

## Project information

### Project title

MIGRAPOP II (Adaptive management of migratory populations; developing novel tools at the interface between ecology, economy, agriculture and society)

### Year

2012/2013

### Project leader

Ingunn Tombre, NINA

### Participants

**Leader:** Ingunn M. Tombre, NINA **Participants:** Jarle Werner Bjerke, NINA Einar Eythórsson, NIKU Anne Kari Bergjord, Bioforsk Jesper Madsen, Aarhus University Mary Wisz, Aarhus University Caroline E. Simonsen, Aarhus University Magda Chudzinska, Aarhus University Silke Bauer, Netherlands Institute of Ecology/Swiss Ornithological Station Bart Nolet, Netherlands Institute of Ecology Hans Braveco, Alterra-Wageningen University and Research Centre Marte Sørbo Hoholm, Landbruketstjenesten Midtre Hålogaland Marvell Hanssen, Landbruketstjenesten Midtre Hålogaland

### Flagship

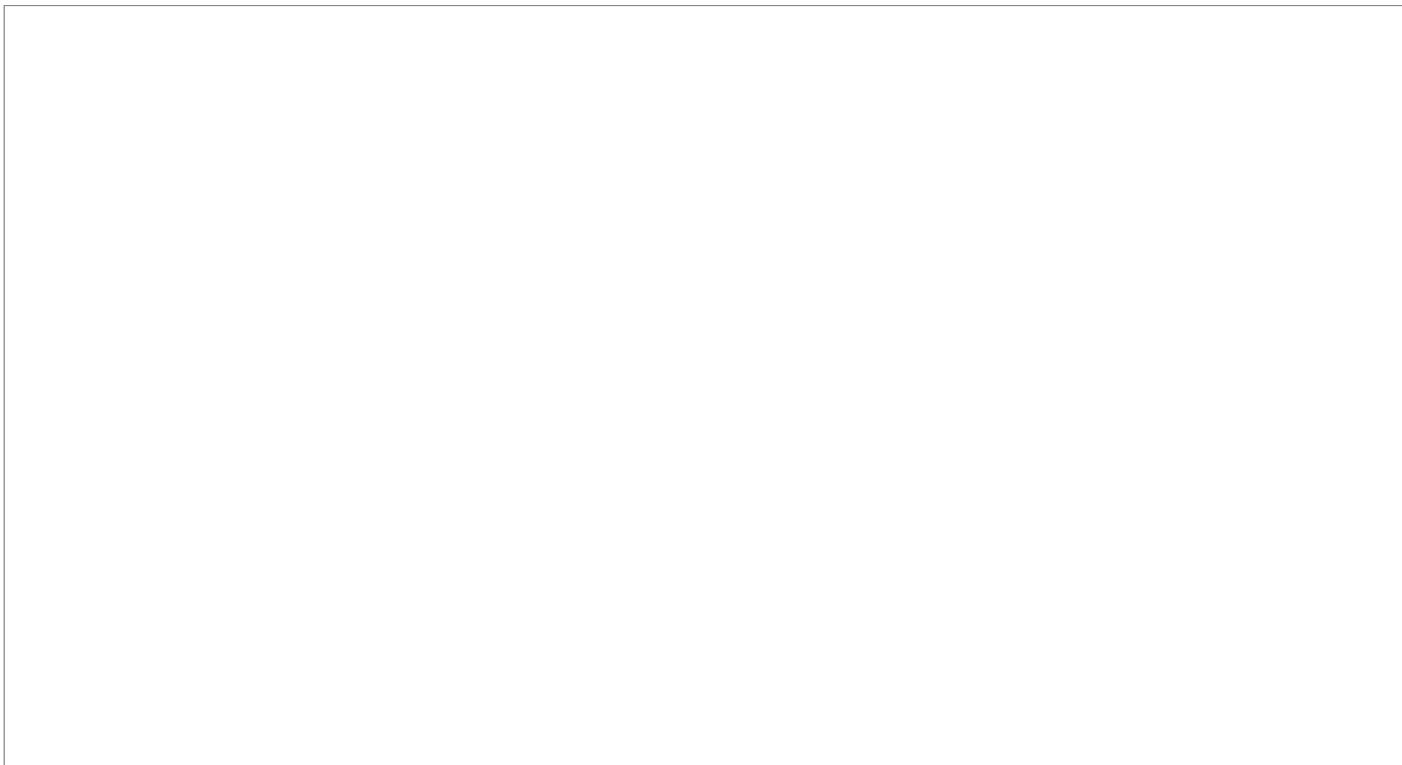
Terrestrial, Theme: Adaptive management of ecosystem services

### Funding Source

The Fram Centre NOK 450 000 Research Council NOK 1 566 000 Directorate for Nature Management NOK 450 000 County Governor Nordland, Environmental Protection Division NOK 100 000 County Governor Nord-Trøndelag, Environmental Protection Division NOK 50 000 County Governor Nord-Trøndelag, Agricultural Division NOK 220 000 Total funding NOK 2 386 000 Extra own funding Aarhus University NOK 580 000 Netherlands Institute of Ecology NOK 110 000

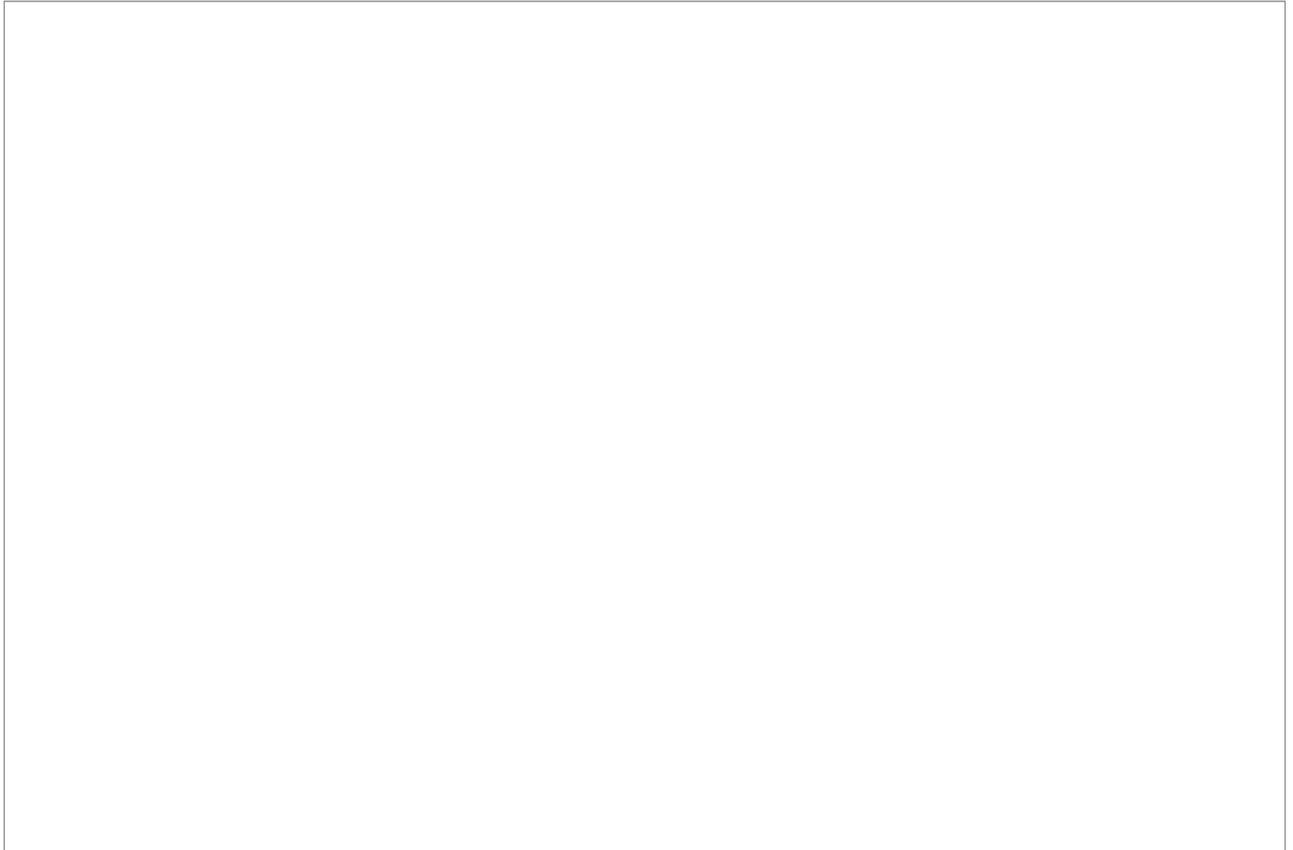
### Summary of Results

One of the aims in MIGRAPOP is to develop species distribution models (geese) and combine these with resource (agricultural fields) depletion models. We want to evaluate how the regional management schemes (there is a subsidy scheme for spring-staging geese) affect the number of geese and measure the staging areas' carrying capacity. Moreover, combining such models will also give us the opportunity to assess the economic costs. In order to gather detailed information needed for our models, one of the measures that needs to be quantified is the scaring activity by farmers. Many farmers that are not included in the subsidy scheme (money limited) chose to chase off the geese from their properties. This activity influences the site use of the geese, and hence their distribution. In 2012, we, in co-operation with several landowners, scared the geese off at a set of fields (n=26) following an experimental protocol by varying the scaring frequency and intensity (over the daily range from 04:00 – 22:00). The figure below demonstrates that the geese are easier to scare off later in the season, and it seems like the flight distance (in meters) to the disturber is shorter in the morning and more variable during afternoon. Data is currently being analysed.



For the spring-staging geese, the subsidy scheme creates a mosaic of refuges and areas subject to scaring. The two study sites in MIGRAPOP, Vesterålen and Nord-Trøndelag, practice the subsidy scheme different in terms of organisation and subsidy distribution. An analysis has been conducted, evaluating the various premises, the challenges and bottlenecks when implementing the scheme. In general, the subsidy scheme is well incorporated in the regional management. The formulation of the scheme is accepted and efficient, but a relatively comprehensive documentation is needed for the implementation. Results are currently being summarised in a scientific paper.

In spring 2012, goose grazing experiments were also established at four farms in Vesterålen (4x4 plots, 4x4 controls, see Figure). Data is currently being analysed. Preliminary results suggest the same pattern as has been documented for Nord-Trøndelag, with a reduction in harvest for control plots where geese have been grazing. Results from all the plots will not only be analysed separately for the experimental setup, they will also fuel the models where the total costs for the two regions are being analysed (combining the grazing data with the goose distribution models).



#### Published Results/Planned Publications

##### **Manuscripts in review (1)**

Bjerke, A. W., Bergjord, A.K., Tombre, I. M. & Madsen, J. 2012. Reduced dairy grassland yields in Central Norway after a single springtime grazing event by pink-footed geese. *In review*

##### **Manuscripts submitted (1)**

Tombre, I. M., Eythórsson, E. & Madsen J. 2012. Towards a solution to the goose-agriculture conflict in north Norway, 1988-2012: the interplay between policy, stakeholder influences and goose population dynamics. *Agriculture, Ecosystems and Environment*.

##### **Manuscripts in preparation (2)**

Eythórsson et al.:

*Subsidy schemes in goose management; premises, bottlenecks and success criteria*

Madsen et al.:

### **Report in preparation (1)**

Eythórsson, E. 2012. Miljøtilskudd for beiteskade av gjess; erfaringer fra Nord-Trøndelag og Vesterålen. NIKU Rapport nr. XX.

### **Oral presentations 2012 (12)**

Tombre, I. M. 2012. *An interdisciplinary approach to the conflict between agricultural interests and arctic geese in Norway; results from projects and potential links to the Icelandic situation*. Presentation at the seminar *In Northern Mists: Understanding the Past, Predicting the Future -Icelandic and Norwegian Contributions to Arctic Research*. 12-13 November 2012, University of Akureyri, Iceland.

Bjerke, J. & Tombre, I. M. 2012. MIGRAPOP; presentasjon av resultater med hovedvekt på beiteskadestudiet. Seminar NINA, Framsenteret 29.oktober 2012.

Tombre, I.M., Madsen, J. & Eythórsson, E. 2012. *Kortnebbgås og hvitkinngås; Status og resultater fra beiterregistreringer/dokumenterte skadeomfang. Kort om internasjonal avtale*. Møte med SLF, Fylkesmannen i Nord-Trøndelag og Fylkesmannen i Nordland, Værnes 22.oktober 2012.

Bjerke, J. 2012. *“Beitekskadestudiene i Trøndelag 2012 og 2011”*. Workshop for referansegruppen og prosjektpartnerne, Steinkjer 17. september 2102.

Chudzinska, M. 2012. *“Diurnal variation in the behaviour of pink-footed geese during the spring stopover in Trøndelag, Norway”*. 14<sup>th</sup> meeting of the Goose Specialist Group, Steinkjer, Norway, 17-22. April 2012

Eythórsson, E. 2012. *“Miljøtilskudd for beiteskade av gjess: Erfaringer fra Vesterålen”* Workshop for referansegruppen og prosjektpartnerne, Steinkjer 17. september 2102.

Tombre, I. M. 2012. *“MIGRAPOP – aktiviteter 2011/2012”*. Workshop for referansegruppen og prosjektpartnerne, Steinkjer 17. September 2102.

Tombre, I. M. 2012. *“Focus on habitat management and mitigation measures: Alternative options for spatial management and reducing conflicts.”* Meeting on the Implementation of the AEWI International Species Management Plan (ISMP) for the Svalbard population of the Pink-footed Goose (*Anser brachyrhynchus*), Longyearbyen Svalbard 4-8 August 2012.

Eythórsson, E. 2012. *“Goose and conflicts in Norway; examples and results from ongoing projects.”* Møte islandske bondelagsfolk, herredsagronomer, forskere og departementsansatte i Reykjavik, 23. Mai 2012.

Tombre, I. M. 2012. Oppdatering av status for Vesterålen, forslag til nye gjennomførings-metoder i 2013. Foredrag i arbeidsmøte for alle jordbruksjefene i Vesterålen, Sortland kommune, 15. mai 2012.

Tombre, I. M., Madsen, J. & Eythórsson, E. 2012. *“Adaptive co-management and geese; case studies and experiences from Norway.”* 14<sup>th</sup> meeting of the Goose Specialist Group, Steinkjer, Norway, 17-22. April 2012

Eythórsson, E., Tombre, I. M. & Sørensen, S. U. 2012. *“Climate Change and Wild Geese Populations: Challenges and Opportunities for Farming and Hunting”*. Internasjonalt seminar arrangert av CICERO: *Land-use Change in a Changing Climate: Farming Practices, Nature-Based Tourism and Outdoor Recreation – Local Issues, Global Concerns*. 1. februar 2012, Framsenteret, Tromsø.

### **Newsletters 2012 (1)**

Tombre, I. M. 2012. Nyhetsbrev fra gåseprosjektet MIGRAPOP, april 2012

### **Newspapers and presentations at the internet/news 2012 (11)**

Trønder Avis 22.september 2012 – omtale om gåseprosjektene i regionen. *“Bare mer og mer gås”*

<http://www.t-a.no/nyheter/article5659345.ece>

*“Johnnys gjensyn med Johnny”*, Bladet Vesterålen, 24.mai 2012

<http://www.blv.no/lokalsider/oksnes/article6074520.ece>

Lørdagskommentaren, Bladet Vesterålen 2.juni 2012 ”Johnny og ”Johnny”

”Forsker på gåseskader” Bladet Vesterålen 18. mai 2012

”Må skyte flere av disse.” Steinkjer-avisa 20.april 2012

”Flygende utfordring”, Nationen 20.april 2012

”Vil utvide gåsejakta” (med omtale også om MIGRAPOP), Adresseavisen 19.april 2012

”Kortnebbgås mellomander i tusentall i Nord-Trøndelag” Nyhetssak i Nationen 18. April 2012  
<http://www.nationen.no/2012/04/18/nyheter/kortnebbgas/innherred/steinkjer/nord-trondelag/7375153/>

”Gåsegutta samles i gåsetrekket.” Nyhetssak NJFFs hjemmeside 17.april 2012 (inkluderer prosjektomtale)  
[http://www.njff.no/portal/page/portal/njff/nyhet?element\\_id=160684016&displaypage=TRUE](http://www.njff.no/portal/page/portal/njff/nyhet?element_id=160684016&displaypage=TRUE)

”Gåsa trekker spesialister til Steinkjer” Nyhetssak på hjemmesidene til NINA 16.april 2012

<http://www.nina.no/Aktuelt/Artikkel/tabid/945/ArticleId/1820/Default.aspx>

”Tusener må dø” (inkluderer omtale av MIGRAPOP), Trønderavisa 30.mars 2012

## **TV/Radio 2012**

Islandsk TV (The Icelandic National Broadcasting Service) Intervju I.Tombre, 13.november 2012

”Paralleller mellom gås-landbruk konflikter på Island og i Norge”

NRK P1 Nordland, intervju i forbindelse med gåseproblematikken i Vesterålen, 9.mai 2012

NRK P1 Friluftsmagasinet, 21.april 2012

<http://nettradio.nrk.no/default.php?&kanal=P2NoYW5uZWw9bnJrLXAxpHN0YXJ0PTIwMTItMDQtMjFUMDglM0EwNiUzQTAwpGVuZD0yMDEyLTA0LTIxVDA5JTlBM0EwMkR0aXRzZT1SbkpwYkhWbWRITnRZV2RoYzJsdVpYUT2kaW5uPTckdXQ9MKRiaXRyYXRIPQ==>

## Communicated Results

We have over the report period arranged one workshop with stakeholders and visited a range of farmers and local managers. These informal meetings are crucial and absolutely vital for the implementation of project plans as many practical aspects of the project include permissions and co-operation with farmers and local managers. Several local and regional newspapers have been interested in MIGRAPOP. For an overview of communicated results see attachment where these are listed.

## Interdisciplinary Cooperation

The project consortium is multidisciplinary, constituting biological and sociological expertise. Through our relation to the reference group we also gain from agricultural and economical expertise. This has been vital for the project, also in terms of progress. I can't find any negative aspects of the outcome of these collaborating disciplines, but slightly more time is needed to establish collaborative links with new partners (but in general that is irrespective of scientific discipline).

## Budget in accordance to results

The funding from the Fram Centre is part of the “own funding” already included in the budget to the original application to the Research Council. However, in 2012 we received more than the original planned budget, giving us the opportunity to include another partner with agricultural experimental competence in MIGRAPOP (Landbrukstjenesten Midtre Hålogaland). Hence, we were able to establish experimental plots also at our study site in the north, Vesterålen. The funding from the Fram Centre also opened for an increased, and necessary and useful, activity towards the stakeholders.

Could results from the project be subject for any commercial utilization

No

If Yes

But the results might substantially help farmers in the north to get more harvest (quality and quantity) out of their land

## Conclusions

At present we are in a very good dialogue with the agricultural authority at the national (Statens landbruksforvaltning) and regional/local level (county/municipality). The data gathered in MIGRAPOP, and models eventually produced, will serve as a sound basis in their management of the subsidy scheme. Moreover, the environmental authority is a close collaborator (leading our reference group where all stakeholders are represented), and results will enlighten the goose conflict through data and information which can be used in the regional management plans in addition to the optimisation of the compensation system;

1) *Do the present system provide best biological value for the money?*

2) *Are the payments sufficient?*

In December 2013 we will organise a workshop (supported by the Research Council, Miljø 2015) for stakeholders. We will invite relevant stakeholders and key persons involved in goose management and the processes involving agricultural interests and geese. The main focus will be the implementation of gained knowledge over the project period (also including another project – GOOSEHUNT); *how can our findings be useful for the society?*