

# ADULT BLACK OYSTERCATCHER BANDING IN LASKEEK BAY: REPORT ON A PILOT PROJECT

**Stephanie L. Hazlitt**

*Bird Studies Canada, 5421 Robertson Rd., RR1, Delta, B.C. V4K 3N2*

and

**Joanna L. Smith**

*101-1001 W. Broadway Ave. Box 623, Vancouver, B.C. V6H 4E4*

## ABSTRACT

Black Oystercatchers, rocky intertidal residents of the BC coastline, are considered a shorebird species of high national and regional conservation concern. Long-term monitoring and adult and chick banding programs, such as the one delivered by the Laskeek Bay Conservation Society (LBCS), provide an excellent opportunity to investigate the breeding biology, annual survival and other population parameters of Black Oystercatchers. The pilot project objectives were to establish a marked population of adult oystercatchers in Laskeek Bay, complimenting the LBCS chick-banding program, and to pass on the adult trapping technique to LBCS staff and volunteers. In total, eight adult Black Oystercatchers were trapped on five islands; one adult was previously banded and seven were unbanded. Three previously banded birds were also observed, bringing the total number of marked birds to ten individuals in 2000. The adult trapping technique was demonstrated to LBCS camp manager Janet Gray and scientific advisor Tony Gaston, both of whom successfully used the method. The LBCS chick-banding program has provided the first known-age Black Oystercatcher breeders in BC and the first evidence of philopatry for this species. However, Black Oystercatcher chick survival and recruitment into the breeding population is low. Adult banding increases the number of marked birds in the breeding population each season, and will provide information on breeding site fidelity, pair longevity, adult survival and nesting success.

## INTRODUCTION

Black Oystercatchers (*Haematopus bachmani*) are resident shorebirds that live in rocky intertidal habitats along the Pacific Coast of North America. More than 80% of the world's 11,000 Black Oystercatchers are found in Alaska and British Columbia (Andres & Falxa 1995, Campbell *et al.* 1990). Hence, this species is of high national and regional concern. Throughout their range, Black Oystercatchers occur at relatively low densities, presumably limited by the availability of their specialized breeding habitat. In addition to natural hazards, oil spills, introduced predators, beach debris covering nesting sites and human disturbances are significant threats to both adult and chick survival.

In British Columbia, Black Oystercatcher populations are considered stable. Studies

in the southern Gulf Islands (Strait of Georgia) and Laskeek Bay (Haida Gwaii) show that there have been a relatively stable number of breeding pairs over the past decade (Vermeer *et al.* 1989, Hazlitt 1999, Laskeek Bay Conservation Society (LBCS) field reports 1992-99). However, threats to adult and chick survival occur throughout their range and information on annual survival rates and the importance of specific nest sites is still lacking for this species. Chick banding in the aforementioned areas has provided some information on juvenile survival. However, adult banding may yield more information despite working with birds of unknown age. Individually marked adults, with unique band combinations, can provide information on nest site fidelity, pair longevity, adult survival and individual nesting success.

Long-term studies of Black Oystercatchers can be hampered by logistical difficulties because this species often breeds in remote places. The Laskeek Bay area offers an excellent opportunity to investigate the breeding biology, annual survival and other population parameters of Black Oystercatchers for several reasons. First, the offshore islands of Laskeek Bay support a population of 34 breeding pairs (1% of the global population), a relatively high density of oystercatchers that are accessible by boat. Second, LBCS, the Research Group on Introduced Species (RGIS) and the Canadian Wildlife Service (CWS) operate seasonal research camps on East Limestone Island and Reef Island and monitor Black Oystercatcher nests annually.

The objectives of the pilot project were to (1) establish a marked population of adult Black Oystercatchers in Laskeek Bay using an adult trapping technique that was successful in the southern Gulf Islands (Hazlitt 1999) and (2) train LBCS staff and volunteers to use the Black Oystercatcher trapping technique for use in future seasons.

The long-term objectives of the project are to establish a marked population of approximately 30 breeding pairs of Black Oystercatchers for population monitoring purposes, and to obtain biological information on adult survival rate, nest site fidelity, pair-bond longevity, breeding success, juvenile survival and philopatry.

## METHODS

A heart shaped (50cm by 80cm) walk-in nest trap was constructed of 1 cm galvanized mesh wire with a soft mesh ceiling to capture a single incubating adult (see Hazlitt 1999). Birds entered through a 15cm opening in the side of the trap and were

allowed to settle on the eggs. After about 2 minutes, they were flushed away from the eggs toward the rear of the trap where they were captured by hand. This technique requires two people: one hides close to the nest, ready to approach and bag the trapped bird, while the other retreats to a vantage point watching the activity at the nest and signaling the other person when the adult has entered the trap. The nest trap was placed over the eggs and secured with rocks from the surrounding area. The nest trap technique was demonstrated to LBCS camp manager Janet Gray and scientific advisor Tony Gaston, both of whom successfully used the method.

A noose carpet design was tested to investigate whether the second bird could be captured near the nest after the first was caught in the nest trap. A noose carpet was made from an approximately 1m x 3m piece of used, dark green fishing net (trawl type) and noose knots tied with 100 lb test fishing line. Approximately 20 nooses were tied to the carpet at intervals to maximize the possibility of capturing an adult's leg.

Between 28 May and 5 July 2000, islands were surveyed for Black Oystercatcher occupancy and the presence of eggs. A territory was considered occupied if a pair was present; whether or not we found a nest scrape. Attempts to band adults at nest sites with eggs were made only between 28 May and 11 June 2000 during the second half of incubation and before hatching.

Captured adults were weighed with Pesola© spring scales ( $\pm 1$  g) and bill length, depth and width measured, as well as tarsus and wing length. Adults were banded with three bands: on the right leg, a black darvic band was placed above a stainless steel U.S. Fish and Wildlife band and an anodized alpha-numeric aluminum band (turquoise) was

placed on the left leg. Time to capture was recorded from the moment that the trap was set over the nest until capture. A cut-off time of 60 minutes was chosen so that adults could return to the nest and incubate their eggs and we minimized habituating the birds to the nest trap. Total time was recorded and the mean calculated ( $\pm$  SD) for successful and unsuccessful trapping attempts. The total number of islands surveyed, the number of trapping attempts

and the numbers of adults marked are summarized by island in Table 1.

## RESULTS

### Adult trapping

Between 28 May and 11 June, 20 nests were found occupied on seven islands in Laskeek Bay, and 15 attempts were made to trap adults (Table 1).

**Table 1. A summary of Black Oystercatcher adult trapping and banding in Laskeek Bay, 2000.**

Island	No. of occupied nests	No. of trapping attempts	No. of adults banded this year	No. of previously banded birds
Reef	2	3	2	0
E. Limestone	3	2	2	0
South Skedans	3	3	1	0
Finger (Skedans)	1	1	0	0
South Low	5	5	2	1
Lost Islands	4	1	1	1*
Kingsway	2	0	0	1*
<b>TOTAL</b>	<b>20</b>	<b>15</b>	<b>8</b>	<b>3</b>

\*not trapped; band was read with binoculars

In total, eight adult oystercatchers were trapped on five islands: one adult was previously banded and seven were unbanded. Three previously banded birds were also observed on the Lost Islands, on Skedans Islands and at Kingsway Rock, bringing the total number of marked birds to 11 in 2000. All trapped adults were caught using the nest trap.

The noose trap was used once without success. We concluded that the noose trap was too visible to the birds to successfully trap an adult.

The mean time to capture using the nest trap was 40 ( $\pm$ 16) min (n=7) and the mean time we waited but were not successful was 62 ( $\pm$  20) min (n=8). Adults weighed 575  $\pm$ 30 g (n=7).

### **Known-Aged Breeders**

The observed marked population of adult Black Oystercatchers in 2000 was 11 individuals, four of known age. All known-aged birds were banded as chicks in Laskeek Bay by LBCS.

The previously banded adults observed on South Low Island and at Skedans Islands were 6 years old and the banded birds on Kingsway and Lost Islands were 5 years old or less. The adult on South Low Island was banded in 1994 as a chick using the banding scheme of white plastic on the left leg and white plastic over metal on the right leg (stainless steel US Fish and Wildlife band); we replaced the white plastic bands because they had degraded. The other birds were marked with a white plastic spiral band with black alpha-numeric codes engraved for individual identification, but because of wear, the codes were illegible.

### **Census of Oystercatcher Breeding Population In Laskeek Bay**

Throughout the entire season (28 May – 5 July), 28 known oystercatcher breeding territories were visited and 24 sites were occupied (see definition in Methods). The occupancy rate of 83% is similar to previous years in Laskeek Bay (88% in 1999).

## **DISCUSSION**

### **Adult trapping**

We caught 8 individuals in 7 days of effort, although other camp activities meant that we could not devote full time to the work. Trapping success may be dependent on age of the clutch, weather or disturbance at the breeding site. The nest trapping technique is fairly simple, and is an easily transferable skill to staff and volunteers of the Laskeek Bay Conservation Society. The noose carpet technique was unsuccessful, most

likely due to the materials used for the carpet construction. Future trapping attempts could be made using less visible materials.

### *Known-Aged Breeders*

The chick-banding program conducted by LBCS, now in its ninth year, has provided the first known-age Black Oystercatcher breeders in BC and the first evidence of philopatry for this species. Unfortunately, the alpha-numeric spiral bands used to individually mark chicks (1992-1999) have poor longevity, as seen in other studies (Hazlitt 1999) and will eventually fall off the birds. Observations of birds with only the metal band on the right leg indicate plastic band loss and birds with a black plastic band on the left leg are typical when the outer layer of the spiral band breaks off, leaving only the black inner layer (Hazlitt 1999). A more durable band material must be used when marking Black Oystercatchers. This year, LBCS used anodized aluminum bands to mark adults in the hope of an increased band life; plastic darvic bands were used simultaneously for comparison purposes. Chicks were marked with plain darvic bands using a unique combination for the year 2000.

### **Recommendations for marking adults and chicks**

Each year, the LBCS staff and volunteers could dedicate a few days in late May and early June to trap and mark adult oystercatchers, slowly increasing the marked population. It is clear that band materials need to be robust for this species, therefore we recommend the use of anodized aluminum bands on adults. However, anodized aluminum bands are expensive and chick survival to first year is low. Therefore we recommend banding chicks with plain plastic darvic bands using unique combinations each year in place of the

plastic alpha-numeric engraved spiral bands. Unique combinations are easy to view with binoculars, the plain bands have longer longevity and will provide information on individual age. Naturally, if this programme is to be of value, it requires that effort also be devoted to recording bands on adult oystercatchers every year. Ideally, we should have a record for all pairs in Laskeek Bay of whether or not they were banded and what the combination was. Although this information may not be of immediate value, over several years it could allow us to determine the annual survival of adults, an important factor in understanding population dynamics.

#### **ACKNOWLEDGMENTS**

We thank the Laskeek Bay Conservation Society, Research Group on Introduced Species, the Canadian Wildlife Service, Tony Gaston, Jean-Louis Martin and Bird Studies Canada for financial and logistical support for this project; Christine Eberl for ordering the aluminum bands and organizing travel arrangements; Greg Martin and Barb

Rowsell for organizing the presentation, office support and accommodation in Queen Charlotte City. We thank Janet Gray for photocopying and sending this and previous years data. Special thanks to the all the members of the RGIS and LBCS camps.

#### **REFERENCES**

- Andres, B.A., and G.A. Falxa. 1995. Black Oystercatcher. Birds of North America, No.155. (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, P.A., and the American Ornithologists Union, Washington, D.C.
- Campbell, R.W., N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G.W. Kaiser, and M.C.E. McNall. 1990. The Birds of British Columbia. Vol. 1. Non-passerines, introduction and loons through waterfowl. Royal British Columbia Museum, Victoria.
- Gaston, A.J. and K. Heise (eds.) 1993. Laskeek Bay Research 4. Laskeek Bay Conservation Society, Queen Charlotte City, B.C.