

Resightings and recoveries of Canada Geese *Branta canadensis* ringed in West Greenland

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Canada Geese Branta canadensis have recently established in West Greenland. Until now their origin and migration routes have been unknown. This paper presents resighting and recovery data of Canada Geese caught during two expeditions to West Greenland: 1997 (10 birds) and 1997 (125 birds). Subsequently, a total of 45 individual birds have been reported. Birds were recovered from northern and central Labrador and New Brunswick, Canada during autumn. During winter the birds were recovered and resighted mainly in Connecticut, New York, and Pennsylvania, USA.

Key words: Canada Geese, *Branta canadensis*, Greenland

The colonisation history and recent expansion of Canada Geese *Branta canadensis* in West Greenland was summarised in Fox *et al.* (1996). Since then numbers have increased and the geographical expansion has continued such that in 1997 and 1998, the first observations of breeding Canada Geese were reported from as far north as Thule District (c. 78°N) (D. Boertmann pers. comm.) and moulting flocks are occasionally seen as far south as Nuuk (c. 64°N) (P. Aastrup pers. comm.). In Isunngua (67°05'N, 50°30'W) an area

subject to regular ground surveys for Greenland White-fronted Geese *Anser albifrons flavirostris* since 1988, numbers of Canada Geese remained stable (c. 20 birds including a few families and non-breeding moulting birds) until 1992 (Fox *et al.* 1996). By 1995 and 1996 more than 100 birds were present (A.D. Fox & J.N. Kristiansen pers. obs.) and in 1997 138 (including 61 juveniles) were reported from the same area (Kristiansen 1998). In a study area of approximately 25 km² within Isunngua, 60 Canada Geese were seen in 1997 (Kristiansen 1998) and during the same

period in 1998 106 birds were recorded (N.S. Jarrett & J.N. Kristiansen pers. obs).

The Canada Goose is now clearly established in West Greenland both as a non-breeding moult-migrant and as a breeding species. However, we still know very little about the migration routes and wintering areas of these birds. Based on the morphometrics of 10 adult non-breeding moulting birds caught in 1992 in Isunngua (Wright & Mitchell 1993), Fox *et al.* (1996) suggested that Greenlandic birds belonged to the *interior* race (ie North Atlantic Flyway population). These birds were all individually marked with neck collars, and in 1997 another 64 adults (breeders and non-breeders) were caught and marked with neck collars and 61 goslings with leg rings (Kristiansen 1998). This paper reports resightings and recoveries of these birds.

Autum/winter resightings and recoveries

A summary of all resightings and recoveries from North America of the Canada Geese ringed in Greenland is given in **Table 1**. Three birds with neck-collars on the 1992 expedition were shot on Sandy Island, Labrador, Canada in the autumn of that year and in the winter that followed, another bird was reported shot from Long Island, New York, USA. There have been resightings of three other individuals from Long Island, New Jersey and Pennsylvania, USA. Of the 125 birds ringed during the 1997 expedition, one bird was shot near Labrador City, Canada and five birds were shot in New Brunswick, Canada in the autumn of that year. During the winters of 1997/98 and 1998/99, 33 different birds were reported from Connecticut, Massachussets, Rhode Island, Long Island and Pennsylvania, USA.

Table 1. Summary of the numbers of Canada Geese ringed in Isunngua, West Greenland in 1992 and 1997 and subsequent resightings and recoveries outside Greenland.

	Year of capture	
	1992	1997
Number of geese caught:		
Isunngua, West Greenland	10	125
Sandy Island, Labrador, Canada	3 (shot)	
Labrador City, Canada		1 (shot)
New Brunswick, Canada		5 (shot)
Connecticut, USA		10
Massachusetts, USA		2
New Jersey, USA	1	
Rhode Island, USA		1
Long Island, New York, USA	1 (shot), 1	10
Pennsylvania, USA	1	10
Total	6	39

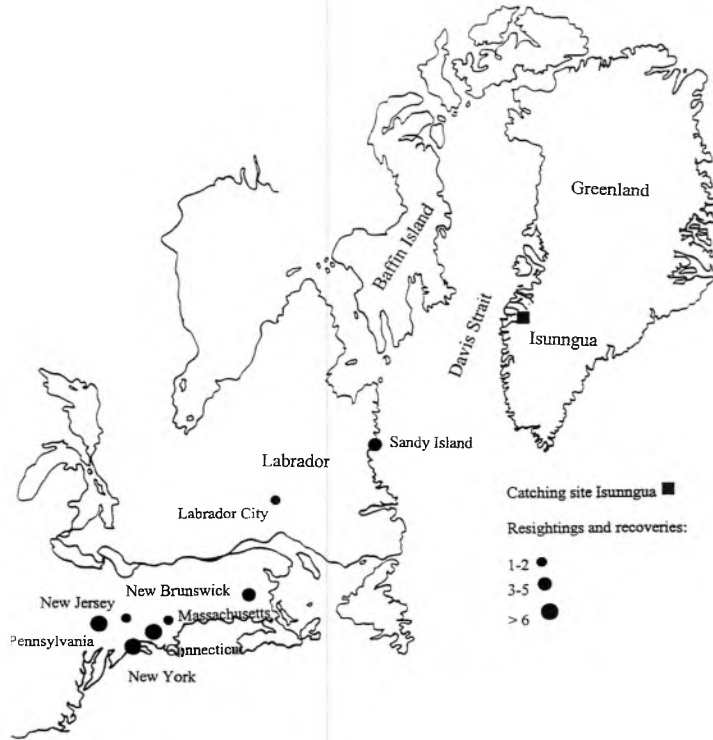


Figure 1. Map showing the 1992 and 1997 ringing site of Canada Geese in Isungua, West Greenland and locations of resightings and recoveries.

Figure 1 shows the Isungua catching area in West Greenland and plots the positions of resighted and recovered Canada Geese, thus indicating the potential migration routes taken by these birds to their North American wintering sites.

Greenlandic resightings

In 1996 one neck-collared bird ringed in 1992 was seen in a flock of 15 non-breeding moulters. In July 1997, three of the 1992 birds were seen (two males and a single female bird). Twenty two (37%) of the birds ringed in 1997 were resighted in 1998 in an area close to where they were caught the year before. One female bird

which was captured as a yearling in 1997 was seen with its mate and three goslings in 1998 indicating that these birds are able to breed when aged two years. In 1999 during a brief visit to Isungua, five neck-collared birds caught in 1997 were seen at the same site at which they were caught two years earlier.

Morphometrics from birds caught in 1997 (**Table 2**) supports the suggestion by Fox *et al.* (1996) that the birds summering in Isungua, West Greenland are of the race *B.c. interior*. However, two birds handled in 1997 showed plumage pattern and size that was atypical of all other birds handled. One bird possessed plumage characteristics of *B.c. occidentalis* (deep brown feathering) and another the characteristics of *B.c. maxima* (white eye

Table 2 Biometrics of Canada Geese caught in Isunngua, West Greenland in July 1997. Mean \pm s.e.

	Body mass (g)	Total tarsus (mm)	Head length (mm)	Culmen (mm)
Males ($n=34$)	3596.3 \pm 47.0	100.3 \pm 0.6	117.6 \pm 0.6	53.0 \pm 0.6
Females ($n=33$)	3139.5 \pm 46.2	94.4 \pm 0.5	111.6 \pm 0.6	50.6 \pm 0.4

brow and large body size) (Palmer 1976). However, interpretation of morphological measurements and plumage characteristics in races of Canada Geese should be done with caution (Leafloor & Rush 1997).

Although resighting and recovery data remain sparse, we are beginning to get some idea of the migration routes and wintering sites of Greenlandic Canada Geese. Our data suggest that after passing the Davis Strait, the geese migrate through Labrador to New Brunswick and continue to their wintering areas in Connecticut, New York and New Jersey. During a ringing expedition the summer of 1999 a team of North American and European biologists have caught and equipped some individual Canada Geese with satellite transmitters. Hopefully this will provide new and more detailed data about migration phenology, flyways and staging areas used on migration.

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