

Laskeek Bay Conservation Society Field Season Report 2004



Black Oystercatcher Nest, by Joelle Fournier

Summary

The annual Field Season Summary report summarizes the field activities of the Laskeek Bay Conservation Society's (LBCS) East Limestone Island field camp. It also acts as a means of comparing this season's activities to those of past years in an organized and concise fashion. The Society's 15th field season ran from April 30 – July 23, opening and closing a few weeks later than in recent past years. This season was made successful by three field staff, one in-town staff, eight year-round Directors, 26 weekly volunteers, many local students and teachers, 86 other visitors and 44 students along with 19 teachers from three local schools. The number of ancient murrelet chicks banded from the funnels this year was 445, the lowest ever; they were also the earliest ever, with the peak of 45 occurring on May 16. Although the Ancient Murrelet program was reduced this year, the Black Oystercatcher program was expanded to include sites as far south as Ramsay Island in Gwaii Haanas National Park Reserve and Haida Heritage Site. All sites in Laskeek Bay were monitored as usual and 23 sites were found to be active from which 10 chicks were banded. The remains of prey items fed to chicks were also collected to study how reproductive success varies with diet. The two surveys in Juan Perez Sound yielded at least 43 active sites from which 21 chicks were banded. A total of 236 Glaucous-winged Gull nests were found with eggs this year, 80% of which were on the Lost Islands. The highest number of Pigeon Guillemot nestboxes was used in 2004 at 4 boxes containing a total of 5 eggs. There appears to be an increase in the use of burrows by Cassin's Auklets on Cassin's Tower and the North Shore as 42 burrows and 5 nestboxes were marked and numbered, half of which showed signs of use by Cassin's Auklets. One Cassin's Auklet chick was also banded at Cassin's Tower. There were 16 active wildlife trees (WT), 10 of which were used by Red-breasted Sapsuckers and one by Red-breasted Nuthatches, the first time this species has been found in a wildlife tree on Limestone. A Northern Saw-whet Owl pair was found nesting in WT 81 and fledged at least one chick. Also, a new Bald Eagle nest was found, from which chicks were heard in July. Noticeably fewer marine mammals were seen this season; no dolphins, and far fewer Humpback whales than in 2003, were recorded. Once again, it was an exciting season on Limestone Island, full of unique learning experiences.

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INTRODUCTION

What began as a discussion around a campfire on Reef Island in 1989 is now an active education and science program that is more than halfway to reaching its goal of providing a 25-year research program through public involvement. With pressures from introduced species, offshore oil exploration and wind farms in the Hecate Strait, long-term monitoring projects such as this provide the scientific background necessary to evaluate changes in the local ecosystem and the effects of human disturbance, should the need arise. The education program is an integral part of the scientific research, with volunteers and visitors participating in data gathering while enjoying a unique experience.

2004 Field Staff

The Limestone Island Field Camp was open for 12 weeks in 2004 from April 30 to July 23. This year's field staff were: Suzanne Charest (Camp Supervisor/Biologist), Ceitlynn Epnors (Biologist/Interpreter) and Charlotte Tarver (Interpreter/Naturalist, May 18-21).

EDUCATION PROGRAM

Project Limestone

2004 marked the 14th year of Project Limestone – a program where local students and teachers learn first hand about seabird biology and the natural history of Limestone Island by participating in research activities. The school groups receive an afternoon orientation to the island, the research projects carried out on Limestone, and the biology and ecology of Ancient Murrelets. At night the school groups return to assist with the Ancient Murrelet chick banding. Students retrieve chicks from the funnels, bring them to the banding shelter, assist with weighing the bird bags, and record measurements and band numbers. Acting as an outdoor classroom, Limestone Island provides a unique and valuable opportunity for these students to learn biological research skills. The students' excitement and enthusiasm for the Ancient Murrelets and Project Limestone is obvious and many students name their visit to Limestone Island as a highlight of the school year.

This year, two groups from Queen Charlotte Secondary School, two groups from the Living and Learning School and one group from George M. Dawson Secondary School participated in Project Limestone. A total of 44 students and 19 teachers and leaders visited Limestone Island. For many students this was their second or third time participating in Project Limestone.

Volunteers

There were 26 participants in Limestone Island's Volunteer Program this year, 10 of whom were repeat volunteers, and 16 of whom participated for the first time, including one 10-year-old and one 14-year-old. Most volunteers stayed for one week, but two stayed up to two weeks and a few only several days. Two people returned to the island and volunteered twice this season, one of them being LBCS Director Keith Moore. Directors Dave Ingram and Brigid Cumming also volunteered this year, with Dave being a part of the start-up crew and Brigid as a weeklong volunteer. Queen Charlotte Secondary School students Dana Myshrall and Ben Drover completed their high school Work Experience Program while on Limestone as our first week volunteers. Our

volunteers ranged from far and wide in 2004 – 16 were local, 3 from Alberta, 3 from elsewhere in British Columbia, 2 from Sweden and 2 from Tasmania, Australia. The total number of volunteer days this year was 176. There were 1.5 weeks where there were no volunteers in camp.

Visitor Interpretation Program

Limestone Island offers a unique participation program for visitors that includes a daytime orientation tour of the island and a return visit at night to assist with the banding of Ancient Murrelet chicks during the banding season. It is the only program of its kind in Canada that allows visitors hands-on experience with the seabirds during banding. Most visitors are sailboat tour groups on their way to or from Gwaii Haanas National Park Reserve and Haida Heritage Site.

The first visitor group to Limestone Island this year was a kayak group that not only came for an afternoon tour, but for the first time ever, also returned at night to assist with banding. The kayakers were a group of 10 undergraduate students in the Outdoor Recreation Department at Lakehead University in Thunder Bay, Ontario. They undertook their three-week kayaking trip to create awareness about environmental, social and historical issues in Haida Gwaii and saw their visit to Limestone Island as a stepping stone to achieving their goal.

Two tour boats visited the island for a total of 5 visits this season. The *s/v Maple Leaf* visited on May 18 and 22 with a group of 12 people each time and the *s/v Island Roamer* visited on May 23 and 25 and June 5 with groups of 12, 10 and 12 people respectively. Visitors in May were given the usual afternoon orientation tours and returned at night to assist with banding. Visitors in June, however, were only given an afternoon tour as Ancient Murrelet banding was finished for the season. Total tour group days, including the Lakehead students, was 68 days.

Dr. Tony Gaston ran a two-week field course for Ontario University students on Reef Island this year from May 21 to June 3. He and the six students visited Limestone Island for a daytime interpretation tour on May 27 and also stayed for dinner. Tony and two students also returned on May 30 for the day to work on course projects.

Other visitors to the island this year were LBCS Executive Director Greg Martin and Astrid Greene who visited for the weekend of June 9-11 to begin construction on a small dam which will help secure water supply levels in future years. Total days for visitors other than tour groups was 16 days.

Haida Gwaii Watchmen

Numerous visits were made to two of the Haida Gwaii Watchmen sites this season. Skedans village was visited several times and efforts were made to have four of the Watchmen over for dinner and a visit but due to a high volume of visitors to their site it was difficult to find an appropriate time. Visits were also made to Hotspring Island during the Black Oystercatcher surveys, as there was a nesting pair on the island. We had

the opportunity to discuss the monitoring and banding project with the Watchmen who also shared their observations on local pairs with us to help with the survey.

RESEARCH & MONITORING PROGRAM

Ancient Murrelets

In 2004, adult banding and burrow and nestbox monitoring were dropped, so as to give the birds respite from the physical disturbances caused by these activities and, we hope, to increase the recruitment of new breeders to Limestone Island.

However, adults were caught opportunistically if found on the ground during chick banding. If they were already banded, the band number was recorded and the presence and size of brood patch noted when possible. Birds were then immediately released. All unbanded birds were immediately released. Only two banded birds were captured: one at Funnel 6 that was banded in 1996 as an adult at the Spring Valley flight net and this year had a brood patch of 20 mm, and the second at Funnel 4 that was banded in 2001 as a chick from Funnel 5.

Chick Banding

The 6 plastic funnels were erected again this year to capture chicks departing their burrows. New stakes were made for Funnels 5 and 6. Funnels were closed and monitored for chicks from May 8 to June 3, with first chicks banded on May 8 from Funnels 5 and 6 and the last chick from Funnel 4 on June 2 (Table 1). Using the adjusted time protocol from 2001, funnel gates were closed from 2230-0230 for May 8-19 and from 2300-0230 from May 20 to the end of banding.

Table 1. Summary of chick departures, peak nights and totals from funnels for Ancient Murrelet chick banding on Limestone Island, 1990-2004.

Year	Opening night	First night	Last night	Peak night	Peak count	Total days	Total chicks
1990	12 May	12 May	15 June	22 May	65	35	873
1991	8 May	8 May	6 June	26 May	48	30	561
1992	12 May	12 May	3 June			23	674
1993	9 May	10 May	15 June	18 May	70	37	653
1994	7 May	7 May	8 June	22 May	52	33	618
1995	7 May	10 May	11 June	22 May	64	33	617
1996	10 May	11 May	9 June	19 May	48	29	588
1997	8 May	11 May	11 June	24 May	41	31	527
1998	7 May	11 May	22 June	20 May	55	43	495
1999	9 May	11 May	11 June	21 May	54	31	567
2000	11 May	11 May	11 June	20 May	62	31	595
2001	8 May	10 May	15 June	18 May	54	37	560
2002	7 May	9 May	3 June	21 May	65	26	566
2003	10 May	11 May	7 June	21 May	52	28	523
2004	8 May	8 May	2 June	16 May	45	26	445

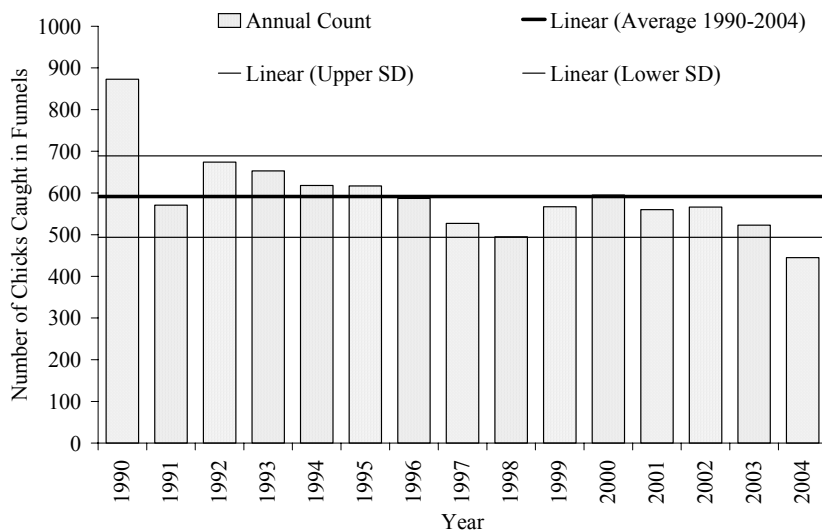


Figure 1. Annual counts of Ancient Murrelets chicks caught in funnels on East Limestone Island 1990-2004. The solid line is the long-term mean for 1990-2003 and the fine lines are one standard deviation from the mean.

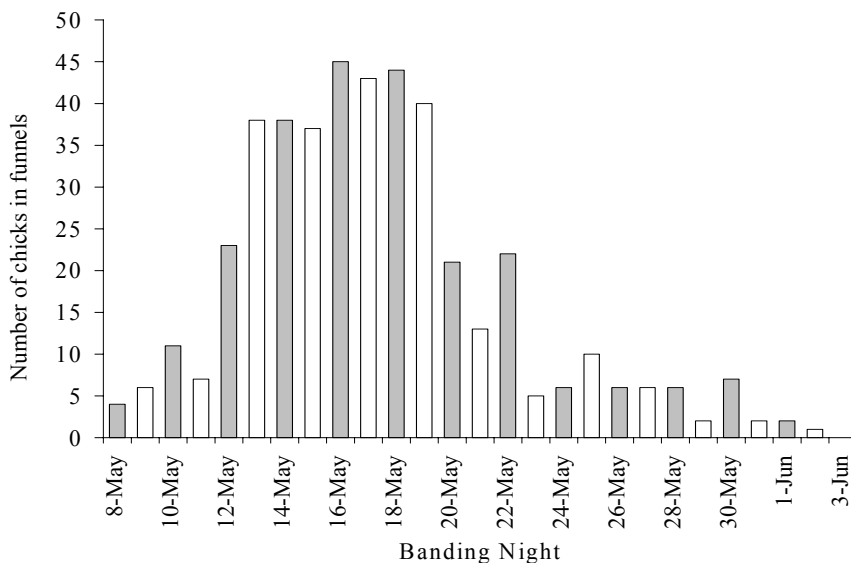


Figure 2. Number of Ancient Murrelet chicks caught in funnels per night from 8 May - 3 June on East Limestone Island.

A total of 445 chicks were banded from the funnels before 0230, and 26 from outside the funnels or after 0230 for a total of 471 chicks banded in 2004. An additional 4 chicks from the funnels went unbanded. This is the lowest number of chicks caught in the funnels since 1990 and is 1.5 standard deviations from the long-term average (Figure 1). No chicks were banded from burrows, as burrows were not monitored this year. The peak number of chicks occurred on May 16 with 45 chicks banded from within the funnels and

7 from outside the funnels or after 0230 (Table 1 and Figure 2). This is the earliest peak date at Limestone Island since the program started in 1990 and is 5 days earlier than the average of peak nights from past years. Apart from 1997 when 41 chicks were banded from funnels, this is the lowest peak funnel count since 1990. The mean (\pm SD) weight of chicks from the funnels was comparable to past years at 26.6 ± 3.4 g. No chicks were found with ticks this season.

Gathering Grounds

Adult Ancient Murrelets were counted on the gathering ground to the west of Low Island each night from May 2 to June 20 at approximately 2 hours before sunset. Poor weather and visibility prevented counts on two nights in June and counts were not done from June 14-16 while all camp members were in Juan Perez Sound for the Black Oystercatcher survey. The peak count occurred on May 16, the same night that the peak number of chicks occurred, with 163 birds recorded (Figure 3). The peak count for June was 87 birds on June 1 (Figure 3).

Point Counts

The number of non-breeders heard calling at night was again estimated through point counts this year from May 16, the date that flight nets would normally have been opened for the first night of post-laying banding, to June 3. Adjustments were made to the protocol developed in 2003. Counts were still made at 0200 at the cabin flight net area, but a second count site was added this year at trail marker N-56 at North Cove, between Funnels 2 and 3. The number of calls heard and the number of birds thought to be making those calls in a 5-minute period were estimated at each site every night during chick banding. Birds assumed to be on the water drawing chicks out were not counted. A comparison was made between point count totals (both sites combined) and gathering ground counts (Figure 3). Although gathering ground counts noticeably fluctuated, there was still a general decreasing trend for all three counts throughout the count period.

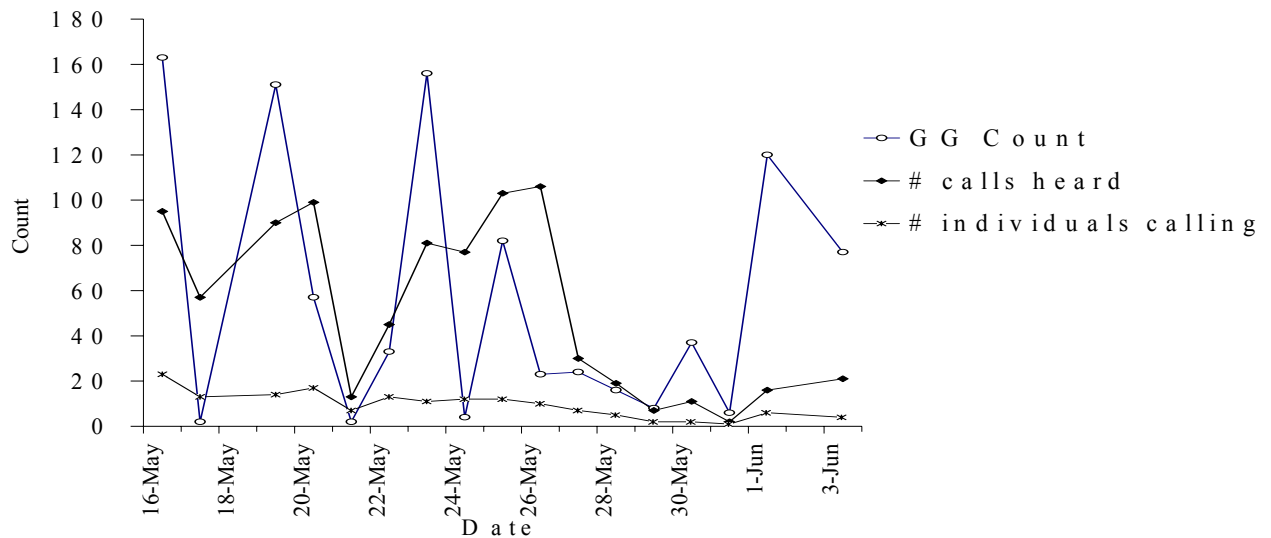


Figure 3. Comparison of Gathering Ground counts to Point Counts from May 16 - June 3, not including May 18 and June 2.

Predation

Predation levels on Ancient Murrelets, represented by the number of wings and feather piles found, were not unusual compared to past years. This season, several feather piles and 38 wings were found in various locations around the island. Of interest, however, is that 11 of the wings were found in an area 5 m in radius behind the bird blind and are suspected Raven predations as a Raven family was often seen and heard nearby. Three headless carcasses were found this year in mid-June near Bald eagle nests BAEA-2, BAEA-4 and BAEA-7. It is suspected that river otters were responsible for the predations as a small burrow digging (too small for a raccoon) was also found in the same area. No bands were found this year.

Black Oystercatchers

British Columbia is host to one third of the global population of Black Oystercatchers (BLOY), 37% of which are found in Haida Gwaii. This year in Laskeek Bay, 23 sites were found to be active, i.e. were found with eggs and/or chicks at some point throughout the season. A total of 51 eggs were laid at these sites, with one pair laying a replacement clutch of 2 eggs. Eggs were measured for length and breadth and then weighed. From these, 20 chicks were found during the season. Unfortunately, by late July, 14 of the active nests had failed, leaving 9 successful nests with 14 chicks in total. Therefore, 39% of the nests were successful in that at least one egg hatched, but there was only a 27% success rate from laying to hatching for all eggs. Ten of the chicks were large enough to band and all were banded with the band combination White (left leg) – Orange/Metal (right leg). When banded, chicks were also weighed and culmen and tarsus measurements were taken. Banded Adults were seen eleven times this season in Laskeek Bay, but due to illegible aluminum alpha-numeric bands or bands having fallen off, it was impossible to determine when and where many of these birds were banded (Table 2). One adult seen at South Low, however, was identified as being banded in 1994 as a chick.

Data was also collected this season to compare nestling diet between Black Oystercatcher sites and how reproductive success varies with diet. When sites were known to have chicks, they were visited every 5-11 days, depending on weather and opportunity in order to collect feed samples. The shells of prey items fed to chicks were collected and measured three times during the season from 9 sites on 5 different islands: Cumshewa Island (CUM-1), Kingsway Rock (KNG-1, KNG-2, KNG-3), Low Island (LOW-1, LOW-2), Reef Island (REE-4) and Skedans Island (SKE-1, SKE-4). The majority of prey items found were limpets, mussels, chitons and crabs.

Table 2. Banded Adult Black Oystercatchers seen in Laskeek Bay in 2004.

Band Combination*	Location seen (nest site)	Year Banded (Location if known)	Banded as (if known)
UB – M	Cumshewa Is. (CUM-3)	Unknown	Unknown
UB – M	Kingsway Rock (KNG-2)	Unknown	Unknown
UB – Bk	Lost Is. (LOS-4)	Unknown	Unknown
Aluminum – Bk/M	Reef Is. (REE-1)	Unknown	Adult
Bk/M – W	Reef Is. (REE-8)	2000?	Chick?
Aluminum – Bk/M	Skedans Is. (SKE-6)	Unknown	Adult
W – M	Skedans Is. (SKE-6)	Unknown	Chick
Bk/M – W	Skedans Is. (SKE-6)	2000?	Chick?
M – Bk	Skedans Is. (SKE-6)	Unknown	Unknown
UB – Bk/M	South Low (SLW-5)	Unknown	Unknown
W – W/M	South Low (SLW-8)	1994	Chick

* (left leg) – (right leg); UB = leg unbanded; M = Metal; Bk = Black; W = White; Aluminum = Blue Alpha-Numeric.

This year, in collaboration with Gwaii Haanas National Park Reserve and Haida Heritage Site, LBCS expanded their Black Oystercatcher monitoring area to the islands off the east coast of Lyell Island and down to the north end of Juan Perez Sound, as far as Ramsay Island. This work will help to provide a baseline against which to detect changes in intertidal ecosystem structure or productivity in the Park as the diet and habitat specializations of Oystercatchers make them unique among the birds of Haida Gwaii. Also, the ease with which the species can be studied makes them an ideal focus for monitoring ecosystem health.

Surveys were conducted in Juan Perez Sound for two three-day periods, the first from June 14-17 and the second from July 3-6. All overnights on both surveys were spent at a temporary camp set up by Gwaii Haanas staff in the Bischof Islands. The first survey attempted to locate all active BLOY nest sites from Titul Island down to the south side of Ramsay Island, including Richardson Inlet and Darwin Sound. All adult Black Oystercatchers seen from the water were noted and the section of shoreline on which they were seen was checked for signs of breeding. Approximately 120 nm (215 km) of shoreline were surveyed. A total of 58 sites were checked, of which 43 were found to be active. A total of 58 eggs (presumed to be alive), 8 predated eggs, 23 live chicks, and 2 dead chicks were found. An additional 37 adult BLOYs were counted but no associated nests were found.

The primary purpose of returning for a second survey in July was to band chicks. A total of 49 sites were checked, 27 of which were considered still active, i.e. eggs and/or chicks were found. Four new active sites were found during this second survey that were not found during the first – Shuttle Island with 1 site, and Murchison Island with 3. All eggs found were measured using calipers and weighed. Eggs were not measured if they were pipped and chicks could be heard peeping. Chicks weighing <100 g were not banded. Chicks weighing >100 g were banded with a colour band on the left leg denoting locality banded, and a colour band denoting banded as a chick in 2004 over a stainless steel band on the right leg. Tarsus, culmen, and wing cord were also measured on all banded chicks.

When chicks were found, prey items surrounding the scrape were counted and categorized into the prey type categories of mussels, limpets, chitons, crabs, abalone etc. GPS co-ordinates were also taken at the scrape at each site checked.

There were 16 sites where eggs or chicks were found during the first survey in June but none were found in July. A total of 21 chicks from 13 sites on 8 islands were banded, with 9 chicks from 5 sites being too small to band. There were 3 sites with dead chicks, 1 chick at each site. A total of 10 nests still contained eggs (5 with 2 eggs, 5 with 1 egg) and 3 nests contained new clutches of 2 eggs each. Table 3 provides the band combinations used.

Table 3. 2004 Black Oystercatcher Chick band combinations by location.

Group*	Location	Band Combination**
1	Laskeek Bay	W – Or/M
2	East of Lyell Is.	None banded
3	Juan Perez Sound	DB-Or/M; DB – R/M
4	Juan Perez Sound	DB-Or/M; DB – R/M
5	Darwin Sound/Richardson Inlet	Or/M-Y; Y-Or/M; Y – R/M

*Grp 1: Cumshewa Is., Skedans Is., East Limestone Is., West Limestone Is., Low Is., South Low Is., Reef Is., Kingsway Rock, Titul Is., Kunga Is.

Grp 2: Tar Is., Kawas Is., Agglomerate Is.

Grp 3: Faraday Is., Murchison Is., House Is., Hotspring Is., Ramsay Rock, Ramsay Is.

Grp 4: Bischof Is.

Grp 5: Topping Is., Shuttle Is., Lyell Pt., Richardson Passage, Dog Is., Stanslung Is.

** (left leg) – (right leg); W = White; Or = Orange; DB = Dark Blue; R = Red; Y = Yellow; M = Metal

Glaucous-winged Gulls

Kingsway Rock was visited on May 20 to check the Glaucous-winged Gull colony for timing of laying. Laying had not begun as no eggs were found, only empty nests. One month later, 5 Glaucous-winged Gull colonies in Laskeek Bay were censused for adult presence and nest contents: Kingsway Rock and Lost Islands on June 20, Cumshewa, Low and East Skedans Islands on June 21. The following was found at each colony: Kingsway – 122 adults, 40 nests with eggs, 27 empty nests; Lost – 551 adults, 188 nests with eggs, 14 empty nests; Cumshewa – 0 adults, 0 nests; Low – 14 adults, 4 nests with eggs, 3 empty nests; East Skedans – 7 adults, 4 nests with eggs, 1 empty nest (Figure 4). No juveniles were recorded at any of the colonies during these visits. All eggs appeared to have hatched by June 29 as small chicks were present and no eggs were seen when colonies were visited for surveys of other species. Although the colony at Lost Island was noticeably increasing and that at Kingsway decreasing from 1992 – 2001, the number of nests with eggs appears to be leveling out since 2001, despite there be being fewer adults recorded at Lost Island this year (Figure 4).

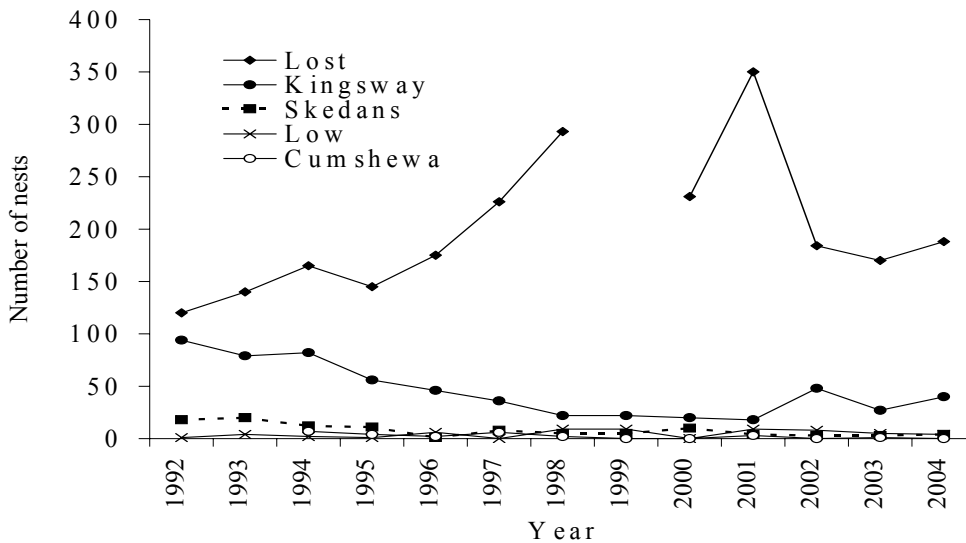


Figure 4. Number of Glaucous-winged Gull nests with eggs in Laskeek Bay 1992-2004.

Pigeon Guillemots

For the third year in a row, Pigeon Guillemots have been found using the nestboxes at Lookout Point. This year, the boxes were checked for signs of use on July 19. Four out of the 10 boxes were used this year, the highest occupancy to date (1 used in 2002, 2 used in 2003). Nestboxes 3, 8 and 9 each had 1 egg while Nestbox 4 had 2 eggs. None of the nestboxes had chicks. None of the eggs showed signs of hatching and it is speculated that these may be replacement clutches as several broken eggshells were found around the boxes and other PIGU chicks that had been seen in Laskeek Bay looked at least several weeks old.

Cassin's Auklets

Cassin's Auklet burrows were again monitored this season on Limestone Island. On May 9, 35 burrows and 5 nestboxes were marked, numbered and mapped out on Cassin's Tower, while the same was done with 7 burrows on the North Shore, near the rope-rock. Knockdown sticks were first set up in burrow and nestbox entrances on the same day and were then checked for knockdowns every 3 days from May 22 – July 21. According to Dr. Gaston, there are considerably more burrows on the east-facing slope of Cassin's Tower this year than in previous years. The majority of the burrows are very long and deep under ground as they are on a slope, so nest cups could not be reached, and hatches could not be dug without disturbing the entire slope. Three of the nestboxes and 26 burrows consistently gave off the telltale odour of Cassin's Auklet. One Cassin's Auklet chick was banded on May 27 from a burrow on Cassin's Tower to which the entrance could not be found. When burrows and nestboxes were checked for knockdowns and sign of chicks for the last time on July 21, eggshell was found in one burrow, and grey and white feathers were found in 15 burrows and 2 nestboxes. There were considerably fewer knockdowns in late July, and the burrow entrances ceased to smell by July 21. It appears that the Auklets have again come and gone after another breeding season on Limestone Island!

Fork-tailed Storm Petrels

Fork-tailed Storm Petrels were heard calling north of the cabin and at North Cove on most nights from May 6-25. This year, one was found incubating in a burrow at Cassin's Tower on May 27. The burrow was checked again on June 28 and a very small chick was found. Its eyes were still closed, so no measurements were taken. The chick was then found dead in the burrow on July 21 just before camp closure.

Sea Surveys

In 2004, four nearshore sea surveys (May 6, May 20, June 26 and July 13) and four Hecate Strait sea surveys (May 13, May 27, June 19 and July 8) were conducted. Nearshore surveys were aborted twice just after they had begun due to fog and sea conditions, and were restarted on subsequent days. Apart from those two days, weather during surveys was calm.

The primary purpose of conducting the sea surveys is to monitor the Marbled Murrelets in Laskeek Bay as these birds are listed as threatened in British Columbia and endangered in Canada. Marbled Murrelets were recorded on every sea survey conducted in 2004 with counts as follows for the nearshore surveys: May 6 – 48, May 20 – 24, June 26 – 50 and July 13 – 57. The peak count of 57 on July 13 was considerably lower than in previous years (June 10, 2003 – 125; July 3, 2002 – 503; June 23, 2001 – 165) and occurred slightly later in the season.

Black-legged Kittiwakes were only seen once this season, on May 13 with a count of 16 adults (Table 4). This is quite a contrast from 2003 when Kittiwakes were seen regularly.

A total of 20 species were recorded this season on nearshore surveys, with several notables such as a Horned Grebe, 17 Long-tailed Ducks and 12 Green-winged Teals seen on May 6 (Table 4). A total of 18 species were recorded on the Hecate Strait surveys, including a Parasitic Jaeger, a Horned Puffin, and Sooty Shearwaters (Table 4). Considerably fewer shearwaters were recorded this year than in past years.

Table 4. Number of Nearshore and Hecate Strait Sea Surveys bird species were recorded on and date of maximum count.

Common Name	Scientific Name	Nearshore Surveys	Max Count	Day of Max Count	Hecate Surveys	Max Count	Day of Max Count
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	2	107	6-May	4	415	13-May
Bald Eagle	<i>Haliaeetus leucocephalus</i>	2	2	20-May, 26-Jun	1	1	8-Jul
Black Oystercatcher	<i>Haematopus bachmani</i>	1	7	26-Jun	0	-	-
Black Scoter	<i>Melanitta nigra</i>	1	7	26-Jun	0	-	-
Black-legged Kittiwake	<i>Rissa tridactyla</i>	0	-	-	1	16	13-May
Cassin's Auklet	<i>Ptychoramphus aleuticus</i>	1	1	20-May	2	8	27-May
Common Loon	<i>Gavia immer</i>	1	6	6-May	0	-	-
Common Murre	<i>Uria aalge</i>	0	-	-	3	7	13-May
Common Raven	<i>Corvus corax</i>	1	1	13-Jul	0	-	-
Glaucous-winged Gull	<i>Larus glaucescens</i>	4	97	6-May	4	28	8-Jul
Green-winged Teal	<i>Anas crecca</i>	1	12	6-May	0	-	-
Harlequin Duck	<i>Histrionicus histrionicus</i>	2	3	20-May	0	-	-
Herring Gull	<i>Larus argentatus</i>	0	-	-	4	3	7-May, 8-Jul
Horned Grebe	<i>Podiceps auritus</i>	1	1	6-May	0	-	-
Long-tailed Duck	<i>Clangula hyemalis</i>	1	17	6-May	0	-	-
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	4	57	13-Jul	4	13	1-May
Northwestern Crow	<i>Corvus caurinus</i>	3	1	6 & 20-May, 26-Jun	0	-	-
Pacific Loon	<i>Gavia pacifica</i>	3	10	6-May	3	3	19-Jun
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	0	-	-	1	1	27-May
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>	4	50	26-Jun	2	2	13-May
Pigeon Guillemot	<i>Cephus columba</i>	4	241	20-May	4	105	8-Jul
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>	4	89	26-Jun	4	72	13-May
Sooty Shearwater	<i>Puffinus griseus</i>	0	-	-	4	132	13-May
Thayer's Gull	<i>Larus thayeri</i>	0	-	-	2	3	13-May
Tree Swallow	<i>Tachycineta bicolor</i>	1	3	26-Jun	1	1	27-May
Horned Puffin	<i>Fratercula corniculata</i>	0	-	-	1	1	8-Jul
White-winged Scoter	<i>Melanitta fusca</i>	3	26	6-May	2	52	13-May

Marine Mammals

In 2004, there were 124 sightings of 8 species of marine mammals in total. The majority of the sightings were of pinnipeds (Table 5). Of particular interest is the seeming lack of Humpback whales in the Laskeek Bay area this season. This year we recorded having seen 19 Humpback whales, which is considerably lower than numbers for the three previous years (Table 5). Discussions with other visitors to the area (tour boats, sailboats etc.) revealed that they too noted that there appeared to be very few whales around this season. Also of interest is that no Pacific white-sided dolphins were seen this year.

There were sightings of 13 Orcas this year: 1 bull seen from Lookout Point, 1 seen during a Hecate sea survey, 6 seen swimming past Cabin Cove and 3, including 1 bull, spotted swimming by just before midnight while chick banding was in progress at North Cove. All sightings were brief so no individual identification photos were taken this year.

Pinniped haul-outs in Laskeek Bay were surveyed during all sea surveys and opportunistically throughout the season. The highest count of Steller's sea lions at the Reef Island Rocks was 450 on May 6. This count is comparable to last year's high count of 410, but occurred one month later this year. No branded animals were seen this season. A California sea lion was heard on the Reef Island Rocks on July 13, but the animal could not be found among the many Steller's sea lions.

Table 5. Total counts of individual marine mammals from marine surveys, haul-out counts, and sea-watches from East Limestone Island for 1997, 1998 and 2001-2004.

Species (common name)	2004	2003	2002	2001	1998	1997
Dall's porpoise	0	0	29	0	0	9
N. elephant seal	0	1	0	2	0	2
Fin whale	0	1	0	4	0	0
Grey whale	1	3	2	0	0	6
Harbour porpoise	12	5	21	19	25	21
Harbour seal	1177	635	316	105	494	257
Humpback whale	19	152	49	140	6	2
Killer whale	13	21	29	16	17	36
Minke whale	2	0	0	0	3	8
Pacific white-sided dolphin	0	325	22	93	10	42
California sea Lion	1	0	0	0	0	0
Steller's sea lion	2987	3107	2577	1633	2317	1077
TOTALS	4212	4250	3060	2016	2875	1462

Sea-Watch Surveys

There were 13 sea-watch surveys conducted this year from Lookout Point for a total of 13.5 survey hours, approximately half of the seasonal goal of 30 hours. Very few marine mammals were seen, except for 1 harbour porpoise spotted on June 6, and 2 on June 26, and 1 male orca on July 12. On July 12, however, hundreds of Marbled Murrelets were seen on the water between Lookout Point and South Low Island.

Wildlife Trees

In May and June 2004, 51 standing snags (dead trees) were monitored for use by cavity nesting species. A large storm on Christmas Eve may have been responsible for the many fallen trees on the island, including 5 wildlife trees (WT). Of the 51 trees monitored, 16 were found to be active, and of these active trees 6 were new this year (WT96-WT101) (Table 6). This year's active trees were used by 5 species of cavity nesters: Red-breasted Sapsucker (10), Hairy Woodpecker (2), Chestnut-backed Chickadee (2), Red-breasted Nuthatch (1) and Northern Saw-whet Owl (1). This is the

Table 6. 2004 active Wildlife Trees.

Nesting Species	Tree #	Tree ¹ Species	Nest hole height (m)	Fledge date
RBSA	12	Ss	20.4	13 June
RBSA	17	Ss	17.3	12 June
RBSA	33	Ss	13.6	9 June
RBSA	34	Ss	17.9	18 June
RBSA	91	Ss	13.0	15 June
RBSA	100	Ss	7.5	19 June
RBSA	101	Ss	16.9	15 June
RBSA	83	Hw	44.9	8 June
RBSA	96	Hw	23.0	8 June
RBSA	99	Hw	9.9	15 June
HAWO	97	Ss	7.5	29 May
HAWO	98	Ss	9.8	1 June
CBCH	58	Ss	14.8	24 May
CBCH	79	Ss	6.4	27 May
RBNU	45	Ss	23.0	15 June
NSOW	81	Ss	9.18	2 June

¹Ss=Sitka Spruce; Hw=Western Hemlock.

first year that Red-breasted Nuthatches have been found using a numbered wildlife tree (WT45). An adult RBSA banded last year with the band combination White/Green-Orange/Metal was using WT34 this year and was seen with its 2 successfully fledged chicks.

As of this year, LBCS has information on 101 trees that have been used by cavity nesters on Limestone Island. Recorded information includes tree species, tree height, diameter at breast height, percent of bark coverage and snag code. We have been interested as to whether cavity nesters, mainly Red-breasted Sapsuckers, are choosing specific types of trees for breeding. In order to determine whether the wildlife trees differ from the other trees on the island, we set out to measure a sample of random snags. Transects perpendicular to the trail were walked at 50 m increments along the Main and Ridge trails, in order to cover the island as evenly as possible. Those same measurements that are recorded for wildlife trees were measured for the nearest standing snag every 20 m along the 100-m-long transects. One hundred random snags were surveyed, of which 64% were Sitka Spruce, 31% Western Hemlock, 4% Red Alder and 1% Red Cedar (Figure 5). Since trees were chosen at random and transects evenly covered the island, we can assume that this is an approximate representation of the make up of tree species on Limestone Island. These proportions are strikingly similar to those of trees used by Red-breasted Sapsuckers on Limestone from 1992-2004 (Figure 6). The random snags were found to have an average height of 12.1 ± 11.1 m and an average diameter at breast height (DBH) of 0.63 ± 0.46 m. This is noticeably shorter and smaller than those trees used by RBSAs from 1992-2004 whose nest trees had an average height of 22.2 ± 10.7 m and an average DBH of 1.12 ± 0.43 m. This suggests that RBSAs on East Limestone Island do not necessarily favour one species of nest tree over another, but that they do tend to choose larger, taller trees.

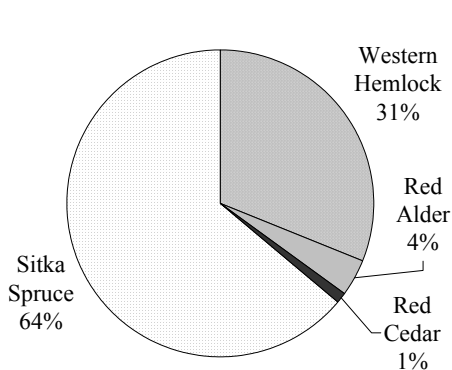


Figure 5. Species representation of random snags surveyed on East Limestone Island, 2004. N=100.

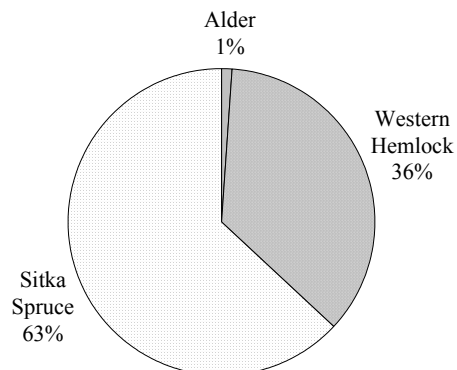


Figure 6. Wildlife Tree species used by Red-breasted Sapsuckers on East Limestone Island, 1992-2004. N=81.

NATURAL HISTORY

Daily Bird Checklist

A checklist of 68 birds commonly encountered in Laskeek Bay was read out each day and all birds seen or heard that day were recorded throughout the entire season. A total of 75 species were recorded this year, just 1 species short of last year's all-time high record of 76. The maximum number of species recorded for one day was 34 and that occurred on May 13, likely due to the fact that a sea survey was conducted that day. Most species were regularly seen. Sightings of interest include a Horned Grebe and 17 Long-tailed Ducks seen during a nearshore survey on May 6, 5 Northern Shovelers seen flying by from Cabin Cove on May 8, a single Horned Puffin spotted below the Cormorant rocks at East Skedans, and a Parasitic Jaeger out in Hecate Strait. Perhaps also noteworthy is that no Double-crested Cormorants were recorded this season, likely because the field season started later this year. The trips down to Juan Perez Sound also afforded us several interesting sightings including a Mew Gull feeding at the north end of Shuttle Island, a Whimbrel at the Tar Islands and numerous Great Blue Herons and Least Sandpipers spotted in various locations throughout the Sound. A Blue Grouse was again heard on Limestone every day from April 30 to May 20 and then occasionally until June 9. The unmistakable calls of Fork-tailed Storm Petrels and Cassin's Auklets were also heard almost every night around midnight in May from north of the Cabin.

Birds of Prey

Four Bald eagle nests were monitored this year, BAEA-1, BAEA-3, BAEA-4, and BAEA-7, a new nest found this season. The tree that BAEA-2 was in (also known as WT78) fell during the winter and no remnants of the nest could be found. The new nest, BAEA-7, is located only 20 m from where BAEA-2 once stood and appears to have been begun just this year as it is relatively thin. It is possible that it was constructed due to the loss of BAEA-2. BAEA-7 was the only nest found to be active this year and was first identified as such on May 5. Two adults were often seen in and around the nest throughout May and June. Chicks were first heard in mid-July and several times subsequently but could not be seen, as the nest was too high.

2004 was an exciting year for WT81. It was home to a Northern Saw-whet Owl pair, the second such nest ever found on Limestone Island! The owls were first discovered on May 4 when one poked its head out of the nest hole while volunteers were completing the first round of wildlife tree checks. The nest hole was excavated by a Red-breasted Sapsucker in 2001 and is only 9.6 m up, faces the cliff in Crow Valley and is therefore easily observable from eye level if one walks up the edge of the slope. An owl was seen looking out the nest hole or sleeping in the sun with its head resting outside the hole several times throughout May. On May 11 at 2300, while checking funnels during Ancient Murrelet chick banding, an adult owl was seen on a stake directly at the mouth of Funnel 5. It was observed for only 10 seconds before it silently flew off into the trees. There was only one other occasion on which an owl was seen other than at WT81 and that occurred on May 23 when an adult was spotted perched on a snag near the beach near Funnel 4 at North Cove. On May 31, we watched a juvenile for 30 minutes as it poked its head out the nest

hole and continuously shifted side-to-side, possibly getting ready to fledge as that was the last time any activity was noted in the tree despite many watches.

Peregrine Falcons were seen flying by Boat Cove and Cabin Cove several times in May and June but no nest was found on Limestone. The bird blind was visited on May 26 but no sign of nesting was found on surrounding cliffs.

Red-tailed Hawks were seen and heard from various locations around the island nine times in May and twice in June. However, no signs of nesting or nesting behaviour were witnessed.

No Common Raven nests were found this year, although several families were seen and heard in the forest throughout the season. There was also no sign of Sharp-shinned Hawks this year on Limestone Island.

Plants

This May and June, East Limestone Island was a delight to behold with *Calypso bulbosa occidentalis* (fairyslipper), *Aquilegia formosa* (red columbine), *Moneses uniflora retialata* (single delight) and many other flowering plants in full bloom. This year several surveys were done in late May and early June to document the presence, location and blooming dates of rare and uncommon plants. The presence of all other plants was also noted when observed. The total number of plant species inventoried for East Limestone Island remains at 120 with no new additions this year. Five *Geranium richardsonii* (Richardson's geranium) specimens were found blooming as early as May 20 in three separate locations. One was a new plant in a new and distinct location! This is of particular note as Richardson's geranium is not known to occur elsewhere in coastal British Columbia. *Anemone multifida* (cut leaf anemone), *Minuartia tenella* (slender sandwort), *Sisyrinchium littorale* (shore blue eyed grass), *Polemonium pulcherrimum* (showy jacob's ladder), *Fritillaria camschatcensis occidentalis* (northern rice-root) and *Dodecatheon pulchellum* (few-flowered shooting stars), all rare plants on East Limestone Island, were observed in bloom as early as May 19. These plants all survive on ledges, cliffs and crevices where deer cannot reach. Mosses were inventoried by volunteer Jocie Ingram in early May and many ferns and lichens were inventoried throughout the season.

Introduced Species

Raccoon surveys were conducted twice this year using a spotlight to scan the intertidal area around the entire perimeter of East and West Limestone Islands, and on Louise Island from Vertical Point north to the point just south of Skedans Bay. The first survey was conducted on May 16 and 4 raccoons were spotted on Louise Island: one opposite West Limestone, two on the rocks in the bay north of Vertical Point, and one just north of Vertical Point. The second survey was conducted on May 31, and 6 raccoons were spotted again on Louise Island, 2 of them at Vertical Point. No raccoons were seen on either of the Limestone Islands during either survey or throughout the rest of the season.

There was no attempt to census the Sitka black-tailed deer on East Limestone this year, but it was suspected that there may be fewer this year as there appeared to be less

browsing on vegetation such as huckleberry shrubs. Two fawns were seen a few times at various locations around the island in late June and July, one of these being sighted at North Cove suckling near Funnel 2. There were no sightings of the collared deer this year.

The red squirrel census was not conducted this year, but based on the experience of returning staff and visitors, squirrels appeared to be more prominent than last year.

Other Species

River Otters were seen occasionally from late May onward, in various locations including one on the rocks just east of Boat Cove, seven eating fish on the rocks at North Cove and one scrambling over the beach at Cabin Cove. Another interesting sighting occurred on June 12 when one otter was watched as it moved across the slope at North Cove and appeared to be foraging around. It was suspected that river otters were responsible for a digging and three headless Ancient Murrelet carcasses just east of North Cove.

Conclusions

The most striking feature of the 2004 season was the decline in numbers of Ancient Murrelet chicks captured and the lack of evidence for prospecting activity by adult birds. Compared to recent years, sightings of humpback whales were reduced. Otherwise, observations of marine animals suggested a normal year, with gulls and Black Oystercatchers breeding normally and a possible increase in numbers of Cassin's Auklets breeding on East Limestone Island. We need to continue monitoring Ancient Murrelet biology very closely to better understand the apparent reduction in recruitment at East Limestone Island. This is the kind of challenge that our monitoring operations are designed to detect and interpret.

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- Gwaii Trust (Project Limestone)
- Science Horizons, Environment Canada
- Gwaii Haanas National Park Reserve and Haida Heritage Site
- B C Gaming Commission
- Canadian Wildlife Service
- School District 50/Community Links Program
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