



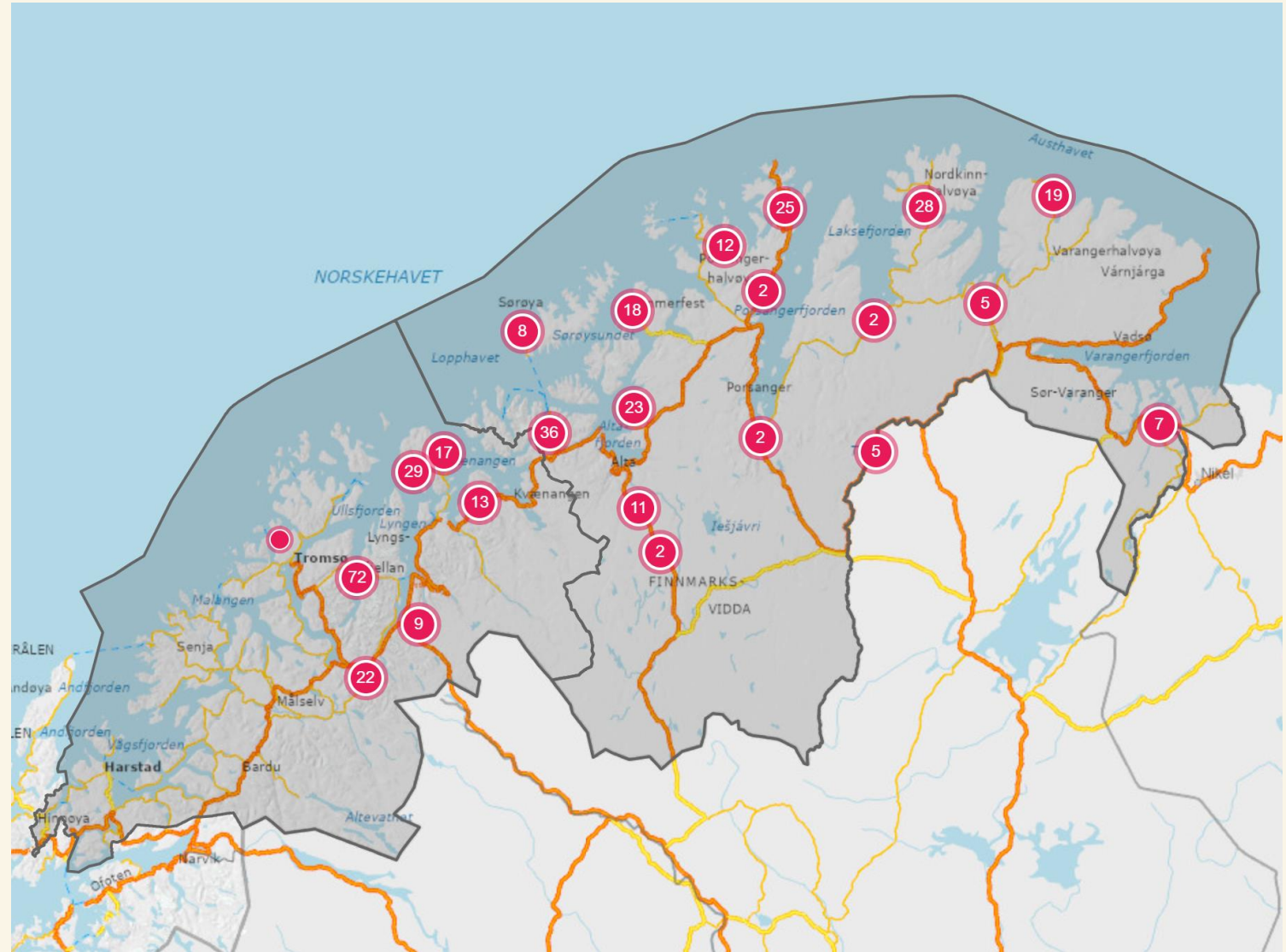
# Managing natural hazards in the Arctic

# Troms and Finnmark

- Two northernmost countys (from 2024)
- Arctic climate
- Size:
  - Finnmark: 48753 km<sup>2</sup>
  - Troms: 25877 km<sup>2</sup>
- Population:
  - Finnmark ≈ 75000
  - Troms ≈ 170 000
- Public roads:
  - Finnmark: 4192 km
  - Troms: 5398 km
- 540 registered natural hazard locations (repeating events)



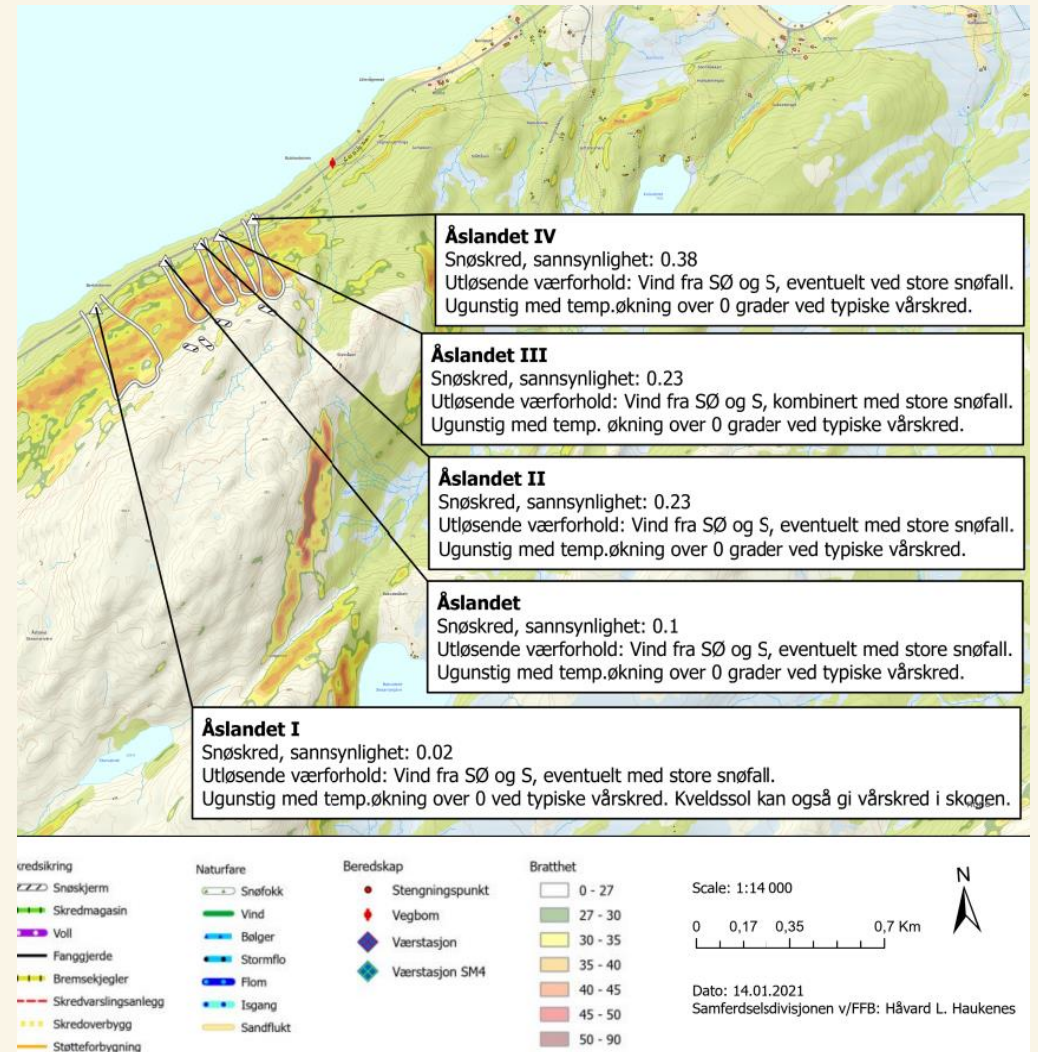
- Finnmark: 2 employees  
Troms: 6 employees
- Giving advice/assessments regarding natural hazards
- Mapping and planning avalanche/hazard protection
- Maintenance of existing infrastructure
- Active avalanche control





# Assisting contractors with avalanche assessments

- Plowing contractors must make their own local avalanche assessment.
  - 2-day avalanche course
  - Natural hazard-plans for each contract
  - NPRA sends out avalanche forecast
- We can advise the contractor on request, about closing/opening the road due to avalanche danger or events.
- We partake in a standby avalanche shift where contractors can reach out to us if necessary, 24/7.







# Avalanche protection

Mapping and planning new avalanche protection



Maintenance





# Active avalanche control





# Active avalanche operations in Grøt fjord and Arnøya





# Arnøya, Singla and Oterelvene



# Challenges

## Avalanche assessment from the plowing contractors

- Knowledge about the local avalanche paths and about avalanches in general varies between contractors
- Usually a 5-year contract
- New contractors in an area sometimes relies heavily on our advice, due to lack of experience
- In some areas we use local persons with avalanche experience



# Variable weather

Often rapid change of weather in Northern Norway

- Exposed to the Atlantic Ocean (arctic maritime climate)
- Cold winds from the north, warmer winds following the Gulf Stream
- Polar low

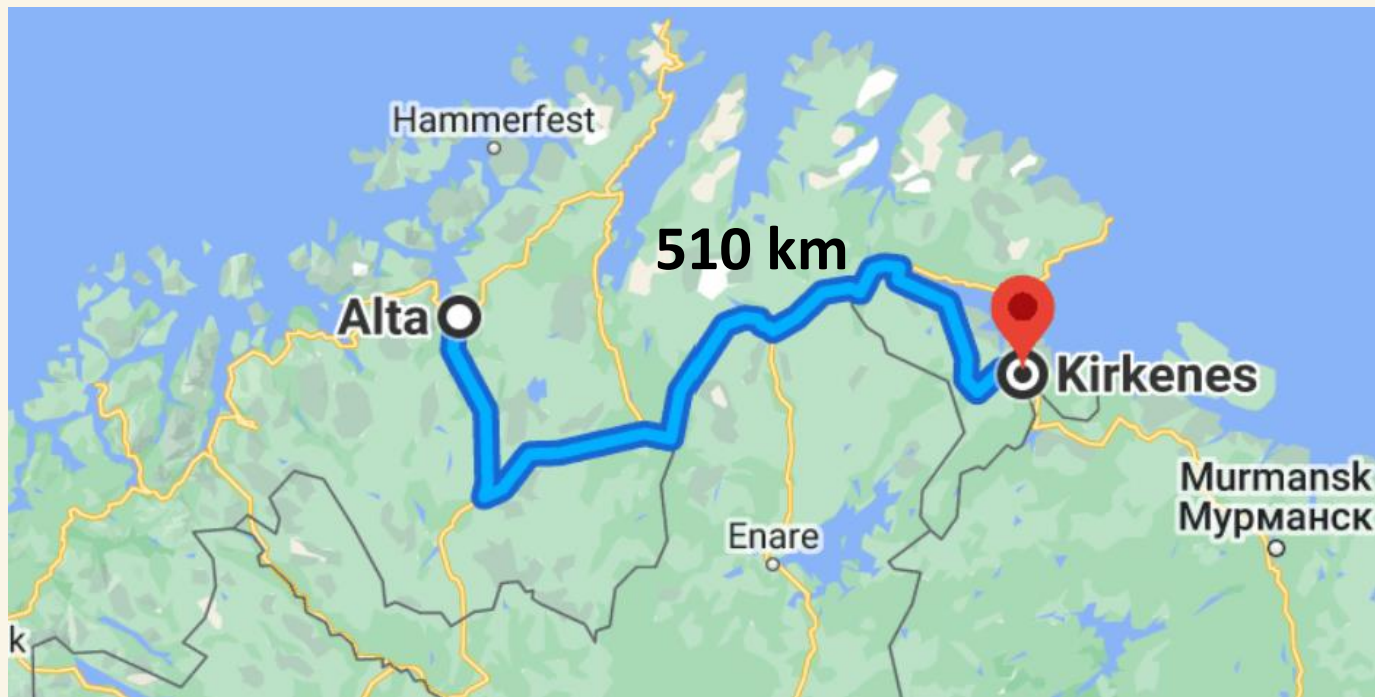
## Polar night

- Located 68°-71° north
- About two months without the sun
- Few hours of daylight during the winter months



# Large distances/few employees

- On-site assessments of avalanche paths can take a long time, as the distances can be large.
- Lack of daylight combined with large distances often results in roads staying closed for a longer period.





# Roads located in the avalanche track





# Topography along the coast





# Often neighboring avalanches









