

Reindeer husbandry in the arctic bioeconomy - matchmaking day August 25th 2020

## Reindeer health and supplemental feeding

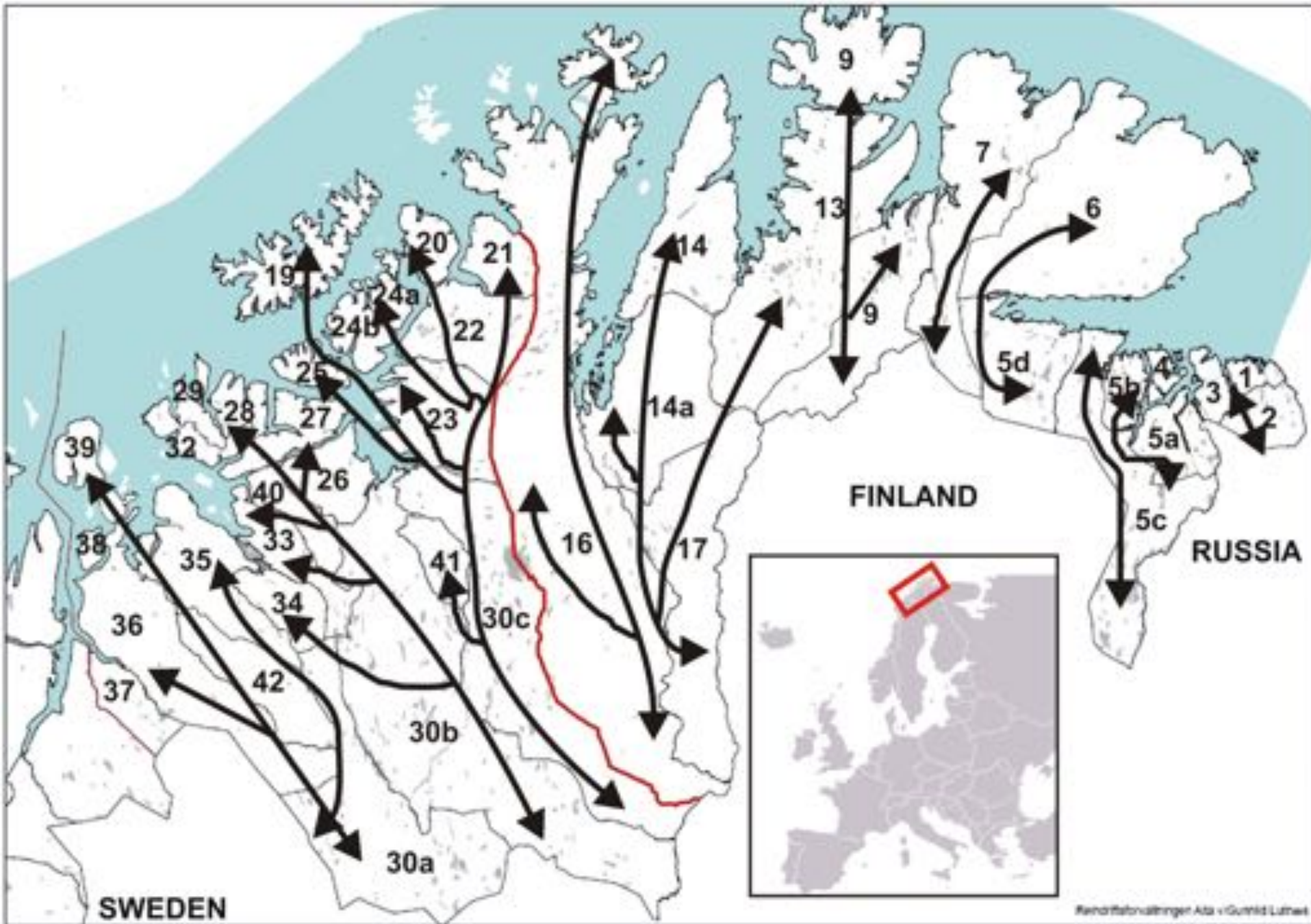


Morten Tryland

UiT Arctic University of Norway, Arctic Infection Biology







Summer and winter pastures in Finnmark, Norway



Excellent opportunities for pathogens (contact and air-born transmission)

Photo: Ingebjørg Helena Nymo



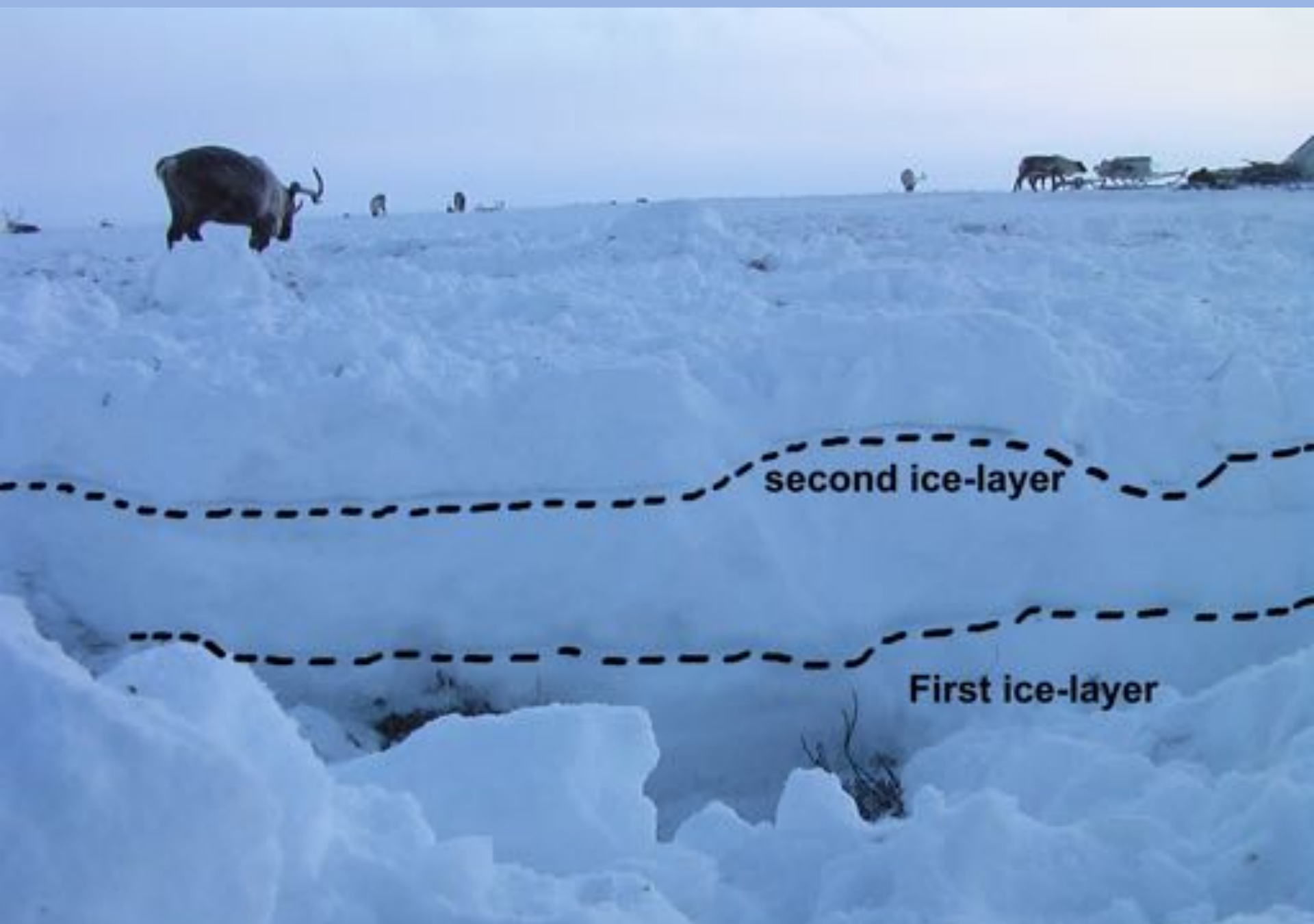


Coastal winter reindeer pasture (Svalbard).

Photo: Åshild Ø. Pedersen



Inland forest winter pasture for reindeer (Sweden)



Rain-on-snow and freeze-thaw cycles are blocking winter pasture resources

Forbes and Stamler, 2009







## Supplementary feeding:

- to avoid starvation during difficult winters
- feeding on a regular basis: longer periods, daily/year-around, full rations → husbandry/farming





Don't forget the hygienic conditions, especially for the newborn calves









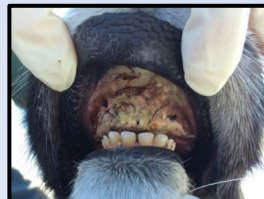
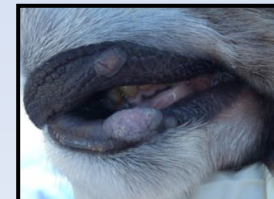
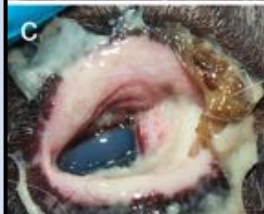
**Stress** → reactivation (older animals) – primary infection (calves) – secondary bacterial infection





# Possible impacts from CvHV2 in reindeer

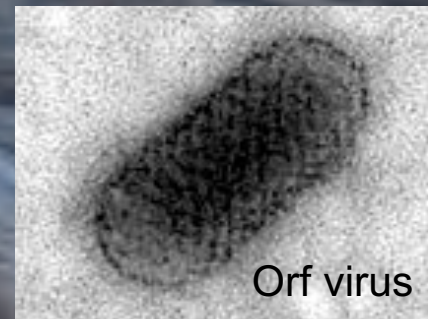
- Endemic: seroprevalence: appr. 50 % in adults, 8 % in calves (< 1 year)
- Reactivation of latent infections upon stress
- Transferred to fetus and newborn calves:
  - Abortion and weak borne calves?
- Transmissible component of IKC:
  - Reactivated in adults, transferred to immunologically naive calves/young
  - Outbreaks occur after herding, corralling, transports etc.
- Primary agent causing mucosal lesions - paving the way:
  - Contagious ecthyma (Parapoxvirus)
  - Oral necrobacillosis (*Fusobacterium necrophorum*)







**Smittsom munnskurv**  
**Munnvårtsjukan**  
**Contagious ecthyma**









**Munnskurv/munnvårtsjukan forårsakes av Orf virus**  
**Smitte fra sau/geit og storfe, til reinsdyr og til mennesker (zoonose)**



Semi-domesticated reindeer with oral necrobacillosis; *Fusobacterium necrophorum*

Photo:  
Ingebjørg Helena Nymo



#### Acknowledgements:

- Norwegian Veterinary Institute:  
Torill Mørk, Ingebjørg Helena Nymo, Rebecca Davidson.
- Uit Arctic University of Norway:  
Javier S. Romano, Eva M. Breines.

#### Funding:

- CLINF Climate-change effects on the epidemiology of infectious diseases and the impacts on Northern Societies (NordForsk).
- FRAM – High North Research Centre for Climate and the Environment (2017-2019).





Tryland • Kutz

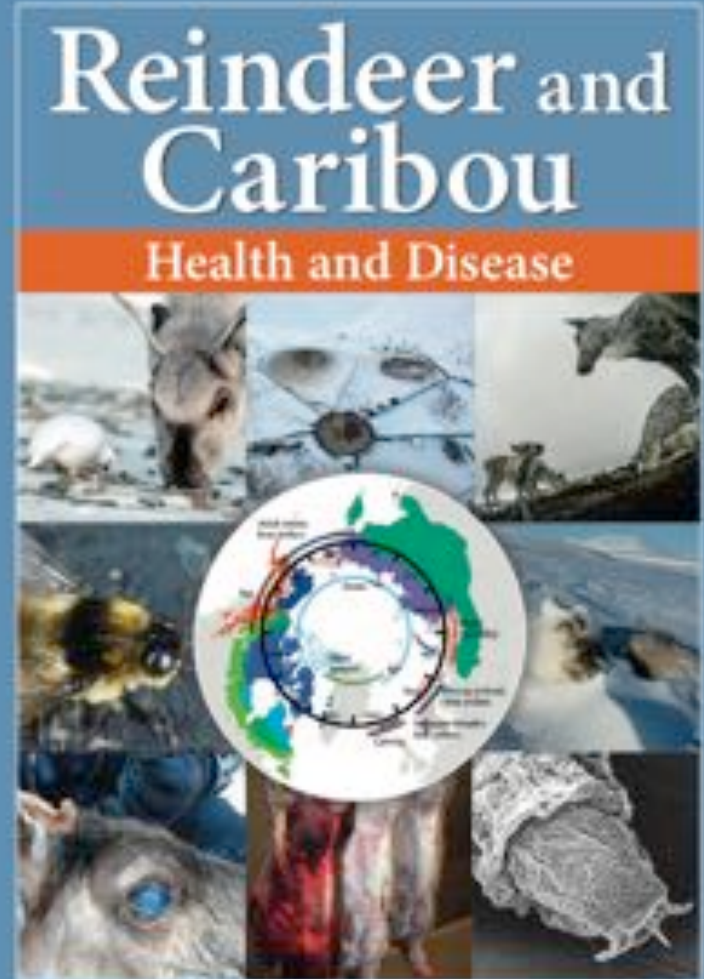
Reindeer and Caribou

820781



**CRC Press**  
Taylor & Francis Group  
An Informa Business  
www.crcpress.com

9781439840000  
9 781439 840000  
1 439840000 0  
Printed on acid-free paper



Edited by Morten Tryland • Susan Kutz

**CRC Press**  
Taylor & Francis Group

Book In Press: pre-order available at [amazon.com](http://amazon.com)