

Ecosystem services of small woodland in agricultural landscape



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Small woodland in agricultural landscape

- Assessment of non-forest woody vegetation for landscape planning
- **Small woodland** Despite their small size, these forest patches often act as refuges for biodiversity and may provide a wide range of ecosystem services (ES) to populations and human society.

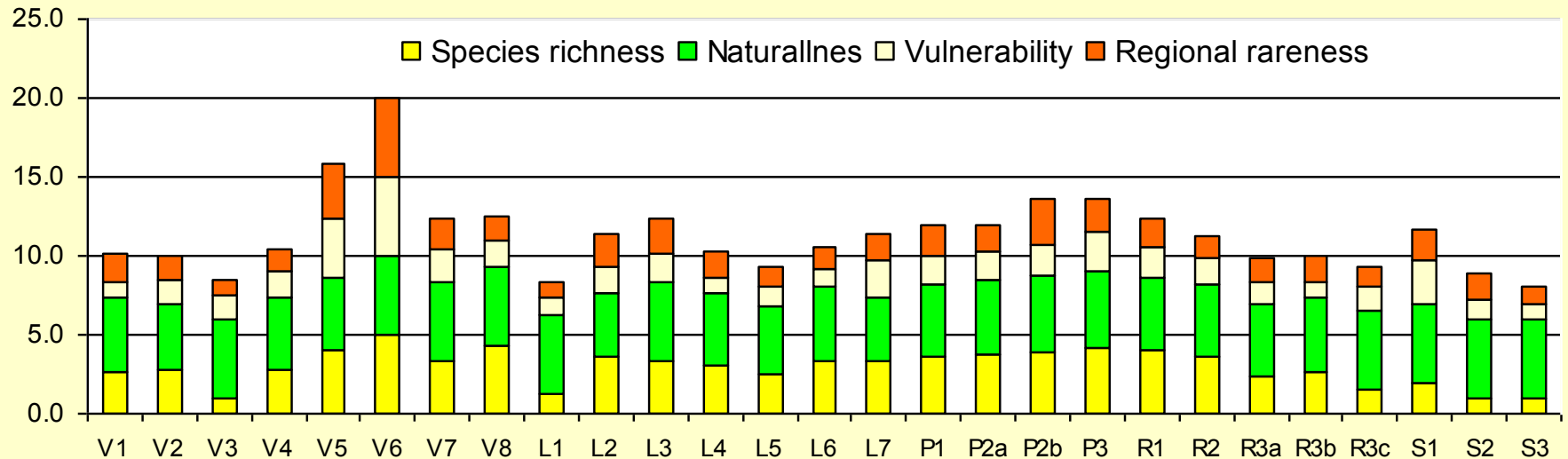


Shape of small woodland:

- plots
- lines of trees
- solitaire trees

Small woodland in agricultural landscape

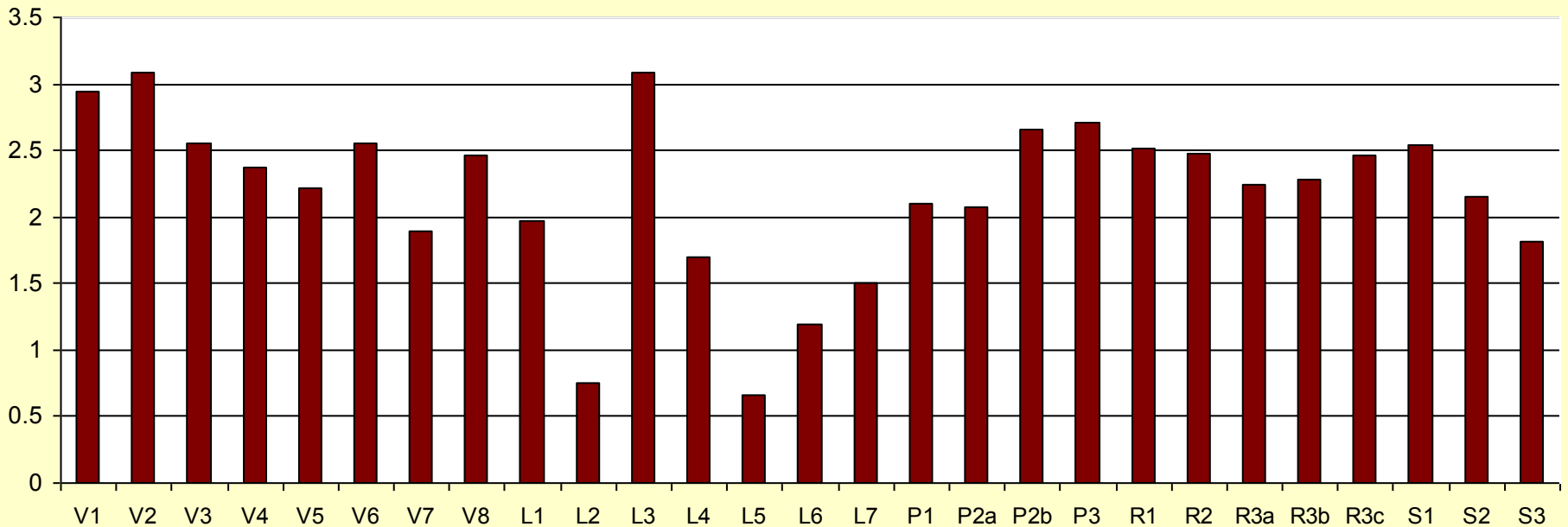
- Significance of habitats for nature conservation



V – wetland habitats, L – lines of trees, P – grassland, R – small forest, S – forest

Small woodland in agricultural landscape

- Landscape ecological services: **hemeroby, vulnerability, regional rareness, species richness, feedstuff potential, melliferous potential, stability degree**



V - wetland habitats, L - lines of trees, P - grassland, R - small forest, S - forest

Biodiversity research of historical structure of agricultural landscape in Slovakia

project supported by the EEA Financial Mechanism, Norwegian Financial Mechanism and state budget of the Slovak Republic, 2009 - 2011

Project objectives:

1. Complex inventory and typology of historical structures of agricultural landscapes (HSAL) in relation to their biodiversity
2. Detailed, interdisciplinary research (investigation of biodiversity in relation to ecological and socio-economical conditions of the site) in 3 pilot areas.
3. The elaboration of a „Strategy for protection and management of valuable biotopes of HSAL“ in pilot areas with respect to principles of sustainable development



Interdisciplinary research of biodiversity in 3 pilot areas

- Man-conditioned biodiversity of the agricultural landscape - special attention was given to vegetation connected to the forms of anthropogenic relief
- Relationships between natural conditions, land use, and culture (natural and socio-economical limits at present and in the past)
- Analyses of biotic, abiotic conditions, land use, socio-economic conditions, demographic and sociological conditions on cadastral level



Ecosystem services

The assessment was oriented to:

- Biodiversity assessment - evaluation of favourable conservation status (FCS) of a natural and seminatural habitat and species, identification of driving forces, and threats to the biodiversity of HSAL.
- Cultural-historical services

Results shows high significance of these habitats as islands of species-rich habitats, they provide also many other environmental services



Significance and ecosystem services of historical structures of agricultural landscapes

(National grant agency VEGA project - 2011 -2014)

Particular objectives:

- to get new knowledge on goods and ecosystems services provided by ecosystem in HSAL
- to study and quantify ecosystem goods and services on the examples of pilot areas - to compare significance of HSAL with other agricultural landscapes, which were reclaimed and don't have features of HSAL



Significance and ecosystem services of historical structures of agricultural landscapes

- Development of methodological concept: selection and proposal of suitable **indicators** for quantitative and qualitative assessment of **ecosystem goods and services** provided by historical structures of agricultural landscapes.
- **Regulating services**: GIS tools and special program for modelling will be used for **assessment of water and soil regulation, visualization of landscape view**, etc.
- **Habitat services**: maintenance of genetic diversity, maintenance of life cycles of migratory species
- **Cultural ecosystem services** (recreation and ecotourism, aesthetic, inspirational, educational, sense of place, cultural heritage) will be assessed in pilot areas using the respective indicators.
- Sociological survey will be oriented on perception of HSAL by land owners and users, as well as visitors of the area.
- **Provisioning services** (food, water - irrigation, cooling, raw material, medical resources, ornamental resources)



A scenic view of a forested hillside. The foreground shows a grassy slope with scattered trees, including some with white blossoms. The middle ground is a dense forest of green trees. The background is a steep, densely forested hillside. A semi-transparent dark blue rectangular box is centered over the middle ground, containing the text "Thank you for attention" in a bright yellow, sans-serif font.

Thank you for attention