EOM
Earth Observation and Modelling

Coperni.Goose

Evaluating the applicability of remote sensing data for damage due to goose feeding

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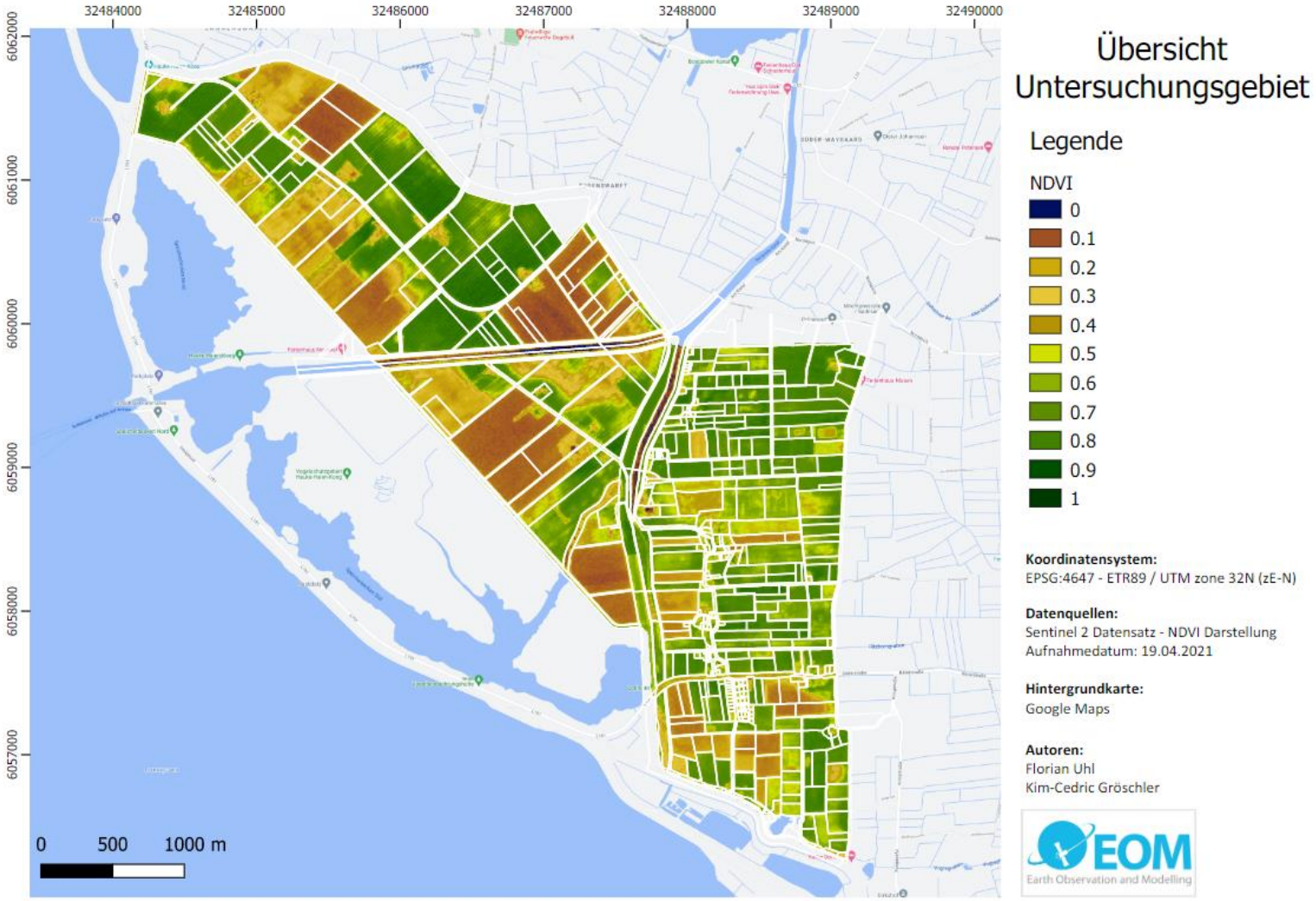
Mission

- Support the field work with satellite data
- Detect grazing damage caused by Barnacle goose
- Identify 2 to 3 damage levels in grassland and other crops
- Develop and evaluate a software routine
- Evaluate suitability of RS data for damages due to grazing

photograph: Daniel Viain

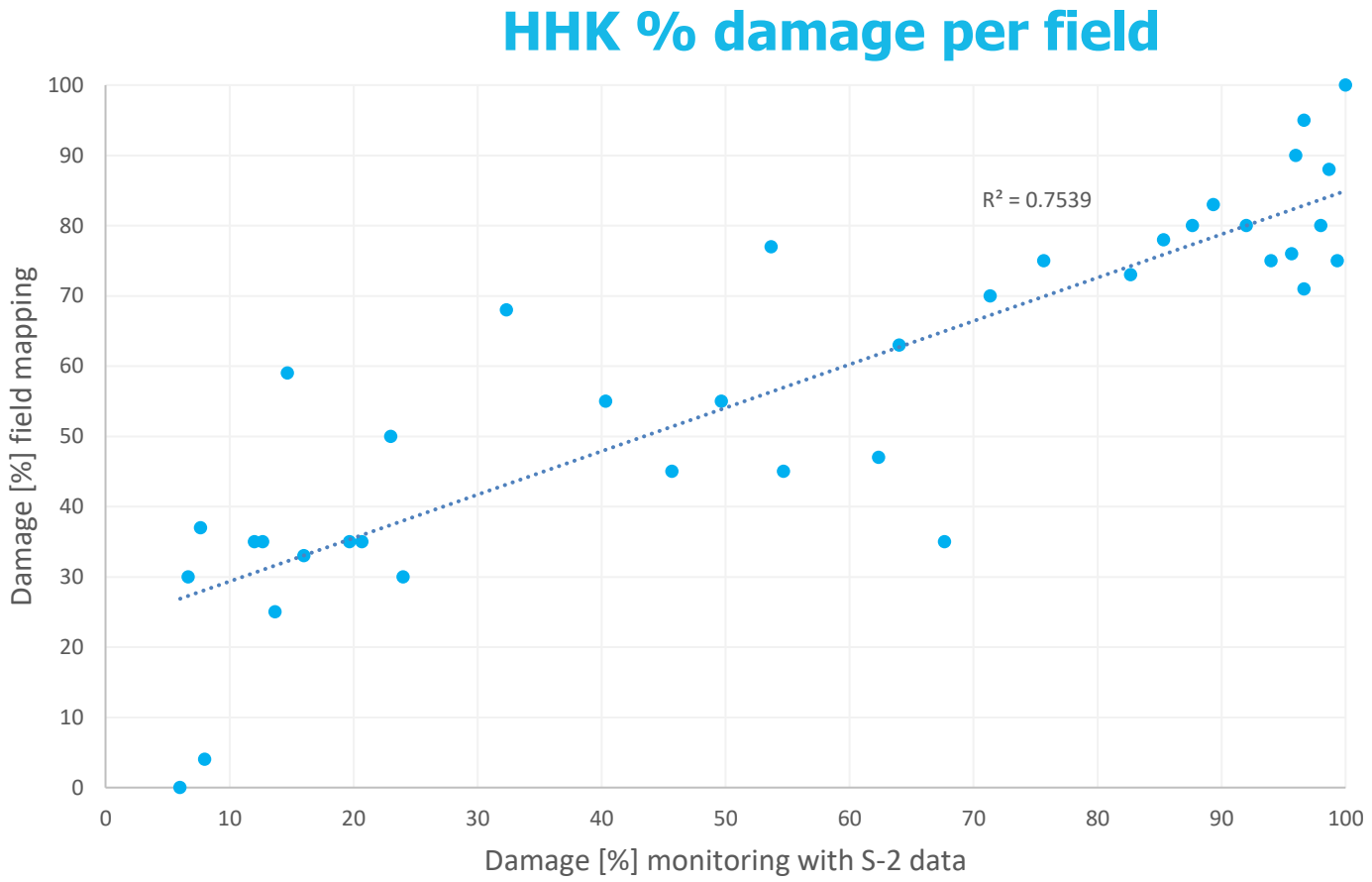
Field campaign

- 3 study areas
- 2 surveys per area
- Data basis:
  - S-2 & Alkis
- satellite scenes recorded close to the field mapping
- Data provided by EOM:
  - 46 field maps
  - Mapping key



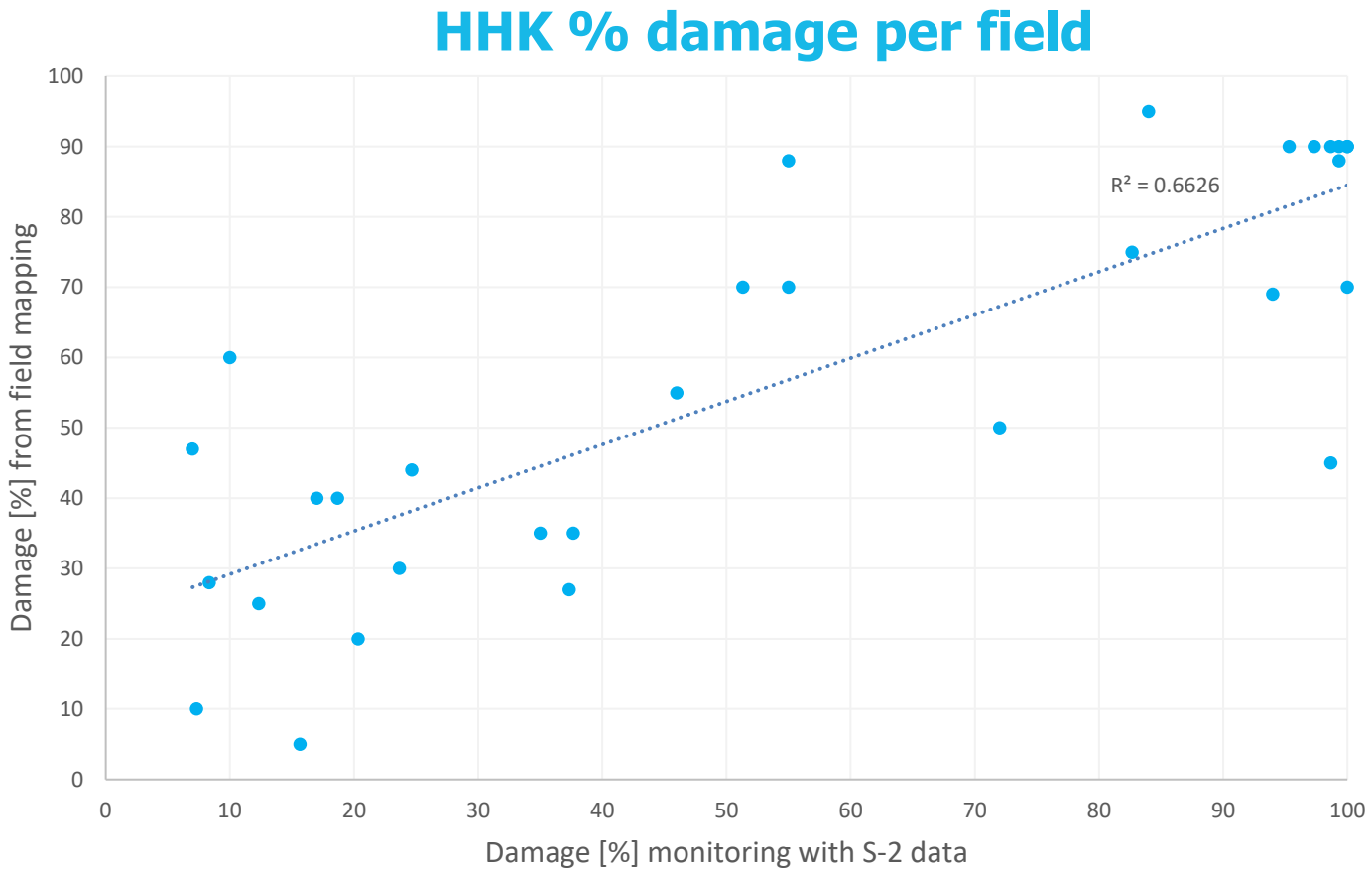
Statistical analysis - winter wheat

- Relevant period:
  - March till May
- 20% percentile from NDVI
  - $R^2 = 0,75$

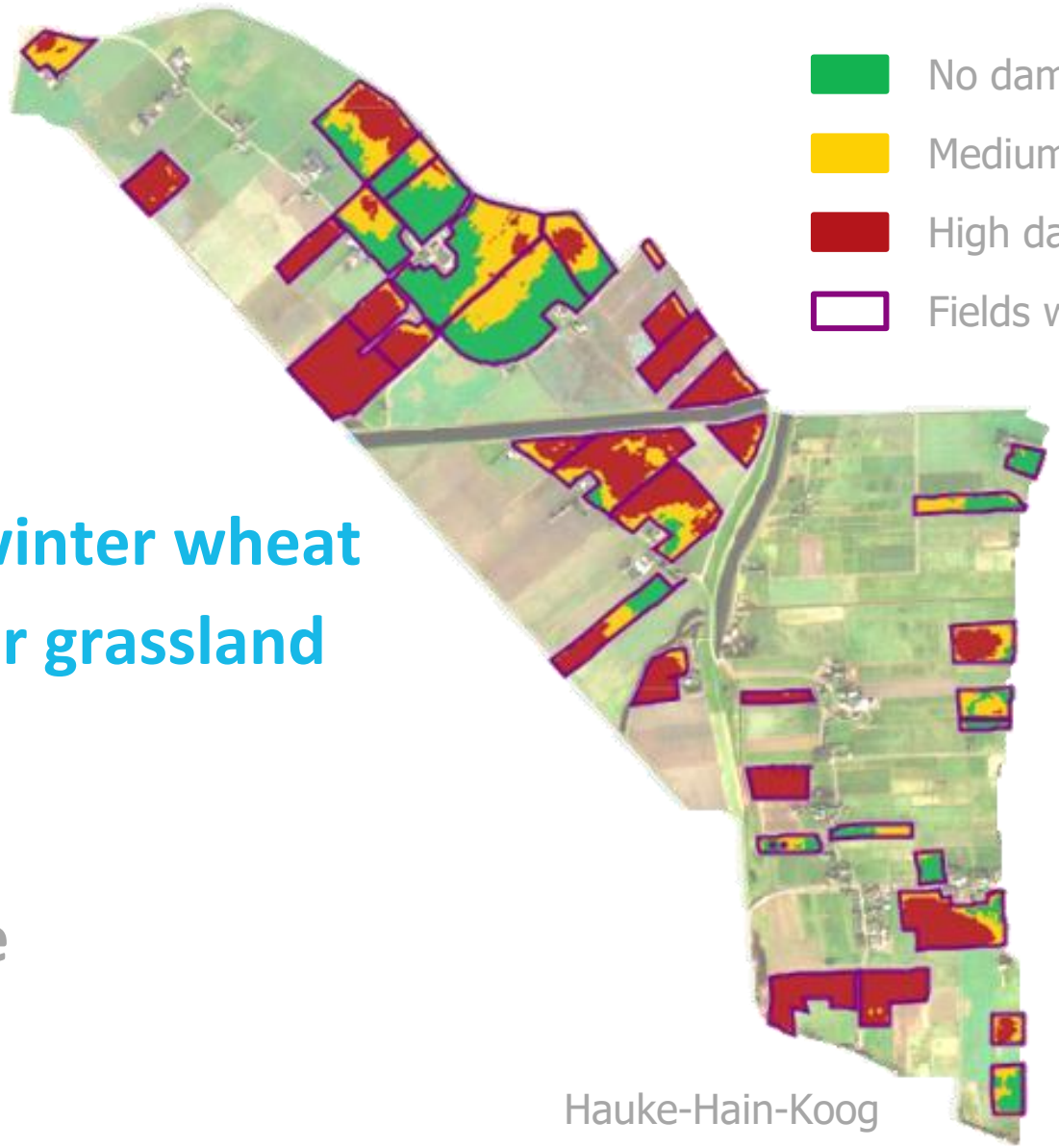


Statistical analysis - grassland

- Month March till May
- 80% percentile from NDVI
  - $R^2 = 0,66$
- Cattle grazing
  - Zero damage removed from analysis



Results



- Good model accuracy for winter wheat
- Average model accuracy for grassland
- Challenges:
  - Grazing by cattle
  - Other causes of damage

Hauke-Hain-Koog

Summary

Feasibility study results

- Crop specific procedures necessary
- Relevant period March to end of May
- Index-based damage detection possible
- Differentiation in three damage classes
- Differentiation from other damage causes necessary
- Development of an end-user application possible

Outlook

- Field mappings during a whole year
- Detailed measurement of other causes of damage
- More accurate differentiation cattle grazing/waterlogging/goose
- Integration of additional satellite data