

# Laskeek Bay Conservation Society Field Season Report 2002



## Summary

This annual Field Season Report summarises the highlights of the Education and Science Programs of the Laskeek Bay Conservation Society. In 2002, we had 395 volunteer and visitor days during our 14-week season on Limestone Island. The camp opened from 29 March to 7 July and was supported by four staff, 27 volunteers and eight Directors. More than one-quarter of the volunteers had helped previously and at least half were from Haida Gwaii. Four school groups participated in Project Limestone and we enjoyed six visits from the sailing vessels *Island Roamer* and *Maple Leaf*. The Research Group on Introduced Species partnered with the Society for a songbird banding and genetics study that will examine the degree of isolation in resident songbirds on Haida Gwaii. Ancient Murrelets always fascinate and intrigue us and this year was no exception. Ancient Murrelet chick numbers were within the long-term average, 566 chicks from 9 May to 3 June, one of the shortest seasons to date. The peak night of departure was 21 May with 65 chicks, the highest number since 1993. Breeding Ancient Murrelets occupied 12 monitored burrows and eight of these families departed with chicks. Of the successful burrows, five left with two chicks and three left with one. Adult Ancient Murrelet catching wasn't as good as the last few years, with only 159 birds for the season. Black Oystercatcher nesting was also slow this year, with only two nests with chicks in July. The Lost Island gull colony declined to pre-1997 levels and the Kingsway Rock colony increased slightly. One Bald Eagle pair raised one chick near the Spring Valley plot. There were 19 nests in wildlife trees from three species and unfortunately for the owls, their nest tree from last year fell down. We had more than 100 sightings of marine mammals, including 49 humpback whales. And saving the big news to last, one of the Pigeon Guillemot nest boxes was used and it was by two different females no less! All in all, a really great season.

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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, more than halfway to its goal of 25 years. With pressures from introduced species, offshore oil exploration and now wind farms in the Hecate Strait, long-term monitoring projects like ours provide the scientific support to evaluate changes or effects. Our science program is comprised of more than a dozen projects and with each season, we are finding more firsts - a nine-year Red-breasted Sapsucker tree and a 17 year old Ancient Murrelet to name a few. The education program is an integral part of the science program, working in concert to gather data and provide a new experience for curious people. Residents and visitors to Haida Gwaii have an opportunity to investigate an old-growth forested island, explore the limestone shoreline and discuss what they have learned with scientists and other visitors.

## EDUCATION PROGRAM

### **Project Limestone**

This year marks the 12th season that local school groups have taken part in Project Limestone. This program is funded by the students, School District 50, Gwaii Trust and LBCS and offers a valuable, educational experience for both students and teachers from Haida Gwaii. Project Limestone is a great opportunity for young residents to learn more about this ecosystem and to experience biological research first-hand. School groups receive an afternoon natural history orientation and are introduced to the ongoing research projects carried out on Limestone Island. At night, students and teachers return to assist with the Ancient Murrelet chick banding and learn to carefully retrieve chicks from funnels, help record weights, measurements and band numbers.

Four school groups participated in Project Limestone this year: Living and Learning School (Q.C. City), G.M. Dawson (Masset) and two groups from Queen Charlotte Secondary Kayak Club. Total number of Project Limestone days: 39 (30 students and 9 teachers).

### **Visitor Interpretation Program**

Sailboat tour operators en route to Gwaii Haanas National Park Reserve often schedule a visit to Limestone Island. Visitors are treated to the same experience as the Project Limestone participants with an afternoon tour and evening chick catching at North Cove. We are told that for many of the tour boat guests, visiting Limestone Island is the highlight of their trip to Haida Gwaii.

Both the *Maple Leaf* and *Island Roamer* came to Limestone Island in 2002, and a scheduled visit by *Copper Sky* was curtailed because of bad weather. The *Island Roamer* visited four times (17-18 and 26 May, 12 June) with 42 guests and nine crew members. The *Maple Leaf* visited twice (21 May and 1 June) bringing 14 guests and 9 crew members. Total number of tour group days: 74.

### **Volunteers**

The volunteer program on Limestone Island offers a unique opportunity for people to assist with biological research in a remote field environment. This program, whereby people donate their time in exchange for learning about the Haida Gwaii ecosystem, is vital to the success of the Society. This year, 27 people volunteered to help on Limestone, all from Canada – Haida Gwaii (17), rest of BC (4), Ontario (4) and Alberta (2). We had four volunteers age 12 or under, including one exceptionally enthusiastic student from Living & Learning, Cole Murdoch, that spent four extra days on Limestone after his trip with the Living & Learning School in 2001 and 2002.

The majority of volunteers helped for one week, but six people came for two weeks; the average length of stay in 2002 was nine days. Eight of the volunteers had been to Limestone before. Total number of volunteer days: 232.

### **Other visitors**

The Reef Island-based Research Group on Introduced Species (RGIS) arrived in Laskeek Bay on 21 June. Limestone Island continues to serve as an important research site for RGIS because they monitor long-term vegetation plots and three deer exclosures. The initial Reef Island research crew of PhD student Steve Stockton (University of Ottawa), Joelle Fournier, Joelle's nephew Andreas Lutjen, post-Doc Theresa Burg and M.Sc. student Roger Bull stayed on Limestone for four days while we worked out the songbird banding schedule and starting setting up their camp for the next week.

Tony Gaston (Canadian Wildlife Service) arrived on 28 June with his undergraduate field course and five students from Ontario. The class came over to Limestone Island for a guided tour and to collect habitat data around the mist net lanes on Limestone. On 5 July, Dr. Vicki Friesen, Queen's University, and her 12-year old son Daniel joined the research crew on Reef Island to study songbird genetics (*see* Songbird Banding).

Other visitors to Limestone included divers from Haida Fisheries, onboard the *Haida Storm*, who were conducting a sea urchin survey in Laskeek Bay in early July. Two of their researchers, Rob and Bart, stopped by one evening to say hello and chat about their project and exchange local news. Total number of other visitor days: 50 (19 people).

### **Haida Gwaii Watchmen**

In an effort to establish a closer relationship with our Haida neighbors, we made a trip to both Tanu and Hotspring Islands in early July. These visits were a good opportunity to meet the Watchmen and to extend an invitation to the Haida community to take part in our volunteer program; a number of the Watchmen seemed quite interested.

### **Limestone Logs**

The office continues to distribute the Limestone Logs electronically on a bi-weekly basis. The Log provides a synopsis of island events and is a great way to keep our supporters posted on new developments and research results as they come in. We were happy to receive so much positive feedback from our readers, sometimes via e-mail directly to Limestone!

### **Volunteer Orientation Guide**

This was the second year that the new Guide was in use. The Guide is a helpful resource for volunteers because they can refer to the descriptions and color photos and develop a better understanding of camp life and research projects.

### **2002 Field Staff**

The Limestone Island camp was open from 29 March to 7 July, 2002. Positions were: Joanna Smith (camp manager/senior biologist), Jen Rock (biologist/interpreter) and Charlotte Tarver (interpreter/naturalist). Volunteer banders: Mark Hipfner (Canadian Wildlife Service) and Keith Moore (LBCS). The science intern position was vacant this year.

## SCIENCE PROGRAM

If you've read our field season reports before, you know that approximately half of the global population of Ancient Murrelets breed on Haida Gwaii and this species is listed as vulnerable in Canada because of threats from introduced species. You may not know that while rats and raccoons continue to be a serious concern for Ancient Murrelets throughout most of this archipelago, Langara Island, on north coast, remains rat free after an intense eradication program. However, wind farms in the Hecate Strait are a new conservation issue to add to the discussion of offshore oil development and introduced species for their effects on species that use the Hecate Strait and offshore islands. Our long-term monitoring programs for breeding success allows us to learn how some species respond within this ecosystem, creating a baseline data base to evaluate future changes, anthropogenic or otherwise.

### Ancient Murrelets

#### Adult Banding

We used three knock-down nets from 1-12 April (before egg laying) and 20 May to 9 June (during chick departures) to catch adult Ancient Murrelets leaving the colony. We also looked for adults in monitored burrows after 30 days of incubation. All told, we opened the nets for 39.25 hours, over 20 nights, using the same approximate time of night as years prior (0330 to 0530 h in April and then 0130 to 0415 in May and June). Most of the time we only use one net each night but on 30 May we had 3 banders on the island so we opened both the Cabin and North Cove nets on the same night (North Cove after finishing chick banding at 0230 h) – a first for the Limestone Island crew!

A total of 190 birds were caught in 20 nights (79 new + 111 retrap), including nine birds in burrows and birds caught more than once. After multiple retraps are subtracted, the total drops to 159 (79 new and 80 retrap; Table 1). Before egg-laying, we caught 66 birds (23 new and 43 retrap) and we caught 93 adults (56 new and 37 retrap) post-laying (i.e. during chick departures).

**Table 1. The number of Ancient Murrelets caught on East Limestone Island, 2002. Birds with brood patches 10-19mm are of unknown breeding status. Retrap\* birds have doubles removed.**

Timing	Capture method	Breeding status	New birds	Retrap* birds	Total birds
Pre-laying	Net	Breeder	23	43	66
Post-laying	Net	Breeder	12	23	35
	Net	Non-breeder	30	8	38
	Net	Unknown	8	3	11
	Burrow	Breeder	6	3	9
TOTAL			79	80	159

Of the 80 birds retrapped on Limestone Island, nine were banded as chicks with seven breeders (banded 1990, 1991, 1995, 1997 and 1998) and two non-breeders (banded 2000). The remaining 71 birds were banded as adults between 1989 and 2001. Two breeders were banded in 1989, which makes them 16 or 17 years old, the oldest Ancient Murrelets to

date. Most of the remaining retrapped birds (59; 74%) were banded in 1996 or later, with 17 adult birds coming from 2000 (21%). Like other years, no chicks were recaptured from 1993, the year with heavy raccoon predation.

Birds in burrows weighed  $206.3 \pm 9.9$  g, followed by breeders caught in nets  $201.3 \pm 16.2$  g, and non-breeders were  $174.5 \pm 14.3$  g.

The catching efficiency of the nets really varied this year. In April, we set up and opened the Spring Valley net first, then North Cove and Cabin. We banded eight nights each at Spring Valley and North Cove and only four nights at Cabin. However, Cabin was the big catcher this year, with 13.8 birds per night, or 6.5 birds per hour. The North Cove net was highly variable and one night we caught no birds but the net rated second for captures with 8.9 birds per night or 4.1 birds per hour. The Spring Valley had the lowest catching efficiency with 6.4 birds per night or 3.8 birds per hour, in part because the net would not completely open.

### Chick banding

Several days of strong, north winds caused lots of difficulties when we were setting up the plastic funnels and we only just managed to get the plastic up by 7 May. The gates were closed from 7 May to 4 June, using the adjusted protocol from 2001: 2230 – 0230 until 21 May and then 2300 – 0230 to End (the 1997 protocol). We used USFWS No. 3 stainless bands series 1313-96000 for the chicks and no plastic bands. The first chicks arrived on the night of 9-10 May and the last chicks left on 3-4 June. A total of 566 chicks were banded this year, with the peak night on 21 May with 65 chicks (Figure 1; Table 2).

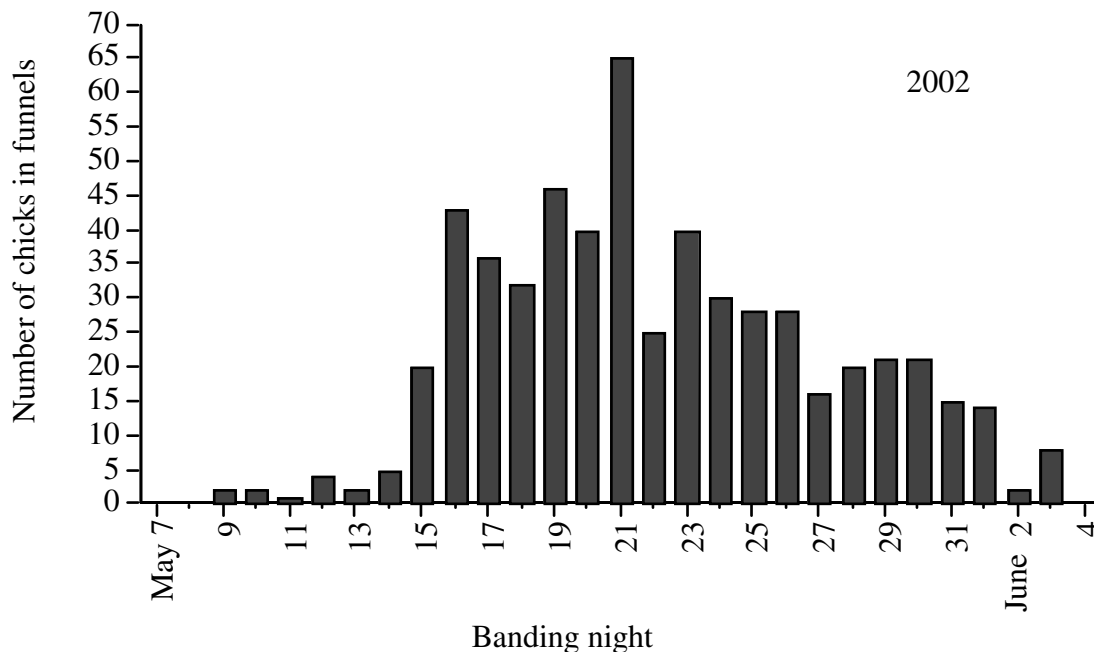


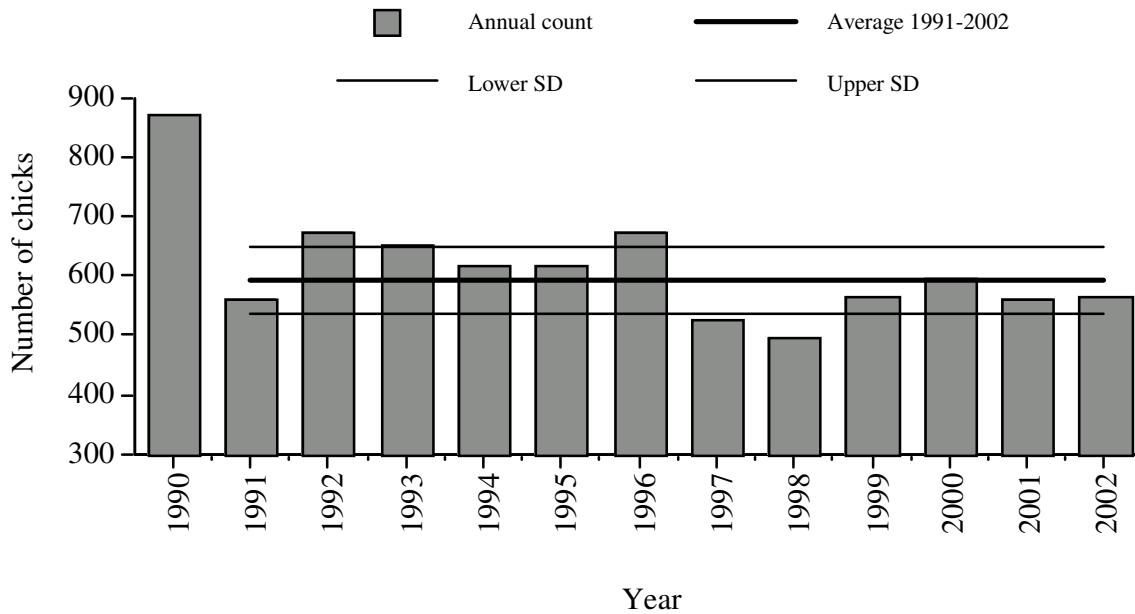
Figure 1. Nightly chick numbers on Limestone Island, 7 May to 4 June 2002.

For those that are keen to look at numbers, you'll notice that 2002 was a slightly unusual year in that we had a relatively high number of chicks in a near record number of days, 566 in 26 days (Table 2).

**Table 2. Summary of chick departures, peak nights and numbers on Limestone Island, 1990-2002.**

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

Discounting the first year that we began banding chicks, the number of chicks caught on Limestone Island in 2002 is within one standard deviation of the long-term average (Figure 2).



**Figure 2. Annual counts of Ancient Murrelet chicks in funnel on East Limestone Island 1990-2002. The solid line is the long-term mean, 1991-2001 and the dashed lines are one standard deviation from this mean.**

We banded an additional 10 chicks in burrows and 18 chicks outside of the funnels. Chicks weighed on average  $31.9 \pm 2.9$  g in burrows, and  $26.5 \pm 2.2$  g in funnels, illustrating the 20 percent weight loss at departure so well characterised by Tony Gaston on Reef Island in the 1980s.

And ticks! We found eight chicks with ticks this year, each having from 1-5 ticks per web. These chicks weighed  $26.4 \pm 1.7$  g, not significantly different than chicks without ticks. Ticks were primarily on chicks that were departing from the eastern side of the island (Spring Valley and Cabin funnels, n=7).

### **Burrow monitoring**

We checked Ancient Murrelet burrows for the first time on 7 April and what a nice surprise to find our first egg the same day. Egg laying continued at a slow pace, with the last egg laid on 4 May (C-44). Our sample of burrows started off at 47 but we retired three burrows because they were either filled with spruce cone seeds or had collapsed (C-9, C-18 and S-23). Three half-days were dedicated to finding potential new burrows bringing the total sample to 52. In the end, 12 burrows were active and of these, only 8 breeders departed with chicks. There may have been 13 active burrows but this last one, C-98 on the Ridge Trail, was under the path and although it had lots of activity, we decided not to dig a hatch for fear the whole burrow would collapse.

Of the eight breeding pairs of Ancient Murrelets that left the colony with chicks, five had two chicks and three left with 1 chick (one had only one egg in the burrow, one was one chick and one cold egg and the last was one chick and one dead chick in the burrow). Four burrows were abandoned or deserted, three with two cold eggs and the other with one cold egg. The average weight of all eggs was  $46.3 \pm 3.9$  g.

Mark Hipfner (Canadian Wildlife Service) volunteered for two weeks in May (17-31) and he's especially interested in alcid eggs. We used a density formula from Tony Gaston's "The Ancient Murrelet" to calculate the length of incubation for the abandoned eggs. We learned that burrows with 2 cold eggs were incubated for 14, 23 and 28 days, and the burrow with the single cold egg was not incubated at all (C-69).

We continued to notice Sitka spruce cone stalks and seeds in the burrows. In 2002, we retired two burrows because of the large accumulation of seeds in the nest cup and are still unsure if it is only mice eating cones in the burrows and boxes, or if squirrels are also using the murrelet nest sites to cache seeds.

Ancient Murrelet families left the colony from monitored burrows from 25 April to 12 June. The last burrow, C-44, has been active for nine consecutive years, with two of last three years with the same adult (1313-87070). The same adults have been in C-75 and C-14 also for two of the last three years.

Burrows were not monitored in North Cove.



## **Gathering Ground**

From 5 April to 27 June we counted Ancient Murrelets on the gathering ground to the west side of Low Island. The peak count was 226 on 29 April, almost a full month earlier than last year (2001: 328 on 23 May). Counts for the season were April: 3-226 (n=22,  $62 \pm 64$ ), May: 1-157 (n=24;  $43 \pm 42$ ) and June: 4-129 (n=19;  $49 \pm 51$ ).

High winds, large swell and reduced visibility prevented us from counting birds on 17 evenings. April was unseasonably sunny and dry, with only a few days with high winds. The weather turned in May and we had several days with gale force winds. On 15 May we had a storm force sou'easter (>55 knots) with seas greater than 2.5m in Laskeek Bay! June was unusual in that we had almost a week of gale force winds in the last half of the month.

## **Nest Boxes**

Ancient Murrelet nest boxes were checked during daily burrow rounds (5 April – 1 June). Since burrows were used in the first year that they were installed on Reef Island, it was a bit of a surprise that the nest boxes on Limestone were not used in their second year, and there were very few overall visits. Spruce cones stalks and seeds were found in nine boxes.

## **Predation**

Who is digging up the Ancient Murrelet burrows on Limestone Island? It is still a mystery but this year, we think it was river otters. Ten burrows were destroyed in 2002, most of them in the small Ancient Murrelet colony near the Look-out Point where an otter family has a play area and den within 200 m. Most of the diggings were found late April to mid May, during the egg-laying and incubation period. Additional predation by birds of prey (eagles, falcons, hawks) was evident with Ancient Murrelet wings and feather piles throughout the colony, and occasionally beyond. Twice, headless carcasses were found.

## **Black Oystercatchers**

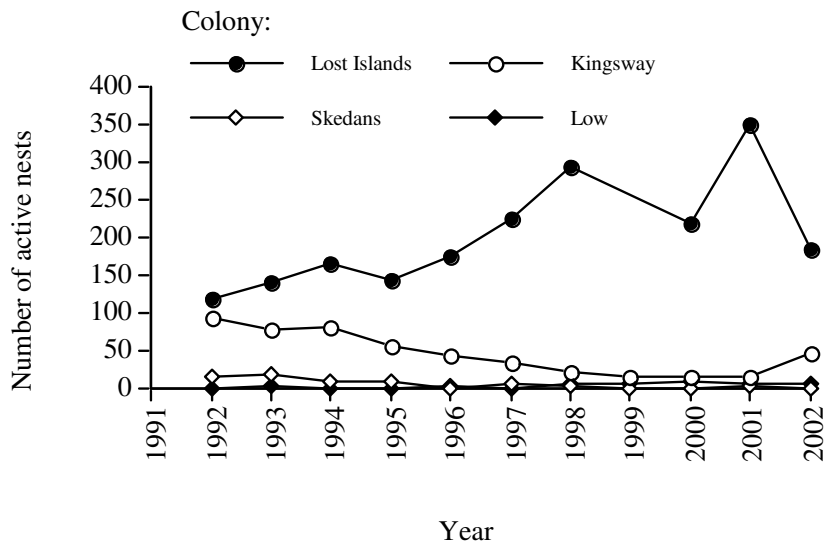
We are pleased that Laskeek Bay was designated an Important Bird Area for Black Oystercatchers and while they are not the easiest bird to study (or band!) we are slowly learning how valuable each breeding site is. We surveyed all of the nest sites from mid May until 3 July, with additional nest checks made by Tony Gaston and Joelle Fournier 8-10 July. In 2002, the final nest tally was 10 active nests, two with chicks and eight with eggs (three with two eggs, five with one egg). No chicks were banded this year because none were large enough by the time we left Laskeek Bay. Eight adult banded oystercatchers were re-sighted and combinations recorded (Table 3) although the aluminum darvic bands are already showing signs of wear.

**Table 3. Banded Black Oystercatchers in Laskeek Bay, 2002.**

Nest location (with Code)	Band combination (left – right leg)
Cumshewa Island (CUM-2)	Metal only (right)
Kingsway Rock (KNG-1)	White – metal
Limestone Island (ELI-2)	Aluminum – black/metal
Reef Island (REE-2)	White – brown/metal; black/metal – white
Skedans Islands (SKE-6)	White – metal; H2 (aluminum) – black/metal
Skedans Islands (SKE-10)	Metal only (right); white – black/metal
South Low (SLW-5)	Aluminum – black/metal
South Low (SLW-8)	White – white/metal

### Glaucous-winged Gulls

We went to Kingsway Rock on 1 June to check the timing of laying and found lots of nests with eggs, some even with a full clutch (3 eggs). Low Island was checked on 14 June (8 nests with eggs, 23 adults) and Kingsway Rock on 20 June (48 nests with eggs, 109 adults). Then, strong winds prevented us from getting to the other colonies for a few weeks. The Lost Island colony was checked on 2 July and there were fewer nests than last year (184 nests with eggs, 121 empty, 920 adults); East Skedans Island was surveyed a few days later (3 nests with eggs, 16 adults) (Figure 3). Cumshewa was checked with the last oystercatcher check on 3 July and no gulls or active nests were found, only one empty nest. The small gull colony on the south side of Reef Island was not counted this year.



**Figure 3. Number of gull nests with eggs in Laskeek Bay, 1992-2002.**

### Pigeon Guillemot Boxes

A guillemot nest box was actually used this year! Boxes were checked on the day before closing camp for the season (6 July). To our surprise, there were three eggs in Box 10, the one farthest out on the rocks at Look-out Point. Two of the eggs were the same, but the third was a different colour and was about two-thirds of the way along the tunnel, towards

the artificial nest cup. Clearly, two different females used the box, but it is not clear how long, if ever, the same-looking eggs were incubated before the third egg was laid, assuming it was put there last.

### **Seabird Surveys**

We managed four nearshore/offshore surveys this year (20-23 April, 12 May, 8-9 June and 3 July), two short of our target. In addition, we traveled 9 km into the Hecate Strait twice to look for Shearwaters and other pelagic migrants (23 May and 19 June). Our boat was running great this year, especially with the new bench and adjustments to the centre driving position, but the weather was generally too rough for most of May and June.

Marbled Murrelet counts are the primary reason we run the nearshore transects because this species continues to be red-listed in BC (Threatened), federally listed as endangered (Council on the Status of Endangered Wildlife In Canada) and internationally listed as vulnerable (International Union for the Conservation of Nature). The total counts of murrelets for transects run continuously for 13 years and all transects combined were, respectively: 20 April- 109 and 150; 12 May - 193 and 215; 8 June - 49 and 121; 3 July - 357 and 503. The murrelet counts in 2002 were higher and occurred later than those in 2001 (165 on 23 June).

Eighteen species were seen on the nearshore/offshore transects: Common and Pacific Loon, Horned Grebe, Double-crested and Pelagic Cormorant, Brant, Bufflehead, Long-tailed Duck, Black Oystercatcher, Glaucous-winged Gull, Black-legged Kittiwake, Ancient Murrelet, Marbled Murrelet, Rhinoceros Auklet, Pigeon Guillemot, Cassin's Auklet, Bald Eagle and Northwestern Crow. Notable by their absence were: Harlequin Duck, White-winged and Black Scoters, Common Merganser and Red-necked Grebe.

Black-legged Kittiwakes were rarely seen in Laskeek Bay this year, in sharp contrast to the hundreds seen in 2001 on Kingsway Rock. Ten sub-adult kittiwakes were flocking with Glaucous-winged Gulls near Cumsheewa Rocks on 3 July and Tony Gaston saw several between Skedans and Reef Islands in early July.

Eight species were seen on the two Hecate Strait surveys: Sooty Shearwater, Pink-footed Shearwater (?), Glaucous-winged Gull, Pigeon Guillemot, Cassin's Auklet, Ancient Murrelet, Rhinoceros Auklet and Red-necked Phalarope. As in previous years, we were no more than 7 km beyond Reef Island when we intercepted hundreds of shearwaters cork-screwing southward just above the waves. We were unable to get very close to the stream of birds but are fairly certain that we saw Pink-footed among the Sooty Shearwaters. On the first Hecate Strait survey, we were literally surrounded by humpback whales, with animals stretching from the horizon near the Skedans Islands, south past Low Island and offshore at least 18 km.

*Correction to 2001 Report: The surveys referred to as 'offshore' in the 2001 Field Summary (p. 11) were Hecate Strait surveys. The 'nearshore' surveys included both the nearshore and offshore transects.*

## Marine Mammals

Nine species of marine mammals were seen in Laskeek Bay in 2002, including the sometimes-marine river otters (Table 4). The pinnipeds were the most numerous group with 2577 Steller's sea lions and 316 harbour seals. Humpback whales were frequently spotted within 100 m of Limestone Island and spectacular displays of breaching, fin slapping and tail slapping occurred in the offshore waters, beyond Low Island. In Laskeek Bay, total numbers were lower than last year but reports from the sailboat tour operators indicated that these whales were numerous in Skincuttle Inlet and Juan Perez Sound, south of us.

**Table 4. Total counts of marine mammals from marine surveys, haul-out counts, and sea-watches from Limestone Island for four of last six years.**

Species (common name)	2002	2001	1998	1997
Dall's porpoise	29	0	0	9
N. elephant seal	0	2	0	2
Fin whale	0	4	0	0
Grey whale	2	0	0	6
Harbour porpoise	21	19	25	21
Harbour seal	316	105	494	257
Humpback whale	49	140	6	2
Killer whale	29	16	17	36
Minke whale	0	0	3	8
Pacific white-sided dolphin	22	93	10	42
River otter	15	-	3	1
Steller's sea lion	2577	1633	2317	1077
TOTALS	3060	2016	2875	1462

The total number of individuals varies from year to year and the seal and sea lion counts are likely a reflection of the number of times animals are counted at haul-outs. What is interesting though is that each year we consistently see the same core group of species (humpback whales, sea lions, killer whales, dolphins) while other species, like the Dall's porpoise, minke and fin whales, are irregular visitors to Laskeek Bay.

## Wildlife Trees

In 2002, we checked 54 wildlife trees (WT) for cavity nesting species. By mid-June, 19 trees were being used, including three new trees (WT 85-87). Red-breasted Sapsuckers nested in 16 trees, Chestnut-backed Chickadees in two, and one pair of Hairy Woodpeckers nested in WT 64. Sapsucker chicks began called from 29 May - 19 June and fledged between 5 - 23 June.

WT 20 (in Spring Valley) was used for the ninth consecutive year by sapsuckers, making it the longest running sapsucker nest tree on Limestone Island. At WT 43 (in C-plot), a colour-banded sapsucker was seen four times, the same bird that was seen from 1996-98 (yellow/yellow – red/metal).

A tree that supported the first Northern Saw-whet Owl nest on Limestone Island last year fell down over the winter. Of the 15m original snag, only 5.5 m remains standing. We were able to locate the nest hole among the bits lying on the ground and estimated that the nest had been at 9 m. The nest opening measured 74 x 77 mm and the actual cavity

measured 18 cm wide by 30 cm tall. The snag had split open during the fall so we were able to examine the nest contents from last year. The nest cup contained two dull, white eggshell fragments and was lined with grass and small, dark feathers. In mid April, a fresh owl pellet was on top of the toppled snag fragment, directly above the old nest hole.

### **Songbird Banding**

In partnership with the Research Group on Introduced Species, a songbird banding and genetics study ran from 22 June to 15 July in Laskeek Bay. The five mist-net stations used this year were E. Limestone Island, W. Skedans Island, Reef Island (2 sites) and Low Island; birds were not banded at Vertical Point (Louise Island). Each station had four banding sessions, generally from 0700 to 1200, with a two or four day rest between sessions. The Limestone Island staff ran the Limestone and Skedans mist-net stations for 7 of 8 scheduled sessions and the Reef banding staff, supervised by Joelle Fournier, ran the other three stations and finished off the last session at W. Skedans Island.

Typical morphometric data were collected from the birds (wing, bill and tarsus length, weight) plus age, plumage and breeding status; fat score and molt were not recorded. Blood was drawn from the brachial vein on the wing of a number of songbirds for a project initiated by Dr. Vicki Friesen and two of her students, Dr. Theresa Burg (a post-Doctoral fellow) and Roger Bull (an M.Sc. student) at Queens' University, Ontario. The blood samples will be used for DNA analyses to test whether resident songbirds on Haida Gwaii are distinct from their counterparts on the mainland coast. This question of genetic similarity is being asked to see how isolated songbirds are on Haida Gwaii, that is, are they mixing with mainland birds often or at all.

We captured 152 birds at the Limestone and Skedans stations between 22 June and 6 July, 118 new and 34 retraps. A total of 17 species were caught, 12 at each station. On Limestone (ELI), Townsend's Warbler was the most common species (25), followed by Golden-crowned Kinglet (14), Chestnut-backed Chickadee (12) and Hermit Thrush (6). On W. Skedans Island (WSK), Fox Sparrow was the most common (21), then Rufous Hummingbirds (not banded, 17), Orange-crowned Warbler (12), Swainson's Thrush (11) and Hermit Thrush (5). All other species were less than five individuals: Brown Creeper (3 on ELI), Dark-eyed Junco (1 on ELI), Golden-crowned Kinglet (1 on WSK), Orange-crowned Warbler (4 on ELI), Pine Siskin (2 on ELI), Pacific-sloped Flycatcher (1 on WSK), Red-breasted Sapsucker (2 on ELI), Red Crossbill (1 on WSK), Song Sparrow (3 on WSK), Swainson's Thrush (1 on ELI), Townsend's Warbler (2 on WSK), Varied Thrush (2 on ELI, 1 on WSK) and Winter Wren (1 on ELI, 3 on WSK).

The long-term question for the Research Group on Introduced Species project is whether recruitment (new individuals entering the population from breeding) is the same for songbirds on islands with and without deer. The ratio of first year birds (hatch-years) to adults is calculated and is used to monitor breeding success of populations near the mist-net stations. We were missing one banding session at W. Skedans when the season ended but with the data we have, the adult:hatch-year ratios were 52:19 on Limestone (26%; 2001 was 18%) and 64:13 on W. Skedans (16%; 2001 was 23%).

Joelle Fournier has been tracking a female Hermit Thrush that was banded on Limestone Island in 1998 and retrapped each year we have used the mist nets. We caught this bird in 2002, again with a brood patch, which makes four years of known breeding. We noticed that a banded Hermit Thrush had built a nest in the limestone wall beside the cabin, in the columbine bushes. We regularly watch this bird feeding directly in front of camp and wonder if it is this banded bird from 1998.

Another interesting note from the songbird banding is that on W. Skedans Island, an adult winter wren was retrapped with a yellow colour band but moss green is the Skedans colour. Our records show that this winter wren was banded as a hatch-year bird on Vertical Point and so it moved 6.5 km, over water, from its hatching site to breed.

## NATURAL HISTORY

### **Daily Bird Checklist**

Our daily checklist of birds on Limestone Island and Laskeek Bay reached a high on 20 April with 38 birds (average was 25 birds per day). A total of 71 species were seen throughout the season with many species seen regularly each week. As in other years, the male Blue Grouse drummed almost daily from 6 April to 9 June, sometimes playing tag with the Northern Saw-whet Owl for continuous day and night calling on the east side of the island. Cassin's Auklets and Fork-tailed Storm-petrels were frequently heard in the middle of the night when we were awake for Ancient Murrelet chick or adult banding. Storm-petrels were probably breeding on the east side of the island, north of camp, and we would hear their 'laugh' as they circled the shoreline after midnight. A lone Red-necked Grebe was in the cabin cove when we opened camp on 29 March. We suspect that this same bird stayed for five weeks, occasionally joined by two other adult grebes. Three Common Snipes were seen on Limestone after two days of southeast gale force winds on 26 April. The snipes were on the ground in the interior of the island, one alone and two as a pair. Wandering Tattlers, usually a reliable visitor to Limestone Island, did not appear this year. Instead, a small flock of Whimbrels landed on our eastern shore on 7 May. The Black Oystercatchers made a raucous when the Whimbrels landed near their nest and continued to alarm until the 'foreigners' left. The always-spectacular large flocks of Sooty Shearwaters flew within 50 m of Lookout Point on 28 May, a foggy, windy day. We generally see these birds in the Hecate Strait and only rarely are they this close to shore, but the dense fog may be the reason we saw hundreds of shearwaters so close to land.

### **Birds of Prey**

Bald Eagles were the only bird of prey known to nest on Limestone Island in 2002. The eagle nest above the Spring Valley murrelet plot (BAEA-2) was active in early April and when we left camp on 7 July, a chick was large enough to be standing up in the nest. The eagle nest at Cassin's Tower all but fell down this year, although an eagle was seen sitting on the tree above the nest on several occasions. A search below this nest on Cassin's Tower in May brought the discovery of another Ancient Murrelet band in a regurgitated pellet but the bird was banded on Reef Island, not Limestone (1313-63528)!

All other eagle nests were checked during the season and were vacant (spring, Crow Valley, North cove). Painted tags (1 to 5) were nailed to all eagle trees except the active nest. Measurements were taken at nest trees this year to quantify the eagle nest sites: tree height and diameter, nest height, tree species, alive or dead, and presence of dead branches. A new nest (for us) may have been located along the southern ridge, west of the junction of the ridge trail out to Cassin's Tower. The suspected nest is in a very large live spruce (210 cm diameter) on a branch with lots of mistletoe. This last nest would bring the total number of eagle nests to 6 on Limestone Island.

Common Ravens frequently sat in the spruce trees near camp, vocalising and searching for unattended lunches on the beach. A quick visit to last year's raven nest tree in May turned up another Ancient Murrelet band, an adult banded on Limestone in 2000. This raven nest was not used in 2002 and we were unable to find their new nest, if in fact they nested this year. Charlotte Tarver remarked that the ravens were unusually quiet this year and some days, we hardly saw or heard them on the island. A Northwestern Crow pair nested under the trailing currant bushes below Cassin's Tower but we're not sure how successful it was. On 7 July, we found a dead fledgling below the nest when we put the new tag on the eagle nest tree.

There was no activity at the Peregrine Falcon eyrie on the south side of Limestone Island and indeed falcons were rarely heard or seen this year. Sharp-shinned Hawks were heard twice and Rob Cameron saw a Northern Harrier on Limestone Island.

Perhaps the biggest news this year for birds of prey was that the Northern Saw-whet Owl nest tree fell over! With the discovery of the nest last year, we were curious whether the pair would return to nest in the same tree. We know an owl visited the tree because a fresh pellet was found the third week in April, above the old nest hole. An owl called from the forest above the cabin, near the junction of the main and north cove trails and on the north side in the forest, above funnel 3 and 4 but we were unable to locate a day roost site, or determine if the female owl was on the island.

### **Plants**

Warm, dry weather in April, followed by rain in May and June created a lush and colourful array of flowers on Limestone Island. All plants in the deer exclosures were growing well, particularly the huckleberry and sword ferns. The rare plant locations were catalogued with GPS coordinates and occurrence was noted for all the plants inventoried in 1998. The cut-leafed anemone (*Anemone multifida*) and Richardson's geranium (*Geranium richardsonii*) continue to grow safely in three locations around the island. The few-flowered shooting star (*Dodacatheon pulchellum*) grows in seven cliff or wall locations and showy Jacob's ladder (*Polemonium pulcherrimum*) has still been found only near the boat cove. The marker for Menzies pipsissewa (*Chimaphila menziesii*) was accidentally removed in 1999 or 2000 and we have not found this plant again, blooming or otherwise.

### **Introduced Species**

Twice we looked for raccoons on the shores of Louise and the Limestone Islands. On 22 May, Charlotte and Jo found a raccoon on the eastern shore of Louise, very close to the

large sandy beach with the old logging equipment. On 6 June, Jen and Jo spotted a small raccoon on a beach facing West Limestone Island. Both surveys were done at low tide but the tidal height was not especially low (6.2' and 6.9' respectively), which may have influenced our surveys. No raccoons were spotted on either of the Limestone Islands, or at Vertical Point.

Mr. Yellow and Red, a collared Sitka black-tailed deer, was seen on Limestone Island from 11 April to 10 June. While he may wander around the whole island, he spends a fair bit of time on the north and east sides and we spotted him 19 times. He is quite tame in that he will feed on the spruce growth and grasses within 10 m of the cabin. A female deer and fawn were seen on the island a couple of times and later a dead fawn was found in the interior of the island.

Red squirrel surveys were not done this year for Research Group on Introduced Species. Squirrels were seen frequently throughout the island and to date, we have not found a nesting location.

### **Other species**

River otters were frequently spotted in Cabin Cove and on the shoreline of the island. The area near the Look-out Point was heavily used and there were many 'slides' up from the forested edge, crustacean bits and otter scat. Otters have also created a trail up from the water near where the spring drains to the beach by the cabin.

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