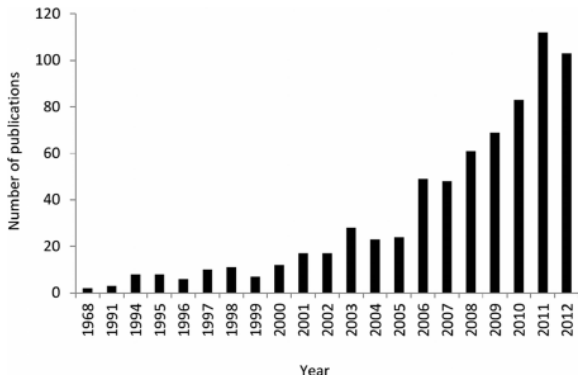
Camera trapping wildlife in Scandinavia - challenges and opportunities

John Odden

Norsk institutt for naturforskning



The number of research articles using camera traps published per year

Rovero & Zimmermann 2016. Camera trapping for wildlife research. Exceter, UK

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New challenges - How do we monitor lynx without snow?

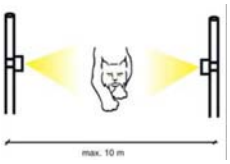
Lynx monitoring with camera traps in Europe

Integrative Zoology 2013; 8: 232–243 doi: 10.1111/1749-4877.12017

ORIGINAL ARTICLE

Optimizing the size of the area surveyed for monitoring a Eurasian lynx (*Lynx lynx*) population in the Swiss Alps by means of photographic capture–recapture

Fridolin ZIMMERMANN,[1] Christine BREITENMOSER-WÜRSTEN,[1] Anja MOLINARI-JOBIN[1] and Urs BREITENMOSER[2]



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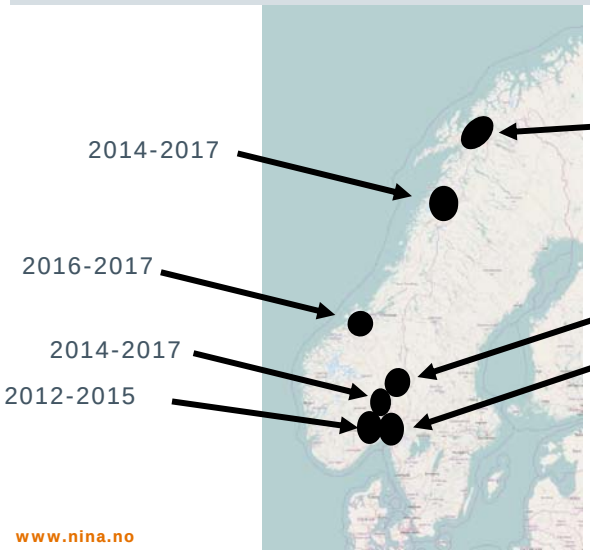
Study areas



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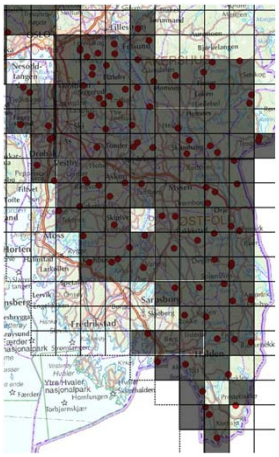
Study design

- 1 camera / 50 km^2
- "Expert placed"
- All year
- Local helpers



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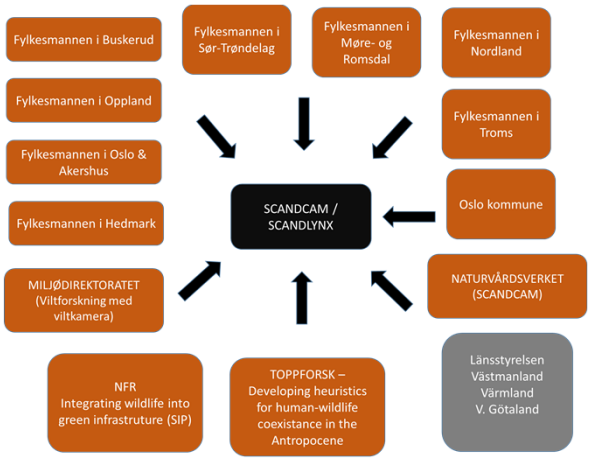
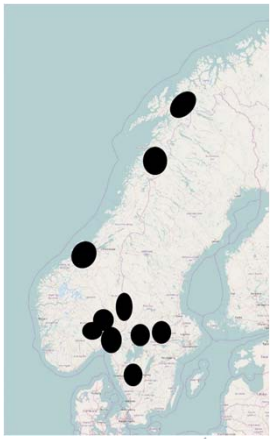
SCANDCAM - viltkamera.nina.no





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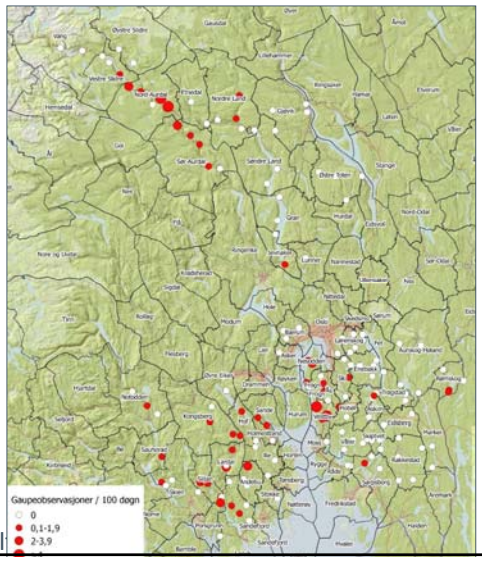
What do the cameras tell us?

- LYNX DISTRIBUTION



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What do the cameras tell us?

- LYNX DISTRIBUTION
- Species level or community level occupancy studies can help us understand mechanisms underlying distribution

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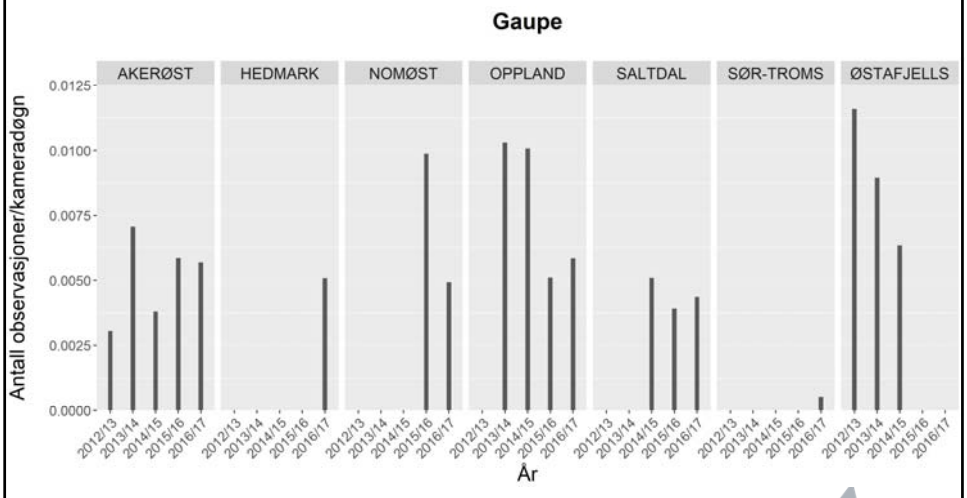
What do the cameras tell us?



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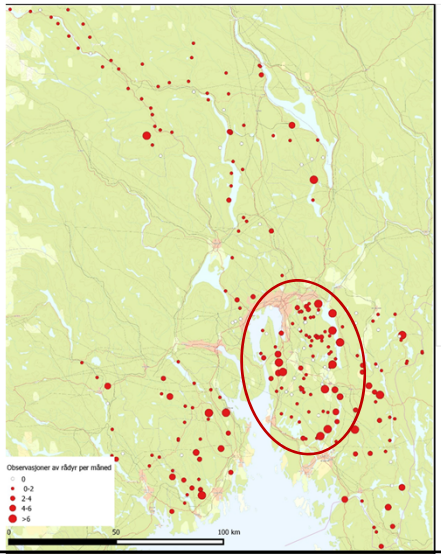
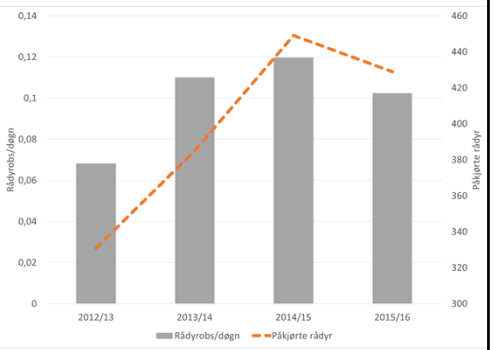
Roe deer – changes in pop. densities?





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Monitoring invasive species

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What do the cameras tell us?

- LYNX DISTRIBUTION
- INDEX
- NO OF LYNX REPRODUCTIONS

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What do the cameras tell us?

- LYNX DISTRIBUTION
- INDEX
- NO OF LYNX REPRODUCTIONS
- POPULATION DENSITY BASED ON INDIVIDUAL RECONITION OF FUR PATTERNS

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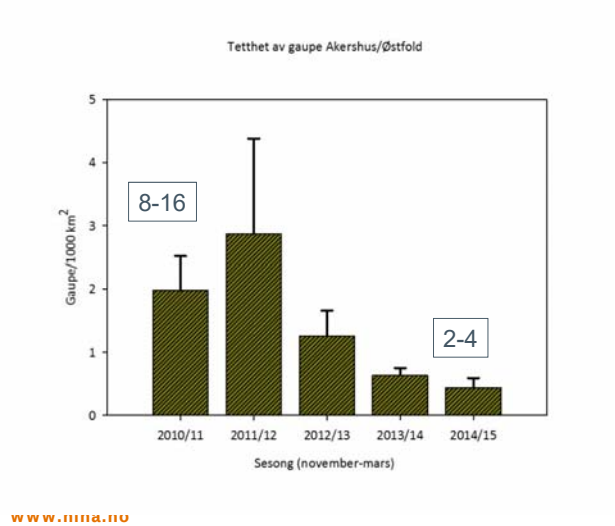
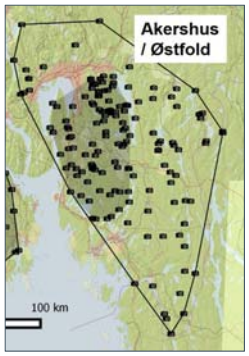
Spatially explicit capture-recapture models

Population density





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Pelt shift in mountain hares – effects of climate changes

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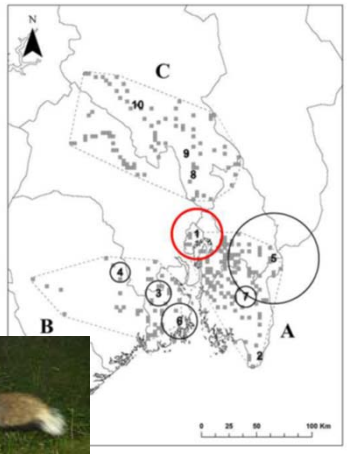
Spatiotemporal dynamics of sarcoptic mange in a red fox population in southeastern Norway

- Red foxes in an advanced stage of the disease were most likely found closer to human settlements and during periods of low wild prey availability (winter)



Carricondo-Sanchez et al. 2017

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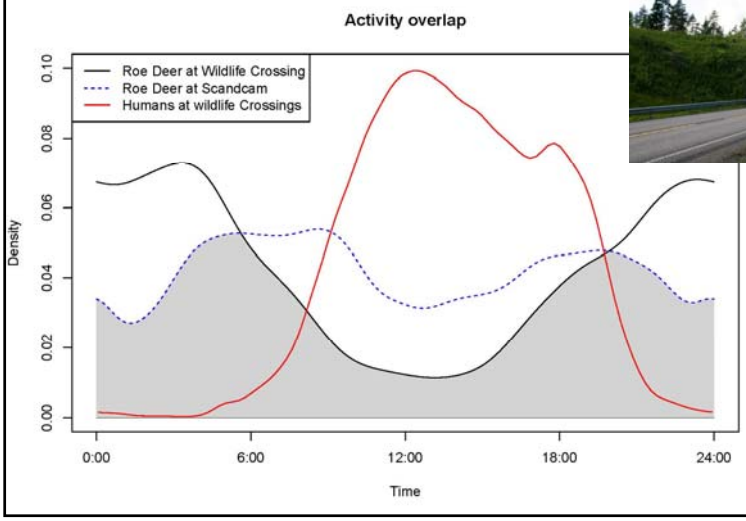
Using camera traps to study animal behaviour



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But there are many challenges…

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Using camera traps to study reproduction and survival

R701
2014 – no kittens
2015 - no kittens
2016 – kittens

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…But not cause of death

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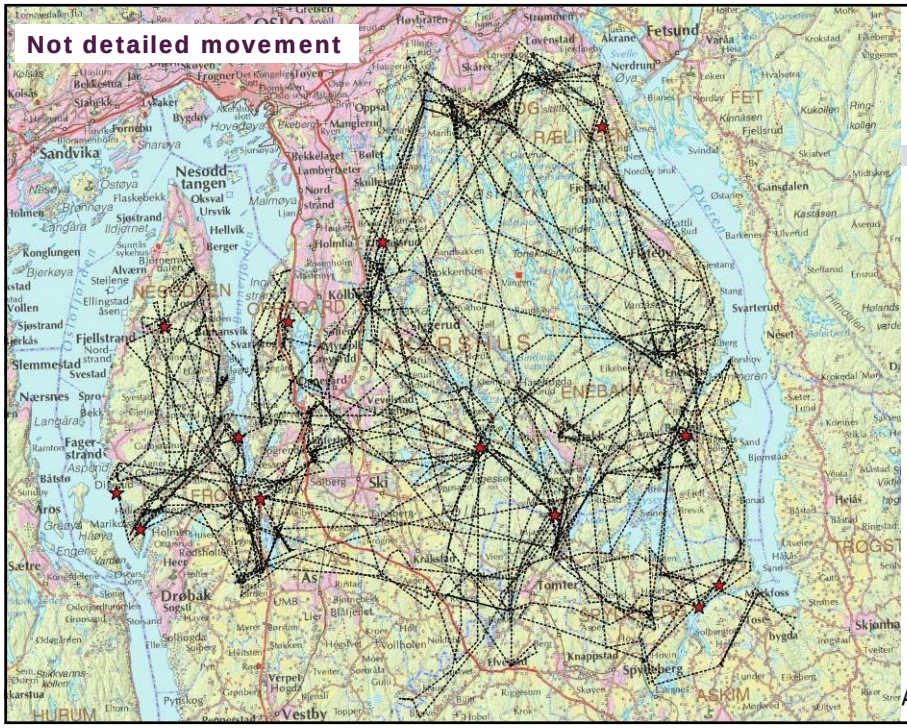
Not detailed movement



Not individual kill rates….

Foto Ken Gøran Uglebakken

Foto Jostein Hunstad

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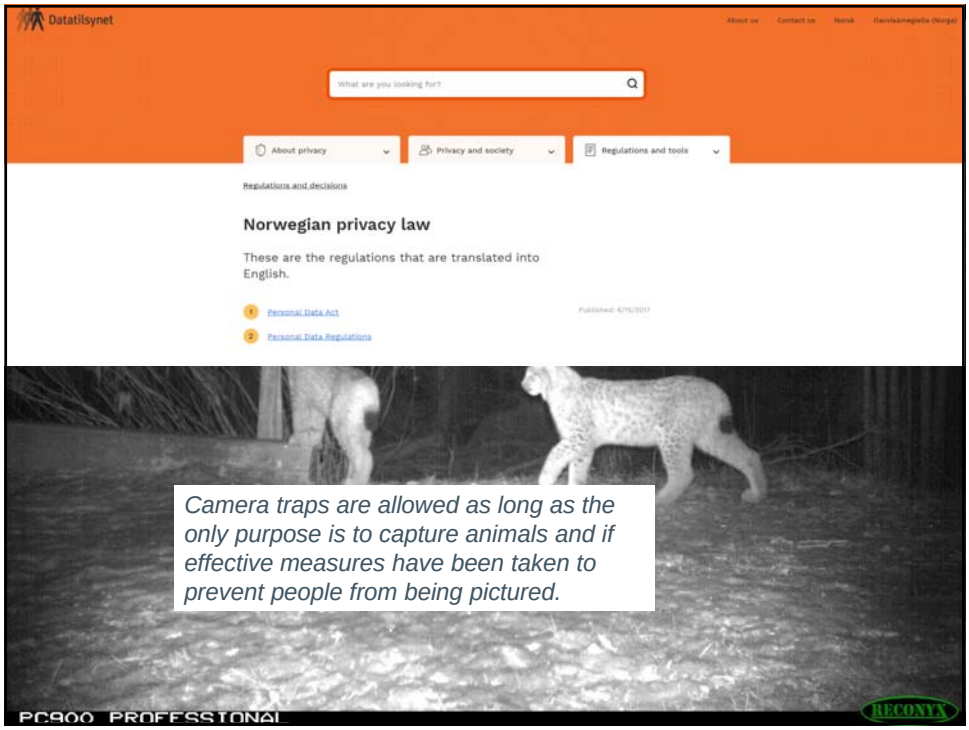
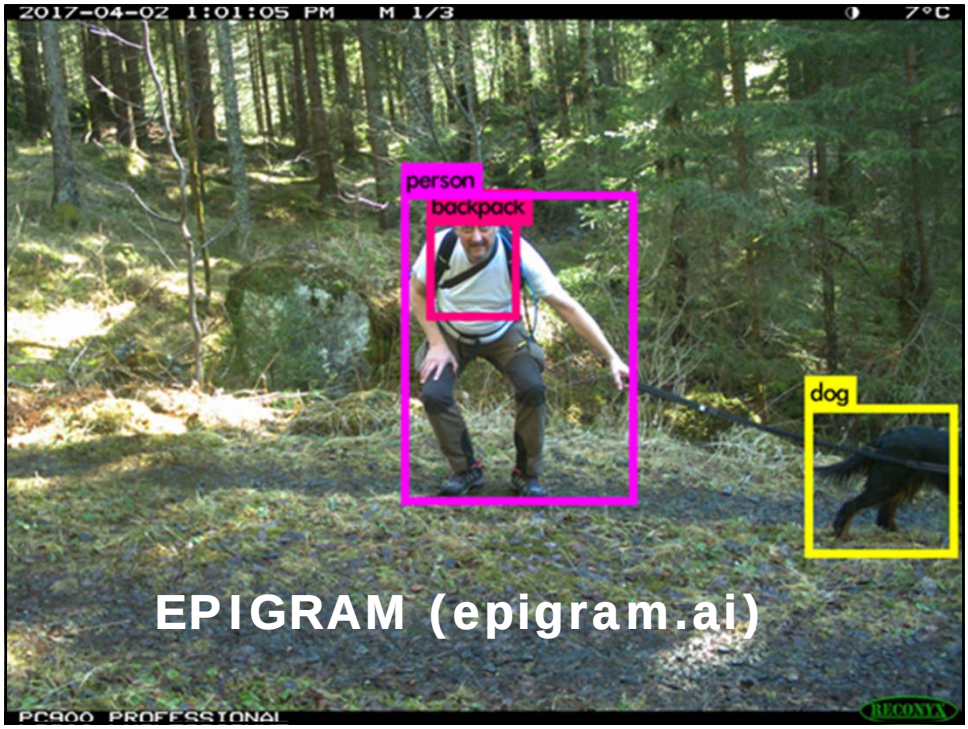


Camera traps are allowed as long as the only purpose is to capture animals and if effective measures have been taken to prevent people from being pictured.



Camera traps

- A non-invasive technique to study animals
- Cost-effective and easy to deploy
- Suitable for the detection of medium sized t large mammals..
- ..and especially detection of elusive species living at low densities, in dense vegetation, diurnal etc.
- Estimating density of naturally marked animals
- Understanding understand the mechanisms underlying distribution and population change

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However, the devil is in the details…

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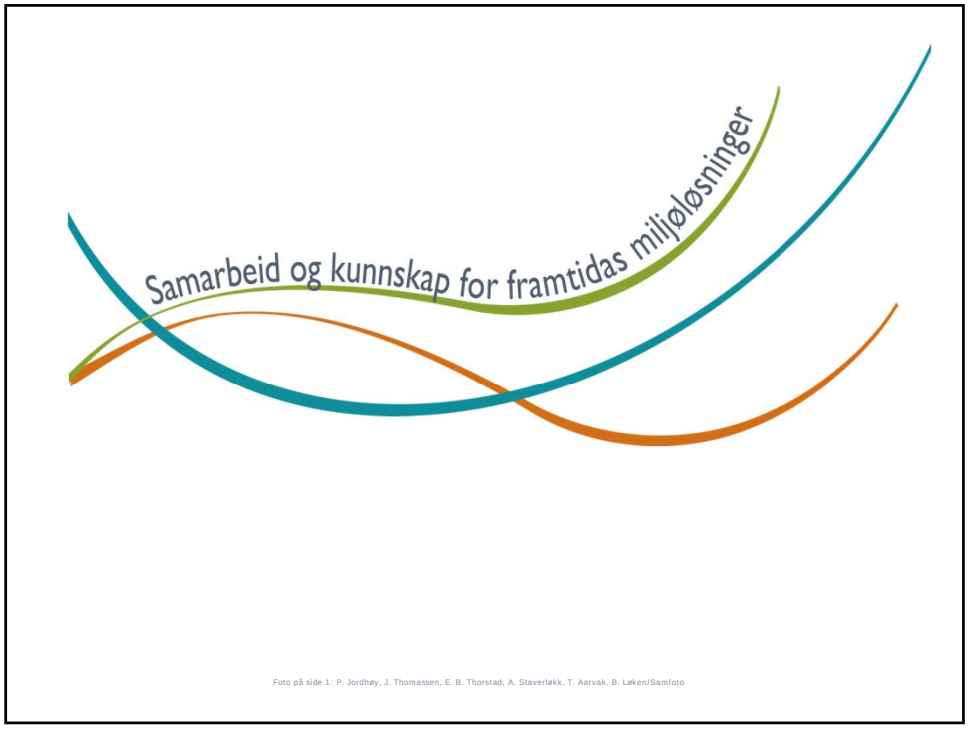
Samarbeid og kunnskap for framtidas miljøløsninger
Foto på side 1: P. Jordhøy, J. Thomassen, E. B. Thorstad, A. Staverløkk, T. Aarvak, B. Løken/Samfoto