Management challenges and conservation efforts in staging/wintering areas of the Taiga Bean Goose, especially in Sweden

Adriaan “Adjan” de Jong, Swedish University of Agricultural Sciences
Leif Nilsson, Lund University

Kristianstad, 5 December 2013

Taiga Bean Goose flyway management units

Recent Population estimates

• Breeding [1)]	850 pairs (655 – 1045)
• Staging autumn (October) [2)]	45000 – 55000
• Wintering (January) [2)]	8000 – 42000
• Staging spring (April)	?

- Breeding population estimate is very rough (“guestimate”)
- January totals vary substantially depending on weather conditions

Sources:

[1)]Ottosson et al. 2012. Fåglarna i Sverige. SOF, Halmstad

[2)] http://www.zoo.ekol.lu.se/waterfowl/index.htm

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Population trends (20 yr)

- Breeding [1)] stable?
- Staging – post-breeding [2)] stable?
- Wintering (January) [2)] increasing?
- Staging – pre-breeding [3)] stable?

Sources:

[1)] Ottosson et al. 2012. Fåglarna i Sverige. SOF, Halmstad

[2)] http://www.zoo.ekol.lu.se/waterfowl/index.htm

[3)] Sjöberg & de Jong 2009, de Jong 2012 & 2013

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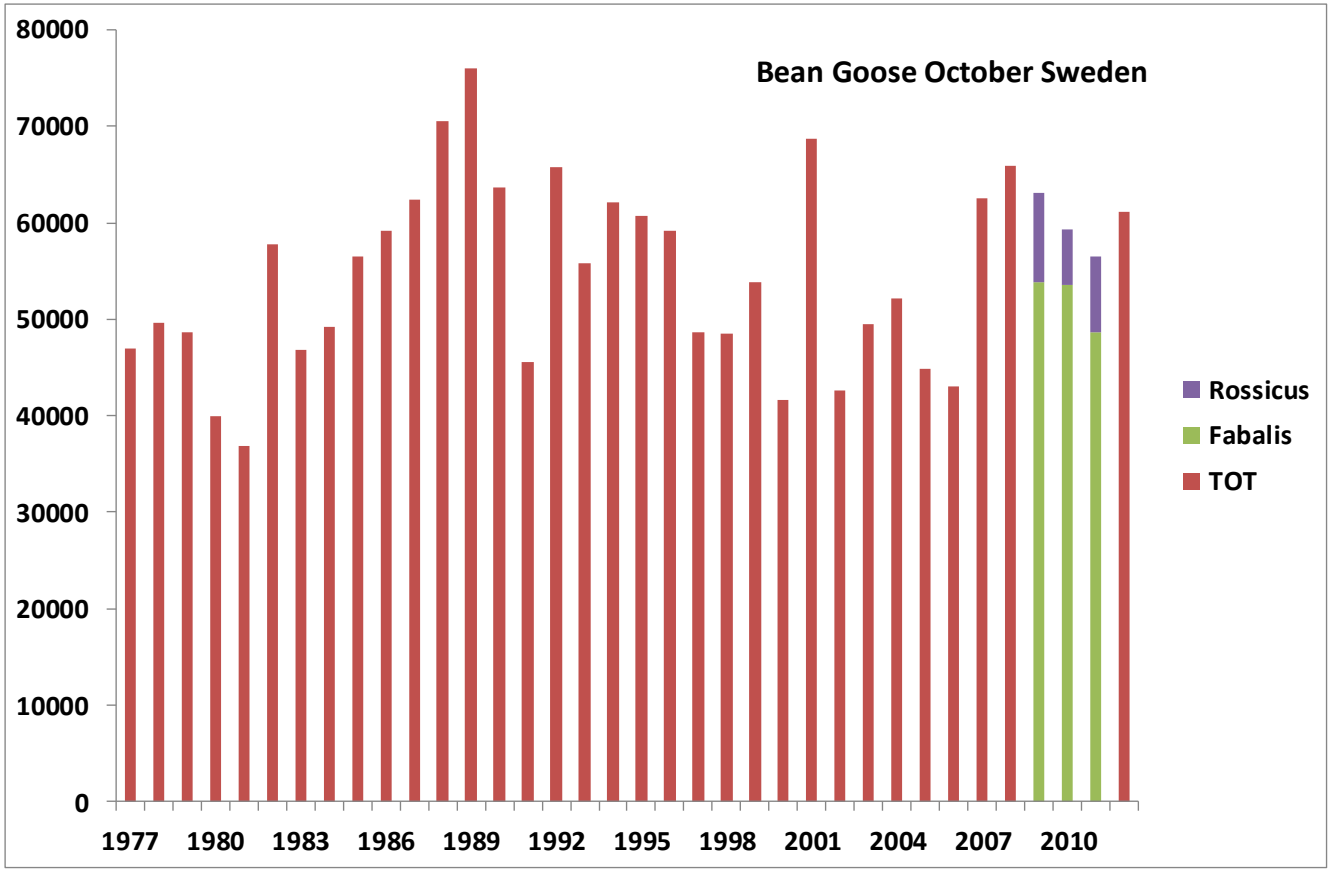

Source: http://www.zoo.ekol.lu.se/waterfowl/index.htm

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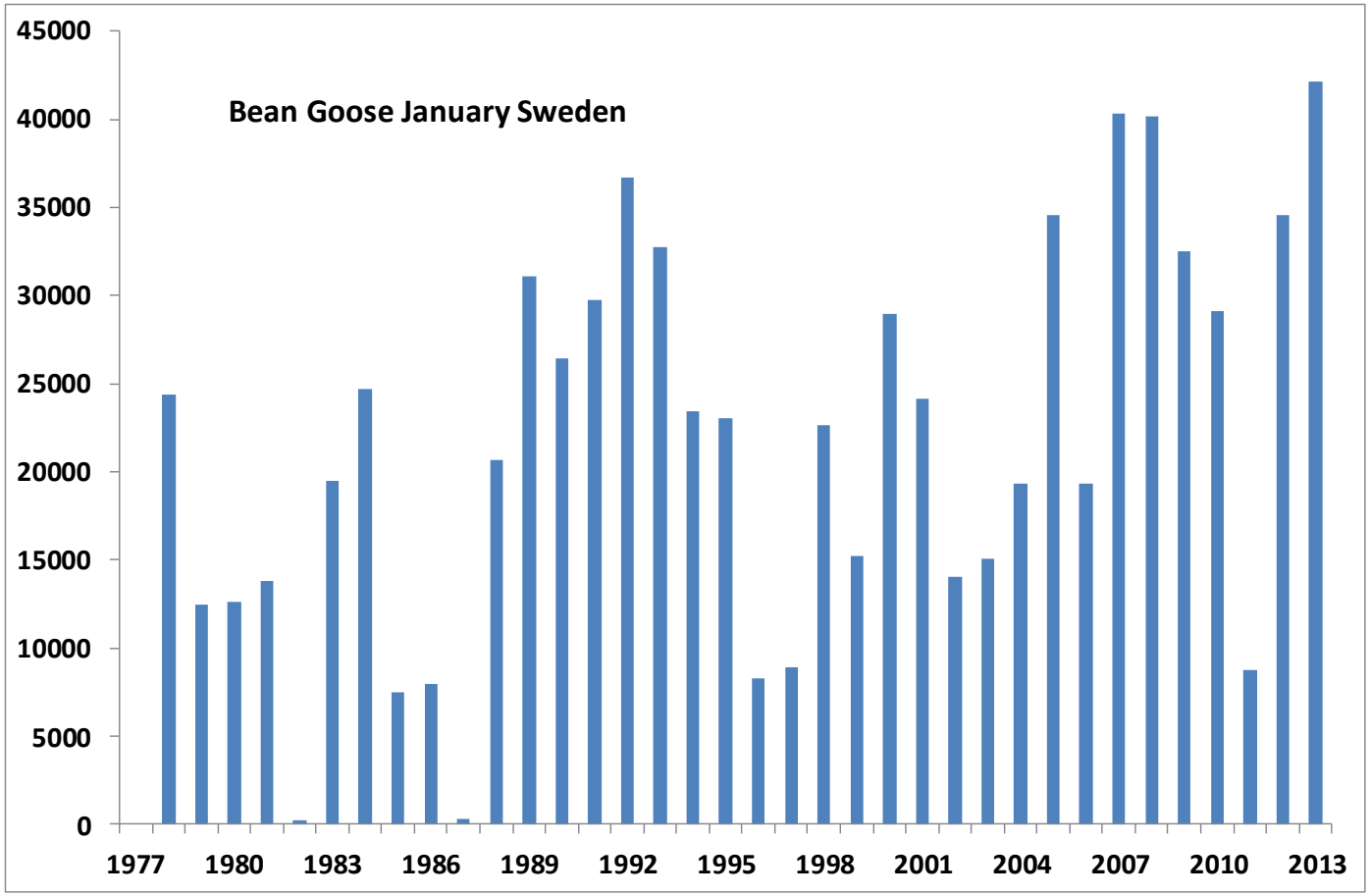

! Count data are **not** corrected for Tundra Bean Geese

Source: http://www.zoo.ekol.lu.se/waterfowl/index.htm

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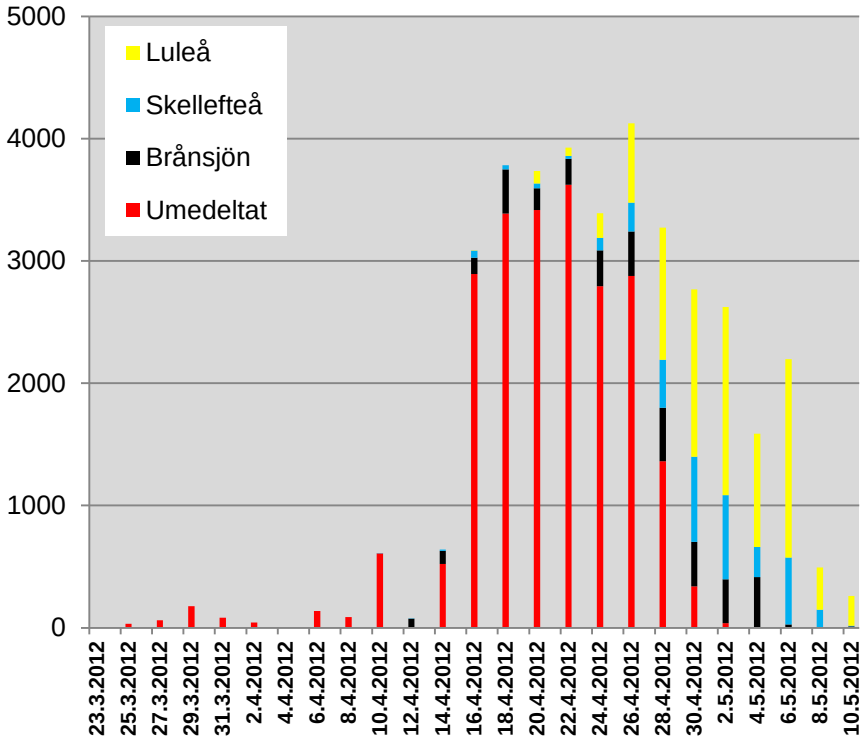
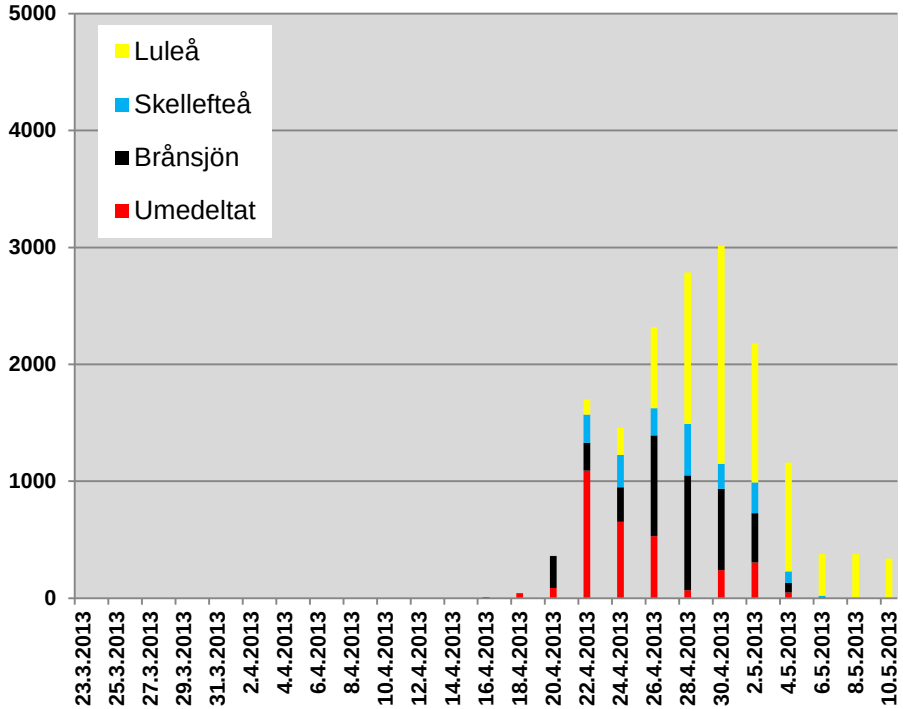
Spring staging “population” (& trend?)

Coastal regions of northern Sweden

2012



2013



Huge between-year differences make trend analyses unreliable, especially without good LOS data

Source: de Jong 2012 & 2013

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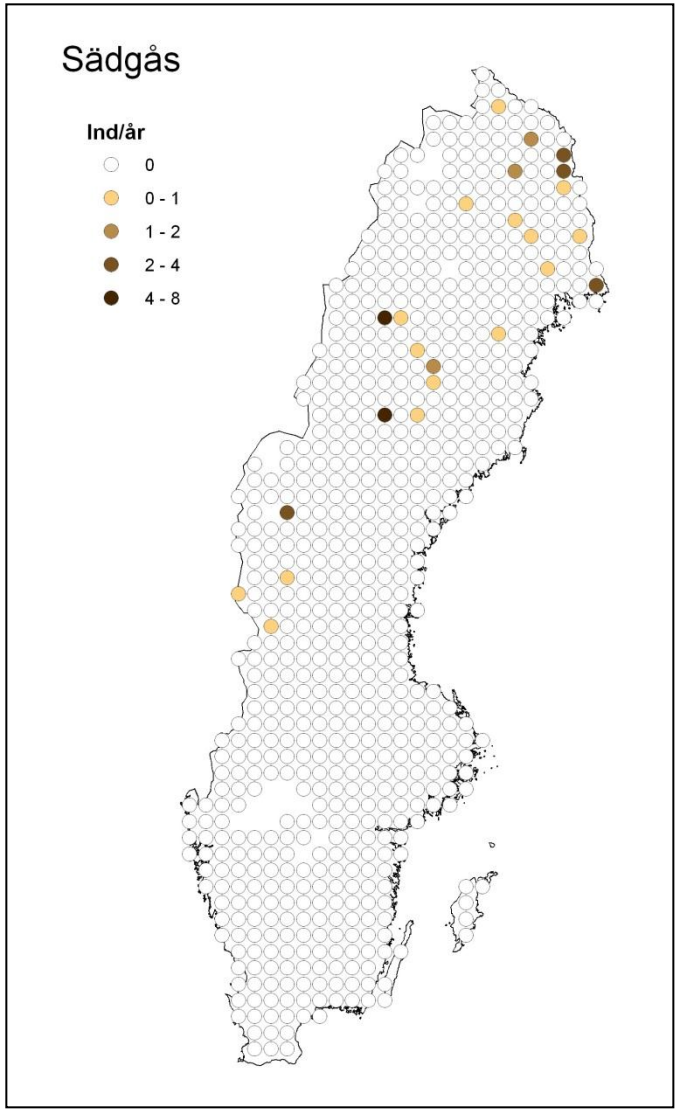
Distribution - Breeding

Summer observations of Bean Geese on ”Fixed routes” (regular 25x25 km grid)

Legend:
Average yearly numbers of individuals observed from ”Fixed routes” transects (8 km).
Note that many of the relevant routes were visited a small number of years only.

Source:
Ottosson et al. 2012. Fåglarna i Sverige. SOF, Halmstad
Map based on the data from the Swedish Bird Survey (c.f. Lindström & Green, 2012)



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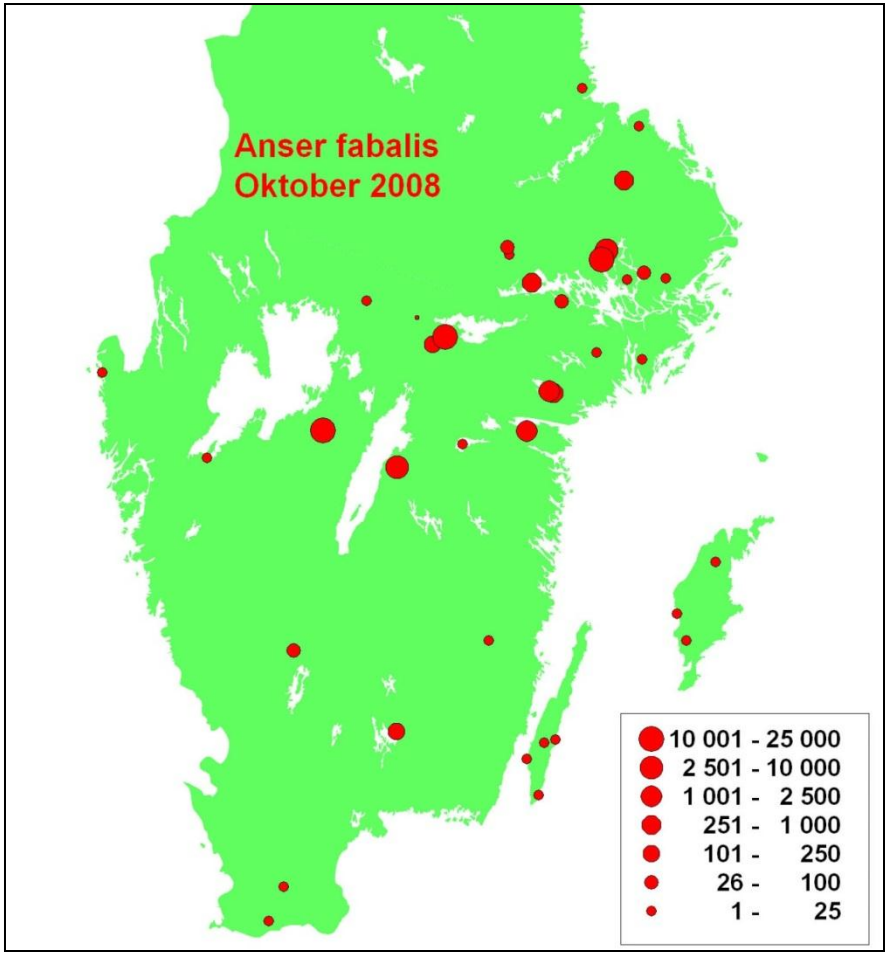
Distribution - Autumn Staging (October)



! Tundra Bean Geese are included in the count data

Source: http://www.zoo.ekol.lu.se/waterfowl/index.htm

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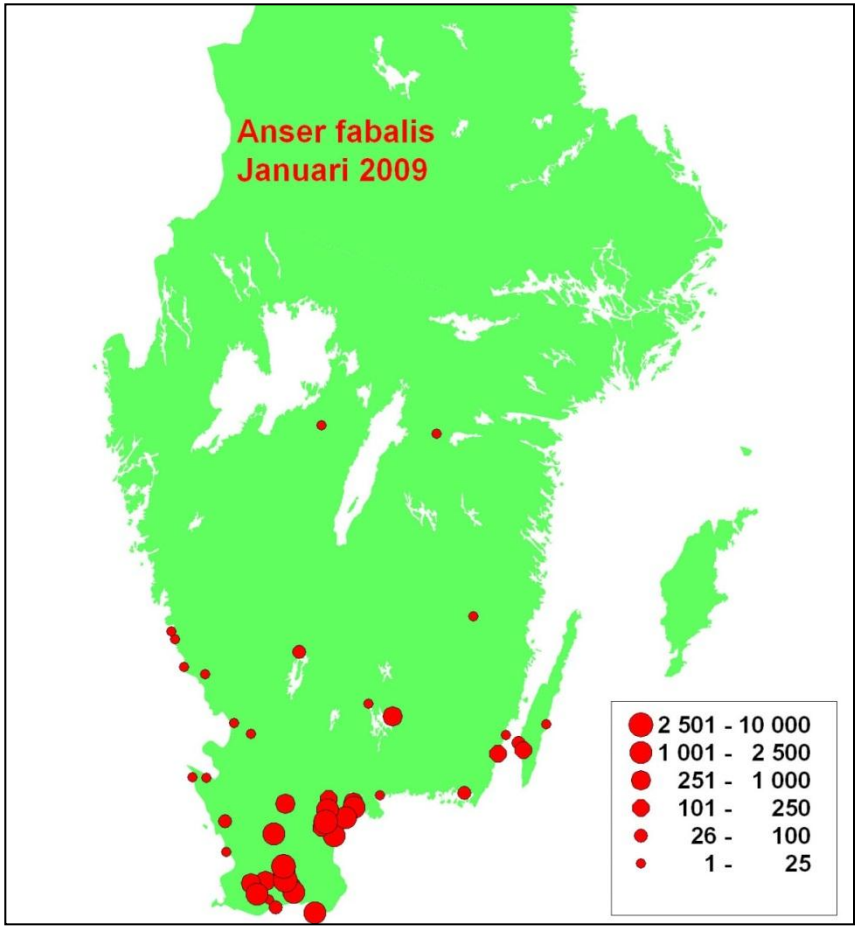
Distribution – Wintering (January)



! Tundra Bean Geese are included in the count data

Source: http://www.zoo.ekol.lu.se/waterfowl/index.htm

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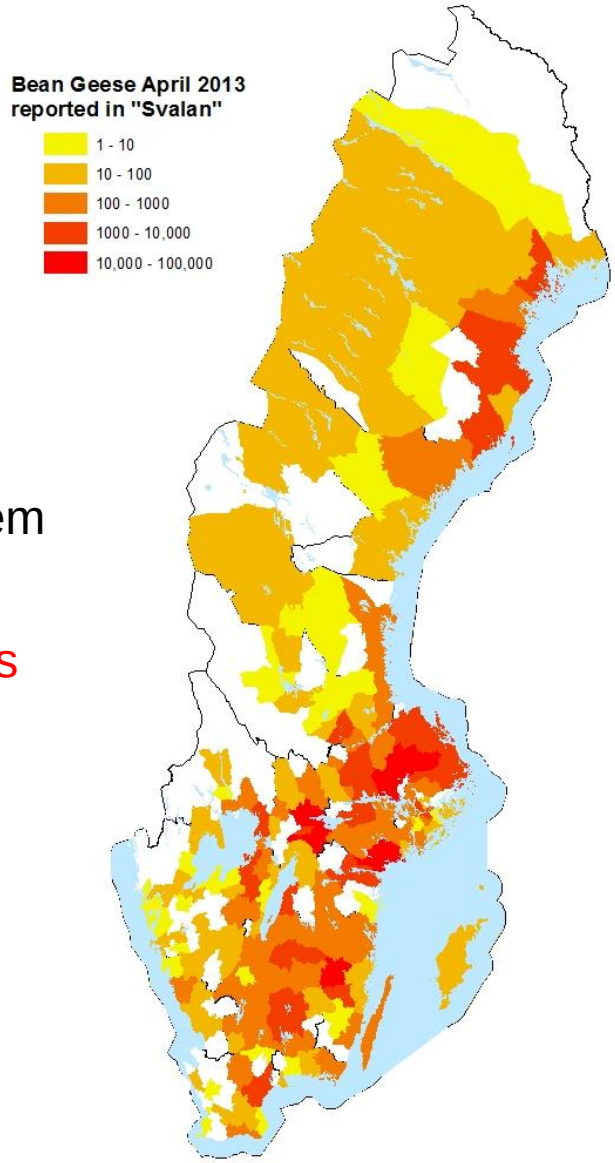
Distribution - Spring



Datasource:
Swedish Species Observation System

! Substantial variation between years

International Bean Goose research in Sweden

Svenska Jägareförbundet
Vårdar det vilda

NORSK ORNITOLOGISK FORENING

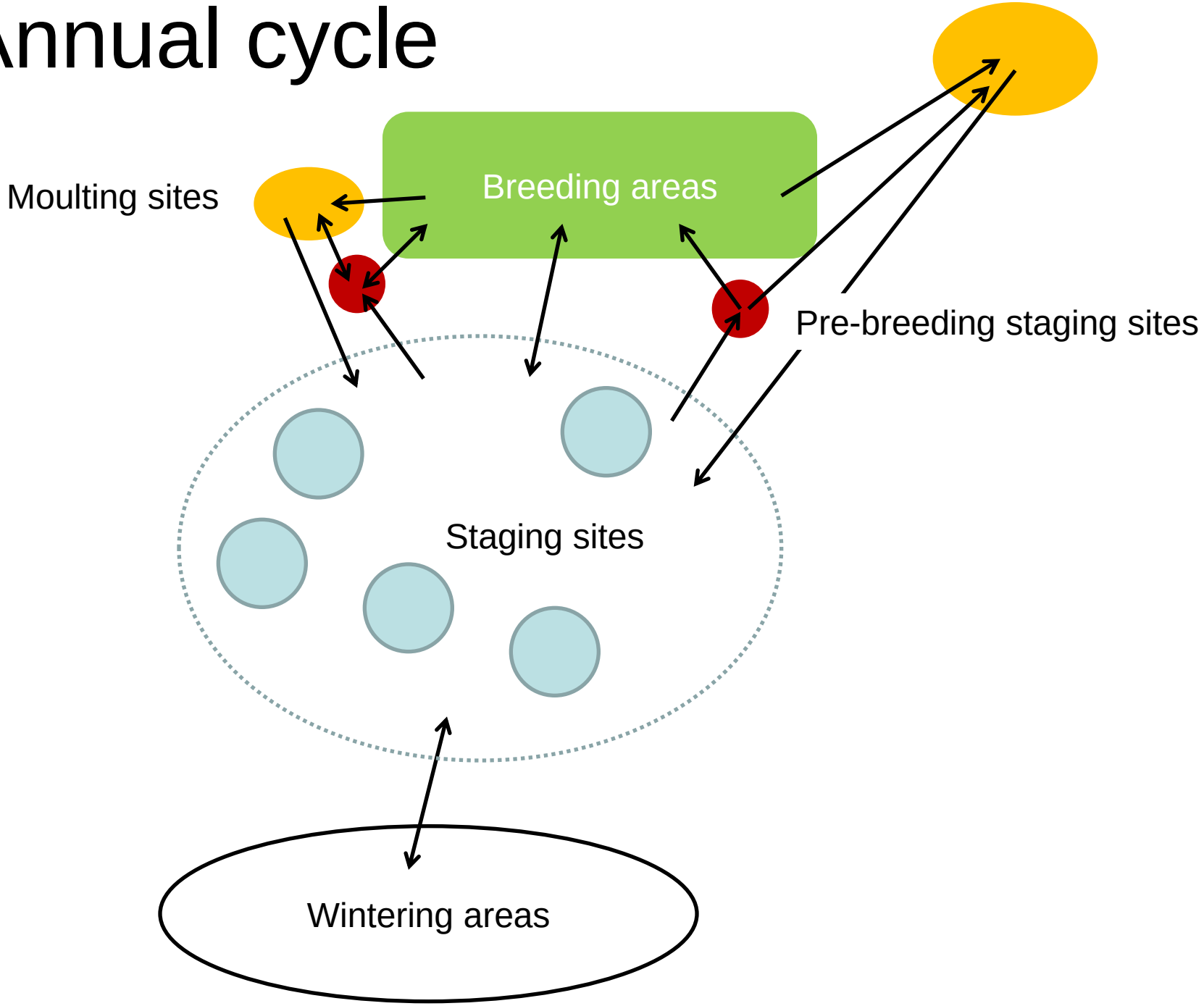
SVENSK VÅTMARKSFOND

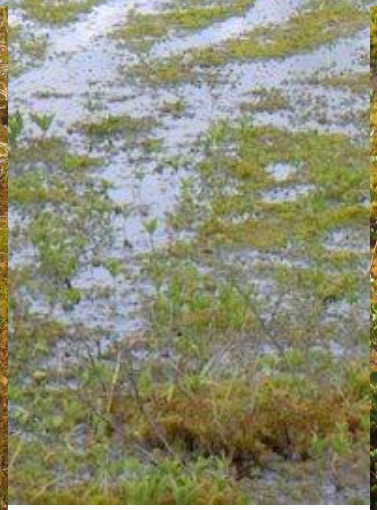
Life cycle

- Childhood
- Adolescence
- Pair forming
- Breeding
- Moult
- Migration

Life challenge

Annual cycle





Taiga Bean Goose – moult migration

Novaya Semlya/RUS
(north swedish + finnish birds)
(+karelian birds?)
(+westsiberian birds?)

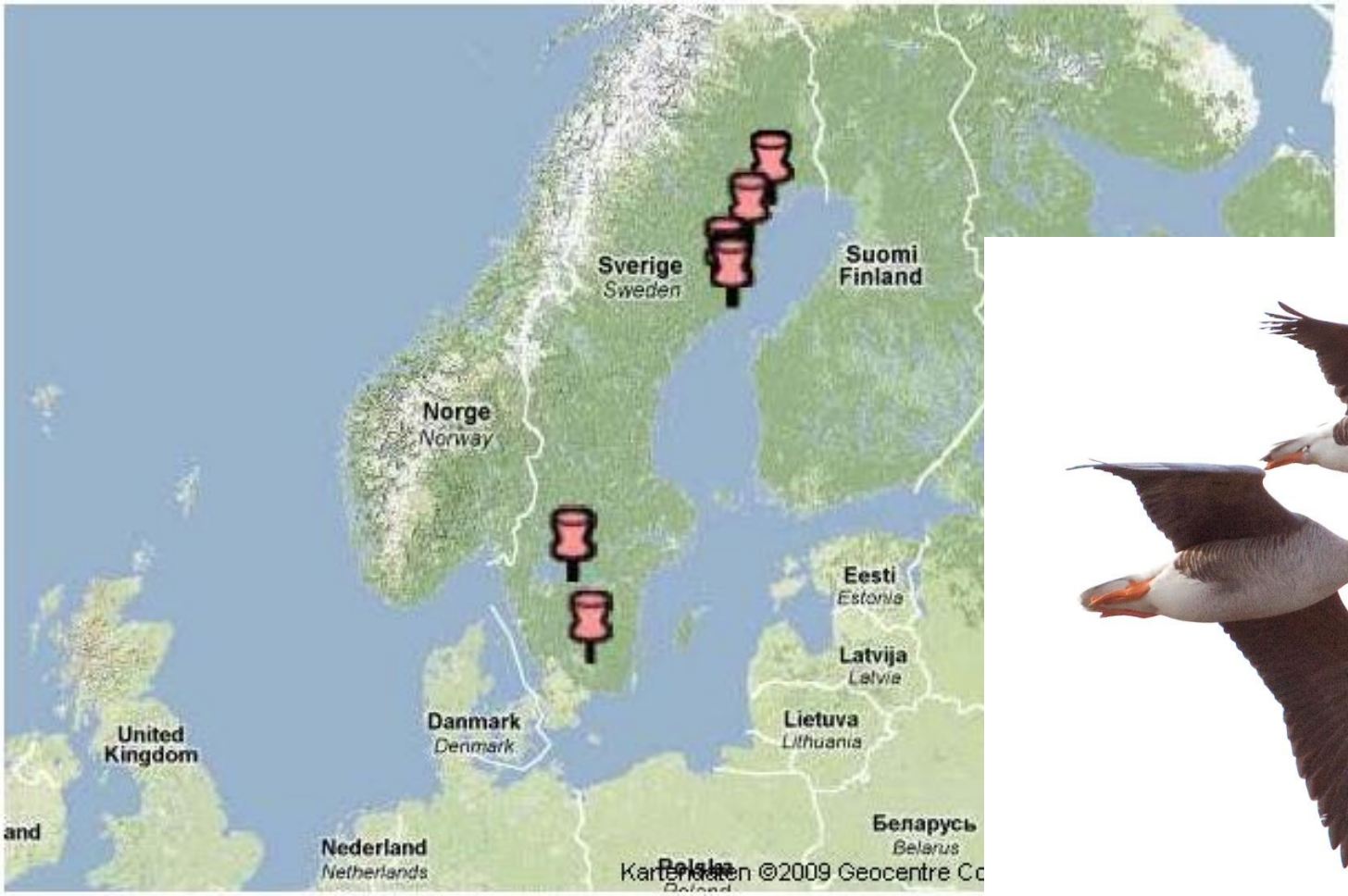
Vilhelmina/S
(southern swed. Lapland birds)

Dalarna/S
(scottish birds)

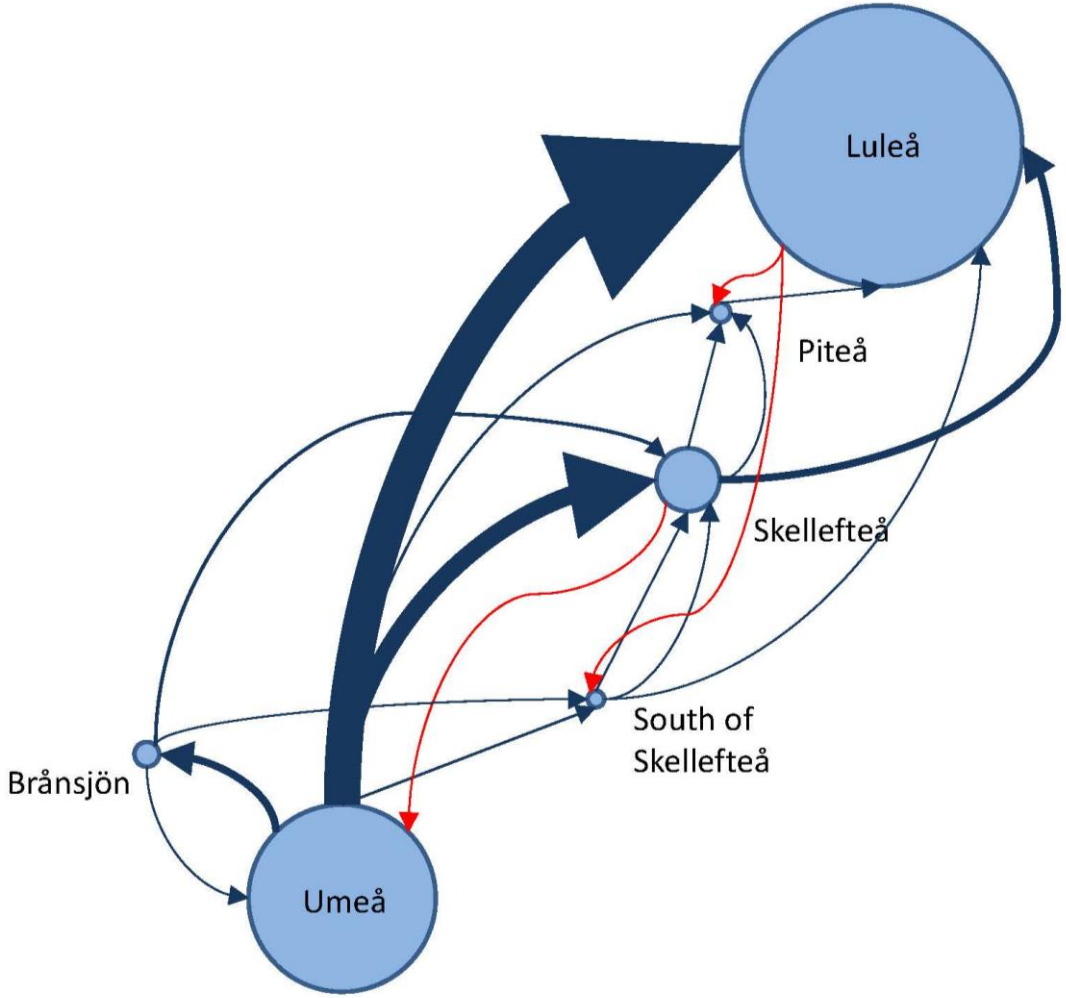
Photo: Kjell Sjöberg

Ringing data for TAIGA BEANGOOSE , EEV (Neckband Blue)

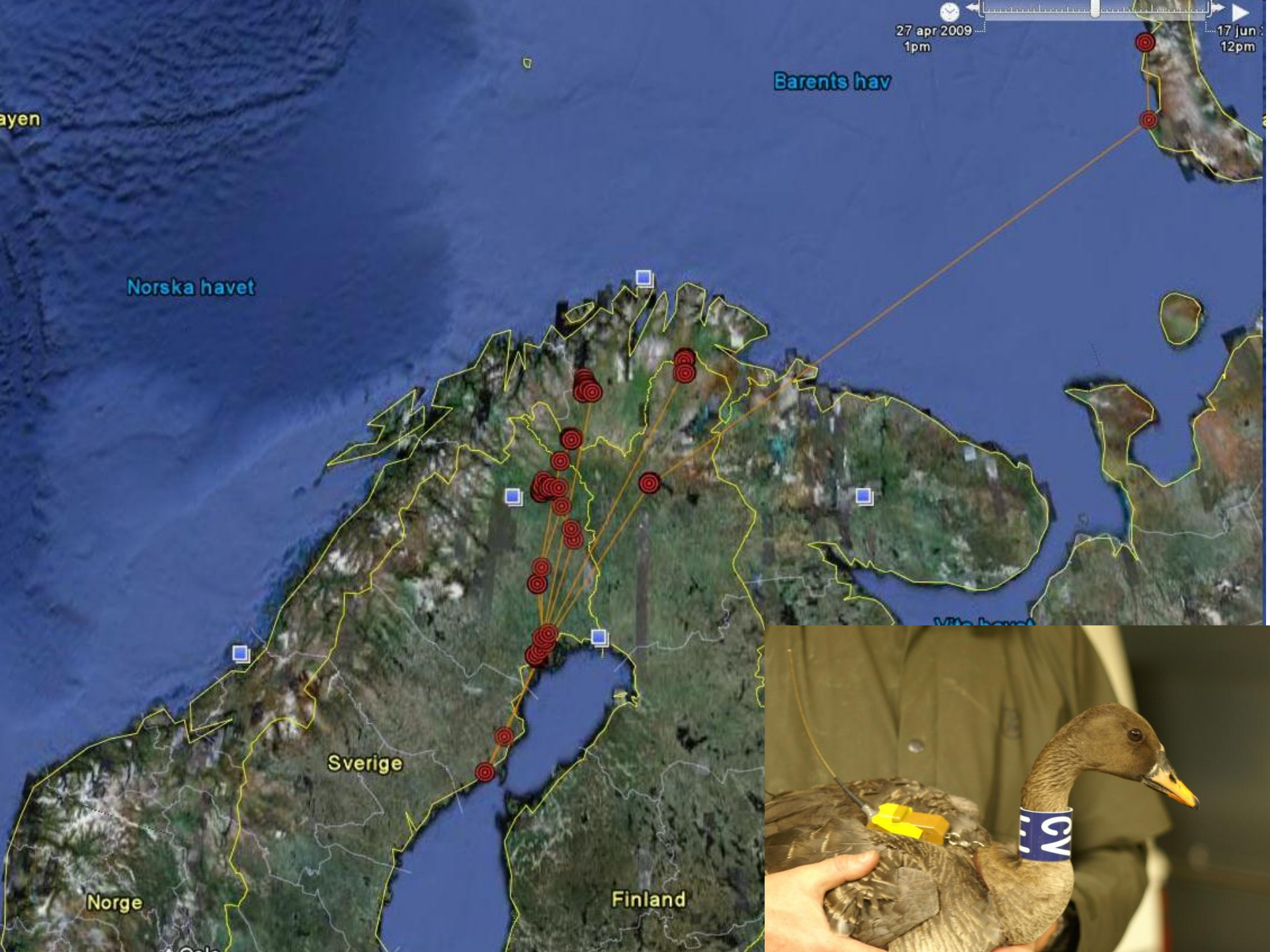
Ring	Ring datum	Sitename	Country code	Latitude	Longitude	Se
EEV (Neckband Blue) Metal Ring SVS 9268926	23-04-2008 20:00	Sundshalet/Ume delta	S	63.44.12 N	20.15.45 E	M



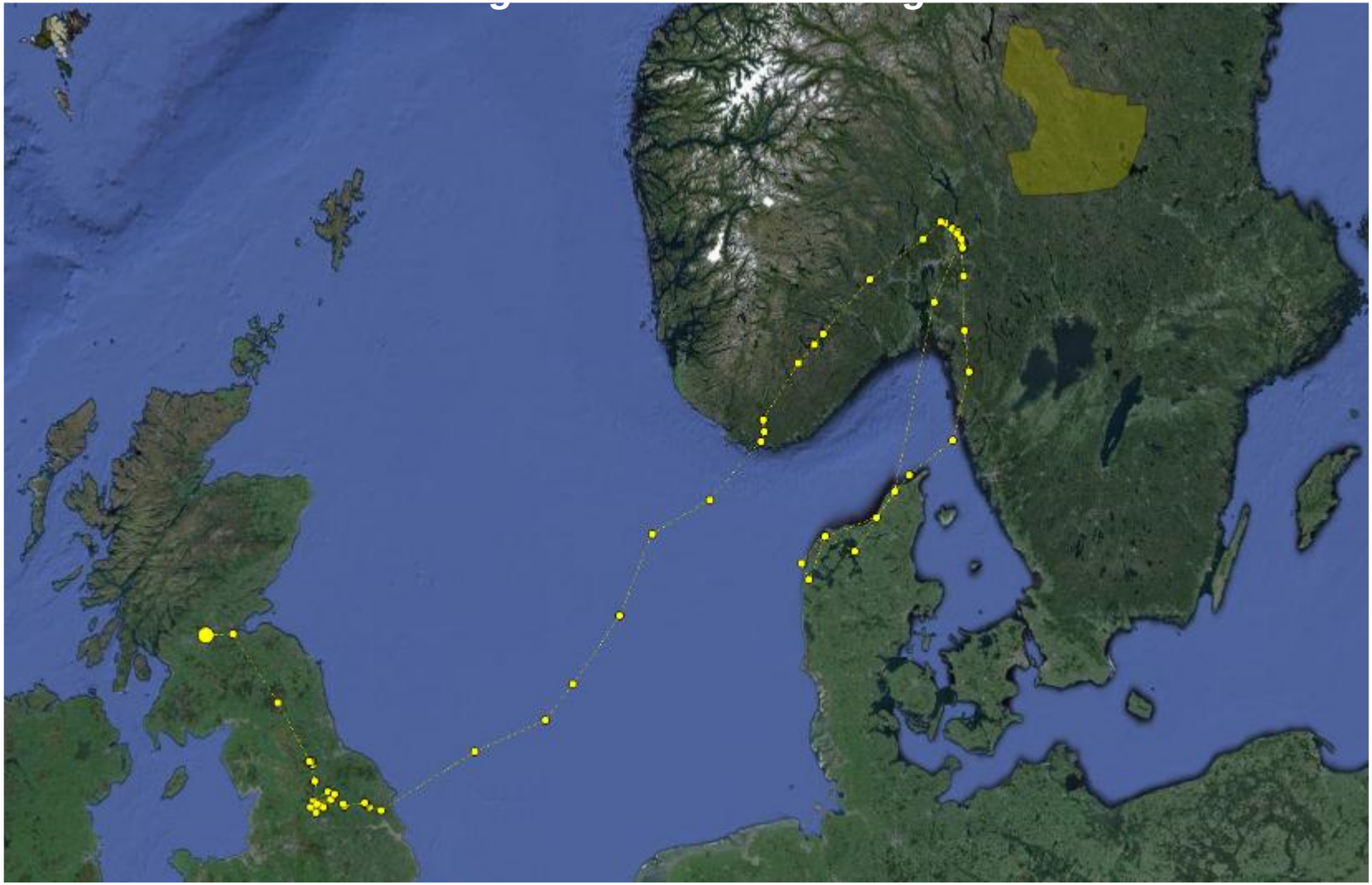
Connectivity between staging sites in northern Sweden from neckband observations

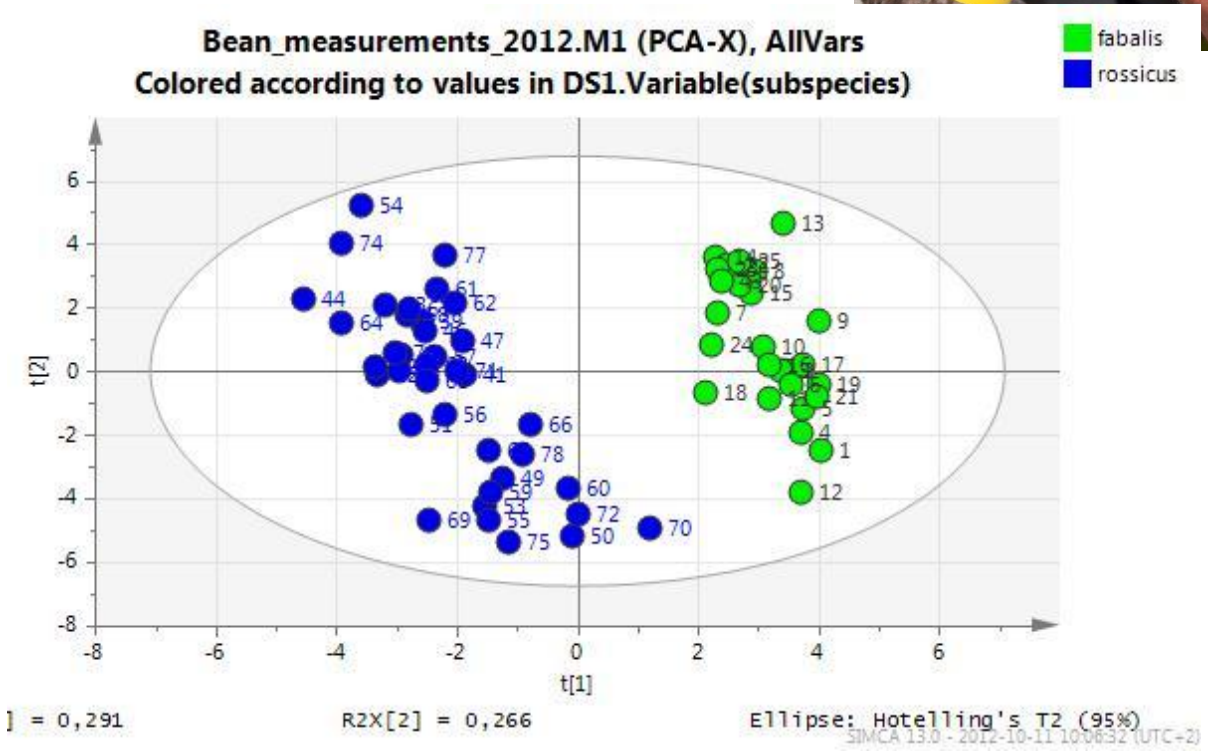


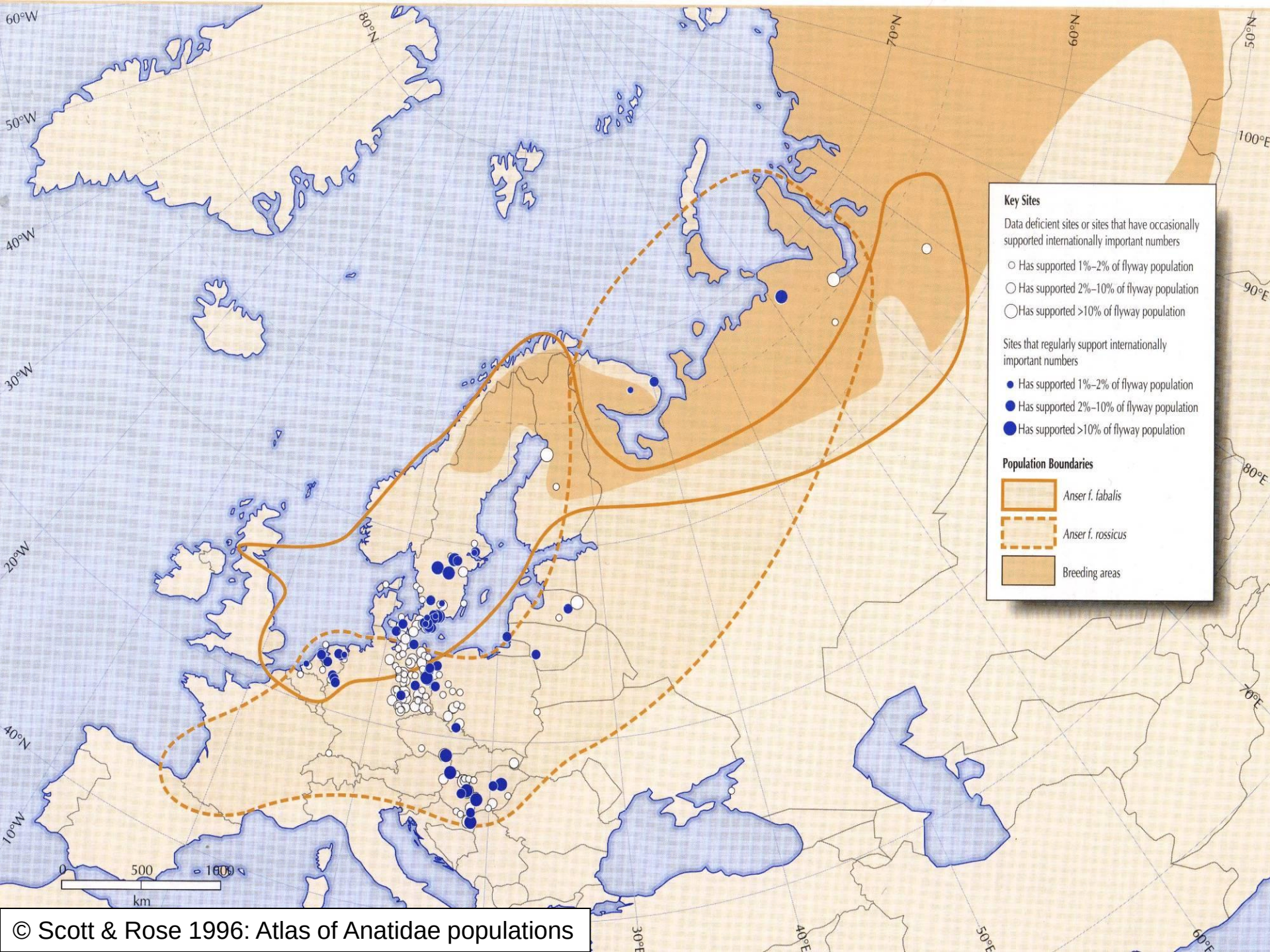
Källa: de Jong & Boström, unpublished

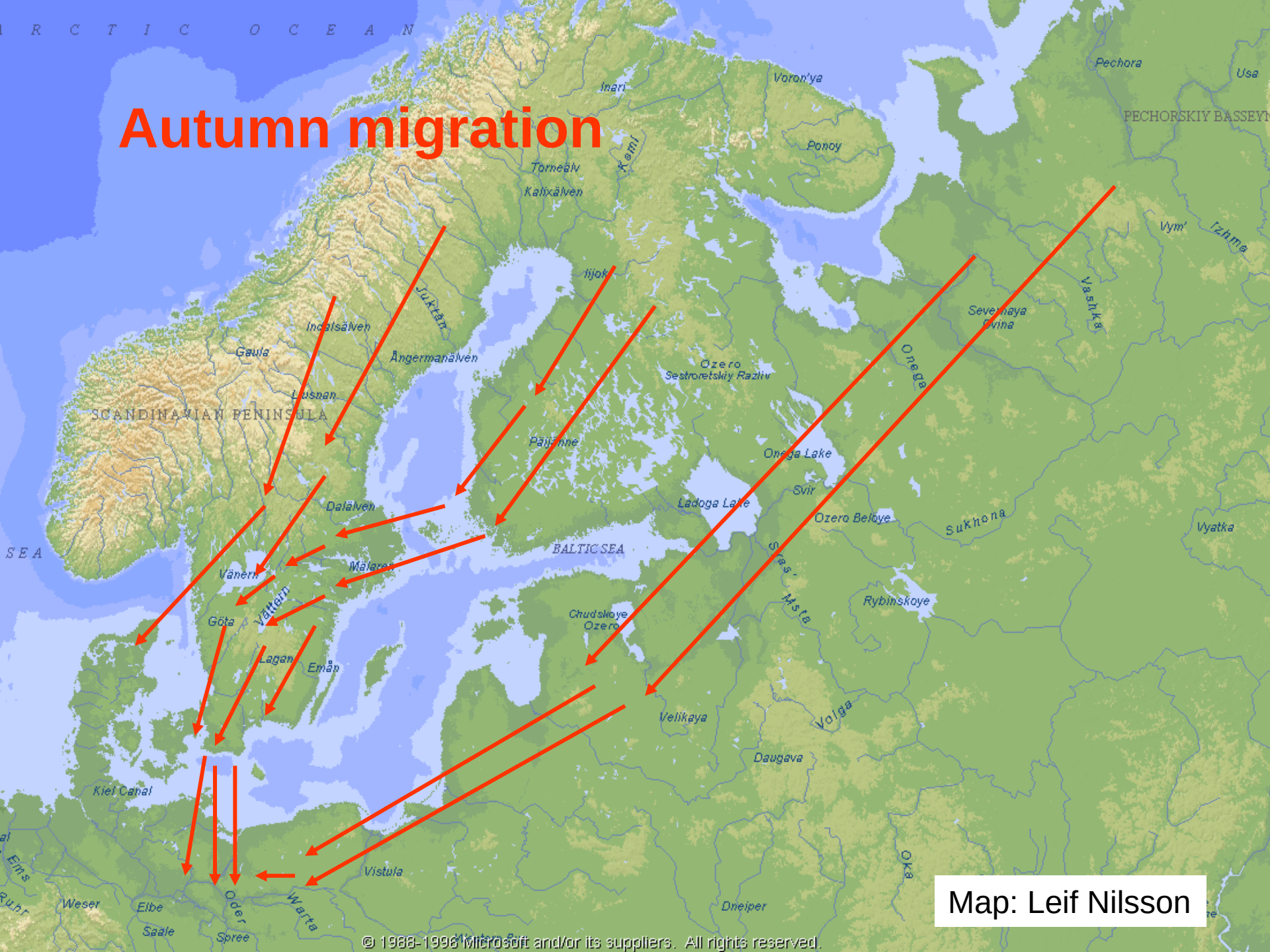

27 apr 2009
1pm
17 jun
12pm
Barents hav
Norska havet
Sverige
Norge
Finland

Autumn migration of a Dalarna-TBG




Bean_measurements_2012.M1 (PCA-X), AllVars
Colored according to values in DS1.Variable(subspecies)
fabalis
rossicus
t[1]
t[2]
] = 0,291
R2X[2] = 0,266
Ellipse: Hotelling's T2 (95%)
SIMCA 13.0 - 2012-10-11 10:06:32 (UTC+2)




Autumn migration
ARCTIC OCEAN
Inari
Voron'ya
Pechora
Usa
PECHORSKIY BASSEYN
Ponoy
Kemi
Torneälv
Kalixälven
Vym'
Izhma
Ijjok
Juktan
Vashka
Severnaya Dvina
Incalsälven
Gaula
Angermanälven
Ozero Sestroretskiy Razliv
Onega
Lusnan
SCANDINAVIAN PENINSULA
Päijänne
Onega Lake
Dalälven
Ladoga Lake
Svir
Ozero Beloye
Sukhona
Vyatka
SEA
BALTIC SEA
Mälaren
Vänern
Vättern
Göta
Chudskoye Ozero
Svis-Msta
Rybinskoye
Lagan
Emån
Velikaya
Volga
Daugava
Kiel Canal
Vistula
Oka
Ems
Ruhr
Weser
Elbe
Oder
Warta
Saale
Spree
Dneiper
Map: Leif Nilsson
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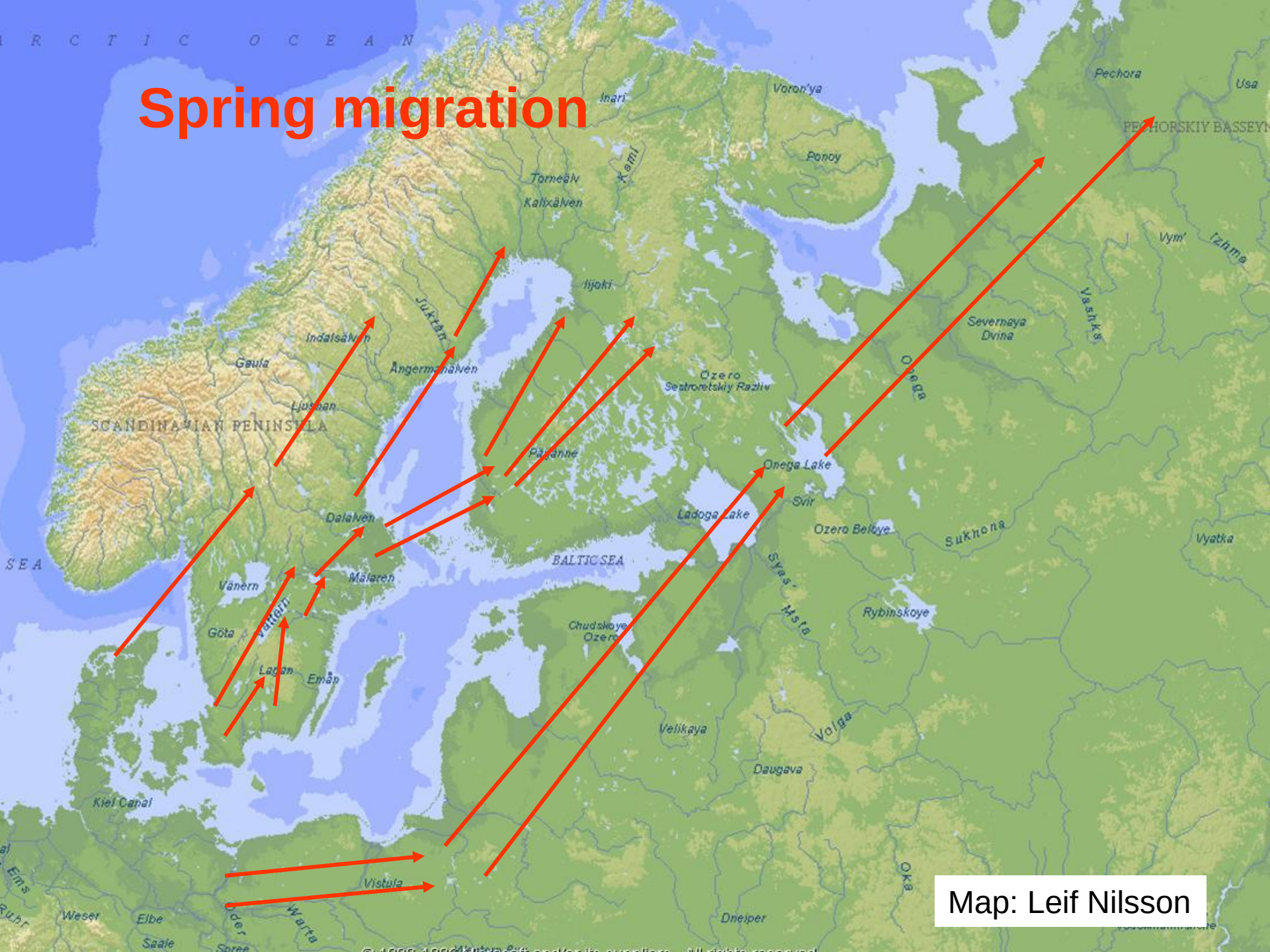


Map: Leif Nilsson

Taiga Bean Goose – preliminary flyway patterns

AEWA Single Species Action-Planning Workshop for the Taiga Bean Goose (*Anser f. fabalis*), Tuusula, Finland 12-14 November 2013

Threats to the Taiga Bean Goose in Sweden

	Breeding	Moulting	Autumn	Winter	Spring[a)]
Habitat loss	(1)	2	2	NA	2
Habitat degradation	1	2	3[b)]	3[b)]	3[b) c)]
Hunting	NA	NA	4	3	NA
Predation (non-human)	2	2	2	2	1
Disturbance, hunting	NA	NA	3	2	NA
Disturbance, other	2	3+[d)]	2	2	3
Windfarms	1	1	2	2	2
Powerlines	NA	1	2	2	2
Infrastructure, other	NA	1	1	1	1

[a)] This period also includes the pre-breeding staging sites near the breeding areas

[b)] Loss of food resources by early post-harvest ”blackening” (ploughing etc.) of fields, introduction of unsuitable crops (including energy crops), etc.

[c)] Abandoned farming management of pre-breeding staging sites.

[d)] Disturbance by berry-pickers, fishermen, etc.

Management challenges
scientific underpinning

- Validation of the flyway structure
  - Transmitters!
  - Genetics
  - Stable isoptopes
- Improvement of the goose count system
  - Adding more value while retaining backward compatability
- Improvement of bag statistics
  - More reports
  - Head + wing sampling
- More information on breeding distribution and numbers

Management challenges
adaptive management modelling

- Survival data *)
- Reproduction data *)
- Numbers *)
- Bag-statistics *)

*) at flyway-level!

Relevant population model structure

Flyway-level adaptive management implementation hurdles

Data input

Harvesting in multiple species system
- One declining species among several booming ones!
  - A marketing challenge!
  - An educational challenge!

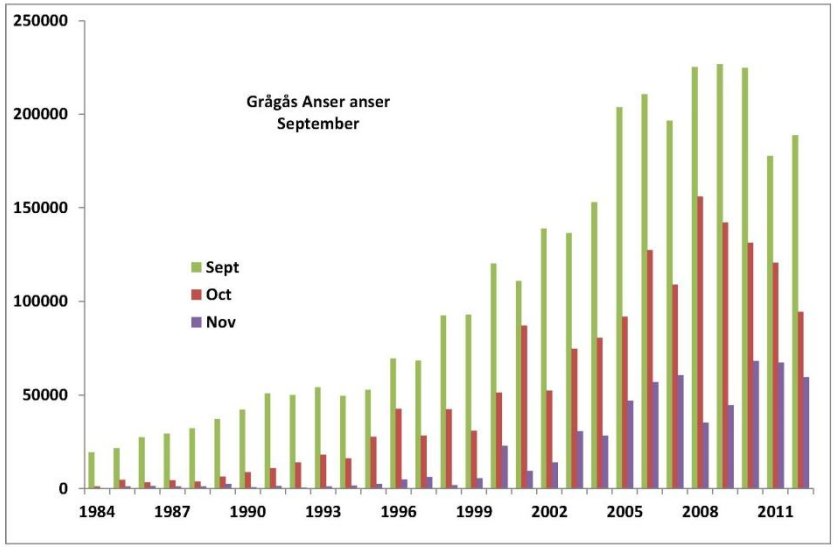
Private – Local – Regional – National – International
- How to share costs, benefits and responsibilities across levels?
- How to integrate local initiatives into flyway management?

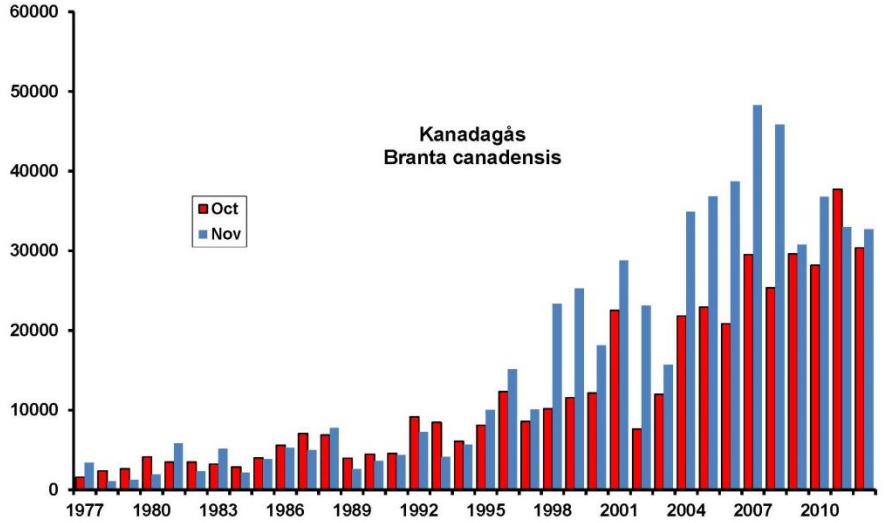
Protective hunting
- How to single out the partial effect of different species?

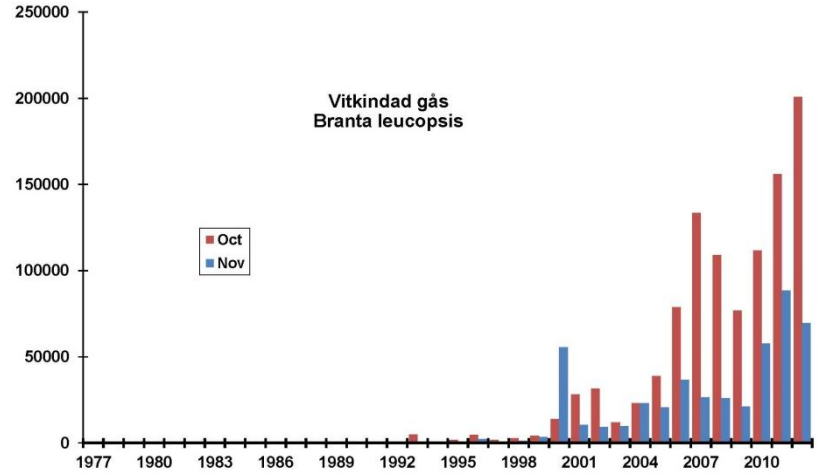
How to plan management when crucial bits of information are missing?
- Short term vs long term plans and actions

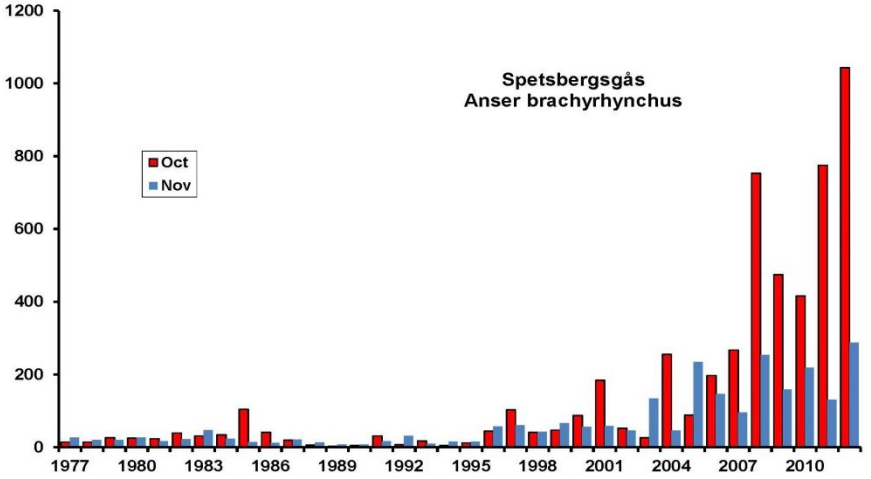
Fine-scale (temporal and spatial) management in conflict with ownership and legislation?

How to harvest a declining species among booming ones?









Flyway-level adaptive management implementation hurdles

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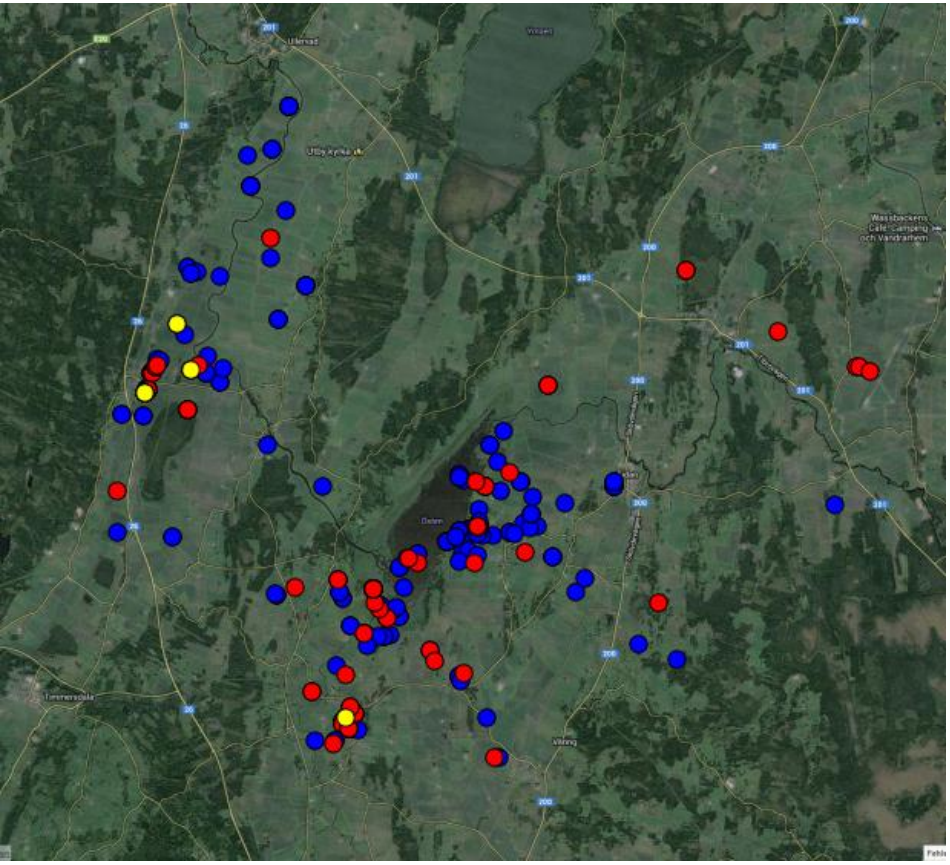
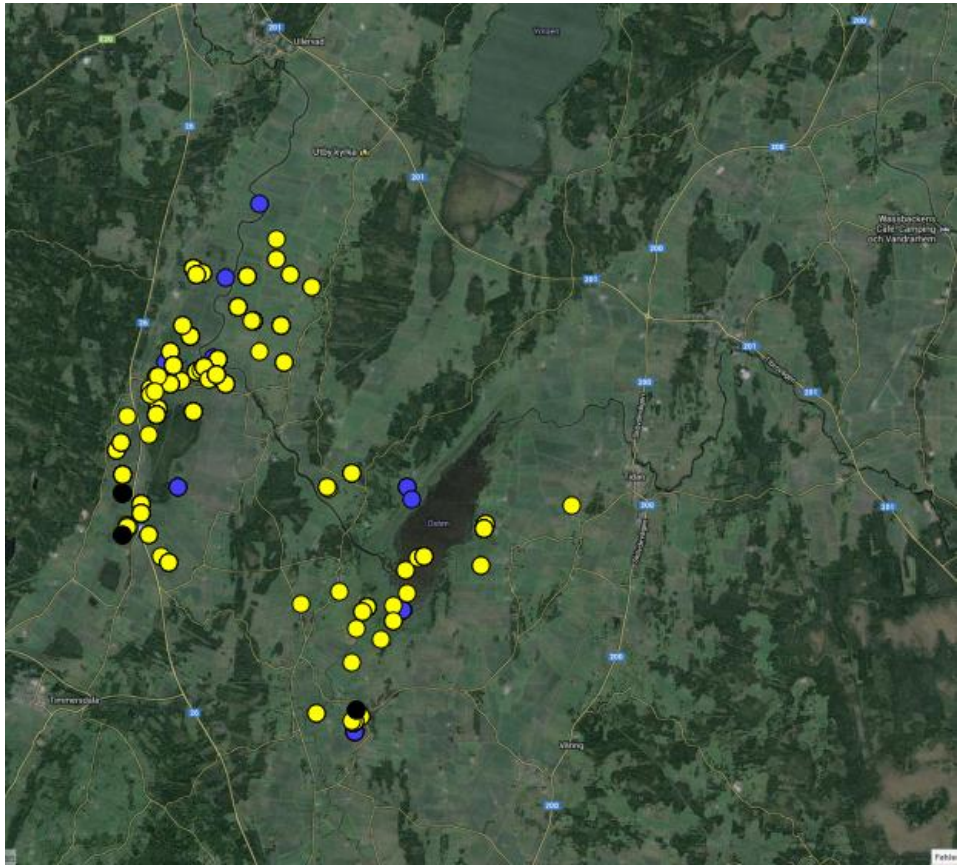
Fine-scale (temporal and spatial) management in conflict with ownership and legislation?

Neckband observations around Lake Östen

Taiga Bean Goose



Tundra Bean Goose



Maps by Thomas Heinicke

Conservation efforts

In place

- Fully protected, when not allowed to hunt
- Protection of most major roost sites
- Reduced exploatation pressure in breeding areas
- Wetland restoration/creation
- Unharvested ceral fields (CAP)
- Local ”bird-problem” groups
- Network of goose counters

Wanted/needed

- Protection of roost sites + surrounding foraging areas
- More nature reserves in northern wetland habitats
- Sedge-meadow restoration (mowing) near breeding sites
- Restoration of pre-breeding staging sites on farmland in northern Sweden
- Protection of moulting sites
- Local ”bird-problem” groups operate within a flyway context
- Flexibility in legislation
- Local natural-resources working groups that acknowledge geese as a resource (c.f. Vilhelmina Model Forest)

Thanks you for your attention!