

2015 SPRING POPULATION SURVEY OF GREATER SNOW GEESE IN SOUTHERN QUÉBEC

Josée Lefebvre, Arctic goose biologist
Canadian Wildlife Service – Québec region

Since 1965, the Canadian Wildlife Service has conducted an annual aerial photographic survey on greater snow geese during their spring migration in southern Québec (including east of Ontario and north of New Brunswick). This year the survey was carried out on May 3rd when five aircraft were used simultaneously during a warm and sunny day. During these favorable weather conditions, the geese tend to roost on water bodies in mid-day, facilitating the coverage. The aerial survey covered a large territory extending from Lac Champlain (south) to Lac St-Jean (north) and from east Ontario (west) to Baie-des-Chaleurs (east).

The preliminary population estimate for spring 2015 is 818,000 \pm 61,000 compared to 796,000 \pm 63,000 geese in 2014 (\pm 95% CI; Figure 1). Based on recommendations from Laval University's statistic consultation services, a revision process has been undertaken to check some earlier years' estimate in order to verify their accuracy (Table 1).

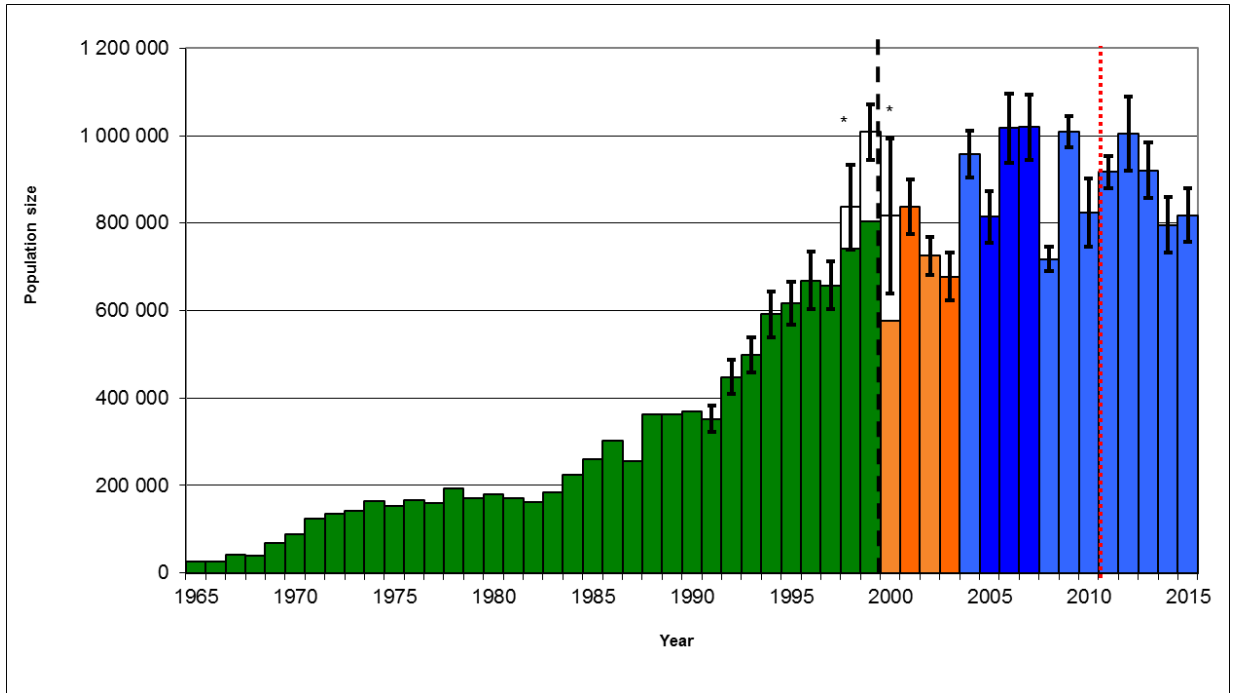


Figure 1. Estimated population size of the Greater Snow Goose according to the Canadian Wildlife Service spring survey, 1965-2015.

Changes in the above bar color indicate modifications in the methodology used (green: 1 plane during a 1-2 days survey; orange: 3 planes during a 1 day survey; blue: 5 planes during a 1 day survey (light color (orange or blue): estimates based on the revised sampling methodology). From 1998 to 2000, lighter part of the bars indicates the correction that was made following a radio telemetry study. The black dotted line indicates the time when special conservation measures were implemented in Québec. The red dotted line indicates the time when special conservation measures were implemented in the United States.

Table 1: Greater Snow Goose population and productivity estimates from southern Québec, 1965-2015.

Year	Estimated sp. pop ¹	Percent young in fall flight ²		Brood size ³ in fall	
		Mean	no. geese	mean	no. broods
1965	25,400				
1966	25,400				
1967	40,900				
1968	38,900				
1969	68,800				
1970	89,600				
1971	123,300				
1972	134,800				
1973	143,000	40.6	800	2.94	49
1974	165,000	6.4	7,282	2.19	119
1975	153,800	31.2	17,579	2.71	1,294
1976	165,600	12.6	20,847	2.46	419
1977	160,000	23.9	10,297	2.28	396
1978	192,600	17.9	9,679	2.34	309
1979	170,100	28.2	20,849	2.65	1,226
1980	180,000	35.3	12,120	2.76	651
1981	170,800	16.3	10,683	2.30	229
1982	163,000	25.1	9,577	2.48	661
1983	185,000	47.4	12,353	2.86	1,246
1984	225,400	30.4	39,781	2.63	2,434
1985	260,000	25.8	33,700	2.49	1,682
1986	303,500	2.3	22,998	1.89	74
1987	255,000	40.2	33,278	2.77	1,882
1988	363,800 ⁴	33.1	40,246	2.76	2,444
1989	363,200	31.1	29,191	2.59	2,014
1990	368,300	23.6	20,313	2.54	830
1991	352,600	38.3	15,102	2.69	1,247
1992	448,100	5.4	32,252	2.06	404
1993	498,400	47.8	24,163	2.75	2,743
1994	591,400	9.2	16,444	2.44	242
1995	616,600	16.6	19,519	2.47	665
1996	669,100	25.1	22,595	2.34	1,247
1997	657,500	36.8	17,586	2.69	1,222
1998	8366,00 ⁵	33.1	17,982	2.52	1,440
1999	1,008,000 ⁵	2.1	20,394	2.09	91
2000	816,500 ⁵	22.7	20,468	2.54	1,302
2001	837,400	27.5	22,106	2.36	1,072
2002	725,000 ⁶	6.0	18,930	1.91	274
2003	678,000	27.0	15,900	2.36	1,092
2004	890,000 ⁶	17.8	26,206	2.44	1,031
2005	814,600	20.7	29,022	2.38	1,470
2006	1,016,900	19.7	23,378	2.34	1,143
2007	1,019,000	20.6	25,463	2.28	1,371
2008	718,000 ⁶	40.0	32,020	2.62	3,187
2009	1,009,000 ⁶	10.6	28,969	2.08	753
2010	824,000 ⁶	19.6	27,030	2.25	1,533
2011	917,000 ⁶	28.0	31,719	2.42	2,291
2012	1,005,000 ⁶	12.0	25,822	2.19	834
2013	921,000 ⁶	8.0	30,735	1.86	693
2014	796,000 ⁶	21.4	28,233	2.15	1,893
2015	818,000⁶	-	-	-	-

¹ from aerial photo counts

² from visual ground counts

³ broods accompanied by 2 parents

⁴ no spring survey conducted - the value provided was derived from population model published in Gauvin & Reed (CWS Occas. Pap. No. 64. 1987)

⁵ estimates in brackets for 1998 and 2000 have been corrected to account for flocks not observed during the survey, using data from a telemetry study. The 1999 value is the mean of the correction factors used in 1998 and 2000.

⁶ estimates calculated with the revised sampling methodology.