

# Spatial determinants of landscape patterns and stability over the centuries, with a particular focus on land ownership

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In the research carried out in SILVIS Lab (University of Wisconsin-Madison, USA) I would like to better understand the role of past land-ownership structure in the long-term landscape dynamics. My case study area would be the eastern part of the Polish Carpathian Mountains. I would like to determine, to what extent the current landscape pattern and the overall landscape persistence can be explained by land-ownership legacies and what is their importance in relation to other factors (environmental, socio-economic). The research would be the continuation of my PhD work. In my dissertation I showed that landscape patterns and long-term land cover stability can be best predicted on the basis of land ownership structure, and that environmental conditions can be seen as mediators rather than determinants of landscape stability, regulating the pace and pattern of spatial changes resulting from local socio-economic factors. This would be also a great opportunity to fully utilize the vast amount of valuable data that I gathered during my PhD fieldwork. As far as I know, particularly the 3 time-slices (1852, 1964, 2008) of spatially explicit landowner data (which I extracted from archives with great effort and then laboriously processed), representing three different socio-political systems (feudalism, communism, capitalism) constitute a worldwide unique database that have the great potential to broaden our knowledge on long-term cultural landscape dynamics. I would like to extend my research in different directions:

- build a better spatial statistical model to verify my hypotheses concerning the dominant role of land ownership in determining landscape dynamics
- control for more confounding variables, e.g. related to accessibility
- add other landscape features as dependent variables: o new land-cover classes (in my PhD, there were only 3: settlements, farmland, forest), for instance, grassland o forest characteristics (e.g. species composition, susceptibility to disturbances)
- utilize the descriptive supplement to the First Military Survey of the Habsburg Monarchy from 1780, where several landscape features not visible on the map are described, particularly concerning forests

I will to conduct my research in SILVIS lab at the University of Wisconsin-Madison in collaboration with Prof. Volker Radeloff. SILVIS lab is a world leading research center in the field of landscape dynamics and one of the very few in the US, for which the Carpathian Mountains and Eastern Europe are in the scope of interest (please see for instance <http://silvis.forest.wisc.edu/research/understanding-where-weve-been-implications-land-use-legacies-carpathians-future>).

## Publikacje

### Artykuły od 2013 roku

- Affek Andrzej, Wolski Jacek, Zachwatowicz Maria, Ostafin Krzysztof, Radeloff Volker: [Effects of post-WWII forced displacements on long-term landscape dynamics in the Polish Carpathians.](#) - Landscape and Urban Planning 2021, 214 - s. 104164.

## Abstrakty, recenzje, notatki

- Affek Andrzej, Jabs-Sobocińska Zofia, Wolski Jacek, *Radeloff Volker C.*: [Modeling Agriculture Persistence After War-Induced forced Displacement and Depopulation. The Case of the Polish Carpathians After World War II.](#) [w]: IALE 2023 World Congress. Book of Abstracts & Programme. Nairobi: IALE, 2023 - s. 371-372.