

# **Brent goose count at Varsolbukta 31.05- 04.06.2006**

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The aim of this study was to estimate the number of foraging light-bellied brent geese (*Branta bernicla hrota*) on the pre-breeding area in Varsolbukta during period 31.05-4.06.2006. The study is a long-term monitoring program on assignment of the Governor of Svalbard. The Svalbard pre-breeding areas are important stops for brent and other geese before they reach breeding grounds. We mainly focused on brent geese and recording ring codes but we additionally counted pink-footed geese (*Anser barachyrhynchus*) and barnacle geese (*Branta leucopsis*).

## ***Study area and counting methods***

To make count data easily comparable to data from previous years we followed counting methods suggested by Christiane Hubner.

The study area was divided in two main areas: 'Skjerpodden' (area NV of Camp Millar- the cabin we stayed) and 'Diabas' (area SE of Camp Millar) and each area was additionally divided into sub-areas as given in Fig.1

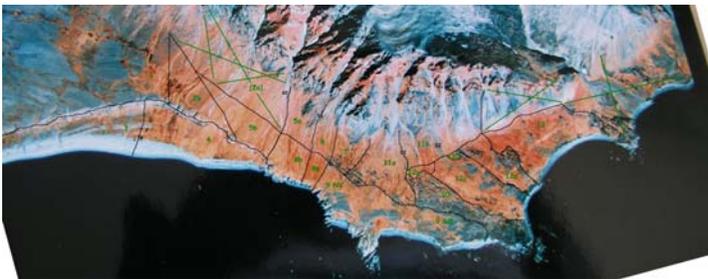


Fig.1 The counting area divided into sub-areas in Varsolbukta

We counted the two main areas simultaneously (starting from the cabin), at the same time every day (around midday).

In Skjerpodden we had one main counting point ( $S_2$  on Fig.1) and we counted following sub-areas: 5a, 5b, 8b, 4, 3,2b and 1. Large flocks of geese were feeding in 1 area which spread out until Klivadalsbekken. Sub-area 6 and 8a were counted on the way to the counting point.

In Diabas we had two counting points ( $D_1$  and  $D_2$  on Fig.1) where we counted sub-areas 9, 10, 11b, 12a, 12b, 12c from  $D_1$  and 12d and 13 from  $D_2$ . Sub-areas 7 and 11a were counted on the way to counting points.

To not scare the geese away we were walking first up the slope and later went down to the counting points. After counting, we spent the rest of the day on recording the rings.

We were using two telescopes (20-60 oculars) and binoculars both for counting and ring reading.

We registered the body condition of the geese in form of abdominal profiles index (API) with help of AP drawing provided by Preben Clausen (brent geese), Jouke Prop (barnacle geese) and Jesper Madsen (pink-footed geese) - Fig.2.

Every day we registered API from randomly chosen brent geese and each ringed geese as well (regardless the species) had written API down.

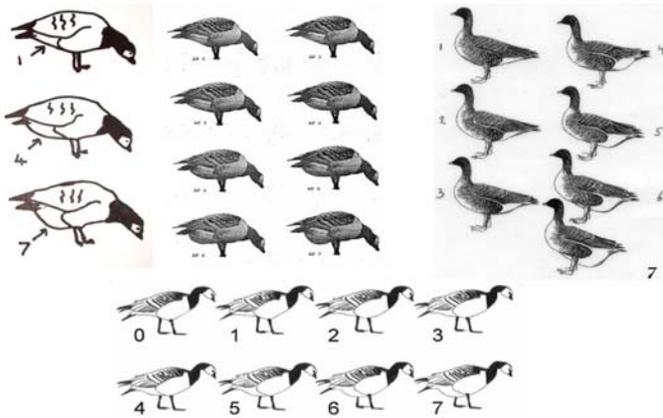


Fig. 2 Abdominal profile index (API) for three studied species of geese.

The area was almost snow free except the high slopes and shaded area. The flatten areas (plains) were very moist and covered with vegetation.

The weather was mainly sunny with high temperature approximately 10-13 degrees and fjord was completely ice free.

## Results

### *Brent geese:*

The goose counting data and figure output are given in Table 1 and Fig. 3  
On 31.05 we did not count areas from 1 to 4 due to late arriving.

Table 1 Number of brent geese during counting period in each sub-area (the area with no geese during the while counting period are deleted)

Data and time\area	1	2a	2b	3	4	5a	5b	8a	8b	9	12c	13	Total
31.05 22-23:15		not counted				0	6	0	0	0	0	0	6
01.06 13-15:00	0	0	0	0	30	27	0	0	0	0	0	0	57

02.06 13-15:15	55	0	46	17	98	0	3	0	16	21	52	17	325
03.06 12-13:30	18	0	19	0	15	10	18	10	24	0	0	2	116
04.06 10:30-12:00	0	0	4	0	6	6	23	2	0	0	0	0	41



Fig. 3 Total brent geese number during study period

Barnacle geese were always the most abundant (Fig.4). They were gathered usually in flocks of up to 20 birds and were less easily scared than the other geese



Fig. 4 Total number of geese (in percentage) for each counting day where blue color represents barnacle geese, red-brent geese, yellow-pink-footed geese and green unknown species

The ring reading results and API are given in the appendix A and B. We found in total 5 ringed birds. In general even if ring recording for brent geese was much easier than for other species (we could approach them closer) the number of

ringed birds was very low and rings were mainly 'old type rings'- birds ringed between 1988 and 1999 (with a combination of colored rings on each leg).

*Barnacle and pink-footed geese*

The numbers of barnacle and pink-footed geese are given in Table 2 and Fig. 5. The number in each sub-area is given in Appendix C

Table 2 Number of three geese species in Varsolbukta during counting period

	31.05	1.06	2.06	3.06	4.06	TOT
<b>Barnacle geese</b>	85	165	369	334	306	<b>1259</b>
<b>Brent geese</b>	6	57	325	116	41	<b>545</b>
<b>Pink-footed geese</b>	2	11	19	5	6	<b>43</b>
<b>unknown sp.</b>	0	0	16	0	2	<b>18</b>

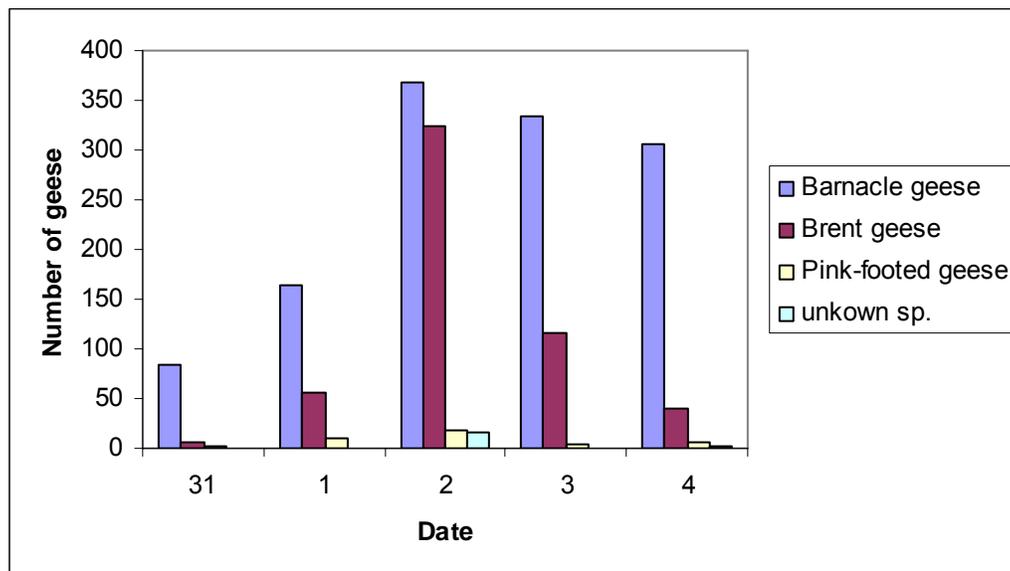


Fig. 5 Number of three geese species in Varsolbukta

The most abundant geese species was the barnacle goose. The geese were in flocks but separate individuals or pairs we observed as well. On 1. of June we counted barnacle geese on Reiniusøyane and we saw 202 barnacles geese including 59 females sitting on a nest (we were walking in this area and counted the scared coupled what actually cannot give the exact number). We recorded together 41 rings of barnacle geese and results are given in Appendix D. High grass and flimmering due to warm air masses close to the ground made it sometimes difficult to read the rings.

The number of pink-footed geese was low. We found 9 females of pink-footed geese sitting on the nests in the cliff area behind the sub-area 13 in Steinnased. We did not record any ringed pink-footed geese.

#### *Other species*

We counted reindeers every day as well but the number was much lower than in previous year and never exceeded 10 animals.

We saw regularly 3-4 arctic foxes feeding (once we saw fox eating little auk) in this area and we found as well three fox carcasses in a white, winter coat (the carcasses were spread in the counting area and animals were usually lying under the bird cliff).

We did not observe any polar bears ☹

Other observed bird species:

- Arctic skuas – *Stercorarius parasiticus*
- Glaucous gull – *Larus hyperboreus*
- Kittiwakes- *Rissa tridactyla*
- Purple sandpipers- *Calidris maritima*
- Great black-backed gull-*Larus marinus*
- Little auks- *Alle alle*
- Snow bunting- *Plectrophenax nivalis*

Thank you very much for enabling us to stay in such a beautiful place in a beautiful cabin!!!!





Appendix D- ring reading of barnacle geese (cream is probably old white)

Date	Time	Color and letters	right (R) or left (L) leg	1-sure 2-not sure	API	API of partner	ring of partner	comments
01.06.2006	15:00	lime S7V	L	2	3.5	5		beautiful weather
01.06.2006	17:00	lime HVI	L	1	4 ♀+ 'egg'	3 ♂		
01.06.2006	17:45	lime HNJ		1	3.5 ♂	3.5 + 'egg'		
01.06.2006	18:00	lime IYD	R	not sure about 'l'	3	no partner		limped on right leg
01.06.2006	18:00	lime HTB		1	5	2.5		
02.06.2006	15:00	lime HIY		1	2.5	4.5		cloudy weather whole day
02.06.2006	16:00	lime HFJ		1	3.5	4	lime HPT	
02.06.2006	16:00	lime HPT		1	4	3.5	lime HFJ	
02.06.2006	17:00	lime HIS	L	1	4	5		
02.06.2006	17:00	lime BII		1	5	2.5		
02.06.2006	17:00	cream SVU	R	1	2	1.5		
02.06.2006	17:00	lime FLF	L	1	2.5	1		
02.06.2006	18:00	lime IDU		1				ring found under bird cliff, no bird remains
02.06.2006	18:00	lime ILH	L	not sure about 'l'	1.5	2.5		
02.06.2006	18:00	cream SBD	L	2	3			
02.06.2006	19:00	orange ASB	L	1	2.5	1.5		metal ring on right leg
02.06.2006	19:00	lime ISF		not sure about 'l'	4	3	INJ	
02.06.2006	19:00	lime INJ		2	3	4	ISF	

02.06.2006	20:00	lime IPA		1	2	3		
02.06.2006	20:00	lime HAB	R					
03.06.2006	13:30	cream or yellow JHF	L	1	3.5	2		
03.06.2006	14:00	orange ABA	R	1	1.5	2		broken ring
03.06.2006	14:00	lime HBT	L	1	4.5	3		
03.06.2006	16:00	lime HDJ	L	1	3.5	2.5		
03.06.2006	16:00	lime HLZ	L	1	2	2		
03.06.2006	16:00	cream UII	L	1	2.5	1.5	white EA	
03.06.2006	16:00	white EA	L	1	1.5	2.5	cream UII	two-lettered ring
03.06.2006	15:00	cream PXT	L	1	2.5	3.5		
03.06.2006	15:00	lime IAE	L	1	4.5	3.5		
03.06.2006	15:00	lime HAH	L	1	4+'egg'	2		
03.06.2006	15:00	lime HIS	L	1	3.5	5		
03.06.2006	15:00	lime HFU	L	1	2.5	5+'egg'		
03.06.2006	17:00	orange BVP	R	1	5	4		
03.06.2006	18:30	lime IDY	L	1	5	3		
03.06.2006	18:30	lime HSC	L	1	3.5	3	lime HPD	
03.06.2006	18:30	lime HPD	R	1	3	3.5	lime HSC	
03.06.2006	19:00	orange AHN	L	1	2	no partner		
03.06.2006	22:00	white LXI	L	1	4+'egg'	3		
04.06.2006	13:00	lime IDI	R	1	4	3		
04.06.2006	13:00	lime IXU		2	3	2	lime IZE	
04.06.2006	13:00	lime IZE		2	2	3	lime IXU	