

HABItat STATus reporting with remote sensing methods (HABISTAT)



Objectives

- Develop an **operation-oriented** methodology to **map**, to **monitor** and to **evaluate** habitat characteristics, vegetation types and gradients in order to determine **nature quality**
- **Assess conservation status of Natura 2000 habitats**



Test Area

- Heathland and floodplain habitats:
 - Kalmthoutse heide (B)
 - Ginkelse and Edese heide (NL)
 - Dijle valley (B)
- Ecological variation expected
- Availability of former hyperspectral data (update)
- Availability of extensive vegetation, ecological surveys and knowledge



Available data

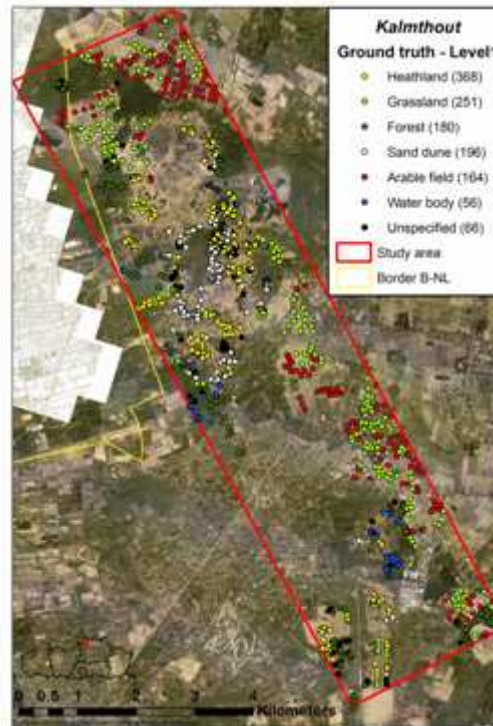
- CHRIS/Proba: spaceborne hyperspectral data
 - 18m resolution
 - 18 spectral bands: 400-1050 nm
 - 5-angle acquisitions: nadir, +/- 36°, +/- 55°
- AHS: airborne hyperspectral data
 - 2.5m resolution
 - 62 spectral bands: 400-1050 nm



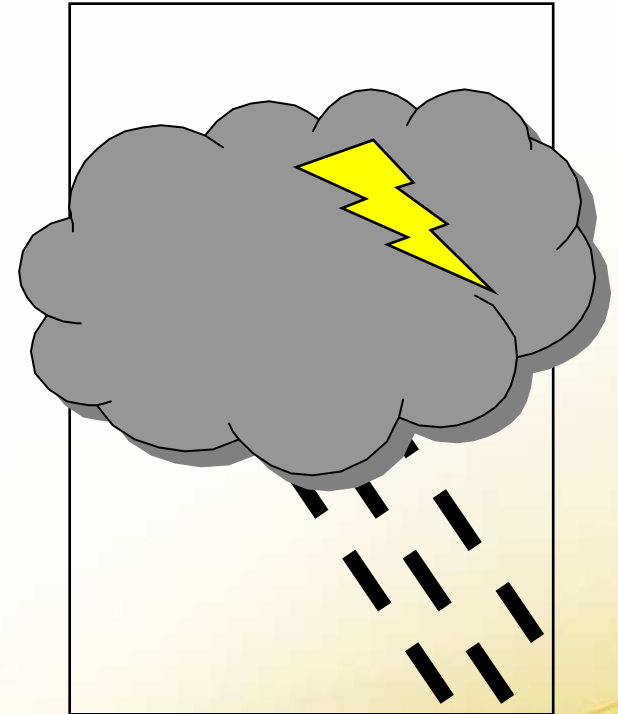
Quicklooks



Ginkelse and Edese heide



Kalmthoutse heide



Dijle vallei



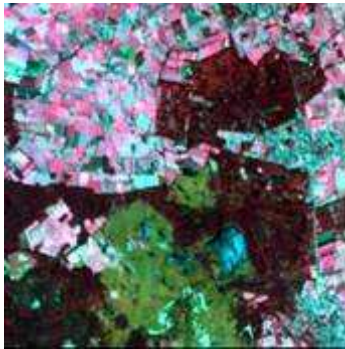
Methods

- Field work
 - collection of ground reference data in study areas
- Data (pre-) processing
 - Geometric and Radiometric correction
 - Super Resolution techniques
- Classification
 - spatial classification strategy, including textural/contextual features based on tree-structured Markov Random Field (TS-MRF) model
 - Ensemble classifiers
- Integration in operational processing chain



Preliminary results (Superresolution)

Original CHRIS PROBA image



Superresolution result (2x)

