

SURVEYS OF PERMANENT SEABIRD MONITORING PLOTS ON RAMSAY ISLAND, GWAII HAANAS IN JUNE 2002

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SUMMARY

We revisited permanent monitoring plots set up in 1984 at Ramsay Island to monitor changes in numbers of breeding Ancient Murrelets and Cassin's Auklets. Numbers of Ancient Murrelet burrows had increased, but the estimated number occupied had remained stable. Numbers of Cassin's Auklet burrows and proportion occupied also appeared to have remained stable since 1984. Breeding of Cassin's Auklets in 2002 was later than usual.

INTRODUCTION

In 1984, the Canadian Wildlife Service set up a series of permanent monitoring plots on select seabird colonies in British Columbia as a means to determine trends in population sizes. As part of this program, twelve 20*20 m plots were established within the Ancient Murrelet *Synthliboramphus antiquus* colony on Ramsay Island, as were eight 15*15 m and one 20*24 m plot within the Cassin's Auklet colony. All but one of the Ancient Murrelet plots and three of the Cassin's Auklet *Ptychoramphus aleuticus* plots were resurveyed in 1992 or 1993; results indicated that the number of murrelet burrows had increased slightly since 1984, while the number of auklet burrows had remained fairly stable. Following the monitoring schedule outlined in The Management Plan for Seabird Conservation, Pacific and Yukon Region, a team from the Canadian Wildlife Service visited Ramsay Island from 8-25 June 2002, to resurvey the permanent plots using standardized methods. This report constitutes a preliminary analysis of results of that resurvey.

RESULTS

Ancient Murrelet

The number of Ancient Murrelet burrows counted on the twelve monitoring plots increased by 58% over the period 1984-2002, extending the 22% increase observed between 1984 and 1992 (Table 1). We measured occupancy rates after the departure of most or all Ancient Murrelets from the colony, in two areas on the north side of Ramsay Island (in the areas of ANMU-1 to ANMU-3 [12 burrows], and ANMU-4 to ANMU-6 [18 burrows]). Overall occupancy was estimated at 40%: 10 of 30 burrows contained eggshells from the current year, one contained a whole egg, and one contained remains of a chick (likely predated and then partially eaten by a *Peromyscus*). Eighteen burrows were confirmed empty. By way of comparison, occupancy was estimated to be 64.5% in 1984 ($n = 31$). Comparing occupied burrows (total burrows x occupancy rate), numbers appear to have changed little between 1984 (140 occupied) and 2002 (138 occupied).

Cassin's Auklet

Overall, the number of Cassin's Auklet burrows counted on the 9 monitoring plots increased by 10% over the period 1984-2002, extending the very slight increase observed between 1984 and 1992 (Table 1). We

checked occupancy rates on the north side of Ramsay Island (near CAAU-4 and CAAU-5). Occupancy was estimated at 63% in 2002: 4 of 24 burrows contained an egg, one contained eggshells from the current year, three contained chicks (none more than 3-4 days old; measurements were taken on 2 of these chicks, see Table 1), and seven contained well-used latrines. Nine burrows were confirmed empty. For comparison, occupancy was estimated at 71.4% in 1984 ($n = 21$).

Table 1
Results of burrow counts in Ancient Murrelet and Cassin's Auklet permanent plots, Ramsay I., Gwaii Haanas

| Species | Year | Plot | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
|---------|---------|--------|----|----|----|----|-----|-----|----|-----|----|----|----|------------|
| | | # 1 | | | | | | | | | | | | |
| ANMU | 1984 | 20 | 7 | 11 | 35 | 22 | 28 | 7 | 24 | 12 | 14 | 24 | 14 | 218 |
| | 1992/93 | 21 | 10 | 13 | 42 | 29 | 30 | 8 | 34 | --- | 23 | 33 | 9 | |
| | 2002 | 23 | 16 | 11 | 45 | 34 | 40 | 14 | 46 | 15 | 35 | 49 | 17 | 345 |
| CAAU | 1984 | 40 | 45 | 34 | 40 | 58 | 28 | 18 | 26 | 57 | | | | 346 |
| | 1992/93 | 43 | 48 | 37 | 43 | 53 | --- | --- | 25 | --- | | | | |
| | 2002 | 40 | 59 | 34 | 42 | 61 | 44 | 27 | 28 | 45 | | | | 380 |

Table 2
Measurements of Cassin's Auklet chicks pulled from burrows on Ramsay Island, 20 June 2002

| Number | Mass (g) | Tarsus (mm) | Culmen (mm) | Bill depth (mm) | Wing (mm) |
|--------|----------|-------------|-------------|-----------------|-----------|
| 1 | 23 | 16.6 | 9.6 | 5.9 | 16.5 |
| 2 | 33 | 18.5 | 10.0 | 5.6 | 17.0 |

DISCUSSION

Islands along the east coast of Moresby Island, most of them situated within Gwaii Haanas National Park Reserve, support an estimated 44% of the Ancient Murrelet population of British Columbia. Because British Columbia in turn supports about half of the world population, the biological significance of the region is readily apparent. Ancient Murrelet recruits appear to be reluctant to use existing burrows (Gaston 1992), so that the marked increase in the number of burrows on the series of permanent monitoring plots on Ramsay Island may be indicative of a high level of recruitment. On the whole, it appears that populations are faring well there. Previous surveys showed that the number of burrows on permanent plots on George Island also increased between 1985 and 1996, while there was little indication of a trend on Rankine Island between 1984 and 2000. Throughout Haida Gwaii, recent trends in Ancient Murrelet populations have been driven mainly by presence or absence of introduced predators (rats and raccoons; summarized in Lemon and Gaston 1999). It is therefore not surprising to find that populations

on islands without introduced predators are doing well. The Ancient Murrelet colony on George Island is scheduled to be resurveyed again in 2003.

The islands of Gwaii Haanas also support small, but important, populations of Cassin's Auklets. Because Cassin's Auklet recruits readily use existing burrows, results of the 2002 survey at Ramsay Island suggest that populations there probably are relatively stable. Interestingly, timing of breeding appeared to be somewhat later in 2002 than in 1984, when hatching began early in May (Rodway et al. 1990), but at present we have no basis on which to speculate on causes or consequences of the late breeding. Previous surveys documented a large decline in the number of burrows on plots on Rankine Island between 1984 and 2000; East Copper Island was resurveyed in 2003 and the population there appears to have been stable since 1985 (M. Lemon, unpublished report).

ACKNOWLEDGMENTS

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REFERENCES

Rodway, M.S., Lemon, M.F. and Kaiser, G.W. 1988. British Columbia seabird colony inventory: Report #1 – East coast Moresby Island. Canadian Wildlife Service Technical Report Series No 50. Canadian Wildlife Service, Pacific and Yukon Region, Delta, BC.

Appendix 1
Locations of bearing points and associated Ancient Murrelet plots on Ramsay Island, Gwaii Haanas

| <u>Bearing point</u> Identifier | Location | Marker | <u>Plot</u> Identifier | Directions to plot |
|--|-------------------------------------|-------------------------|---|------------------------------------|
| RAMS-A | N 52°34' 00.3'' W 131°25' 00.5'' | On cedar tree | ANMU-1 | 124° from RAMS-A, 35 m from shore |
| | | | ANMU-2 | 124° from ANMU-1, 105 m from shore |
| | | | ANMU-3 | 124° from ANMU-2, 195 m from shore |
| RAMS-B | N 52°33' 54.3'' W 131°25' 48.5'' | On spruce tree | ANMU-4 | At RAMS-B, at the shore |
| | | | ANMU-5 | 134° from RAMS-B, 50 m from shore |
| RAMS-C | N 52°33' 51.2'' W 131°25' 53.5'' | On spruce tree | ANMU-6 | 124° from RAMS-C, 50 m from shore |
| RAMS-D | N 52°33' 18.5'' W 131°26' 03.1'' | On spruce tree | ANMU-7 | 50° from RAMS-D, 30 m from shore |
| RAMS-E | N 52°33' 04.9'' W 131°25' 26.3'' | On diseased spruce tree | ANMU-8 | 39° from RAMS-E, 75 m from shore |
| RAMS-F | N 52°32' 02.7'' W 131°25' 05.5'' | On alder tree | ANMU-9 | 350° from RAMS-F, 45 m from shore |
| RAMS-G | N 52°33' 06.1'' W 131°24' 25.9'' | On spruce tree | ANMU-10 | 150 m at 221° from RAMS-G |
| | | | ANMU-11 | 55 m at 190° from RAMS-G |
| RAMS-H | N 52°32' 38.8'' W 131°23' 35.9'' | On spruce tree | ANMU-12 | 64° from RAMS-H, 110 m from shore |

Appendix 2
Locations of Cassin's Auklet monitoring plots on Ramsay Island, Gwaii Haanas

| Plot | Location |
|-------------|------------------------------------|
| CAAU-1 | N 52° 34' 35.1'' W 131° 21' 53.2'' |
| CAAU-2 | N 52° 34' 52.5'' W 131° 22' 08.5'' |
| CAAU-3 | N 52° 35' 07.7'' W 131° 22' 23.0'' |
| CAAU-4 | N 52° 34' 57.3'' W 131° 22' 58.2'' |
| CAAU-5 | N 52° 34' 39.1'' W 131° 23' 08.7'' |
| CAAU-6 | N 52° 33' 08.4'' W 131° 25' 33.2'' |
| CAAU-7 | N 52° 33' 01.6'' W 131° 24' 49.7'' |
| CAAU-8 | N 52° 32' 38.8'' W 131° 23' 35.9'' |
| CAAU-9 | N 52° 32' 37.7'' W 131° 22' 30.4'' |
