

Canada Goose Survey on Middleton Island - 2006

Mike Petrula, Tom Rothe, Dan Rosenberg, Dave Crowley
Alaska Department of Fish and Game, Division of Wildlife Conservation
and

Dan Logan
USDA, Forest Service, Chugach National Forest, Cordova Ranger District

We conducted a survey of Canada geese on Middleton Island from June 22-24, 2006. This effort is directed at documenting growth of this island group and periodically determining its status as part of the dusky Canada goose population. Survey methodology was similar to surveys conducted in 1996, 1997, 2000, 2002 and 2004.

Estimation of Brood Size and Gosling Abundance

Accurate counts of goslings were difficult to obtain when flushed in thick vegetation. Brood size and age class were also difficult to determine for some family groups observed offshore because of their distance from the observer, the tendency for family groups to associate with other geese, and the effects of the surf and other obstructions (rocky outcrops) on observation. To estimate average brood size we used brood observations where the total number of goslings was accurately determined and the number of adults observed with the brood was < 3 ($n=167$ broods). Family groups with more than 2 adults may have comprised more than one brood, therefore they were not included in the calculation of average brood size. For family groups with more than 2 adults ($n=16$) we divided the number of goslings by the average brood size to obtain the number of broods. We used the average brood size to calculate the number of goslings in family groups when the number of young could not be accurately counted ($n=54$), and for paired geese suspected of having a brood ($n=31$).

Results and Discussion

We counted 1453 adult and 713 young Canada geese on Middleton Island during 3 days of surveys (Fig. 1). Average brood size was 3.53 goslings ($SD = 1.88$; Table 1). We estimated that 252 broods were present; 2 less than our estimate in 2004. Two active nests were located and 2 collared birds (1 red/white and 1 green/white) from previous marking events were observed during the survey.

The number of adult geese observed was similar to our 2 previous surveys (Table 1) indicating little change in the size of the breeding population during the last 5 years. We estimate that 37% of the Canada goose population on Middleton Island was composed of young in 2006 compared to 34%, 40%, 48%, 37% and 37% in 1996, 1997, 2000, 2002 and 2004, respectively. The consistently high productivity is undoubtedly related to the lack of mammalian predators on the island. Of the 215 broods classified to age in 2006, most were between 12 and 20 days of age (62%), and 5 and 11 days of age (23%; Fig. 2). This age distribution suggests that peak hatch was during June 2-10.

A stable number of adults with relatively high levels of productivity indicate that the Canada goose population is thriving on Middleton Island.

ACKNOWLEDGEMENTS

We thank the Chugach Alaska Corporation for permitting us access to their private lands on Middleton Island.

Preliminary Report
prepared for Pacific Flyway Study Committee
July 15, 2006

Table 1. Numbers of Canada geese observed on Middleton Island, Alaska during June in 1996, 1997, 2000, 2002, 2004 and 2006. The average and S.D. of known-sized broods was used to estimate size of suspected broods and broods of unknown size.

Date	Number of Adults	Number of known-sized broods (#young)	Number of unknown-sized broods (#young)	Number of suspected broods ^a	Estimated number of young ^b	Estimated number of broods	Average brood size (SD)	Total geese observed ^c	Total geese estimated ^d
1996 Jun 20-22	1456	27 (111)	118 (420)	38	752±246	183	4.11 (1.58)	1987	2208±246
1997 Jun 23-25	1168	27 (106)	156 (490)	18	789±282	201	3.93 (1.62)	1764	1957±282
2000 Jun 19-21	1309	163 (638)	108 (284)	39	1227±284	310	4.01 (1.93)	2231	2536±284
2002 Jun 27-29	1416	107 (347)	136 (314)	17	843±226	260	3.24 (1.48)	2077	2259±226
2004 June 20-22	1499	105 (360)	110 (258)	39	871±219	254	3.43 (1.47)	2117	2370±219
2006 June 22-24	1453	167 (564)	54 (98)	31	864±160	252	3.53 (1.88)	2115	2317±160

^a Single or paired adult geese that flushed from thick vegetation close to the observer. Goslings were suspected of being present but were not observed.

^b Number of young in known-sized broods + [(number of unknown-sized broods + number of suspected broods) * average brood size ± standard deviation].

^c Adults + all observed young.

^d Adults + estimated young

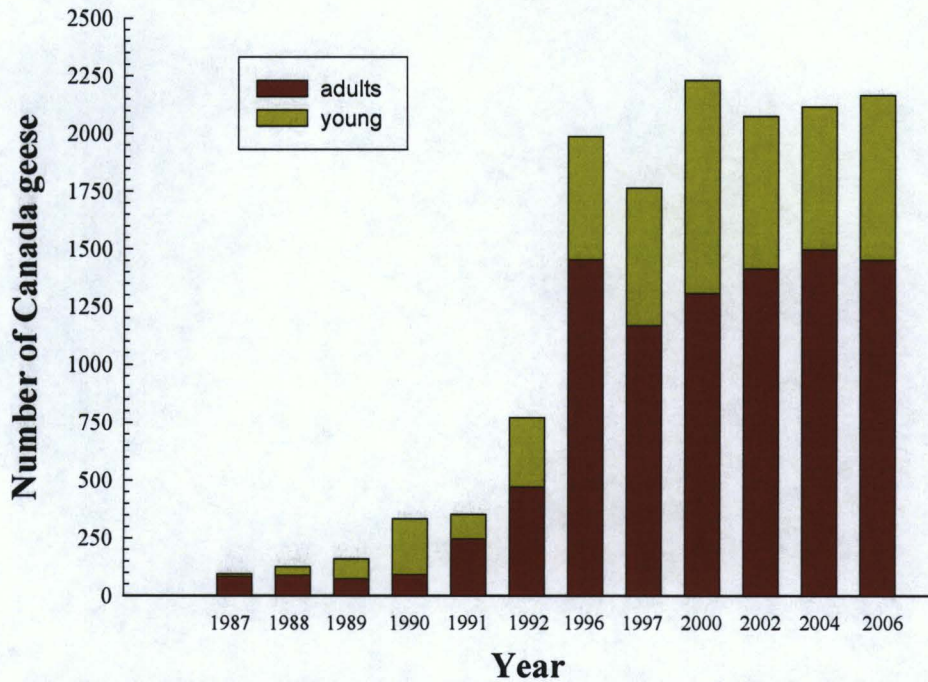


Fig. 2. Number of adult and young Canada geese observed on Middleton Island, Alaska during June 1987-2006.

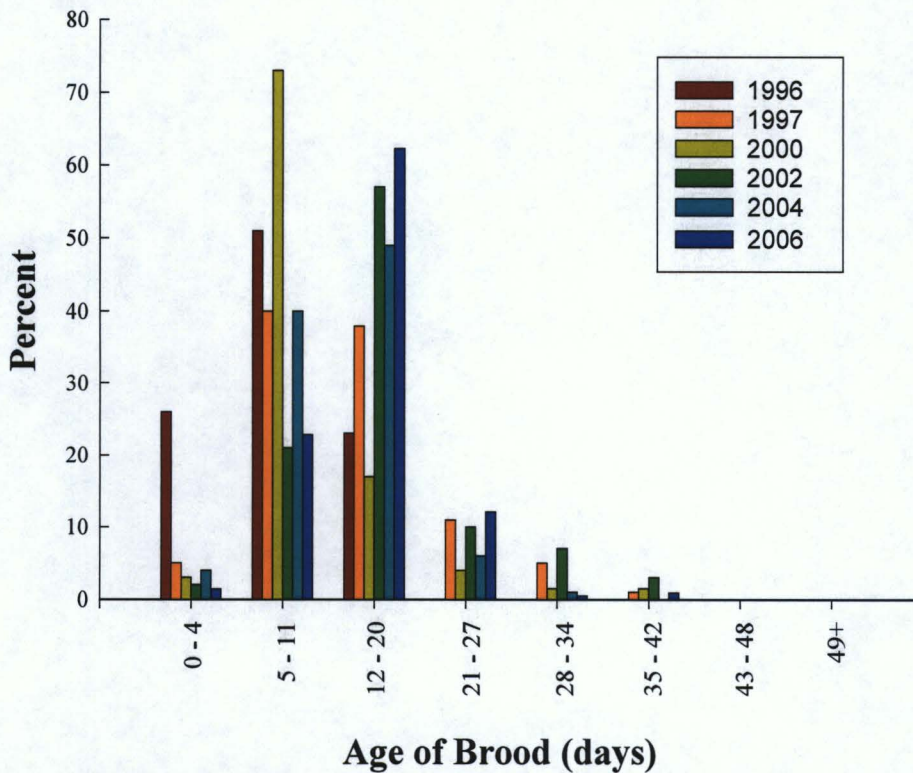


Fig. 3. Age distribution of Canada goose broods observed on Middleton Island, Alaska in June 1996 (n=82), 1997 (n=128), 2000 (n=206), 2002 (n=197), 2004 (n=174) and 2006 (n=215)