

Trends in population size and reproduction of Black-throated Loon and Red-throated Loon in Sweden



**Svenska LOM-föreningen /
Projekt LOM**

www.projekt-lom.com

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Trends in population size and reproduction of Black-throated Loon and Red-throated Loon in Sweden

- 1. "PROJEKT LOM" in Sweden**
- 2. BLACK-THROATED LOON (*Gavia arctica*)**
 - Trends in population size**
 - Trends in reproduction**
- 2. RED-THROATED LOON (*Gavia stellata*)**
 - Trends in population size**
 - Trends in reproduction**

Data sources

- **Surveys of breeding success, 1994-2012 (Projekt LOM)**, <http://www.projekt-lom.com/lom.invres.htm>
- **Swedish Bird Survey (Svensk Fågeltaxering)**, <http://www.zoo.ekol.lu.se/birdmonitoring/arsrapporter.htm>



Projekt LOM

- **Started in 1994**
- **Common initiative by the Swedish Society for Nature Conservation (Svenska Naturskyddsföreningen, SNF) och BirdLife Sweden (Sveriges Ornitologiska Förening, SOF)**
- **Independent NGO since 2001**



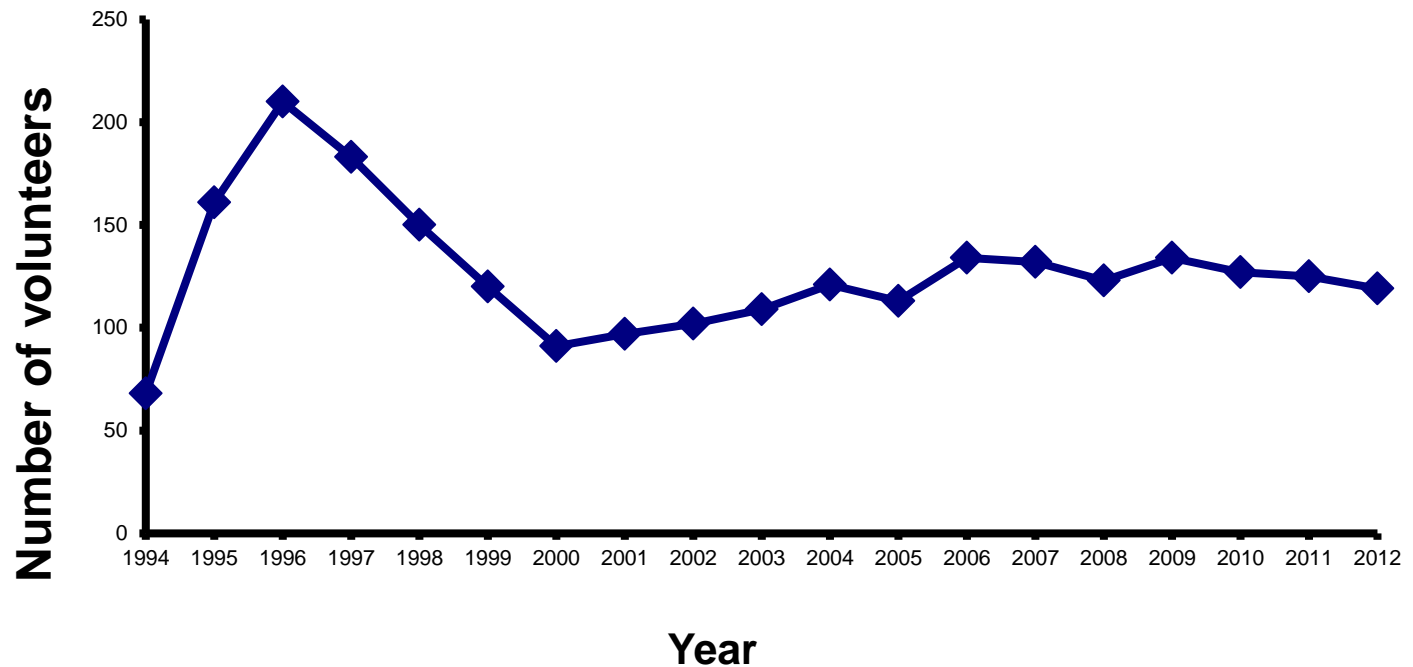
Projekt LOM

- **More than 400 volunteers have contributed with reports during at least one year since the start in 1994.**
- **During recent years ca 125 persons have been active in the volunteer network**
- **In addition, check against the bird reporting database, Artportalen / SVALAN**

Projekt LOM



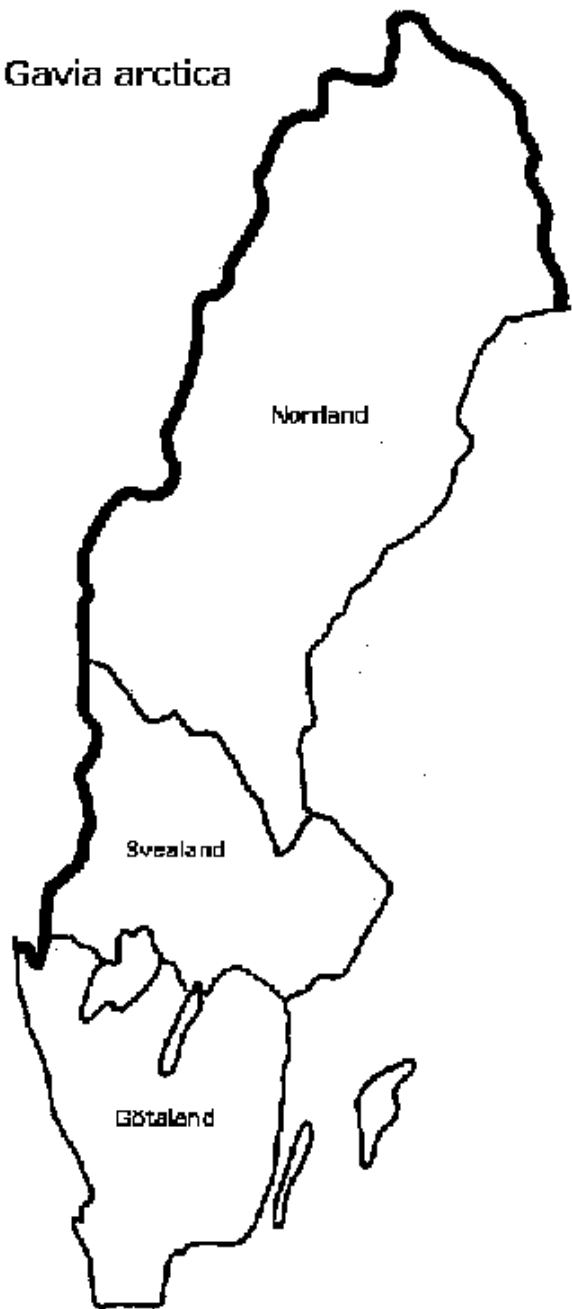
- Number of volunteers are declining
- Volunteers are getting older - many have reported for several years – difficult to recruit younger people



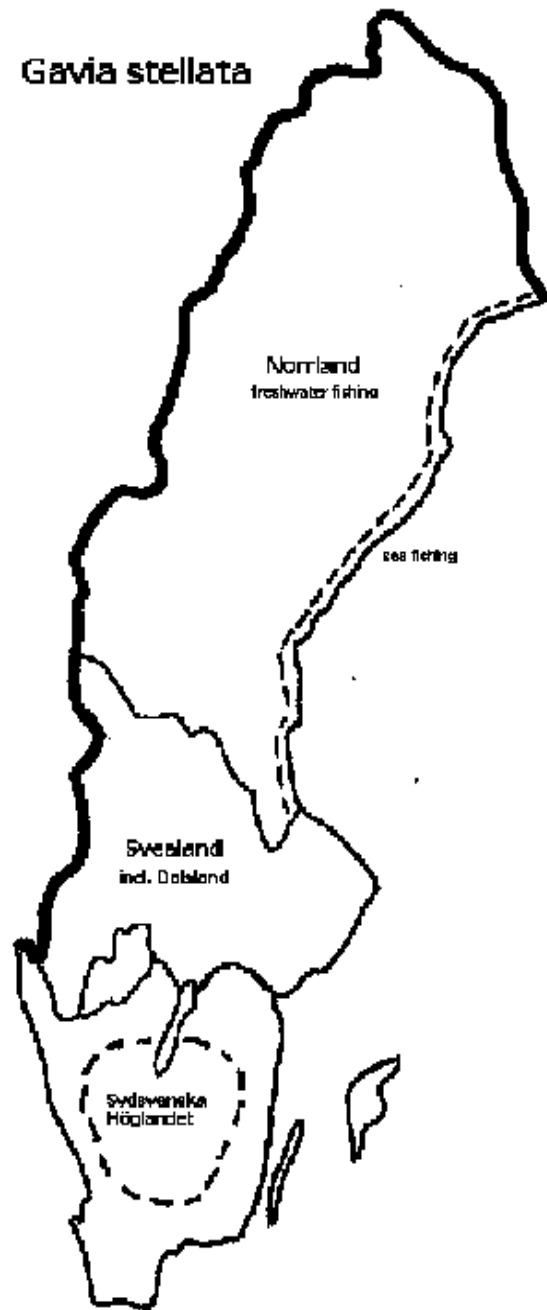
Black-throated Loon **(*Gavia arctica*)**

Photo: Christer Brostam

Gavia arctica

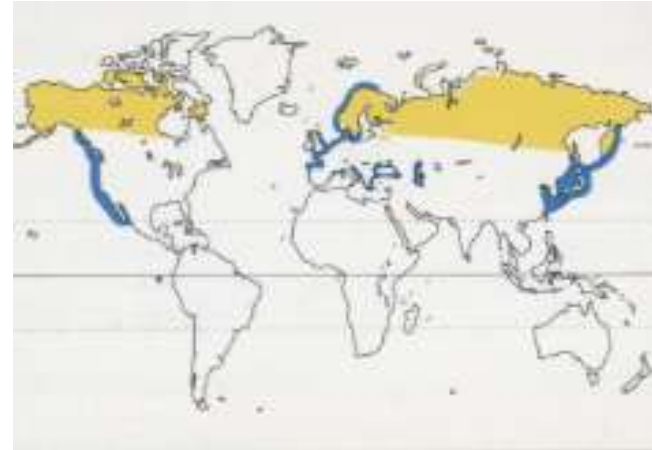


Gavia stellata



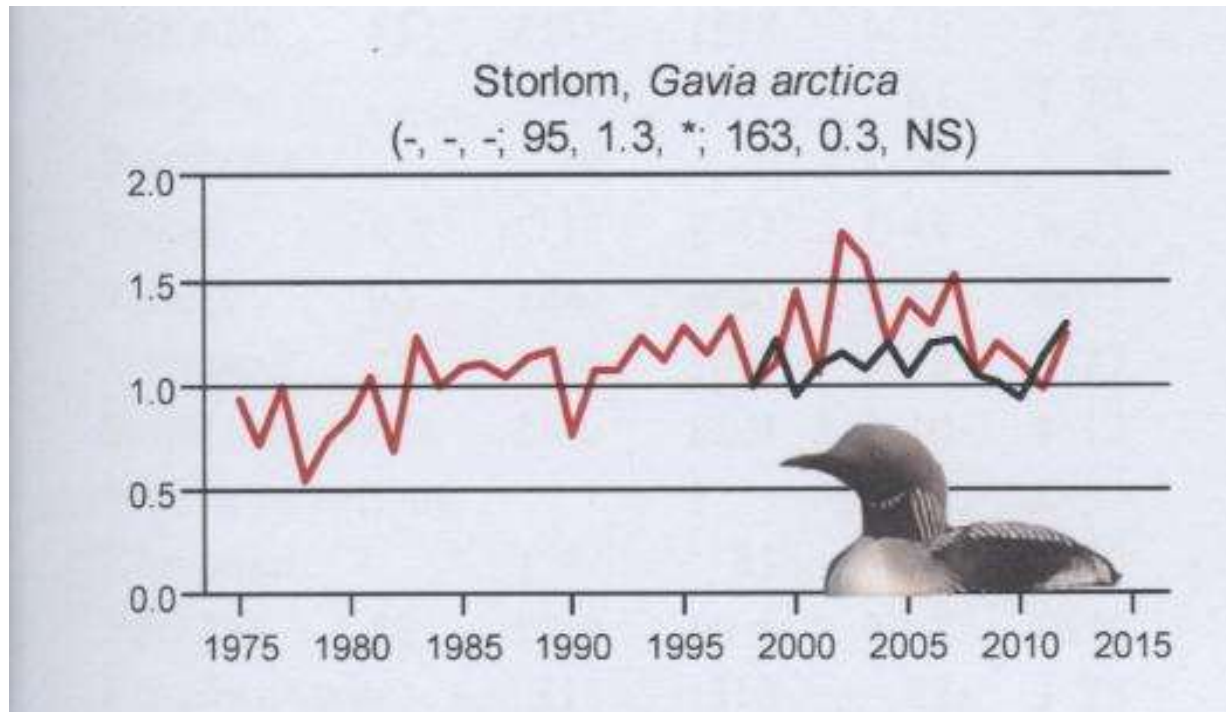
Black-throated Loon (*Gavia arctica*)

Pacific Loon (*Gavia pacifica*)



		Trend
World population		
<i>G.a.arctica</i> (inkl. <i>G.a. suchkini</i>)	86 000 – 162 000 pairs	-
<i>G.a. viridigularis</i>	25 000 – 1 000 000 pairs	?
<i>G. pacifica</i>	300 000 – 530 000 pairs	0
Europe (excl. Russia)	16 000 – 22 000 pairs	0
Sweden, Finland, Norway	15 500 – 21 500 pairs – 97 %	+ = Sweden, Finland - = Norway
Sweden	5 500 – 7 000 pairs – 33 %	0 / +

Black-throated Loon (*Gavia arctica*) Population trend in Sweden (Swedish Bird Survey)



- Longterm increase since mid-1970s
- Indication of levelling-out during last 10-15 years

Black-throated Loon (*Gavia arctica*)

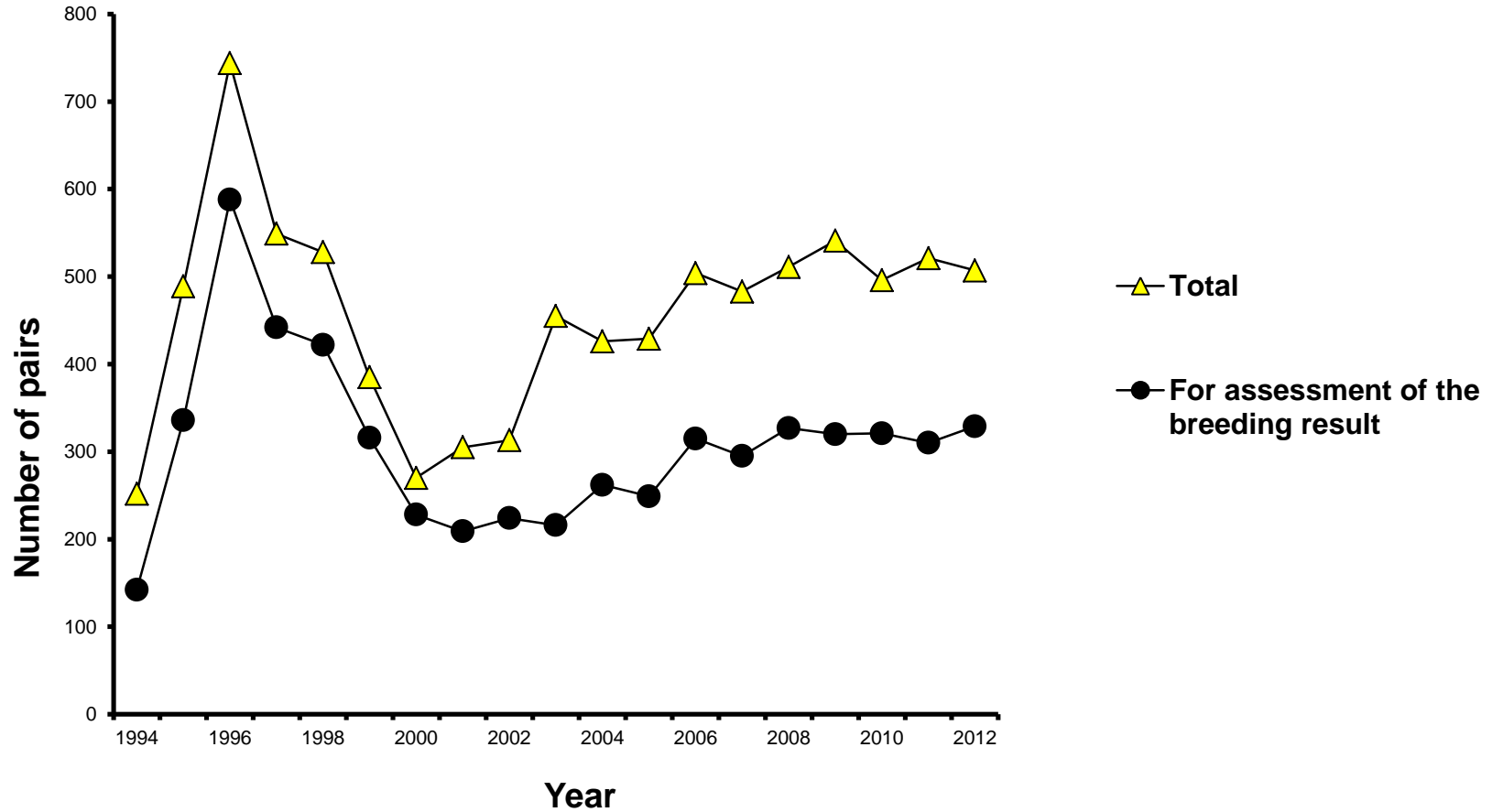
Number of reported pairs

Total number of localised breeding lakes (lakes with territory-holding pairs at least once during 1994-2012):

- ca 2200 lakes = ca 9 % of all lakes >10 ha
- ca 2800 pairs = ca 45 % of the breeding population.
- **Ca 7 % of the Swedish population have been covered on an annual basis during 2003-12, 400-500 pairs**
- **Ca 60 % with enough information to be included in the annual assessments of breeding success**

Black-throated Loon (*Gavia arctica*)

Breeding success - number of reported pairs



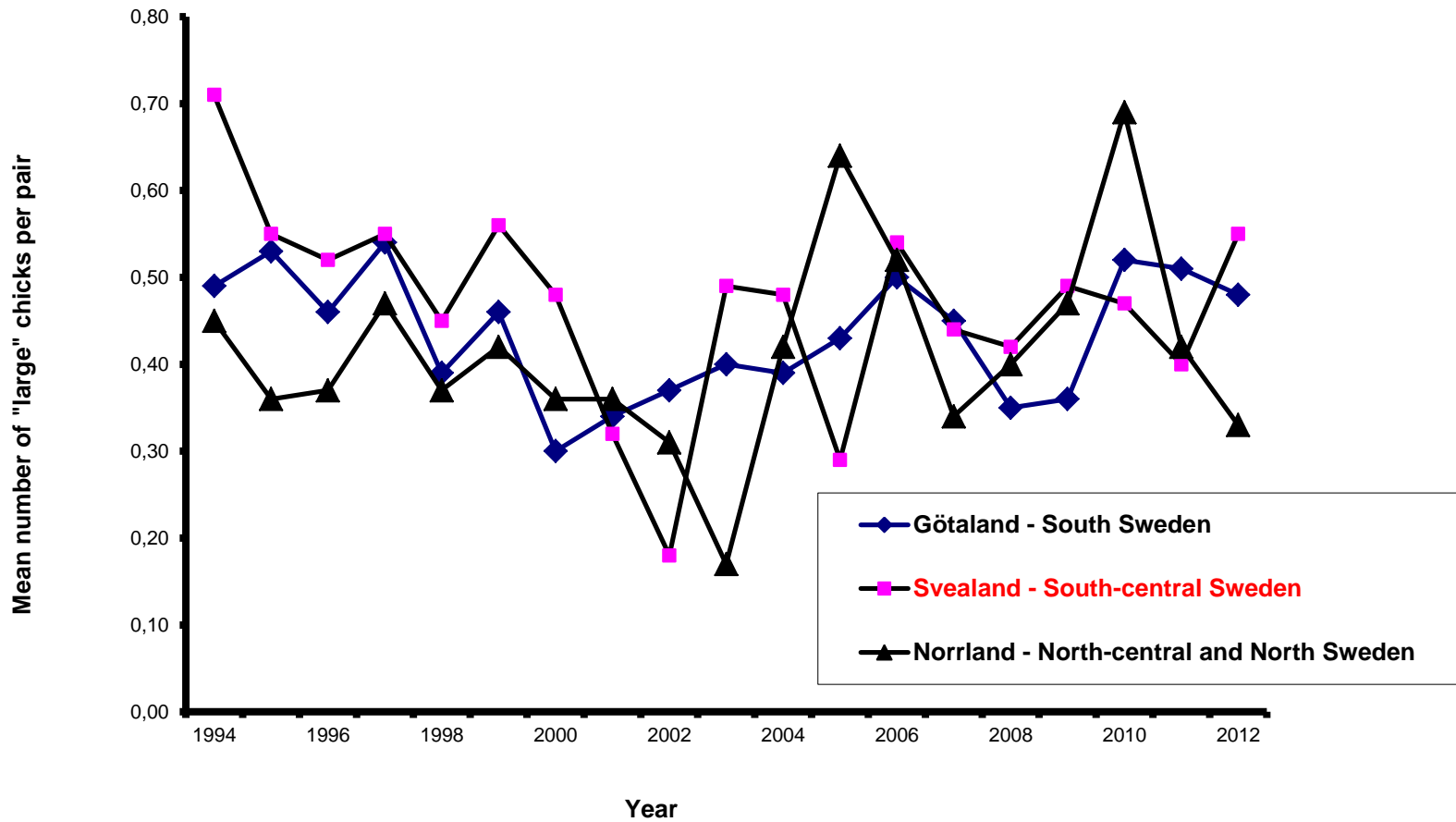
Black-throated Loon (*Gavia arctica*)

Breeding results

0.42-0.46 "large" chicks per pair and year

- Same level in whole Sweden
- Recruitment enough to compensate for annual mortality
- Indication on decreasing trend for Svealand (South-central Sweden, Spearman $r_s = -0.39$, $0.05 < P < 0.10$, 19 years) – linked to decreased % of 2-chick broods
- separate talk on that.....

Black-throated Loon (*Gavia arctica*) Breeding result



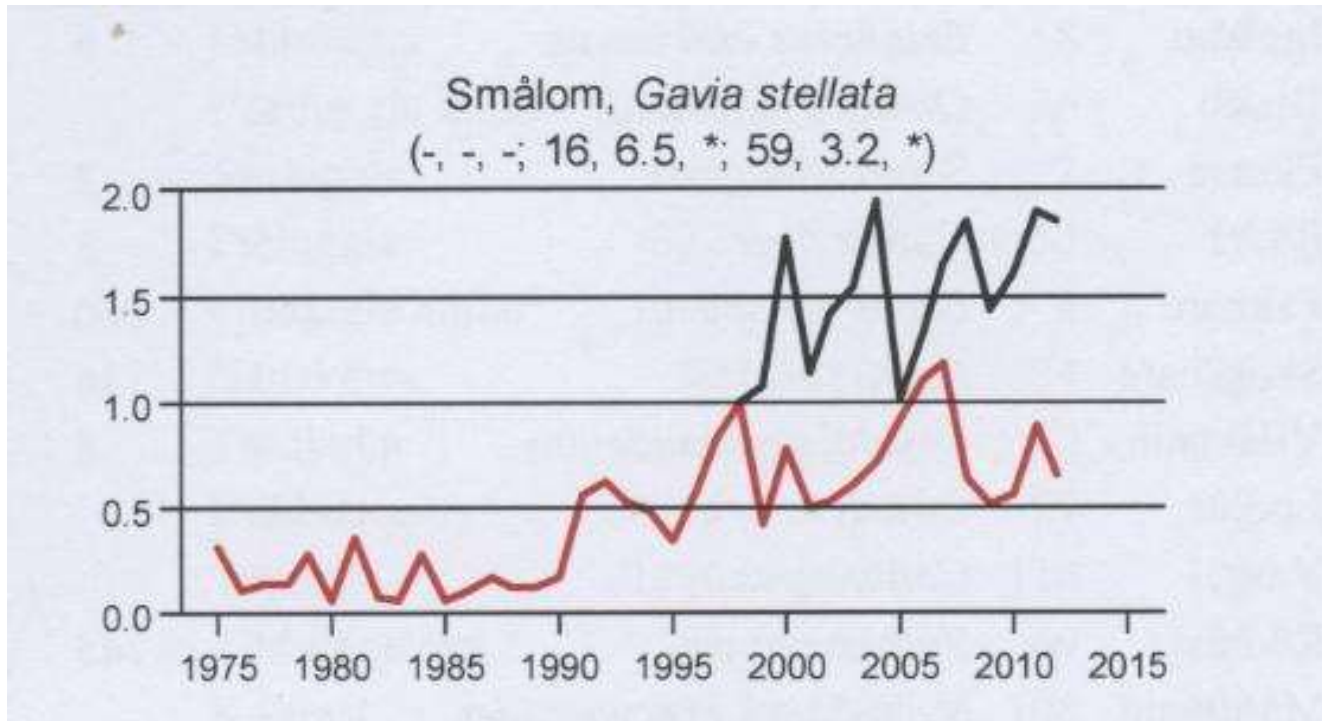
Red-throated Loon
(*Gavia stellata*)

Red-throated Loon (*Gavia stellata*)



		Trend
World population thereof North America	70 000 – 200 000 pairs ca 40 000 pairs	0 = Europe, Asia - = North America
Europe (excl. Russia)	7 100 – 12 000 pairs	0
Sweden, Finland, Norway	4 200 – 8 000 pairs – 64 %	0 / + = Sweden - = Norway, Finland
Sweden	1 300 – 1 900 pairs – 17 %	+ = North Sweden - = South Sweden

Red-throated Loon (*Gavia arctica*) Population trend in Sweden (Swedish Bird Survey)



- Long-term increase since mid-1970s, related to northern Sweden
- Non-significant indication of decline in southern Sweden

Red-throated Loon (*Gavia stellata*)

Number of reported pairs

Total number of localised breeding sites (with breeding pairs at least once during 1994-2012):

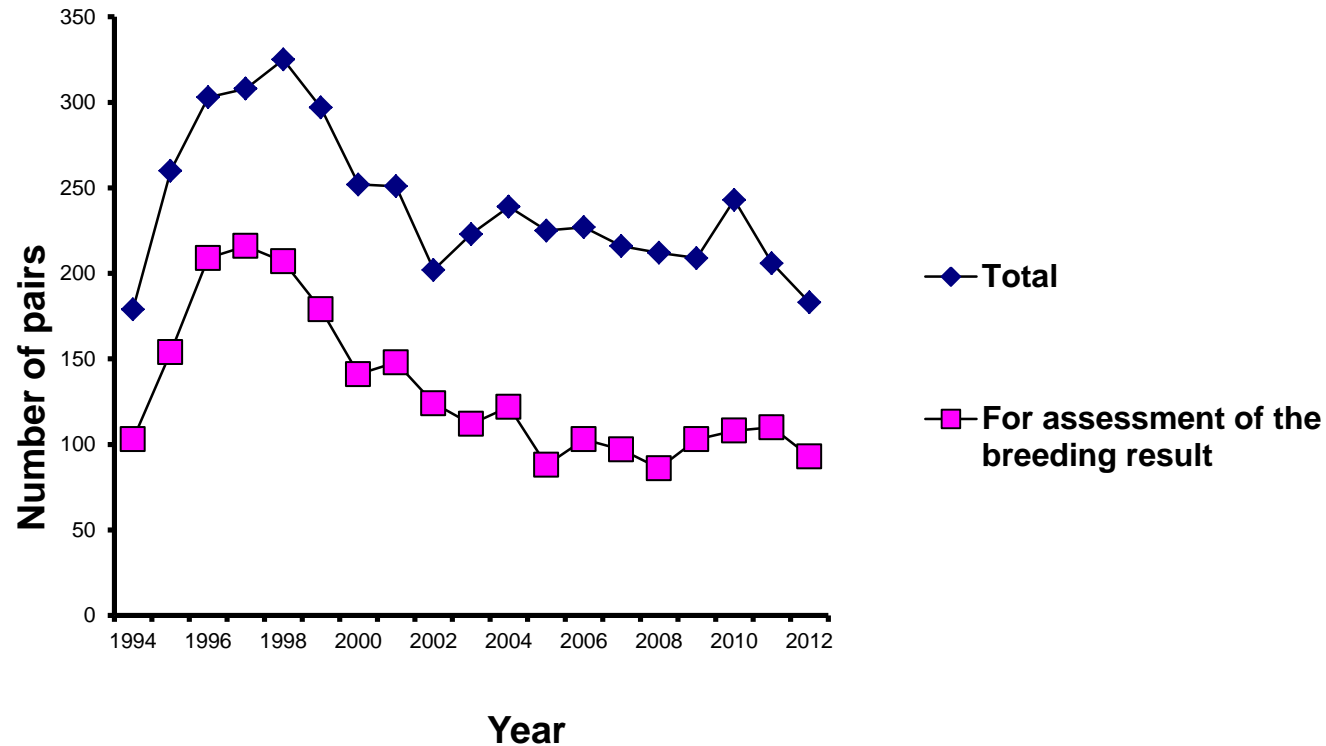
ca 1200 sites = ca 75 % of the breeding population.

- ca 12 % of the Swedish population have been covered on an annual basis during 2003-12, ca 200 pairs

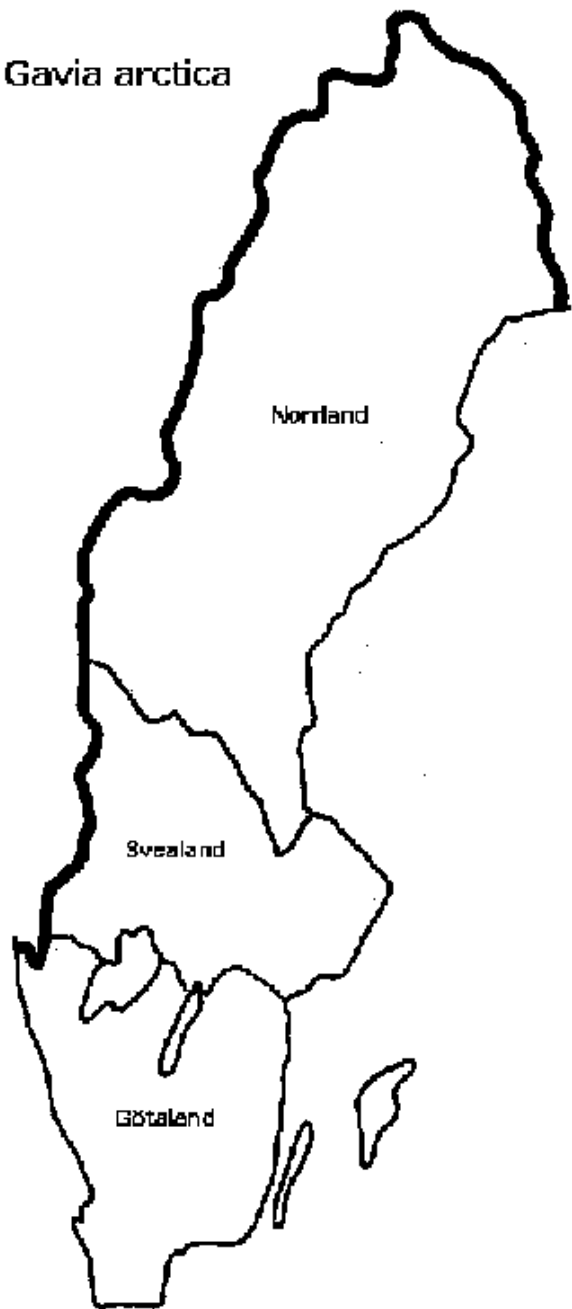
- ca 50 % with enough information to be included in the annual assessments of breeding success

Red-throated Loon (*Gavia stellata*)

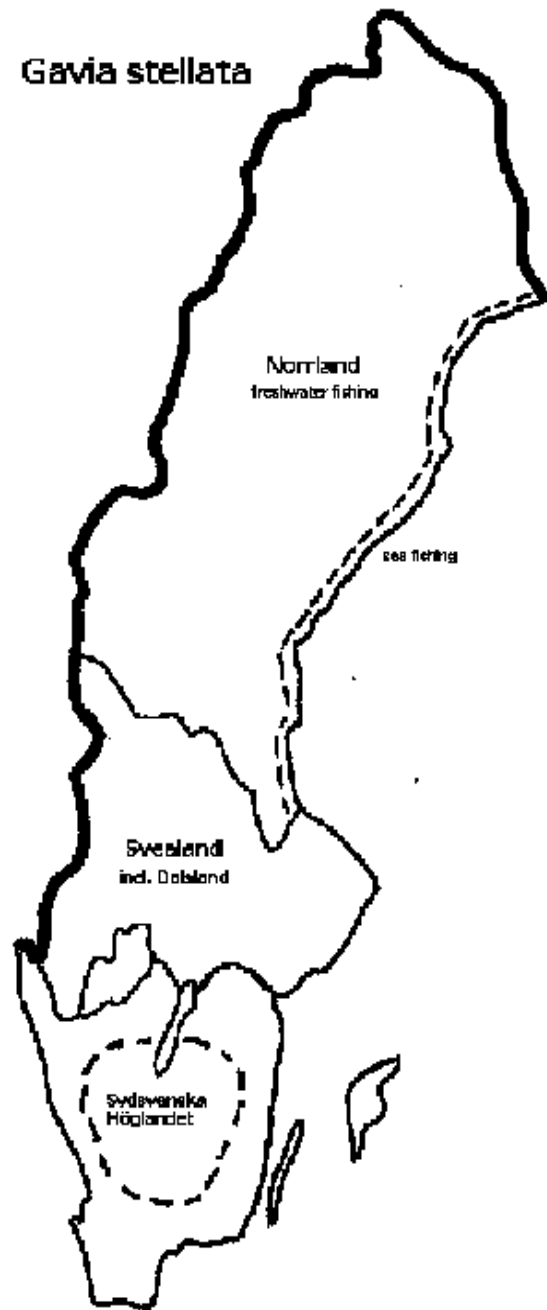
Breeding succes - number of reported pairs



Gavia arctica



Gavia stellata



Red-throated Loon (*Gavia stellata*)

Breeding results – Southern Sweden

Sydsvenska Höglandet (South Sweden)

- 0.69 "large" chicks per pair and year
- Presumably too low to compensate for annual mortality
- **Decreasing trend (Spearman $r_s = -0.55$, $P < 0.02$, 19 years) – linked to decreased % of 2-chick broods → separate talk on that.....**

Svealand + Dalsland (South-central Sweden)

- 0.69 "large" chicks per pair and year
- Presumably too low to compensate for annual mortality
- No trend – no decreased % of 2-chick broods

→ *Non-significant indication of population decline in southern Sweden*

Red-throated Loon (*Gavia stellata*)

Breeding results – Northern Sweden

Inland breeders (foraging in freshwater lakes)

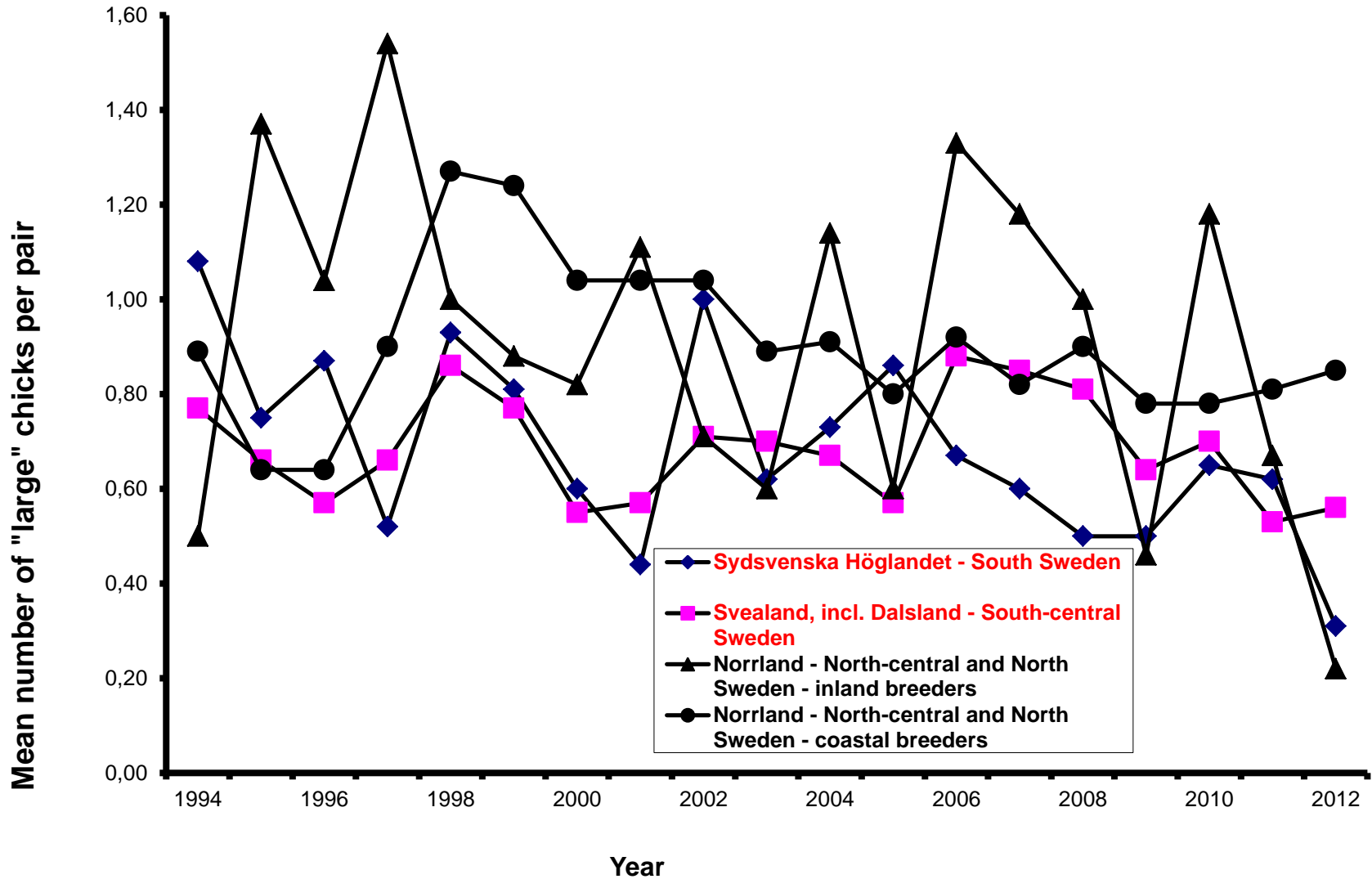
- 0.91 "large" chicks per pair and year
- Presumably sufficient to compensate for annual mortality
- No trend – no decreased % of 2-chick broods

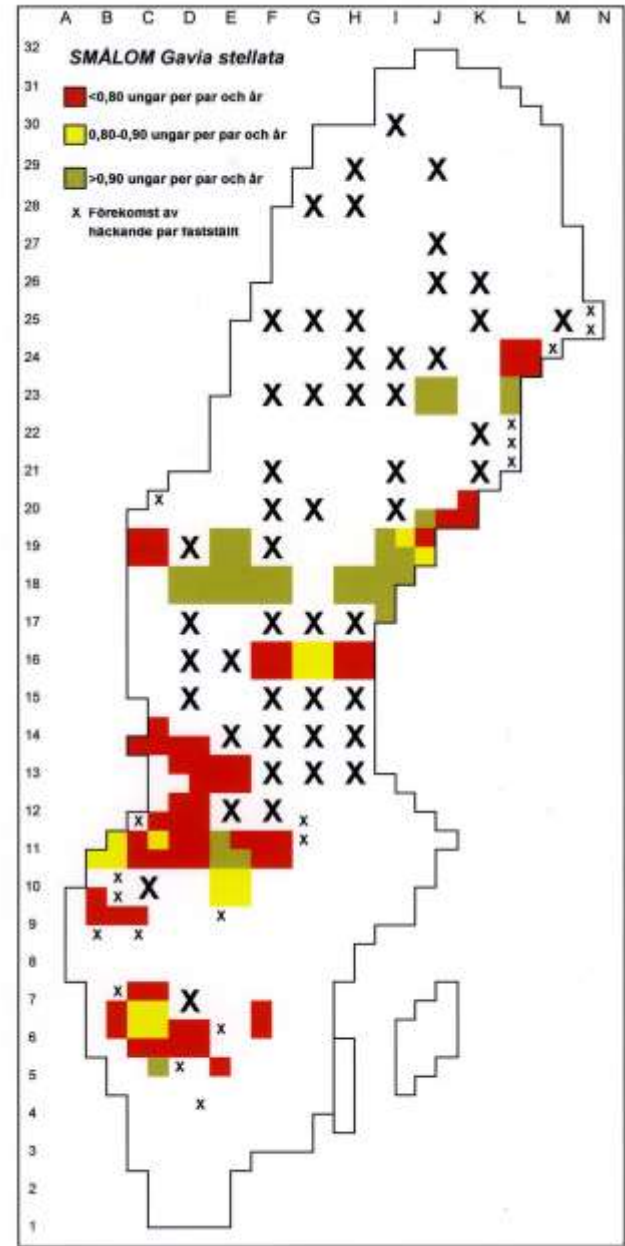
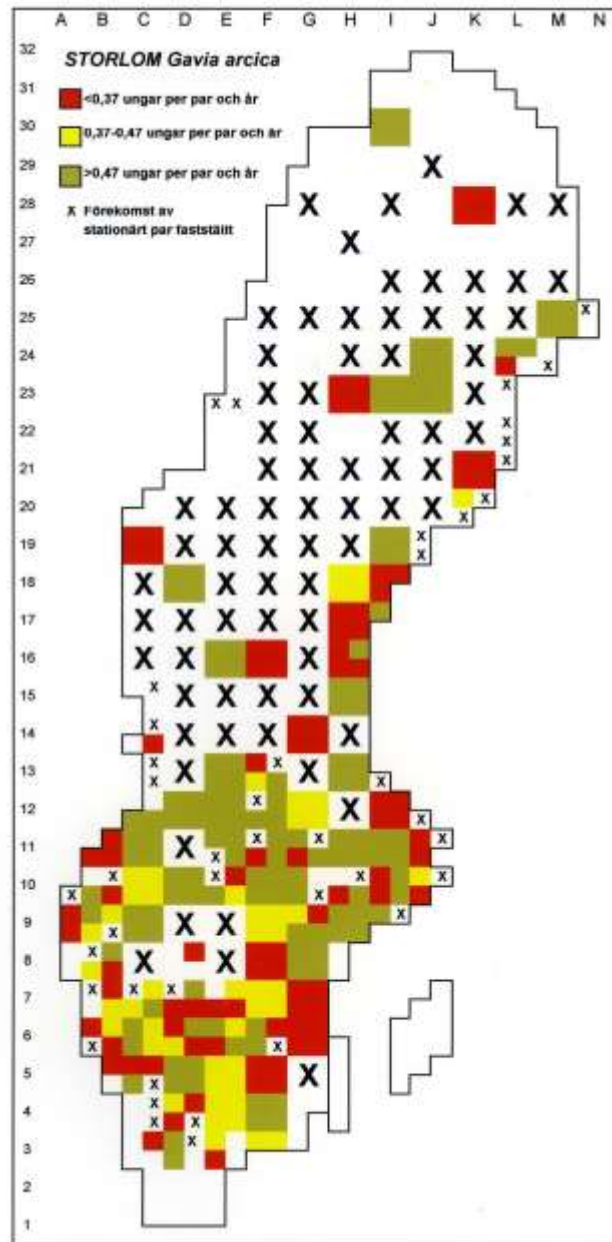
Coastal breeders (upto 10 km from the coast – foraging in marine habitats)

- 0.90 "large" chicks per pair and year
- Presumably sufficient to compensate for annual mortality
- No trend – no decreased % of 2-chick broods

→ Long-term population increase in Northern Sweden

Red-throated Loon (*Gavia stellata*) Breeding result





To summarize

BLACK-THROATED LOON (*Gavia arctica*)

- Long-term increase of population size, might have levelled off during the last 10-15 years.
- Recruitment enough to compensate for annual mortality, but ...
- **Decreasing trend for Svealand (South-central Sweden) – linked to decreased % of 2-chick broods → separate talk on that.....**

RED-THROATED LOON (*Gavia stellata*)

- Long-term increase of population size in northern Sweden, **indication of decline in southern Sweden.**
- Recruitment enough to compensate for annual mortality in Northern Sweden – **not in Southern Sweden**
- **Decreasing trend for Sydsvenska Höglandet (South Sweden) – linked to decreased % of 2-chick broods → separate talk on that.....**

THANK YOU