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

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Skogfors 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

Establishment
planting, sowing,
natural regeneration

Final felling
~ 3 ha/object
100 - 600 m³/ha

(0) 1 - 4 thinnings
each 30 - 70 m³/ha

60 - 140 years

Cleaning
1200 - 3000 stems/ha
Cut to length 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
Retention areas?

Build bridge?
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 connected 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.