



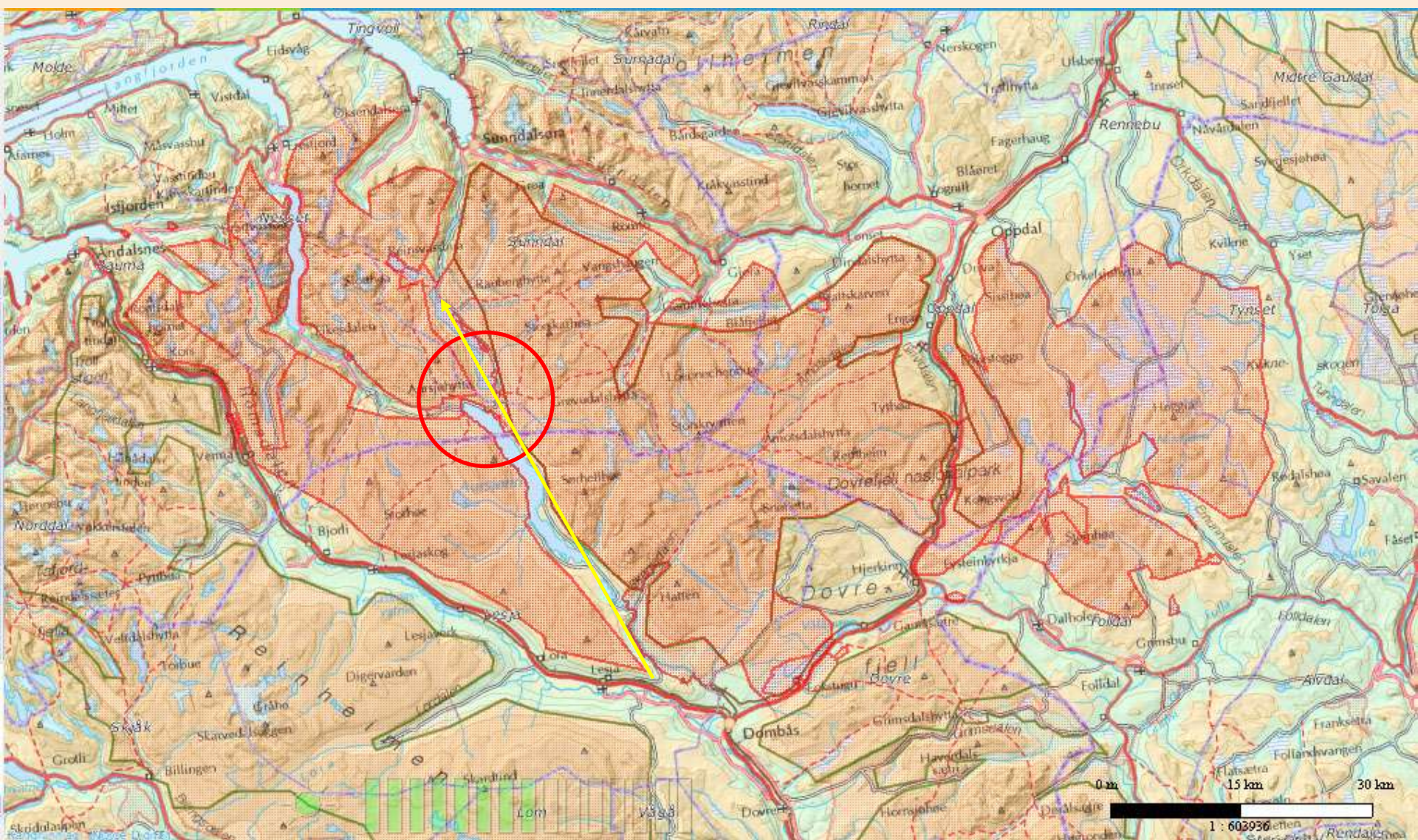
Snøhetta 2286



Dovrefjell National Park Area –carrying capacity / monitoring of people and animals



Where we are ...



Main objectives of PAs

- To preserve an (almost) intact mountain ecosystem
 - The wild reindeer!
- Cultural influenced landscapes
- Geology and scenery
- (Simple outdoor life without heavy infrastructure)

Hotspots???

- What is a hotspot?
 - Apparently not biodiversity hotspots...
 - *”Area with many endemisms threatened by human activity” ...*
 - **Here, supposedly:**
 - **Areas within PA where human activities may impair or destroy objectives / values the PA is meant to protect.**



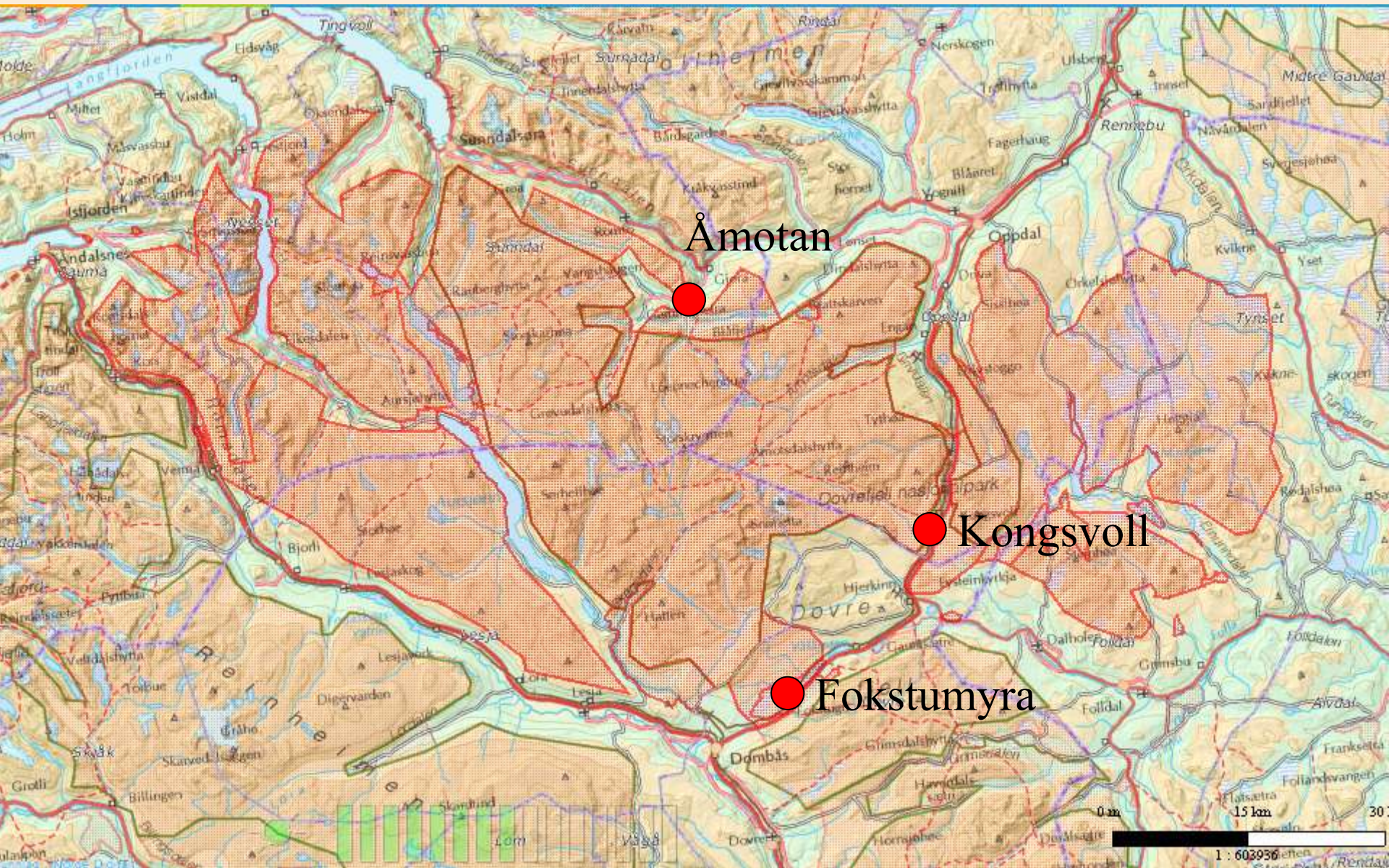
Monitoring in Dovrefjell

- **Initiated by DFR 2006**
- **The directorate for Nature management (DN) joined, thus two parts:**
 - A principal – all Norw. PAs
 - B Dovrefjell area
 - (C – field manuals, registration schemes etc)
- **Gradually implemented**
 1. Reindeer
 2. Visitor monitoring
 3. Raptors
 4. Small rodents



Monitoring initiated by Dovrefjellrådet

- **2006 – counters at Kongsvoll and Fokstumyra**
- **2008 2 new at Kongsvoll and one in Åmotan**
- **One extra moved around since 2006**
- **We use counters from Eco-Compteur. IR-based.**



Åmotan

Kongsvoll

Fokstummyra

Dovre-fjellrådet

8 kommuner og 4 fylker rundt Dovrefjell

1 : 603936

Results Åmotan

Date	Åmotan IN (down)	Åmotan OUT (up)	IN
jan 2009	23	18	0,6 %
mar 2009	34	28	0,9 %
apr 2009	49	54	1,2 %
mai 2009	157	122	4,0 %
jun 2008	671	434	17,1 %
jul 2008	1 401	1 105	35,6 %
aug 2008	932	721	23,7 %
sep 2008	562	291	14,3 %
okt 2008	62	59	1,6 %
nov 2008	16	16	0,4 %
des 2008	28	27	0,7 %
1 YR	3 935	2 875	

- Åmotan approx 4000 out, 2900 in
 - Approx 90 % during summer (June - Sept), 60 % top season (July - August)
 - So same
 - sh same
 - Vangåsen in summer 2009 (July), one representative year
 - Numbers may be coupled to parking fees (# in period 1350 i.e.3 p/car) & guestbook

Results - Kongsvoll

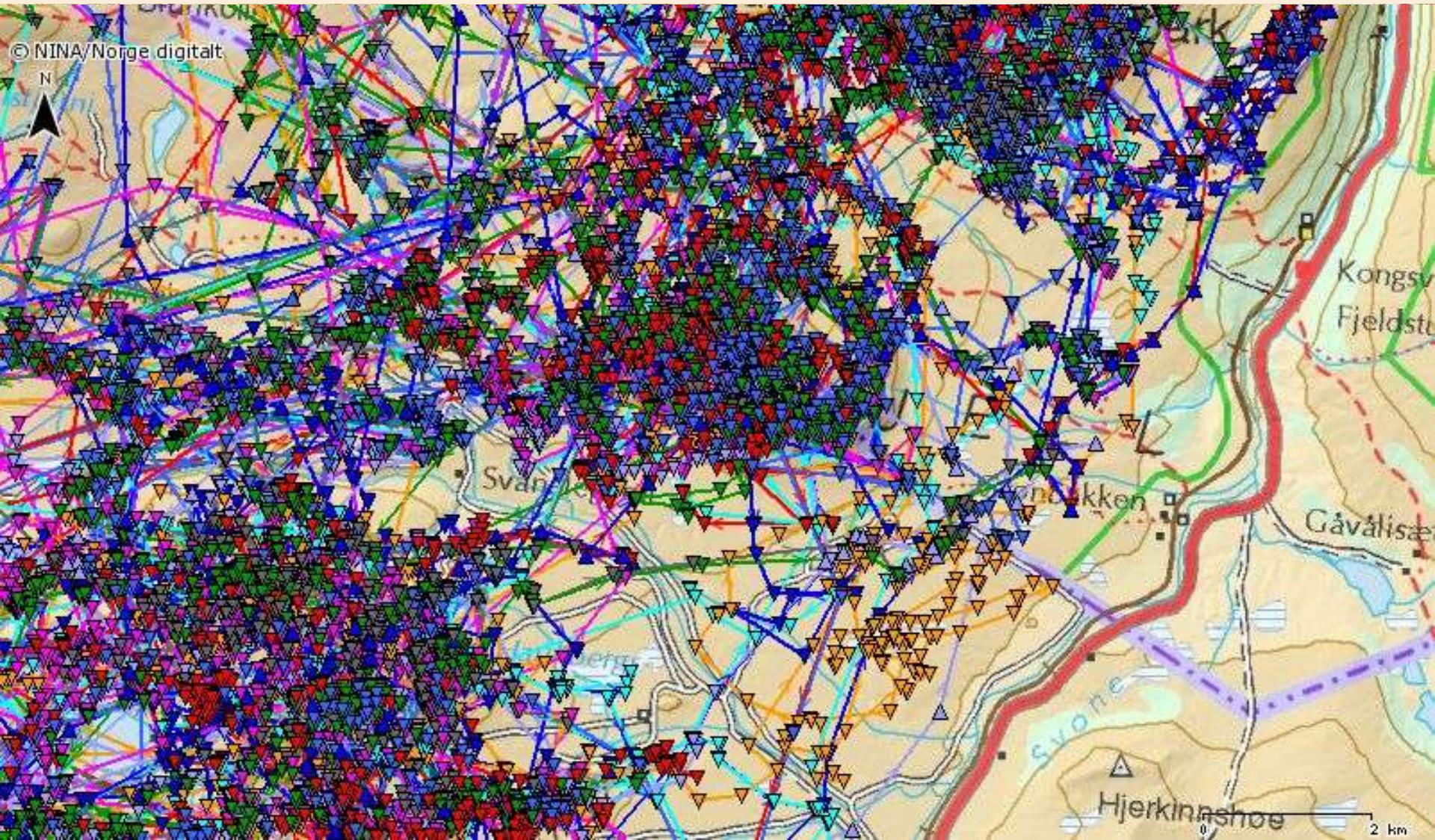
Month	# (ave)	%		
Jan	10	0,15 %		
Feb	130	1,93 %		
Mar	188	2,78 %		
Apr	190	2,81 %		
Mai	269	3,98 %		
Jun	825	12,21 %		
Jul	1 980	29,32 %	83,47 %	59,40 %
Aug	2 031	30,08 %		
Sep	801	11,86 %		
Okt	269	3,98 %		
Nov	44	0,66 %		
Des	15	0,23 %		
Totaltall	6 752	100,00 %		

- 6.500 out, 5.500 in...
- Approx. 85 % during summer, 60 % in top season
- In

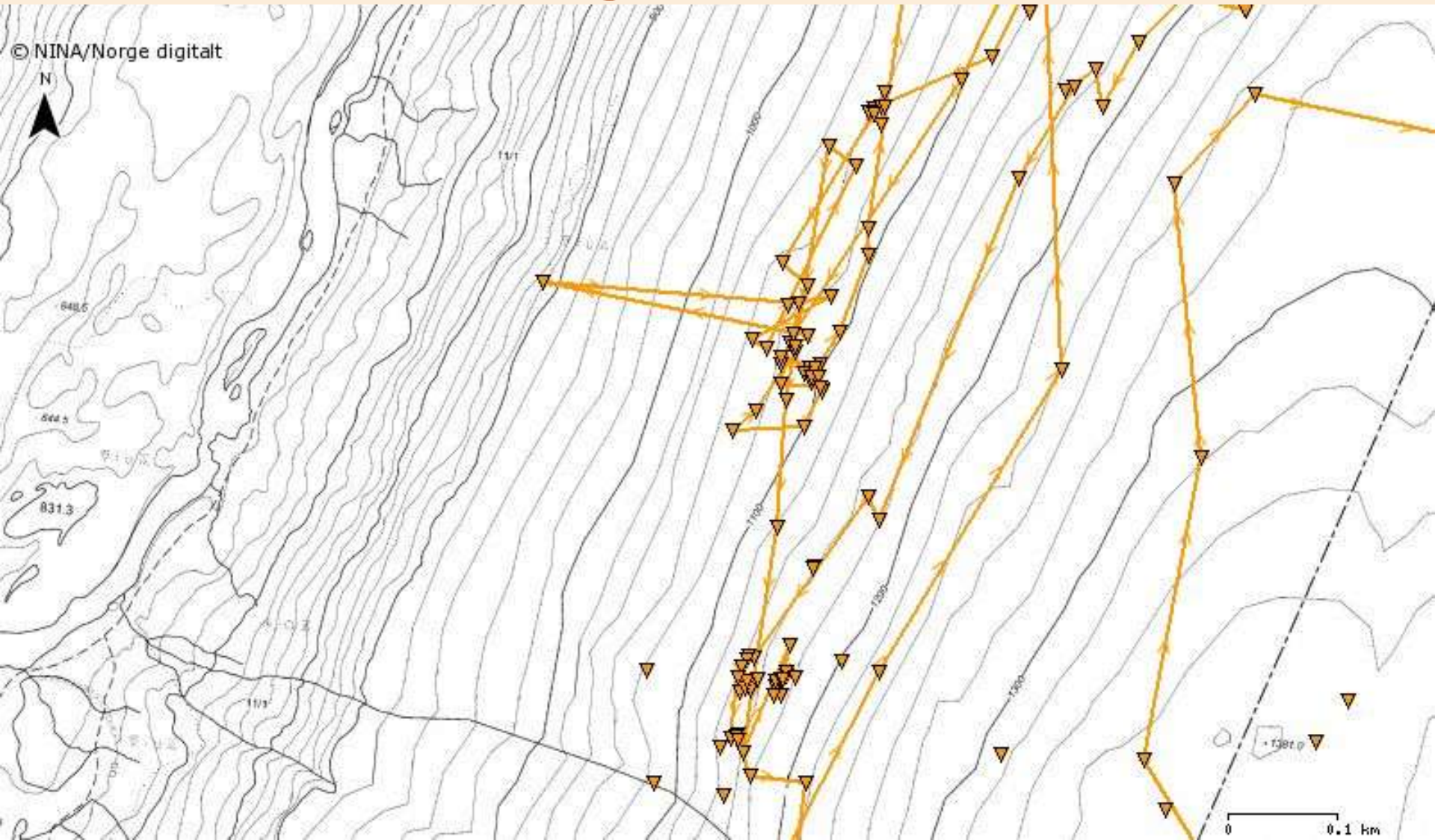




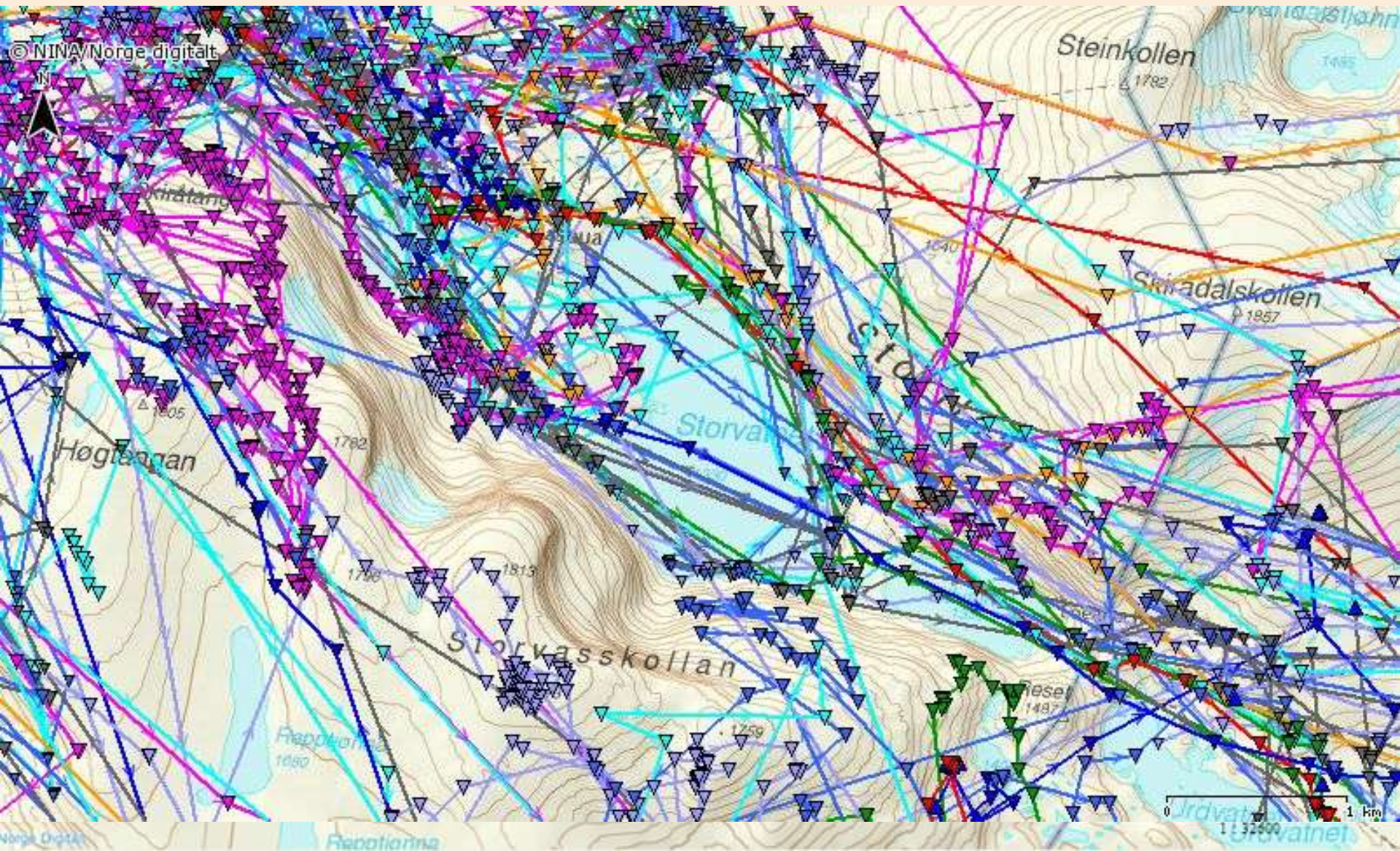
Monitoring vs. suspected "hot spots"



Following one animal...



Another hot spot – new hiker's cabin?



Visitor monitoring in Dovrefjell-Sunndalsfjella Status for snow-free season 2009



*Vegard Gundersen, Kirstin Fangel, Line Camilla Wold, Oddgeir Andersen,
Karianne Wilberg, Marius Kjøsberg*

NINA Lillehammer

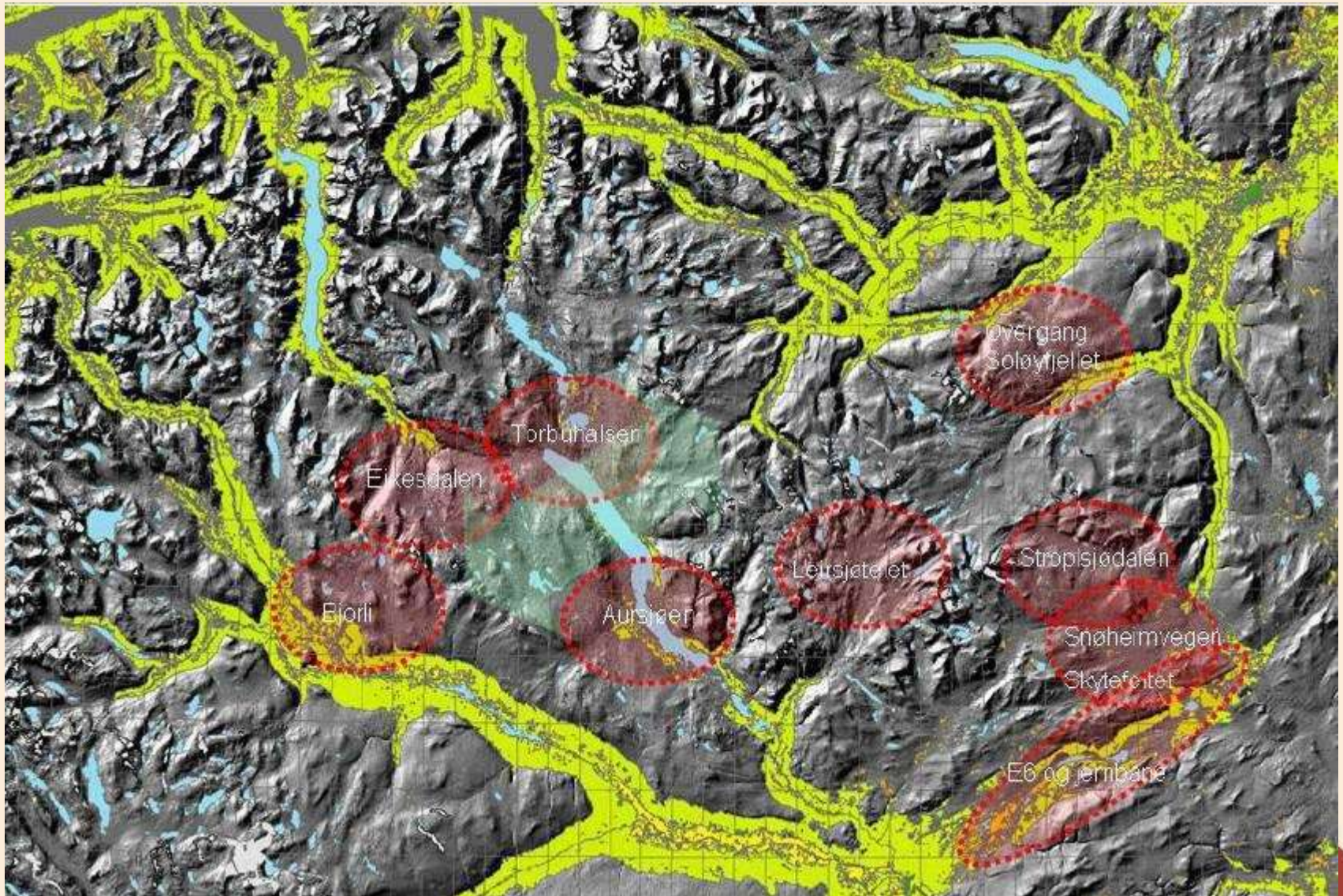
Objectives 2009

- The objective is to give an as precise as possible picture of the usage of Dovrefjell-Sunndalsfjella National Park and surrounding PAs in the Snøhetta management area for the wild reindeer. Emphasis especially on the area near Mt Snøhetta and Tourist area
- Self-register boxes (visitors are by signs on the boxes asked to answer an questionnaire) and IR-counters are supposedly giving a good overview of visitor flow from main entrances and along main routes.
- The IR-counters are supposed to
 - Give a good and high resolution picture of visitors as a function of time for the points they are placed.
 - Together with self registration boxes they will give a good measure of the actual fraction of visitors answering the enquete.

Objectives 2009

- **Questionnaire: Planned and real trips are drawn on map, to quantify in number, geographically and in time the dispersal of visitor movement from registration points.**
- **In the questionnaire the visitor also is asked to supply information on her /his use of the area and about her-/himself: Duration of trip, scope of trip, address/nationality, if the visitor is following the marked paths or not etc.**
- **E-mail addresses of respondents are collected and make follow-up possible.**

”Focus areas”



Activity snow-free season 2009

- Selvregistreringskasser 24
- Ferdselstellere 15 NINA + 5 SNO = 20
 - 13 tellere m/GSM
 - 7 manuelle
- Bortfallstudier 7 representative kasser
- Omregningsfaktorer / tellere

- Atferdstudie Dalsida av fiskere / Dagbokanalyse jaktbu
- Utprøving av GPS sporing av ferdsel (Tracksticks)

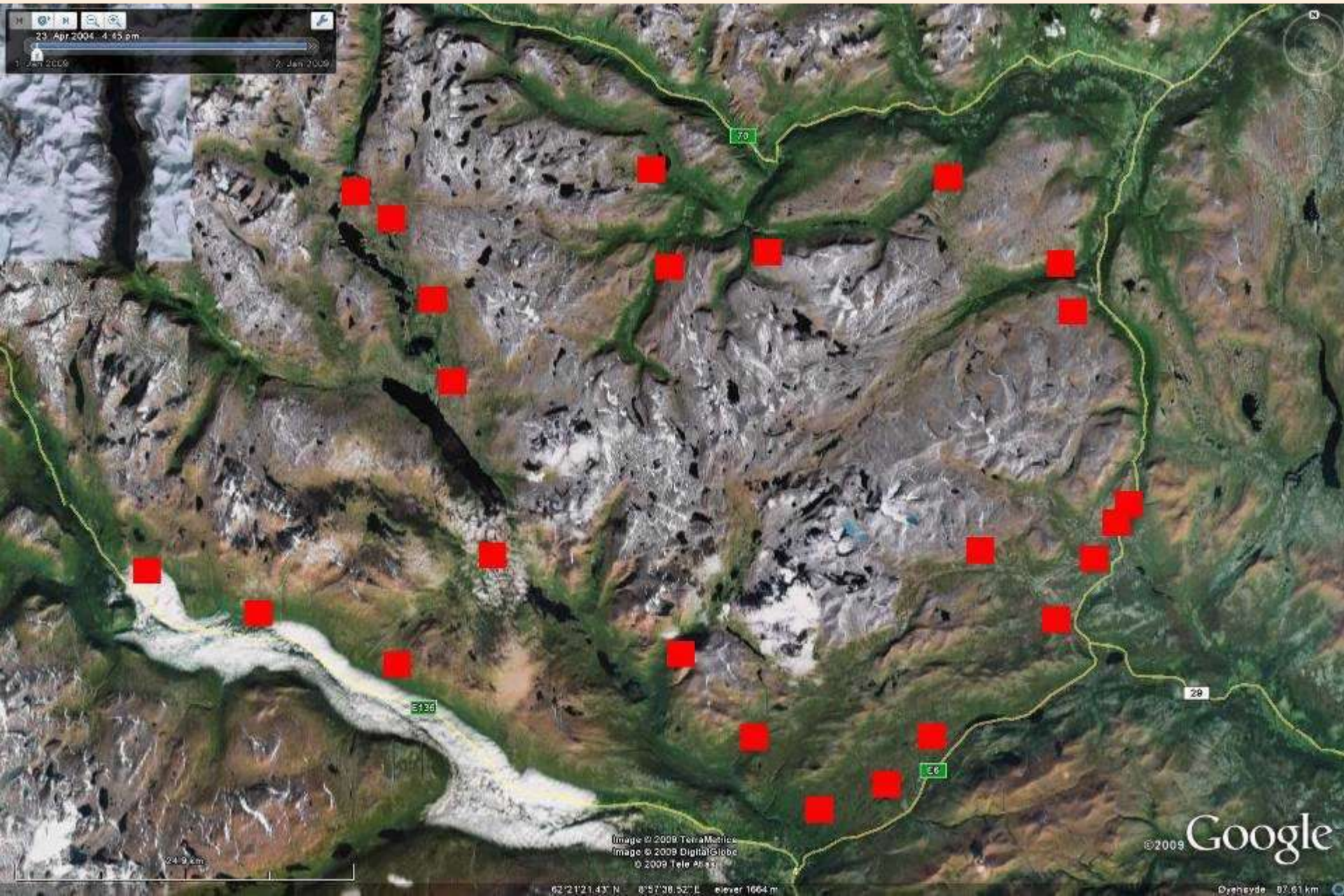
Self-service boxes

- Placed July 23th – 29th
- Displaced October 7th – 10th
- Collected approx. every 3rd week (5-12 tømminger / kasse)
- Choice of location important



- 4000 questionnaires collected
- Total # visitors = approx. 20 000 i.e. approx every 5th (20 %) stops and fills in the questionnaire

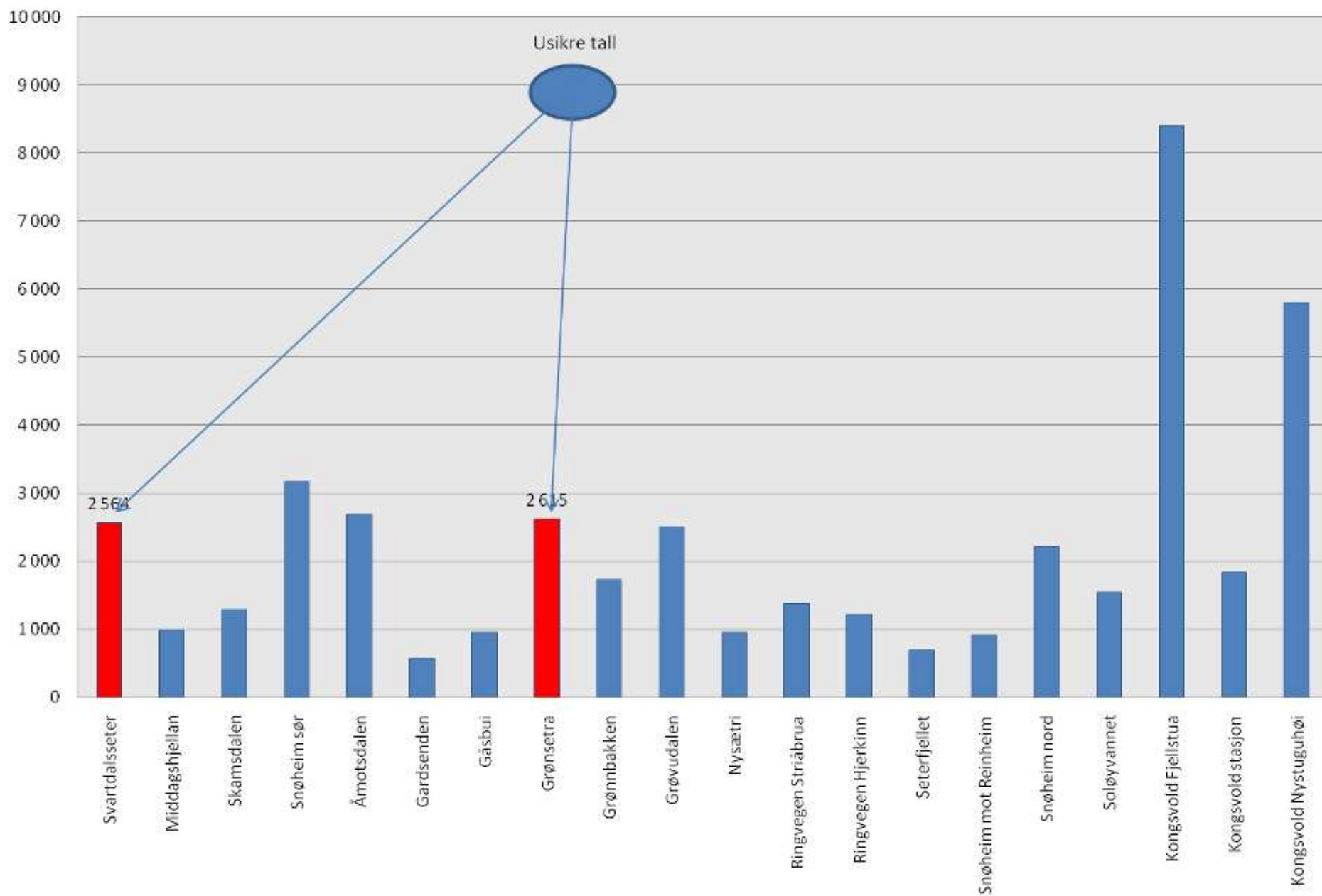
Self-register boxes





Totalt antall passeringer 5. juli - 15. oktober 2009

n = 44066



Some preliminary key numbers

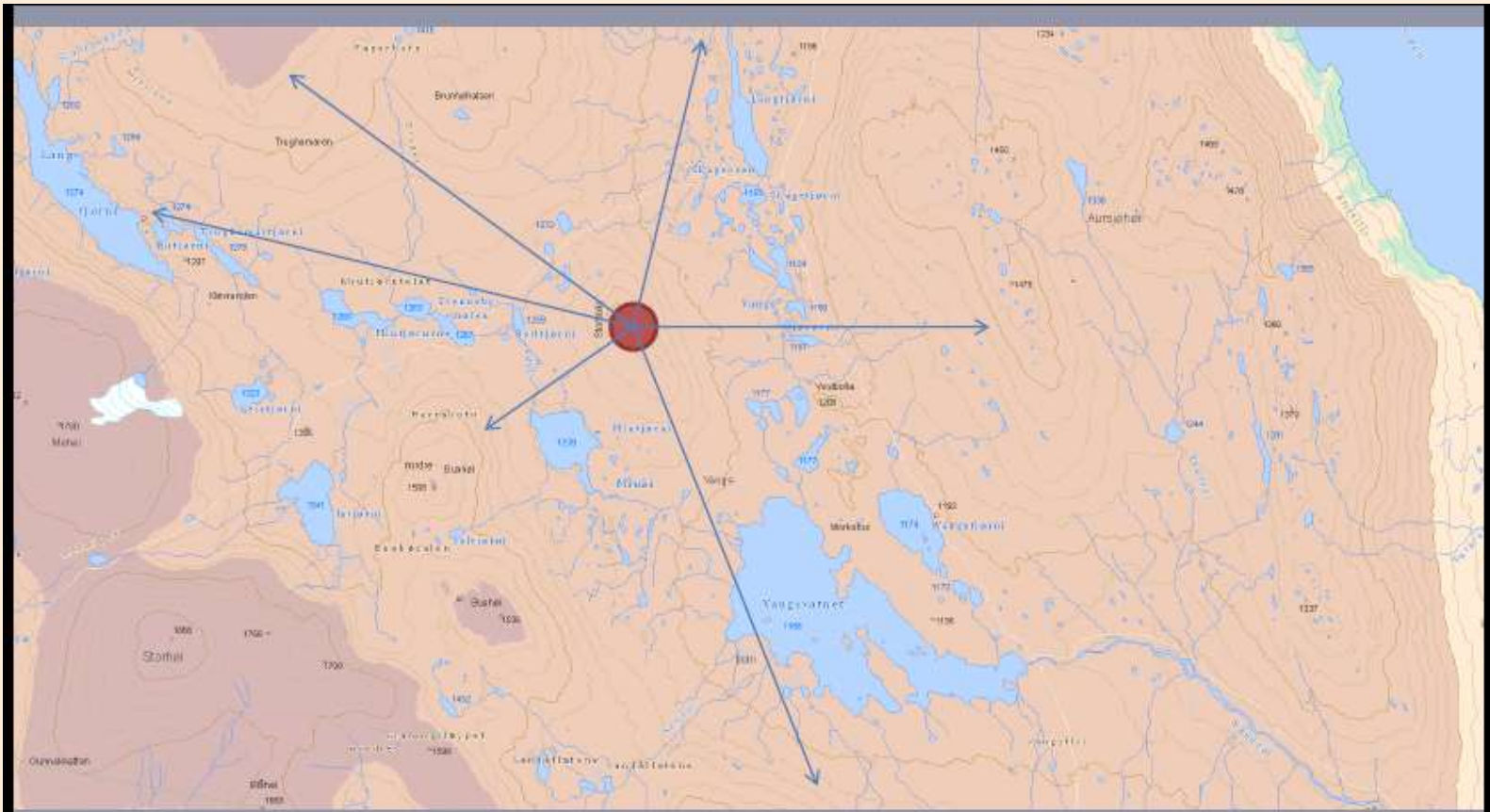
- **Approx 20 000 persons enter the area at counting points**
- **25 % of the total enters at Kongsvold (\approx 10.000 counts NB I+O!)**
 - 60 % passes counter at Nystuguhøi
- **2700 enters from Snøheim towards Mt. Snøhetta**
 - in addition 1000 countings Snøheim – cabin Reinheim
- **Åmotsdalen, Åmotan and Grøvdalen are important entering points (\approx 3000 countings)**

This is a very low number for such a huge area.

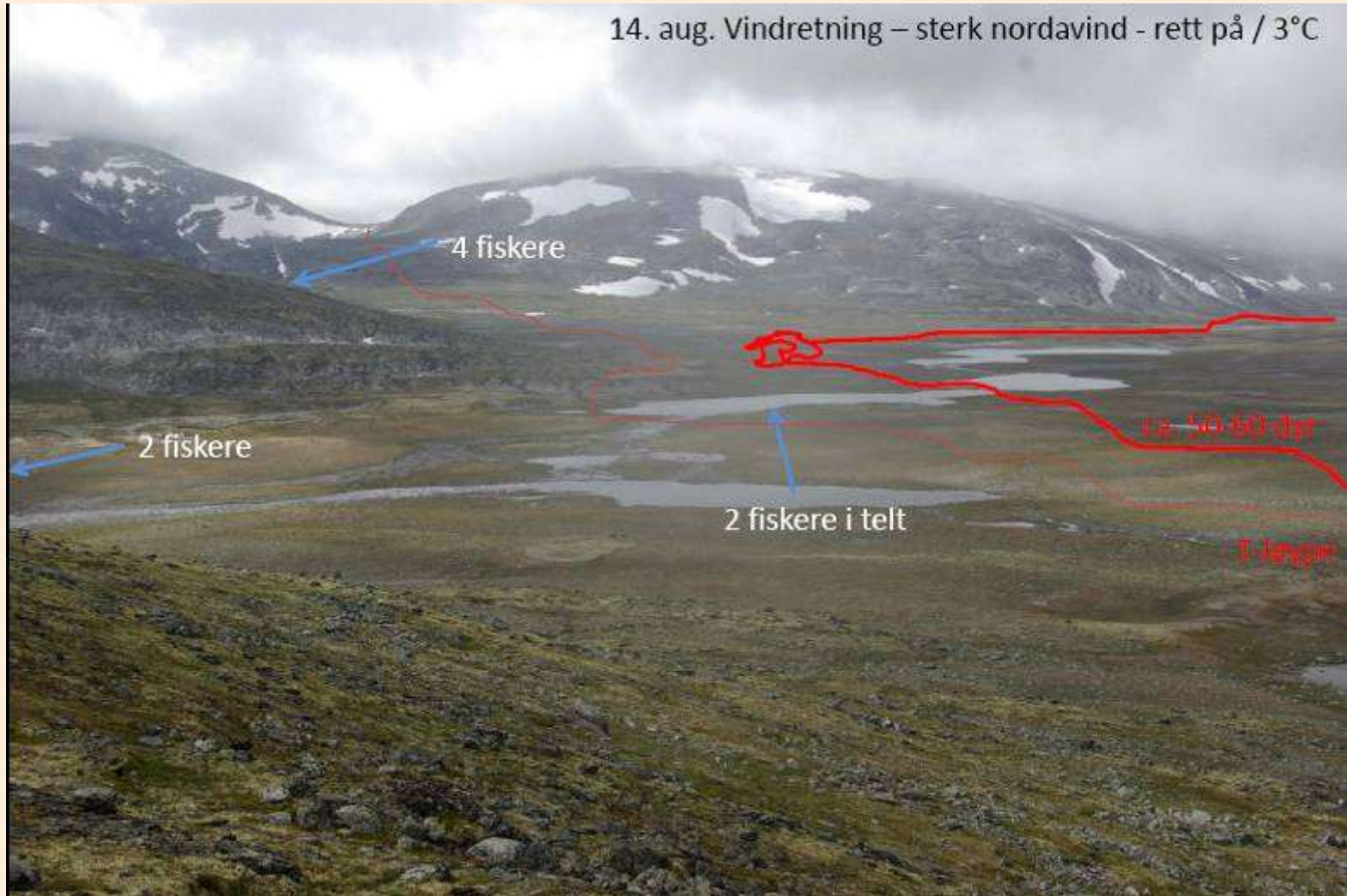
Total picture is of interest..

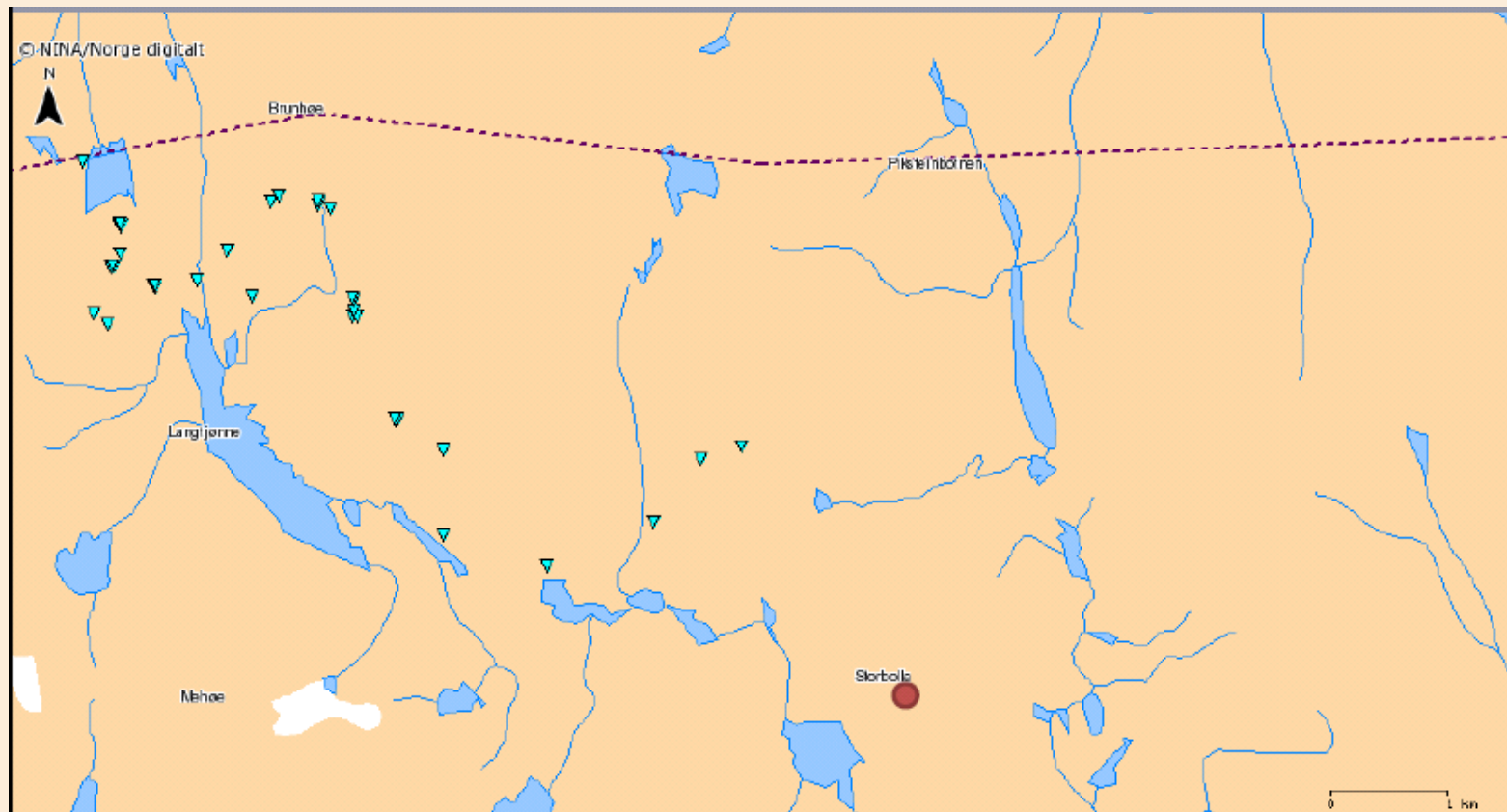
- The numbers from the guest surveys from 2008 describe
- about the same patterns of behaviour
- About the same numbers of visitors
- The guest survey gives additional information about length of stays etc (ca 75 % day visitors)

Observing behaviour



14. aug. Vindretning – sterk nordavind - rett på / 3°C









USER GUIDE

trackstick

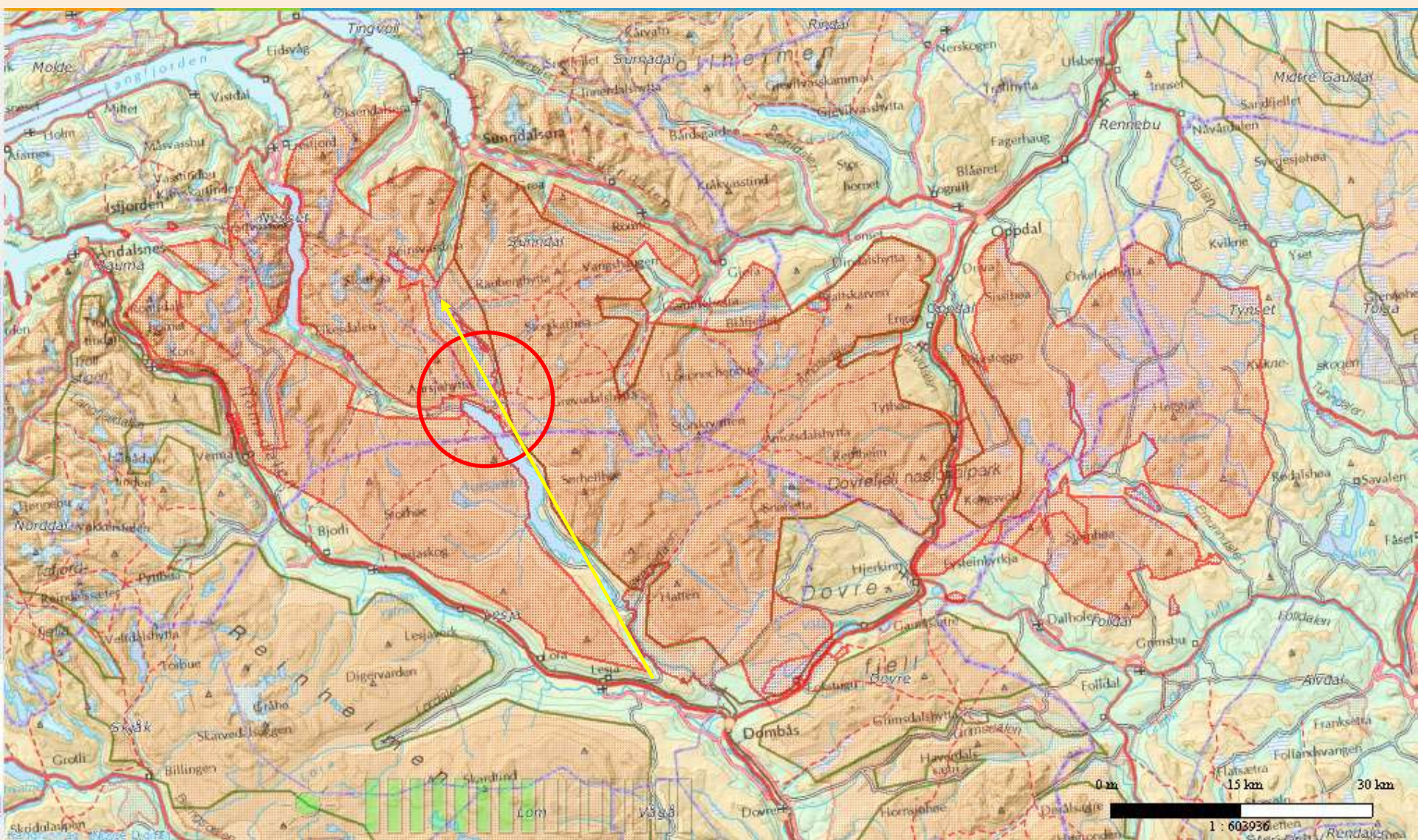
Dovrefjellrådet

8 kommuner og 4 fylker rundt Dovrefjell





Where we are ...



Thank you for your attention!



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