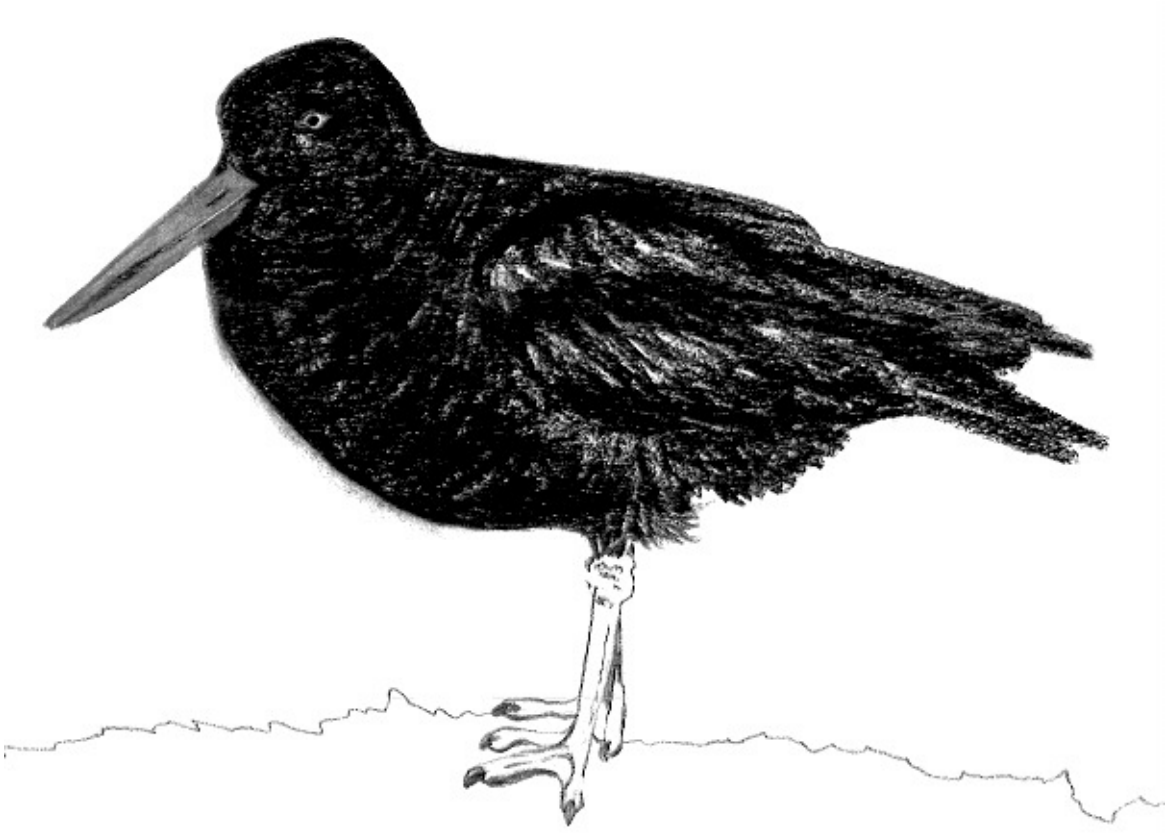
# Laskeek Bay Conservation Society

## *Report From the 2000 Field Season*



Drawing by Susy Feltham

**1. SUMMARY**

The Laskeek Bay Conservation Society conducted its 11th field season of research, monitoring and education this year on East Limestone Island. This report summarizes the activities of 2000 and highlights interesting data changes over time. All of the research programs, such as seabird monitoring, sea surveys, wildlife trees and introduced species surveys were continued. This season marked the third year of the science intern program, designed to give local post-secondary students experience with biology work. Several high school groups visited the field camp through Project Limestone to participate in the chick banding program. In addition to these activities, the society continued its partnership with the Research Group on Introduced Species (RGIS), with it's field camp located on nearby Reef Island. LBCS welcomed a number of international scientists and grad students associated with RGIS to Limestone Island this year.

# Report From the 2000 Field Season

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## 2. SCIENTIFIC MONITORING

Monitoring and research of seabirds, marine mammals, flora and fauna continued on East Limestone Island, extending what is one of the longest continuously run data sets for seabird research in British Columbia. The LBCS Scientific Advisory Panel has established research questions and protocols, putting the annual monitoring program on a sound scientific footing, as well as providing valuable hands-on education for volunteers.

### 2.1 ANCIENT MURRELET RESEARCH

Haida Gwaii contains about half of the world's Ancient Murrelet breeding population. Ancient Murrelets are blue-listed in British Columbia and designated as vulnerable by the Council on the Status of Endangered Wildlife in Canada (COSEWIC). This means that the populations are

thought to be declining throughout their range and may become endangered unless the factors responsible for their decline (such as introduced species) are addressed.

*2.1.1 Adult Banding*

Adult Ancient Murrelet survivorship is measured with a yearly banding program during the breeding season. Adults were caught from April 6th to April 9th, and again from May 15th to June 11th, when nesting was almost over. Table 1 shows that total number of murrelets caught was 260 in 15 nights, slightly more effort for fewer birds compared to the past three years.

Table 1. Comparison of adult banding totals and breeding status for 1997-2000.

| Year | Banding # nights | New | | Retraps | | Total | Breeder | Non-breeder | Unknown |
|---|---|---|---|---|---|---|---|---|---|
| | | Net | Burrow | Net | Burrow | | | | |
| 2000 | 15 | 129 | 8 | 117 | 6 | 260 | 130 | 93 | 37 |
| 1999 | 12 | 158 | 9 | 148 | 8 | 323 | 175 | 115 | 37 |
| 1998 | 13 | 162 | 5 | 120 | 9 | 296 | 160 | 120 | 16 |
| 1997 | 18 | 201 | 8 | 118 | 13 | 340 | 89 | 209 | 42 |

Table 2. shows that this year we retrapped 99 birds, of which 81 were banded as adults and 18 were banded as chicks. Note the consistency in high numbers of retraps banded as adults versus those banded as chicks. This reflects the fact that chicks have a higher mortality rate than adults. Additionally, adults are likely to return to the same area of a colony to breed year after year, in the vicinity of the net in which they were originally banded. Chicks are much less likely to return to the same area of the colony they were fledged from, and may choose to breed on another colony entirely. Still, no chicks banded in 1993 have been recovered, and only a few have been recaptured from 1991 and 1992. (El Nino years)

Table 2. Numbers of Ancient Murrelet adults recaptured in 1997, 1998, 1999 and 2000, as well as the life stage when banded.

| Year banded | 2000 Retraps | | | 1999 Retraps | | | 1998 Retraps | | | 1997 Retraps | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Banded as Adult | Banded as Chick | Total Retraps | Banded as Adult | Banded as Chick | Total Retraps | Banded as Adult | Banded as Chick | Total Retraps | Banded as Adult | Banded as Chick | Total Retraps |
| Total | 81 | 18 | 99 | 135 | 21 | 156 | 115 | 11 | 126 | 119 | 13 | 131 |

*2.1.2 Chick Banding*

This year chicks were banded with either a black stainless steel band or a white plastic band. The two bands were used alternately throughout the banding period. Funnels were monitored from May 11th to June 12th, with the first two chicks appearing on May 11th. Table 3. shows that numbers peaked on May 20th with 62 chicks, and that 0 chicks were caught on June 12th. Chick departure was monitored for 31 days, and a total of 595 chicks were banded at the funnels; an additional 25 chicks were banded in burrows, outside the funnels, or at the adult flight nets. As in previous years, the departure vocalizations of chicks and parents were recorded on tape. These distinct vocal signatures help each chick find its parents at the edge of the ocean.

Table 3. A comparison of chick banding variables and dates including all monitoring years, note that there are 2 different time protocols to be considered.

| Variable | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Start monitoring | May 12 | | | May 9 | May 7 | May 7 | May 10 | May 8 | May 7 | May 9 | May11 |
| End monitoring | June 15 | | | June 15 | June 8 | June 11 | June 10 | June 12 | June 23 | June 12 | June 12 |
| Protocol time in 24hr clock | 2300 - 0200+ | 2300 - 0200+ | 2300 - 0200+ | 2300 - 0200+ | 2300 - 0200+ | 2300 - 0200+ | 2300 - 0200 | 2300 - 0230 | 2300 - 0230 | 2300 - 0230 | 2300- 0230 |
| Total days | 35 | | | 38 | 33 | 36 | 31 | 35 | 48 | 34 | 32 |
| 1st night of chicks | May 12 | | | May 10 | May 7 | May 10 | May 11 | May 11 | May 11 | May 11 | May 11 |
| Peak date & # | May 22 (65) | | | May 18 (70) | May 22 (52) | May 22 (64) | May 19 (48) | May 24 (41) | May 20 (55) | May 21 (54) | May 20 (62) |
| Last chick night | June 15 | | | June 15 | June 8 | June 11 | June 9 | June 11 | June 22 | June 11 | June 11 |
| Days with chicks | 35 | | | 37 | 33 | 33 | 29 | 31 | 43 | 31 | 31 |
| **Total chicks** | **873** | **562** | **674** | **653** | **618** | **617** | **588** | **527** | **495** | **567** | **595** |

*2.1.3 Burrow Monitoring*

Monitoring of burrows began on April 2nd. The first eggs were found on April 6th and the last ones were found on May 9th. Eighteen burrows were occupied this year. Table 5 shows fledging success for the last 5 years on Limestone. Note that the rate of abandonment was high this year as in '97& '98, compared to '96 and '99. Two of the burrows with two eggs hatched only one chick- a rather high rate of infertility. In both cases the unhatched eggs were found to be undeveloped. One single-egg clutch was deserted after it had been incubated to "full term;" the embryo was found to be fully developed with down, and a hard bill. The remainder of the abandonments either were not incubated at all, or only incubated for a short time before abandonment.

Table 4. Occupancy and hatching success of Ancient Murrelet chicks from monitored burrows on East Limestone Island 1996-2000.

| Burrows | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|
| Monitored | 89 | 72 | 62 | 86 | 75 |
| Occupied | 28 (31%) | 21(29%) | 17(27%) | 17 (20%) | 18 (24%) |
| Incubated full term | | | | | |
| Fledged 2 chicks | 22 (79%) | 14(67%) | 6 (35%) | 14 (82%) | 8 (44%) |
| Fledged 1 chick | 4 (14%) | 1(5%) | 3 (18%) | 0 (0%) | 2 (11%) |
| Deserted prior to full term | | | | | |
| 1 egg | 2 (7%) | 6 (28%) | 6 (35%) | 0 (0%) | 5(39%) |
| 2 eggs | 0 (0%) | 0 (0%) | 2 (12%) | 3 (18%) | 3(17%) |

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No eggs laid after April 22nd were hatched. The burrow in which the first egg was laid, was also one of the last to successfully hatch two chicks, which departed on May 30th. Incubation began in this burrow on April 19th; total number of days from incubation to departure was 42. The total number of days is normally 31 to 33, so this burrow was fairly unusual. The total time between when the first egg was laid and the date of departure was unusually long for this burrow, 55 days compared to the approximate average of 38-44 days.

*2.1.4 Gathering Ground Counts*
Gathering Ground Counts were performed from April 2 to June 20, using a spotting scope focused on the ocean in front of Low Island. The highest count for each month was 186 on April 8th, 511 on May 19th, and 127 on June 4th. Eight counts were missed due to rough weather. The peak count of 511 stands as the highest count recorded from Limestone since the project began. As birds on the staging area are believed to be mainly pre-breeders, this high count augurs well for future recruitment to the colony. However, in 1990 a visual count of 1000 was recorded from a zodiac at the center of the staging area.

## 2.2 MARINE SURVEYS

*2.2.1 Seabird Surveys*
Five inshore surveys were completed. Only one offshore survey was completed due to sea conditions and mechanical problems with the boat. Large rafts of Ancient Murrelets were seen close to Skedans Islands during two of the surveys. On a separate boat trip to Lost Islands a family party of Ancient Murrelets, comprising two parents and two chicks, was observed up close, feeding and traveling. Twenty-six species of birds were counted: seven auks, four gulls, three loons, two cormorants, five ducks, and one species each of shearwater, phalarope, eagle, oystercatcher, and crow. The peak count of Marbled Murrelets this year was 167 on June 25th, a relatively low number compared to past counts of several hundred.

*2.2.2 Marine Mammal Surveys*
Marine Mammal watches were conducted from a set location on Lookout Point on Limestone Island. A total of 29 surveys were done between April and July, adding up to 28 hrs of effort. Highlights for volunteers were the occasions when humpback whales were sighted in groups of 2 and 3 actively jumping and lunge feeding. On a few occasions Orcas were sighted, but in small groups traveling quickly, therefore not allowing us opportunities for photo identification. Also of interest was the decomposing carcass of a male Grey Whale. It had been sprayed with orange paint and stayed for 18 hours in the kelp at Cabin Cove before the current took it northward. In the week prior to the appearance on East Limestone Island, a Grey whale carcass washed in up north in Tlell, and was subsequently graffitied with orange spray paint before it washed out with the tide a few days later.

Steller Sea Lions were counted at the Skedans and Reef Island haul-outs. Table 6, below, shows the peak numbers for Skedans occurred in May with 120 individuals counted. Peak numbers for Reef also occurred in May with 400 individuals counted. No California Sea Lions or marked individuals were recorded this season.

Table 5. Peak counts from the two main sea lion haul out sites in Laskeek Bay 1997-2000

| **Sea lion haul out** | **1997** | **1998** | **1999** | **2000** |
|---|---|---|---|---|
| Skedans Islands | 180 | 72 | 112 | 120 |
| Reef Island | 300 | 735 | 511 | 400 |

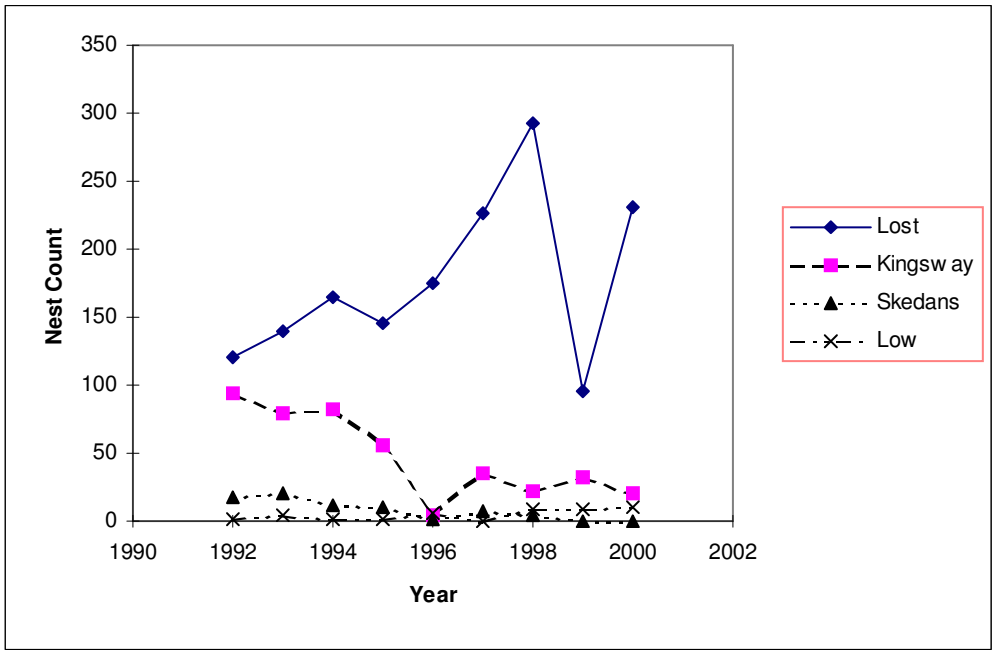
*2.2.3 Black Oystercatcher Census and Banding*

It is important to monitor Black Oystercatchers because BC and Alaska have 80-85 % of the world's population. By banding both adults and chicks it is possible to determine site fidelity, mate fidelity, individual breeding success, and adult survivorship. Eight islands in the Laskeek Bay area are surveyed for breeding pairs and their success each year. This year nest checks began in May and finished in July. Our surveys found 34 active nest sites this year with approximately 30% of those sites later experiencing some degree of predation/unsuccessful chick rearing. A total of 16 chicks were banded and 3 previously banded individuals were sighted at the same locations as last year. This year an adult banding program was begun by Stephanie Hazlitt of Bird Studies Canada. A total of 8 adults were marked in the Laskeek Bay Area.

*2.2.4 Glaucous-winged Gull Colony Census*

Glaucous-winged Gull nests were counted on five islands, 244 nests containing 1-3 eggs each. Figure 1 shows that in comparison to last year, nest counts increased on Lost and Low islands, and decreased on Kingsway Rock. The total number of nests this year is equal to the count in 1994, exceeded by '97, '98 and double that of '99. However, the count at Lost Islands in 1999 was known This year large congregations of 50-80 Bald Eagles were seen at Low Island, which may account for the low numbers of nesting sites in the area. On Skedans, Kingsway and Cumshewa, fresh otter scat and prints were found through the gull colonies. Figure 1. Indicates that over the 8 years of surveys, Lost Islands nest counts are rising while those on Kingsway are declining. The low number of nests counted in 1999 on Lost Islands are likely a reflection of the inability to count all colony locations due to weather conditions.

Figure1. Chart of Glaucous-winged gull colony censuses in Laskeek Bay 1992-2000.



## 2.3 TERRESTRIAL PLANTS AND ANIMALS

*2.3.1 Songbird Banding and Species Counts*

Songbird Banding took place at six stations: East Limestone Island, Reef Island camp area (site13), Reef Island south shore (site16), Vertical Point, Low Island and West Skedans Island, with the Limestone Island crew being responsible for E. Limestone, Vertical Point and West Skedans. Table 7 shows the total # of birds banded for the three islands over the last three years, as well as the species totals. The banding is done primarily to determine differences in adult/juvenile ratios on islands with and without introduced species, and to establish a marked population for long-term monitoring and survival estimates. An interesting retrap from this year at the Limestone Island station was a Hermit Thrush originally banded on Vertical Point. Early analysis of the data by RGIS scientist Sylvain Allombert indicates that over the last three years birds on deer free islands weigh more than those on islands with deer.

Table7. Songbird banding totals from 3 monitored islands in Laskeek Bay 1998-2000.

| Year | East Limestone | | Vertical Point | | West Skedans | |
|---|---|---|---|---|---|---|
| | Species | Total | Species | Total | Species | Total |
| 1998 | 12 | 269 | 14 | 64 | - | - |
| 1999 | 14 | 100 | 15 | 109 | - | - |
| 2000 | 12 | 234 | 14 | 91 | 12 | 315 |

The daily checklist of birds recorded 74 different species. The maximum number of species counted for a single day was 34 on both April 11$^{th}$ and May 8$^{th}$. Similar to last year, the Peregrine Falcons were absent from their nest on the south cliff at most viewing times, and there were no fledglings seen. A Sharp-shinned Hawk was seen several times near Boat Cove, however, as last year, there appeared to be no nesting activity at the main trail site. A new Bald Eagle's nest was constructed on Cassin's Tower this year, successfully fledging two young. Because the nest was located in the spruce tree on Cassin's Tower, Cassin's Auklet and Fork-tailed Storm Petrel surveys were not done. Northern Saw-whet Owls were heard and seen on both the west and east sides of Limestone Island.

*2.3.2 Cavity Nest Surveys*

There were 23 active wildlife trees this year on East Limestone Island, ten of which were previously unused for cavity nesting. Red-Breasted Sapsuckers were found breeding in 22 of trees and Hairy Woodpeckers were found using one tree. The sapsuckers began nest excavation in April, the first chicks were heard in early May and chicks fledged from June 13$^{th}$ to 23$^{rd}$.

*2.3.3 Introduced Animals*

Ten squirrel surveys were carried out between April 21$^{st}$ - June 23$^{rd}$ to examine the distribution of squirrels on East Limestone Island in various habitats. There were 27 accounts of squirrel presence, ten of which occurred in the 20m-radius study plots. Observations of squirrels varied over the season, with the high count of six on May 13$^{th}$. As in previous years, the majority of squirrels noted were along the Main Trail. On several occasions squirrels were seen chasing sapsuckers away from sap wells and then feeding on the sap.

A deer collared with a radio transmitter on Limestone in July of '99 by RGIS researchers was seen several times at the field camp this year. The deer was also tracked over last winter in various locations on Louise Island and Limestone. On one occasion, two deer without collars were seen swimming from the south side of Limestone to nearby Vertical Point.

Several shoreline surveys for raccoon sign were conducted. While no evidence of raccoons was found on East Limestone Island, Project Limestone participants found scat at Vertical Point.

*2.3.4 Plant Inventory*

The total number of plants inventoried for East Limestone Island (including some mosses and lichens) remains at 120, with no new plant species found. Dr. Irwin (Ernie) Brodo of the Canadian Museum of Nature visited Limestone to make a complete lichen collection of the island. He will provide LBCS with a comprehensive lichen inventory for the 2001 program. Algal collections and presses were also made this season to aid Parks Canada in species occurrence and distribution studies within the Laskeek Bay area.

## 3. EDUCATIONAL PROGRAM

Laskeek Bay Conservation Society enables interested people to participate in ongoing environmental monitoring and research at East Limestone Island. Volunteers stay on the island with the staff for a minimum of one week. They are given an orientation to the field camp and field training so that they can fully engage in all aspects of camp life, from biological monitoring to camp maintenance. Local school groups, tour groups, and other visitors come to the island for shorter stays, usually less than 24 hours. These parties learn about coastal forest ecosystems and the work of the Society on Limestone Island.

### 3.1 Limestone Island Field Station

*3.1.1 Society Staff*

Field Camp Supervisor Janet Gray returned for a 15 week season and Research Assistant/Interpreter Chris Lindberg worked for 10 weeks in camp. Science Intern Dana Nyeholt joined the camp for 6 weeks during the Ancient Murrelet chick banding season. Administrator Greg Martin works in Queen Charlotte City all year, coordinating the Society and providing logistical support for the field camp.

*3.1.2 Volunteer Program*

This year 31 volunteers contributed 240 days of effort at Limestone Island through our weekly volunteer program. The average length of stay was 7.7 days. Most people volunteered for one week; two people came for two weeks, two people came for ten days, and one person came for only three days, due to health problems. 13 volunteers were from Haida Gwaii, 16 were from the rest of Canada, and there was one volunteer from Germany and one from Tasmania. In addition, Beverly McBride from Canadian Wildlife Service, Hull, Quebec, volunteered for 25 days to help with the songbird banding work.

*3.1.3 Science Intern Program*

The Science Intern Program is designed to assist Haida Gwaii post-secondary students to gain biological and conservation skills and experience. In this third year of the program operation, Uvic student Dana Nyeholt from Port Clements worked on Limestone May 5$^{th}$ to June 16$^{th}$. She

took part in biological monitoring, collation of data, natural history interpretation and volunteer training. Her main interests were wildlife tree monitoring and Ancient Murrelet chick banding.

*3.1.4 Project Limestone*

The Project Limestone school outreach program is the product of a working partnership between School District 50 and LBCS for the past ten years. After orientation and interpretive sessions, local students worked with staff at monitoring the burrows of Ancient Murrelets, as well as trapping, counting, banding, weighing, measuring and releasing these seabirds. In addition to gaining "hands-on" experience in field research, local students were exposed to the impacts of introduced species, the biology of songbirds and seabirds as well as the delicate ecological balance of the land-sea interface. This year three school groups participated: two from Queen Charlotte Secondary (fourteen students), and one from George M Dawson Secondary (six students).

*3.1.5 Tour Groups and Other Visitors*

Visiting East Limestone Island is a highlight of a South Moresby trip for many tour boat operators, as guests are able to take part in seabird research and see Ancient Murrelet chicks depart. The sailing vessels Island Roamer and Maple Leaf have brought groups to East Limestone Island for many years. This year, the Island Roamer brought 91 visitors ashore on six trips, while the Maple Leaf visited twice bringing 26 visitors. An additional tour boat, Copper Sky also came ashore twice this year, bringing 18 visitors. We also had a visit from a private vessel with a crew of four from Prince Rupert. Guests and crew were given guided tours of the island in the afternoon or evening, to learn about the old growth forest that supports the Ancient Murrelet colony. The groups returned to the island later the same day and walked to the banding area on the North Cove to help catch chicks and record data. In total, 139 people visited Limestone this year via tour boat, and 49 t-shirts were sold.

*3.1.6 Collaborating Scientists*

Laskeek Bay continues to be a partner with the Research Group on Introduced Species (RGIS). Sean Sharpe, Dr. Jean-Louis Martin, and Dr. Tony Gaston are the primary researchers. This five year project focuses on the impact of introduced species on the ecology of the Queen Charlotte Islands. The RGIS field camp on Reef Island this year ran from May 6$^{th}$ to July 28$^{th}$, with two to eight staff in camp at various times through the season. Limestone staff and volunteers assisted in a number of RGIS field projects that included work on Limestone Island and Laskeek Bay. On the May 26-28 weekend, 26 people converged on Reef Island for a summit on research activities.

## *4. CONCLUSION*

The student intern and hard working volunteers contribute immensely to the success of the camp, as do the in-town staff, scientific advisors and Board of Directors. We look forward to another field season filled with shared experiences of staff, volunteers, school groups and other visitors.

## 5. ACKNOWLEDGEMENTS

Established in 1990, the Laskeek Bay Conservation Society is a non-profit organization based in Haida Gwaii, BC. The Society relies heavily on volunteers to run its programs. The goal is to continue increasing public awareness and understanding of the marine and terrestrial ecosystems of Haida Gwaii, specifically the Laskeek Bay area, through research and education programs. This is possible due to the generous contributions from the following groups and individuals:

- W.Alton Jones Foundation for their continued financial assistance for the interpretive program.
- Canadian Wildlife Service (National Wildlife Research Center, Ottawa, and Pacific and Yukon Region, Delta) for financial assistance and long-term equipment loans.
- Forest Renewal BC for financial assistance for RGIS projects
- Environment Canada for funding under the Science Horizons program
- Gwaii Trust for funding the Science Intern and Project Limestone youth programs
- Ministry of Environment, Lands and Parks, Skeena Region for permission to conduct research in the Wildlife Management area
- Weyerhaeuser and the Gwaii Trust Society for funding the purchase of a new boat
- Habitat Conservation Trust Fund for field camp and outreach funding
- Important Bird Areas (IBA) Community Action Fund for financial assistance
- Mountain Equipment Co-op for equipment and field camp funding
- Calgary Zoological Society for a generous donation

Thanks also go to the following individuals and groups who gave generously of their time to the Society:

- Tony Gaston for his valuable advice and guidance throughout the field season.
- Graeme Ellis for providing us with a camera and film to document killer whales.
- Bev McBride for three weeks of songbird banding
- Crew and guests of the vessels Island Roamer and Maple Leaf for generously supporting our project with their visits and t-shirt purchases.
- Nathalie Macfarlane at the Haida Gwaii Museum, for continuing to provide a venue to promote the Society's work.
- Greg Martin for numerous hours of volunteer time to keep the Society going.
- Barb Rowsell, RGIS coordinator for generous assistance whenever required.
- LBCS directors for their time and efforts in maintaining and developing funding, the field camp, and the scientific and educational projects.
- All of the volunteers who participated in the Limestone Island camp, purchased t-shirts, made donations or helped out in town.

Finally, thanks goes to the owners, staff and crew of South Moresby Air Charters, s/v Anvil Cove, and m/v Akko Chan for their professional services in transporting gear and people from Queen Charlotte City to Limestone Island.

Thank you all, please come and celebrate Limestone's 12th year in 2001.

Report prepared by Janet Gray, camp supervisor/biologist and edited by LBCS



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