loitering near causeway
15:00:00	Common Tern	Sterna hirundo	1	Flying North to South, turned into wind and tried to sail over. Looked like it came very close to contacting wires.
	Northern Gannet	Morus bassanus	1	South to North over wires
	Herring Gull	Larus argentatus	1	North to South under wires through ship canal
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Great Black-Backed Gull	Larus marinas	1	South to North under wires through ship canal.
	Herring Gull	Larus argentatus	1	South to North under wires through ship canal.
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires.
15:15:00	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Northern Gannet	Morus bassanus	2	South to North over wires
	Herring Gull	Larus argentatus	1	North to South over wires.
	Herring Gull	Larus argentatus	1	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
15:30:00	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Herring Gull	Larus argentatus	1	South to North under wires.
	Common Tern	Sterna hirundo	2	North to South under wires through ship canal
	Herring Gull	Larus argentatus	1	South to North under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
	Herring Gull	larus argentatus	1	South to North under wires.
	Great Black-Backed Gull	Larus marinas	1	South to North over wires, had to gain altitude to get over wires
15:45:00	Common Tern	Sterna hirundo	1	Carrying food South to North over wires, over land East of causeway.
	Herring Gull	Larus argentatus	3	North to South under wires
	Bald Eagle	Haliaeetus leucocephalus	1	North of causeway, flying across water.
	Common Tern	Sterna hirundo	1	Fishing along North side of causeway
	Herring Gull	Larus argentatus	1	Flying north to South under wires, just above traffic.
16:00:00	Great Black-Backed Gull	Larus marinas	1	North to South over wires.
	Great Black-Backed Gull	Larus marinas	1	North to South under wires
	Herring Gull	Larus argentatus	2	North to South under wires through ship canal
	Herring Gull	Larus argentatus	2	North to South under wires
	Common Tern	Sterna hirundo	1	Carrying food south to north under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires over land East of causeway.
	Common Tern	Sterna hirundo	1	South to North over wires
	Common Tern	Sterna hirundo	1	South to North over wires
16:15:00	Northern Gannet	Morus bassanus	5	Foraging well north of causeway.
	Great Black-Backed Gull	Larus marinas	2	South to North under wires.
	Northern Gannet	Morus bassanus	1	South to North over wires
16:30:00	Herring Gull	Larus argentatus	1	South to North under wires through ship canal.
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
	Herring Gull	Larus argentatus	3	South to North under wires.
	Common Tern	Sterna hirundo	2	North to South over wires. Both had to circle and make second approach.
16:45:00	Northern Gannet	Morus bassanus	1	North to South over wires.
	Herring Gull	Larus argentatus	1	North to South over wires.
	Herring Gull	Larus argentatus	1	North to South under wires
	Double-crested Cormorant	Phalacrocorax auritas	1	North to South under wires
	Herring Gull	Larus argentatus	1	South to North under wires.
17:00:00	Common Tern	Sterna hirundo	1	South to North under wires through ship canal.
	Herring Gull	Larus argentatus	1	South to North over wires
	Common Tern	Sterna hirundo	1	South to North under wires.
	Common Tern	Sterna hirundo	1	Flying South to North, went over wires. Had to make 5 approaches. Stuttered 5 times each approach.
	Double-crested Cormorant	Phalacrocorax auritas	1	South to North under wires.
	Herring Gull	Larus argentatus	1	North to South under wires
	Great Black-Backed Gull	Larus marinas	2	North to South under wires
	Common Tern	Sterna hirundo	1	Carrying food South to North over wires over land East of causeway.
17:15:00	Herring Gull	Larus argentatus	1	South to North over wires
				30+ Gulls patrolling causeway
	Double-crested Cormorant	Phalacrocorax auritas	7	Flying North to South. 2 went over wires, 3 underwires and 2 between wires. All birds had difficulty, at least 2 looked very close to contacting wires.
	Herring Gull	Larus argentatus	2	North to South over wires.
	Herring Gull	Larus argentatus	6	North to South over wires. All had to gain altitude.
	European Starling	Sturnus vulgaris	50	On grass near causeway.
	Herring Gull	Larus argentatus	1	North to South under wires

Table A12: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date July 19, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
17:15:00	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires, over land East of causeway.
	Great Black-Backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	2	North to South over wires. Both had to gain altitude.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Common Tern	<i>Sterna hirundo</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
17:30:00	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	South to North over wires, needed two approaches
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South under wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Great Black-Backed Gull	<i>Larus marinas</i>	1	South to North under wires through ship canal.
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South over wires, had to gain altitude.
17:45:00	Herring Gull	<i>Larus argentatus</i>	1	North to south between wires, looked very close to contacting wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South over wires. Turned into wind to gain altitude.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires.
	Great Black-Backed Gull	<i>Larus marinas</i>	2	South to North under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	Hovering between 2 sets of wires as if it was trapped, appeared distressed. Eventually made it out and headed south. Looked very close to contacting wires 5 times.
	Herring Gull	<i>Larus argentatus</i>	1	South to North under wires through ship canal.
	Common Tern	<i>Sterna hirundo</i>	1	South to North between wires. Made last second adjustments. Had some difficulty.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires, appeared fairly close to contacting wires.
18:00:00	Common Tern	<i>Sterna hirundo</i>	1	Fishing along North side of causeway
	Herring Gull	<i>Larus argentatus</i>	2	South to North under wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	2	North to South under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South over wires, made 3 attempts. First attempt looked very close to contacting wires.
18:15:00	Common Tern	<i>Sterna hirundo</i>	1	North to South under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	North to South under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying North to South, backed off wires at last second. Circled, went over wires on second approach.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires
	Great Black-Backed Gull	<i>Larus marinas</i>	1	Flying North to South, went under first set of wires and over second set. Appeared difficult, looked close to contacting wires.
	Common Tern	<i>Sterna hirundo</i>	1	Fishing in Ship canal
	Herring Gull	<i>Larus argentatus</i>	3	North to South over wires.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires. Needed 3 approaches.
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires, made 2 approaches
18:30:00	Great Black-Backed Gull	<i>Larus marinas</i>	1	South to North under wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	Flying North to South. Flew parallel to wires, circled. Went over lines on second approach. Looked very close to contacting top wires.
	Common Tern	<i>Sterna hirundo</i>	1	Flying North to South, turned into wind and tried to sail over. Looked like it came very close to contacting wires.
	Double-crested Cormorant	<i>Phalacrocorax auritas</i>	1	North to South under wires through ship canal
	Common Tern	<i>Sterna hirundo</i>	1	Carrying food South to North over wires, over land East of causeway.
	Common Tern	<i>Sterna hirundo</i>	1	South to North under wires through ship canal.
	Herring Gull	<i>Larus argentatus</i>	1	North to South over wires.
	Great Black-Backed Gull	<i>larus marinas</i>	1	North to South under wires
18:45:00	Herring Gull	<i>Larus argentatus</i>	2	North to South over wires. Both had to circle and make second approach.
	Northern Gannet	<i>Morus bassanus</i>	1	South to North over wires
	Herring Gull	<i>Larus argentatus</i>	1	North to South under wires
	Common Tern	<i>Sterna hirundo</i>	1	North to South under wires
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	Soaring near quarry.

Species	Number of Individuals Observed
Alder Flycatcher	1
American Crow	8
American Goldfinch	6
Bald Eagle	6
Bank Swallow	1
Belted Kingfisher	1
Blackburnian Warbler	1
Black-throated Green Warbler	1
Blue-headed Vireo	1
Cedar Waxwing	5
Chipping Sparrow	1
Common Raven	1
Common Tern	84
Dark-eyed Junco	1

Date	July 19, 2014
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Species	Number of Individuals Observed
Double-crested Cormorant	102
European Starling	50
Evening Grosbeak	5
Great Black-Backed Gull	54
Great Blue Heron	3
Hermit Thrush	1
Herring Gull	102
Lesser Yellowlegs	1
Magnolia Warbler	1
Northern Flicker	1
Northern Gannet	21
Northern Parula	1
Osprey	1
Purple Finch	5
Red-breasted Nuthatch	1
Semipalmated Plover	1
Song Sparrow	2
Spotted Sandpiper	1
Whimbrel	1
White-throated Sparrow	1
Yellow Warbler	1
TOTAL	474



Table A13: Spring Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Species	Survey 1		Survey 2		Survey 3		Survey 4		Survey 5		Survey 6		TOTAL
	5-Jun-14	6-Jun-14	12-Jun-14	13-Jun-14	18-Jun-14	19-Jun-14	27-Jun-14	28-Jun-14	6-Jul-14	7-Jul-14	18-Jul-14	19-Jul-14	
Alder Flycatcher	1	1	-	-	-	1	1	-	-	1	-	1	6
American Black Duck	-	-	-	-	-	-	2	-	-	2	-	-	4
American Crow	6	3	9	13	9	-	8	-	1	-	15	8	72
American Goldfinch	3	-	-	-	1	6	2	-	-	-	-	6	18
American Kestrel	-	-	-	-	-	-	-	-	-	1	-	-	1
American Redstart	1	1	-	-	1	1	-	1	-	1	-	-	6
American Robin	4	6	1	-	2	1	1	2	2	2	-	-	21
Arctic Tern	1	-	-	-	-	-	-	-	1	-	-	-	2
Bald Eagle	2	-	5	4	-	1	4	3	2	-	1	6	28
Bank Swallow	-	-	-	-	-	-	-	-	-	-	-	1	1
Belted Kingfisher	-	-	-	-	1	1	1	-	-	-	-	1	4
Black-and-white Warbler	-	-	-	-	-	-	1	-	1	-	-	-	2
Blackburnian Warbler	-	-	-	-	1	-	1	-	1	1	1	1	6
Black-capped Chickadee	2	-	-	-	-	-	-	-	-	-	-	-	2
Black-throated Green Warbler	-	-	-	-	-	-	-	1	1	-	-	1	3
Blue Jay	-	-	-	2	-	-	-	1	-	-	-	-	3
Blue-headed Vireo	1	1	-	-	-	-	1	-	1	-	-	1	5
Canada Goose	-	8	-	-	-	-	-	-	-	-	-	-	8
Cedar Waxwing	16	3	-	-	4	-	-	-	-	-	-	5	28
Chestnut Sided Warbler	1	1	-	-	-	-	-	-	-	-	-	-	2
Chipping Sparrow	1	-	-	-	-	-	1	-	-	-	-	1	3
Common Grackle	1	-	-	-	-	-	-	1	1	-	-	-	3
Common Loon	-	-	-	1	1	6	5	6	-	-	-	-	19
Common Merganser	-	-	2	-	-	-	-	-	1	-	-	-	3
Common Raven	3	2	-	10	2	5	1	-	2	6	5	1	37
Common Tern	3	3	12	-	47	78	61	68	90	68	109	84	623
Dark-eyed Junco	-	-	-	-	1	-	-	-	1	-	-	1	3
Double-crested Cormorant	14	17	25	20	18	24	37	83	67	145	76	102	628
Eastern Bluebird	1	-	-	-	-	-	-	-	-	-	-	-	1
European Starling	25	25	1	-	12	-	-	-	-	-	-	50	113
Evening Grosbeak	-	-	-	-	-	-	-	-	-	-	-	5	5
Golden-crowned Kinglet	-	-	-	-	-	-	-	-	1	-	-	-	1
Great Black-Backed Gull	11	11	28	31	8	11	22	12	78	76	65	54	407
Great Blue Heron	-	-	-	-	-	-	2	1	2	1	6	3	15
Gull sp.	-	-	4	1	-	-	-	-	-	-	-	-	5
Hermit Thrush	-	-	-	-	-	-	-	-	-	-	-	1	1
Herring Gull	6	40	30	31	6	17	44	40	94	157	110	102	677
Lesser Yellowlegs	-	-	-	-	-	-	-	-	-	-	-	1	1
Magnolia Warbler	-	1	-	-	-	-	1	1	-	-	1	1	5
Merlin	-	-	-	-	-	-	1	-	-	-	-	-	1
Northern Flicker	-	-	-	-	-	-	1	-	-	-	-	1	2
Northern Gannet	-	-	-	-	-	-	107	26	-	5	18	21	177
Northern Mockingbird	-	-	-	-	-	-	1	-	-	-	-	-	1
Northern Parula	-	-	-	-	-	1	-	-	-	1	1	1	4
Osprey	1	-	-	4	1	1	1	5	1	4	1	1	20
Pigeon	-	-	2	1	-	-	-	-	-	-	-	-	3
Pine Siskin	-	-	-	-	-	-	-	-	-	-	-	-	0
Purple Finch	2	-	-	-	-	-	-	-	-	-	-	5	7
Red Crossbill	-	-	-	-	-	-	-	9	0	-	-	-	9
Red Eyed Vireo	-	-	-	-	-	1	-	-	-	-	-	-	1
Red-breasted Merganser	-	2	-	-	-	-	-	-	-	-	-	-	2
Red-breasted Nuthatch	-	-	-	-	-	-	-	-	-	-	-	1	1
Red-eyed Vireo	-	1	-	-	1	-	-	-	-	1	-	-	3
Red-tailed Hawk	-	-	1	-	-	-	-	-	-	-	-	-	1
Ring-billed Gull	-	-	-	-	-	-	-	-	-	2	-	-	2
Ring-necked Duck	-	-	-	-	-	-	1	-	-	-	-	-	1
Rock Dove	10	11	-	-	6	-	-	-	2	-	-	-	29
Ruby-crowned Kinglet	-	-	-	-	-	-	-	-	1	-	-	-	1
Ruby-throated Hummingbird	1	-	-	-	1	-	-	1	-	-	-	-	3
Semipalmated Plover	-	-	-	-	-	-	-	-	-	-	-	1	1
Song Sparrow	2	3	-	-	1	-	1	1	1	1	1	2	13
Spotted Sandpiper	-	1	-	-	-	-	1	1	-	1	2	1	7
Tern sp	-	-	-	-	-	1	-	-	-	-	-	-	1
Tree Swallow	4	-	-	-	1	1	-	1	-	-	2	-	9
Whimbrel	-	-	-	-	-	-	-	-	-	-	-	1	1
White-throated Sparrow	-	-	-	-	-	-	-	1	-	-	-	1	2
Willet	-	1	-	-	-	-	-	-	-	-	1	-	2
Yellow Warbler	3	2	-	-	2	1	1	1	3	1	1	1	16
Yellow-bellied Sapsucker	-	-	-	-	1	-	-	-	-	-	-	-	1
TOTALS	126	144	120	118	128	158	311	266	355	477	416	474	3093

Flight Path through NSPI Infrastructure Summary			
Under	Over	Between	
14	14		3
10	12		3
20	38		2
11	44		3
15	39		4
19	68		5
47	85		7
71	88		8
107	132		5
128	174		10
165	108		6
144	99		7
TOTALS	751	901	63

Interactions Summary		
Jun-27	Double-crested Cormorant	Hit

Table B1: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateSeptember 17, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Clear, Wind 10-20 km/h NW				
06:15:00	American Crow	<i>Corvus brachyrhynchos</i>	-	Loitering around causeway
	Common Raven	<i>Corvus corax</i>	-	Loitering around causeway
	Song Sparrow	<i>Melospiza melodia</i>	1	Calling
	Great black-backed Gull	<i>Larus marinus</i>	15	Loitering on causeway
	Herring Gull	<i>Larus argentatus</i>	25	Loitering on bridge
06:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	S-N, backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	Under lines S-N, dropped altitude at last second to go under
06:45:00	American Black Duck	<i>Anas rubripes</i>	3	South of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Under lines S-N through ship canal
07:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	Under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Under lines S-N, dropped altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N Some under, some between, most over lines, most birds made adjustments
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N, between, under and over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N most underlines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N all underlines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N most underlines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	75	All underlines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	All underlines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	45	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	S-N underlines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	75	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	S-N most under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	2 between, 1 under lines S-N, all made adjustments
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	18	S-N under lines thorough ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	S-N under lines. Some troubles
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	S-N under lines
07:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S high above lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	18	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N over lines, some gained altitude
	Herring Gull	<i>Larus argentatus</i>	45	N-S between lines, minor troubles
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N over lines
	Herring Gull	<i>Larus argentatus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	S-N over lines, all gained altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	S-N low under lines, gained altitude to avoid traffic
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines through ship canal, minor troubles
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>		Loitering on causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
08:00:00	Blue Jay	<i>Cyanocitta cristata</i>	25	Loitering over land, flying N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines. Backtracked to gain altitude over traffic, flying low.
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
08:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	S-N under lines
	Blue Jay	<i>Cyanocitta cristata</i>	30	N-S, over land
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
08:30:00	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	S-N under lines, some made adjustments
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	S-N under lines

Table B1: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateSeptember 17, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	Loitering on bridge and wharf
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines near ship canal
08:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines near ship canal
	Great Blue Heron	<i>Ardea herodias</i>	1	S-N under lines through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	American Crow	<i>Corvus brachyrhynchos</i>	2	N-S over lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	fishing from causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N over lines, high above wires
	American Black Duck	<i>Anas rubripes</i>	1	N-S under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	2	fighting under lines over causeway
	Blue Jay	<i>Cyanocitta cristata</i>	15	N-S under lines, east of ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N over lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S high above wires
09:00:00	Blue Jay	<i>Cyanocitta cristata</i>	3	attempting to cross straight, having difficulty flying into wind
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S soaring high above lines
	Common Raven	<i>Corvus corax</i>	1	N-S under lines
09:45:00	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N between lines
Clear, Wind 20-25 NW				
10:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	Loitering on wharf
	Gulls	-		Several foraging on grass close to causeway
	Boreal chickadee	<i>Poecile hudsonicus</i>	1	Calling east of causeway
	Common Merganser	<i>Mergus merganser</i>	19	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S high over wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S over liense
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S through ship canal
	Red-tailed hawk	<i>Buteo jamaicensis</i>	1	N-S under lines E over land
	Blue Jay	<i>Cyanocitta cristata</i>	50	N-S over wires east land
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	Foraging N of causeway with gulls
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	60	Foraging N of causeway
	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	Foraging N of causeway
	Herring Gull	<i>Larus argentatus</i>	5	Foraging N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S unde rlines
	Ring-billed Gull	<i>Larus delawarensis</i>	1	Foraging near causeway
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	100	N side of causeway
	Herring Gull	<i>Larus argentatus</i>	25	
Afternoon Survey: Sunny, Wind 20km/hr N				
02:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	20	Feeding N of causeway
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines, minor adjustments
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
03:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
03:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N- S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, made 3 approaches
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	3	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:00:00	Great black-backed Gull	<i>Larus marinus</i>	5	Foraging along N side of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	5	Foraging on N side of causeway
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Pigeon	#N/A	8	N-S, 3 between, 5 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines

Table B1: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateSeptember 17, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
04:30:00	Belted Kingfisher	Megaceryle alcyon	1	
	Bald Eagle	Haliaeetus leucocephalus	1	Soaring high above wires
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S over wires, both did 2 large circles to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
4:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S, 2 under lines, 1 backed off, circled then went over lines
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
04:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S, made 3 attempts at crossing then went between lines. Almost hit - CLOSE
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	26	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, some trouble
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S backed off made 3 approaches then over
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines
	Double-crested Cormorant	Phalacrocorax auritus	5	Circling to gain altitude, N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S, all backed off lines,
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
05:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S backed off, made 5 approaches appeared to give up and go back N
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines; making to many approaches hard to keep track; some circle all the way to north end of canal
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, 2 approaches
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, some trouble
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, some trouble
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S, 2 approaches then between lines
	Double-crested Cormorant	Phalacrocorax auritus	1	Hit wires, landed on road, dead
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, made adjustment
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
05:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	3	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	6	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S, flew parallel to lines for altitude then went between lines with some difficulty
	Herring Gull	Larus argentatus	5	Bothering makerel fisherman
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines after 2 approaches
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Great Blue Heron	Ardea herodias	1	N-S under lines
05:30:00	Double-crested Cormorant	Phalacrocorax auritus	8	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	14	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S between lines, some trouble, made 2 approaches
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S back tracked, both circling
	Double-crested Cormorant	Phalacrocorax auritus	20	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, had trouble
05:45:00	Double-crested Cormorant	Phalacrocorax auritus	50	N-S most under lines, 1 between lines with trouble
	Double-crested Cormorant	Phalacrocorax auritus	8	N-S under lines
	Merlin	Falco columbarius	5	Hunting around causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, 3 approaches
	Great Blue Heron	Ardea herodias	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S, backed off wires, eventually went under
	Double-crested Cormorant	Phalacrocorax auritus	18	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, some trouble
	Double-crested Cormorant	Phalacrocorax auritus	300	Some between, over, under. Several close calls, lots of adjustments
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S looked like it hit wires, tumbled but straightened before landing S of causeway, close call
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	20	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S over lines, had to gain altitude
06:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, had trouble
06:00:00	Double-crested Cormorant	Phalacrocorax auritus	5	N-S backing off wires, circling

Table B1: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 17, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires, circling
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines, 1 made adjustment
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Fishing from N end of ship canal
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	30	Fishing at N end of ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
06:30:00	Great Blue Heron	<i>Ardea herodias</i>	1	Flying west across N harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Flying low over causeway, had to avoid traffic
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
06:45:00	Osprey	<i>Pandion haliaetus</i>	1	N-S between lines, caught fish and flew back over lines S-N
	Herring Gull	<i>Larus argentatus</i>	3	S-N over lines, had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	6	N-S under lines through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, had to gain altitude
	Great black-backed Gull	<i>Larus marinus</i>	50	Swimming around N end of ship canal
07:00:00	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines through ship canal
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	2	Feeding on N side of causeway
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S under lines through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
07:15:00	Herring Gull	<i>Larus argentatus</i>	5	Loitering around causeway
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	E-W across N harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N over lines, high above wires

Species	Number of Individuals Observed
American Black Duck	4
American Crow	2
Bald Eagle	7
Belted Kingfisher	6
Black-headed Gull	1
Blue Jay	123
Bonaparte's Gull	217
Boreal chickadee	1
Common Merganser	19
Common Raven	1
Double-crested Cormorant	2112
Great black-backed Gull	85
Great Blue Heron	7
Herring Gull	138
Merlin	5
Osprey	1
Pigeon	8
Red-tailed hawk	1
Ring-billed Gull	1
Song Sparrow	1



Table B2: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateSeptember 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Clear, Wind 10-15 km/h SE				
06:30:00	Belted Kingfisher	Megaceryle alcyon	1	On causeway
	Great Blue Heron	Ardea herodias	3	On N side of causeway
06:45:00	Common Merganser	Mergus merganser	30	S-N over lines, all had to gain altitude
	Bald Eagle	Haliaeetus leucocephalus	1	Chasing osprey for fish
	Gulls	-	30	N-S, between, over, under. Most going to hang out on bridge
	Bald Eagle	Haliaeetus leucocephalus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great black-backed Gull	Larus marinus	3	N-S over lines, had to circle once to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Great Blue Heron	Ardea herodias	6	N side of causeway
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N between lines, had trouble
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N all between lines, two had minor trouble, other 2 close calls
	Warbler sp.	-	6	N-S over lines, east land route
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Herring Gull	Larus argentatus	1	S-N, made 4-5 attempts then over
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N over lines, gained altitude
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines, one back tracked the went over
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N some between lines, one struck wires land in water, dead. Several close calls
	Double-crested Cormorant	Phalacrocorax auritus	30	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	100	Between, under lines, several close calls
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N some between, several had trouble
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	18	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Great black-backed Gull	Larus marinus	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Blue Jay	Cyanocitta cristata	30	N-S east land route
	Double-crested Cormorant	Phalacrocorax auritus	150	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Great black-backed Gull	Larus marinus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N between lines, had trouble
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	16	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	9	S-N over lines had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N over lines
	Great Blue Heron	Ardea herodias	8	Fishing N side causeway
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N 2 approaches then under
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines
08:00:00	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N over lines
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Gulls	-	5	Foraging around causeway
	American Crow	Corvus brachyrhynchos	5	Foraging around causeway
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N over lines
	Belted Kingfisher	Megaceryle alcyon	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N underlines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
08:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S underlins
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Herring Gull	Larus argentatus	1	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	3	S-N over lines

Table B2: Fall Active Observation Survey, Canso Causeway Bird Study

DateSeptember 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
08:30:00 AM	Arctic Tern	<i>Sterna paradisaea</i>	8	N-S over lines, 3 made 2 approaches, 1 made 3
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
08:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	300	Loitering at N end of ship canal
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	100	Near Aulds Cove
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>		
09:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
09:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines through ship canal
	Great Blue Heron	<i>Ardea herodias</i>	2	W-E north of causeway
	Herring Gull	<i>Larus argentatus</i>	2	S-N under lines through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	8	Between lines, N-S then back S-N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N circled once then under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
09:30:00	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	40	Feeding 800 m N of causeway
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	S-N under lines, had to drop altitude at last minute
09:45:00	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines, through ship canal
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>		Staying on N side of causeway
	Gulls	-	5	Foraging around causeway
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, 3 approaches
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Fishing in ship canal
Cloudy, Wind 10-15 km/h SW				
09:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Herring Gull	<i>Larus argentatus</i>	3	S-N over lines all gained altitude
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Blue Jay	<i>Cyanocitta cristata</i>	75	N-S between lines then NW across N harbour to mainland
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Blue Jay	<i>Cyanocitta cristata</i>	12	N-S under lines, east land route
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	2	S-N both had to circle then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N turned back at last second, did circle then over, close to wires, close call
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>		
Afternoon Survey: Partly overcast, Wind 20-25km/hr W				
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	300	Feeding frenzy on N side of Causeway just west of lighthouse island
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	5	Feeding with cormorants
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	2	On causeway fishing, fighting
	Ring-billed Gull	<i>Larus delawarensis</i>	2	Loitering on causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S tried to go over at last second, lost control, close call
03:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines near ship canal
	Common Raven	<i>Corvus corax</i>	2	Patrolling causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	Soaring over N harbour
	Osprey	<i>Pandion haliaetus</i>	1	Soaring over N harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Osprey	<i>Pandion haliaetus</i>	1	S-N between lines, had trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
03:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Common Raven	<i>Corvus corax</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines near ship canal
03:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S flying fast, hit brakes, dropped and went under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines through ship canal
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1	N-S east land route
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S gained altitude, still backed off wires twice finally went under

Table B2: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateSeptember 18, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines, 1 made 2 attempts
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S backed off wires
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
04:30:00	Great black-backed Gull	<i>Larus marinus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:45:00	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Fishing in ship canal
	Common Raven	<i>Corvus corax</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires, second approach under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under linese
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, zig zag approach
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	2	N-S under lines through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	N-S approach wires, backed off at last second, second approach over lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Several attempts finally over lines S-N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines, scared by large truck and went back N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	Most under lines N-S, several backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines, had some trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	11	N-S backed off wires, gained altitude then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S most under lines, several backed off
05:30:00	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	8	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	3	N-S over lines, gained altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires at last second
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines, several made adjustments for tractor trailers on causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S backed off lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines had trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines had trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines, close call
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	400	N-S under lines, a few backed off, 1 over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires, 3 approaches, over lines



Table B2: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 18, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines, 1 avoided truck
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed of wires, 3 approaches, under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S high above wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
06:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S over lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S under lines
	Osprey	<i>Pandion haliaetus</i>	1	With fish N-S east land route over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
6:45:00	Herring Gull	<i>Larus argentatus</i>	2	S-N over lines
	Herring Gull	<i>Larus argentatus</i>	3	Travelling back and forth through ship canal
	Great black-backed Gull	<i>Larus marinus</i>	3	S-N under lines
7:00:00	Great black-backed Gull	<i>Larus marinus</i>	1	S-N between lines, had trouble
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Gulls	-		Hovering around causeway
7:15:00	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Fishing in ship canal
	Great black-backed Gull	<i>Larus marinus</i>	1	Hovering above ship canal, almost sailed into wires, some trouble

Species	Number of Individuals Observed
American Crow	5
Arctic Tern	8
Bald Eagle	11
Belted Kingfisher	7
Blue Jay	117
Bonaparte's Gull	172
Common Merganser	30
Common Raven	5
Double-crested Cormorant	3086
Great black-backed Gull	20
Great Blue Heron	22
Gulls	40
Herring Gull	29
Osprey	3
Red-tailed Hawk	1
Ring-billed Gull	2
Warbler sp.	6

Table B3: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 22, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Raining, Wind 70-90 km/h SE visibility very poor				
06:45:00	Great Blue Heron	Ardea herodias	1	Blown into N harbour, managed to get back in air, scared by truck
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N over lines turning into wind, gaining altitude then over. Having trouble, many dropping into south harbour.
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N
	Double-crested Cormorant	Phalacrocorax auritus	50	Under, between and over lines, having trouble with wind, some drop in S.Harbour
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	50	Many dropping in S.Harbour
	Double-crested Cormorant	Phalacrocorax auritus	40	Most dropping in S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	12	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	Few under lines, most S.Harbour
	Double-crested Cormorant	Phalacrocorax auritus	50	Half over lines, half S.Harbour
	Double-crested Cormorant	Phalacrocorax auritus	50	Most over lines
	Double-crested Cormorant	Phalacrocorax auritus	50	Most over lines, some from S. Harbour
	Ring-billed Gull	Larus delawarensis	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	Took off from S.Harbour. Some over line S-N, other dropped back.
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	12	Under and over lines, some trouble
	Double-crested Cormorant	Phalacrocorax auritus	75	Taking of from S.Harbour, some over lines some under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
08:00:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	100	S-N most over lines fairly high, some under lines, several stayed in S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	9	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Great Black-backed Gull	Larus marinus	2	Hovering over causeway
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N, 40+ over lines, few under lines, 20 stayed in S.Harbour
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	25	In S.Harbour, waiting to cross
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
	Northern Gannet	Morus bassanus	1	Flying over S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
08:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
	Common Merganser	Mergus merganser	3	In S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
08:45:00	Double-crested Cormorant	Phalacrocorax auritus	4	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N between lines, not too much trouble
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	Loitering on South wharf
	Herring Gull	Larus argentatus	4	Loitering on South wharf
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	Approach lines S-N, stay in S.Harbour
	Bonaparte's Gull	Chroicocephalus philadelphia	2	In S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, turn into wind then over
	Bonaparte's Gull	Chroicocephalus philadelphia	2	S-N, both between , both had trouble
09:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N turn into wind then over lines after gaining altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	15	S-N, 9 over lines, 2 between lines with some trouble, 1 under line, and 3 stayed in S. Harbour
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N, 5 over lines, 1 under lines. Had to turn into wind for altitude.
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N over lines after turn into wind
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines, turn into wind then over
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
09:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, turn into wind then over
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, east over land
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N turn into wind then over lines after gaining altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, turn into wind then over
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N turn into wind then over lines after gaining altitude

Table B3: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 22, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
10:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N between lines, not too much trouble
	American Crow	<i>Corvus brachyrhynchos</i>	7	Loitering on S side of causeway on grass
	Herring Gull	<i>Larus argentatus</i>	73	Loitering N of causeway
10:15:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines, low over causeway
Sky clearing, Wind 30 km/h				
10:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	Over lines, turn into wind and gain altitude
10:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	American Black duck	<i>Anas rubripes</i>	2	In S. Harbour
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
10:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	Loitering on S. side of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
Afternoon Survey: Sunny, Wind 30-40km/hr W				
02:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N over lines
	Gulls	-	5	Several gulls on south wharf
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	On south wharf
03:15:00	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	6	Fishing N of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
03:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	150	Flew from N wharf all under lines N-S
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
03:45:00	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	17	4 over lines, 13 under lines, N-S
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	9	S-N under lines
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	High over lines, S-N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:30:00	Sharp-shinned Hawk	<i>Accipiter striatus</i>	1	Flying over land east of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S, 9 under lines, 3 backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	14	N-S, 10 under lines, 4 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S, 2 under lines, 2 backed off
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines, had some trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S, 2 approaches, under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	20	Feeding N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S, 14 over lives, 1 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines, had some trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S, flew parallel with wires into wind gaining altitude then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines

Table B3: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 22, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S , 1 between lines minor trouble, 1 over lines and 5 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines through ship canal
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S flew parallel to lines then over
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S, 3 under lines, 17 over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
06:00:00	Herring Gull	<i>Larus argentatus</i>	3	N-S under lines through ship canal
	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S, 5 under lines, 1 backed off flew parallel then over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S underlines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S underlines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S over lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	98 under lines, 1 between lines with trouble, 1 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	21	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S most over lines, 2 between lines with trouble, 3 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S between lines with trouble
06:30:00	Sharp-shinned Hawk	<i>Accipiter striatus</i>	1	N-S over lines east land route
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
06:45:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	2	E-W across N.Harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S, 1 backed off, 1 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off at last second
	Great Black-backed Gull	<i>Larus marinus</i>	30	Loitering on grass N of causeway

Table B3: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 22, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
07:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines through ship canal
07:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines

Species	Number of Individuals Observed
American Black duck	2
American Crow	7
Bald Eagle	4
Bonaparte's Gull	30
Common Merganser	3
Double-crested Cormorant	2018
Great Black-backed Gull	55
Great Blue Heron	4
Gulls	5
Herring Gull	87
Northern Gannet	1
Ring-billed Gull	1
Sharp-shinned Hawk	2

Table B4: Fall Active Observation Survey, Canso Causeway Bird Study

Date	September 23, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Partly overcast, Wind 20 km/h NW				
06:45:00	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	60	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	Under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	200	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	70	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	60	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N under lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Herring Gull	Larus argentatus	1	N-S over lines
	Herring Gull	Larus argentatus	2	N-S under lines
	Ring-billed Gull	Larus delawarensis	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	15	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Common Loon	Gavia immer	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Common Merganser	Mergus merganser	7	S-N over lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
07:45:00	Great Blue Heron	Ardea herodias	1	-
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
08:00:00	Great Black-backed Gull	Larus marinus	2	S-N under lines
	Great Black-backed Gull	Larus marinus	25	N-S over lines
	Herring Gull	Larus argentatus	5	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S backed off, circled then over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Black-backed Gull	Larus marinus	1	N-S under lines through ship canal
08:15:00	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
08:45:00	Great Black-backed Gull	Larus marinus	1	N-S under lines
	Gulls	-		Loitering around causeway
	Herring Gull	Larus argentatus	1	N-S under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, not much trouble
	Common Raven	Corvus corax	1	N-S over lines
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	2	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	2	N-S over lines
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Northern Gannet	Morus bassanus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
09:30:00	Blue Jay	Cyanocitta cristata	1	S-N over lines
	Great Black-backed Gull	Larus marinus	1	N-S over lines
	Herring Gull	Larus argentatus	2	S-N under lines
	Ring-billed Gull	Larus delawarensis	1	On causeway
Wind 40-50 km/hr				
09:45:00	Common Raven	Corvus corax	1	Hovering under lines along causeway
	American Crow	Corvus brachyrhynchos	50	East of ship canal flying over trees
10:00:00	Great Blue Heron	Ardea herodias	1	N-S over lines
	American Goldfinch	Spinus tristis	2	Flying east to west over harbour
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	200	Loitering on north wharf
	Northern Harrier	Circus cyaneus	1	Tried to fly fly over harbour but wind too strong
Wind 50+ km/h				
10:00:00	American Crow	Corvus brachyrhynchos	3	N-S over lines
	Bald Eagle	Haliaeetus leucocephalus	1	Soaring high over lines N-S, 2 more soaring over N Harbour
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
Afternoon Survey: Sunny, wind 50km/hr N				
03:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	N-S, 2 over lines, one between lines, looked like it grazed wires, close call, 4 under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S backed of wires at last second, turning into wind, struggling to more forward, then going back over lines
	Common Raven	Corvus corax	2	Patrolling causeway
03:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Black-backed Gull	Larus marinus	1	S-N under lines



Table B4: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 23, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
03:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S, 1 under lines, 1 backed off
03:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N through ship canal under lines, 2 approaches
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines through ship canal
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, turn into wind then over
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind then over, 3 approaches
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off, 2 approaches, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	2 backed off, 1 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	2 backed off, 3 approaches over lines, 1 under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires, circled, under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S turn into wind, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires, 2 approaches, over lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S underlines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S, 8 under lines, 1 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S, all backed off, went under lines after watching another cormorant do it
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	23	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S, 1 under, 1 over, had trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines first set, over second set, close call
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S under lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S, 3 backed off, 22 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines, 2 through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S 2 over lines, 4 under lines
Wind 40 km/hr				
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	11	N-S under lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	100	Feeding north of canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines, 1 through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S high over lines
	Great Blue Heron	<i>Ardea herodias</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind, under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	5	Fighting over food, came close to wires. Close call.
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
Wind 30-40 km/hr				
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S, 1 under lines, 6 turn into wind then over, 2 came close
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Backed off wires, then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines, had trouble
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S, 2 over lines, 2 under lines, 2 turn into wind then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	3 over lines, 1 between lines, close call
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S, 5 under lines, 1 over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	7 over lines, several barely made it, 1 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S 1 over lines, 2 turned into wind then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	7 under lines, 1 over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S 2 under lines, 2 over lines

Table B4: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	September 23, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines with trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	60	N-S, 10 had trouble over lines, 10 backed off, 40 over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	High over wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	3 backed off, 6 over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	Several over lines with trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	Over lines 20 with trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S backed off, 2 close calls
06:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	11	N-S, 7 over lines, 4 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S backed off, gained altitude then over lines
	Herring Gull	<i>Larus argentatus</i>	4	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off last second, close call
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	1 turned into wind, over lines with trouble, other under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	20	On grass by causeway
	Herring Gull	<i>Larus argentatus</i>	20	On grass by causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Over lines, high above
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
06:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	In ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Gulls	-	100	Loitering on grass near rocks
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	Flying E-W across harbour.

Species	Number of Individuals Observed
American Crow	53
American Goldfinch	2
Bald Eagle	3
Belted Kingfisher	1
Blue Jay	1
Bonaparte's Gull	100
Common Loon	1
Common Merganser	7
Common Raven	4
Double-crested Cormorant	1947
Great Black-backed Gull	52
Great Blue Heron	5
Gulls	100
Herring Gull	47
Northern Gannet	1
Northern Harrier	1
Ring-billed Gull	2

Table B5: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateOctober 4, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy, foggy, Wind 25-30 km/h SE, fog cleared within first hour				
06:45:00	American Crow	Corvus brachyrhynchos		Loitering around causeway
	Gulls	#N/A		Loitering around causeway
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	15	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Great black-backed Gull	Larus marinus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N, 20 over lines, 5 under lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	30	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N over lines, all gained altitude
	Double-crested Cormorant	Phalacrocorax auritus	100	S-N
	Double-crested Cormorant	Phalacrocorax auritus	60	20 between lines, several close calls, 20 backed off, 20 over lines with adjustment to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	70	S-N over lines, many had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N over lines, many had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	6	Soaring over quarry
	Double-crested Cormorant	Phalacrocorax auritus	80	S-N between lines, under lines, over lines, 2-3 close calls, 2 backed off
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	4	N-S under lines
	Belted Kingfisher	Megasceryle alcyon	1	Fishing from causeway, N side
	Herring Gull	Larus argentatus	1	Fishing from causeway, N side
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N high above lines
	Common Loon	Gavia immer	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	Several between lines, close calls
	Double-crested Cormorant	Phalacrocorax auritus	1	Hit wires, fell into water, alive but cant fly
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines, dropped altitude at last second to go under
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Common Loon	Gavia immer	2	N-S high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, high above
	Great black-backed Gull	Larus marinus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	70	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N, 1 under lines, 1 over lines
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines, all dropped altitude at last minute to go under
	Iceland Gull	Larus glaucoides	1	S-N over lines
	Great black-backed Gull	Larus marinus	5	Fishing around causeway
	Great Blue Heron	Ardea herodias	1	N-S over lines, had to gain altitude
08:00:00	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Great black-backed Gull	Larus marinus	1	N-S over lines, 2 approaches to gain altitude
	Ring-billed Gull	Larus delawarensis	1	N-S over lines, gained altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Blue Jay	Cyanocitta cristata	3	Flying S over land east of causeway
08:15:00	Common Merganser	Mergus merganser	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Great black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Herring Gull	Larus argentatus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:30:00	Herring Gull	Larus argentatus	1	N-S over lines, 10 approaches, couldn't gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Herring Gull	Larus argentatus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
08:45:00	Herring Gull	Larus argentatus	1	N-S over lines, 7 approaches
	Herring Gull	Larus argentatus	6	S-N over lines, 2 gained altitude at last second to clear wires
	Bald Eagle	Haliaeetus leucocephalus	1	Flying N-S, low, over lines, 2 approaches
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N high over lines
	Herring Gull	Larus argentatus	2	S-N under lines
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, barely made it, lost control, close call
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Common Raven	Corvus corax	2	Hovering over causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
09:30:00	Surf scoter	Melanitta perspicillata	7	N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal, landed in water



Table B5: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateOctober 4, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
09:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	Loitering on N wharf
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, 2 approaches
10:00:00	Blue Jay	<i>Cyanocitta cristata</i>	4	N-S east over land
	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	East of causeway
10:15:00	Great black-backed Gull	<i>Larus marinus</i>	30	Loitering on S wharf
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
10:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Common Merganser	<i>Mergus merganser</i>	11	Over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	American Goldfinch	<i>Spinus tristis</i>	1	Heard overhead
10:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	Fishing on N side of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
Afternoon Survey: Wind 30-40km/hr SE				
02:45:00	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S under lines
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
03:15:00	Swamp Sparrow	<i>Melospiza georgiana</i>	1	East of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
03:30:00	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	Loitering at N end of ship canal
	Herring Gull	<i>Larus argentatus</i>	1	Blown backwards between lines, close call
	Common Raven	<i>Corvus corax</i>	2	Hovering over causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
04:00:00	Herring Gull	<i>Larus argentatus</i>	1	N-S, 5 approaches, went under, had trouble
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	3	N of causeway
	Great black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
04:15:00	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Gulls	-	15	Hovering around causeway
04:30:00	Gulls	-		Along causeway
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines, low over causeway due to break in traffic
05:00:00	Herring Gull	<i>Larus argentatus</i>	1	S-N, turn into wind gained altitude, sailed over lines
	Herring Gull	<i>Larus argentatus</i>	3	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, had to gain altitude
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	N of causeway
05:15:00	Herring Gull	<i>Larus argentatus</i>	1	N-S, 6 approaches, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Common Merganser	<i>Mergus merganser</i>	6	S-N high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S over lines, east land route, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	60	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires at last second, fairly close
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	30	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Duck sp.	-	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	80	N-S several backed off, several over lines with trouble, rest under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	80	N-S 60 under lines with adjustments, 20 backed off, 2nd approach 6 backed off then over lines
	Common Merganser	<i>Mergus merganser</i>	50	N- of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines

Table B5: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 4, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	E to W across harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	Struggle to gain altitude, over lines S-N
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	120	All except 1 under lines N-S
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had trouble
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off, circled, went under lines after watching two others
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N turn into wind, struggle to gain altitude, then over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	16	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	E-W over harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	N-S under lines, 1 backed off
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N turn into wind, gain altitude, over lines
06:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	60	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	Over lines, west side of causeway over land
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	3	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Gulls	-	100	Flying east across N. Harbour

Species	Number of Individuals Observed
American Goldfinch	1
Bald Eagle	8
Belted Kingfisher	2
Blue Jay	7
Bonaparte's Gull	3
Common Loon	3
Common Merganser	68
Common Raven	4
Double-crested Cormorant	1864
Duck sp.	2
Great black-backed Gull	50
Great Blue Heron	4
Gulls	115
Herring Gull	36
Iceland Gull	1
Ring-billed Gull	1
Surf scoter	7
Swamp Sparrow	1
Yellow-rumped warbler	1

Table B6: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 5, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Cloudy, Wind 15-20 km/h SE				
06:45:00	Gulls	-		On causeway
	American Crow	Corvus brachyrhynchos		On causeway
	Bald Eagle	Haliaeetus leucocephalus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Dark-eyed Junco	Junco hyemalis	1	Heard east of causeway
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	80	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	Over first set, under seond set, had trouble
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N over lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	60	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	40	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	4	2 between lines with trouble, 2 under lines
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N, 20 backed off, 5 between lines with a lot of trouble, 15 under lines/over lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N, 15 over lines
	Double-crested Cormorant	Phalacrocorax auritus	120	Most over lines, some between lines, one hit wires, regained control before it hit water, kept flying
	Double-crested Cormorant	Phalacrocorax auritus	60	S-N between lines, over lines, under lines, a lot had trouble
	Double-crested Cormorant	Phalacrocorax auritus	10	under, between and over lines
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N between, over and under, lots with trouble
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N over lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N one over lines, one over first set, under second set, had trouble
	Herring Gull	Larus argentatus	50	Loitering near causeway
	Great Black-backed Gull	Larus marinus		Loitering near causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	N-S over lines, had to work to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, struggle to gain altitude at last minute
	Great Black-backed Gull	Larus marinus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N, angled approach to gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N gained altitude, over lines
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N, high Over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	Under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines
08:00:00	Pine Grosbeak	Pinicola enucleator	1	Heard east of causeway
	Common Loon	Gavia immer	2	N-S high over lines
	Great Blue Heron	Ardea herodias	1	Flying west, low over water
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Black-backed Gull	Larus marinus	1	S-N over lines, gained altitude
08:15:00	Common Grackle	Quiscalus quiscula	50	Over lines, then west over harbour
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Song Sparrow	Melospiza melodia		On island with lighthouse
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
08:30:00	Belted Kingfisher	Megaceryle alcyon	1	On causeway
	Herring Gull	Larus argentatus	1	S-N under lines through ship canal
08:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	American Goldfinch	Spinus tristis		Heard east of causeway
	American Robin	Turdus migratorius	1	Heard east of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Common Raven	Corvus corax	2	Perched on towers
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Blue Jay	Cyanocitta cristata	5	S-N over lines, east over land
09:15:00	Herring Gull	Larus argentatus	1	S-N turn into wind, gain altitude, over lines
09:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
09:45:00	Pine Grosbeak	Pinicola enucleator	3	East of causeway
	Great Black-backed Gull	Larus marinus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
10:00:00	Herring Gull	Larus argentatus	1	N-S backed off, 3 approaches, over lines
	Bonaparte's Gull	Chroicocephalus philadelphia	1	N of causeway
10:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N between lines, looked like close call
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines



Table B6: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 5, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
10:30:00	American Robin	<i>Turdus migratorius</i>	6	Flying S over wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Blue Jay	<i>Cyanocitta cristata</i>	40	N-S under lines, east land route
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	Loitering on N. wharf
10:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S soaring over lines
	Herring Gull	<i>Larus argentatus</i>	2	S-N under lines
Afternoon Survey: Wind 30-40km/hr SE, Sunny				
02:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:00:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	American Crow	<i>Corvus brachyrhynchos</i>		Loitering around causeway
	Common RAven	<i>Corvus corax</i>	2	Loitering around causeway
	Guills	#N/A		Loitering around causeway
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
03:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
03:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	N of causeway
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires, then went under near tower
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S under lines
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	E turn into wind across harbour
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
Clouded over				
04:45:00	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines, just above traffic
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N between lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	35	N-S under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	10	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines, had to gain altitude
	Surf Scoter	<i>Melanitta perspicillata</i>	2	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N turn into wind, gain altitude, over lines with trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines, 1 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	90	N-S under lines, 5 backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Common Merganser	<i>Mergus merganser</i>	1	E-W over harbour
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	E-W over harbour
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
05:45:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N turn into wind, gained altitude then over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	120	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S backed off wires, joined up with next 50
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>		

Table B6: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 5, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S 2 backed off, 18 under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	60	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	90	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	35	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	Fishing on causeway
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off, 2 approach, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over linese
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
06:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Common Merganser	<i>Mergus merganser</i>	4	N-S under lines, backed off slightly
06:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines

Species	Number of Individuals Observed
American Robin	7
Bald Eagle	7
Belted Kingfisher	2
Blue Jay	45
Bonaparte's Gull	1
Common Grackle	50
Common Loon	2
Common Merganser	5
Common Raven	4
Dark-eyed Junco	1
Double-crested Cormorant	1758
Great Black-backed Gull	16
Great Blue Heron	3
Herring Gull	60
Pine Grosbeak	4
Surf Scoter	2

Table B7: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 11, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Clear, Wind 10-15 km/h W				
06:45:00	Great Blue Heron	Ardea herodias	3	Fishing on N side of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines through ship canal
	Herring Gull	Larus argentatus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	15	NS-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	75	S-N over lines, far side of causeway
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines through ship canal
	Herring Gull	Larus argentatus	1	S-N over lines, struggled to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N, most over lines, 5 between, 2 backed off
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Hairy Woodpecker	Picoides villosus	1	Landed on tower flew back to Cape Breton tree line
	Double-crested Cormorant	Phalacrocorax auritus	19	S-N under lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal
	Great Black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N over lines, far west side, high
	Double-crested Cormorant	Phalacrocorax auritus	9	S-N over lines, far west side, high
	Song Sparrow	Melospiza melodia	1	In area
	American Robin	Turdus migratorius	1	In area
	Double-crested Cormorant	Phalacrocorax auritus	15	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	American Crow	Corvus brachyrhynchos	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Ring-billed Gull	Larus delawarensis	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Blue Heron	Ardea herodias	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Black-backed Gull	Larus marinus	2	N-S over lines, had to gain altitude
	Herring Gull	Larus argentatus	1	N-S over lines, had to gain altitude
	Herring Gull	Larus argentatus	1	N-S over lines, struggle to gain altitude, close to wires
	Common Raven	Corvus corax	1	Loitering near causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:00:00	Pine Grosbeak	Pinicola enucleator	1	On Cape Breton side of causeway
	Savannah Sparrow	Passerculus sandwichensis	1	Foraging near ship canal
	Great Black-backed Gull	Larus marinus	1	S-N under lines
	Herring Gull	Larus argentatus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	1	N-S over lines
	Bald Eagle	Haliaeetus leucocephalus	1	S-N over lines
	Merlin	Falco columbarius	1	East of causeway
08:30:00	Purple finch	Carpodacus purpureus	1	East of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Pigeons	#N/A	20	Flying around ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	16	Loitering near causeway
08:45:00	Great Black-backed Gull	Larus marinus	2	Loitering near causeway
	American Robin	Turdus migratorius	75	East of causeway
	Blue Jay	Cyanocitta cristata	2	Crossing water E to W
	Herring Gull	Larus argentatus	1	N-S over lines, had to gain altitude
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Yellow-rumped Warbler	Dendroica coronata	1	E to W across harbour
09:15:00	Herring Gull	Larus argentatus	12	Fishing N of causeway
	Great Black-backed Gull	Larus marinus	2	Fishing N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	6	Fishing N of causeway
Wind 15-20 km				
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
09:30:00	Pine Grosbeak	Pinicola enucleator	2	East of causeway
	Herring Gull	Larus argentatus	1	S-N under lines through ship canal
	Herring Gull	Larus argentatus	1	N-S under lines, circling below close to wires a couple times
	Herring Gull	Larus argentatus	1	N-S under lines
	Song Sparrow	Melospiza melodia	6	In M.Rose on lighthouse island
09:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Belted Kingfisher	Megaceryle alcyon	1	Near causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	4	N-S over lines high
	Herring Gull	Larus argentatus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, had to gain altitude

Table B7: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 11, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
10:00:00	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S over lines
	American Crow	<i>Corvus brachyrhynchos</i>	2	S-N under lines
10:15:00	Herring Gull	<i>Larus argentatus</i>	12	Feeding on schools of fish N of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	2	Feeding on schools of fish N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Feeding on schools of fish N of causeway
10:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
10:45:00	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
Afternoon Survey: Wind 10-15km/hr N, Cloudy				
02:45:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, 3 approaches
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, 2 approaches
03:30:00	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines through ship canal
03:45:00	Black-capped Chickadee	<i>Poecile atricapillus</i>		Several east of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
04:00:00	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, struggle to gain altitude
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines,had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S over lines
04:15:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	3	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	27	N side of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	4	N side of causeway
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N side of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N between lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S high over lines
	White-winged Scoter	<i>Melanitta fusca</i>	4	Flying N of causeway
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	4	N-S high over lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	80	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	22	N-S high over lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Juvenile chasing gulls
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Caspian Tern	<i>Hydroprogne caspia</i>	2	S-N high
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	Flying N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	6	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S high over lines
	Great Blue Heron	<i>Ardea herodias</i>	1	N-S backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines

Table B7: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 11, 2014			
Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	32	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	17	N-S high over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	75	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, gained altitude
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	11	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, barely made it
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	30	Sitting in water S of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, gained altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off, second approach over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, backed off, angled approach
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines through ship canal
Light rain				
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	14	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines through ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	2	N-S under lines
06:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S over lines, 1 had to gain altitude
06:45:00	Gulls	-	50	Gathering on N wharf at ship canal

Species	Number of Individuals Observed
American Crow	4
American Robin	76
Bald Eagle	7
Belted Kingfisher	2
Blue Jay	2
Caspian Tern	2
Common Raven	1
Double-crested Cormorant	924
Great Black-backed Gull	34
Great Blue Heron	7
Gulls	50
Hairy Woodpecker	1
Herring Gull	145
Merlin	1
Pigeons	20
Pine Grosbeak	3
Purple finch	1
Ring-billed Gull	1
Savannah Sparrow	1
Song Sparrow	7
White-winged Scoter	4
Yellow-rumped Warbler	1

Table B8: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateOctober 12, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Partly cloudy, Wind 15-20 km/h N				
06:45:00	Great Blue Heron	Ardea herodias	1	On N side of causeway
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Great black-backed Gull	Larus marinus	10	Soaring high above wires
	Herring Gull	Larus argentatus	30	Soaring high above wires
	American Crow	Corvus brachyrhynchos	5	Loitering around causeway
07:00:00	Ruffed Grouse	Bonasa umbellus	1	Looked like it came from mainland. Flew over causeway to Cape Breton.
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	3	Soaring over lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Great black-backed Gull	Larus marinus	1	S-N over lines, struggled to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Great Blue Heron	Ardea herodias	2	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	21	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	19	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	27	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	28	Flying at wires, some between, over and under, lots of trouble
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N over lines high
	Double-crested Cormorant	Phalacrocorax auritus	16	S-N under lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	11	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	21	Over lines, most had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	15	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N
	Double-crested Cormorant	Phalacrocorax auritus	9	S-N under lines
	Herring Gull	Larus argentatus	1	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines 2 approaches
	Common Raven	Corvus corax	2	Patrolling causeway
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Herring Gull	Larus argentatus	3	S-N over lines
07:45:00	Pine Grosbeak	Pinicola enucleator	1	Heard east of causeway
	American Robin	Turdus migratorius		Heard east of causeway
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Blue Jay	Cyanocitta cristata	8	N-S over lines
	Herring Gull	Larus argentatus	1	S-N over lines, 2 approaches
	Herring Gull	Larus argentatus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
08:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Great black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S circled then over
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Greater Scaup	Aythya marila	1	N-S over lines
08:15:00	Surf Scoter	Melanitta perspicillata	8	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:30:00	Herring Gull	Larus argentatus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:45:00	Surf Scoter	Melanitta perspicillata	1	N of causeway
	Ring-billed Gull	Larus delawarensis	1	N-S under lines
	Herring Gull	Larus argentatus	1	N-S turn into wind, gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Great black-backed Gull	Larus marinus	1	S-N under lines
Wind 30-40 km/hr				
08:45:00	Herring Gull	Larus argentatus	2	S-N over lines
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	American Robin	Turdus migratorius	30	East of causeway
	Bald Eagle	Haliaeetus leucocephalus	4	N-S high over lines
Wind 40-50 km/hr				
09:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
09:30:00	Great Blue Heron	Ardea herodias	1	East of causeway
	Herring Gull	Larus argentatus	2	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great black-backed Gull	Larus marinus	2	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under line
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines



Table B8: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateOctober 12, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
09:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
10:00:00	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N, 1 over, 2 backed off then over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
10:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great black-backed Gull	<i>Larus marinus</i>	9	Loitering near causeway
	Herring Gull	<i>Larus argentatus</i>	6	Loitering near causeway
	Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	6	S-N under lines
10:30:00	Herring Gull	<i>Larus argentatus</i>	6	Under lines on N side of causeway
	Great black-backed Gull	<i>Larus marinus</i>	2	Under lines on N side of causeway
Wind 50+ km/h				
10:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Red-throated Loon	<i>Gavia stellata</i>	1	50 m N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
10:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind, 2-3 approaches, backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Gulls	-	20	Hovering under lines on N side of causeway
	Herring Gull	<i>Larus argentatus</i>	1	Sailed backwards under lines N-S almost hit wires, close call
Afternoon Survey: Wind 50-60 km/hr N				
02:45:00	Common Eider	<i>Somateria mollissima</i>	19	Just N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:00:00				Headed S, turned around at last second when approaching wires. Some went under, turned and headed back north
	Common Eider	<i>Somateria mollissima</i>	30	
	Surf Scoter	<i>Melanitta perspicillata</i>	35	Just N of causeway
	Common Raven	<i>Corvus corax</i>	1	N-S under lines through ship canal
03:15:00	Northern Gannet	<i>Morus bassanus</i>	1	N of causeway
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
03:30:00	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	5	
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:45:00				N-S turn into wind, gain altitude, 1 under lines, other backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great black-backed Gull	<i>Larus marinus</i>	2	Loitering on grass near ship canal
	Herring Gull	<i>Larus argentatus</i>	13	Loitering on grass near ship canal
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S between lines, close call
04:00:00	Harlequin Duck	<i>Histrionicus histrionicus</i>	1	N of causeway
	Great black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, gained altitude, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	American Crow	<i>Corvus brachyrhynchos</i>	1	N-S over lines
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, then under lines
	European Starling	<i>Sturnus vulgaris</i>	50	Loitering near causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind at last second, gain altitude, over lines
	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Iceland Gull	<i>Larus glaucoides</i>	1	Just N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, gain altitude the over
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind then under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S underlines
	Common Eider	<i>Somateria mollissima</i>	18	Just N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Duck sp	-	25	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	Turn into wind, gain altitude, under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	Turn into wind at last second then under lines, close call
	Great Blue Heron	<i>Ardea herodias</i>	3	N-S over lines, turn into wind

Table B8: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 12, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Rain				
05:15:00	Double-crested Cormorant	Phalacrocorax auritus	5	Turn into wind, waited, all over lines
05:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, over lines
	Canada Goose	Branta canadensis	9	High over lines S-N
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S turn into wind, gain altitude, then over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S turn into wind, one over one under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S under lines
	Long-tailed Duck	Clangula hyemalis	6	Headed S, backed off, went back north
	Unknown sp.	-	1	Looked like it was tumbling down as if it had hit wires but it was a brief look from far away and visibility was getting worse. Looked like a Storm Petrel.
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S turn into wind, over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	Hit wires and was sliced into several pieces.
	Double-crested Cormorant	Phalacrocorax auritus	3	Over lines
	Duck sp.	-	30	N-S turn into wind before wires at last second, 4 had too much momentum and went between lines, close calls.
	Murre sp.	-		N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
05:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S between lines, minor trouble
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	60	N-S high over lines
06:00:00	Bald Eagle	Haliaeetus leucocephalus	1	N-S under lines
	Harlequin Duck	Histrionicus histrionicus	1	N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, over lines
	Great black-backed Gull	Larus marinus	1	N-S turn into wind, gain altitude, sailed over
06:15:00	Wilson's Storm-Petrel	Oceanites oceanicus	2	N of causeway
	Great Blue Heron	Ardea herodias	1	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
06:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Blue Heron	Ardea herodias	1	E-W across water S of causeway

Species	Number of Individuals Observed
American Crow	6
American Robin	30
Bald Eagle	10
Blue Jay	8
Bonaparte's Gull	8
Canada Goose	9
Common Eider	67
Common Raven	3
Double-crested Cormorant	533
Duck sp.	55
European Starling	50
Great black-backed Gull	32
Great Blue Heron	9
Greater Scaup	1
Gulls	20
Harlequin Duck	2
Herring Gull	74
Iceland Gull	1
Long-tailed Duck	6
Northern Gannet	1
Pine Grosbeak	1
Red-throated Loon	1
Ring-billed Gull	1
Ruffed Grouse	1
Surf Scoter	44
Wilson's Storm-Petrel	8

Table B9: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

DateOctober 15, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Clear, Wind 15-20 km/h NW				
06:45:00	American Crow	Corvus brachyrhynchos		Loitering
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	N-S under lines
	Herring Gull	Larus argentatus	2	N-S over lines, had to gain altitude, 2 approaches
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines, low over causeway during traffic break
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Common Merganser	Mergus merganser	3	N-S over lines, had to gain altitude, hesitated
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Great Black-backed Gull	Larus marinus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	19	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	30	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N over lines, 6 had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	20	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	25	S-N high over lines
07:15:00	Double-crested Cormorant	Phalacrocorax auritus	25	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	36	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	35	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	21	S-N under lines through ship canal
	Herring Gull	Larus argentatus	2	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N under lines, through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	5	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N , 2 over lines, had to gain altitude, other between with some trouble
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Herring Gull	Larus argentatus	3	S-N over lines, 2 took 2 approaches
	Common Raven	Corvus corax	2	Loitering around causeway
	Double-crested Cormorant	Phalacrocorax auritus	8	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines
	Hairy Woodpecker	Picoides villosus	1	E-W across water
	Double-crested Cormorant	Phalacrocorax auritus	6	N-S under lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	30	S-N under lines
	Herring Gull	Larus argentatus	2	S-N over lines, both gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	10	S-N under lines, had to lower altitude quickly
	Great Black-backed Gull	Larus marinus	1	S-N under lines, carrying squid
	Great Black-backed Gull	Larus marinus	2	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Herring Gull	Larus argentatus	3	S-N, 2 gained altitude, over lines, 1 between lines with minor trouble
	Herring Gull	Larus argentatus	1	S-N over lines, 4 approaches
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	15	Loitering on N side of causeway
	Herring Gull	Larus argentatus	23	Loitering on N side of causeway
07:45:00	Double-crested Cormorant	Phalacrocorax auritus	5	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines, gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Great Black-backed Gull	Larus marinus	1	N-S over lines, had to gain altitude, 2 approaches
	American Crow	Corvus brachyrhynchos	24	NE-SW over lines across water to mainland
	Great Black-backed Gull	Larus marinus	1	N-S 3 approaches to gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines had to gain altitude quickly at last minute
08:00:00	Herring Gull	Larus argentatus	1	S-N over lines 4 approaches
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	American Robin	Turdus migratorius	30	E of causeway
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N over lines, 1 stuttered, angled approach
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines, through ship canal
	Herring Gull	Larus argentatus	1	S-N over lines, 2 approaches
08:30:00	Herring Gull	Larus argentatus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
Wind 20-25 km/hr				
08:30:00	Double-crested Cormorant	Phalacrocorax auritus	4	S-N high over lines
	Bald Eagle	Haliaeetus leucocephalus	1	N-S over lines
	Herring Gull	Larus argentatus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S over lines, had to gain altitude
	Herring Gull	Larus argentatus	1	S-N over lines had to gain altitude

Table B9: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 15, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, 2 approaches
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	Over lines, 1 made 2 approaches
	American Robin	<i>Turdus migratorius</i>	40	E of causeway
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, 3 approaches
Wind 30-40 km/hr				
08:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
09:15:00	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
09:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	20	Loitering around causeway
	Herring Gull	<i>Larus argentatus</i>	40	Loitering around causeway
09:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
10:00:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S sailing over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
10:15:00	Gulls	#N/A	30	Sailing under lines over causeway
Wind 40-50 km/hr				
10:15:00	American Crow	<i>Corvus brachyrhynchos</i>		Loitering
10:30:00	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
10:45:00	Herring Gull	<i>Larus argentatus</i>	1	Gliding with lines, gains altitude the over N-S
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
Afternoon Survey: Wind 30-40 km/hr NW, Partly overcast				
02:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Herring Gull	<i>Larus argentatus</i>	60	N side of Causeway
	Great Black-backed Gull	<i>Larus marinus</i>	40	N side of Causeway
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S turn into wind, gained altitude, sailed over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:15:00	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, came close to wires trying to sail over
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
03:30:00	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines
03:45:00	Gulls	#N/A	100	Still along causeway
	Great Black-backed Gull	<i>Larus marinus</i>	7	S-N under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Herring Gull	<i>Larus argentatus</i>	1	Turn into wind, shuffle along causeway, gained altitude, over lines after a minute
	Great Black-backed Gull	<i>Larus marinus</i>	2	Turn into wind, shuffle along causeway, gain altitude, over lines N-S
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under over lines had to gain altitude
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Surf Scoter	<i>Melanitta perspicillata</i>	3	N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under over lines had to gain altitude
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S, turn into wind, flew forward gained altitude then over lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	4	Over lines, both turned into wind, gained altitude
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	21	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	12	N-S turn into wind, 7 over lines, 5 under lines, 3 with troubles
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Gulls	#N/A	100	Still loitering on N side of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:00:00	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, turn into wind, gained altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S turn into wind, gain altitude, shuffled parallel, over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S turn into wind, gain altitude, 2 approaches over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S turn into wind, 3 approaches, between lines with trouble
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines, made adjustment



Table B9: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 15, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
05:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines, dropped altitude at last second, close
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, had to gain altitude at last second, close
05:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S backed off wires, under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Gulls	#N/A		Mostly left causeway
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
05:45:00	Double-crested Cormorant	Phalacrocorax auritus	4	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S turn into wind, gain altitude, 2 approaches over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
06:00:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	11	N-S high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Great Black-backed Gull	Larus marinus	1	Almost blown back into wires
	Great Black-backed Gull	Larus marinus	1	N-S under lines, had to drop quick to avoid wires
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
06:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	3	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
06:30:00	Gulls	-	40	Loitering on causeway
	Double-crested Cormorant	Phalacrocorax auritus	4	S-N had to gain altitude, over lines
	Double-crested Cormorant	Phalacrocorax auritus	15	

Species	Number of Individuals Observed
American Crow	24
American Robin	70
Bald Eagle	8
Common Merganser	3
Common Raven	2
Double-crested Cormorant	650
Great Black-backed Gull	102
Gulls	270
Hairy Woodpecker	1
Herring Gull	159
Surf Scoter	3

Table B10: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 16, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Clear, Wind 15-20 km/h SE, Overcast				
07:00:00	Herring Gull	Larus argentatus	4	N-S over lines
	Herring Gull	Larus argentatus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines first set, under lines next, some trouble
	Herring Gull	Larus argentatus	2	N-S over lines, gained altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Great Black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
07:15:00	Great Black-backed Gull	Larus marinus	2	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had some trouble
	Double-crested Cormorant	Phalacrocorax auritus	12	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	13	S-N most between lines, with trouble. One struck wires, couldnt fly or dive. Very hurt, was unconcious when it hit water halfway between 2 towers.
	Double-crested Cormorant	Phalacrocorax auritus	6	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	9	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	N-S, 6 between lines, had to drop altitude
	Double-crested Cormorant	Phalacrocorax auritus	90	Too fast to count, some between, over and under, many had troubles. Some over first set then under.
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	9	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	Between lines with minor trouble
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	40	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	American Black duck	Anas rubripes	1	S-N high over lines
	Great Black-backed Gull	Larus marinus		N-S between lines, 2 approaches, cautious, minor trouble
	Double-crested Cormorant	Phalacrocorax auritus		N-S under lines
	Great Black-backed Gull	Larus marinus		N-S between lines
07:45:00	Gulls	#N/A	40	
	Double-crested Cormorant	Phalacrocorax auritus	3	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
08:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	20	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N high over lines
	Great Black-backed Gull	Larus marinus	1	N-S over lines had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	American Goldfinch	Spinus tristis		Heard over head
	Herring Gull	Larus argentatus	2	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	N-S over lines
	Herring Gull	Larus argentatus	6	S-N over lines
08:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Surf Scoter	Melanitta perspicillata	3	S-N over lines
09:00:00	Herring Gull	Larus argentatus	1	S-N high over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N high over lines
	Herring Gull	Larus argentatus	1	N-S over lines, had to gain altitdue
	American pipit	Anthus rubescens	2	N-S over lines
	Great Black-backed Gull	Larus marinus	1	S-N over lines
09:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under linese
	American Robin	Turdus migratorius	40	E of causeway, attempting to cross water
09:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Common Raven	Corvus corax	2	Near causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under linese through ship canal
09:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	S-N under linese
	Great Black-backed Gull	Larus marinus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S backed off, 3 approaches
10:00:00	Great Black-backed Gull	Larus marinus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	3	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
10:15:00	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	American Crow	Corvus brachyrhynchos	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines



Table B10: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 16, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
10:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	American Black duck	<i>Anas rubripes</i>	1	S-N over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
10:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
Afternoon Survey: Wind 20-30 km/hr SE, Cloudy				
02:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under linese
	Gulls	#N/A	30	N side of causeway
03:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	In water
03:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
03:30:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	S-N over lines
03:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
04:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N 2 approaches, between lines, minor troubles
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, dropped altitude then gained
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off wires
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under linese
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines, just over causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	Under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	25	N-S, 22 gained altitude over lines, 1 dropped altitude under lines, 2 backed off the over lines with 2 approaches
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
05:15:00	Great Black-backed Gull	<i>Larus marinus</i>	1	Juvenile, S-N , hit wing on wires while going between lines. Not hurt, kept flying, but slowly
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S between lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S gained altitude, over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N gained altitude at last second, barely made it over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	8	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	60	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	100	N-S under lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	49	N-S high over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S, 1 backed off the over lines after gaining altitude, 1 over lines, 1 backed off

Table B10: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 16, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:00:00	Great Black-backed Gull	Larus marinus	1	S-N over lines, struggle to gain altitude at last second
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	130	N-S under lines, several had to make adjustments
	Double-crested Cormorant	Phalacrocorax auritus	14	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines first set, between lines second, close call
	Double-crested Cormorant	Phalacrocorax auritus	29	N-S flying at wires, between and under lines, a few close calls
	Double-crested Cormorant	Phalacrocorax auritus	60	N-S over lines, 2 between lines with adjustments
	Herring Gull	Larus argentatus	1	S-N between lines, had trouble
	Great Black-backed Gull	Larus marinus	1	S-N over lines, 2 approaches
06:15:00	Double-crested Cormorant	Phalacrocorax auritus	5	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S high over lines
	Double-crested Cormorant	Phalacrocorax auritus	5	N-S all backed off, 2nd approach, 2 under, 4 over lines
	Herring Gull	Larus argentatus	6	N-S over lines, had to gain altitdue
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
06:30:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	S-N over lines

Species	Number of Individuals Observed
American Black duck	2
American Crow	1
American pipit	2
American Robin	40
Bald Eagle	2
Common Raven	2
Double-crested Cormorant	993
Great Black-backed Gull	23
Great Blue Heron	1
Gulls	70
Herring Gull	36
Surf Scoter	3

Table B11: Fall Active Observation Survey, Canso Causeway Bird Study

Date	October 25, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
<b>Clear, Wind 20-25 km/h NW, Overcast and foggy</b>				
07:00:00	American Crow	<i>Corvus brachyrhynchos</i>	5	Loitering near causeway
	Great Black-backed Gull	<i>Larus marinus</i>	3	Loitering near causeway
07:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
07:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	7	Loitering near causeway
	Herring Gull	<i>Larus argentatus</i>	6	Loitering near causeway
	Iceland Gull	<i>Larus glaucoides</i>	1	Loitering near causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	15	S-N under lines
	Common Merganser	<i>Mergus merganser</i>	1	S-N over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	33	S-N under lines, just over road during traffic break
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	21	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	50	S-N, 30 under lines, 20 backed off. All flying low over causeway. 20 got scared by truck and turned around
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	70	S-N under lines, 20 from last group
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
07:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	American Crow	<i>Corvus brachyrhynchos</i>	6	Patrolling causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Common Eider	<i>Somateria mollissima</i>	4	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines first set, under lines second
	Common Raven	<i>Corvus corax</i>	1	Patrolling causeway
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Patrolling causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
08:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, had to gain altitude
	Common Eider	<i>Somateria mollissima</i>	75	Well N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	S-N under lines
08:15:00	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines, had to gain altitude
	American Crow	<i>Corvus brachyrhynchos</i>	30	E of causeway
08:30:00	Great Black-backed Gull	<i>Larus marinus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines, dropped altitude at last second
	White-winged Scoter	<i>Melanitta fusca</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
09:00:00	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Patrolling N side of causeway
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Eating gull S of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	2	Patrolling causeway
	Pigeon	#N/A	12	Around causeway
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
09:15:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Common Eider	<i>Somateria mollissima</i>	10	N-S under lines, some barely made it
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
09:30:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over first set, under second set
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	American Crow	<i>Corvus brachyrhynchos</i>	1	S-N over first set under second set
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines
09:45:00	Herring Gull	<i>Larus argentatus</i>	1	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Surf Scoter	<i>Melanitta perspicillata</i>	3	N-S under lines
	Common Raven	<i>Corvus corax</i>	2	Patrolling causeway
10:00:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Common Merganser	<i>Mergus merganser</i>	6	3 under lines, 2 between lines, 1 backed off wires. 2 between and 1 under lines close to wires
	Common Merganser	<i>Mergus merganser</i>	1	S-N over lines east land route
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N over lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, flew parallel to lines
	American Crow	<i>Corvus brachyrhynchos</i>	2	N-S over lines
	Common Raven	<i>Corvus corax</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N under lines



Table B11: Fall Active Observation Survey, Canso Causeway Bird Study

Date	October 25, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
10:30:00	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Long-tailed Duck	<i>Clangula hyemalis</i>	4	N-S over lines, had to gain altitude
	White-winged Scoter	<i>Melanitta fusca</i>	1	N-S over lines, had to gain altitude
10:30:00	Surf Scoter	<i>Melanitta perspicillata</i>	3	S-N over lines
	Northern Gannet	<i>Morus bassanus</i>	1	Well N of causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
10:45:00	Great Black-backed Gull	<i>Larus marinus</i>	1	Loitering near causeway, lame leg
	Herring Gull	<i>Larus argentatus</i>	1	Foot almost fallen off, loitering around causeway
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines
Afternoon Survey: Light rain, wind 30-40 km/hr NW				
02:45:00	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	2	Just N of causeway
	Great Black-backed Gull	<i>Larus marinus</i>	1	Juvenile loitering near causeway
03:00:00	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
03:15:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	S-N uner lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Hovering over storm petrels N of causeway
	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	7	North of causeway, being chased by eagle
03:30:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines
	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>		Still present
03:45:00	Northern Gannet	<i>Morus bassanus</i>	1	Just N of causeway
04:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S, parallel with lines then over
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	20	N-S high over lines
04:15:00	Great Black-backed Gull	<i>Larus marinus</i>	3	N-S high over lines
04:30:00	Herring Gull	<i>Larus argentatus</i>	2	S-N over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	20	Loitering near causeway
	Herring Gull	<i>Larus argentatus</i>	10	Loitering near causeway
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S stopped at last second, close call
04:45:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
	Great Blue Heron	<i>Ardea herodias</i>	1	E of causeway
	Herring Gull	<i>Larus argentatus</i>	1	N-S over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S over lines, had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines through ship canal
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
	Common Eider	<i>Somateria mollissima</i>	45	N-S high over lines
	Long-tailed Duck	<i>Clangula hyemalis</i>	9	N-S over lines, had to gain altitude
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	11	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	23	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	9	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S over high over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off, parallel, under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	3	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S 3 approaches, over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines, had to gain altitude
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	S-N under lines
	Great Black-backed Gull	<i>Larus marinus</i>	70	Loitering near causeway
	Herring Gull	<i>Larus argentatus</i>	40	Loitering near causeway
Wind 15-20 km				
05:45:00	Great Black-backed Gull	<i>Larus marinus</i>	3	N-S over lines, all had to gain altitude
	Great Black-backed Gull	<i>Larus marinus</i>	9	N-S over lines, all had to gain altitude
	Herring Gull	<i>Larus argentatus</i>	2	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines

Table B11: Fall Active Observation Survey, Canso Causeway Bird Study

Date	October 25, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N over lines, 2 approaches
	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S under lines
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines, had to gain altitude
	Duck sp.	-	40	N-S over lines
	Northern Gannet	<i>Morus bassanus</i>	1	S-N over lines
06:15:00	Great Black-backed Gull	<i>Larus marinus</i>	2	N-S over lines
	Gulls	-		All left causeway

Species	Number of Individuals Observed
American Crow	44
Bald Eagle	6
Common Eider	134
Common Merganser	8
Common Raven	4
Double-crested Cormorant	390
Duck sp.	40
Great Black-backed Gull	159
Great Blue Heron	1
Herring Gull	72
Iceland Gull	1
Long-tailed Duck	13
Northern Gannet	3
Pigeon	12
Surf Scoter	6
White-winged Scoter	3
Wilson's Storm-Petrel	9

Table B12: Fall Active Observation Survey, Canso Causeway Bird Study

DateOctober 26, 2014

Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
Variable cloud, Wind 10-15 km/hr				
07:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
07:15:00	Great Black-backed Gull	Larus marinus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
07:30:00	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	7	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	100	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	50	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	60	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Herring Gull	Larus argentatus	1	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	17	S-N over lines, fairly high
	Great Black-backed Gull	Larus marinus	9	N-S under lines
	Great Black-backed Gull	Larus marinus	2	N-S over lines, had to gain altitude
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Great Black-backed Gull	Larus marinus	1	N-S circled, 2 approach over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Herring Gull	Larus argentatus	1	N-S over lines, circled, 2 approaches
07:45:00	Great Black-backed Gull	Larus marinus	29	Loitering on N side of causeway
	Herring Gull	Larus argentatus	6	Loitering on N side of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	American Robin	Turdus migratorius	1	Heard E of causeway
	Common Raven	Corvus corax	2	Patrolling causeway
	Golden-crowned Kinglet	Regulus satrapa		Heard E of causeway
	Hairy Woodpecker	Picoides villosus	1	Heard E of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
08:00:00	Great Black-backed Gull	Larus marinus	1	S-N under lines
	Boreal Chickadee	Poecile hudsonicus	2	E of causeway
	Common Eider	Somateria mollissima	20	N-S high over lines
	Pine Grosbeak	Pinicola enucleator	1	E of causeway
08:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S over lines
	Herring Gull	Larus argentatus	1	N-S over lines
	Herring Gull	Larus argentatus	1	N-S over lines
08:30:00	Common Raven	Corvus corax	1	Patrolling causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Great Black-backed Gull	Larus marinus	50	Loitering around causeway
08:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Cormorant	Phalacrocorax carbo	2	N-S under lines
09:00:00	Surf Scoter	Melanitta perspicillata	1	With gulls just N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Great Black-backed Gull	Larus marinus	1	S-N over lines, fairly high
09:15:00	Great Black-backed Gull	Larus marinus	46	Loitering near causeway
	Herring Gull	Larus argentatus	8	Loitering near causeway
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
09:30:00	Great Black-backed Gull	Larus marinus	1	N-S over lines
09:45:00	Black Guillemot	Cepphus grylle	1	Just N of causeway
	Great Black-backed Gull	Larus marinus	1	4 approaches, flying parallel to wires
	Great Black-backed Gull	Larus marinus	1	N-S over lines, had to gain altitude
	Great Black-backed Gull	Larus marinus	1	N-S under lines
10:00:00	Bald Eagle	Haliaeetus leucocephalus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
10:15:00	Northern Gannet	Morus bassanus	1	N of causeway
	Herring Gull	Larus argentatus	1	N-S under lines, fairly close to traffic
10:30:00	Great Black-backed Gull	Larus marinus	1	S-N under lines
10:45:00	Great Black-backed Gull	Larus marinus	1	N-S under lines
Afternoon Survey: Cloudy, Wind 15-20 S				
02:45:00	Great Black-backed Gull	Larus marinus	16	Loitering on N side of causeway
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
03:15:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines through ship canal
	American Robin	Turdus migratorius	40	N-S, under lines east land route
	Great Black-backed Gull	Larus marinus	1	N-S over lines
03:30:00	Great Black-backed Gull	Larus marinus	1	N-S over lines, 2 approaches
03:45:00	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	1	N-S under lines through ship canal
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
04:00:00	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	2	S-N under lines
	Great Black-backed Gull	Larus marinus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
04:15:00	Double-crested Cormorant	Phalacrocorax auritus	42	Loitering on N wharf
	Herring Gull	Larus argentatus	1	S-N over lines
	Double-crested Cormorant	Phalacrocorax auritus	12	N-S under lines
	Northern Gannet	Morus bassanus	1	S-N over lines
	Bald Eagle	Haliaeetus leucocephalus	1	S-N over lines
04:30:00	Northern Gannet	Morus bassanus	6	Well N of causeway
	Double-crested Cormorant	Phalacrocorax auritus	2	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	S-N under lines
	Double-crested Cormorant	Phalacrocorax auritus	1	N-S under lines
	Herring Gull	Larus argentatus	1	S-N over lines, circled, 2 approaches



Table B12: Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Date	October 26, 2014
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Time of Day	Common Name	Scientific Name	No of Individuals	Species Behaviour
04:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S underlines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S high over lines
	Herring Gull	<i>Larus argentatus</i>	1	S-N over lines
05:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines, had to gain altitude at last minute to avoid truck
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	18	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	35	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	5	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	11	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S over lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	14	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S backed off, flew parallel, made 3 attempts, 1 close call
05:15:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Northern Gannet	<i>Morus bassanus</i>	14	Foraging N in open water
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
05:30:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	32	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
05:45:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	6	N-S, 4 under, 2 dropped altitude at last second, other 2 under lines first set, over lines second set, others backed off, both close calls
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	N-S under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S, backed off, circled, flew parallel, 2 more approaches then under high spot
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	40	N-S, 36 under lines, several close calls, 4 backed off
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7	N-S under lines
	Great Black-backed Gull	<i>Larus marinus</i>	1	S-N under lines
	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S under lines
06:00:00	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	N-S
	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines
06:15:00	Great Black-backed Gull	<i>Larus marinus</i>	1	N-S under lines

Species	Number of Individuals Observed
American Robin	41
Bald Eagle	2
Black Guillemot	1
Boreal Chickadee	2
Common Eider	20
Common Raven	3
Double-crested Cormorant	573
Great Black-backed Gull	168
Great Cormorant	2
Hairy Woodpecker	1
Herring Gull	23
Northern Gannet	22
Pine Grosbeak	1
Surf Scoter	1

Table B13: Summary Table - Fall Active Observation Survey, Canso Causeway Bird Study

Project # 14-5063

Species	Survey 1		Survey 2		Survey 3		Survey 4		Survey 5		Survey 6		TOTAL
	17-Sep-14	18-Sep-14	22-Sep-14	23-Sep-14	4-Oct-14	5-Oct-14	11-Oct-14	12-Oct-14	15-Oct-14	16-Oct-14	25-Oct-14	26-Oct-14	
American Black Duck	4	-	2	-	-	-	-	-	-	2	-	-	8
American Crow	2	5	7	53	-	-	4	6	24	1	44	-	146
American Goldfinch	-	-	-	2	1	-	-	-	-	-	-	-	3
American pipit	-	-	-	-	-	-	-	-	-	2	-	-	2
American Robin	-	-	-	-	-	7	76	30	70	40	-	41	264
Arctic Tern	-	8	-	-	-	-	-	-	-	-	-	-	8
Bald Eagle	7	11	4	3	8	7	7	10	8	2	6	2	75
Belted Kingfisher	6	7	-	1	2	2	2	-	-	-	-	-	20
Black Guillemot	-	-	-	-	-	-	-	-	-	-	-	1	1
Black-headed Gull	1	-	-	-	-	-	-	-	-	-	-	-	1
Blue Jay	123	117	-	1	7	45	2	8	-	-	-	-	303
Bonaparte's Gull	217	172	30	100	3	1	-	8	-	-	-	-	531
Boreal chickadee	1	-	-	-	-	-	-	-	-	-	-	2	3
Canada Goose	-	-	-	-	-	-	-	9	-	-	-	-	9
Caspian Tern	-	-	-	-	-	-	2	-	-	-	-	-	2
Common Eider	-	-	-	-	-	-	-	67	-	-	134	20	221
Common Grackle	-	-	-	-	-	50	-	-	-	-	-	-	50
Common Loon	-	-	-	1	3	2	-	-	-	-	-	-	6
Common Merganser	19	30	3	7	68	5	-	-	3	-	8	-	143
Common Raven	1	5	-	4	4	4	1	3	2	2	4	3	33
Dark-eyed Junco	-	-	-	-	-	1	-	-	-	-	-	-	1
Double-crested Cormorant	2112	3086	2018	1947	1864	1758	924	533	650	993	390	573	16848
Duck sp.	-	-	-	-	2	-	-	55	-	-	40	-	97
European Starling	-	-	-	-	-	-	-	50	-	-	-	-	50
Great black-backed Gull	85	20	55	52	50	16	34	32	102	23	159	168	796
Great Blue Heron	7	22	4	5	4	3	7	9	-	1	1	-	63
Great Cormorant	-	-	-	-	-	-	-	-	-	-	-	2	2
Greater Scaup	-	-	-	-	-	-	-	1	-	-	-	-	1
Gulls	-	40	5	100	115	-	50	20	270	70	-	-	670
Hairy Woodpecker	-	-	-	-	-	-	1	-	1	-	-	1	3
Harlequin Duck	-	-	-	-	-	-	-	2	-	-	-	-	2
Herring Gull	138	29	87	47	36	60	145	74	159	36	72	23	906
Iceland Gull	-	-	-	-	1	-	-	1	-	-	1	-	3
Long-tailed Duck	-	-	-	-	-	-	-	6	-	-	13	-	19
Merlin	5	-	-	-	-	-	1	-	-	-	-	-	6
Northern Gannet	-	-	1	1	-	-	-	1	-	-	3	22	28
Northern Harrier	-	-	-	1	-	-	-	-	-	-	-	-	1
Osprey	1	3	-	-	-	-	-	-	-	-	-	-	4
Pigeon	8	-	-	-	-	-	20	-	-	-	12	-	40
Pine Grosbeak	-	-	-	-	-	4	3	1	-	-	-	1	9
Purple finch	-	-	-	-	-	-	1	-	-	-	-	-	1
Red-tailed hawk	1	1	-	-	-	-	-	-	-	-	-	-	2
Red-throated Loon	-	-	-	-	-	-	-	1	-	-	-	-	1
Ring-billed Gull	1	2	1	2	1	-	1	1	-	-	-	-	9
Ruffed Grouse	-	-	-	-	-	-	-	1	-	-	-	-	1
Savannah Sparrow	-	-	-	-	-	-	1	-	-	-	-	-	1
Sharp-shinned Hawk	-	-	2	-	-	-	-	-	-	-	-	-	2
Song Sparrow	1	-	-	-	-	-	7	-	-	-	-	-	8
Surf scoter	-	-	-	-	7	2	-	44	3	3	6	1	66
Swamp Sparrow	-	-	-	-	1	-	-	-	-	-	-	-	1
Warbler sp.	-	6	-	-	-	-	-	-	-	-	-	-	6
White-winged Scoter	-	-	-	-	-	-	4	-	-	-	3	-	7
Wilson's Storm-Petrel	-	-	-	-	-	-	-	8	-	-	9	-	17
Yellow-rumped warbler	-	-	-	-	1	-	1	-	-	-	-	-	2
TOTALS	2740	3564	2219	2327	2178	1967	1294	981	1292	1175	905	860	21502

Flight Path through NSPI Infrastructure Summary			
Under	Over	Between	
171	48	24	
175	61	15	
155	82	13	
126	68	6	
120	67	5	
124	55	10	
137	73	3	
107	61	5	
119	69	4	
117	54	14	
81	59	2	
79	25	1	
TOTALS	1511	722	102

Interactions Summary		
Sept.17	Double-crested Cormorant	Hit
Sept. 18	Double-crested Cormorant	S-N, b/w lines, hit
Oct. 4	Double-crested Cormorant	Hit
Oct. 12	Double-crested Cormorant	Hit
Oct. 16	Double-crested Cormorant	S-N, b/w lines, hit
Oct. 16	Double-crested Cormorant	S-N, b/w lines, hit