



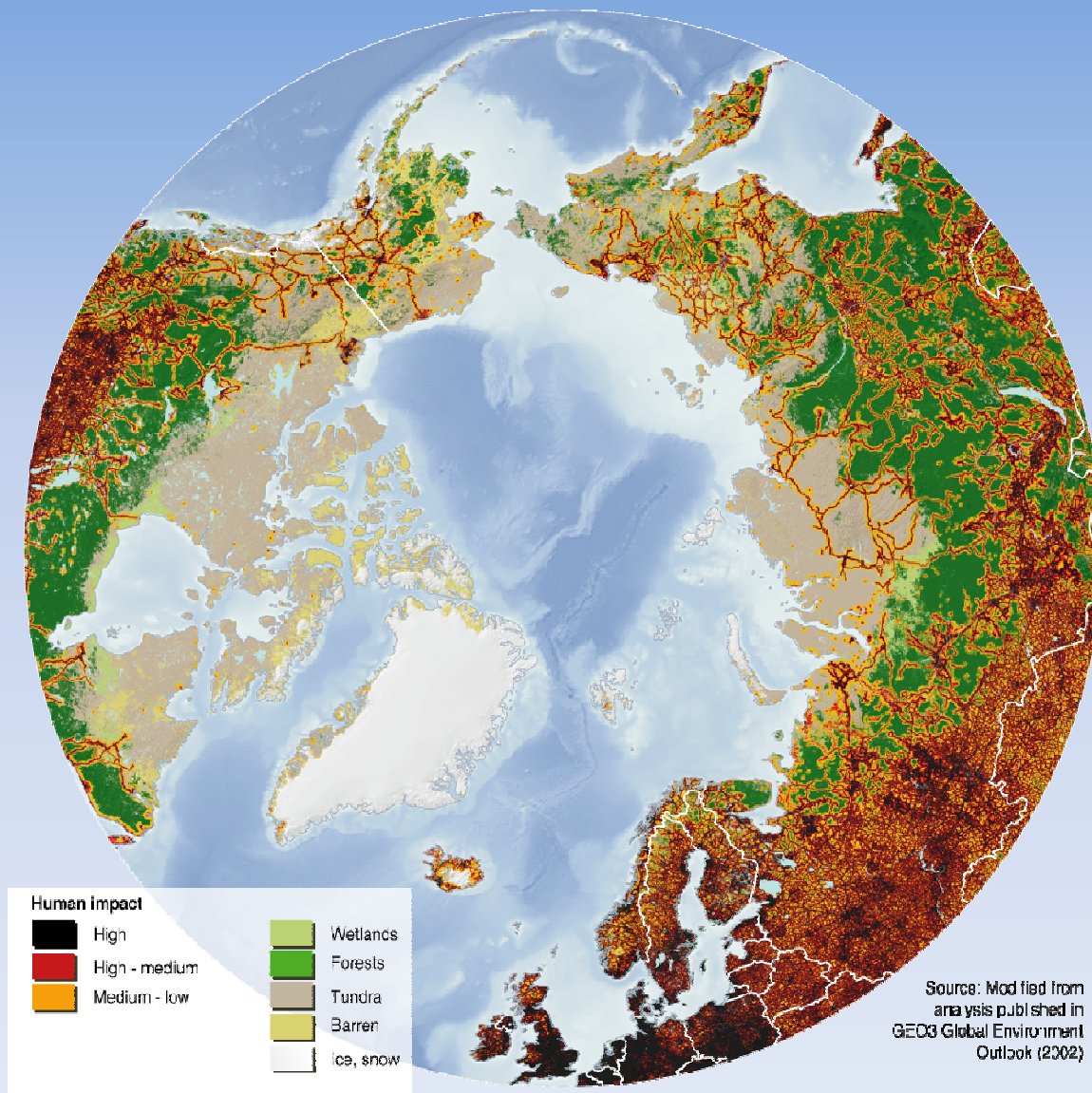
REINDEER HUSBANDRY AND BARENTS 2030

IMPACTS OF FUTURE PETROLEUM DEVELOPMENT ON REINDEER HUSBANDRY IN THE BARENTS REGION

A REPORT PREPARED FOR STATOIL BY THE INTERNATIONAL CENTRE FOR REINDEER HUSBANDRY

Dr. Ingunn Ims Vistnes, Norut Alta - Áltá

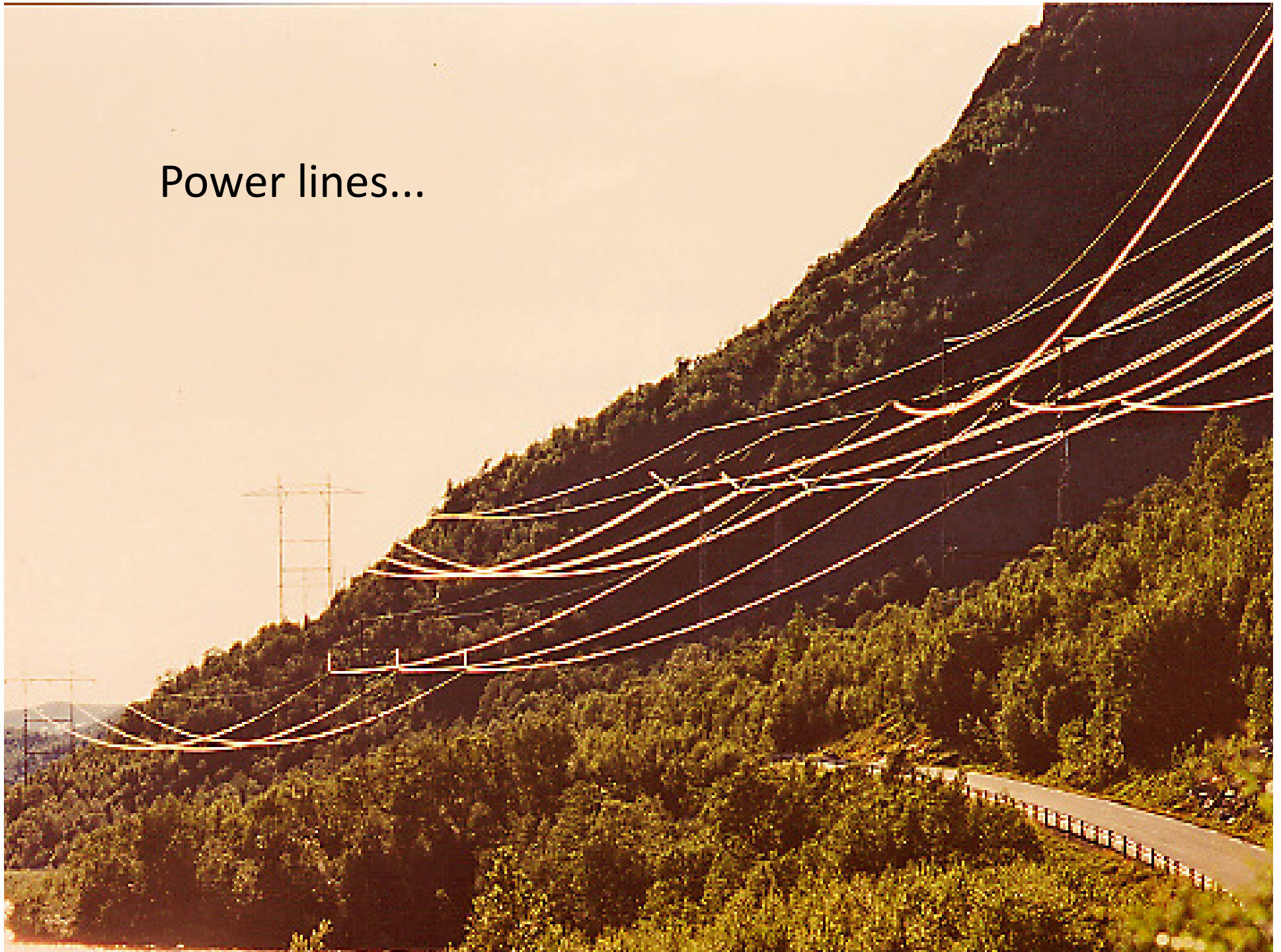
Human development: How does it affect reindeer husbandry?



Petroleum development...



Power lines...



Roads...



Cabin resorts...



Wind power...



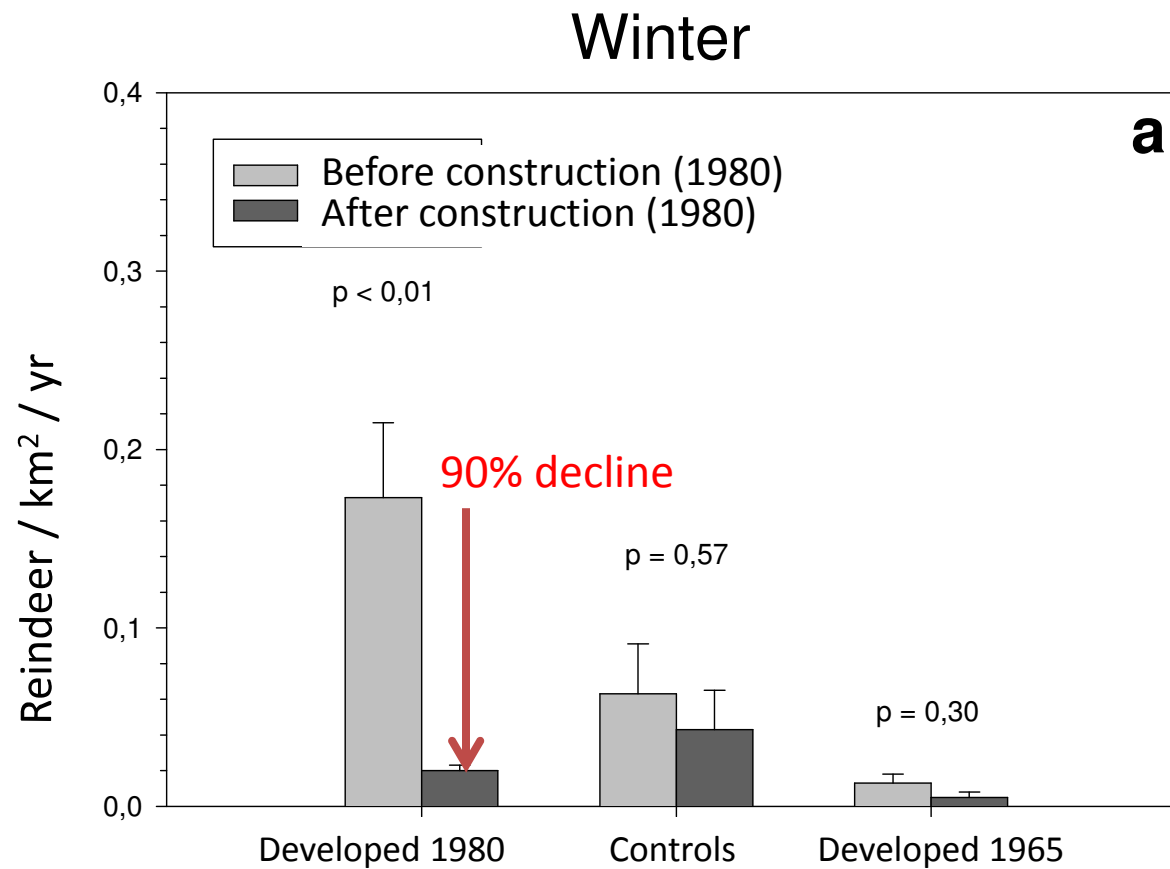
Mining and prospecting...



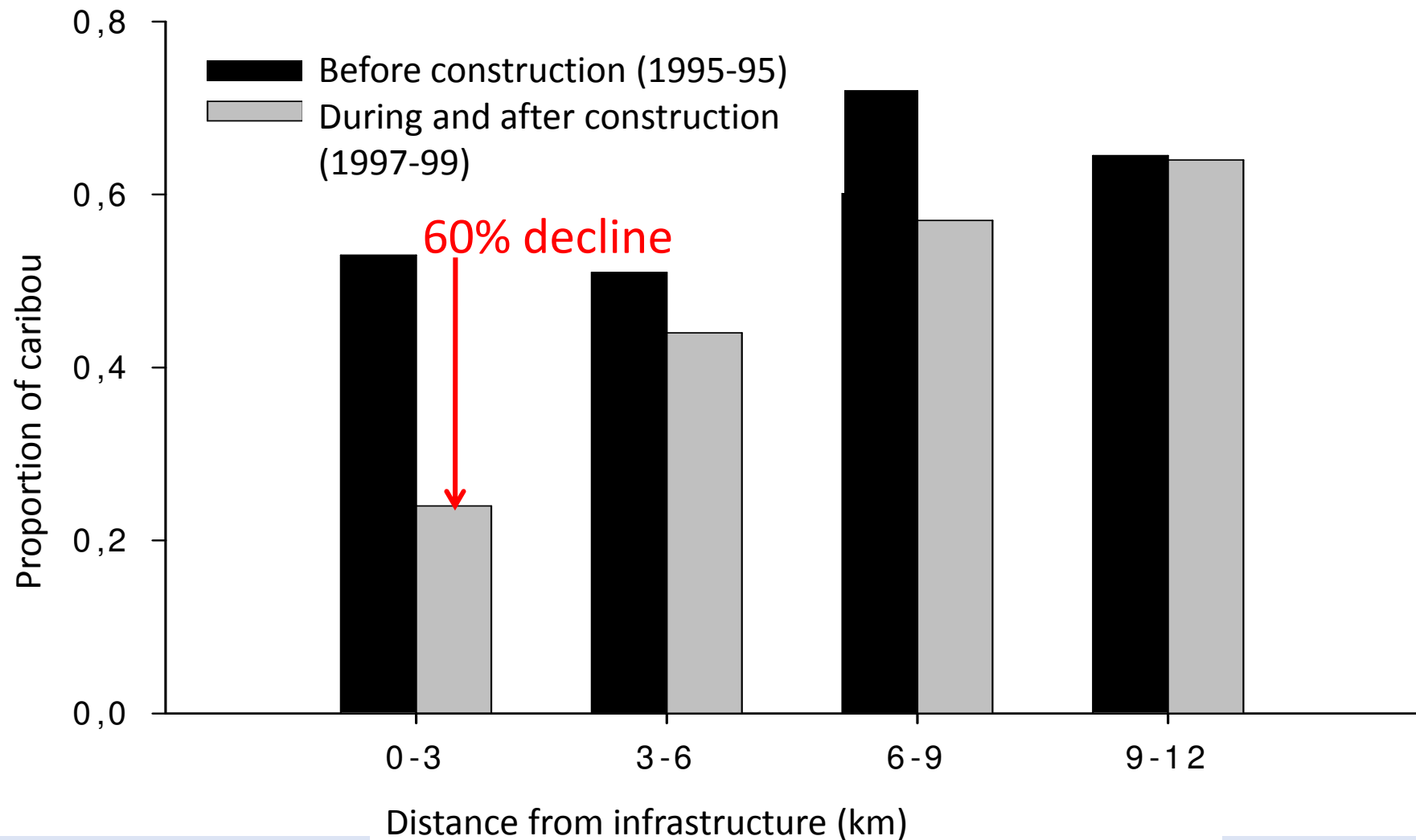
Forestry...



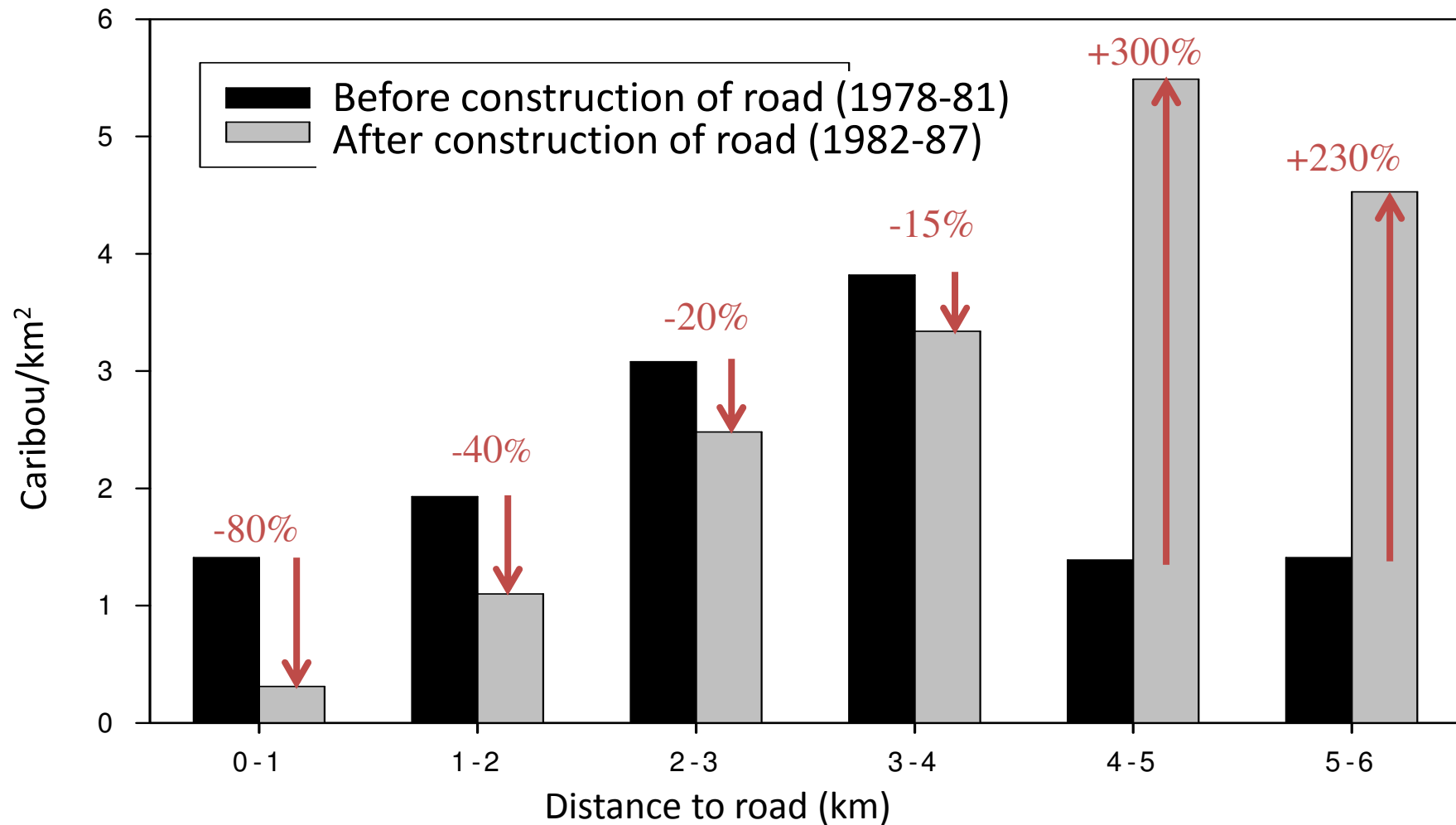
Norway - Before and after development



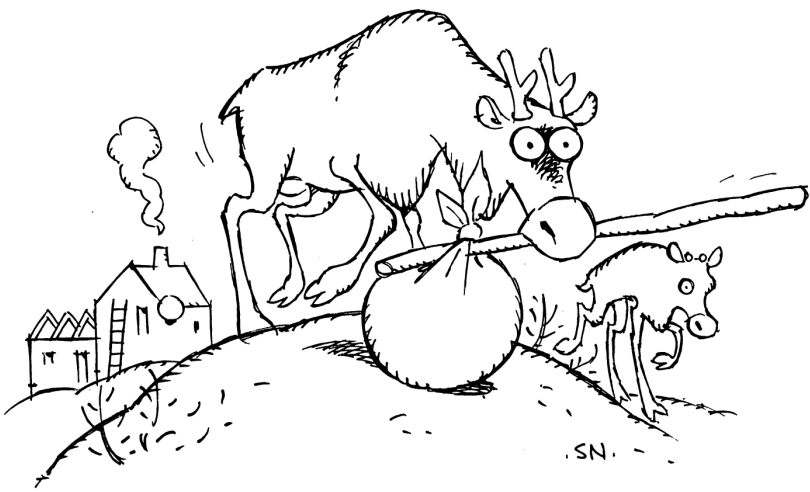
Canada – before and after development



Alaska – before and after development



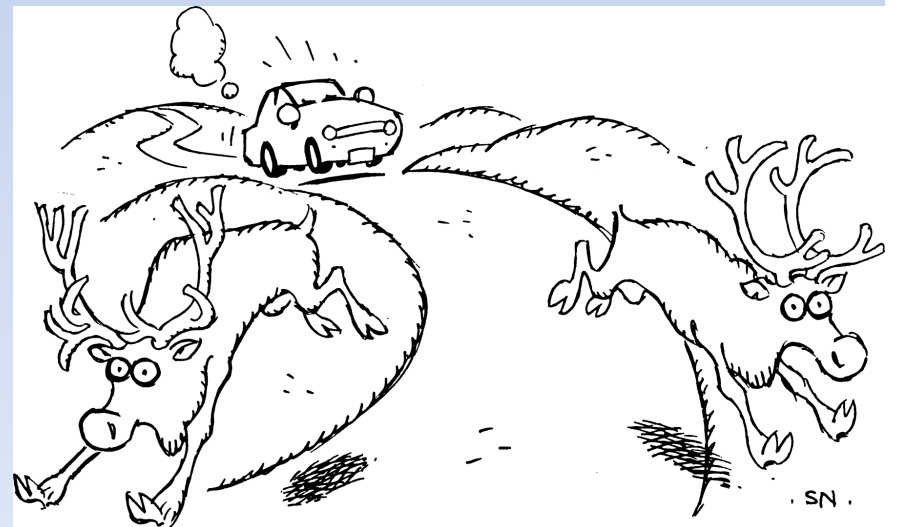
Avoidance defined



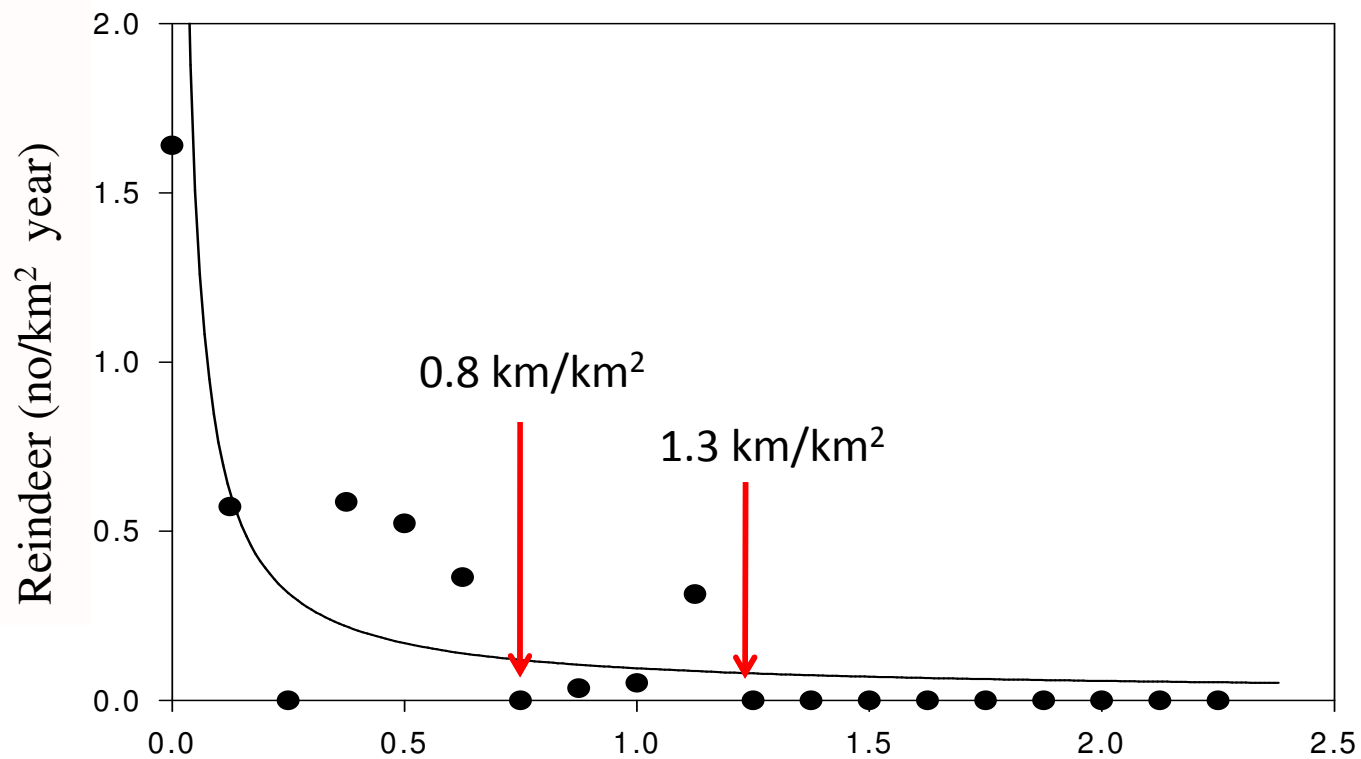
Avoidance: Reduced use of areas perceived as threatening or disturbed by the majority of the reindeer.

This may lead to a redistribution of reindeer into undisturbed areas.

As opposed to the immediate response of reindeer when meeting disturbance sources;
Often short-term responses of the most tolerant animals close to disturbance

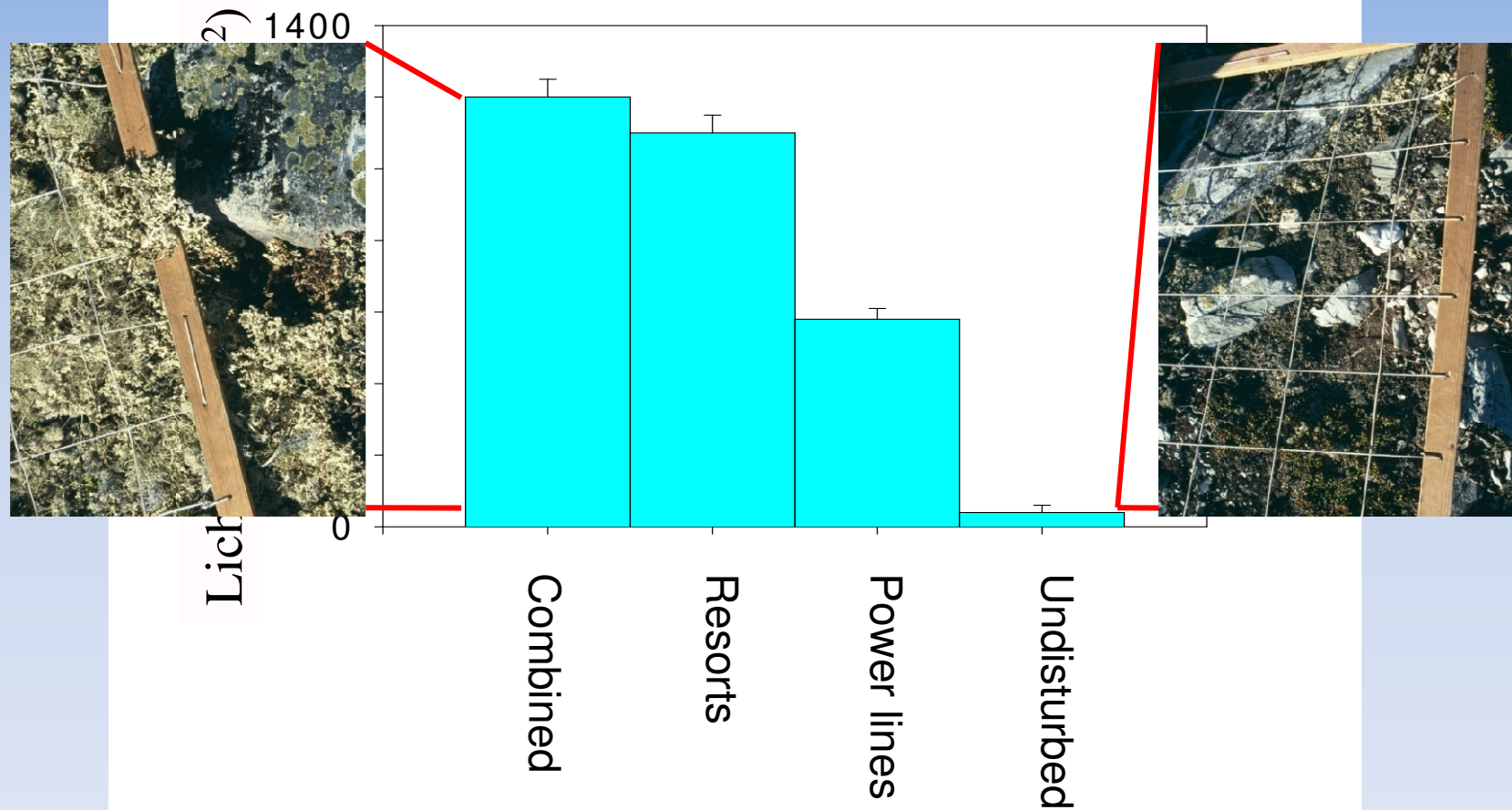


Thresholds – Infrastructure density



Density of power lines, roads and marked ski trails (km/km²)

Avoidance may lead to heavy grazing



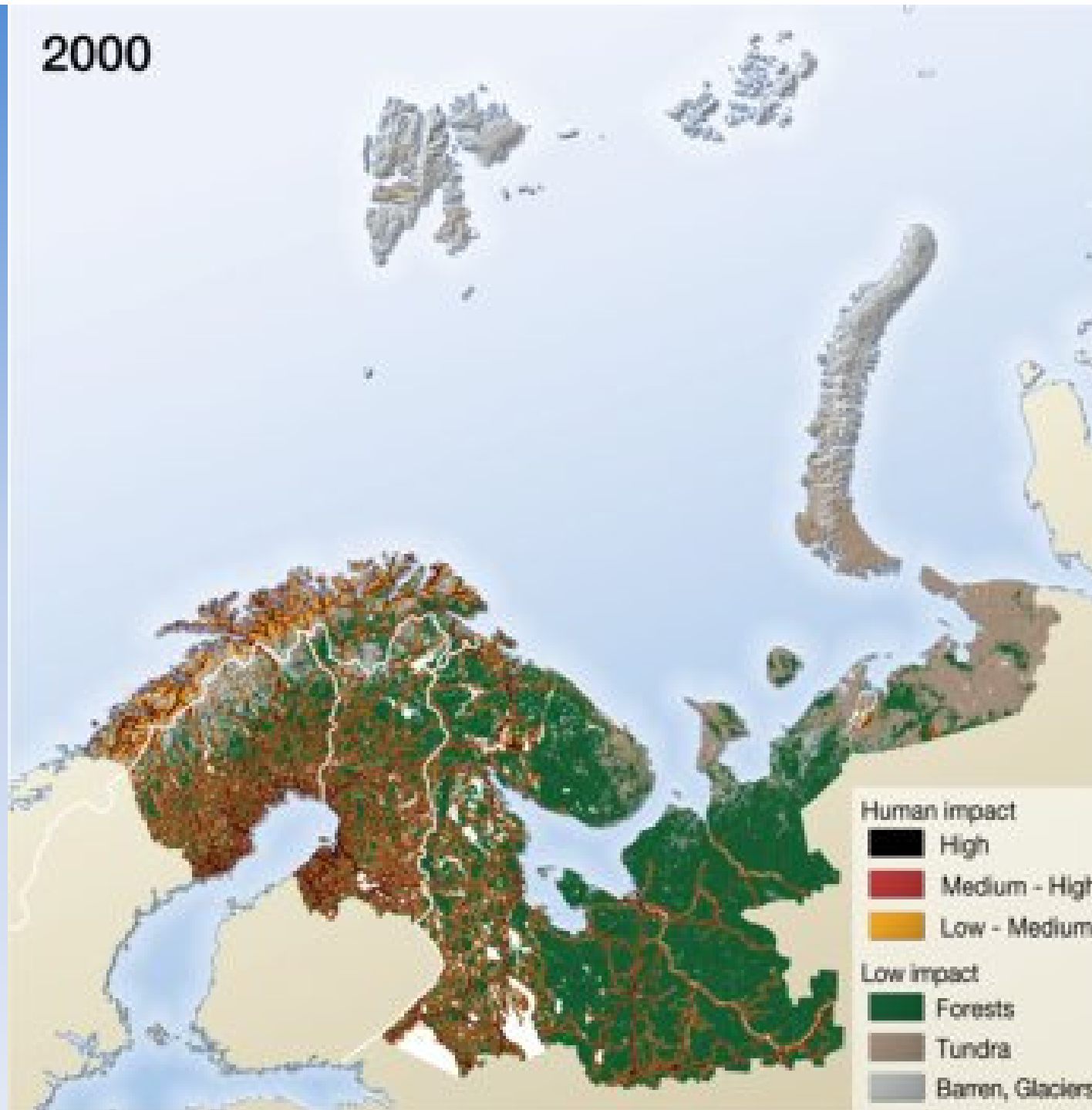
From Nordfjella 1998

The Barents Region after 2020: The Barlindhaug scenarios

- Six pipeline terminals and/or processing plants from Vesterålen to Eastern Finnmark
- Snøhvit
- Goliat
- Shtokman
- Pipelines
- Expansion of activity to Barents Sea north and disputed area



2000



2012-2020



2021-2030



*“Loss of pastures is the biggest challenge
reindeer husbandry is facing”*

Nils Henrik Sara, NRL leader



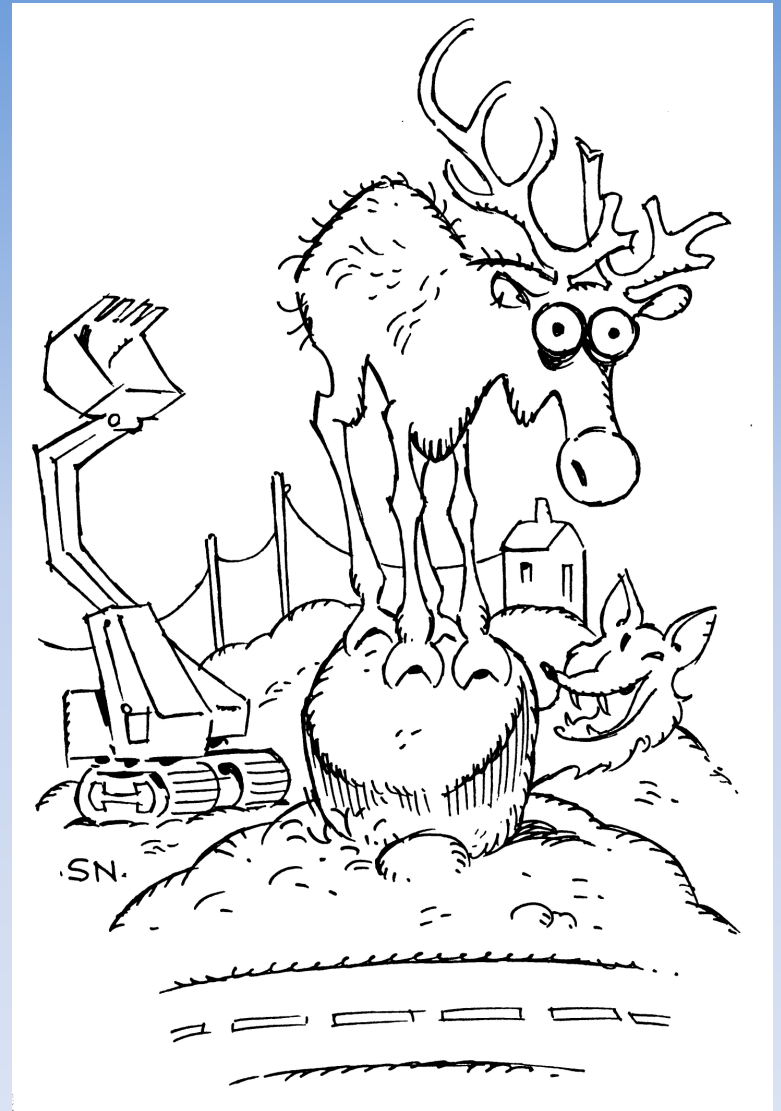
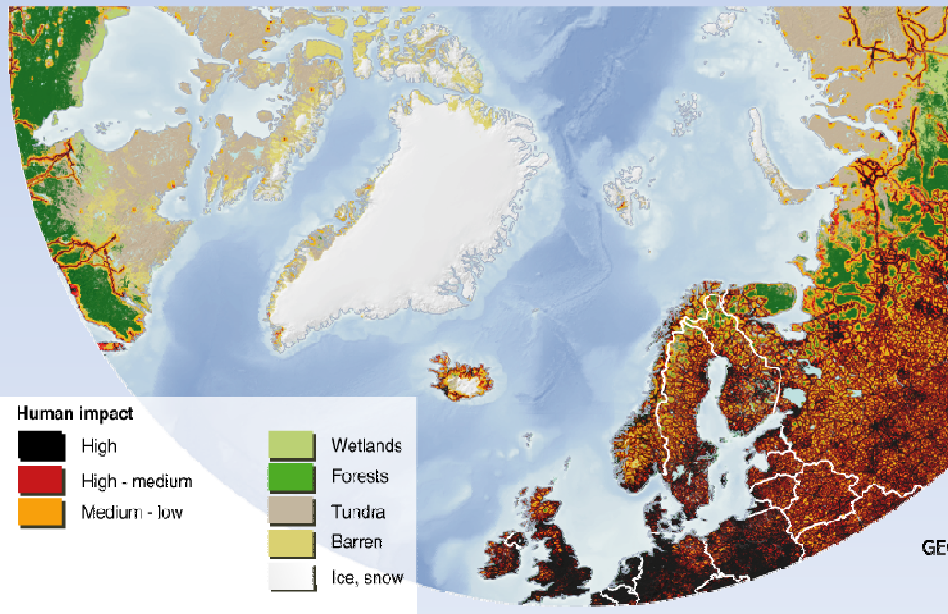
Climate change



- Flexibility and mobility has been important with extraordinary weather conditions
- Loss of pastures will make reindeer husbandry less capable of adapting to climate change

Future prospects

Increased competition
for land and resources

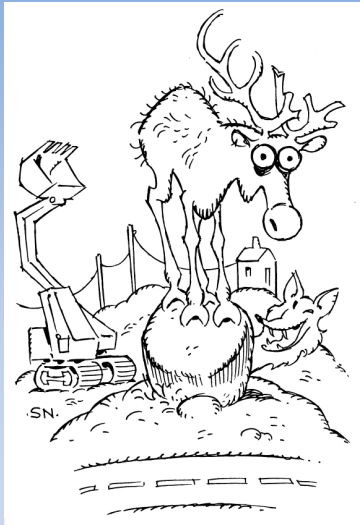


Future prospects

More conflicts and court trials



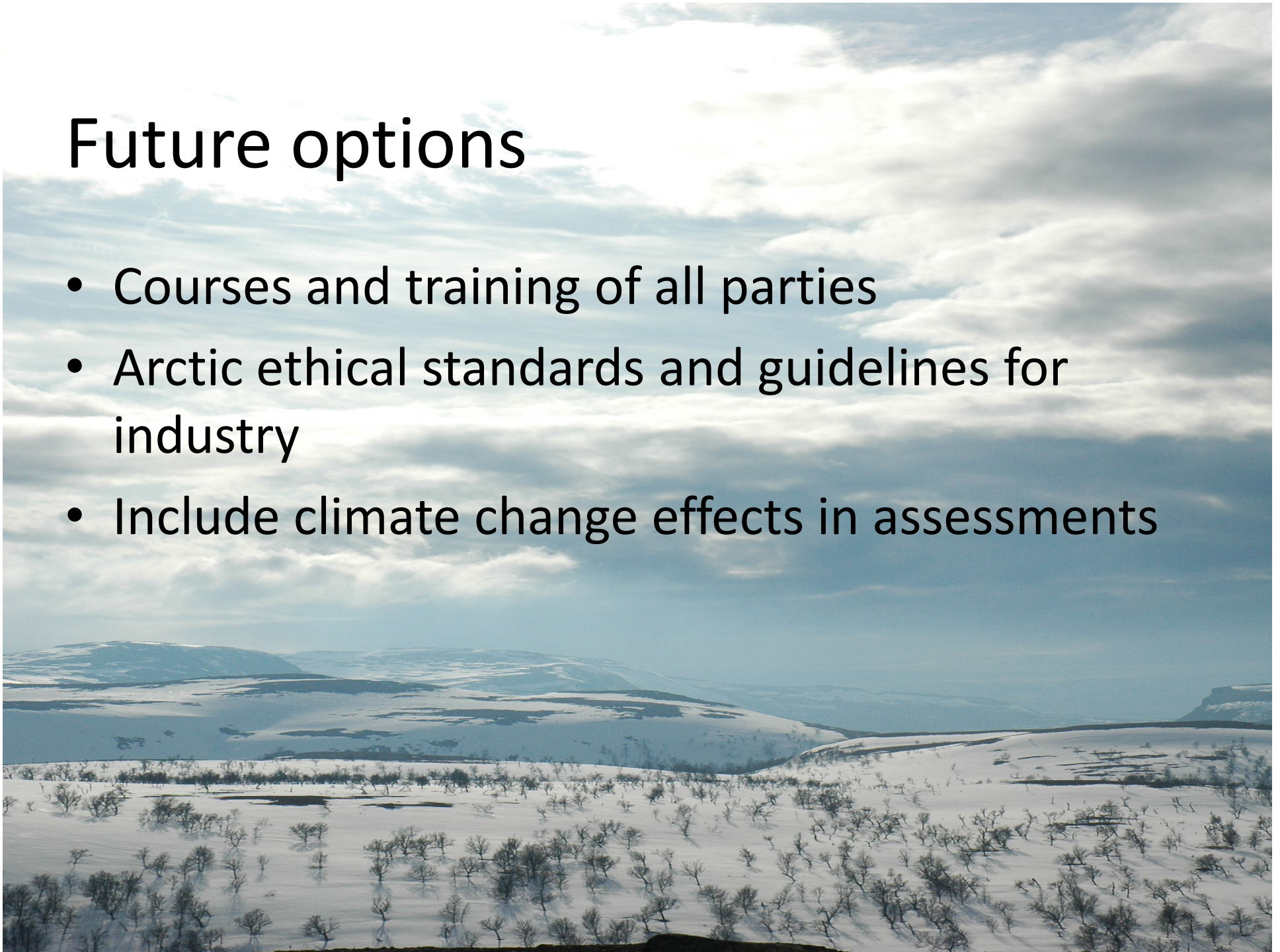
Future prospects



Or are there more sophisticated ways?

Future options

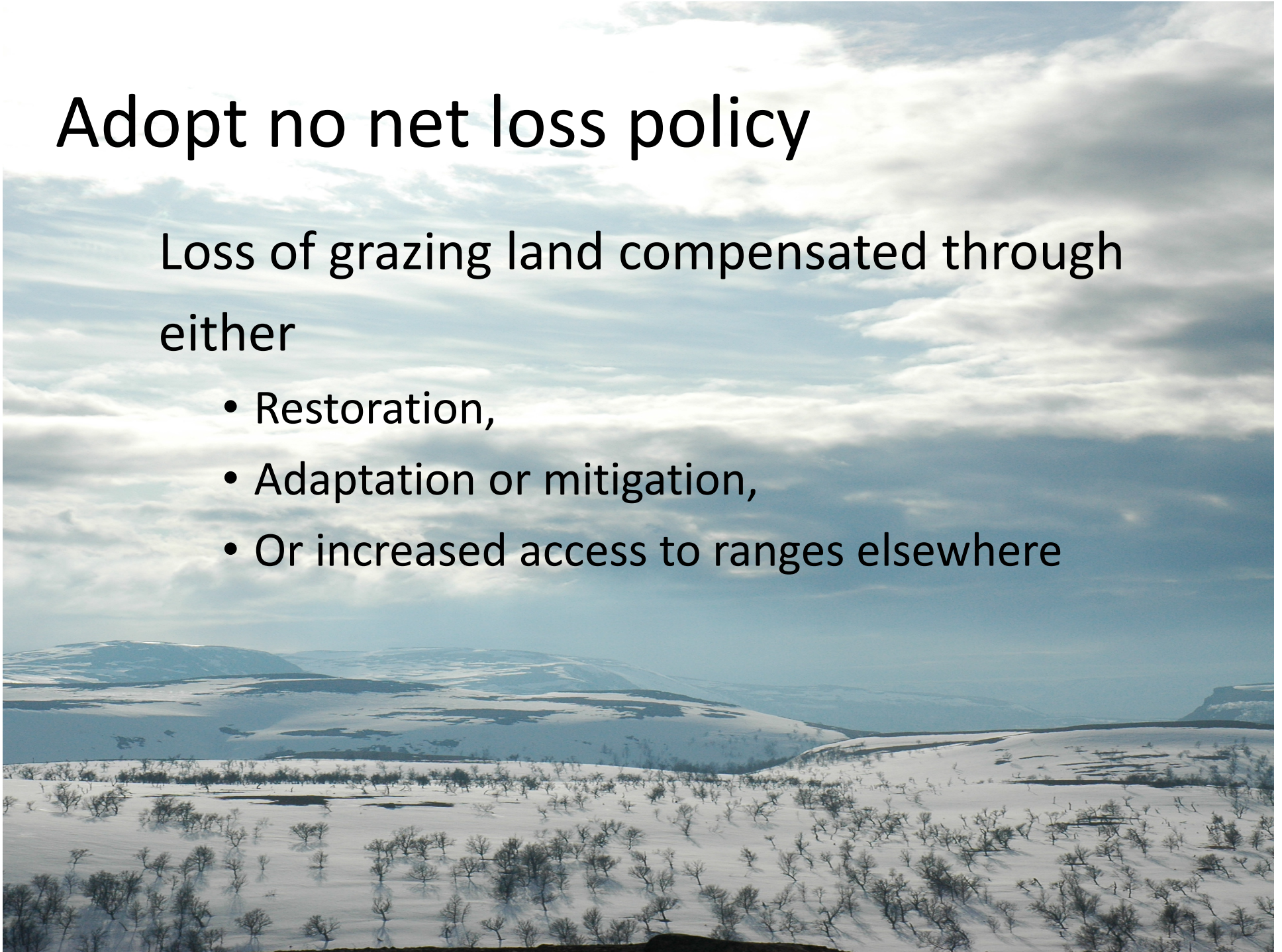
- Courses and training of all parties
- Arctic ethical standards and guidelines for industry
- Include climate change effects in assessments



Adopt no net loss policy

Loss of grazing land compensated through either

- Restoration,
- Adaptation or mitigation,
- Or increased access to ranges elsewhere



Long-term recommendations

Develop an integrated management plan also for the Barents sea *land* region involving and balancing the land changes associated with industrial and infrastructure development, climate change and the long-term sustainability of reindeer husbandry.





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Thank you!