

REXSAC

ARCTIC RESOURCES & COMMUNITIES

Resource extraction and sustainable Arctic Communities Insights and Conclusions

Dag Avango and Ninis Rosqvist, Div. of social science, LTU

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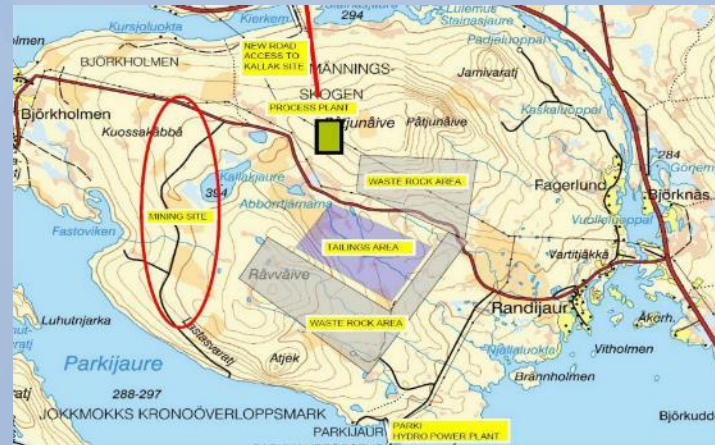
Resource Extraction and Sustainable Arctic Communities

Extractive industries as cultural, social, economic, and ecological phenomena



Pajala, Sweden

Why resource extraction commences



Gallok/Kallak, Sweden

Consequences for communities and environments in the Arctic



Pyramiden, Svalbard

Opportunities for transitioning toward post-extractive futures

Staff and activities

Multidisciplinary research across human, social and natural sciences

- 53 researchers
- 12 PhD students

PhD school

Mobility

Outreach

Conferences, workshops etc.



How and why do extractive industries commence

Main drivers

- Exceptionally high demand and prices
- Or planned economies
- Actors from outside of the Arctic

Contributing factors

- Clear and undisputed institutional frameworks
- Geopolitical interests
- New technologies
- Ideological trends and public perceptions
- Affective economies

Presence or absence of sea ice has little importance



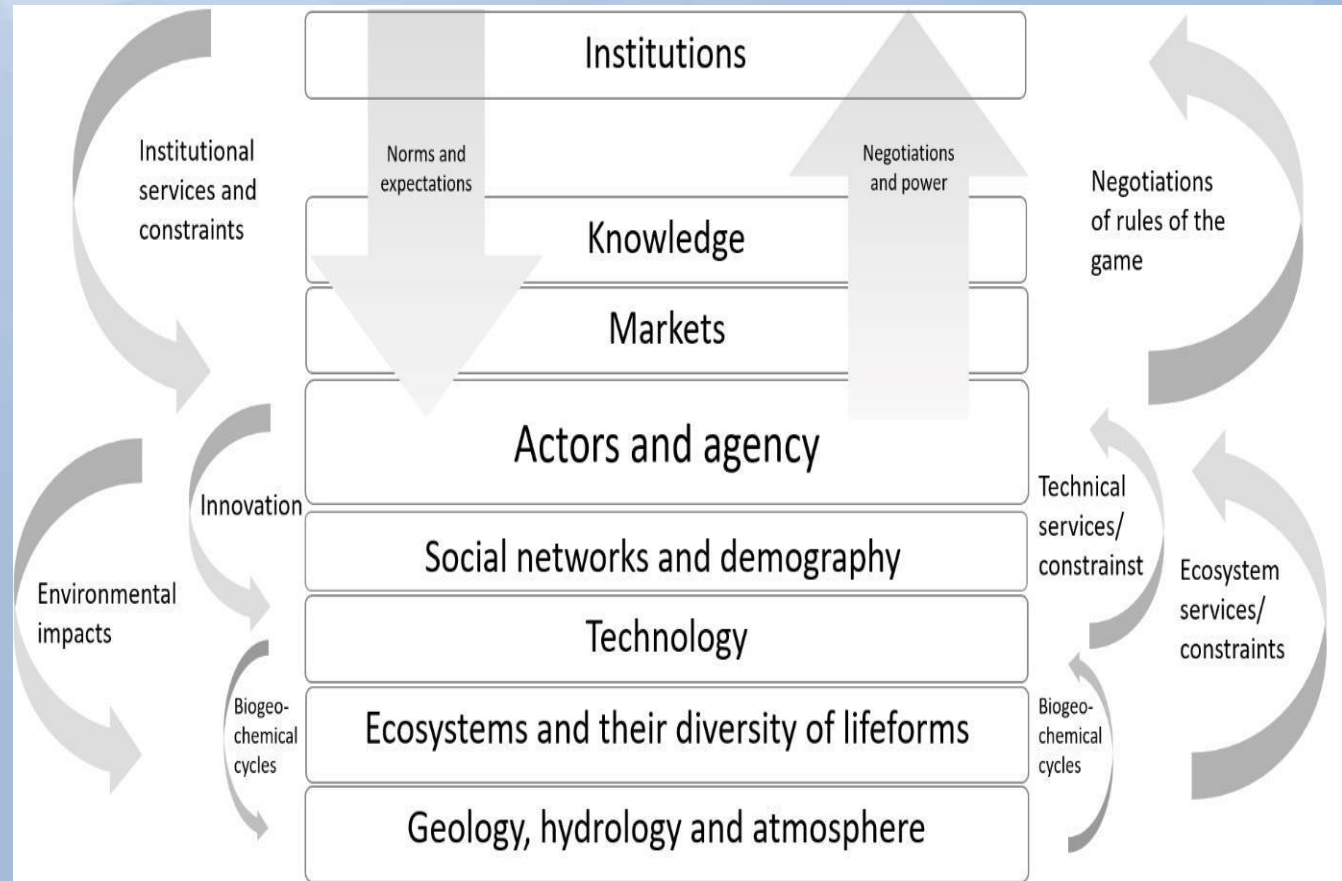
How and why do extractive industries commence?

Extractive industries in the Arctic can generate wealth, jobs and welfare but also tensions

Understanding tensions and impacts requires an holistic theoretical approach – need to look beyond the hole in the ground

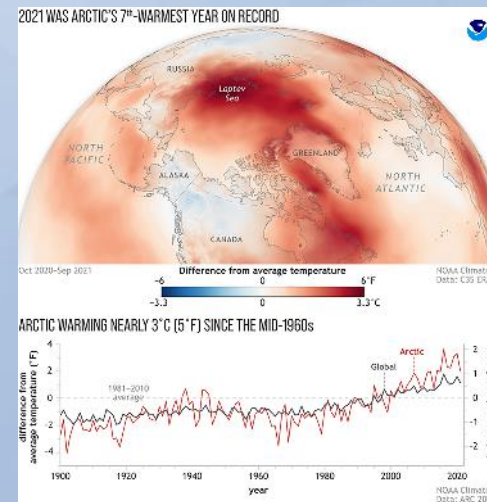
Socio-technical-ecological systems

- Mines & processing
- Infrastructures
- Settlements
- Organisations and people
- Institutions (formal and informal)
- Transformed ecologies and geographies (human and physical)



What are the consequences for environments and communities?

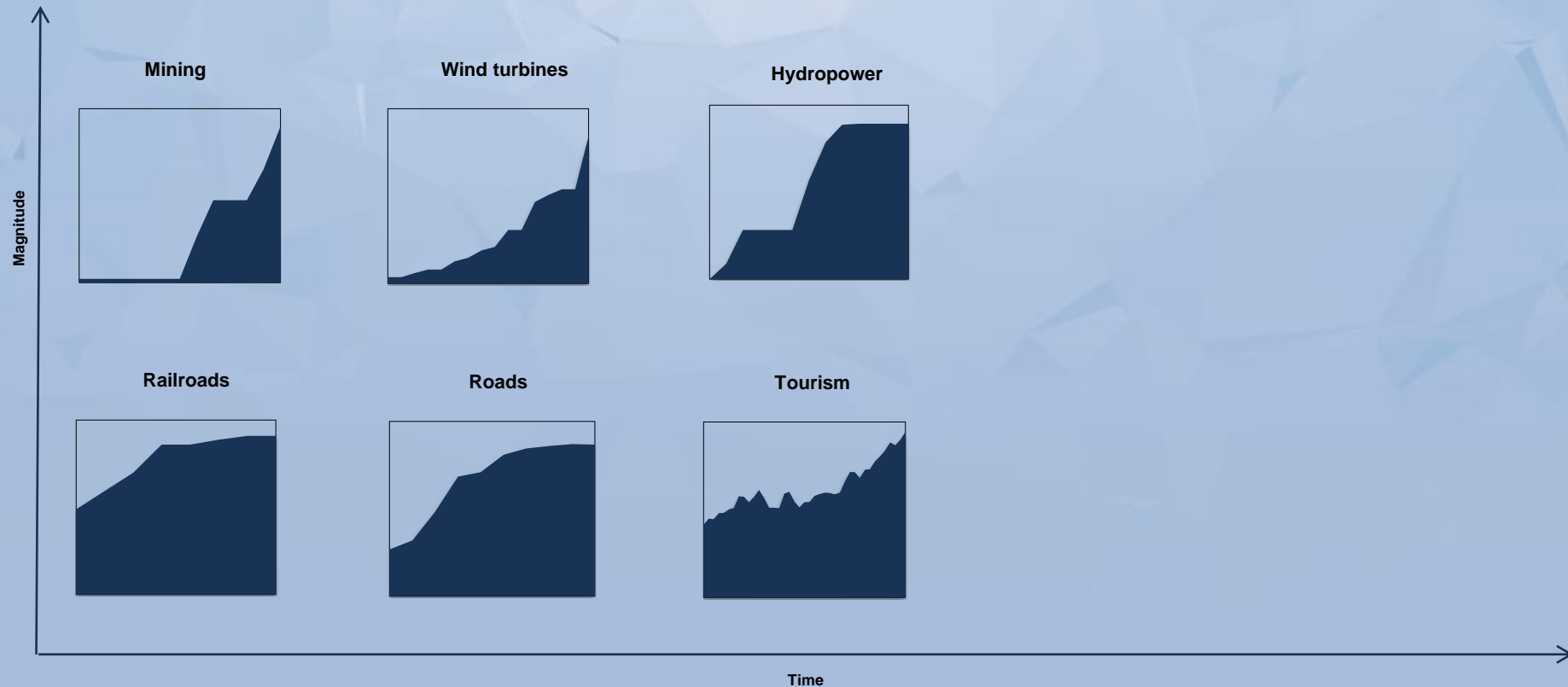
Multiple pressures on environment and people in the Arctic



Which changes/activities exert pressure?
How do impacts accumulate?
How do impacts interact?
How and why do these cause land use conflicts?
Why are these impacts not properly assessed?

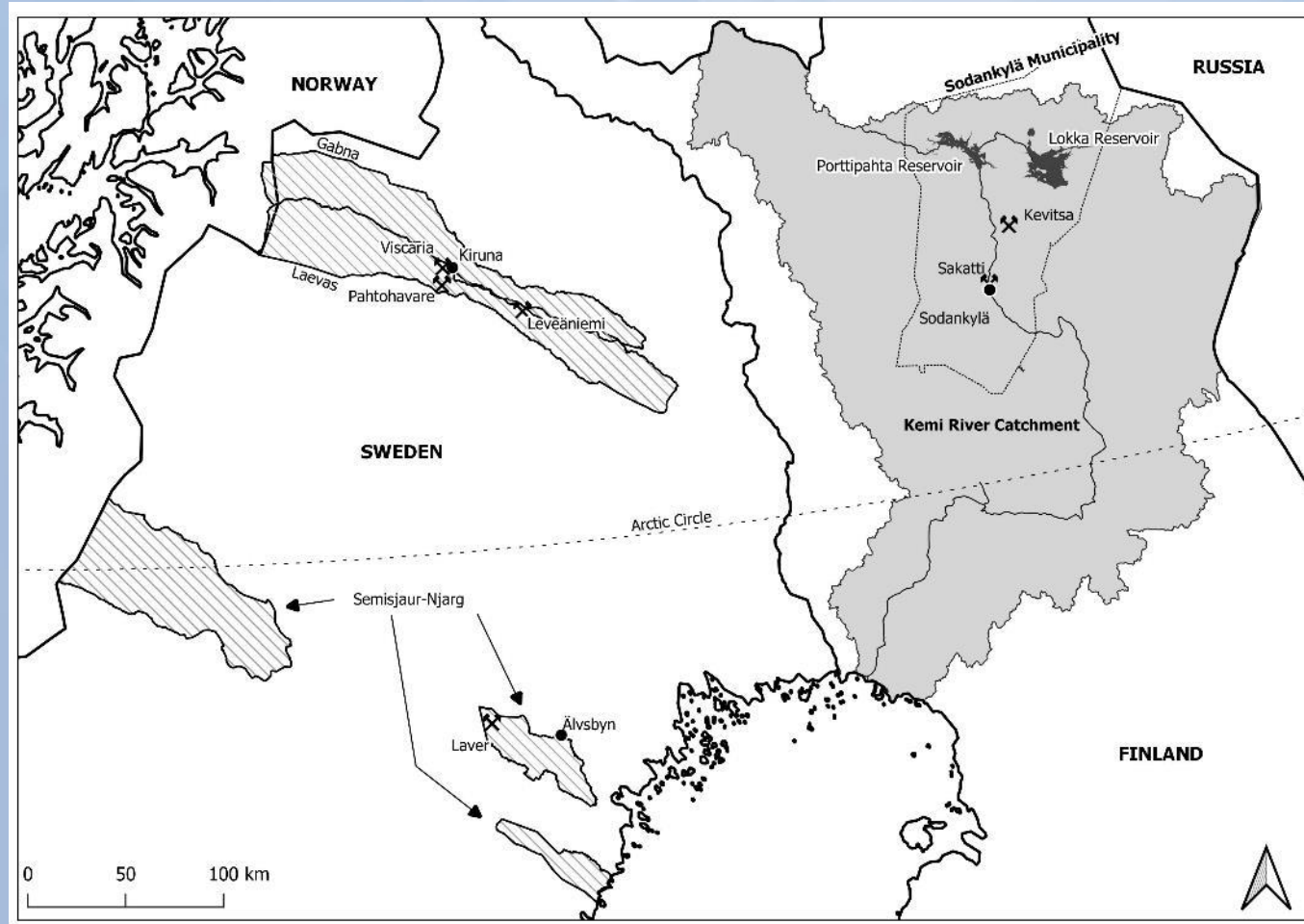
What are the consequences for environments and communities?

.....on different temporal and spatial scales



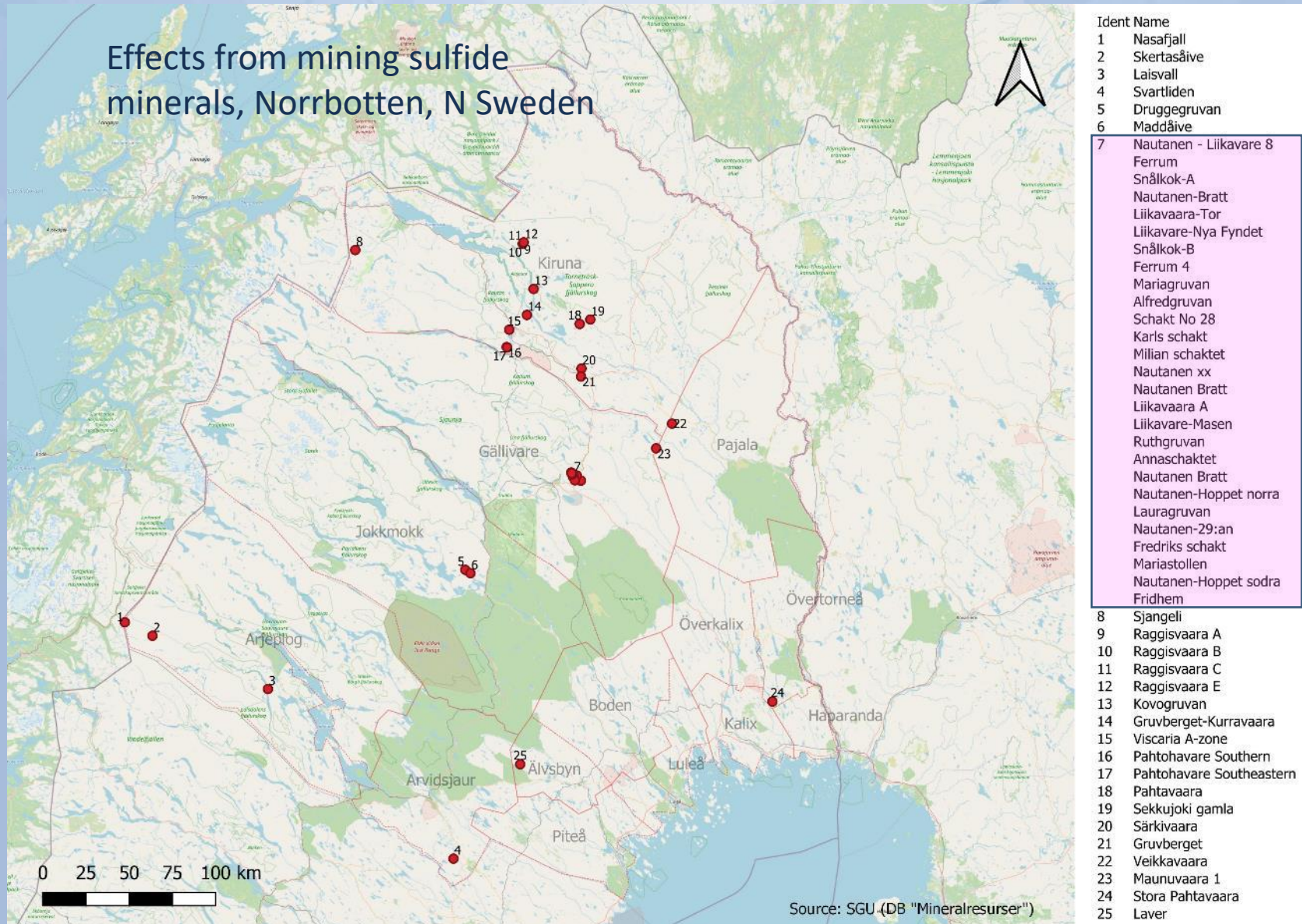
Cumulative impacts from mega-system development during the last 100 years in Norrbotten, N Sweden

What are the consequences for environments and communities?



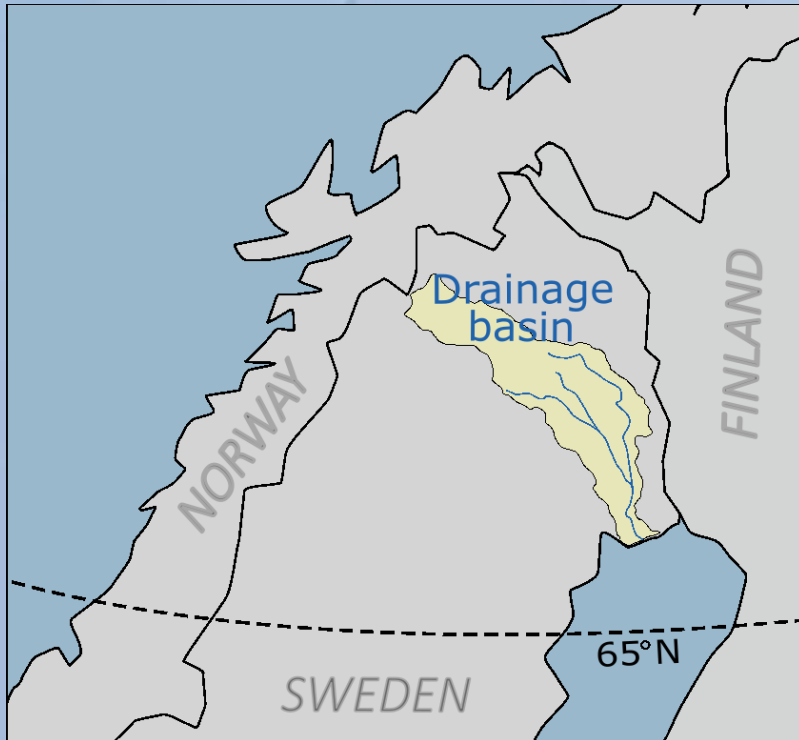
Cumulative impacts from mega-system development; harnessing Kemi river for energy supply to forestry and mining industry

What are the consequences for environments and communities?



What are the consequences for environments and communities?

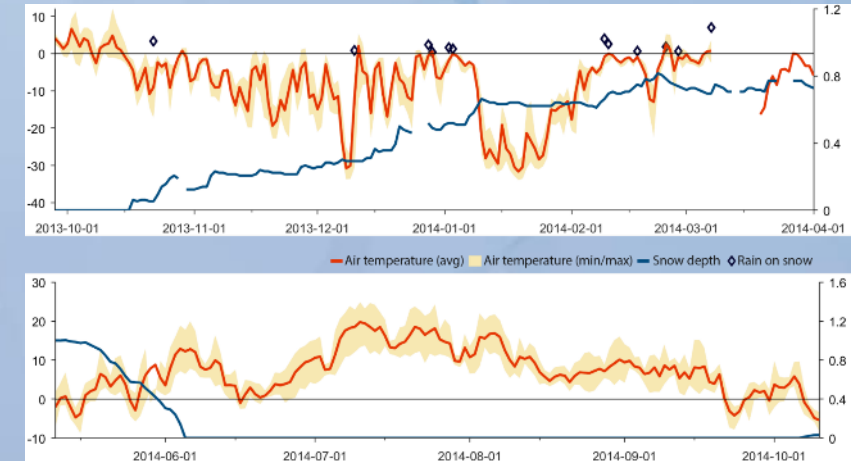
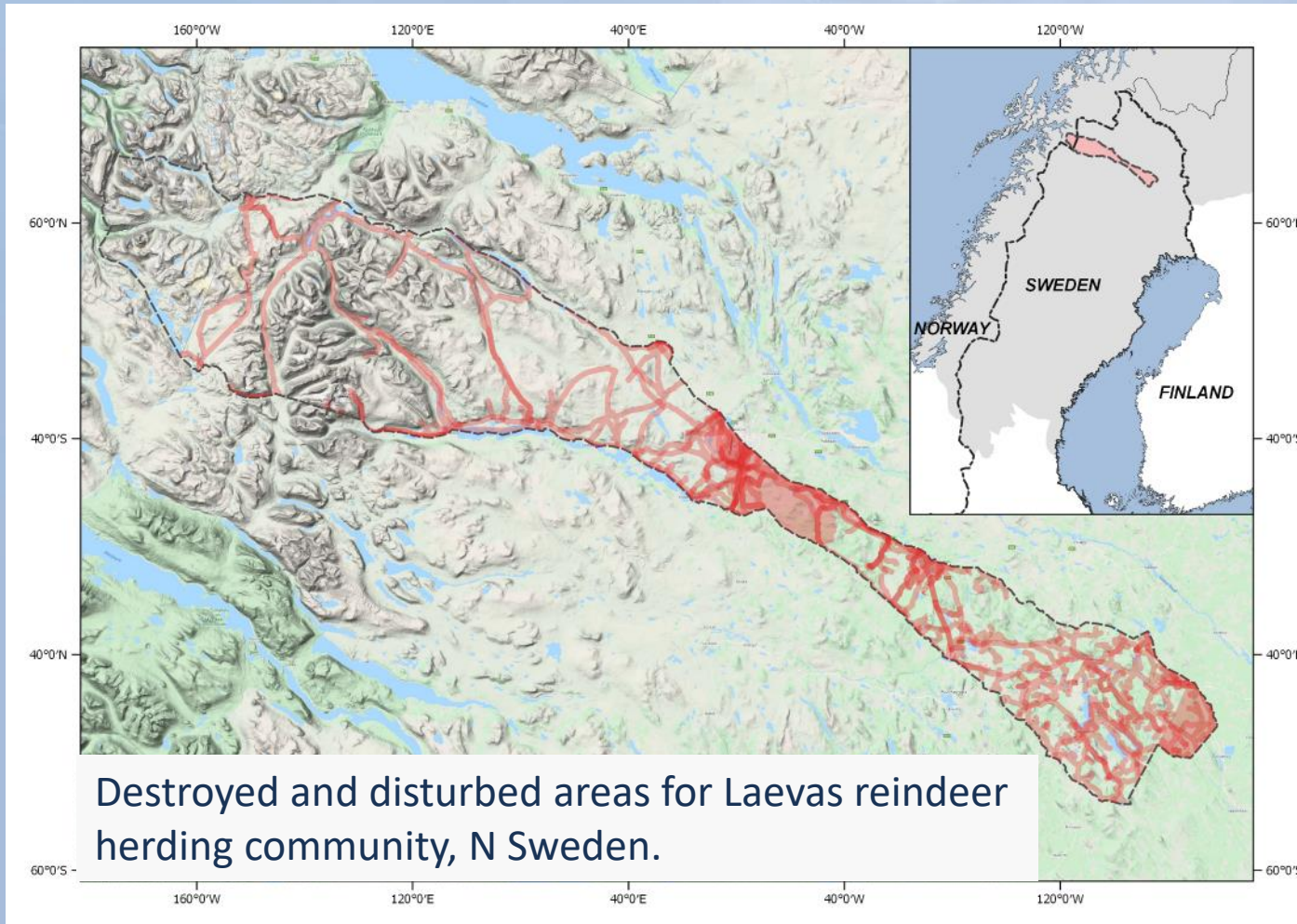
Effects from acid mine drainage at Nautanen- 100 year perspective



(presentation by Sandra Fischer)

What are the consequences for environments and communities?

Cumulative effects from mining, energy production, infrastructure development, tourism, etc. most serious (so far) on traditional land users e.g. reindeer, inhibits adaptation to effects from climate warming.



Rosqvist, G. C., Inga, N., Eriksson, P. 2021. Impacts of climate warming on reindeer herding require new land-use strategies. *Ambio*, 40: 566-574.

Fohringer, C., Rosqvist, G., Inga, N., Singh, N.J. 2021. Reindeer husbandry in peril? How extractive industries exert multiple pressures on an Arctic pastoral ecosystem. *People and Nature* 3: 872-886.

Transitions to post-extractive futures

Arctic mining settlements sensitive to fluctuating markets and particularly vulnerable during de-industrialization

- Most jobs connect to the mine
- Distances to alternative employment great
- Legacies of the mining past have been left behind (waste, infrastructures, settlements, identities and memories)



Transitions to post-extractive futures

Under which circumstances can legacies of extraction gain new value? For whom and why?

Four processes:

- Abandonment, decay, pollution
- Environmental remediation
- Re-economization
- Heritage making (official, corporate, unofficial)



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Transitions to post-extractive futures

Mining legacies are part of the cumulative impacts from land use and together with climate change contribute to multiple pressures in the Arctic

Understanding the scale of legacies from past extraction requires social-ecological-technical systems approach, for:

- Assessing impacts and predicting legacies
- For planning post-extractive futures



Transitions to post-extractive futures

Planning and regulating the afterlife of systems for extraction requires consideration of a wider variety of post-extraction futures:

- The societal challenges of environmental remediation
- The potential for re-using legacies of mining: re-economization, heritage making

Environmental safeguards, clear responsibilities and local influence are key to creating new values from legacies of extractive industries



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