

Issues in LULCC Research in the Czech Republic

Charles University in Prague

Charles University in Prague
Faculty of Science

Current issues

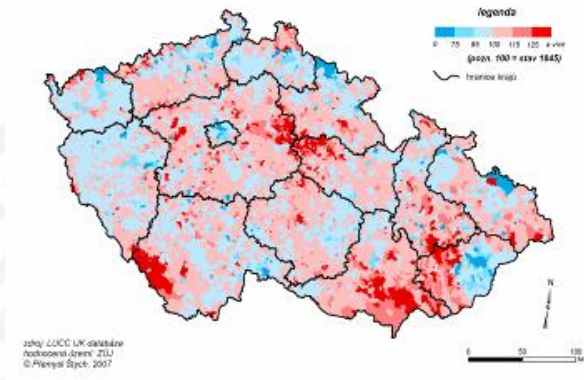
Current issues

- *LUCC research very well established (tradition of 20 years), rich archive of long-term LULC data*
- ***Main processes** in present – suburbanization, grassing over, afforestation.... loss of agricultural and especially arable land, changes in forest (disturbances...)*
- ***Driving forces:** transition processes, EU accession, open EU market, land preservation changes, CAP, restitutions, private land ownership, nature preservation)*
- ***Research effort:** (1) to find complex of driving forces (physical and socio-economic), (2) to use more hyperspectral data in combination with laboratory spectral measurements and laboratory chemical analyses to evaluate not just a quantitative state of land cover but also physiological state of ecosystems (3) long-term land use changes (archive of Landsat, SPOT..) (4) data fusions: optical, radar and lidar data (5) multidisciplinary initiatives (cooperation with biologists, social geographers...)*

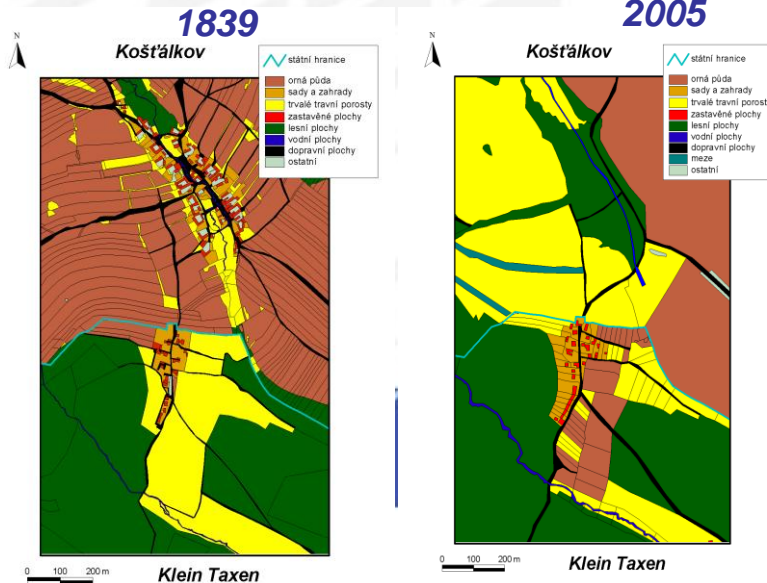
Current issues and needs for remote sensing

Changes of arable land 1845-1948

Vývoj rozlohy orné půdy v Česku v období 1845 - 1948 (v %)



Cross-border Case studies

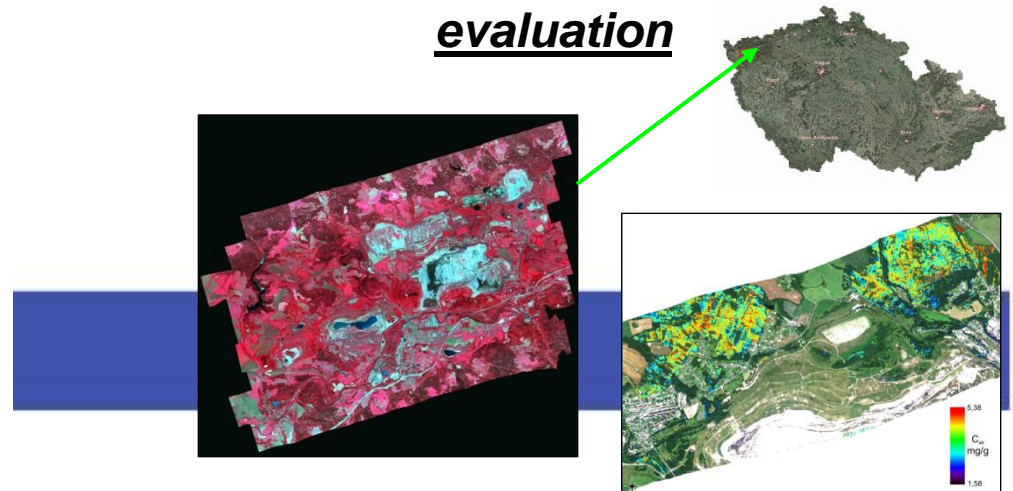


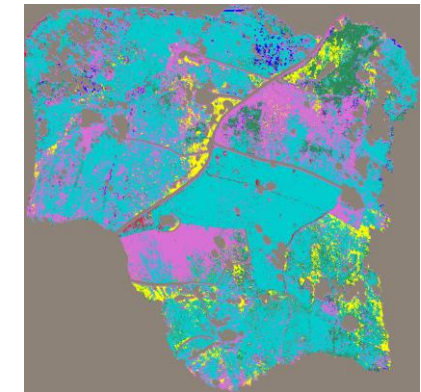
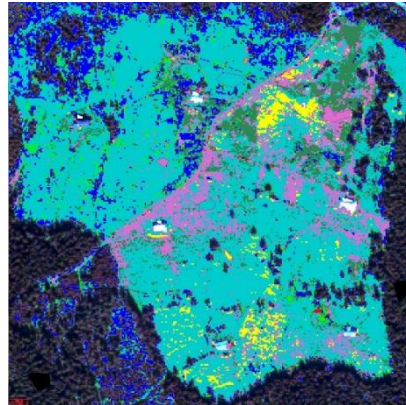
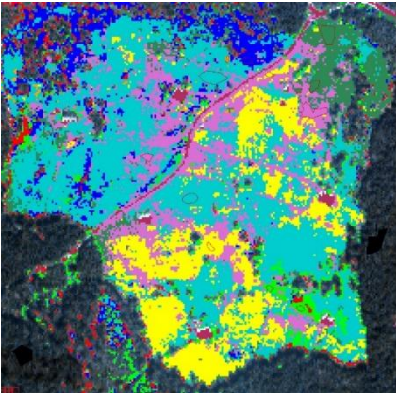
Evaluation of suburban processes

QuickBird images 2007 - OBIA + laser scanning data (nDSM) buildings classification



Hyperspectral data based environmental evaluation





Data type	sensor	Spectral resolution	Spatial resolution	Date of acquisition
Hyperspectral aerial data	APEX	288 bands	2.4 m	September 2012
Multispectral satellite data	WorldView-2	8 multispectral bands + Panchromatic band	2 m	September 2011
Orthophoto	Digital camera VEXCEL UltraCamX	RGB + IR	0.12 m	August 2013



Current issues and needs for remote sensing

Current needs

- *Complex research, hyperspectral and lidar data*
- *International and multidisciplinary cooperation (comparative studies, cross-border research, data and experiences sharing...)*
- *Cooperation with decision makers, state administration sector...*



How can we contribute?

- **Sharing our data, experiences, capacities...**
joint publications, joint research grants...
- **Sharing our partnerships (ESA, IGU, GEO Group...)**
- **Training and capacity building activities**
TAT training, success stories,





Thank you for your attention

stych@natur.cuni.cz