

# **A SUMMARY OF THE ACTIVITIES OF THE LASKEEK BAY CONSERVATION SOCIETY**

## **1993 FIELD SEASON**

### **INTRODUCTION**

The fourth field season of the Laskeek Bay Conservation Society (LBCS) was very successful, with more volunteers than ever participating in field research on the biology of Laskeek Bay. The field season, from April 9 to July 15, was two weeks longer than in 1992, and almost twice as long as the first season in 1990. Research efforts expanded to include an in-depth survey of land-bird populations on Limestone Island, and a new venture into marine mammal research.

### **VOLUNTEERS**

A total of 469 person-days of work was performed over the 14 week period. Of these, 328 days were contributed by 34 volunteers who stayed on Limestone for periods of one to five weeks. Nineteen of these volunteers were Queen Charlotte Island residents, of which five had returned from previous years. An additional 52 days were contributed by 16 volunteers who stayed for less than a week. The volunteer effort was 32% greater than last year, and towards the end of the season the number of volunteers applying exceeded space available.

There is a definite role for children in the activities of the Society. Eleven children (five who stayed for one week, and two groups of students), accompanied by a parent, teacher or guardian, were able to spend time on Limestone Island.

### **VISITOR INTERPRETATION**

Two commercial tour operators visited the island in 1993, bringing a total of 17 visitors, considerably fewer than in previous years. This probably reflects a general decline in the number of visitors to Haida Gwaii, as the number of tour operators in Laskeek Bay declined. An additional six people visited the island, all but one of whom had stopped there in previous years.

### **EDUCATIONAL PROGRAMS**

Two groups from the Queen Charlotte Elementary and Secondary School returned to Limestone Island for a second season of participating in Ancient Murrelet research. Four students from the Kayak Club, two teachers and the principal spent two nights on the colony. They also received a daytime tour and a general orientation to field research

methods, as did six grade 12 biology students and their two teachers. They spent one night on the colony, catching departing chicks and adults with great enthusiasm and dexterity.

## **LIMESTONE ISLAND FIELD PROGRAM 1993**

### **ANCIENT MURRELET PROGRAM**

#### **Adult Banding**

Adult Ancient Murrelets were caught and banded in the late and post-incubation period from May 15 to June 17. There was no catching in the pre-laying period. A total of 118 adult birds were captured, including 30 retraps, compared to 284 captures of which 66 were retraps in 1992. Six of the 1993 retraps were banded as chicks on Limestone Island, one in 1990 and five in 1991. Although significantly more adults were caught in 1992 (284) and there were 66 retraps, only six of the retraps were birds banded as chicks on Limestone Island. Bands were also recovered from two dead birds, one banded as an adult in 1991 on Limestone Island, the other banded as an adult on Reef Island in 1987.

#### **Chick Banding**

From May 10 to June 13, a total of 665 chicks were caught in funnels (a system of plastic fences that guide chicks to the sea) of which 653 were banded. This total was slightly lower than in 1992, when 674 chicks were caught within the same area. The highest recorded number of chicks caught in an evening was 70, on May 18. This is only slightly less than the May 21/22 1992 record of 76 chicks in one night.

Chicks were caught from May 10 to June 12, (33 days) which was longer than the 1991 and 1992 seasons (28 and 23 days respectively), but comparable to 1990 (35 days). The peak number of chicks occurred earlier this year than in previous years. By the night of May 20/21, 50 percent of the chicks had passed through the funnels. In 1990 and 1991 median dates were May 23/24, and in 1992 the median date was May 22/23.

We had the opportunity to observe a chick from pipping to 6 days of age. It's parents were killed by unidentified predators so we removed the cold eggs to take to camp. That night one egg started peeping and a few days later Cedric emerged into his new "mother's" hand. Unfortunately, his eye development hadn't kept up with the rest of him, so he could barely see. He made up for this with perfect navigation by sound, quickly learning the sound of his mother's voice. Amazing quantities of bottom fish vanished into his beak on the end of a toothpick as he was taken burrow monitoring, night banding and paddling in tide pools. On the 6th morning he died, leaving a small, but noticeable hole in camp life.

#### **Burrow Monitoring**

A total of 69 burrows in two study plots were examined regularly to determine occupancy. Eggs were laid in 29 of these burrows between April 10 and May 2. These eggs were weighed and measured, and temperature probes were installed in the burrows to allow the monitoring of incubation without disturbing the adult on the nest. Sixteen of these 29 burrows were also occupied in 1992 .

Incubation is shared by both parents, and chicks depart for the sea within two to three days of hatching. In 25 burrows, incubation was successful. The four other nests were deserted, two without incubation ever beginning, one deserted as a result of our activities and one nest appeared to have been incubated by a single adult which eventually abandoned the nest. Chicks immediately head offshore and do not return to land for at least one year. We do not know what the chick survival rate is after they leave their burrows. On a few occasions chicks left the burrow during the day and were heard peeping their way to the water. Adult pairs were near shore at the time and assumed to be the parents, as the peeping ceased when chicks reached the water.

Within the 25 burrows in which incubation was successful, we examined 44 chicks and 14 adults. Eight of the adults were banded as adults on Limestone Island in 1989, prior to the beginning of LBCS research activity in the area. Four of the adults occupied the same burrows in which they were found in 1992. Three of these birds were also in the same burrows in 1991. One bird that deserted a nest in 1991 returned to the same burrow in 1993 and successfully hatched two chicks.

## Predation

Predation rates were quantified on the island by counting the number of Ancient Murrelets killed along seven 20m wide predation transect lines. These transects cover 17% of the colony area. The predation rate on Ancient Murrelets was significantly higher in 1993 than in 1992, as 93 predations were found, compared to only 18 in 1992. Predators indigenous to the area and present on the island in both 1992 and 1993 include Bald Eagles, Saw-Whet Owls, Peregrine Falcons and River Otters. In late 1991 and early 1992, raccoons present on the island in 1991 were killed and did not appear to be present during the 1992 Ancient Murrelet season. The return of at least one raccoon in 1993 appears to account for the large increase in predation over the 1992 levels.

If

the 1993 predation rate is applied to the entire colony, it is possible that over 500 Ancient Murrelets were killed on Limestone Island this year, much of which would have been directly attributable to raccoons. In 1991, the last year that raccoons were present on the island, 127 predations were recorded. Regular searches were conducted to confirm their presence in 1993. One raccoon on the island was seen on June 1. Fresh scat was found regularly, especially along shoreline areas and on West Limestone Island, where Ancient Murrelets also nest. One raccoon hair, found in

the woods, led to lessons in differentiating between 'coon and deer hairs. In early June, Ministry of Environment staff killed four raccoons on Louise Island near Vertical Point. However, at least one raccoon continued to survive on East Limestone Island after June 10.

## Staging Area Count

Each evening, numbers of Ancient Murrelets on the staging grounds between Limestone Island and Low Island were counted by telescope, to give a relative index of numbers of birds visiting the colony. The highest number of birds seen to pass in a 10 minute interval was 185, on April 23. The weather was particularly poor this spring, especially during April and early May, and counts were generally lower than in previous years. When the staging count is low, generally the number of visits to the colony is also low.

Ancient Murrelets continued to be seen on an infrequent basis in the waters of Laskeek Bay well after their departure from Limestone Island. From June 26 to July 14 there were 6 sightings of Ancient Murrelets, including one in full winter plumage off Vertical Point on July 8.

## FOREST BIRD BANDING PROGRAM:

Under the guidance of Paul Prior, a warden from the Long-Point Bird Observatory in Ontario, an intensive effort was made to band songbirds. From June 13 to July 13, mist nets were placed in 15 locations around the island and at nearby Vertical Point on Louise Island. A total of 257 birds, including 10 first banded in 1992, were netted and banded. Twenty different species were caught, including four species not caught in 1992 (Red Crossbills, Red-Breasted Nuthatches, Song Sparrows and a Saw-Whet Owl).

The most commonly netted species were Townsend's Warblers (44 birds banded), Rufous Hummingbirds (31 netted, none banded) and Chestnut-Backed Chickadees (34 banded). Pine Siskins, which were caught 9 times in 1992, were only caught once in 1993, and Brown Creepers were caught just four times in 1993 compared to 14 times in 1992. Some of the birds banded in Spring Valley in 1992 were retrapped this year in different parts of the island - a Winter Wren and a Hermit Thrush were trapped in Crow Valley, and a Red-Breasted Sapsucker was caught in one of the Boat Cove nets.

## MONITORING AVIAN PRODUCTIVITY PROJECT

A new project, which we hope will become part of the North American Monitoring Avian Productivity (MAP) project, was started at Vertical Point. MAP is designed to establish long-term monitoring of land bird population trends in North America. Mist net sites, located within a one hectare area, were operated by standard methods every tenth day. A total of 31 birds comprising 10 species were banded during 120 net hours. This rate is somewhat lower than the catch rate on Limestone Island (0.34 and 0.44 birds per net hour respectively) but it will be of interest to note changes in species abundance and composition over the next few years. The most commonly netted species was the Hermit Thrush (16 banded) and the only species caught at Vertical Point but not on Limestone Island was a Northern Saw-Whet Owl.

## IMPACT OF INTRODUCED PREDATORS STUDY

Under the direction of Dr. Jean-Louis Martin of the Centre National de Recherche Scientifique in Montpellier France, a comparative study of predation rates on bird eggs by introduced species (raccoons, rats and squirrels) was begun. Dummy nests stocked with quail eggs were placed along 3 km of transect lines across Limestone Island. Similar surveys on Ramsay Island (squirrel and rat free) and Langara Island (rats present) ran concurrently. The predation rate on Limestone Island was very high; 94 of 120 nests were predated within a 15 day period. Much of this predation was attributed to squirrels and raccoons, who apparently had a far easier time finding the nests than did the monitoring humans. Results from the studies on Ramsay and Langara Islands are not yet available. This introduced predator study is very similar to one that has recently been completed in Hawaii, where dummy nests were used to assess the affects of rat and other predation on the nests of endemic birds (Amarasekare, 1993. *Conservation Biology* 7: 316-324).

## SEA SURVEYS

Boat transects covering the near shore and offshore waters of Laskeek Bay were conducted every two weeks, to census all birds at sea. A total of 58.25 km was traversed bi-weekly between April 18 and July 10, and birds on the water within 200m of either side of the boat were noted. This is the fourth year that the LBCS has maintained coverage of these areas, and a large database of sightings is being accumulated. Additional opportunistic surveys were carried out in the waters east of Reef and the Skedans Islands, as well as in the area between Haswell Island and Lyell Island.

A minimum of seven surveys of each transect line were conducted. An unprecedented number of Marbled Murrelets were counted. In 1992, there were generally 300-350 Marbled Murrelets seen per survey. On the first series of transects in April 1993, 248 Marbled Murrelets were seen, after which numbers generally increased in June to over 500 per survey. On June 21, 1402 Marbled Murrelets were counted on inshore transect lines and 284 were counted on offshore transects, for a total of 1686 birds. This represents the highest count of Marbled Murrelets to date. Concentrations were greatest between Limestone Island and Haswell Island. Interestingly, the waters from Haswell Island south to Lyell Island did not appear to have high concentrations of Marbled Murrelets, despite the fact that it was an area where relatively high numbers were counted in 1992.

Large numbers of Rhinoceros Auklets were noted in mid and late June, when they appeared to become one of the most abundant species in Laskeek Bay. Unlike in 1992, there were few sightings of White-Winged Scoters. During offshore transects and on surveys into the waters east of Reef Island, large numbers of Sooty Shearwaters and Black-Legged Kittiwakes were noted, especially during May and June. Pacific Loons, Cassin's Auklets, Ancient Murrelets, Common Murres, Pelagic Cormorants and

Glaucous- Winged Gulls were also seen regularly. Tufted Puffins were observed on several occasions, and a Long-Tailed Jaeger was seen once.

## MARINE MAMMAL SURVEYS

Eleven species of marine mammals, comprising four species of pinnipeds and seven species of cetaceans, were censused opportunistically throughout the Laskeek Bay area.

Steller sea lion numbers on the Skedans Islands declined from an initial count of 92 on April 19 to 0 on May 31 and thereafter. On the Reef Island rocks, there were 544 Steller sea lions on May 9, but the numbers gradually declined and remained constant at approximately 250-300 from mid-June onwards. California sea lions were recorded on Reef Island rocks on May 9 and July 1. California sea lions are expanding their range in B.C. and these appear to be the first records of this species in the Queen Charlotte Islands. The first harbour seal pups were noted on June 17. Counts on intertidal haul-outs were recorded on South Low Island, Low Island and the Skedans Islands. A large male elephant seal was seen on May 27, four miles east of Lost Island.

Killer whales were sighted seven times in 1993 (May 2, May 18, June 26, July 6, July 7, July 11 and July 14). All sightings appeared to be of transient (mammal-eating) groups. Minke whales were sighted on 11 occasions (between May 2 and July 11) and gray whales were seen 5 times (April 24, May 19, May 25, May 31 and July 4). A total of 12 humpback whales were seen, of which 10 were photographed for identification purposes.

Harbour porpoises were seen on eight occasions, primarily within a 3 km area southeast of East Limestone. Dall's porpoises were observed only three times.

Pacific White-sided dolphins were sighted in the near shore waters of Laskeek Bay for the first time, and were encountered on 11 occasions. A stationary hydrophone was installed to acoustically monitor the area around E. Limestone, and in future years should help to increase the frequency with which the above species are sighted.

## OTHER FIELD PROJECTS

Cassin's Auklet burrows and nest boxes (installed in 1992) were examined regularly for signs of occupancy, at both Cassin's Castle and in Cabin Cove on Limestone Island. The nest boxes were entered early in the season but ultimately were not used for nesting. However, several of the naturally occurring burrows were active, and the presence of at least one chick was confirmed on June 29. Our fears that this species had been eliminated from Limestone by raccoon activity in 1991 have not yet been realized. However, Cassin's Auklets remain very vulnerable to the risk of raccoon predation, and a freshly-dug burrow was found on June 29.

A total of 234 Glaucous-Winged Gull nests were censused in the following four colonies in Laskeek Bay: Skedans Islands (20 nests, including one with 4 eggs); Low Island (4

necks); Lost Island (140 nests) and Kingsway Island (79 nests). Length and width measurements were taken of 236 eggs. Sixty Glaucous-Wing Gull chicks were banded on Kingsway Island, and were given brown colour bands. It will be of interest to return to the colony next year to see if any of the colour-banded birds are in the area.

Thirty Black Oystercatcher nests, of which 28 were active in 1993, were surveyed in Laskeek Bay. Two nests used in 1992 appeared to be inactive in 1993. The first eggs were noted May 25 and the first chicks were found June 18. In total, 23 chicks were weighed and given yellow colour bands. Food materials were also collected in the vicinity of nest sites, in an ongoing study of chick diet. On Limestone Island there were three active Black Oystercatcher nests, all of which had young at least until the close of the field camp. A nest was found on West Limestone for the first time but was abandoned by July 7. The highest number of nests found were in the Reef Island area (8 nests), in the Skedans Islands (7 nests) and on South Low Island (5 nests).

Daily species records of all bird species were maintained. Seventy species were recorded within Laskeek Bay, of which 68 were seen from Limestone. Of these 70 species, we had 24 in the hand (20 land birds, 4 seabirds). This year there were two first records for Limestone Island--one Horned Puffin on June 28 and one Pine Grosbeak on May 18.

There were up to 7 Rufous Hummingbirds (6 immature) at a time in mid to late May. They squabbled over the feeder, objecting loudly when someone took the feeder away for a refill, and spent hours playing chicken amongst the small spruces near the cabin. Most of the young birds departed when an adult male appeared near the end of May.

Since 1990, nineteen Red-breasted Sapsucker nest trees have been recorded on East Limestone, of which 10 were active this year, including one tree near the cabin that was occupied by Northern Flickers last year. A family of Chickadees took up residence in a nest tree occupied by Sapsuckers in 1992. Two pairs of Hairy Woodpeckers were seen regularly around the island, but no nests were located. Surveys of West Limestone were carried out, but no adult birds or nests were found.

Activity on the Peregrine Falcon eyrie on East Limestone was monitored through regular visits to a blind after the 24th of May. Initially three chicks were present, but only one juvenile successfully fledged on the 25 of June.

A family of Common Ravens nested a short distance away from a nest site occupied in 1992. Three young fledged by May 29 and were frequently seen and heard in the area. Numbers of Northwestern Crows nesting in Crow Valley were considerably lower than in previous years, although there appeared to be a resident population of birds. Few nests were found elsewhere on the island. The Bald Eagle nest was active again in 1993, and still had one juvenile on the nest on July 10.

A detailed plant species list was developed for East Limestone in 1992. These records were maintained in 1993. No new rare plant species were located.





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