

# Goose staging in Vårsolbukta

First results from the field season 4.5.-22.6.2005

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May 24, 2007

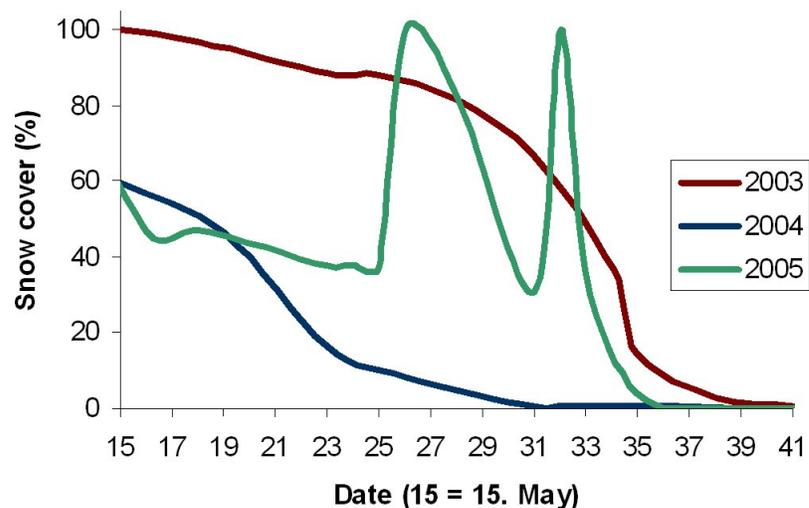
## **Project: Plant-herbivore interactions in an Arctic pre-breeding area for geese: effects of timing and intensity**

This project lasts over three years (2003-2005)<sup>1</sup> and is financed by the Norwegian Research Council, the Roald Amundsen Centre in Tromsø and the Norwegian National Committee on Polar Research. Permission for fieldwork was given by the Governor of Svalbard.

The results presented here are part of a PhD-project and are still unpublished. Thus, the data have to be considered as confidential. For permission to use these data please contact the author.

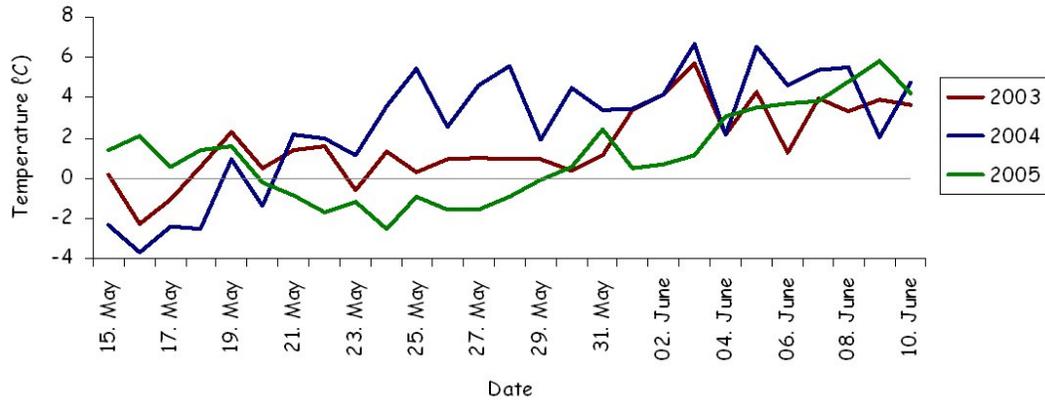
## 1 General conditions

Snow cover was quite similar to 2004 when the geese arrived, but heavy snow fall on 26 May and 1 June covered the area again for several days in snow (Fig.??). The vegetation was to a large extent unaccessible for geese during that time and many geese spent large amounts of their time resting. Daily mean temperatures were on average lower in 2005 than in the two previous years (Fig.??).



**Figure 1.** Snow cover in the preferred goose habitat in Vårsolbukta 2003 - 2005.

<sup>1</sup>see also reports of the field seasons in 2003 and 2004

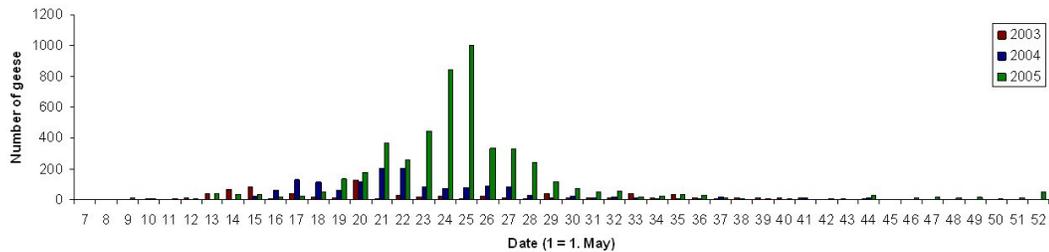


**Figure 2.** Daily mean temperature on the ground in Vårsolbukta 2003 - 2005.

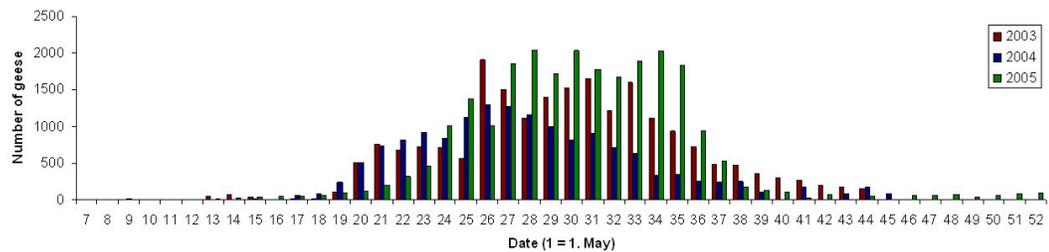
## 2 Goose staging

Daily goose counts were conducted in an area of about 4 km<sup>2</sup> around Camp Millar, from the southwest edge of Diabasbukta to approx. Camp Bell. For methods see section 4.

In 2005, extraordinary many pink-footed geese *Anser brachyrhynchus* staged in Vårsolbukta. Maximum numbers were eight times higher than in 2003 and five times higher than in 2004 (Fig. ??). Also barnacle goose *Branta leucopsis* numbers were highest in 2005 (Fig. ??), but light-bellied brent geese *Branta bernicla hrota* numbers were only slightly higher (Fig. ??).

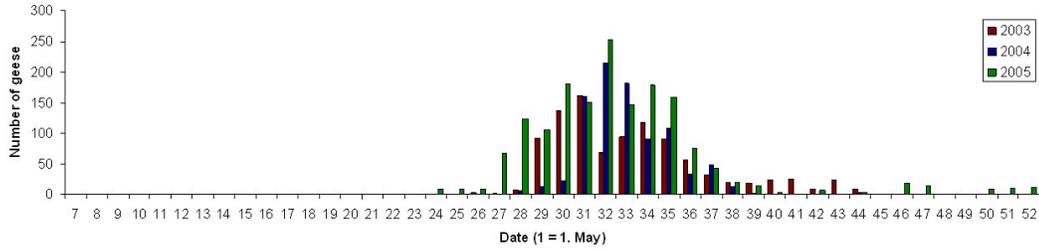


**Figure 3.** Number of pink-footed geese in Vårsolbukta in spring 2003-2005.



**Figure 4.** Number of barnacle geese in Vårsolbukta in spring 2003-2005.

In 2005, median arrival was one day later than in the two previous years and departure date was the 30 May as in 2003. Staging times were intermediate compared to the two other years (Table ??).



**Figure 5.** Number of light-bellied brent geese in Vårsolbukta in spring 2003-2005.

The proportion of birds staying only one day in the area was smaller than in the previous years: 119 geese staged only one day in the area, whereas 199 stayed between 2-15 d (ratio of 1:1.7), compared to a ratio of approx. 1:1 in the previous years.

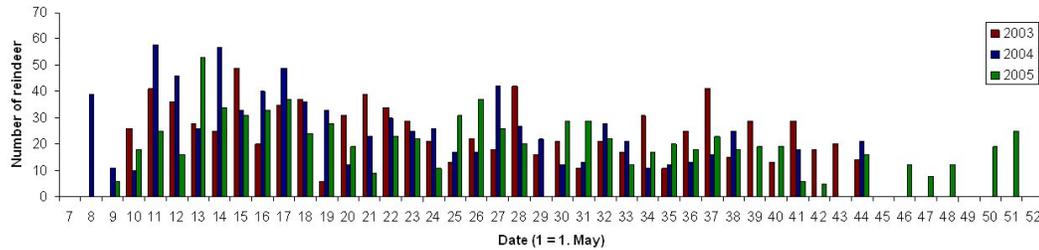
The number of individual geese using the area exceeded the numbers of 2003 and 2004 (Table ??, for methods see report for 2004), resulting in 29 % of the Svalbard barnacle goose population using Vårsolbukta during pre-breeding in 2005.

**Table 1.** Average arrival date, departure date, staging time and estimated numbers of individual barnacle geese in Vårsolbukta, Svalbard. Staging times in parentheses are means  $\pm$  st.err. for birds staying longer than one day.

Year	Median arrival	Median departure	Staging time $\pm$ st.err.	Individuals
2003	26.5.	30.5.	3.9 $\pm$ 0.3 d (6.6 $\pm$ 0.4 d)	5,332
2004	26.5.	27.5.	2.5 $\pm$ 0.2 d (4.6 $\pm$ 0.3 d)	5,826
2005	27.5.	30.5.	3.0 $\pm$ 0.2 d (4.3 $\pm$ 0.2 d)	7,887

### 3 Other observations

In addition to the daily goose counts, we recorded the number of reindeer in the area (Fig. ??). However, these numbers are minimum counts, since we did not search the area thoroughly for reindeer.



**Figure 6.** Minimum number of reindeer in Vårsolbukta in spring 2003-2005.

During the whole period in Vårsolbukta we saw no sign of polar bears. We saw several new born reindeer calves (first calf seen 13 June) and at least 4 different polar foxes visited the area frequently. For further observations see Table ??.

## 4 Methods for goose counts in Vårsolbukta

- 1 count/day
- The counting area was divided in two main areas: “Skjerpodden” (area NW of Camp Millar) and “Diabas” (area SE of Camp Millar). Two observers counted these two areas simultaneously, starting from the cabin. Each main area was divided in sub-areas (see. Fig. ??).
- Skjerpodden:
  - Two counting points S1 and S2. Due to time constraints, we counted mostly only from S1.
  - Sub-areas counted from S1: 9, 6, 8a, 8b, 5a, 5b, 2b, 4,3, 1
  - Sub-areas counted from S2: 2a, 5b, 2b, 1
  - S1: UTM-position: 33x 485573E, 8631790N; on the second scree vein NW of the cabins; a large stone with a vertical flat side (good to lean on), Fig. ??.
  - S2: UTM-position: .....; a big bolder on the slope
- Diabas:
  - Two counting points D1 and D2.
  - Sub-areas counted from D1: 11a, 11b, 10, 12a, 12c
  - Sub-areas counted from D2: 12b, 12d, 13
  - sub-area 7 was counted from behind the cabin (on the way to D1)
  - Sub-area 11a has to be crossed to reach D1. Therefore, continuous counting was done on the way, in case of geese flying off
  - D1: UTM-position: 33x 486004E, 8631535N, Fig. ??
  - D2: UTM-position: 33x 486213E, 8631528N

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Big thanks for putting the Governors cabin at Camp Millar at our disposal!

Further results and conclusions will be available in end of 2006 in form of my PhD-thesis - hopefully...

**Table 2.** Additional observations of birds during spring 2005 in Vårsolbukta

<b>Species</b>		<b>Date</b>	<b>Remarks</b>
Teal	Krikkand	14.-22.5.	1 male, 2 females
Lapland bunting	Lapppsurv	15.5/4.6.	1 male
Great skua	Storjo	17.5.	1. sighting
Northern Wheatear	Steinskvett	18.-19.5.	1 male
Bean goose	Sædgås	27.5./31.5.	1 individual
Purple sandpiper	Fjæreplytt	27.5.	1. sighting
Arctic skua	Tyvjo	28.5.	1. sighting
Wigeon	Brunnakke	28.5./31.5.	1 male, 1 female
Great black-backed gull	Svartbakk	29.5.	1. sighting
Dark-bellied brent goose	Mørkbukete ringgås	30.- 31.5.	1 male, 1 female
Cackling goose	liten kanadagås	31.5.-4.6.	1 individual
Greylag goose	Grågås	31.5.	2 individual



Figure 7. Counting area, with sub-areas



**Figure 8.** Counting point S1



**Figure 9.** Counting point D1