The behavior of the reindeer herd
- the role of the males

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Traditional knowledge
Herd structure
Castration
Activity
Herd structure

- Male / female ratio
- Behavior types
- Individual behavior vs. herd behavior
- Castrates

Activity logging
- Activity as an indicator for behavior
- Logging movement
  - Activity
  - Inactivity
Data from activity loggers

Castrated male (heargi)

Female
"active" hours pr day

Average active hours in the period, total number of hours 624.
Females: 373 hours
Intact males: 357 hours
Castrated males: 341 hours
Kilde: www.yr.no
Snowdepth and precipitation

- Snowdepth cm
- Precipitation mm
Activity and snowdepth

Active hours

Snow depth cm

Dato

Antall timer

Active hours

Snow depth cm

kastrater
gj.snitt
intakte
gj.snitt
simler
totalt
Snødybde
Activity and snowdepth

gjennomsnittlig antall aktive timer

Snowdepth cm

Dato
Intact males (sarvvesnulpput)

![Graph showing active hours and snow depth over time]

- **Active hours:**
  - Intakte gj.snitt
  - Snødybde cm

- **Snow depth cm:**
  - 50
  - 62
  - 64
  - 66
  - 68
  - 70

- **Dates:**
  - 10.03.08
  - 12.03.08
  - 14.03.08
  - 16.03.08
  - 18.03.08
  - 20.03.08
  - 22.03.08
  - 24.03.08
  - 26.03.08
  - 28.03.08
  - 30.03.08
  - 01.04.08
  - 03.04.08

**Antall timer**
- 62
- 64
- 66
- 68
- 70

**Intact males (sarvvesnulpput) gjennomsnittlig antall aktive timer**

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<thead>
<tr>
<th>Dato</th>
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**Snowdepth cm**

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**Intact males (sarvvesnulpput) gjennomsnittlig antall aktive timer**
Castrated males

Castrates

Active hours vs. Snowdepth cm

Gjennomsnittlig antall aktive timer

Data from 10.03.2008 to 03.04.2008

- 10.03.2008: Antall timer = 62, Snowdepth cm = 0
- 12.03.2008: Snowdepth cm = 2
- 14.03.2008: Snowdepth cm = 4
- 16.03.2008: Snowdepth cm = 6
- 18.03.2008: Snowdepth cm = 8
- 20.03.2008: Snowdepth cm = 10
- 22.03.2008: Snowdepth cm = 12
- 24.03.2008: Snowdepth cm = 14
- 26.03.2008: Snowdepth cm = 16
- 28.03.2008: Snowdepth cm = 18
- 30.03.2008: Snowdepth cm = 20
- 01.04.2008: Snowdepth cm = 22
- 03.04.2008: Snowdepth cm = 24

Note: The graph shows the average active hours for castrated males over the period from 10.03.2008 to 03.04.2008, with snowdepth cm as a variable.
Thank You
Next steps

• Statistical analysis of the data
  – Can this be used to discuss differences in behavior between males and females
  – Does castration of males affect behavior

• Interwievvs reindeer herders
  – How to define activity
  – Differences in behavior between castrated males and not castrated males
Area
Without castrates it is not possible to build up a controllable reindeer herd. Castrates have many functions in a reindeer herd. The first one is that they are the calmest animals of a herd. Which means that a reindeer herd with castrates quiets down easily. This is one function. In Chukotka it is impossible to survive without crushing ice during a so-called black ice period, when everything gets covered with a layer of ice. When this happens only the castrates are strong enough to break such ice. Reproductive bulls are first to die because of lack of food. Calves die very quickly too. But castrates are the strongest animals and they manage to break such ice. Reindeer cows follow after them and eat the fodder left over” (www.reindeerportal.org)
Castration

- Energy conservation
- Castrated males are used for transport
- Are able to dig snow when it is bad conditions during winter
- Calm animals, keeps the herd calm
- Individual treatment affects the herds welfare positively
Methods

• Activity logging
  – Activity as an indicator for behavior
  – Logging movement
  – Dekoding the data into two categories of behavior
    • Activity
    • Inactivity
Temperature and activity

Temperature

Active hours

10.03.08 12.03.08 14.03.08 16.03.08 18.03.08 20.03.08 22.03.08 24.03.08 26.03.08 28.03.08 30.03.08 01.04.08 03.04.08

-40 -35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40

Temperatur °C Maks
Temperatur °C Min
antall aktive timer
22. March 2008

Mean temperature: -24.5°C
Coldest: -32.9°C
Snow depth: 67 cm
31. Mars

Mean temperature: 0,6°C
Coldest: -2,2°C
Snowdepth: 67 cm.
14. Mars

Mean temperature: -2,9°C
Coldest: -3,6°C
Snowdepth: 63 cm.
Snowdepth and precipitation

Nedbør i mm
Snødybde cm

01.03.08 08.03.08 15.03.08 22.03.08 29.03.08 05.04.08 12.04.08 19.04.08 26.04.08

14. March
22. March
31. March
Activity and snowdepth

- Active hours
- Snowdepth cm

Graph showing active hours and snowdepth over time.
Study objects

- Castrated male
- Not castrated male
- Female