

Laskeek Bay Conservation Society Summary of the 1995 Field Season

Ginny Collins

Introduction

This summary highlights the research, monitoring, and interpretation activities of the Laskeek Bay Conservation Society (LBCS) at East Limestone Island and the surrounding inland waters of Laskeek Bay during the 1995 field season. This sixth field season, from 25 March to 15 July, was twelve days longer than last year and coordinated by a paid in-town administrator. The project ran with 1 or 2 paid staff, assisted by up to 4 volunteers each week. Research efforts expanded to include pre-season raccoon monitoring, a satellite camp at Reef Island, banding of Red-breasted Sapsuckers, marine watches, and photographic id/hydrophone recordings of two species of cetaceans.

Participants

Volunteers

There were a total of 27 volunteers contributing 255 person days over the 112 day field program. Seven volunteers returned from previous years; three of which had volunteer experience of between 2-5 years.

Eight volunteers from Queen Charlotte and three volunteers from Masset contributed a total of 84 person days, in addition to the 16 off-island volunteers whom contributed a total of 171 person days. Off-island British Columbia volunteers came from Vancouver, Nanaimo, Delta, and Castlegar. 5 volunteers came from the provinces of Saskatawechan, Ontario, Alberta, and Quebec. The two international volunteers came from France and Germany. (See Table 1)

9 volunteers committed themselves for more than 1 week, 1 more person than in 1994. The average stay of volunteers this season was lower than in 1994 (mean = 9.4 days).

52 person days of volunteer effort prior to, during, and following the field season made possible the tasks of camp transport and equipment purchases/repairs/fabrication. We are grateful to all who contributed to the success of the field season and recognize the phenomenal effort of the LBCS directors in securing funding to continue this conservation research and interpretation.

Staff

Five people took on formal responsibilities for parts of the

project this year and were paid by the Society: Ralph Stocker (pre-season raccoon monitoring, 2wks.); Rob Kelly and Colin French worked for 10 days under contract to Dr. Tony Gaston catching and banding Ancient Murrelets during the pre-laying period; Colin French (Supervisor 11 wks.); Ginny Collins (Supervisor 2wks., Assistant/Interpreter 9 wks.); and Pat de Clark (Administrator 26 wks.). All together they contributed 370 staff days to the project.

Researchers

Dr. Jean-Louis Martin returned for two weeks to continue his comparative studies of impacts of introduced predators on native species. Moira Lemon spent a week recensusing the Ancient Murrelet colony.

Visitor Interpretation

The interpretation program at East Limestone Island was expanded in 1995 to 87 daytime visitors and 105 visitor nights to the colony. This is a marked increase from previous years; 1994 (61 adults over 5 visits); 1993 (17 visitors), in addition to independent travellers and school groups 1994: (17 travellers); (14 adults and 32 students). The interpretation program was presented to three different audiences; chartered tour groups, independent travellers, and school groups.

Visitor Summary

There were a total of 82 guided visitors and 29 crew visitors in 14 visits this year from 6 different vessels of which 4 were local and 2 off-island. Of these visits, 58 visitor nights were spent in the colony.

There were a total of 9 non-guided visitors in 3 visits this year of which 2 groups were kayakers and 1 group was a family on their sailboat. Of these visits, 4 visitor nights were spent in the colony. There were a total of 5 visitors whom were researchers from 2 different projects of which 2 visitor nights were spent in the colony.

There were 16 students and 10 teachers in 8 visits from 3 different school groups and 2 island schools. Of these visits, there were 41 visitor nights spent in the colony. Visitors came from the USA, England, Czech Republic, Germany, and Scotland. (See Table 2).

Colony Interpretation

The interpretation program consisted of guided walks through the

colony, assistance in night-time chick banding and adult catching, and sensory orientation activities along marked trails throughout the field season.

Prior to coming ashore for an evening in the colony, interpretation was carried out on board charter vessels promoting conservation messages. Guests were informed of LBCS's commitment to sensitively conduct research and interpretation in a small dynamic seabird colony. Major themes for interpretation included birds breeding in the Laskeek Bay ecosystem, population dynamics, impacts of introduced species and conservation of critical habitats. (see Figure 1).

Interpretation messages delivered included the importance of Haida Gwaii for Ancient Murrelet breeding; the unique breeding strategy and life history of the Ancient Murrelet; the impacts of introduced predators on native species; potential threats from humans (oil spills, colony visits, loss of habitat); LBCS mandate with CWS and MOE; importance of conservation research by LBCS; importance of interpretation for awareness; and critical nature of securing funders.

Visitors were led across the island on marked trails and various stops were made along the way to observe Red-breasted Sapsucker nest and well trees, Bald Eagle nest trees, impacts of introduced red squirrels and Sitka black-tailed deer, and songbird activity. Once in the colony, attention was focused on a monitored Ancient Murrelet burrow. The breeding strategy of this seabird was unfolded with the aid of a telethermometer, banding kit, and field notebook.

Most visitors returned to the colony at night and were commonly split among the 4 funnels on the North Cove section to assist in the chick catching and weighing. Two experienced banders ran 2 funnels each, insuring proper handling of chicks and fielding visitor inquiries. Walking in the colony was confined to marked trails and the edge of the forest to release the chicks. Visitors were trained in proper use of headlamps and remained still and quiet.

The interpretation within the Ancient Murrelet colony was successful in that visitors were able to make a connection between the vulnerable status and importance of seabirds breeding on land to spending the rest of their lives at sea. Visitors came away with an increased understanding of the deleterious effects introduced species can have on the native seabird species and how this in turn affects the whole ecosystem.

Recommendations

In order to expand upon the educational aspects of the visitor program, it is recommended that LBCS adopt a process of formative evaluation of guided tours and incorporate the feedback from

visitors into the program. Interpretation could be expanded to include the intertidal ecology and geomorphology of Limestone, and activities that incorporate all of the senses. Those activities that build upon one another demonstrating the interconnectedness of the marine ecosystem are most valuable in developing values of stewardship.

Improvements to the Volunteer Program

It is beneficial to have return volunteers each field season as they are trained, motivated, and understand the need to assist in research that promotes conservation. It would be beneficial for volunteers to have a 1-2 hour orientation on the night prior to departing to Limestone. This could be done at the Visitor Reception Center of Heritage Canada. The briefing could consist of a simple slide show that incorporates camping guidelines and basic research skills. It could include identification slides of songbirds, seabirds, and marine mammals that are encountered on boat surveys and in the forests of Limestone. A sound recording of their songs played simultaneously would help reinforce species recognition. It is also recommended that an evaluation form be sent out with a letter of confirmation to each volunteer.

Ancient Murrelet Banding Program

Adult Banding

A total of 216 adult Ancient Murrelets were trapped this year. Of this number, 145 were new birds which were banded, a slight increase of 2 birds over 1994. 71 were retraps from previous years, a slight increase of 5 birds over last year. In addition 3 birds were recovered as carcasses, one in an eagle pellet (banded as a chick in 1993), and 2 in feather piles (banded as adults in 1991,1993).

Eighty of the adult Ancient Murrelets were banded between 25 March and 3 April. None of the birds had brood patches. The remaining adults were caught and banded in the post-incubation periods, 23 May through 7 June. Of the re-traps, 12 were banded as chicks on Limestone Island, 4 in 1990, 2 in 1991, 2 in 1992, and 4 in 1993.

A satellite camp was run simultaneously at Reef Island this year and 4 birds were retrapped that were banded on East Limestone Island. Two of the birds were breeders, banded as chicks in 1990, and the other two were non-breeders, banded as chicks in 1993.

Chicks

From 7 May to 20 June (45 days, 12 days longer than last years chick season) 693 chicks were caught. 617 were weighed and banded in the six funnels, 39 outside funnels, and 37 in burrows. This year we captured 18 more chicks than in 1994, 28 more chicks than

in 1993, and 17 more chicks than in 1992. The higher numbers reflect greater effort in catching chicks outside the funnels. This year we caught the same number of birds inside the funnels as last year and three fewer in the monitored burrows. The peak number of chicks (69) occurred on 22/23 May, a marked increase of 17 over last year's peak and almost equal to the counts of 70 in 1993 and 76 in 1992. On 20 June the last two chicks were banded in a monitored burrow, 19 days later than last year.

Burrow Monitoring

At the start of the season, eighty-nine burrows in the two study plots were monitored with knock-down sticks and searched for a first egg. Eggs were laid in 28 of these burrows between 3 April and 5 May, with 17 May being the latest record on which incubation began. One burrow had three eggs laid in it, probably by two different birds and only two eggs hatched. In another burrow one egg was placed inside the nest cup as it was laid outside the burrow entrance. Only one egg hatched from this burrow.

Of the twenty-five adults examined in their burrows, 16 were re-traps, all banded as adults (2 in 1989, 2 in 1990, 1 in 1991, 3 in 1992, and 6 in 1994) except one that was banded as a chick in 1993.

Five birds occupied the same burrows last year, and 2 used the same burrows for three consecutive years.

Chicks fledged from 21 probe monitored burrows; 75% fledging success compared to 85% fledging success out of last years monitored burrows. Adults from 2 burrows were killed and 5 burrows were deserted leaving a total of 14 cold eggs in burrows.

Eighteen out of 93 marked burrows had squirrel caches or middens in them and of these three fledged chicks.

Colony Census

Moira Lemon of the Canadian Wildlife Service initiated the third recensus of the colony during the week of 16-23 June. 14 transects were repeated as close as possible to the original starting points marked in 1983 and repeated in 1989. No squirrels were seen in 1983. The colony appears to be in the same place on East Limestone but has fewer burrows on the west side of the island and lower occupancy than in previous years.

Predation

In mid March, Ralph Stocker set out a trapline of live traps and egg traps to catch any raccoons present on the Limestone Islands.

He also conducted shoreline scat surveys and found no evidence of raccoons on either island. Shoreline scat surveys were continued throughout the season on both East and West Limestone Islands and no evidence suggested recent raccoon activity.

Seven predation transects representing 17% of the colony were monitored once a week. Predation rates are quantified by counting the number of carcasses, feather piles, right wings, and dug-out burrows along the 20 meter wide transects. As in 1994, transect 7, which passes through C plot had the highest number of predations, including 4 headless, inverted carcasses. Three other headless carcasses were found, one on T1, one on T2, and one on T3. Predations, excluding failed and predated eggs, avian pellets, or raccoon/otter scats, totaled 45 compared to 58 in 1994 with at least one raccoon present on the island. This is substantially higher than 18 predations in 1992 when there were no raccoons present on the island as was the case this year.

River otters were most likely responsible for the inverted carcasses and dug-out burrows on East Limestone Island. Up to 5 river otters were seen at one time on the island and on one occasion a pair was observed systematically poking their heads into every hole as they climbed up the slope behind the cabin.

Gathering Ground Counts

Numbers of Ancient Murrelets flying over their gathering grounds between East Limestone and Low Island were counted by telescope every evening at both Limestone and Reef Islands. The count is conducted for 10 minutes to give a relative index of birds visiting the colony that evening. The highest count was 347 on May 15.

Counts were comparable between Reef and Limestone Islands. Nights of high chick banding seemed to be correlated with high gathering ground counts. Due to inclement weather conditions, the count wasn't conducted on 7 evenings. Numbers of murrelets visiting Limestone dropped in mid June and the last Ancient Murrelet heard flying overhead was on 22 June.

Seabird Surveys

Surveys by boat covering the near-shore and off-shore waters of Laskeek Bay were conducted bi-weekly to census all birds at sea. Six complete surveys were achieved. A total of 58.25 km. was traversed every two weeks between 14 April and 2 July, noting all birds on the water within a 400 meter wide transect. This is the sixth consecutive year that the LBCS has surveyed the area, and the database of sightings continues to grow. One additional opportunistic survey was carried out in the waters east of Reef and the Skedans Islands.

Peak numbers of Marbled Murrelets (MAMU) in Laskeek Bay were noticeably lower and later than in previous years. 275 birds (2 July) and 243 birds (6 June) were recorded compared to peaks of 635 (16 May 1994) and 1686 birds (21 June 1993). Otherwise, from 14 April to 18 June between 40 and 178 birds were sighted each survey. The first fledged MAMU chicks were observed near Gogit

Point on 25 June.

Similar transects covering the near-shore waters of southern Laskeek Bay between Thurston Harbour and Windy Bay were conducted on 8 June (56 MAMU), 25 June (155 MAMU), and 8 July (221 MAMU). The 1995 surveys were the fourth consecutive replicate since the surveys were initiated in the southern area in 1992. Numbers of MAMU's sighted in the southern Laskeek Bay area were the lowest out of all previous surveys, and three times lower than in 1994.

On 28 April one aborted survey was carried out in the waters east of Reef Island. 270 Ancient Murrelets (ANMU), 12 Brant, 3 Pelagic Cormorants, and 29 Double-crested Cormorants were recorded over the approximate 5 kilometres travelled. Survey was cut short due to high winds and large swell obstructing vision.

An astounding count of 1726 ANMU was noted on 25 May on the off-shore transects. 103 White-winged Scoters were counted on 7 May on the off-shore transects. Rhinoceros Auklets and Ancient Murrelet flocks were commonly seen in May and early June in the off-shore transects.

Black Oystercatchers

Surveys of Black Oystercatchers (BLOY) nesting and feeding in Laskeek Bay have revealed a total of 34 active nests this year, one less than last year. In addition, evidence of nesting was found at three other sites on Cumshewa Island. The highest number of nests were found in the Reef Island area (7), in the Skedans area (6), and on Lost (5) and South Low (4). Inactive nest sites this year included those on Tanu, Skedans village, and Skedans Islet Point. A total of 22 chicks were banded, 8 more than last year, each with a white colour combination band and a metal band. At Low Island, all three chicks from one scrape were banded on 28 June, making it the most successful hatch of all nest sites.

Three scrapes were once again active on East Limestone and one on West Limestone. The first BLOY chicks hatched were noted on 7 June on East Limestone and banded on 23 June when they weighed 200 grams. Two chicks were banded from the scrape active near cabin cove and one chick each was banded from the other two scrapes on East Limestone.

On 6 May, one BLOY with white colour bands (banded as a chick in 1994) was spotted foraging with four other BLOYS in cabin cove. This was the only sighting of a colour-marked adult BLOY.

Other Marine Birds

Visits to Glaucous-winged Gull colonies in Laskeek Bay were made from mid June to early July. Nests were censused and the number of eggs or chicks were recorded. A total of 222 nests were active in six colonies; Cumshewa Island (4), Skedans Islets (11), Low

Island (1), Reef Island (1), Kingsway Rock (60), and Lost Island (145).

Numbers at all colonies were lower than 1994 (261) and 1993 (234) excluding Reef and Cumshewa Islands which were not censused in 1993. Sixteen empty nests were recorded at Kingsway and one old colour band was recovered. There were 22 and 20 more active nests at Kingsway and Lost Islands respectively in 1994. As in 1994, no egg measurements and no chicks were banded this year. No banded gulls from previous years were sighted.

Natural burrows and Cassin's Auklet (CAAU) nestboxes were monitored for visitation from 15 April to 27 May. 9 of the 15 nestboxes were visited but none were occupied. On 25 June, the nestboxes were rechecked and incubating Fork-tailed Storm Petrels (FTSP) were found in nestbox 3, and natural burrows 29 and 51. Two adult FTSP were banded on 4 July. A predated FTSP egg was found in natural burrow 70 on 7 July, further evidence of introduced red squirrel impacts.

A CAAU chick found in natural burrow 50, was banded on 25 June and monitored until the end of the season. It hadn't fledged as of 15 July but had lost most of its down and was losing weight, indicative of leaving the burrow. It is the second CAAU chick to be monitored at East Limestone Island.

Marine Mammal Surveys

Eleven species of marine mammals, including three pinnipeds and eight cetaceans, were censused opportunistically throughout Laskeek Bay. A marine lookout station was established on the high point south of cabin cove. 18.7 hours were spent scanning for marine mammals over 33 watches, each averaging 57 minutes.

Stellar sea lion numbers on the Skedans Islands initially dropped from the first count of 56 animals on 14 April to 41 on 27 April, and then increased to a peak of 75 on May 7. Each subsequent count yielded no animals on June 6, June 18, and July 2. On the Reef Island rocks, there were approximately 600 Stellers on April 14, but the numbers gradually declined and remained constant between 400 and 550 animals from April 27 onwards. No California sea lions were observed at the Reef or Skedans Island haul-out sites this year. A total of 4 Northern elephant seals were seen in mid-April and early May.

Counts of Harbour seals at intertidal haul-outs were again noted this year on Skedans, Cumshewa, Reef, Lost, South Low, and Low Islands. The highest number of seals was recorded at Cumshewa on 4 July with 140 animals including pups. On June 21, an abandoned seapup appeared in the cabin cove. On the lower BC mainland coast, approximately 1000 out of 3000 seal pups born each year are abandoned by mothers too weak to feed them.

Baleen whales were spotted on 16 occasions: 7 Grey whales on March 31, 1 on May 20; 1 Minke whale on July 13; a possible Fin or Sei whale on May 26; and Humpback individuals on April 22, 23, 28, May 3, 5, 7, 8, June 9, 18, pairs on May 1, June 2, and 4 individuals on April 22. One of the pairs of Humpbacks sighted was a mother and calf.

4 species of odontocetes were seen including a possible Risso's dolphin on May 15. Harbour porpoises were sighted most frequently as individuals and in groups of 2 or 4, on 13 occasions between April 28 and July 8. Pacific White-Sided dolphins, in groups of 3-230 individuals, were sighted 9 times, primarily travelling in a Southerly direction past Limestone. No Dall's porpoises were seen this year.

Killer whales were sighted 11 times in 1995 (April 13, May 15, May 25, June 6, June 29, July 2, July 9-12, and July 15). A northern resident group with a new calf was spotted on April 13. T-70, the most commonly sighted transient bull in Haida Gwaii, was seen with 2 others, four days in a row in the Skedans group. On two occasions, observations were made of orcas killing harbour seals. Numerous photos and sound recordings were made to identify individuals and pods.

Terrestrial Surveys

Seven species of terrestrial mammals were observed, including four species seen regularly at East Limestone Island. They were the Red squirrel, Sitka-black tailed deer, Deer mouse, River otter, and Little brown bat. A black bear cub was observed feeding on the shoreline of Tanu Island. Old raccoon latrines were found on Reef, and both East and West Limestone Islands. Ralph Stocker conducted scat surveys and set out live traps in early March on East Limestone Island.

Red-breasted Sapsucker (RBSA) surveys were expanded this year by measuring and photographing nest trees, and banding individuals. The sample of 19 nest trees established in 1990 increased to 40 trees this year, of which 23 were active. Four of these nest trees have been active for four consecutive years, eight trees have been used in two out of the six years from 1990-1995. The average nest hole height was determined to be 16.3 metres, ranging from 7.1 to 34.5 metres. Tree 39 was occupied by a breeding pair of Hairy Woodpeckers. One RBSA nest tree was found on West Limestone.

16 hours of mistnetting effort with 9 mist nets resulted in 4 songbirds netted and banded including one Townsend's Warbler, a Winter Wren, a Fox Sparrow, and a Western Flycatcher. A total of 9 Red-breasted Sapsuckers were banded including three breeding pairs.

The Peregrine Falcon eyrie appeared to be active early on, but no

signs of activity were noted from June 23 onwards. Two Bald Eagles nests were active, both with 2 almost-fledging chicks on 15 July. One of the nests was occupied last year in Crow Valley and the other nest was a new nest off the northeast point of East Limestone Island. Approximately 100 Bald Eagles were seen feeding on the surface between Skedans Islands and Skedan Village Islet on 12 May in a mixed feeding flock consisting of Black-legged Kittiwakes, Glaucous-winged Gulls, and Pacific Loons.

Northern Saw-whet Owls were heard calling during the night hours until 29 June. On 29 April, a possible Cooper's Hawk was spotted at Cassin's Tower. 64 bird species were seen throughout the field season. A few songbird nests were found and monitored for squirrel predation on East Limestone.

Plant diversity and development were noted as in previous years.

Intertidal Surveys

Three intertidal plots were visited twice at the lowest tides to record plant and animal species diversity. 15 plant species and 30 animal species were identified.

Introduced Predator Study

Dr. Jean-Louis Martin of the Centre National de Recherche Scientifique in Montpellier, France continued his third year of comparative studies of predation rates on songbirds eggs by introduced species. 120 dummy nests stocked with quail eggs were placed along marked trails in areas that differed in percentage of coniferous cover. The nests were strategically placed along a gradient of easily visible to those well hidden. A series of five checks were conducted at three day intervals to determine predation levels by introduced red squirrels. Only 13 out of 120 nests remained intact after the first check.

Five triggered cameras were positioned on dummy nests in ground cover and in spruce regen. Many pictures resulted, more in the first day of use than the cumulative total in 1994.

Squirrels were censused 10 times along established trails to document their numbers and determine if they continue to increase. The first squirrel youngster was sighted with its parent on 7 July. It is hoped that Jean-Louis will continue to further research the impacts of introduced species such as deer and squirrels on the diversity of native bird communities in Gwaii Haanas next year.