Leverage from the EU 2007–2013

How reindeer herding could utilize snow and ice data?

European Union
European Regional Development Fund

Oct 8th 2014, Oslo

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How reindeer herding could utilize snow and ice data?

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POROT project

Producing GIS data of reindeer herding to the use of, e.g. regional planning, reindeer herders, forestry and research.

Data is maintained and distributed through Internet by applications ”Harava” (maintenance of the data) and ”Liiteri” (viewing and downloading the data).

Co-operation with CryoLand project.

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Sami culture

Arctic

Adaptation

Communal

Traditional

Social

Reindeer herding in Finland

~ 200 000 reindeers

~ 4500 reindeer herders + workers in food production, tourism…

~ total income about 30 million € + tourism, handicrafts,…

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Meat production

Tourism

© Nordiskfilm.fi

Work

Handicrafts

Culture

Agriculture

Hobby

Way of living

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Knowledge-based solutions, for sustainable choices

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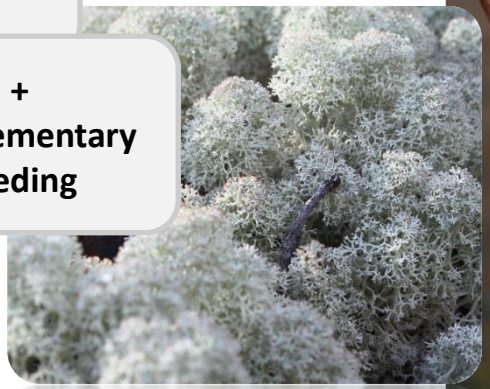
Reindeer & snow and ice

”Variation in local weather and snow conditions, especially in early winter and spring, as well as snow accumulation during winter, could have a strong impct on the reindeer population”

Kumpula & Colpaert, 2003. Polar Research 22 (2), 232.

Lichens are the main food in winter

+ supplementary feeding



FGFRI / Photo gallery

Snow- and ice-covered areas (date, location)

The depth of the snow

The structure of the snow (hardness, density)

The snow conditions impact on nutrition and…
- body mass
- mortality
- reproductive rate
- calf percentage

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How reindeer herders and researchers could utilize the current snow and ice data?

To find out
the date and location of the first
and last snow-covered areas

Possibility to do field work in areas
where snow and ice is needed

To monitor
snow conditions
during the winter

To assess
the hardness
of the winter

To make decisions about
supplementary feeding

To get knowledge about
the habitat selection
in winter (GPS & snow data)

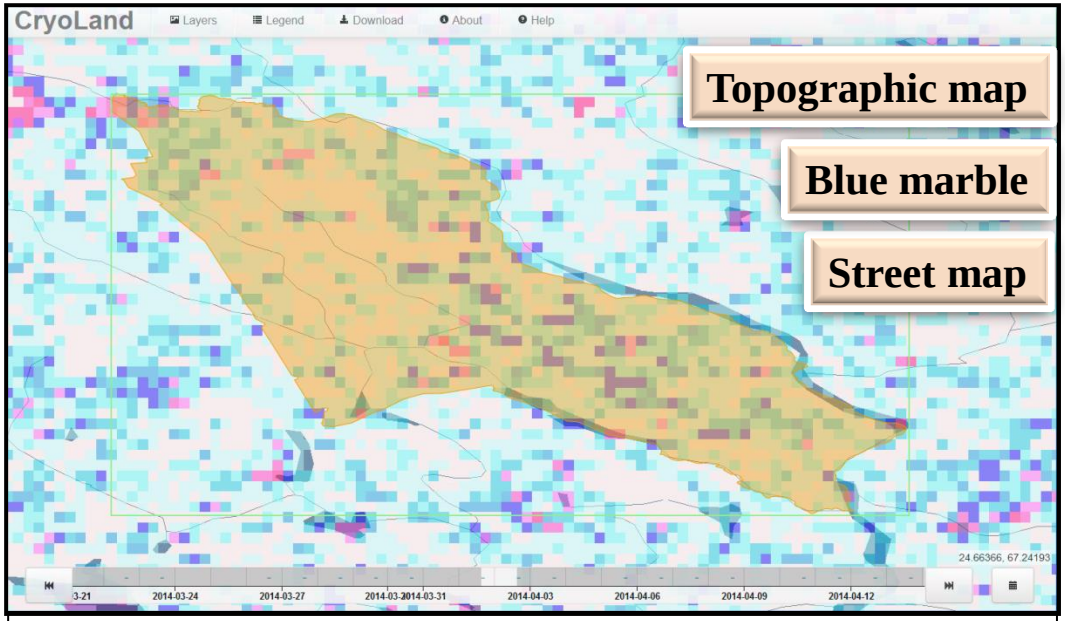
How snow and ice data could be improved to suit the needs of reindeer herding?

- New products
  - Lake ice in early winter
  - Snow depth (*m*) and structure (hardness, density)
  - Long-term data
    - Monthly, yearly
    - Averages, medians
- Data quality - product uncertainty?

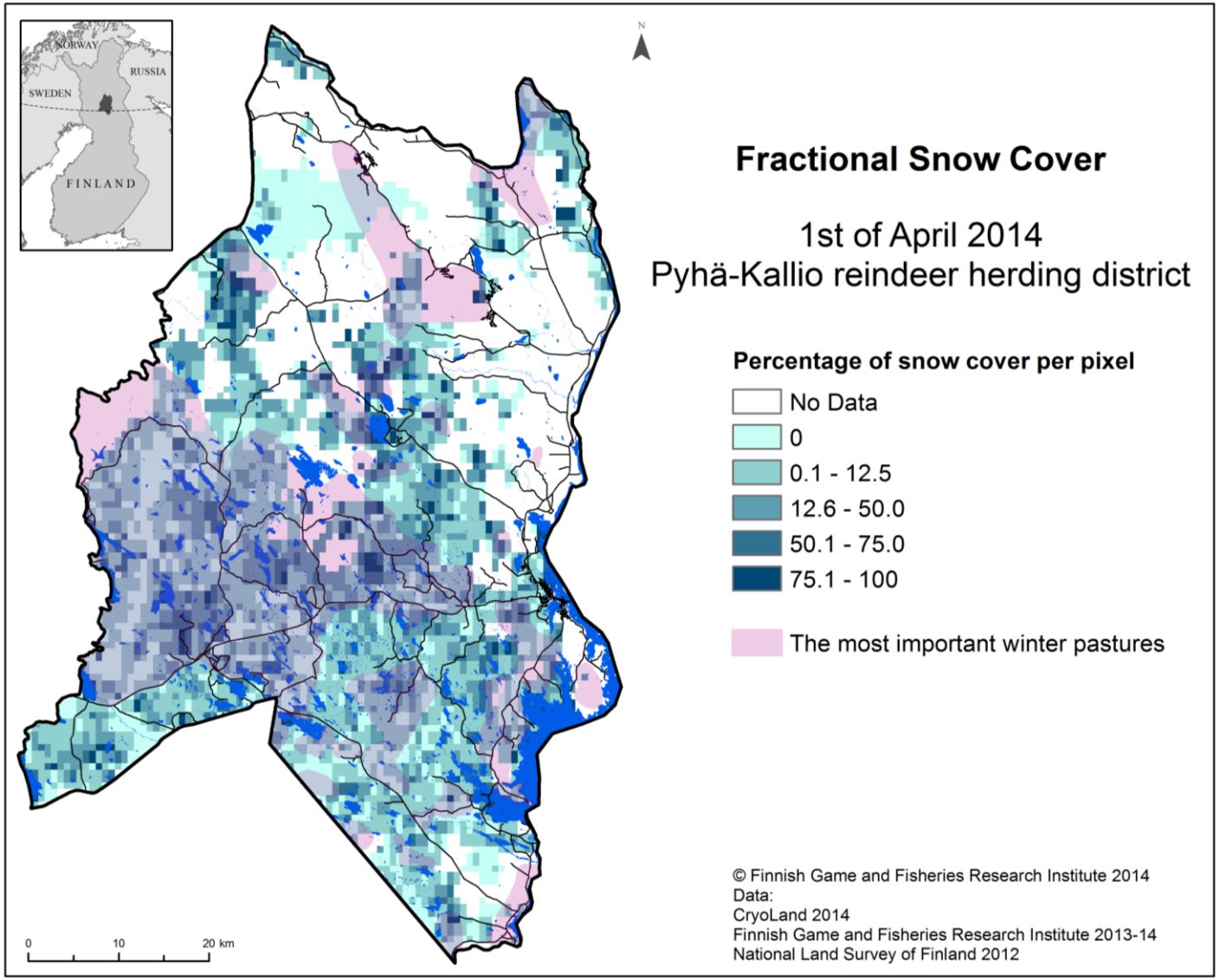
How snow and ice data could be improved to suit the needs of reindeer herding?

- GeoPortal
  - Log in -system
    - Own zoom level (as reindeer herders are mainly interested in their own reindeer herding district)
    - Selected layers
  - More detailed base layer, possibility to change them in the map view
  - Layer names
  - Color codes that are in the timeline could also be in the calendar

- Possibility to use selected CryoLand products in the Internet application ”Liiteri” (WMS)?



Jääskö reindeer herding district (1st of April 2014)
Multitemporal fractional snow cover in Scandinavia


NORWAY
RUSSIA
SWEDEN
FINLAND
N
0
10
20 km
Fractional Snow Cover
1st of April 2014
Pyhä-Kallio reindeer herding district
Percentage of snow cover per pixel
No Data
0
0.1 - 12.5
12.6 - 50.0
50.1 - 75.0
75.1 - 100
The most important winter pastures
© Finnish Game and Fisheries Research Institute 2014
Data:
CryoLand 2014
Finnish Game and Fisheries Research Institute 2013-14
National Land Survey of Finland 2012

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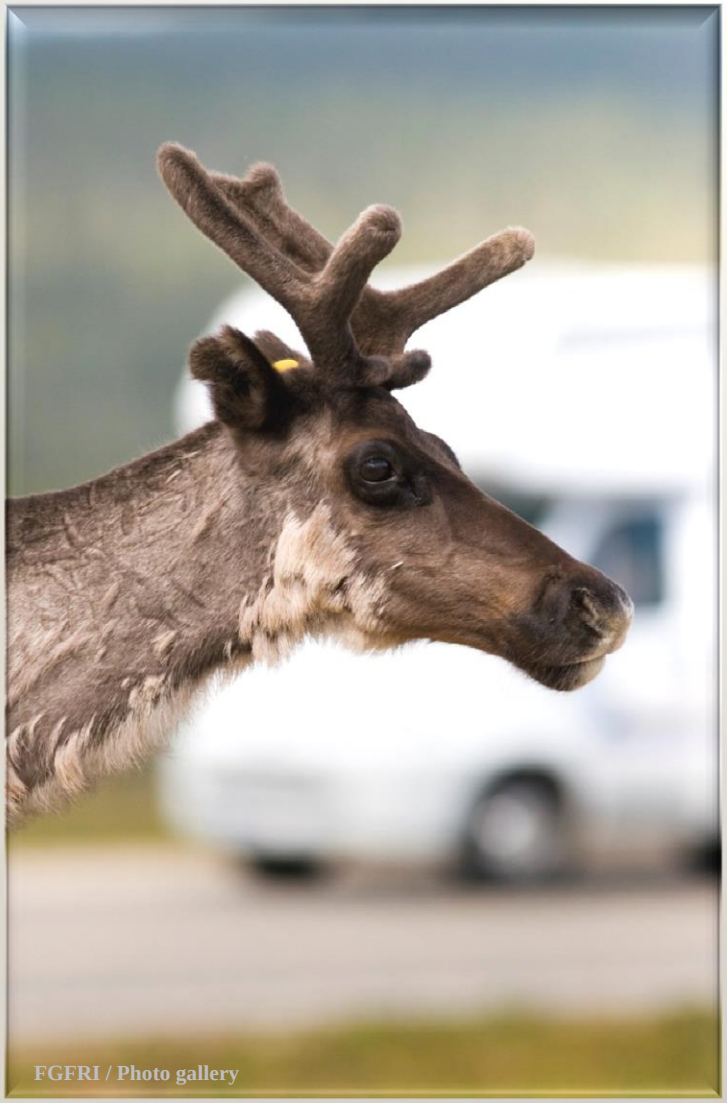

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