Reducing damage on Soil and Water with GIS in the Swedish forestry

Esri user congress

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SKOGFORSK

Skogforsk in brief

Forestry and the Government in collaboration

Applied research and development

R&D for sustainable and profitable forestry

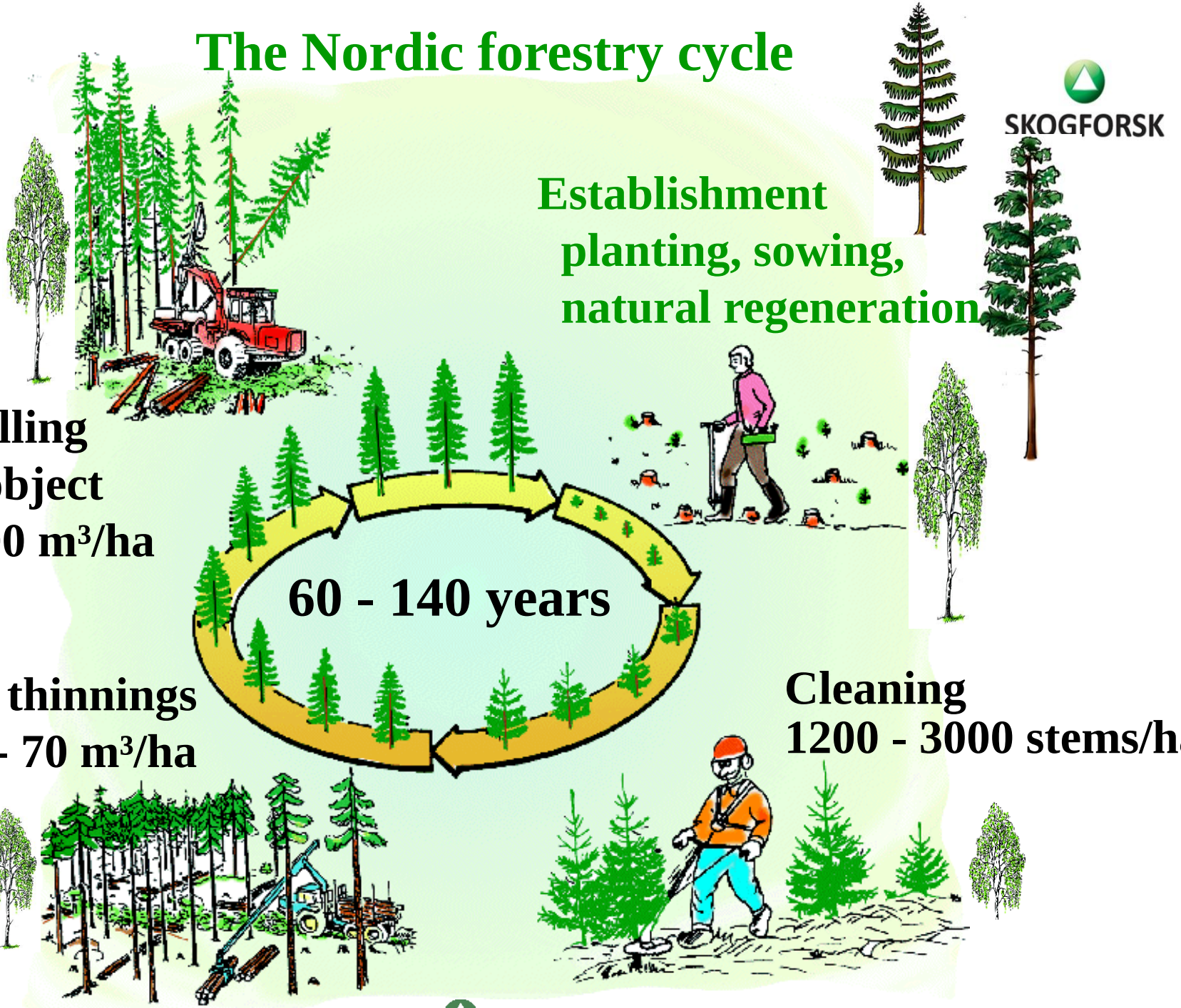
Over 100 employees, in three locations

Communication of knowledge

Research areas:

- Forest Production
- Wood Supply

The Nordic forestry cycle



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Cut to lenght system

Harvester

Forwarder

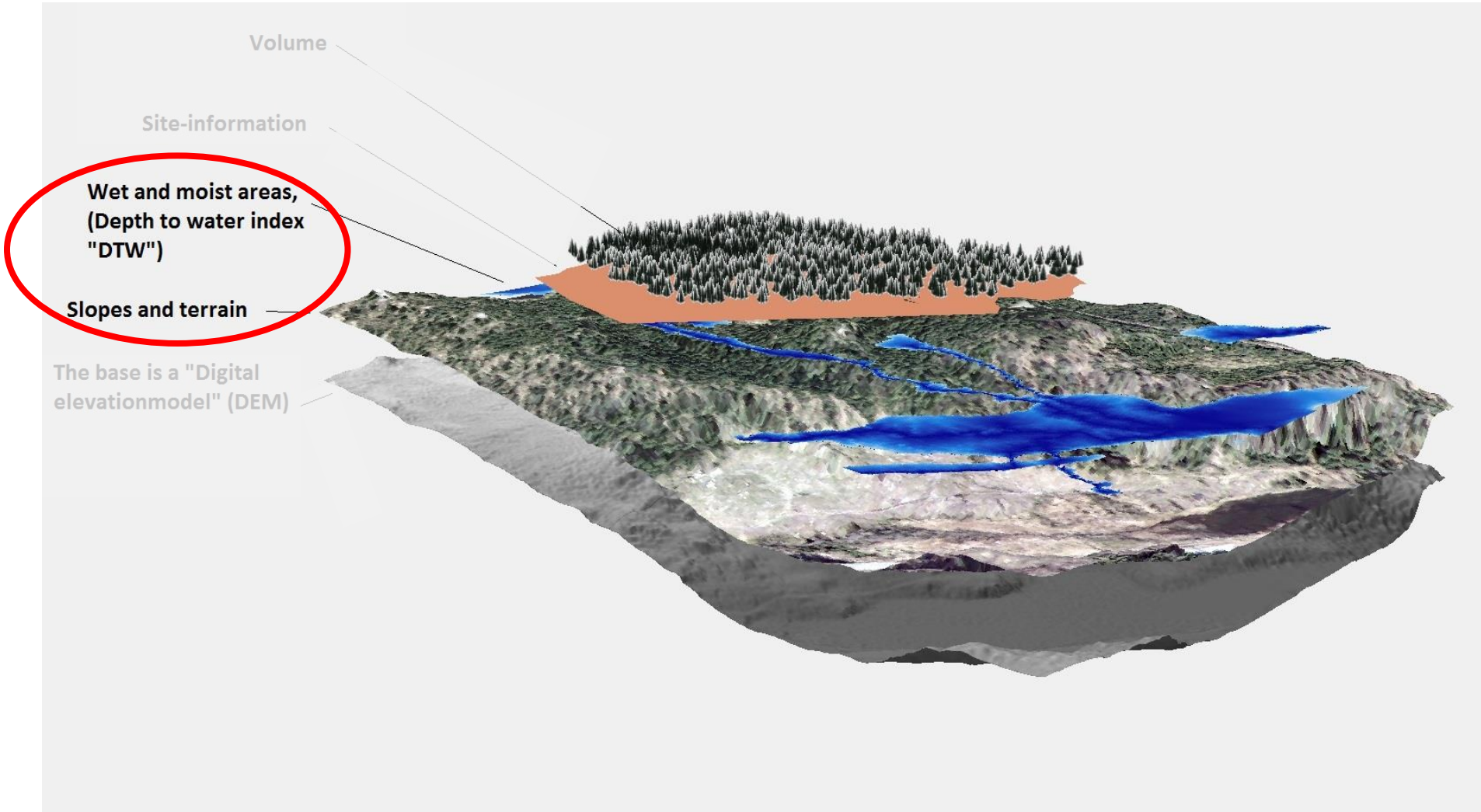
Background

Problem

- Harvesting operations causes rutting
- Consideration to sensitive areas (mainly connected to water)
- Efficiency combined with caretaking actions.

New digital information

- Lidar-data for whole Sweden, 2010
  - Decision support maps



Planing harvesting operations

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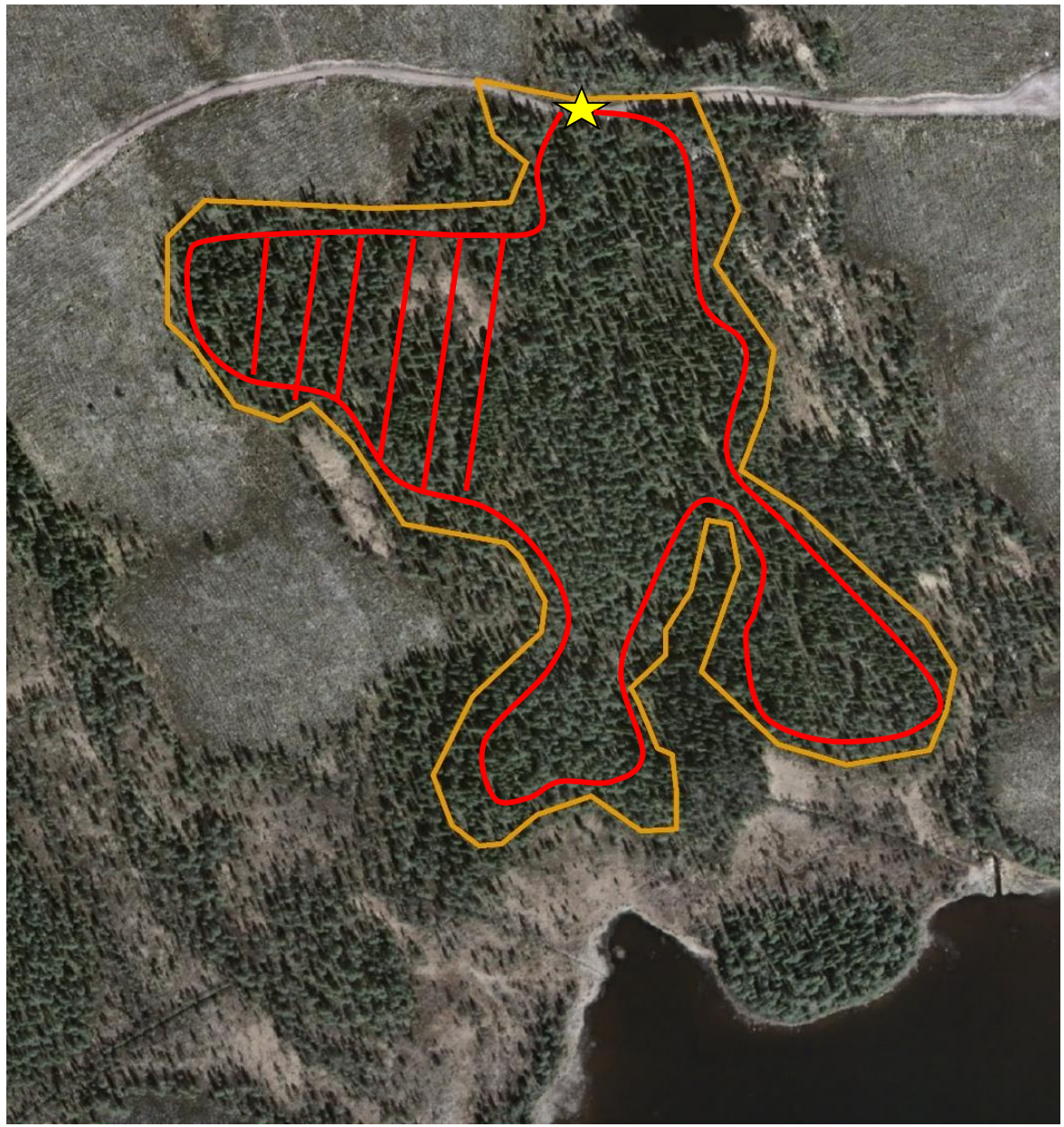
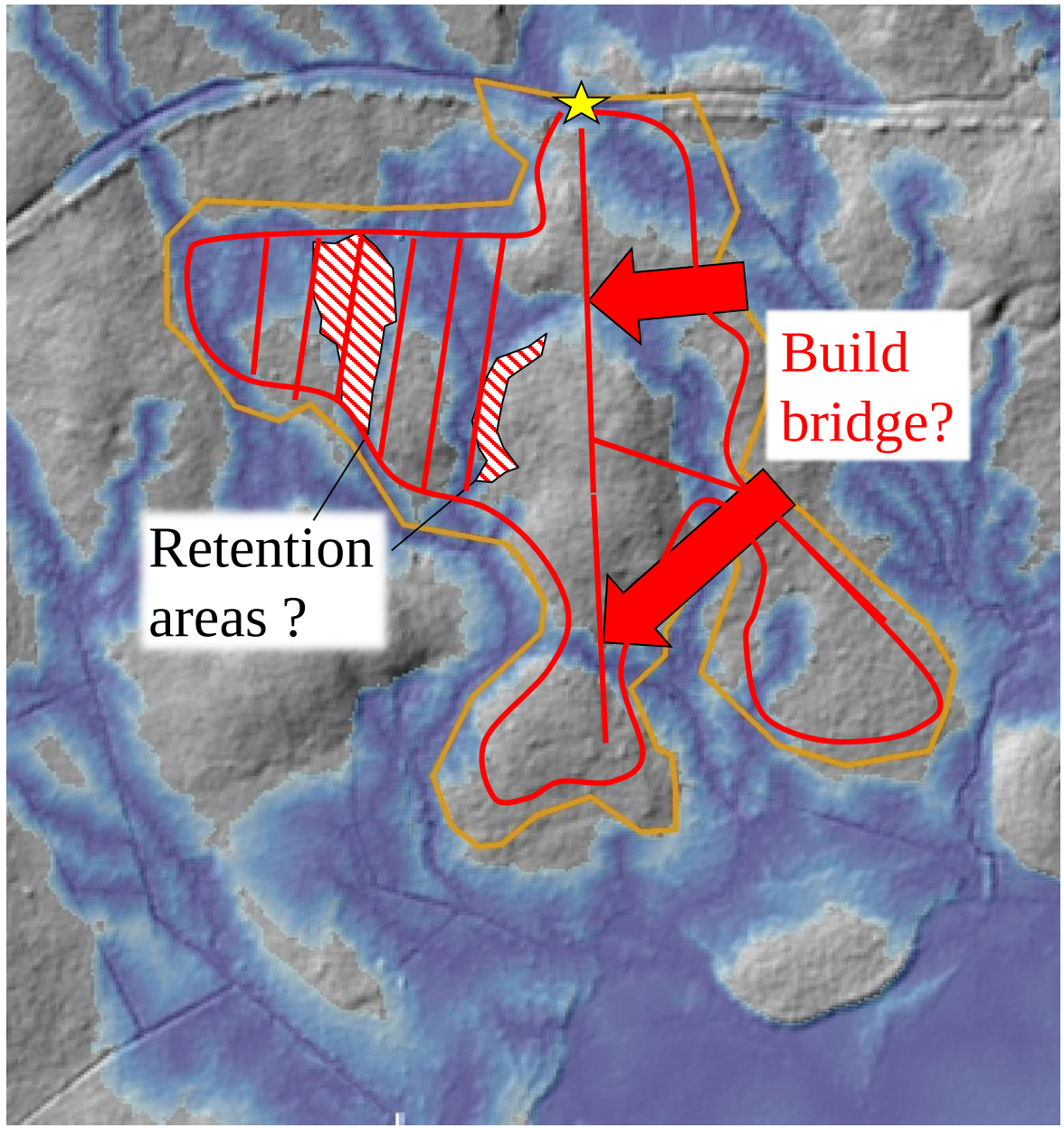
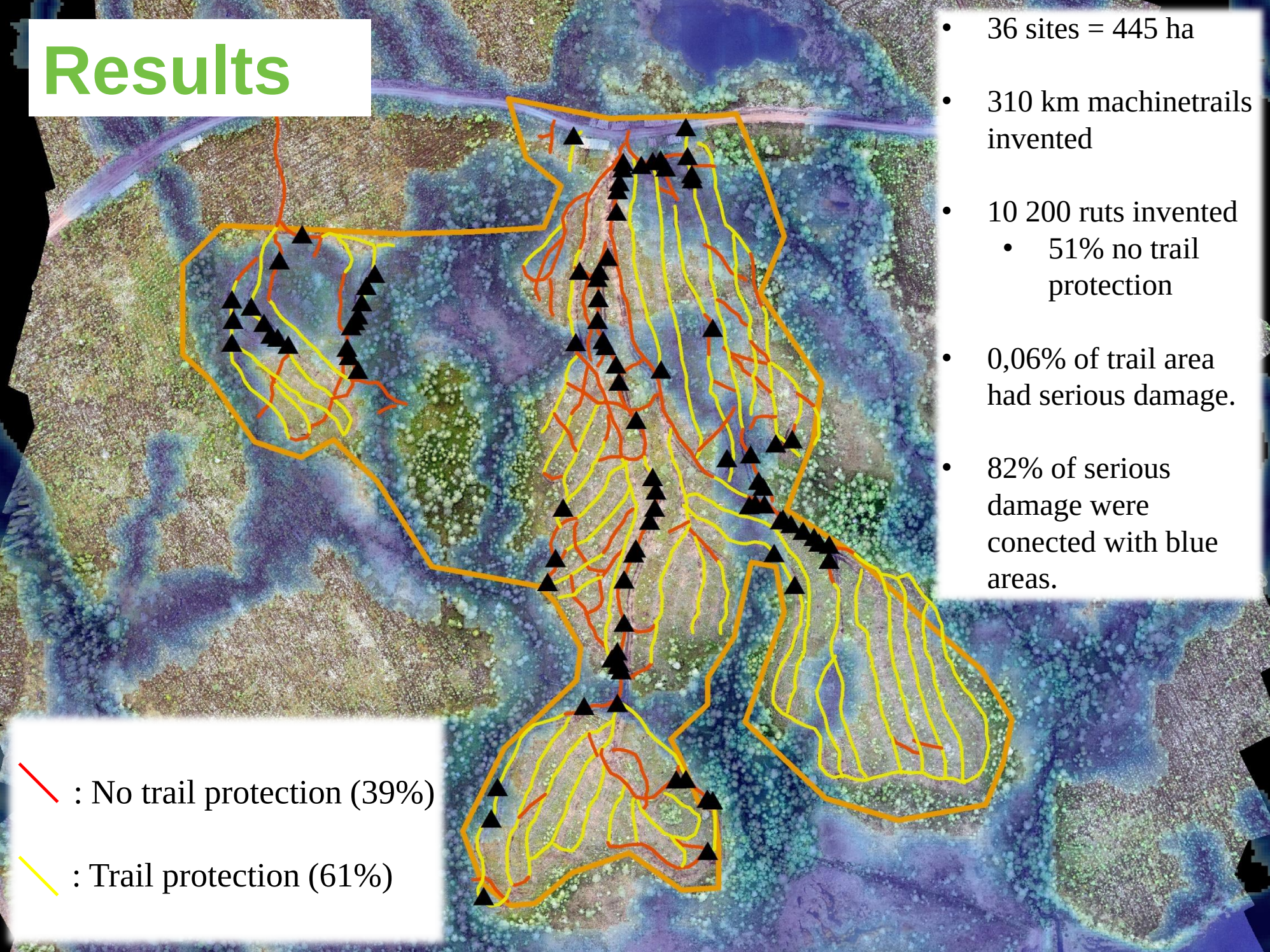
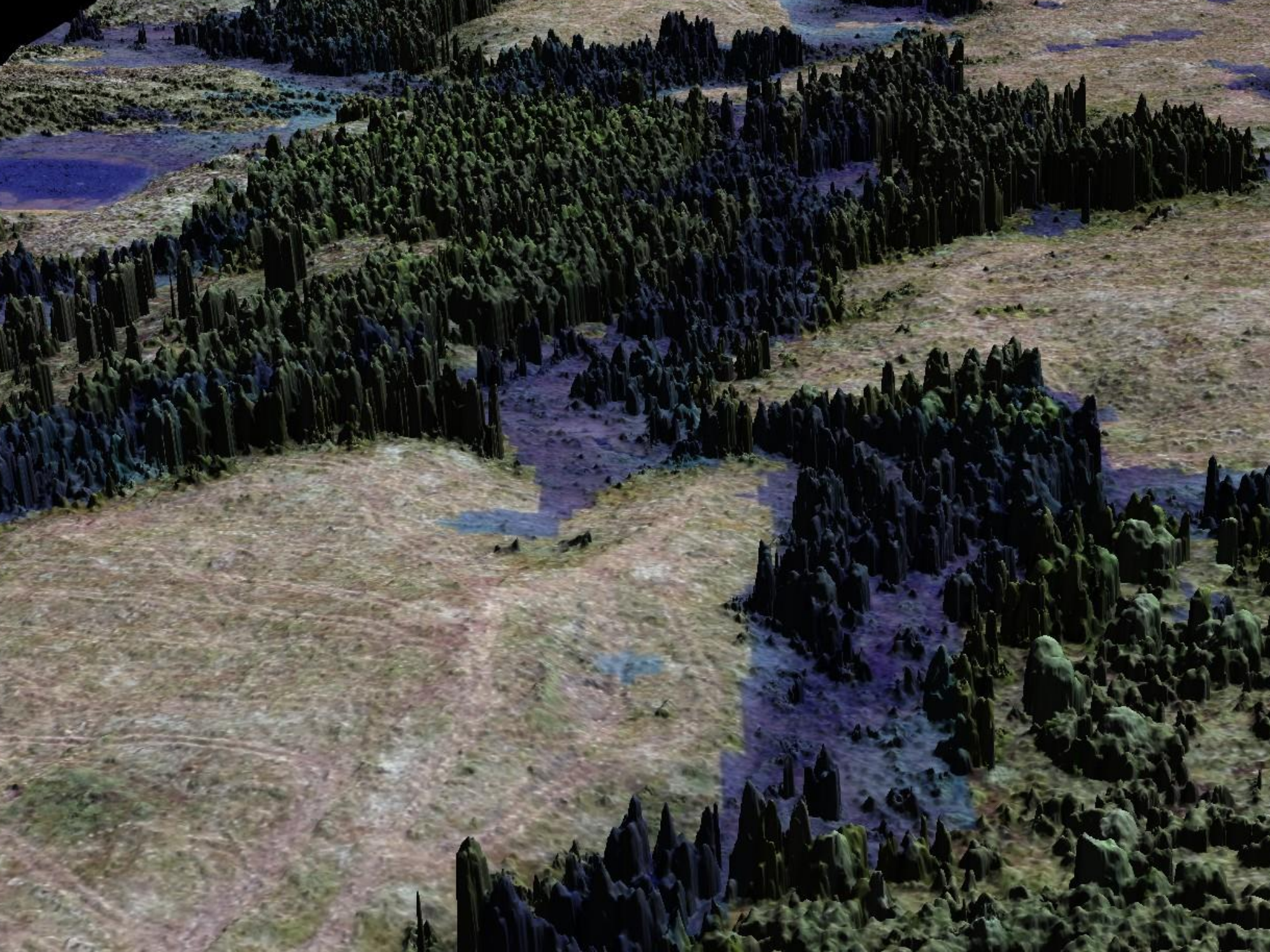


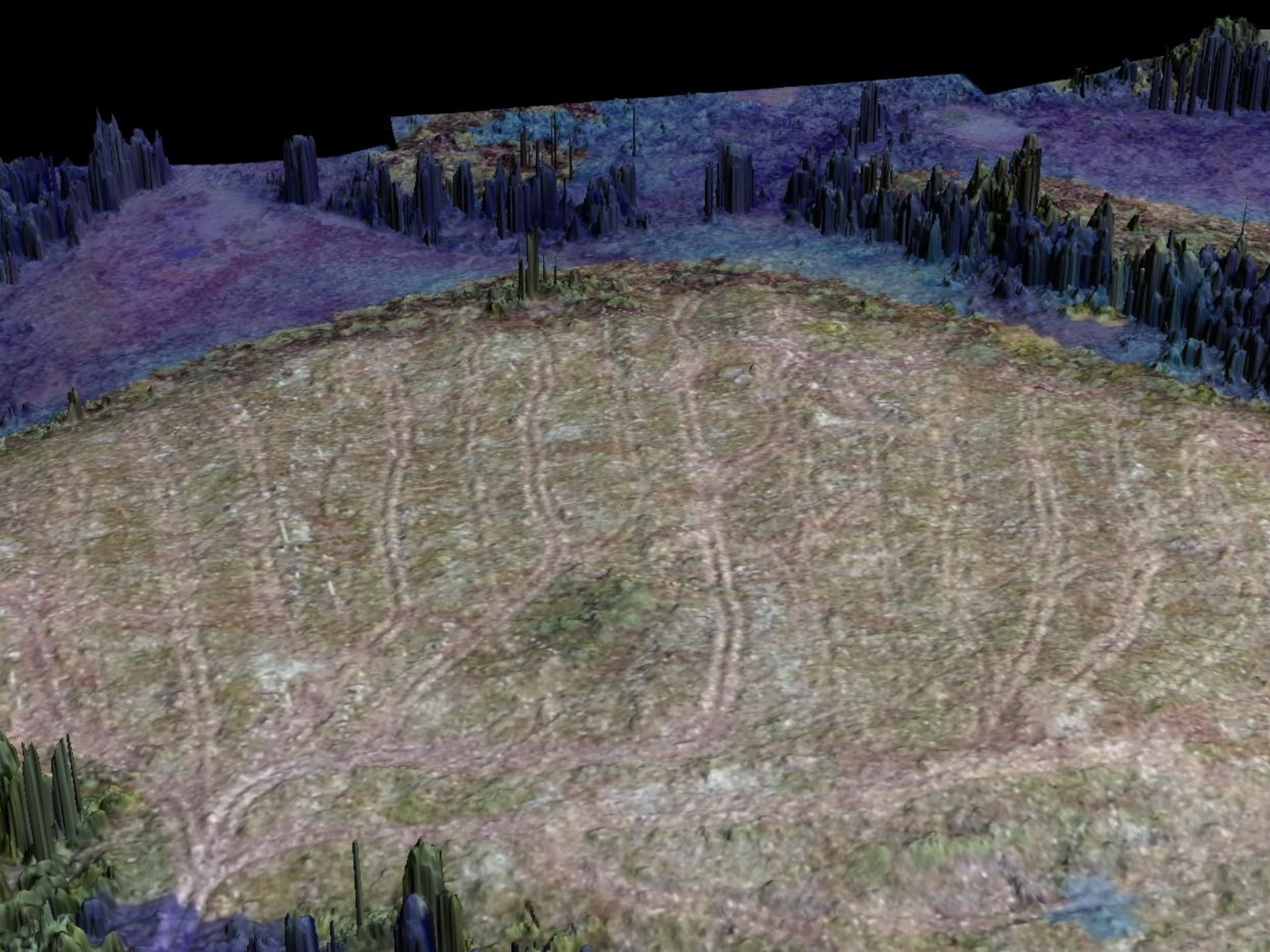

Build bridge?
Retention areas ?

Results



- 36 sites = 445 ha
- 310 km machinetrails invented
- 10 200 ruts invented
  - 51% no trail protection
- 0,06% of trail area had serious damage.
- 82% of serious damage were conected with blue areas.





Conclusions

If 0,06% serious damage today, we can reach 0%.

Trail protection can be used more efficient and make a change directly

Machine operators are positive to the new decision support maps and work creatively with them to become more environmental friendly and efficient every day.