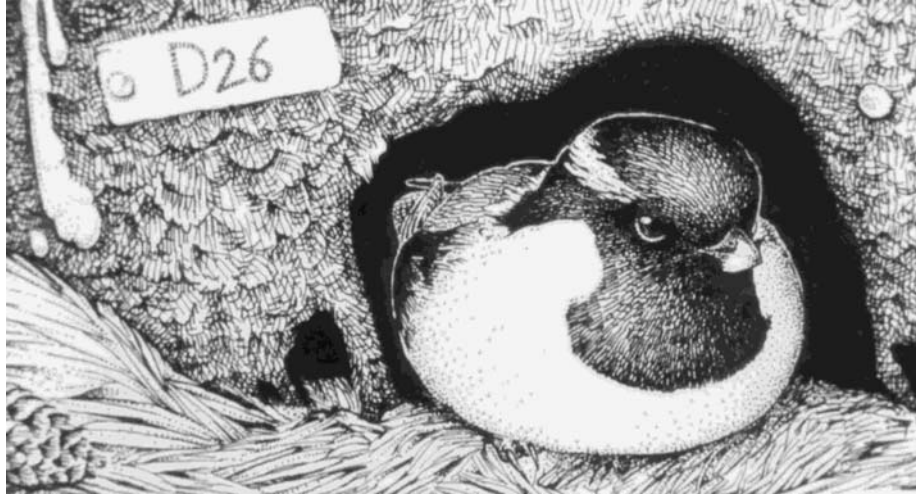


Laskeek Bay Conservation Society

2005 Field Season Report



SUMMARY

This year marked the 16th field season on East Limestone Island. Our interpretation and research programs welcomed 262 visitor and volunteer days. Three local school groups participated in Project Limestone and this year, we also hosted students from Langara College, a post secondary school in Vancouver. For a second consecutive year, the Ancient Murrelet banding program was limited to chick banding. The timing of chick departures was similar to previous years, peaking on May 23. In total, we caught 462 Ancient Murrelet chicks in our funnels, the second lowest number of chicks caught to date. Black Oystercatcher surveys were carried out in Laskeek Bay south to Juan Perez Sound. In total, 78 nest sites were deemed active at some point in the season with either eggs or chicks and we banded 27 chicks. We also described Black Oystercatcher chick diet based on 3351 prey remains identified at 29 nest sites. Limpets, mussels, and chitons made up 97% of the prey fed to Black Oystercatcher chicks. We counted 326 active Glaucous-winged Gull nests distributed among three colonies, the majority of which were located on the Lost Islands (79%). For the first time, we found Pigeon Guillemot chicks in the nestboxes at Lookout Point. We banded eight Pigeon Guillemot chicks from five nestboxes and at Cassin's Tower, we monitored growth and banded a single Cassin's Auklets chick. Marine mammal sightings were consistent with previous years and we recorded 65 sightings from nine species. Ten wildlife trees were active with Red-breasted Sapsuckers (5), Hairy Woodpeckers (3), and Chestnut-backed Chickadees (2). We also followed two active Bald Eagle nests and a Northwestern Crow nest that fledged three chicks.

INTRODUCTION

Our research programs actively involve volunteers and local students, providing important educational opportunities about the significance of wildlife conservation and long-term monitoring. The collection of baseline data is fundamental to assessing any changes that may occur in the local ecosystem and this is especially significant given the ongoing pressures from introduced species and recent interests in both wind farm and offshore oil and gas developments in the Hecate Strait.

The East Limestone Island camp was set-up on April 22 and shut down on July 23, totalling a 93 day field season. The 2005 Limestone Island field staff were: Jen Rock (Camp Supervisor / Biologist), Ceitlynn Epnors (Interpreter / Assistant Biologist) and Jake Pattison (Assistant Biologist). Alexandra Rose, a graduate student from University of Santa Cruz, was on Limestone from mid April to mid June studying the effects of introduced species on Song sparrows in Laskeek Bay.

EDUCATION AND INTERPRETATION PROGRAM

Providing opportunities for non-scientists to participate in field research is one of the Laskeek Bay Conservation Society's key objectives. Project Limestone, the Limestone Island volunteer and visitor programs, provides unique and valuable opportunities for the public to take part in biological research and field camp life. By directly participating in the research, students, visitors and volunteers gain field research skills, a better understanding of island ecology and an awareness of conservation issues on Haida Gwaii.

Project Limestone

2005 marked the 15th year of Project Limestone - a program whereby local students and teachers participate in our Ancient Murrelet banding program. 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, and assist with weighing the bird bags and recording measurements and band numbers. 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.

Despite very stormy weather during the peak of the Ancient Murrelet breeding season four local school groups and a total of 31 students and nine teachers/leaders visited Limestone Island. One group from G.M Dawson Secondary School visited on May 17. Two groups from Queen Charlotte Secondary School visited Limestone Island during the nights of May 25 and 27. One group from the Living and Learning School visited Limestone Island during the evening of May 20 after weathering three days of storms which impeded travel from Vertical Point to Limestone Island. Unfortunately, a second

group from the Living and Learning School was not able to make it to Limestone Island due to the storms. We received great feedback from the students this year. Over half of the students were first time visitors to Limestone and all vowed to return in subsequent years. In total, 357 students have participated in Project Limestone since its inception in 1991.

Volunteers

Volunteers come to Limestone Island for one or more weeks. Living in camp and working alongside field staff, they are involved in all aspects of the research programs and camp life. This year 20 volunteers joined the Limestone Island team, 18 of whom were from BC, one from Alberta and one from Ontario. Nine of this year's volunteers were from Haida Gwaii! Two volunteers each stayed for two weeks, most others stayed for one week, and a few repeat volunteers or Directors stayed for a couple of days. Stacey Shantz and Tysen Husband, two local youth, joined the Limestone Island team July 15- 23 as summer work exchange students. There was a total of 143 volunteer days this summer and 1 week without volunteers.

Visitors

Three tour boats visited Limestone Island for a total of four visits this season. The s/v Maple Leaf visited on May 16, the s/v Island Roamer visited on May 24 and 26 and the s/v Anvil Cove visited on May 23. A total of 31 guests and 7 leaders came ashore on Limestone Island. Unfortunately, one visit by the Maple Leaf was cancelled due to stormy weather. Similar to Project Limestone the tour group visitors participate in an afternoon interpretive tour and then return in the evening to participate in the Ancient Murrelet Banding program. Tour boat guests often cite the visit to Limestone Island as a highlight of the trip. Each tour boat was either on its way to or from a multi-day excursion in Gwaii Haanas.

Limestone Island also provided interpretive tours to three student groups from Langara College June 16-18. The visit to Limestone Island was part of Langara College's Haida Gwaii Studies program - an intensive and integrated four course package that explores the culture, biology and geology of Haida Gwaii. A total of 28 students and 5 leaders visited Limestone Island. The interpretive tour provided an introduction to the research done on Limestone Island, seabird biology and island ecology. The tour also allowed the students to observe the real world relevance and applications of their academic work- a key learning objective of the Langara College program.

LBCS Executive Director Greg Martin, LBCS Director Marlene Specht and Astrid Egger visited ELI for the weekend of July 9-10. Marlene did an inventory of Limestone's plants while Greg and Astrid did some plumbing and construction for a new camp shower.

We had one other visitor; Leiv Poncet from the Falkland Islands, a friend of Jake Pattison. Leiv visited Limestone on July 12 during a kayak trip.

This year we enjoyed frequent visits with the research crew on Reef Island; Jean-Louis Martin of the Centre National de Recherche Scientifique in Montpellier France, Julie Gressner, Deigo Vasquez and Bruno Villa. The Reef crew was examining whether the reduction in plant density resulting from deer browse has a negative effect on the efficiency of pollination. It was nice to share frequent meals and discussions about each others work.

RESEARCH & MONITORING PROGRAMS

Ancient Murrelets (*Synthliboramphus antiquus*)

Adult Banding and Burrow Monitoring

Since the 1990s there has been an apparent reduction in recruitment of new breeders on East Limestone Island. Recognizing that adult capture work and burrow monitoring could potentially contribute to this decline, for a second consecutive year, there was no adult banding, or burrow and nestbox monitoring on Limestone Island.

Although we did not carry out any directed adult capture work, during chick banding, we opportunistically checked adults encountered on the ground for bands. If birds were banded, we recorded band information and condition of the brood patch and if they were not banded, we released the bird immediately. This season, we caught three banded Ancient Murrelet adults. The three birds were originally banded on Limestone as breeding adults in 1990, 1993 and 2002. Ancient Murrelets age at first breeding is between two and four years, meaning that the adult banded in 1990 is at least 17 years old.

Predation

Predation levels appeared normal this year and throughout the season we came across the usual feather piles and body parts leftover from predators such as Common Ravens, Bald Eagles and Peregrine Falcons. We found no burrow diggings or headless murrelet carcasses, both of which can be indicative of the presence of raccoons in the colony.

We recovered three bands from the remains of dead Ancient Murrelets (presumably predated). All individuals were originally banded as adults, one banded on ELI in 1997 as a breeding adult, one banded on ELI in 2003 as a non-breeding adult and the third band was recovered on Reef Island belonging to a bird banded there in 1997.

Chick Banding

Following the usual protocol, we weighed and banded chicks passing through the six plastic funnels at North and Cabin Cove. Our first banding night was on May 7 and we shut down after June 6 which was the first night that no chicks arrived at the funnel mouths (Figure 1). We closed the funnels between 2230-0230 from May 7-19 and adjusted to 2300-0230 for the remainder of the season. In total, we caught 462 chicks in the six funnels in addition to 11 chicks that were collected either after 0230 or outside of the funnels (Table 1). Of the 473 chicks caught and processed, we banded 468 chicks.

Chick departures peaked on May 23 with 38 chicks passing through the funnels (Figure 1). This is the lowest peak count since 1990, reflecting also, the second lowest total for chicks caught at the six funnels since 1990 (Figure 2).

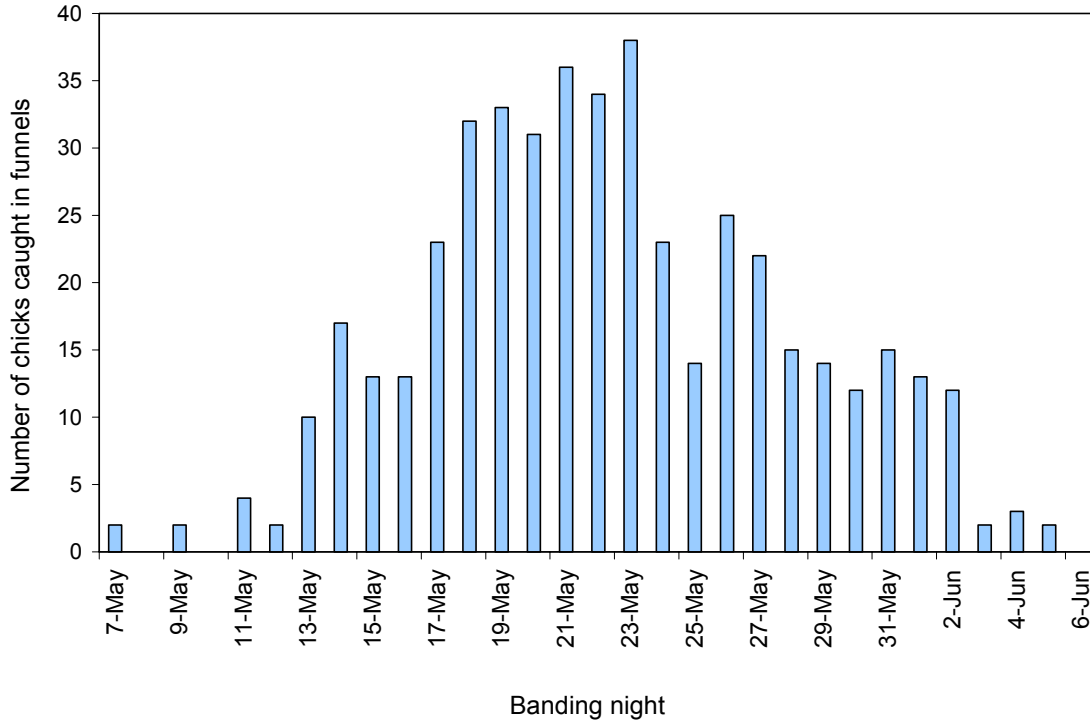


Figure 1. Number of Ancient Murrelet chicks caught in funnels on East Limestone Island, 2005.

Year	Opening night	First night with chicks	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	571
1992	12 May	12 May	3 Jun	21 May	73	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	587
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
2003	10 May	11 May	7 Jun	21 May	52	28	523
2004	8 May	8 May	2 Jun	16 May	45	26	445
2005	7 May	7 May	6 Jun	23 May	38	31	462

Table 1. Summary of Ancient Murrelet chick departures on East Limestone Island, 1990-2005.

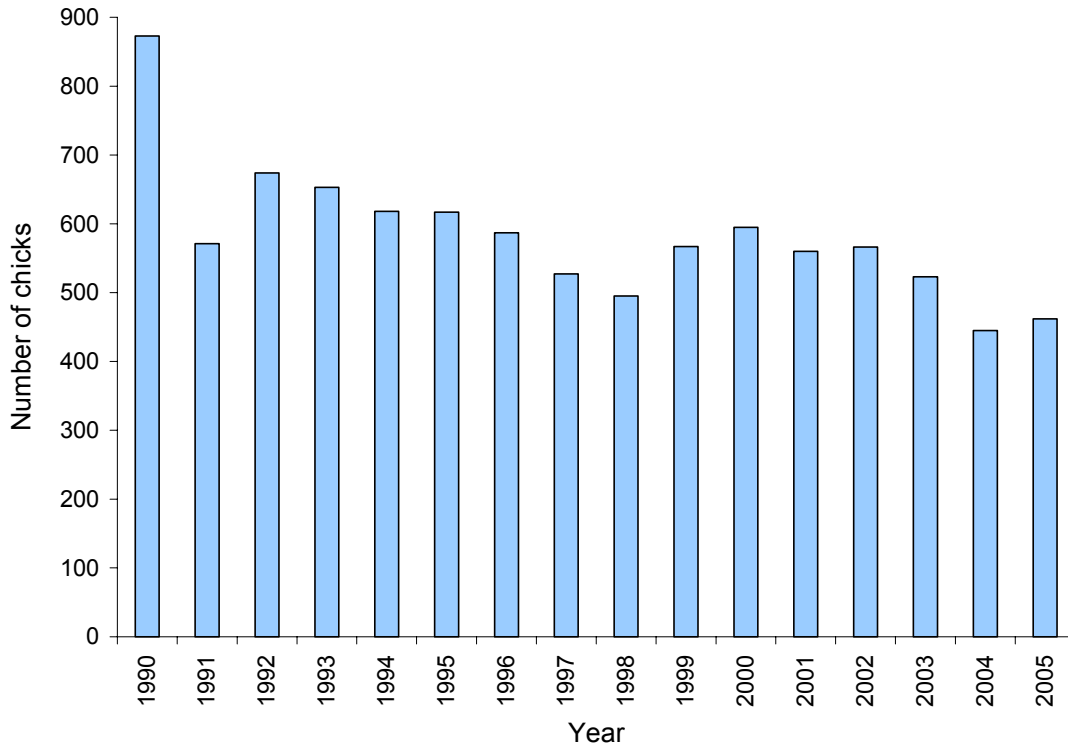


Figure 2. Number of Ancient Murrelet chicks caught in funnels on East Limestone Island, 1990 – 2005.

Gathering Grounds

As they wait to visit the colony at night, Ancient Murrelet adults aggregate at discrete ‘gathering grounds’ located in nearby waters. May 1-June 20, we conducted nightly counts of Ancient Murrelet as they gathered on the water west of Low Island. Numbers peaked on May 24 with 216 individuals counted (Figure 3), this is one day after the peak in chick departures recorded at the funnels. Over the course of the season, we missed 13 gathering ground counts, nine due to poor weather conditions and another four when the field crew was in Gwaii Haanas conducting Black Oystercatcher surveys.

Point Counts

Once incubation is complete, the birds that are heard singing in the colony at night are typically non-breeding, prospecting males. Beginning May 16, we conducted nightly point counts noting the number of individuals calling and the number of calls heard at each of two sites at North and Cabin Cove. These five-minute point counts were conducted between 0200 and 0230 until the end of chick banding on June 6. Birds assumed to be on the water drawing chicks out were not counted. Figure 3 compares gathering ground counts and point counts.

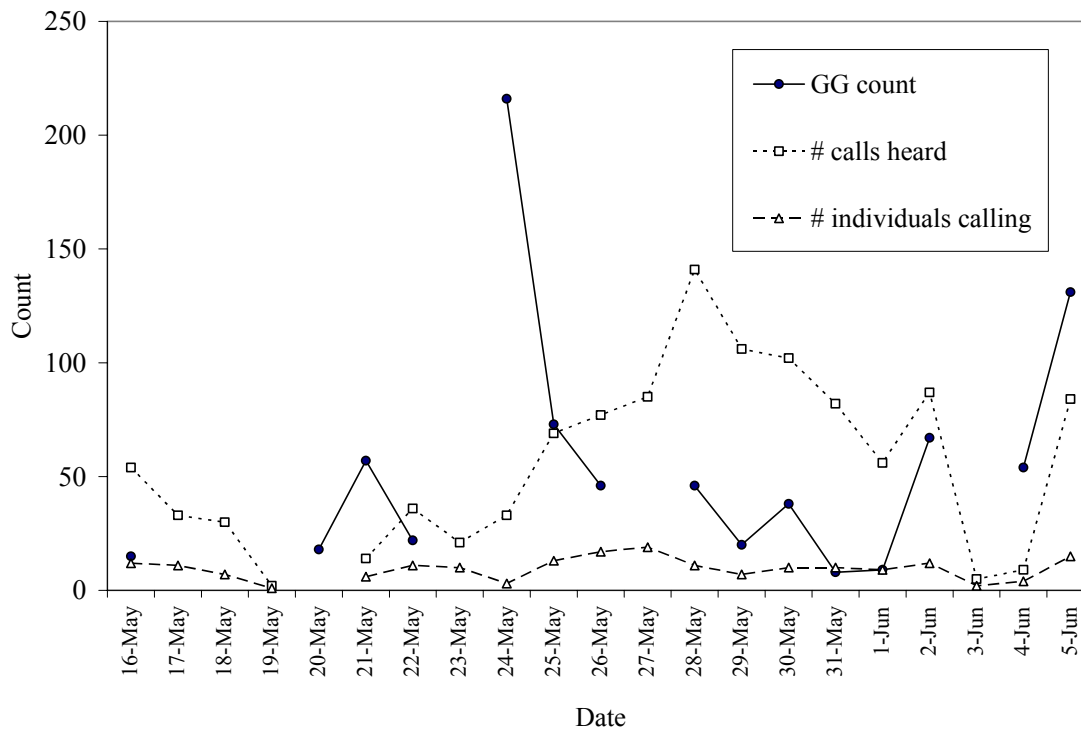


Figure 4. Daily counts of the number of Ancient Murrelets at the Low Island gathering ground (GG) compared with the number of calls and individuals heard during point counts conducted on East Limestone Island, 2005.

Black Oystercatchers (*Haematopus bachmani*)

Black Oystercatcher banding

Black Oystercatchers are conspicuous shorebirds that are common along the rocky shores of Haida Gwaii. These birds rely on marine shorelines for nesting and foraging habitat and consequently their breeding success is closely associated with the health of intertidal ecosystems. Because of this relationship, long-term monitoring of Black Oystercatcher reproductive success and chick diets can help detect changes in the marine environment

LBCS has been monitoring Black Oystercatcher reproductive success in Laskeek Bay since 1992. Throughout the breeding season, we visit Black Oystercatcher breeding territories to count and measure eggs and chicks. In 2005, we found 27 active Oystercatcher sites in Laskeek Bay, containing either eggs or chicks. Two new breeding territories were monitored this year, both located on Louise Island, one at Nelson Pt. (LOU-1) and the other on the point due west of Nelson Pt, ‘Squatter Pt.’(LOU-2). In total, 46 eggs were laid at 27 sites and subsequent visits revealed that 22 of these sites failed while five nests hatched 10 chicks (range: 1-3 chicks).

The Black Oystercatcher banding program continued this year and once chicks reached 100 grams in mass they were banded with colour combinations indicating where birds are banded and the year they are banded ie; (left leg – right leg): locality colour– year colour

/ standard metal USFWS bird band. This season, five chicks were banded with a dark green darvic band indicating 2005 as hatch year and a white darvic band indicating Laskeek Bay as nest site location. By mid July, two of the banded chicks disappeared and a third was depredated, leaving only two banded chicks at sites on Reef Islets (Reef – 4 and Reef –8). Two nests remained active with eggs in mid July, with 1 egg and 2 eggs respectively. Adults were attending the eggs at both sites and these late clutches could indicate either inexperienced breeders or replacement clutches.

This season we spotted nine banded adults at breeding sites in Laskeek Bay. Three of the re-sighted birds were banded as adults and three were banded as chicks. Re-sighting our banded birds is important as it lends insights into basic Oystercatcher biology for example: survival, age at first breeding, long term pair bonds, philopatry, and nest site fidelity.

For a second year, the Black Oystercatcher program at LBCS was expanded to include areas in Gwaii Haanas National Park Reserve / Haida Heritage Site. This expansion includes islands and islets south of Laskeek Bay: on the east side of Lyell, Darwin Sound, including the north end of Juan Perez Sound. Banding colour codes for the different localities were: Richardson Passage = yellow and Juan Perez Sound = dark blue.

We conducted our surveys on two separate occasions using the same protocol employed in Laskeek Bay. On 12-15 June we conducted our first trip, visiting 53 potential breeding territories and finding 41 active nest sites with 66 eggs and 17 chicks. None of the chicks were big enough to band as most were just a couple of days old.

On 2-July, 17-19 July we re-visited the known BLOY territories in Gwaii Haanas and found 29 active sites. Seventeen of the previously active nests had failed while five territories had become active since our last visit, active either eggs or chicks. The 29 active sites included 15 eggs and 26 chicks, 17 of which were big enough to band. Also, on this second trip, we discovered 7 additional breeding territories, five of which were active: five chicks from four sites were banded and one site contained two eggs.

In summary, we visited 60 potential breeding territories in Gwaii Haanas (not including the Lost Is.), 51 of which were active at some point in the season and 22 chicks were banded.

Band Combination	Location seen (nest site)	Year Banded	Banded as Adult or Chick
W-W	South Low (SLW-8)	1994	Chick
W-Bk /M	Skedans (SKE-6)	2000	Chick
W-M	Skedans (SKE-6)	unknown	Chick
UB-Bk/M	South Low (SLW-5)	unknown	unknown
M-Bk/M	Reef Is. (REE-1)	unknown	Adult
M-Bk/M	Reef Is. (REE-2)	unknown	Adult
M-Bk/M	Reef Is. (REE-7)	unknown	Adult
UB-M	Cumshewa Is. (CUM-2)	unknown	unknown
UB-Bk/M	Lost Is. (LOS-4)	unknown	unknown

Table 2. Banded adult Black Oystercatchers seen in Laskeek Bay in 2005.

Black Oystercatchers diets

For many bird species, reproductive success is closely linked to food availability and therefore, baseline information on diet is key to understanding changes in productivity. Adult Black Oystercatchers feed chicks exclusively with marine invertebrates obtained from the intertidal zone and because chicks stay at breeding territories until fledgling (~40d), chick diet composition is relatively easily determined by examining the shell remains of invertebrate prey found at nest sites. In Laskeek Bay, we collected 1134 prey remains from five nest sites which were later identified and measured to get an idea of both diet composition and prey size. Mussels and limpets made up the majority of prey delivered to Black Oystercatcher chicks, along with a smaller amount of chitons (Figure 4). The average sizes of the three main prey types were 47.6 ± 5.4 mm, 27.2 ± 1.3 mm and 59.4 ± 2.2 mm for mussels, limpets and chitons respectively.

Black Oystercatcher chick diets in Gwaii Haanas were analyzed solely for composition and we were able to identify 2217 prey remains at 24 nest sites. Results are consistent with findings in Laskeek Bay where mussels, limpets and chitons are the three main types of prey fed to Black Oystercatcher chicks (Figure 4).

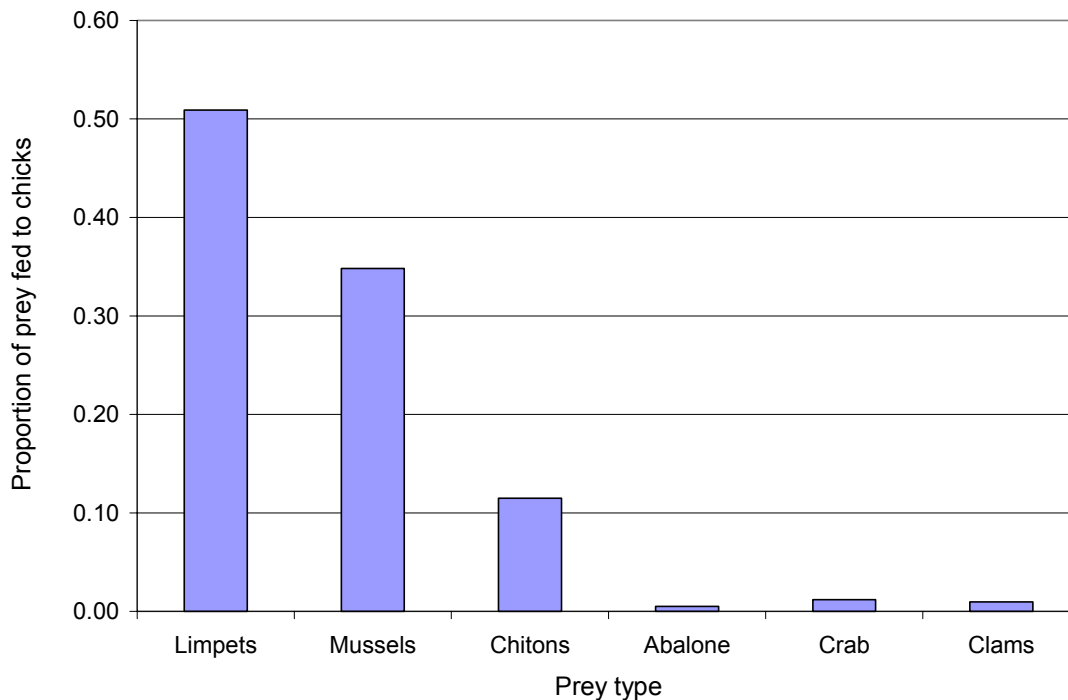


Figure 4. Composition of Black Oystercatcher chick diets determined from 3351 prey remains identified at 29 nest sites located in Laskeek Bay and Gwaii Haanas, 2005.

Glaucous-winged Gulls (*Larus glaucescens*)

On May 24 laying had just begun on Kingsway Rock and we counted 110 adults, 65 empty nests and two nests with one egg each. From June 20-25, we censused all of the Glaucous-winged Gull colonies in Laskeek Bay taking note of the number of adults, nests and describing the contents of each nest. No nests were found at either Skedans or Cumshewa Islands and we counted six nests at Low Island. Of interest this year was the notable increase in the number of nests at Lost Islands (Figure 5) as well as a small increase at Kingsway Rock. In total, we counted 326 Glaucous-winged Gull nests in Laskeek Bay: 72% comprised three eggs, 18% two eggs and 7% one egg. The remaining 3% of all nests counted contained either three chicks, two eggs and one chick or one egg and two chicks.

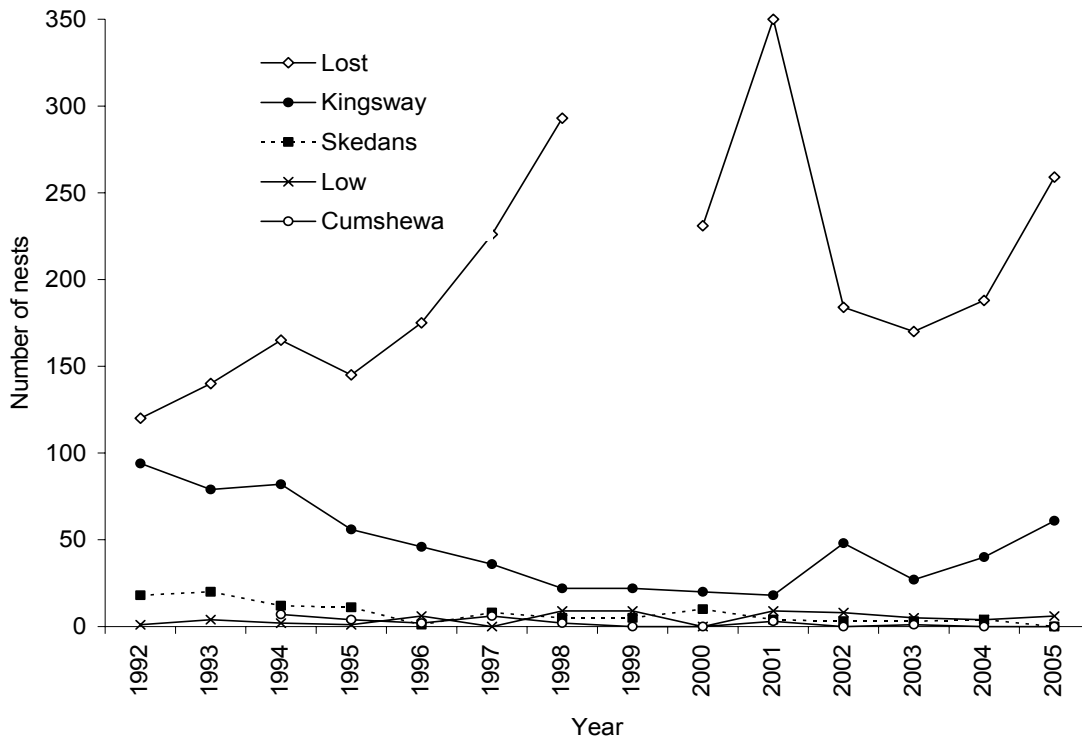


Figure 5. Number of active Glaucous-winged Gull nests in Laskeek Bay 1992-2005. Active nests contained either eggs and / or chicks.

Pigeon Guillemots (*Cepphus columba*)

In 2001, ten wooden nest boxes were installed at Lookout Point in hopes that Pigeon Guillemots would nest inside. Since their installment, the ELI crew has been checking the boxes at the end of each season for signs of breeding activity and this year, we found eight chicks in five nestboxes (range:1-2 chicks). This news is exciting as the nest boxes are experimental in design and this year is the first year that chicks have been found. On July 23 we weighed, measured and banded the eight Pigeon Guillemot chicks.

Cassin’s Auklets & Fork-tailed Storm Petrels
(Ptychoramphus aleuticus & Oceanodroma furcata)

This season, we monitored breeding activity at 61 burrows located at Cassin’s Tower and the North Shore. We visited the two sites every three days and checked for knockdowns at burrow entrances. Telltale smells at burrow entrances allowed us to identify some of the burrows as either Cassin’s Auklets or Storm Petrels. At Cassin’s Tower we monitored 47 burrows and based on smell, 23 were Cassin’s Auklets, seven were Storm Petrels and the occupants of the seventeen remaining active burrows could not be determined. On the North Shore, we monitored 13 burrows and based on smell, five nests were Cassin’s Auklets and the occupants of two of the burrows could not be determined. By mid-season, six of the 13 burrows on the North shore were no longer active.

We attempted to grub all of the burrows suspected to be Cassin's Auklets and were successful at accessing the contents of one nest at Cassin's Tower. We banded the chick and monitored its growth every five days until it fledged around June 25. In addition to the nests at Cassin's Tower and North Shore, we counted approximately five plus another 12 Cassin's Auklet burrows at the Lookout and South side of the Island. Burrows at both of these sites were located under rocks and thus were chicks inaccessible.

Mid-way through the season, a ladder was constructed at Cassin's Tower. The ladder is a great improvement over the previous scramble method of reaching the top of the Tower.

Marine Surveys

Seabirds

By carrying out regular, systematic surveys at sea we are able to monitor the number of marine birds and marine mammals in the area. One species of particular interest is the Marbled Murrelet as it is provincially red listed and is designated as threatened by the Committee on the Status of Endangered Wildlife in Canada. In 2005, we conducted four nearshore surveys (May 3, May 23, June 8 and June 27) and two Hecate Strait surveys (May 25 and June 26). The peak count of Marbled Murrelets this season was the May 23 when 110 individuals were counted on a nearshore survey.

We counted sixteen different bird species during nearshore surveys including: Rhinoceros Auklets, Pigeon Guillemots, Pelagic and Double-crested Cormorants, Common Murres, Pacific Loons, Glaucous-winged Gulls, Ancient Murrelets, White-winged Scoters, Buffleheads, Marbled Murrelets, Long-Tailed Ducks, Bald Eagles, a Black-legged Kittiwake, a Red-necked Phalarope and a Sooty Shearwater.

A definite highlight of the season was a Hecate Strait survey we conducted on May 25. The survey started out with a Horned Puffin sighting and as we travelled east into the Hecate, we were soon surrounded by an estimated 1000 Sooty Shearwaters, including 616 that were counted on our transects. Over the course of our two Hecate Strait surveys we counted nine different bird species including: Marbled Murrelets, Rhinoceros Auklets, Pigeon Guillemots, Common Murres, Sooty Shearwaters, Glaucous-winged Gulls, Ancient Murrelets and Common Loons.

Marine Mammals

In 2005, we had a total of 65 marine mammal sightings from nine species (Table 3). The sightings occurred during sea surveys, sea-watches as well as opportunistically from the cabin.

We reported 15 Humpbacks this season, which is fewer than previous years (Table 3), however, passing boats reported that Humpbacks were common in areas south of Laskeek Bay suggesting that overall, the numbers passing through Haida Gwaii were not necessarily low.

We encountered Killer whales five times this season. Twice we spotted single individuals travelling on their own and on three occasions we saw a group of three

whales. Most sightings were brief with the exception of June 27 when we followed three whales into the Skedans Islets Lagoon and were able to follow the whales for about an hour. During this encounter, we took photos of each of the three whale's saddle patches and dorsal fins which, in the future, will help with individual identification.

The highest count of Steller sea lions at haul-outs on Reef and Skedans Islands occurred on May 3, with 373 and 42 individuals counted at each site respectively. The s/v Maple Leaf reported a California Sea Lion sighting on May 9 at Skedans. We kept our eyes and ears open on subsequent visits but unfortunately, we were unable to locate the California Sea Lion. No branded individuals were reported this year.

Species (common name)	Scientific name	2005	2004	2003	2002	2001
Dall's porpoise	<i>Phocoenoides dalli</i>	1	0	0	29	0
Northern elephant seal	<i>Mirounga angustirostris</i>	0	0	1	0	2
Fin whale	<i>Balaenoptera physalis</i>	0	0	1	0	4
Grey whale	<i>Eschrichtius robustus</i>	1	1	3	2	0
Harbour porpoise	<i>Phocoena phocoena</i>	3	12	5	21	19
Harbour seal	<i>Phoca vitulina</i>	679	1177	635	316	105
Humpback whale	<i>Megaptera novaeangliae</i>	15	19	152	49	140
Killer whale	<i>Orcinus orca</i>	11	13	21	29	16
Minke whale	<i>Balaenoptera acutorostrata</i>	0	2	0	0	0
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	8	0	325	22	93
California sea Lion	<i>Zalophus californianus</i>	1	1	0	0	0
Steller sea Lion	<i>Eumetopias jubatus</i>	1849	2987	3107	5277	1633

Table 3. Summary of marine mammals sightings noted throughout the field season on East Limestone Island, 2001-2005. Counts are the result of sightings made during sea surveys, sea-watches as well as opportunistically from the cabin or boat.

Wildlife Trees

Early in the season we monitored 54 snags for cavity nesting birds. After visiting each tree at least three times, we determined ten trees to be active with Red-breasted Sapsuckers (five nests), Hairy Woodpeckers (two nests) or Chestnut-backed Chickadees (three nests). Of the ten active trees, seven were Sitka spruce and three were Western hemlock. Five of the active trees were new to the list, having not been monitored in previous years. This year, we did not observe any banded birds nesting in wildlife tree cavities.

At the end of the season, we recorded the locations of wildlife trees on Limestone using a G.P.S. unit. We hope to produce a more accurate map of our wildlife tree locations.

Daily Bird Checklist

Our daily checklist of birds on East Limestone and surrounding Laskeek Bay totalled 70 species identified in 2005. The maximum species count for one day was 40, which we counted on May 25. Sightings of interest for the season include: a Red-necked Grebe, a Green-winged Teal, Buffleheads, Long-tailed Ducks, Wandering Tattlers, a Spotted Sandpiper and on June 26, we saw an Ancient Murrelet family out by Reef Island, two adults accompanied by a juvenile bird.

Some of our more unusual sightings on Limestone occurred after a stretch of storms in May when we spotted two Albatross soaring among the waves out by Reef Island and a Savannah Sparrow seen two days in a row in Crow Valley.

Birds of Prey

Two Bald Eagle nests were active this year, tree #7 and tree # 8. Tree #8 was a new nest site and is situated along the Ridge Trail. Bald Eagle nests were determined active based on a combination of adult activity at the nest sites, signs of guano around the base of the trees and chicks calling. Because both of the Bald Eagle nests were difficult to see, we were unable to determine how many chicks were produced at each nest.

The Northern Saw-whet pair did not return to nest in tree #81 and unfortunately, we were unable to determine where the Saw-whets were nesting this year. There were a few accounts of owl activity early in the season including three occasions when a Northern Saw-whet Owl was seen perched on funnels at both North and Cabin Cove during Ancient Murrelet chick banding. On July 6, five Northern Saw-whets were observed in the forest during mid-day. Four juvenile birds sat quietly perched for about 45 minutes and then became quite vocal. Within moments, an adult bird arrived delivering a small mouse or vole to the juvenile birds. This was the only occasion that the family was observed.

This year, we did not find any signs of nesting Peregrine Falcons, Red-tailed Hawks, Sharp-shinned Hawks or Common Ravens. Northwestern Crows nested up on the ridge trail in a tree easily spotted from the path. We counted three chicks at the crow nest and all three fledged in early June.

Plants

In 2005, we did not include any new additions to the Limestone Island plant list, however, we did note a new location for the rare Richardson's Geranium (*Geranium richardsonii*). Richardson's Geranium is not known to occur elsewhere in coastal B.C. and so far, this species has been recorded at four locations on East Limestone Island. Other rare plants such as cut-leaf anemone *Anemone multifida* and showy Jacob's ladder, *Polemonium pulcherrimum* continue to do well on cliffs and other areas that deer cannot access.

Wall lettuce *Lactuca muralis*, an invasive flowering plant was detected in four areas on East Limestone and in efforts to control it's spread, we removed all accessible specimens. Unfortunately, wall lettuce appears to be well-established in two hard to reach areas,

along the south edge of the island and the cliffs in Crow Valley. The clusters found in Cabin and North Cove areas were removed and those sites will be closely monitored.

Introduced Species

In 1998, three deer exclosures were erected on East Limestone Island to demonstrate the recovery of the forest understory in the absence of deer browsing. Unfortunately, when we arrived in late April, fallen trees had damaged all three deer exclosures and deer had browsed the vegetation inside. The exclosures have since been repaired and the vegetation is recovering. Deer on East Limestone are a common sight on the Island and this year we saw at least two fawns, with no reports of the collared deer.

Introduced raccoons have can devastate seabird colonies by predateding on eggs, chicks and adults. In order to monitor for the presence of raccoons on the Limestone Islands and neighbouring Louise Island (Vertical Pt. area), we conducted two nighttime surveys at low tide, scanning the intertidal zone using a spotlight. On June 3, our first survey, we spotted four raccoons on Louise Island and on June 18 we did not see any raccoons. Raccoon surveys are best conducted during the Ancient Murrelet breeding season and June 18 is a little late, however, poor weather and tide conditions prevented the second survey from occurring any earlier. In addition to our boat surveys, we walked the shoreline on East Limestone throughout the field season, keeping an eye out for behaviours indicative of raccoon activity ie: suspicious diggings and predations or latrines. We did not find any evidence of raccoon activity on Limestone Island this year.

CONCLUSIONS

Although Ancient Murrelet chick numbers are slightly higher than 2004, this year's chick total indicates that the number of chicks passing through Limestone funnels remain low compared to the early 1990s. Concerns persist that previous adult capture work has potentially deterred prospecting birds resulting in reduced recruitment. It remains to be seen, however, whether chick numbers will recover now that adult trapping has ceased. Alternatively, other factors may be at work which of course, underlines the importance of continuing our long-term monitoring efforts.

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