

# *Dyrevelferd hos sau i utmark*

## Beiteatferd

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# Beiteatferd - sau

- Bakgrunn
- Rammeverk
- Sau Genotype\*miljøsamspill i to ulike beitemiljø



Spring

Infield spring grazing



Summer

Infield winter food production



Outfield summer grazing

Norwegian sheep  
production system



Indoor feeding

Grass/roughage from infield production  
Concentrate

Winter



Infield autumn grazing

Autumn

# Saubeiting krever areal

Et "moderat" beitebelegg  $\approx 35$   
**sau/km<sup>2</sup>**

**28 500 m<sup>2</sup>**  
per sau

$\approx 2\ 000\ 000$  sau på utmarksbeite

**Arealkrav: 57 000 km<sup>2</sup>**

**Vi kan doble sauetallet –  
konsekvenser?**

(Rekdal, 2015)



# Ei kort “Norgeshistorie”



grøde



grøde



grøde



grøde



-8000

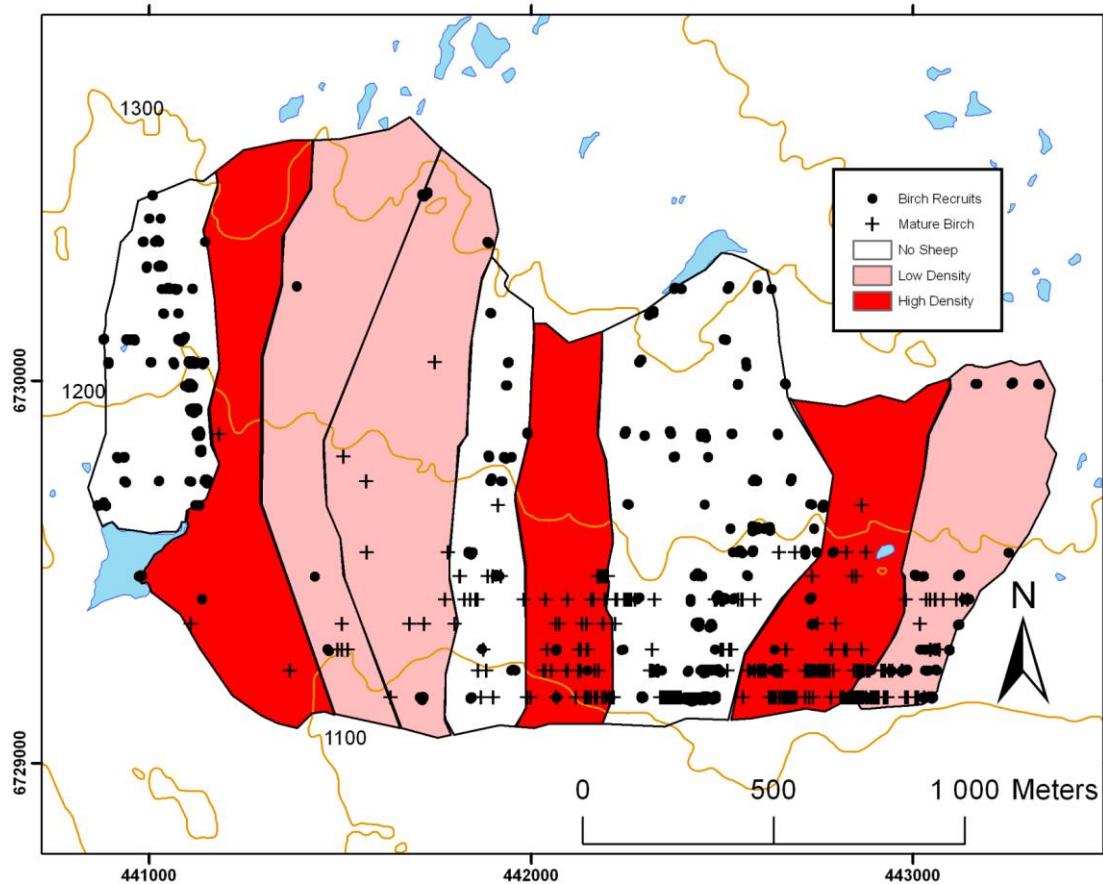
-4000

-2000

0

2000

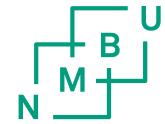
# Sauebeiting hindrer gjengroing - bjørk



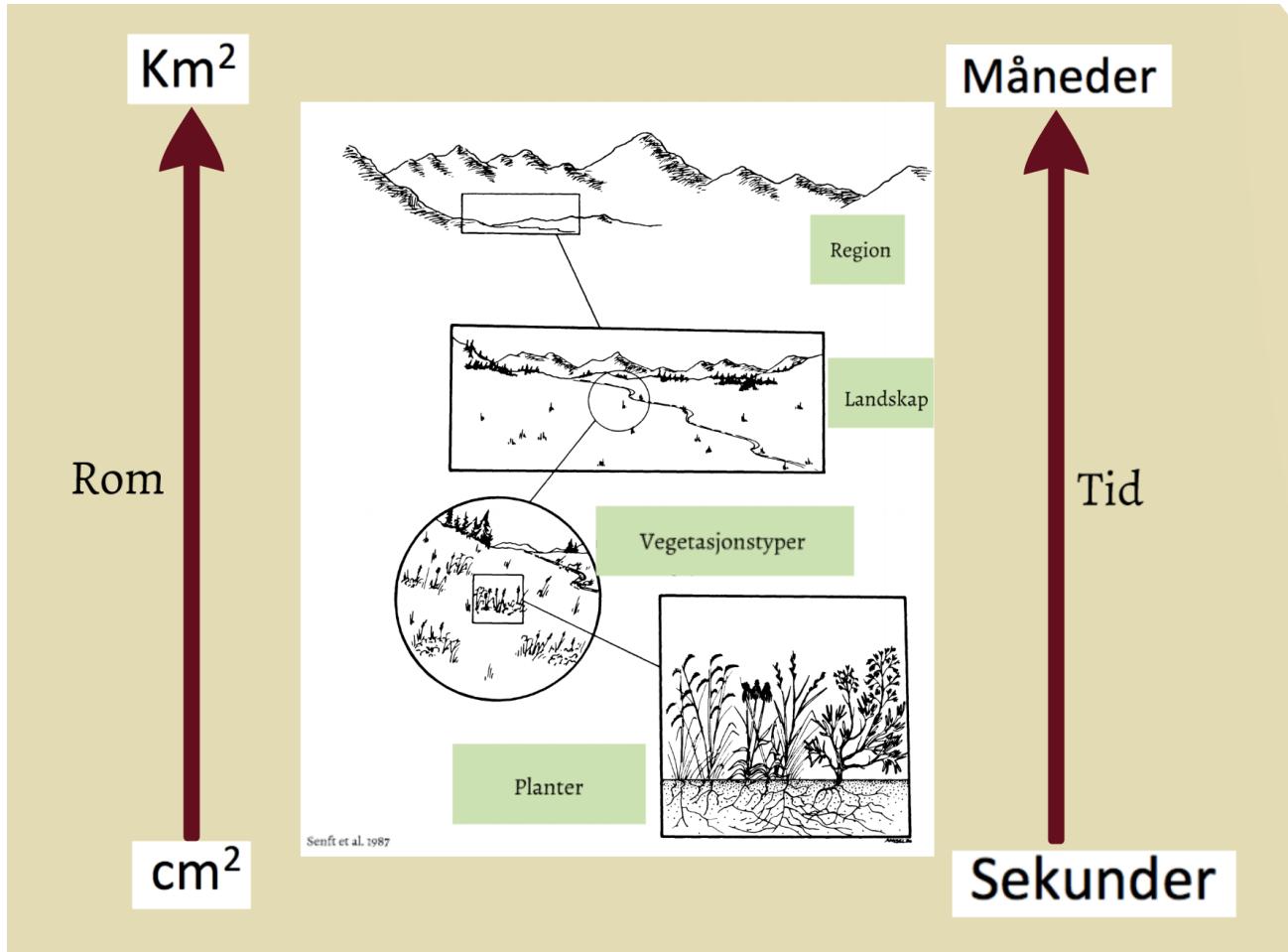
Speed et al. 2010

Betydningen for klimaregnskapet?

# Beitedyr bruker landskapet aktivt



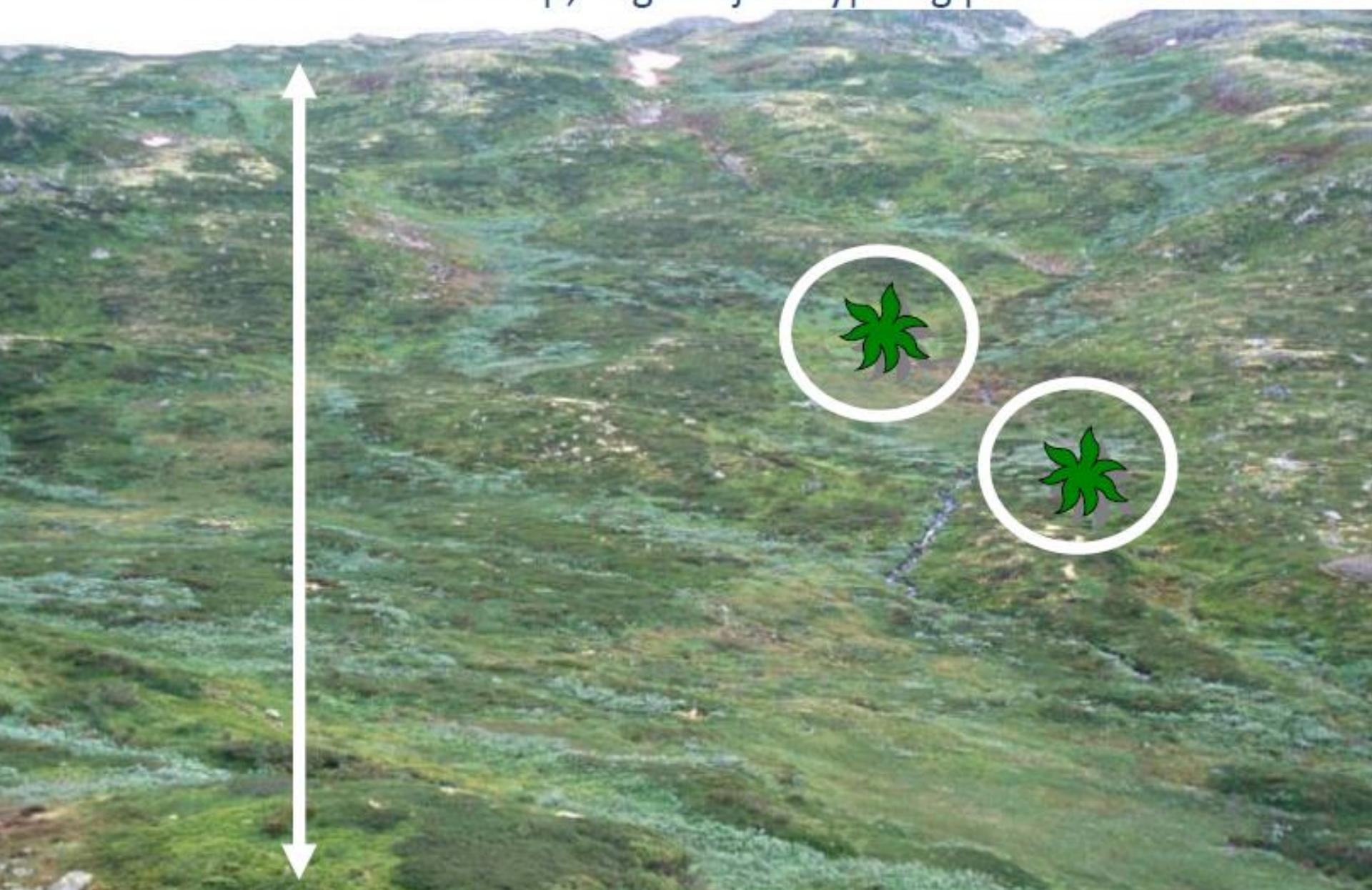
# Beslutninger i både rom og tid



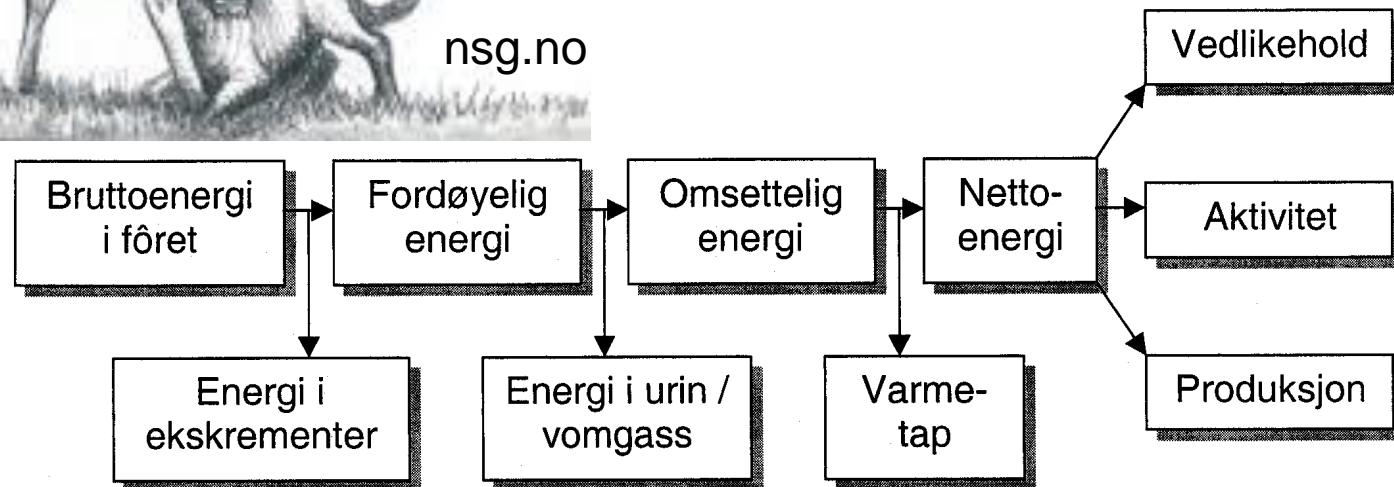


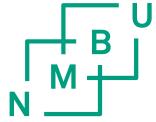
## Fjellbeite – en mosaikk av vegetasjonstyper

Tre skalaer: landskap, vegetasjonstype og plantearter



# Fitnessfunksjon (O, V R)



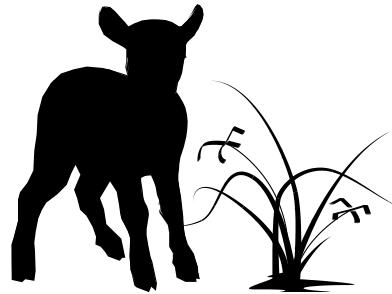


# Selektiv beiting

- Selektiv beiting hvis opptatt biomasse er ulik et tilfeldig utvalg av tilgjengelig fôr
- Beitedyra vil oftest ta opp fôr med høyere næringsinnhold enn i tilbudt fôr
- Ikke alltid anledning til å selektere,
  - f.eks. ved sterk beitekonkurranse
  - lang tid til å bryte ned fôret - drøvtygging

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# «The multiple effect»

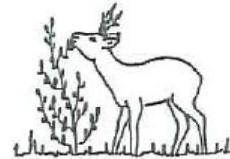
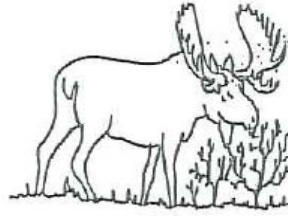
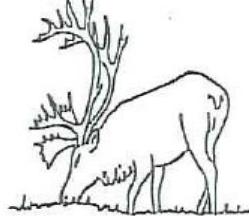
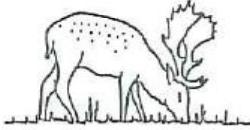
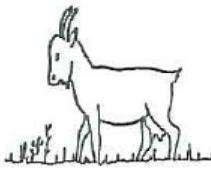
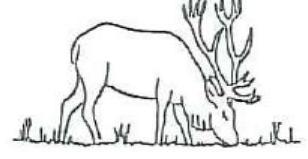
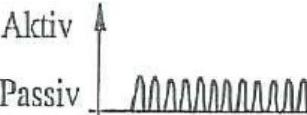
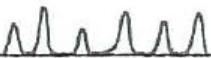
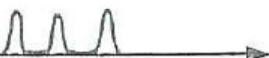


	-----	<b>Selektiv beiting</b>	++++++
<b>Fordøyelighet %</b>	<b>65</b>		<b>70</b>
<b>Tørrst.inntak (g/dag)</b>	<b>2200</b>		<b>2500</b>
<b>Omsettelig E (KJ/dag)</b>	<b>23000</b>		<b>30000</b>
<b>Vektøkning (g/dag)</b>	<b>150</b>		<b>320</b>

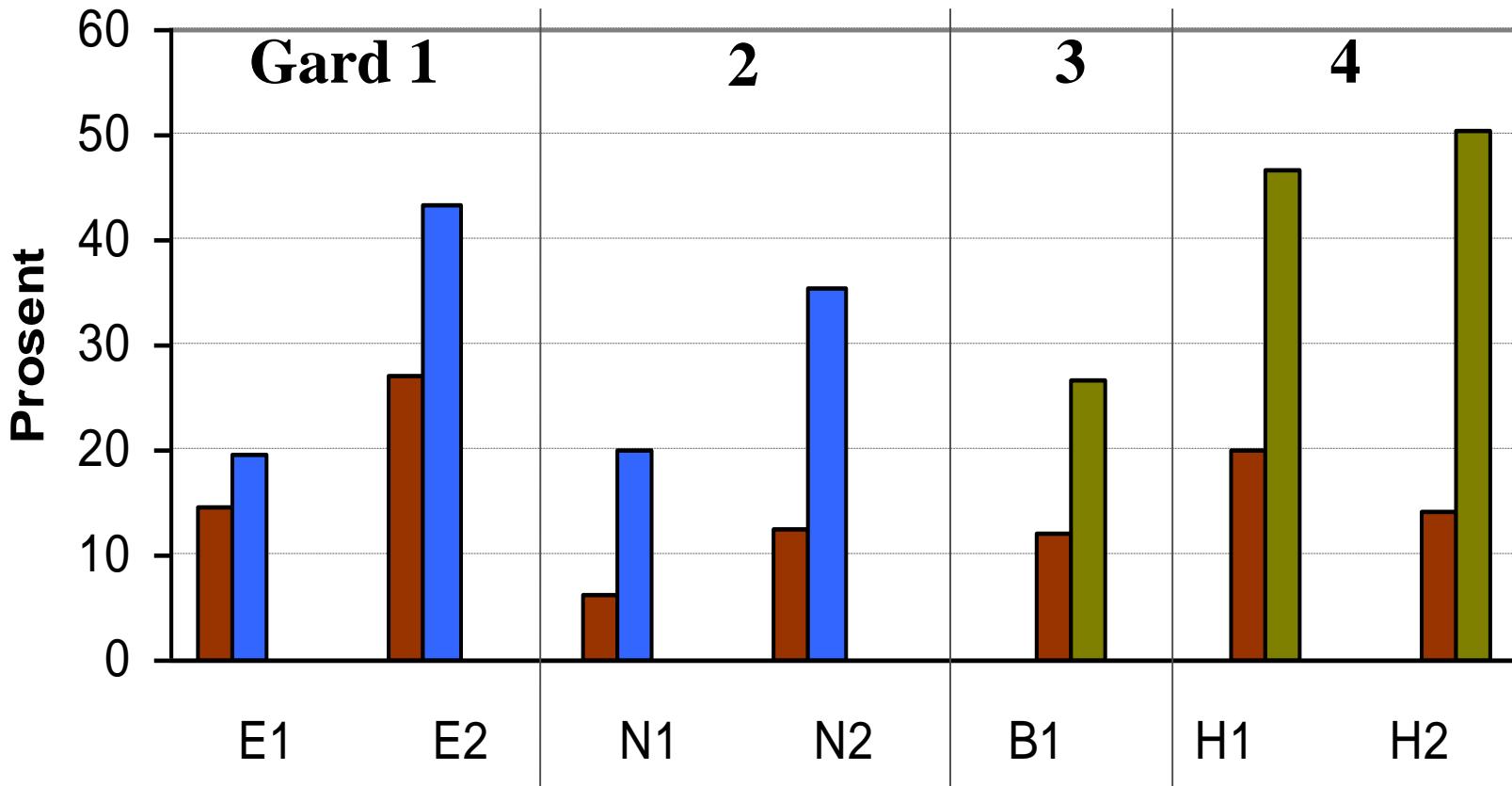
(White 1983)



Beinhardt seleksjonspress for selektiv beiting, for å maksimere energi opptaket

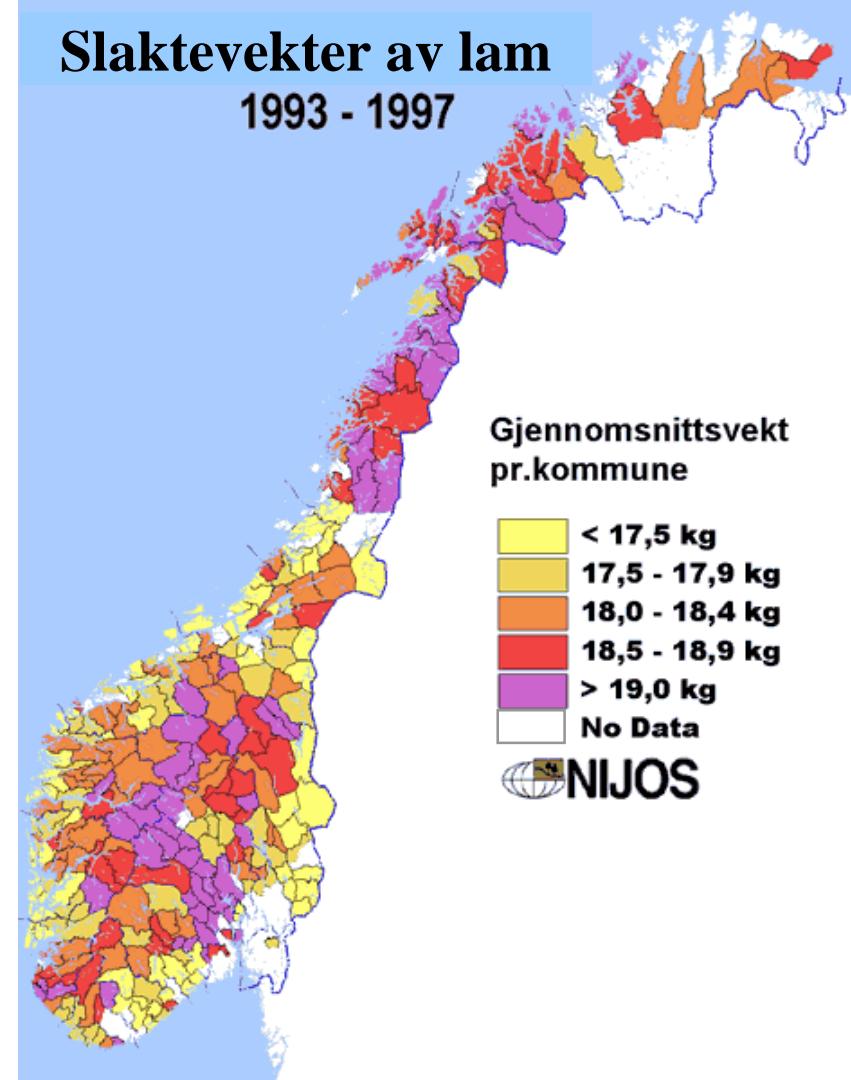
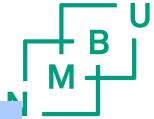
	Konsentratbeitarar	Grasbeitarar
Dyreslag	Rådyr  Elg 	Rein  Dåhjort  Geit  Hjort 
Størrelse på bladmagen		Vom  Bladmage
Beiteaktivitet	Aktiv  Passiv	 

# Vedfôrbeiting - dala, pels- & spælsau

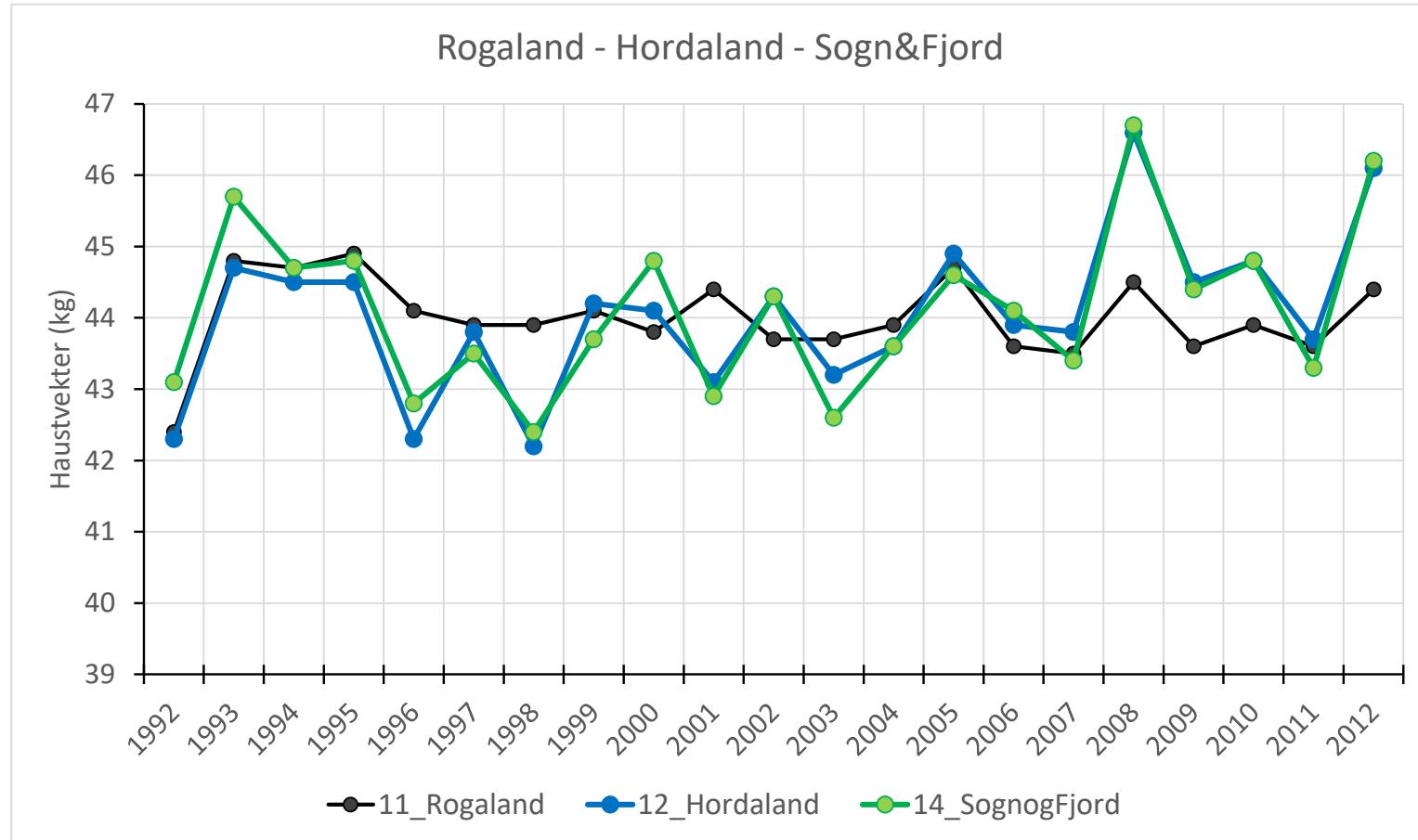
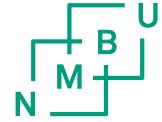


- Prosent av beitetid brukt på beiting av lauv, kvister & bark

# Miljøvariasjon oppdatert kart på veg



# Samvariasjon i haustvekter

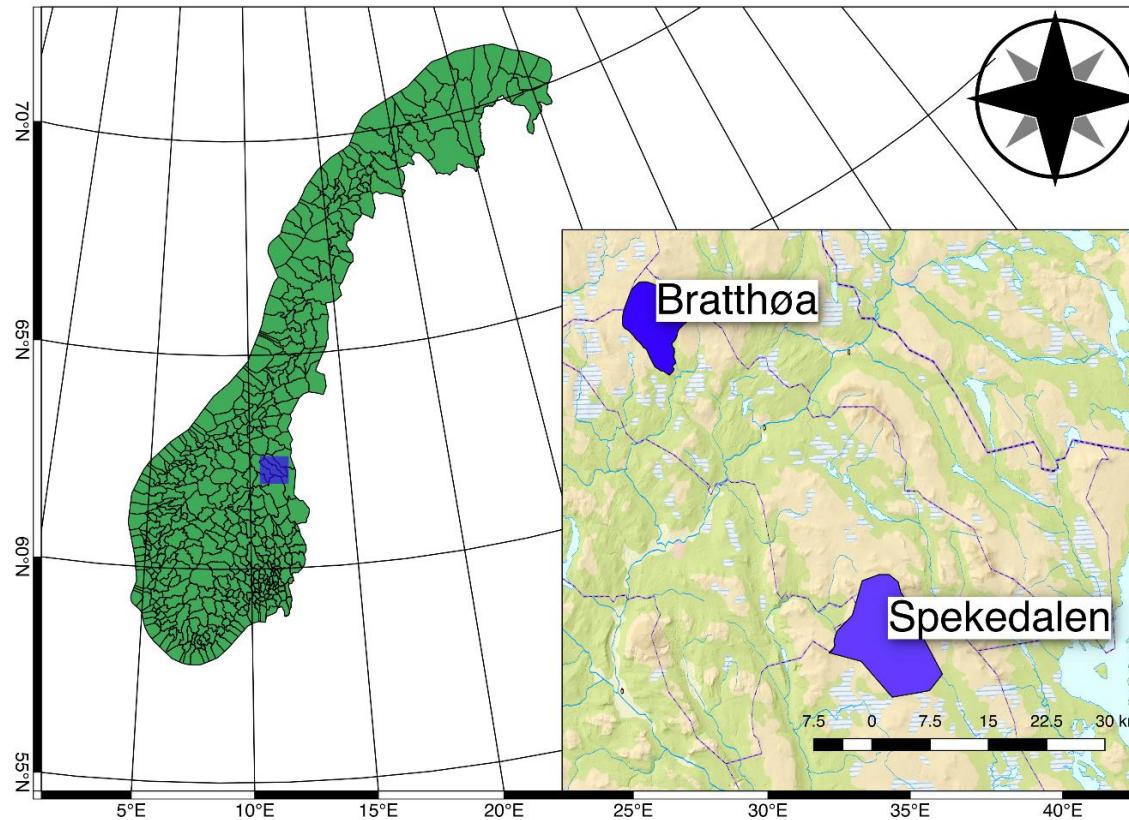
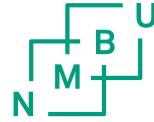


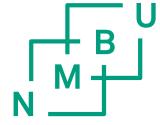


# Genotype\*miljøsamspill

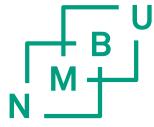
- arealbruk og beiteatferd

# Studieområder, vegetasjonskartlagt (NIBIO)





(M. Angeloff)



(M. Angeloff)

## Habitat produktivitet

**Høy:** lågurteng  
høgstaudeeng



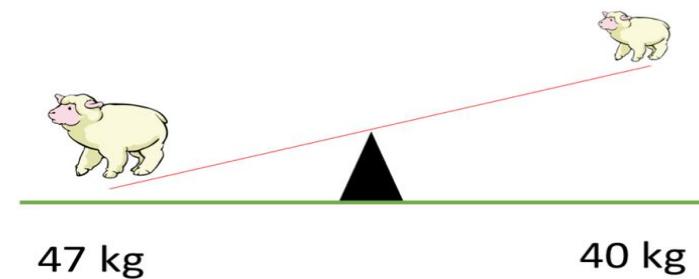
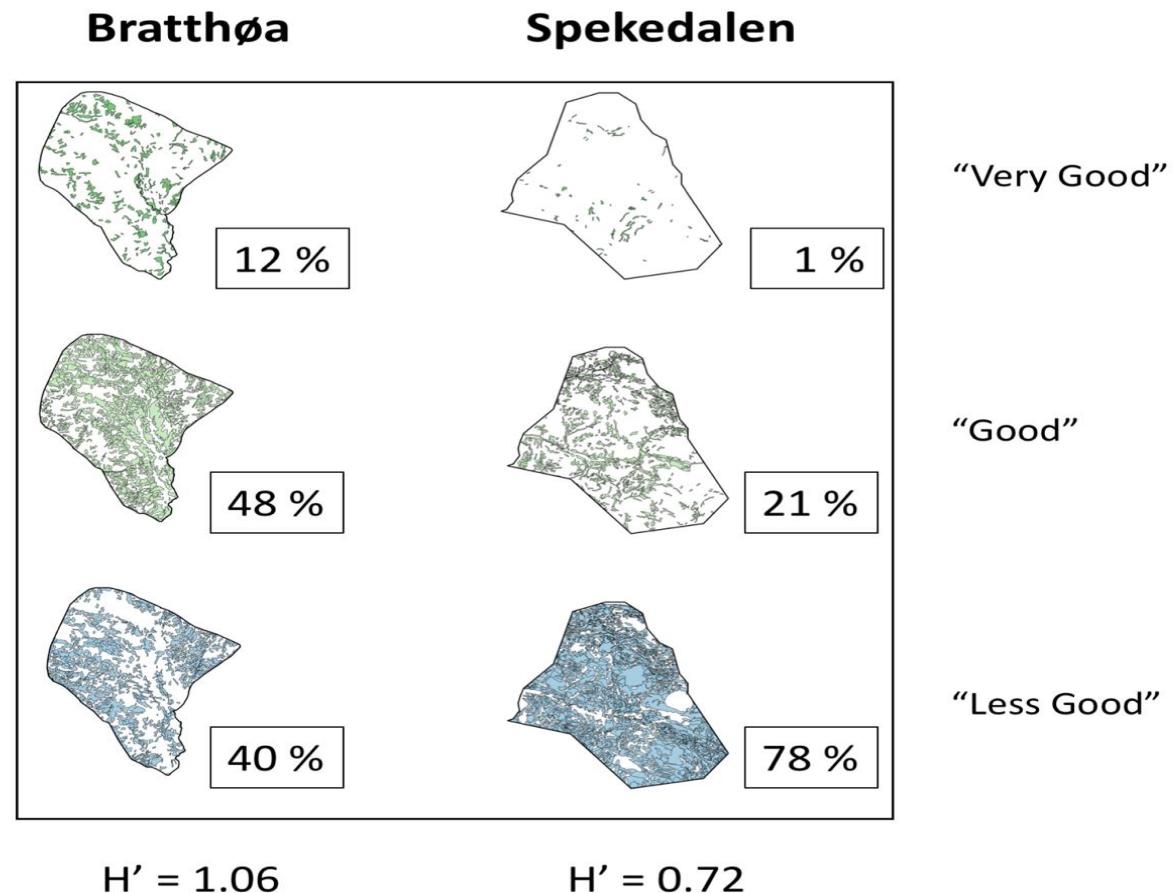
**Medium:** rishei  
grassnøleie

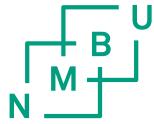


**Lav:** lavhei  
mosesnøleie  
rismyr/grasmyr  
polygonmark



# Bratthøa vs Spekedalen, beiteverdi





# Søyer – GPS – klaver logging hver time

		Rase	23.06.13 - 22.08.13	23.06.14 - 22.08.14
Spekedalen		NKS	7	6
		SP	7	3
Bratthøa		NKS	9	6
		SP	7	6

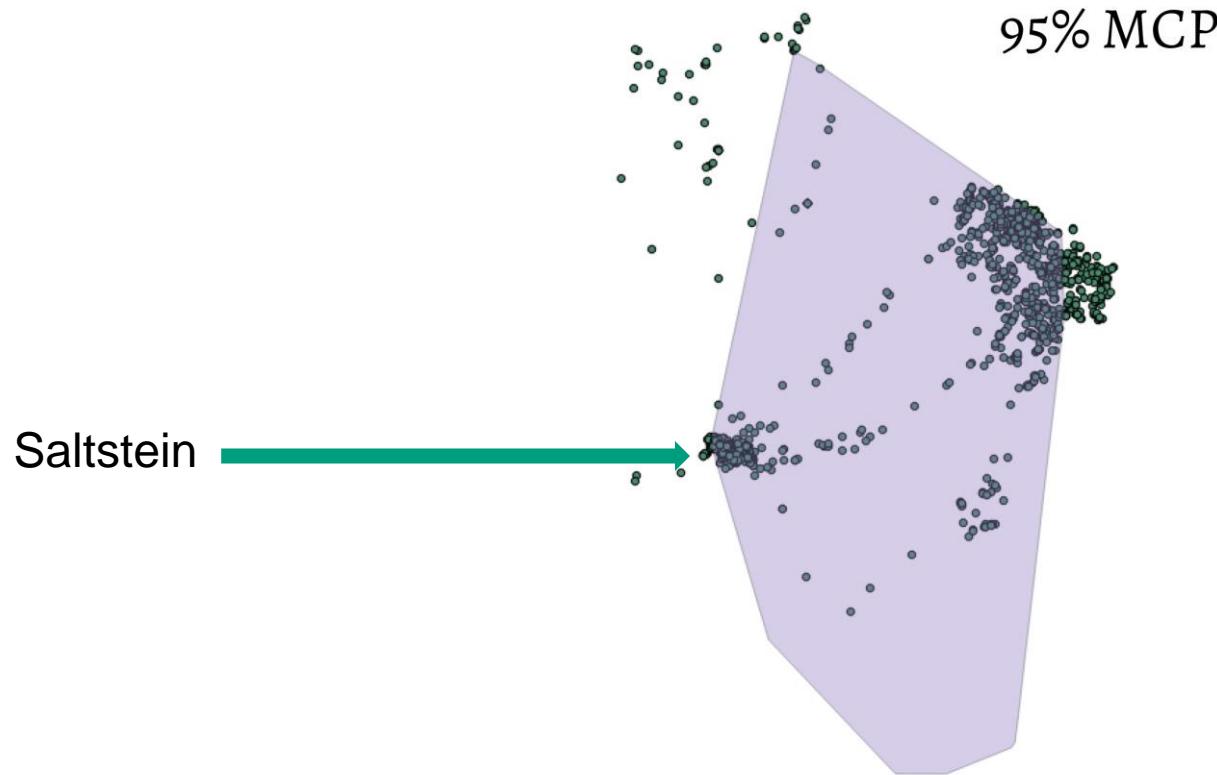
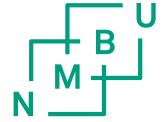
# Aktivitetsloggere



June

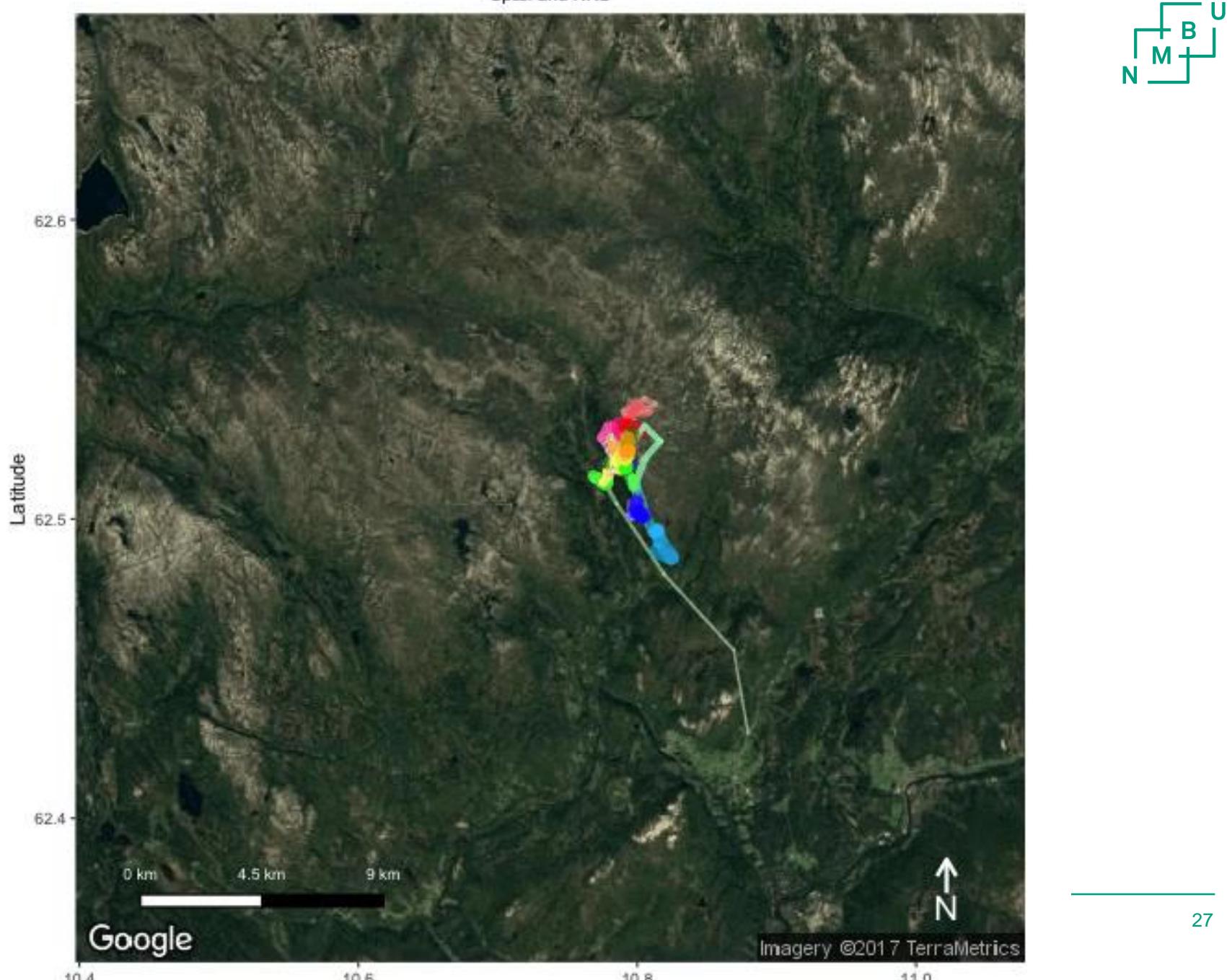


# Ett dyr i Spek edalen gj. sesongen

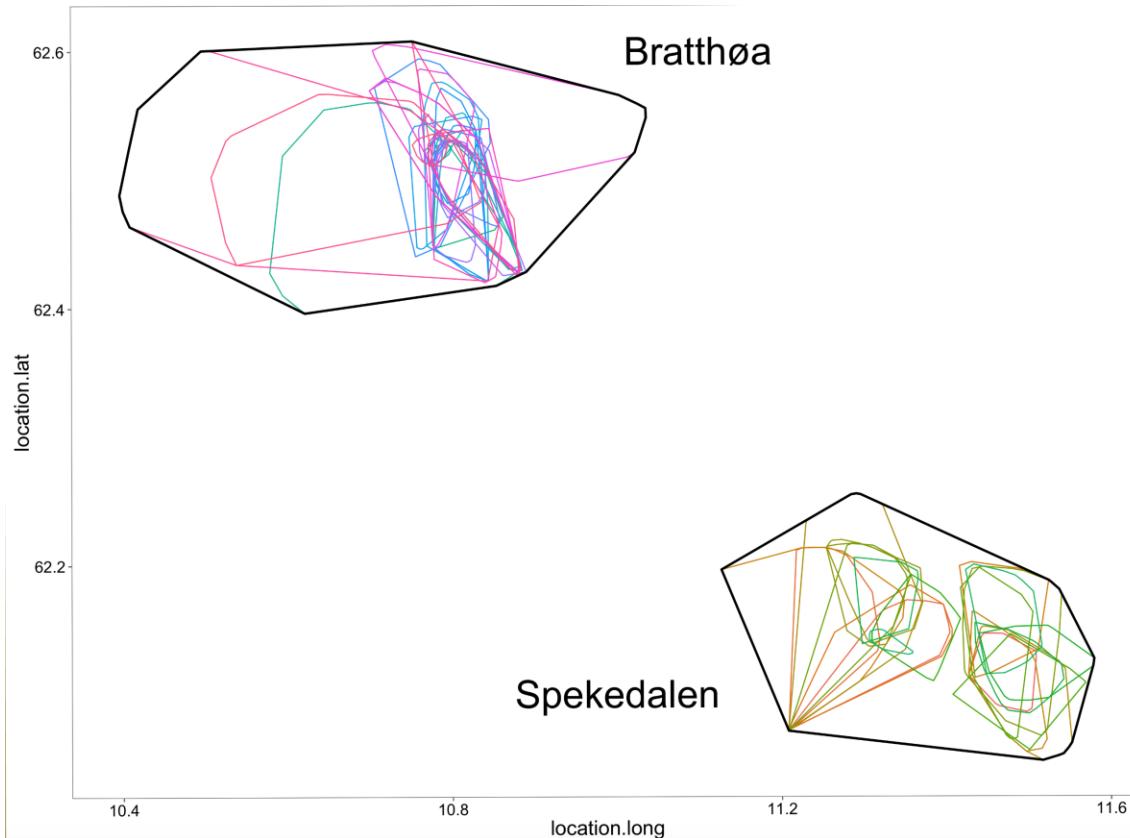


# Movement of sheep in 2013 in Nordøsterdalen

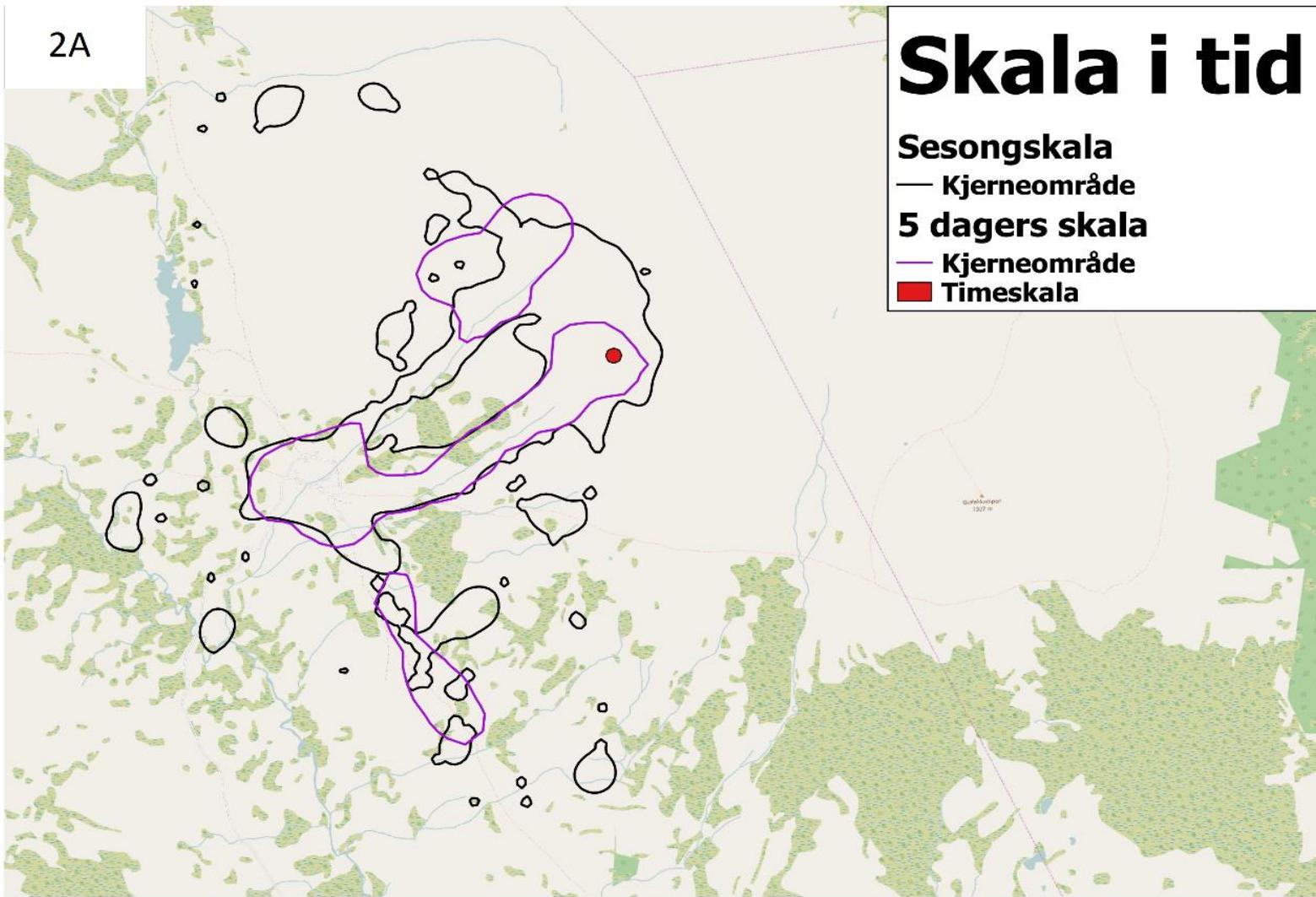
Spæl and NKS



# Stor variasjon – stort overlapp



2A



# Skala i tid

## Sesongskala

— Kjerneområde

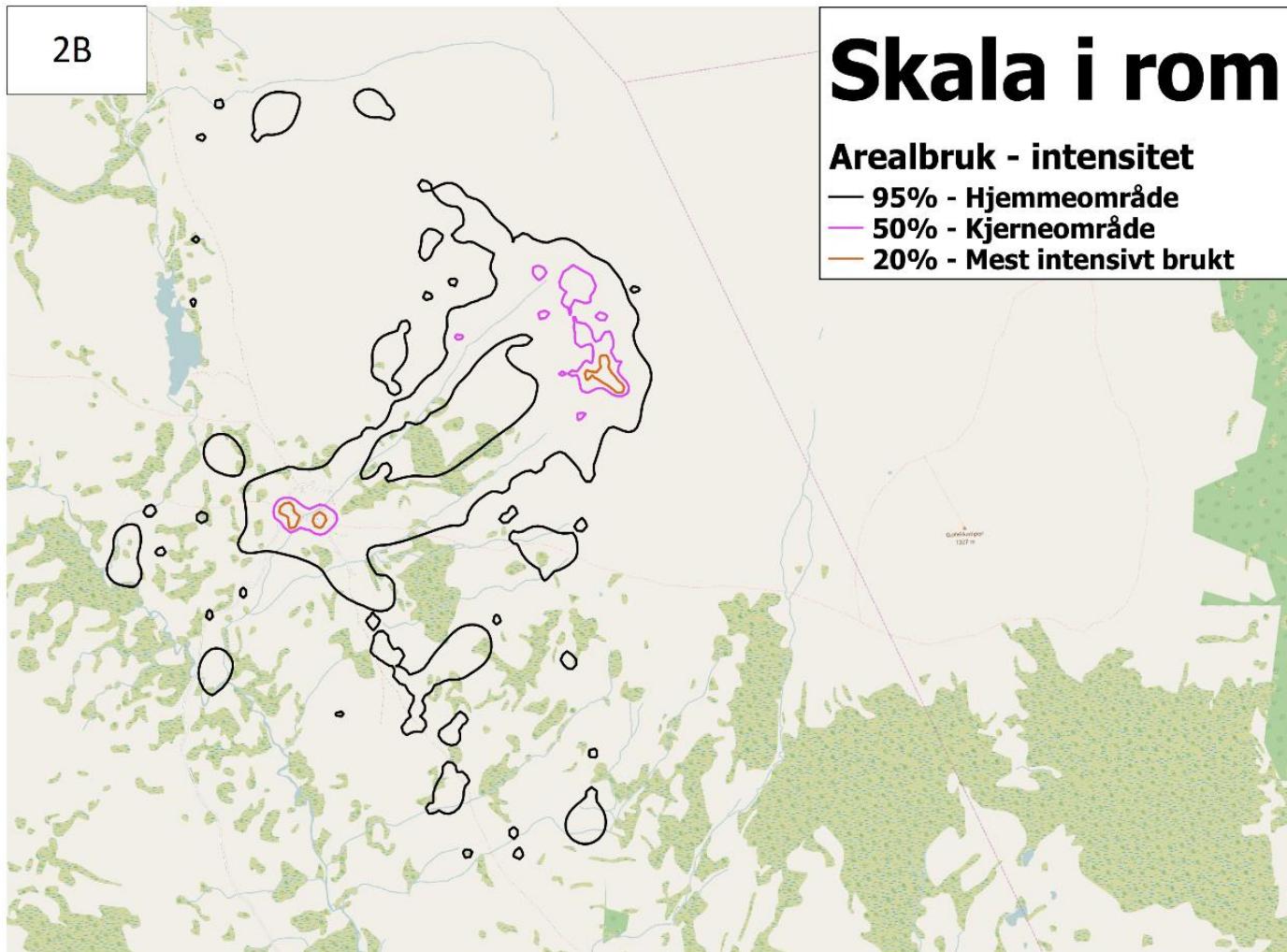
## 5 dagers skala

— Kjerneområde

■ Timeskala

Jørgensen m.fl. 2017

2B



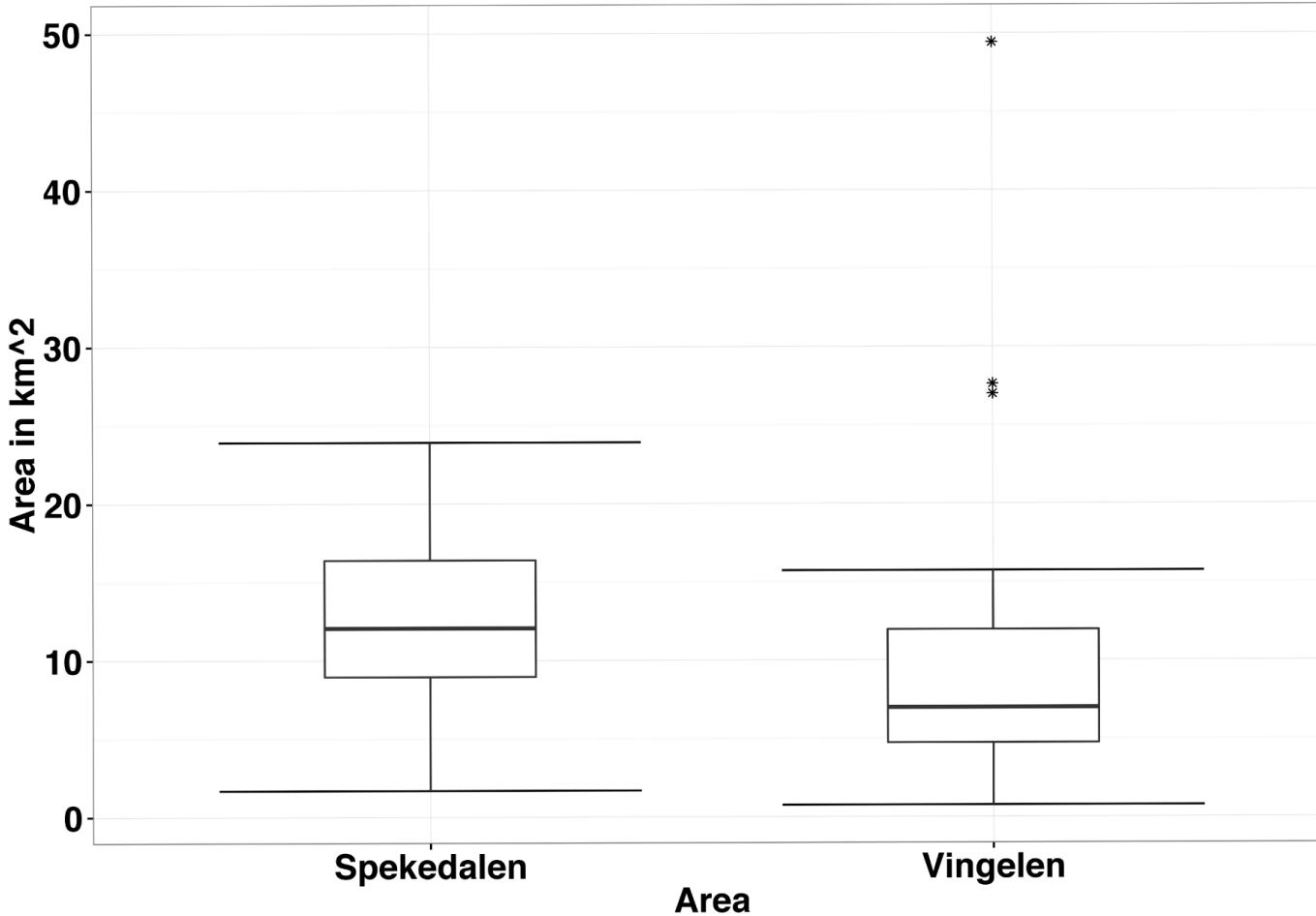
## Skala i rom

### Arealbruk - intensitet

- 95% - Hjemmeområde
- 50% - Kjerneområde
- 20% - Mest intensivt brukt

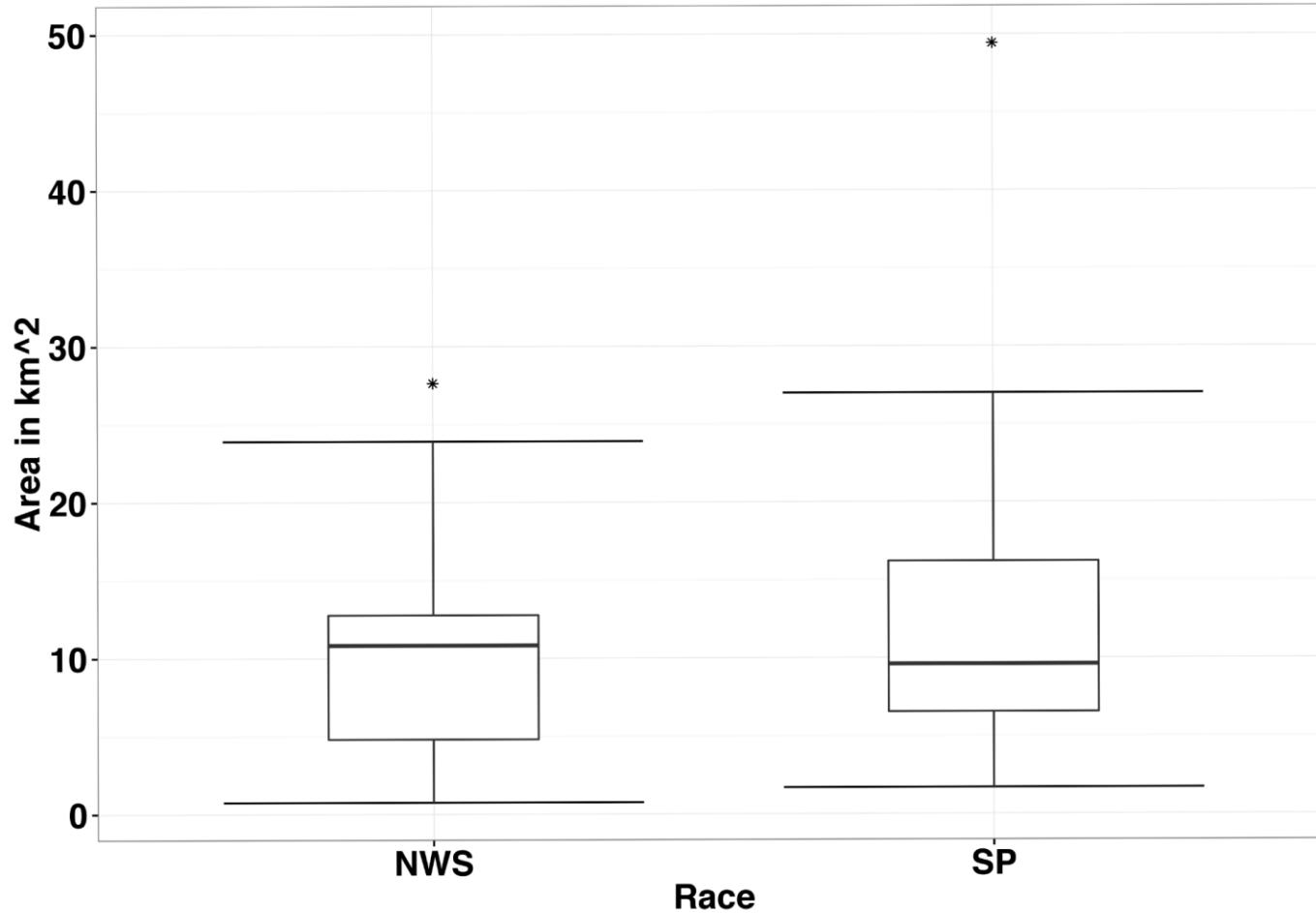
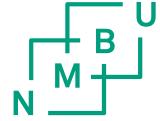
Jørgensen m.fl. 2017

# «Homerange» gjennom sesongen



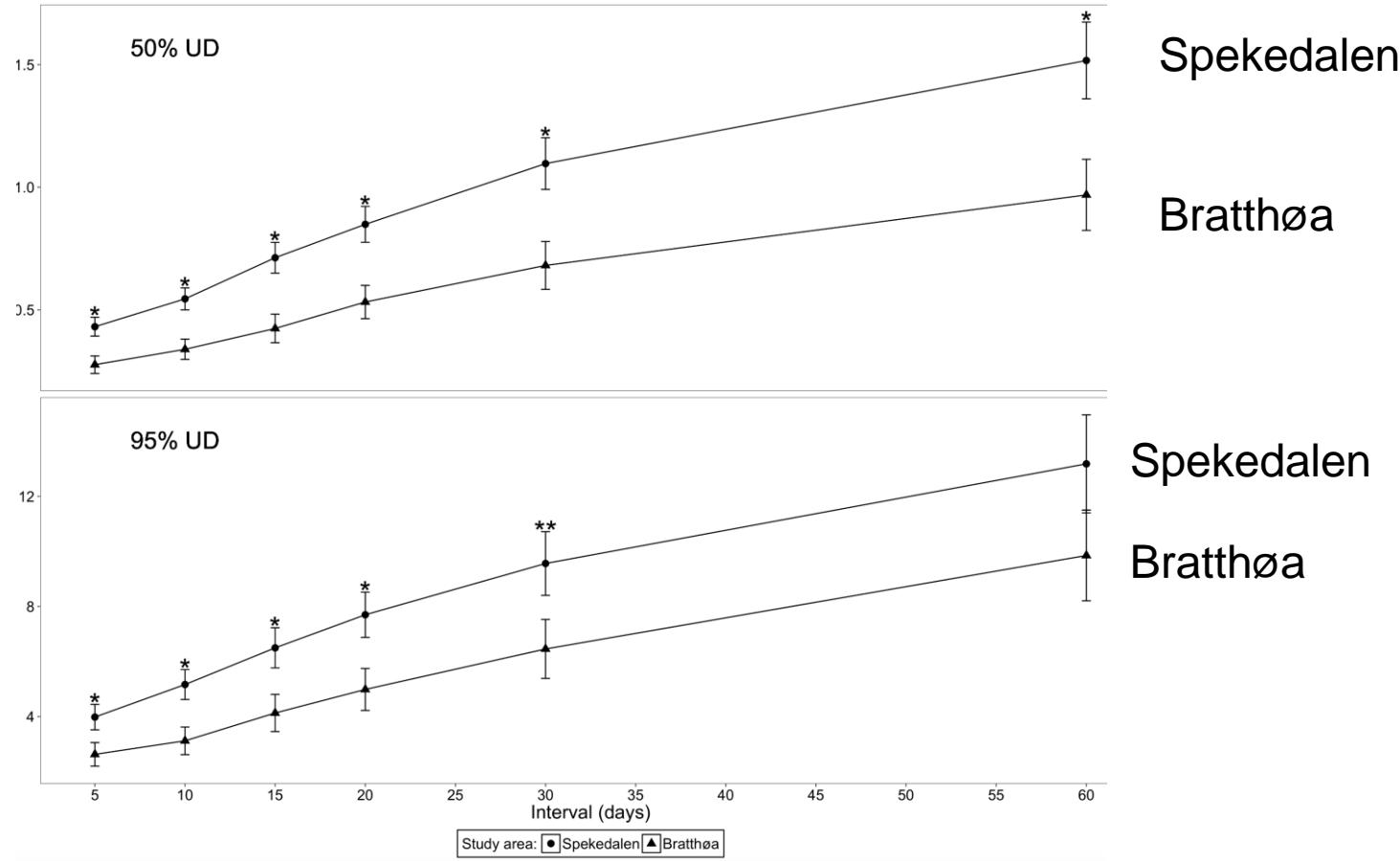
Jørgensen m.fl. 2016

# «Homerange» NKS vs Spæl

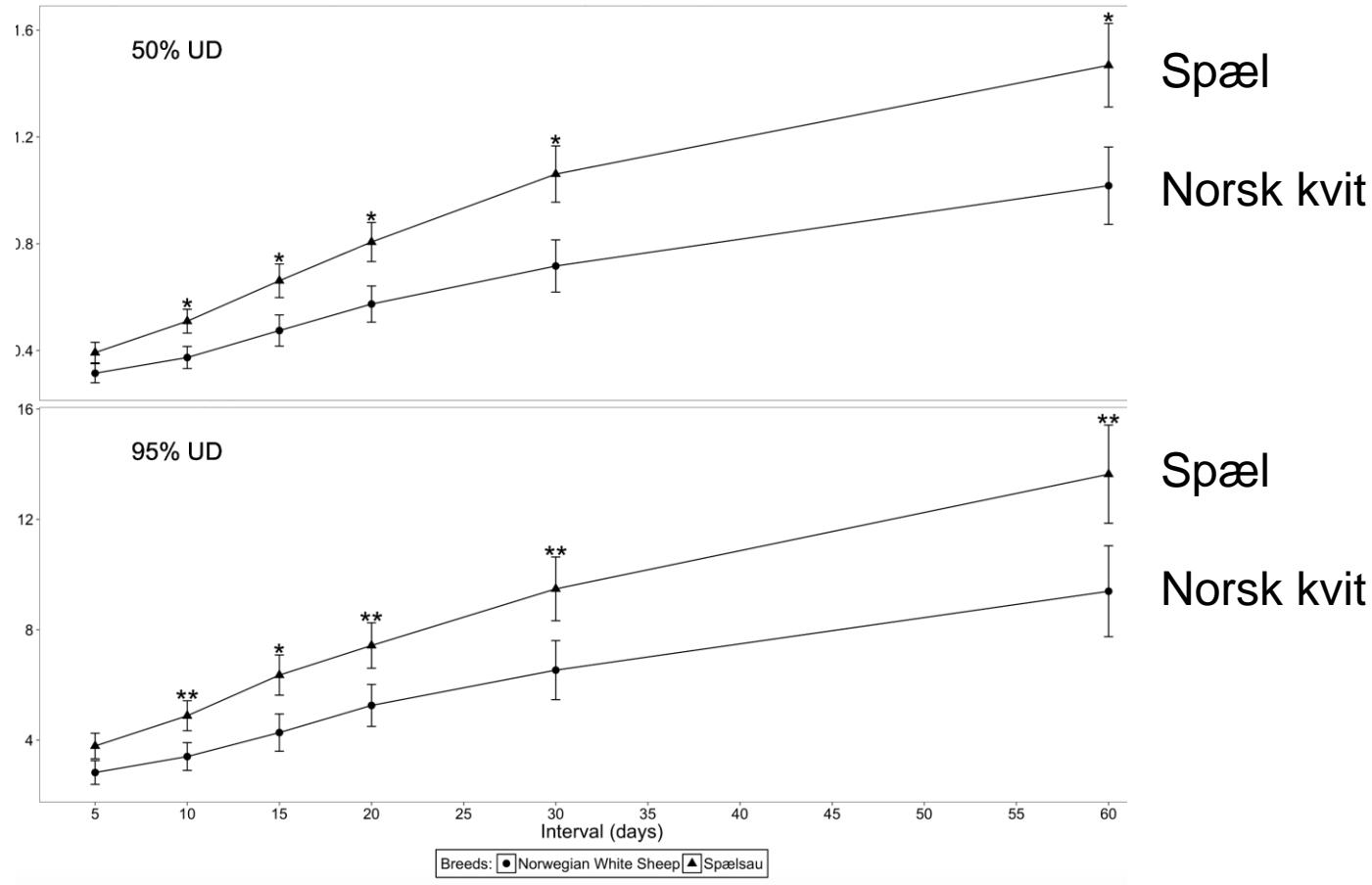


Jørgensen m.fl. 2016

# «Akkumulert homerange» over tid på to ulike romlige skala



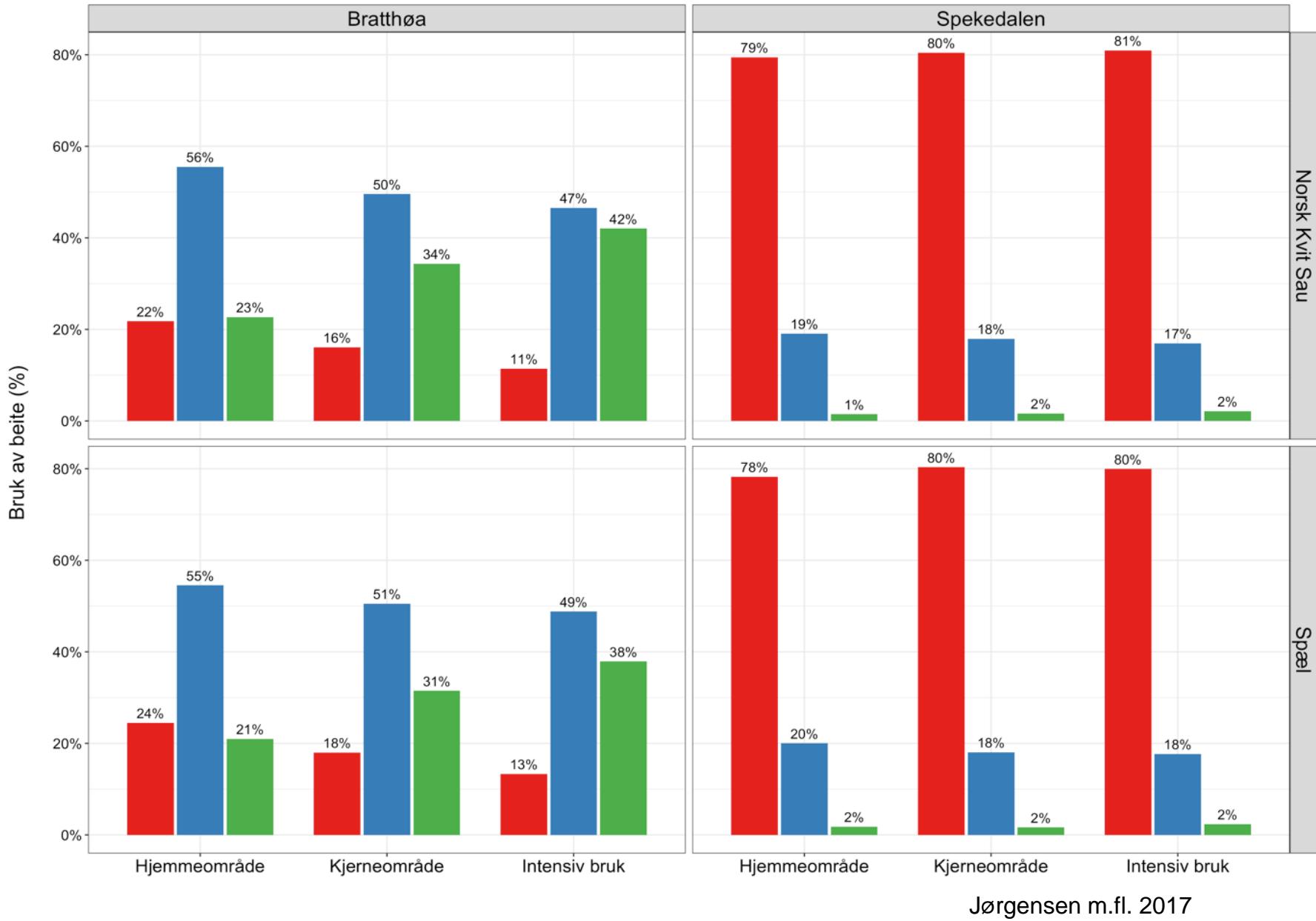
# «Akkumulert homerange» over tid på to ulike romlige skala



Jørgensen m.fl. upabl

# Beitebruken gjennom heile sesongen

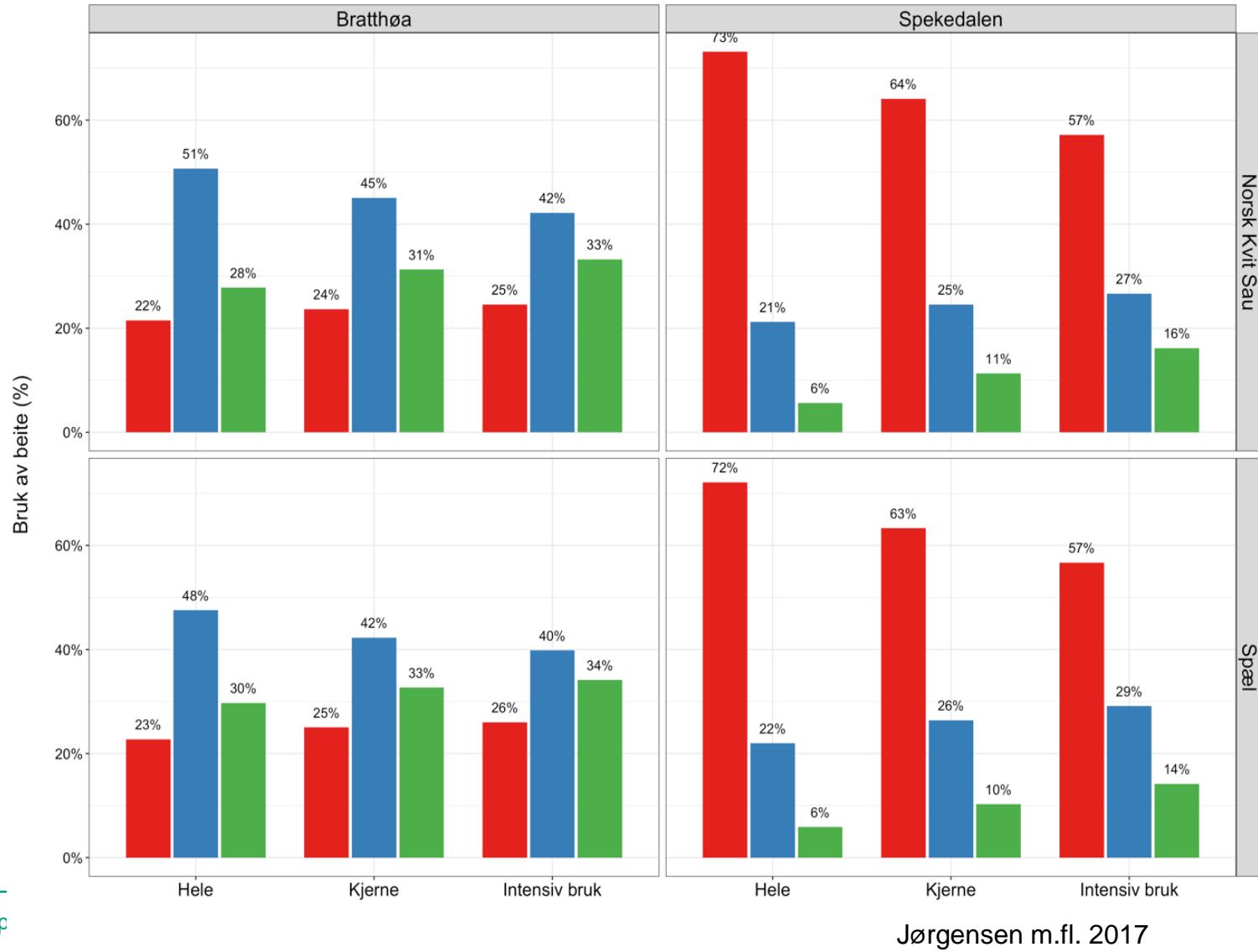
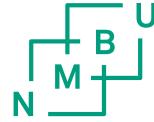
NB  
Norsk  
Kvit  
Sau



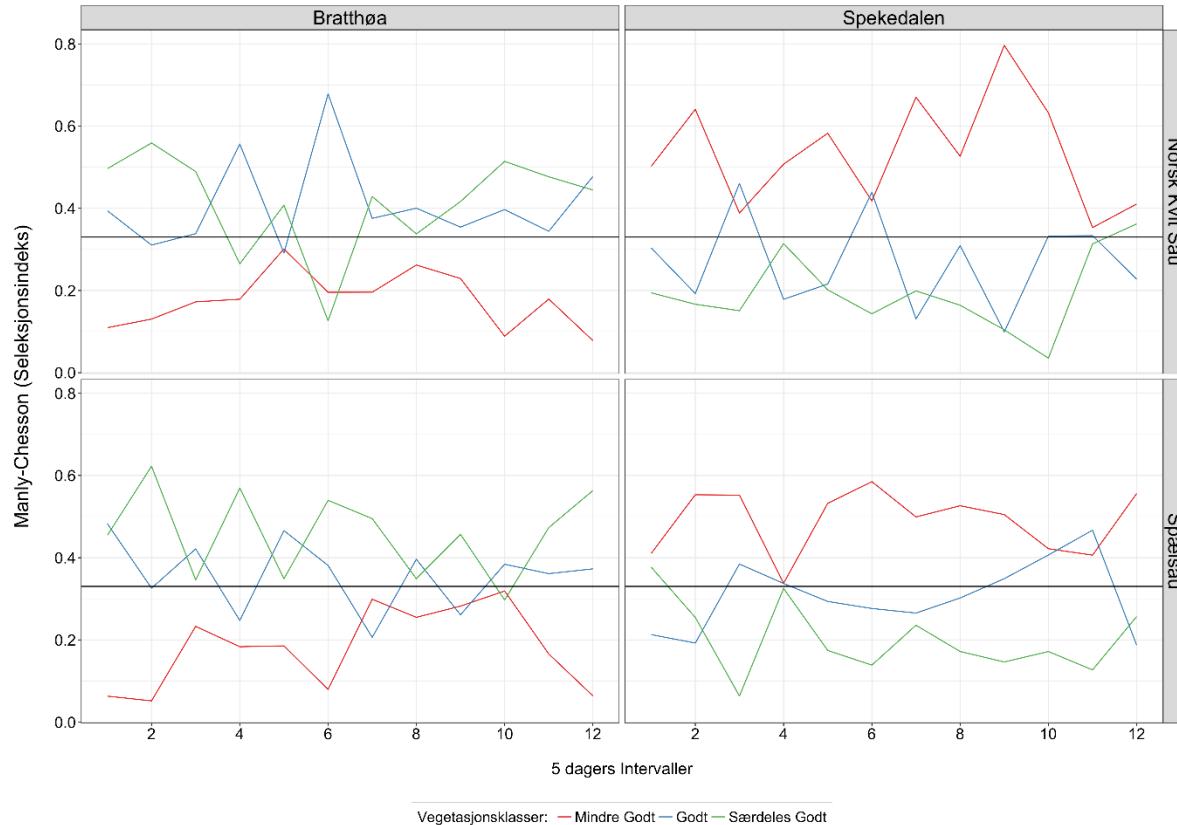
Jørgensen m.fl. 2017

Beiteklasser: Mindre godt Godt Svært Godt

# Beitebruken gj.sn. (timeobs.)

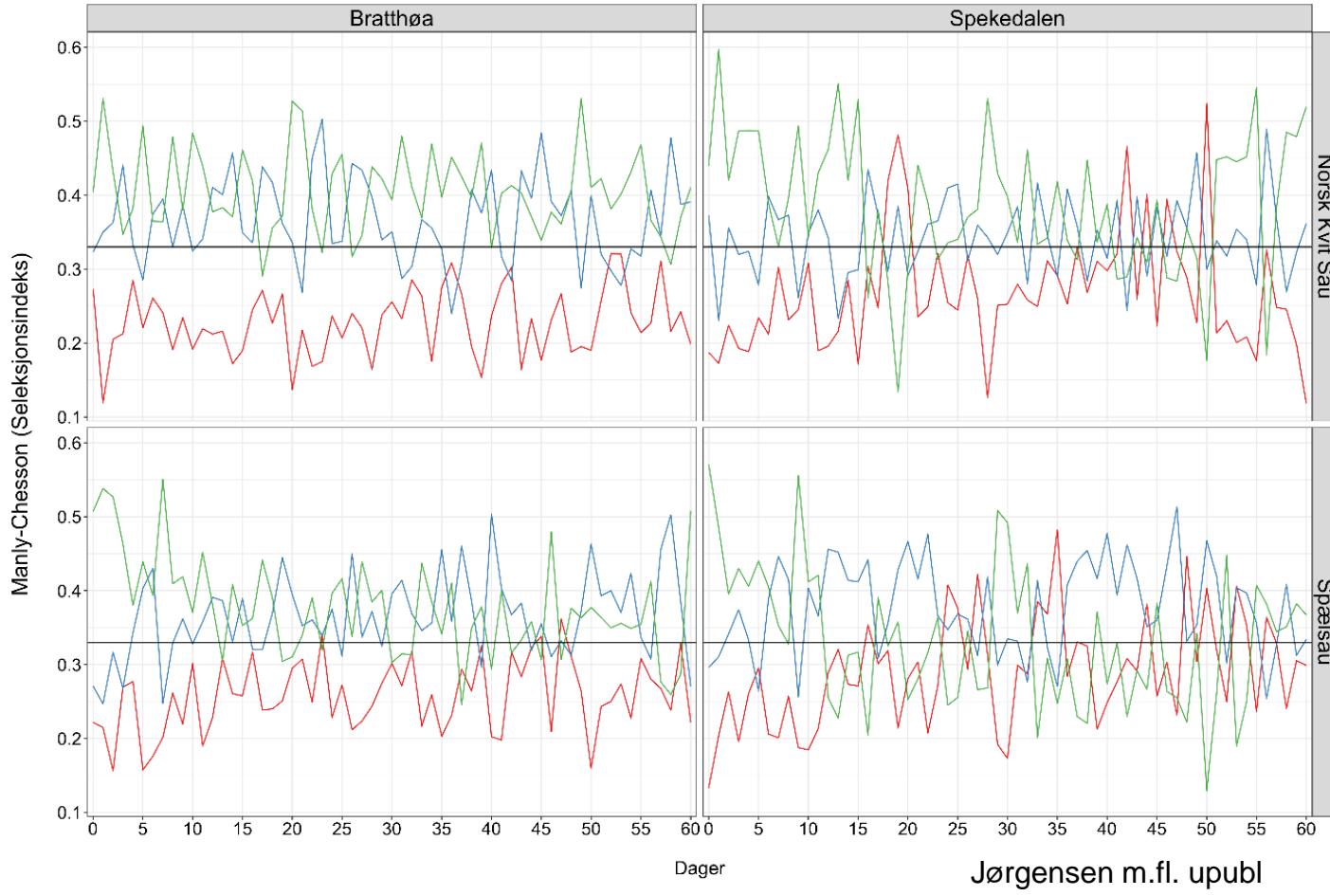


# Seleksjonsindeks; gj. sn. per 5 dagers intervall

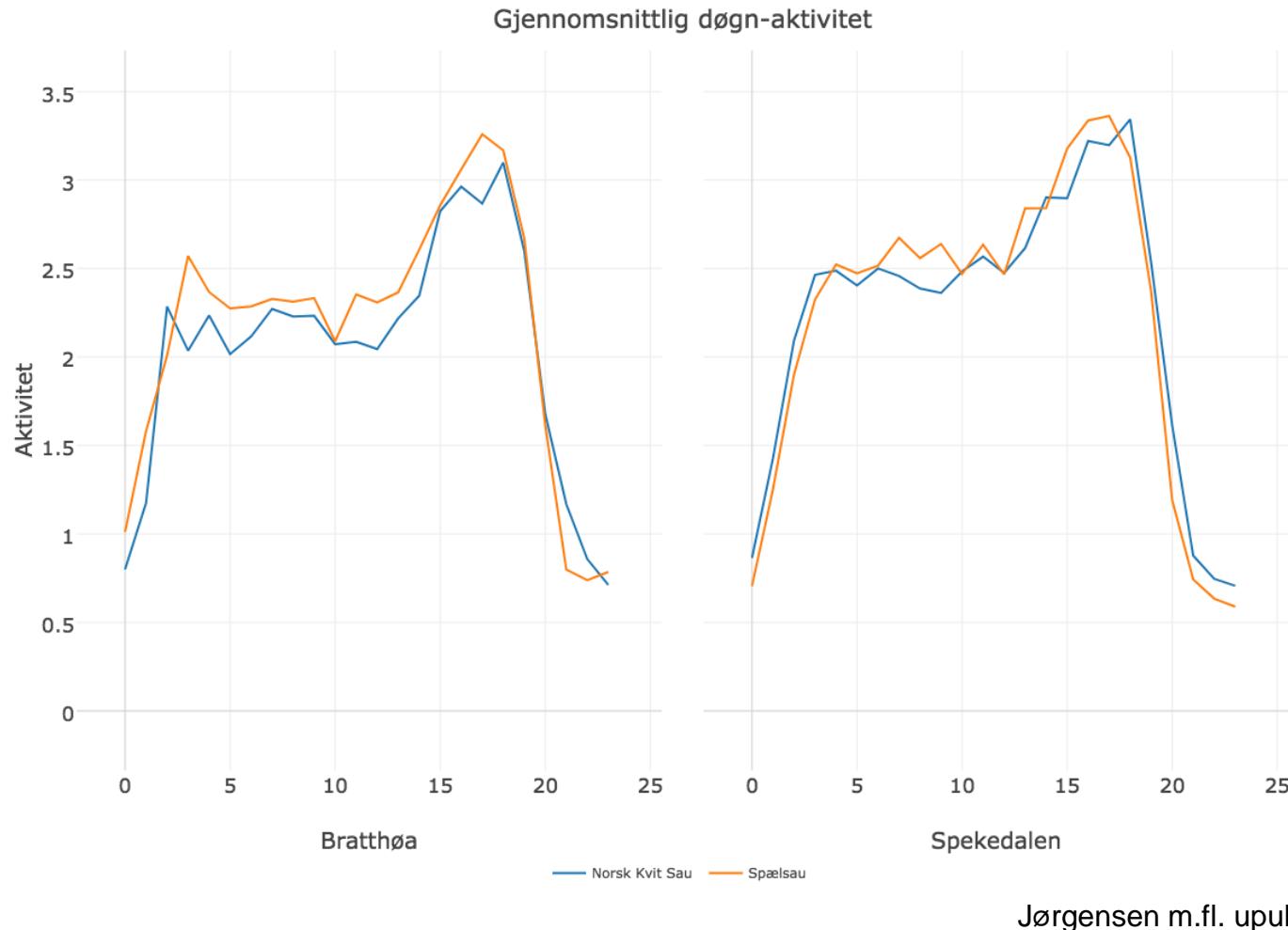


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# Seleksjonsindeks; gj. sn. per dag basert på time obs.



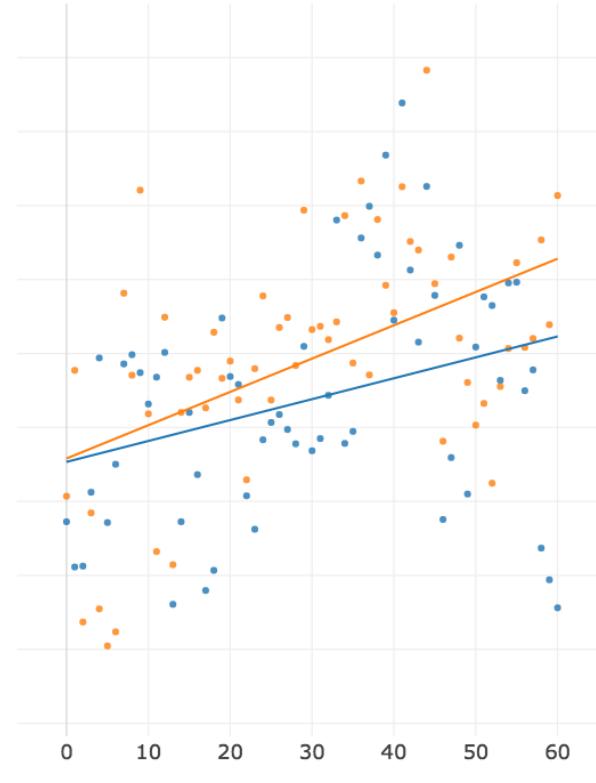
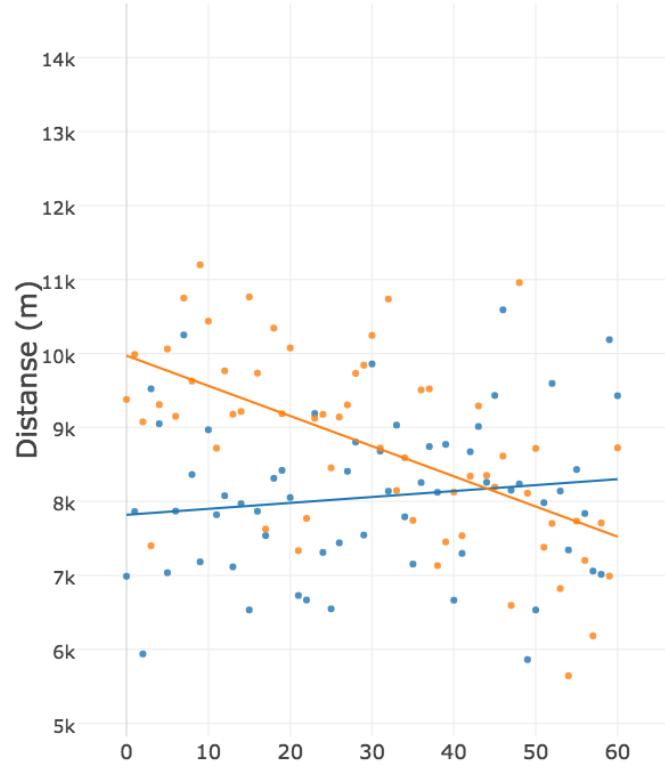
# Gj. sn. døgnaktivitet, «klin lik»



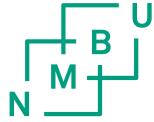
# Gj. sn. distanse gått per døgn

(blå: NKS, oransje: Spæl)

Gjennomsnittlig distanse gått gjennom døgnet



Jørgensen m.fl. upabl



# Konkl.

- «Scale matters»
  - Områdebruk
  - Bruk og seleksjon av vegetasjonstyper
- Stor individuell forskjell
- Forbausende liten forskjell mellom NKS og Spæl
- Miljøet er avgjørende
- Viktig i arelbruksammenheng



# Takk til

- Sauebøndene i Spekedalen & Bratthøa
- NIBIO
- Rune Granås, NØ
- Småfefondet
- NRF
- NMBU