

The future of butterflies in Transylvania, Romania



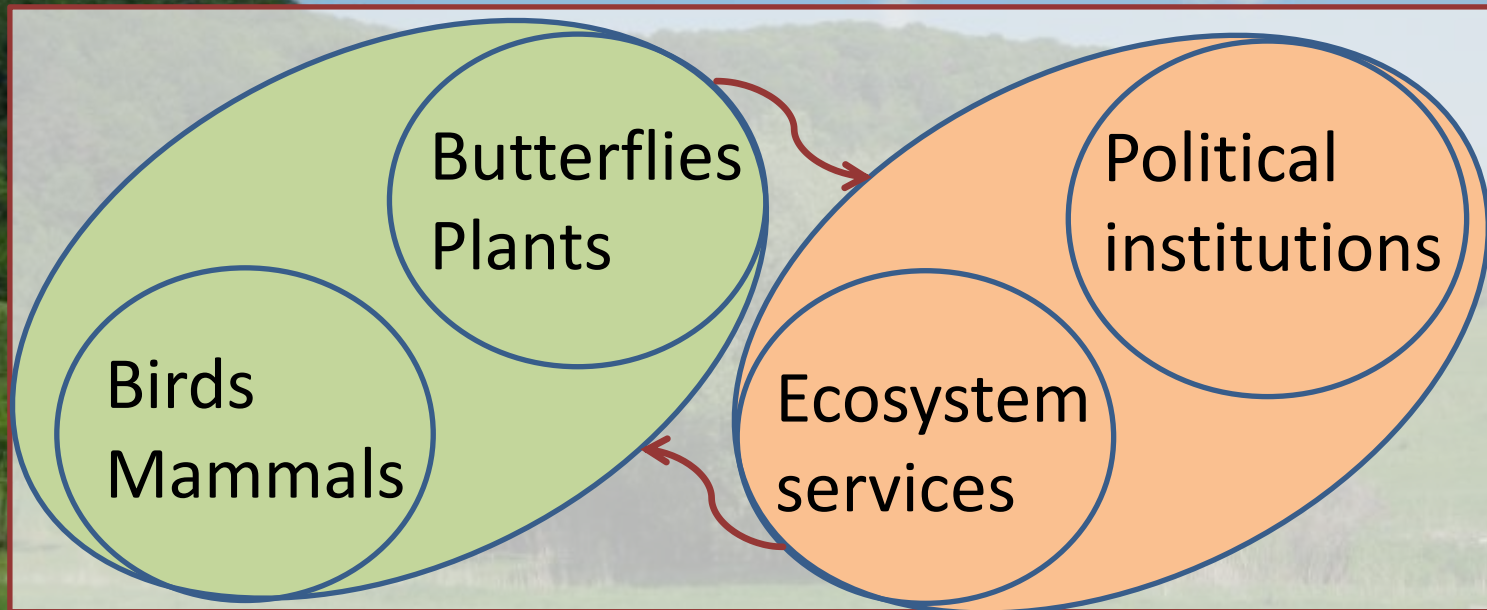
LEUPHANA
UNIVERSITÄT LÜNEBURG

Jacqueline Loos, PhD scholar

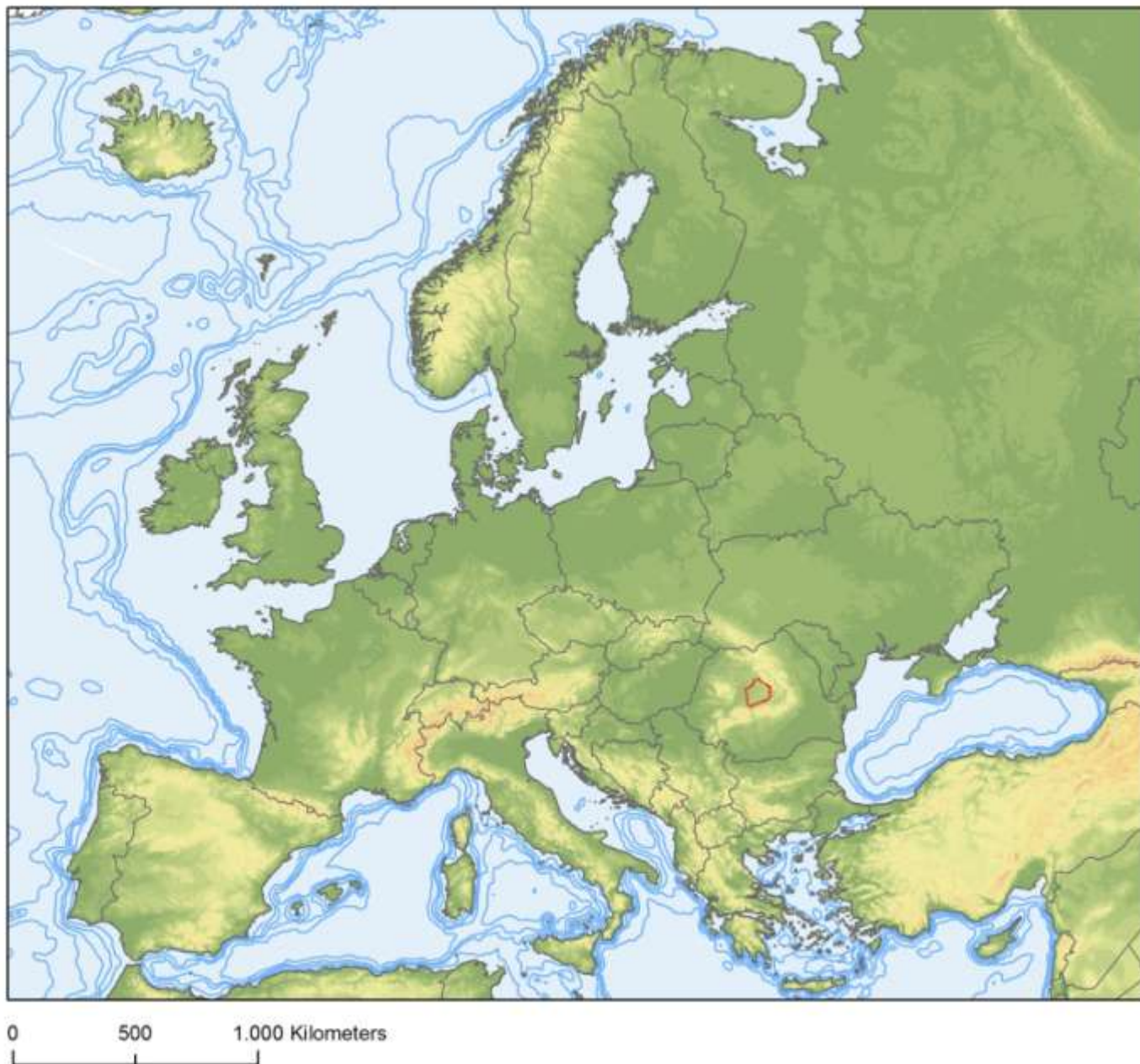
Future of Butterflies in Europe III

„Sustainable development in Transylvania“

Coordinator: Prof. Jörn Fischer



Duration: 2010–2014



Future of Butterflies in Transylvania · Jacqueline Loos

History



1947-1989 Communist era: collective farms

1989 postsocialist era: subsistence farming

2007 EU accession: CAP, Infrastructure development

Future of Butterflies in Transylvania · Jacqueline Loos

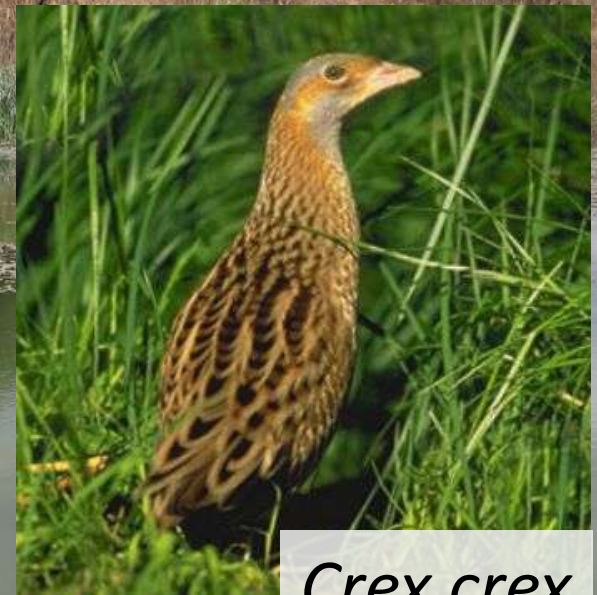
Current situation

30 % Forest
15 % Arable land
40 % Pasture & meadow

72 % of holdings < 1ha
communal grazing

A large landscape photograph showing a forested hill in the background, a pond in the middle ground, and tall reeds in the foreground. The sky is blue with some clouds.

Bombina variegata



Crex crex



Orchis spp.



source: www.lepiforum.de & Jacqueline Loos

Land use change



drastic land use change:

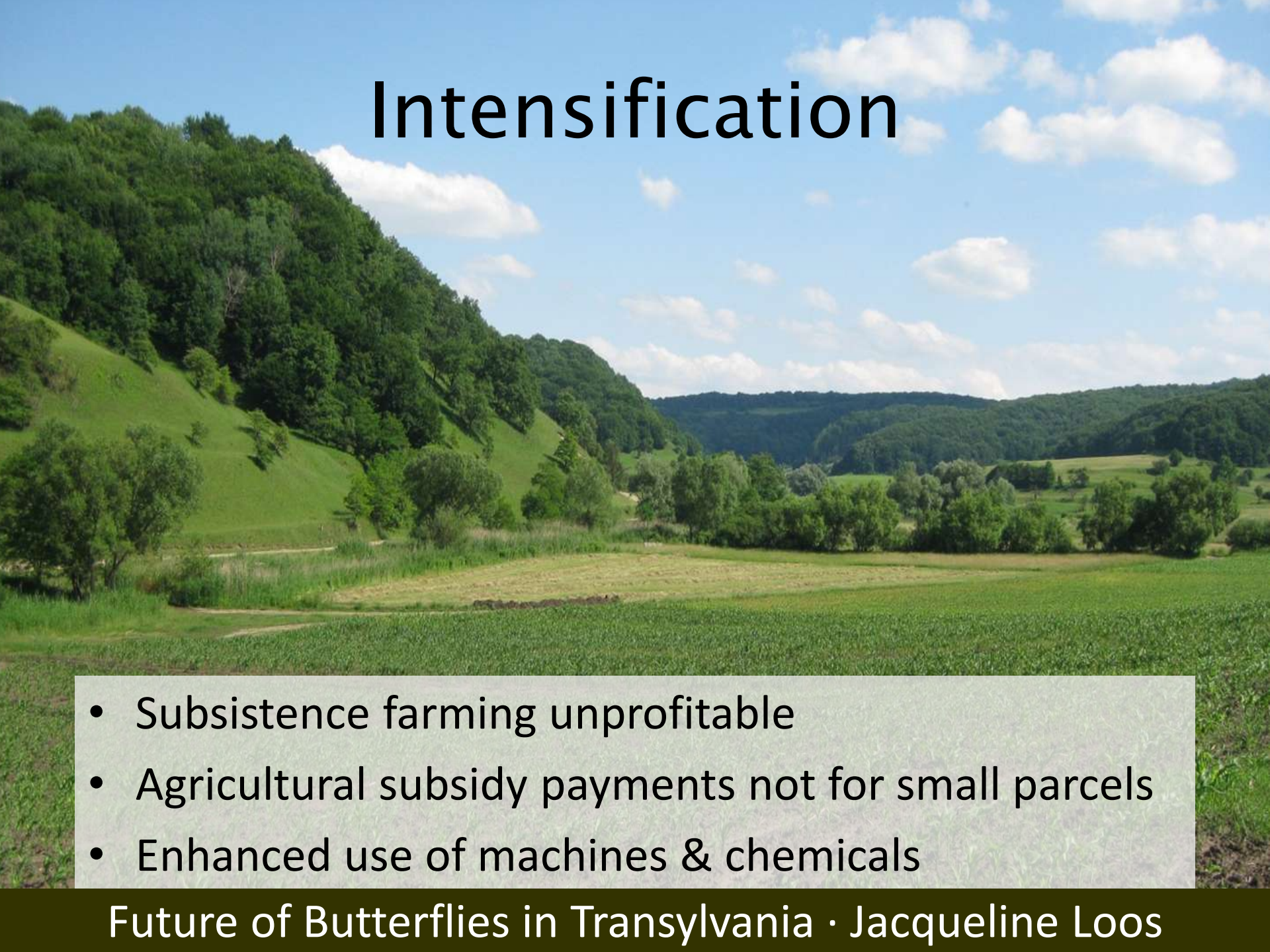
- abandonment
- intensification

Abandonment



- shrub encroachment
- loss of open structures

Intensification



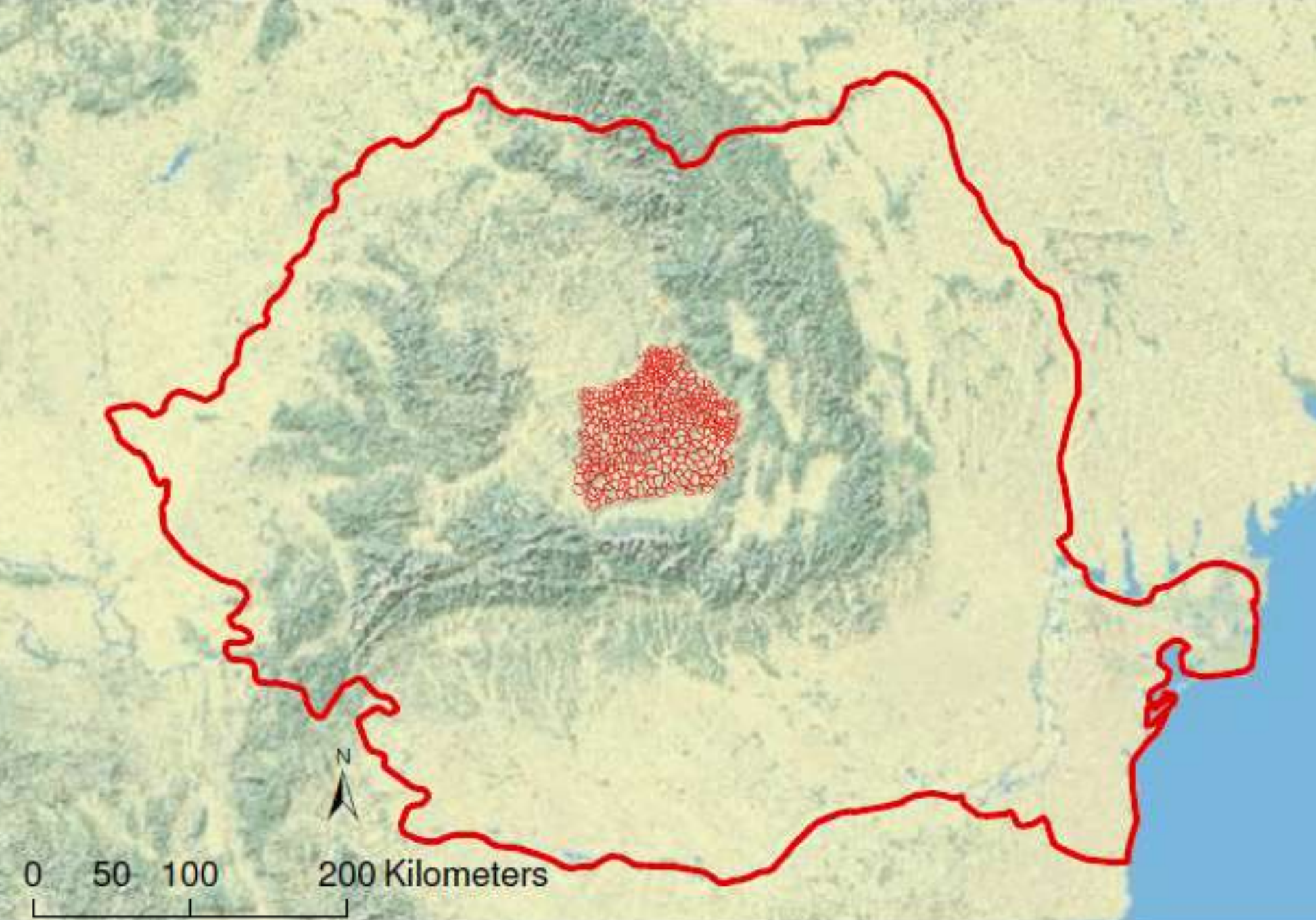
- Subsistence farming unprofitable
- Agricultural subsidy payments not for small parcels
- Enhanced use of machines & chemicals

Future of Butterflies in Transylvania · Jacqueline Loos

Research project on butterflies

Aims:

- (i) species distribution of *Rhopalocera*, *Zygaenidae* & host plants in relation to land use
- (ii) forecast effects of land use change on species richness and composition
- (iii) effects of landscape elements on presence and movement patterns



Future of Butterflies in Transylvania · Jacqueline Loos

Land-use- Categories



Forest



Grassland
+/- woody veg.
abandoned



Arable land
+/- woody veg.
fine & coarse scale

5 plots per village

First results from pilot study 2011

June & July 2011

26 sites à 1 ha

200 m Pollard Transects

4 temporal replicates

→ 81 species

→ 3330 individuals

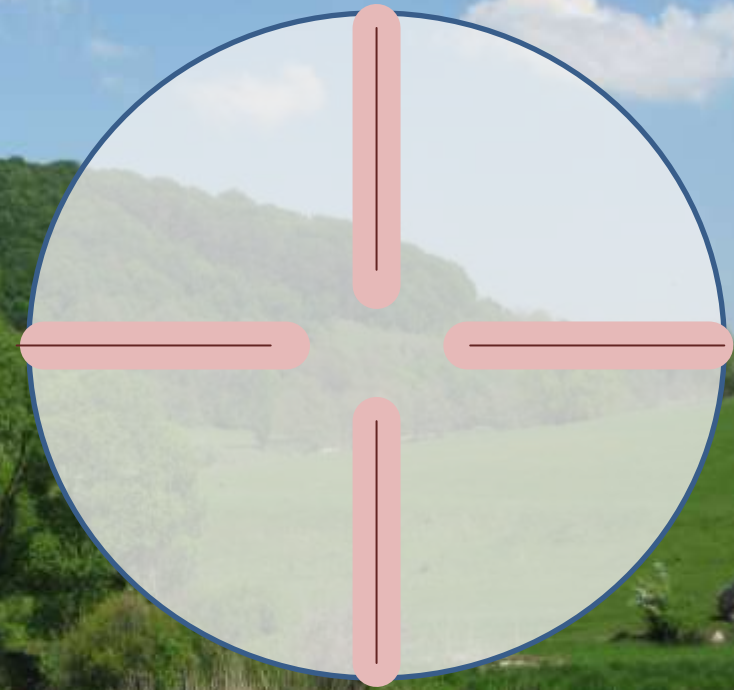
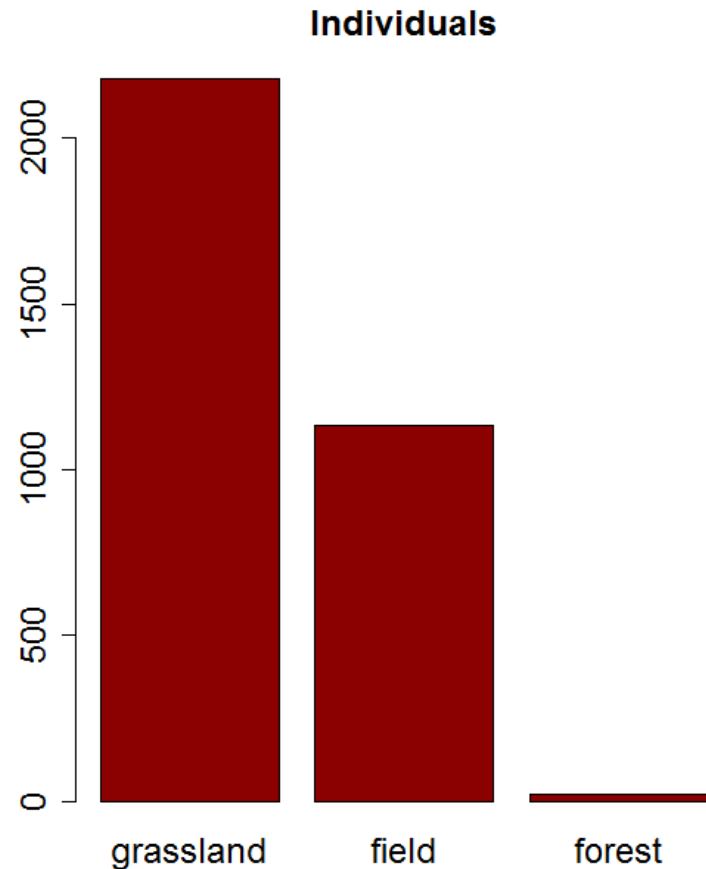
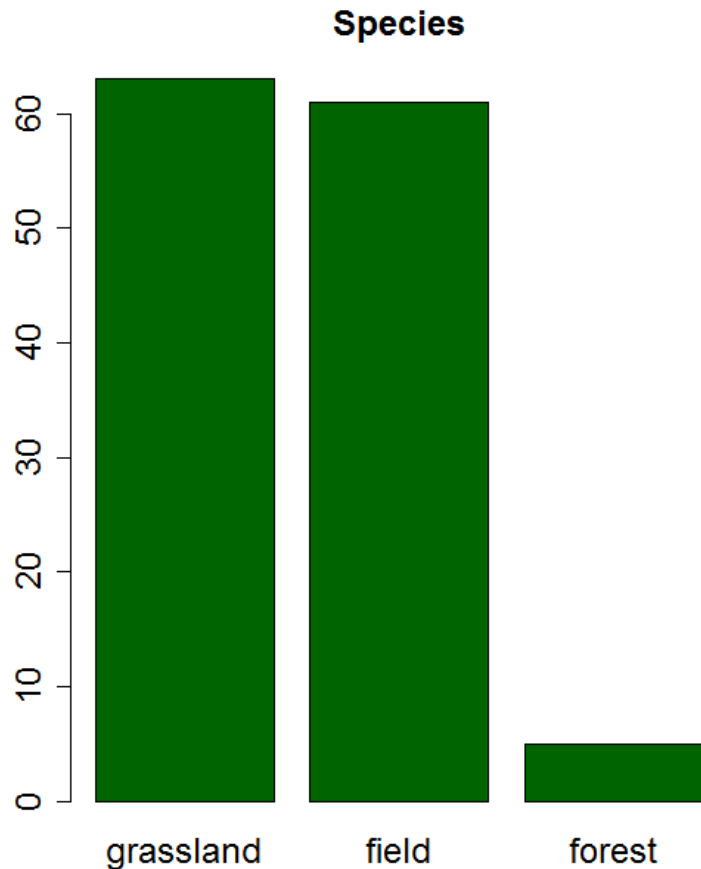


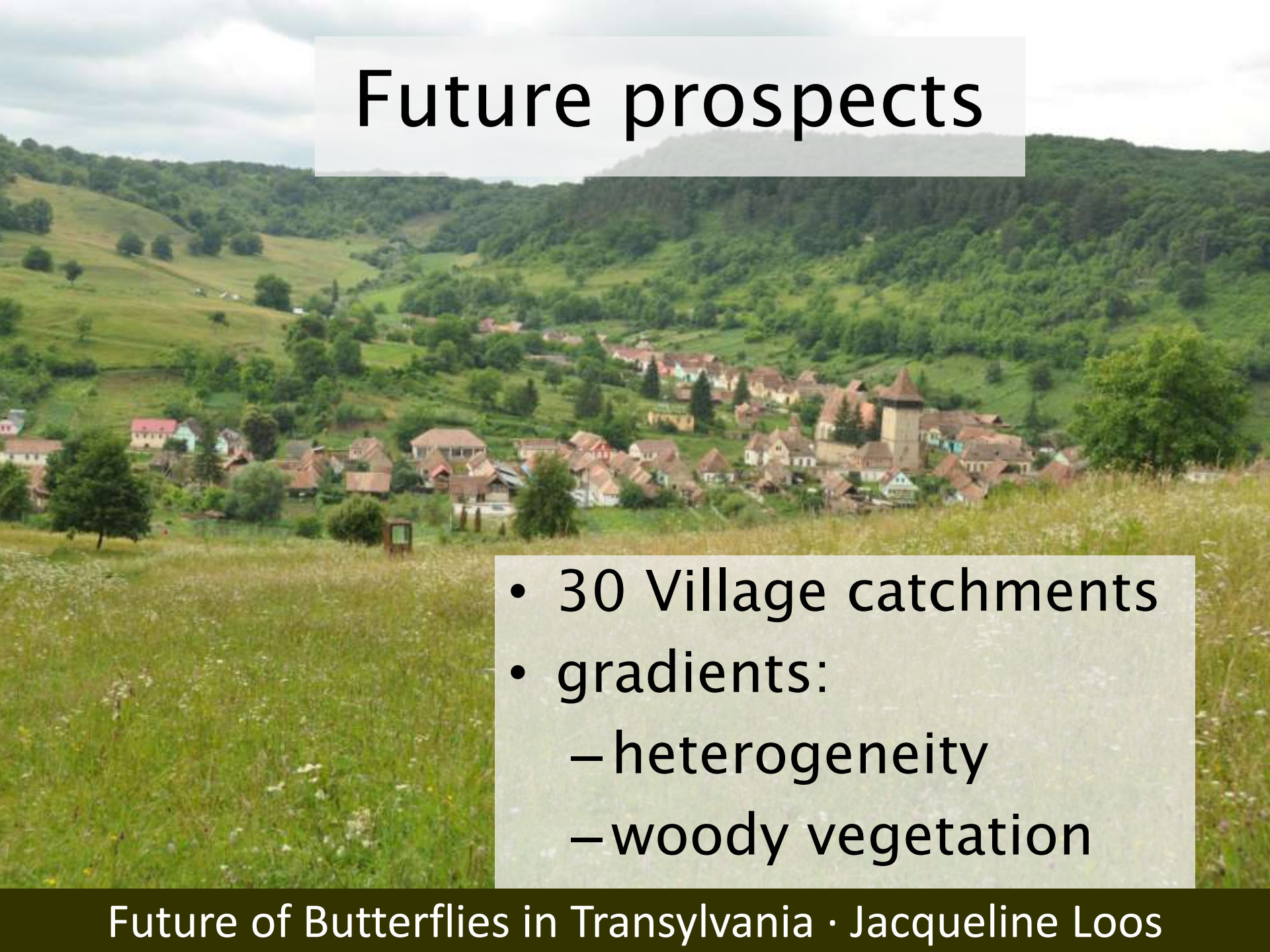


photo credits: J. Loos, lepiforum.de & eurobutterflies.com

Species richness & Abundance



Future prospects



- 30 Village catchments
- gradients:
 - heterogeneity
 - woody vegetation



Future of Butterflies in Transylvania · Jacqueline Loos

The future of butterflies in Transylvania, Romania

Monitoring

sustainable land
management

Environmental
education

Thanks to:

- Dr. Tibor Hartel
- Prof. Henrik von Wehrden
- Dr. Jan Hanspach
- Mihai Eminescu Trust
- Fundatia Adept
- Prof. Laszlo Rakosy
- Dr. Szekely Levente

Thank you for
listening!



loos@leuphana.de

Future of Butterflies in Transylvania · Jacqueline Loos