



Growing
ideas
through
networks

Vegetation classification and ecological features of riparian alder forests and alder carrs in the Slovak Republic

COST CONVERGES (Action CA16208)

WG1 Meeting for Unification of National (Cost members) Riparian Database

Michal Slezák – Kraków, Poland – 21–22 May 2018



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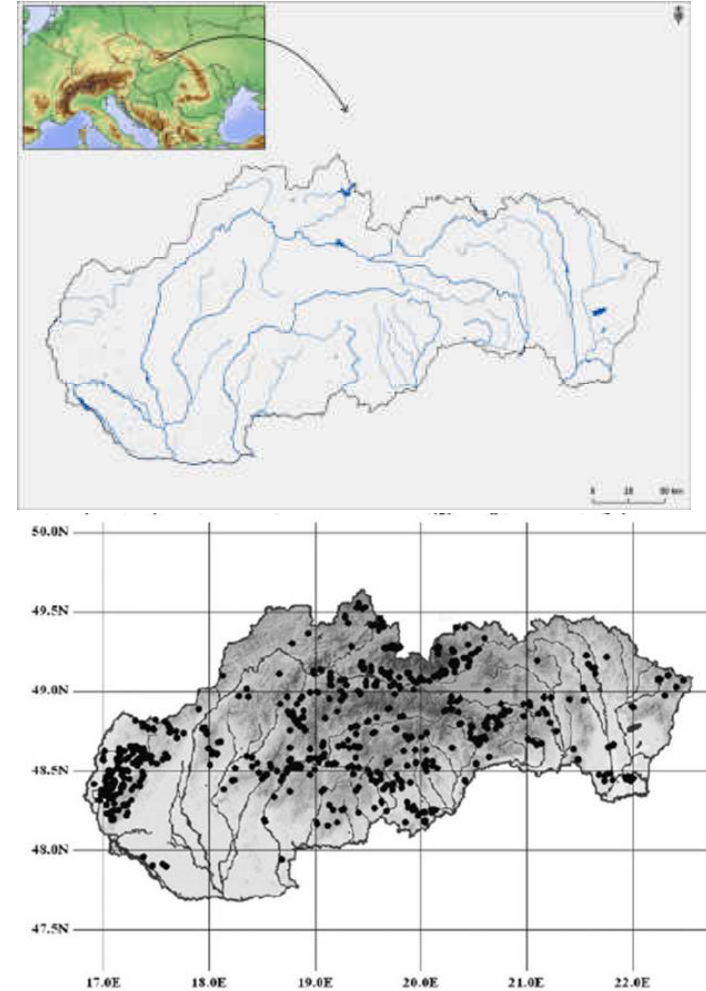
Why riparian and swamp alder forests?

- well-established landscape structure related to flooded riparian and waterlogged non-riparian areas
- unique interface between freshwater and terrestrial ecosystems, which supports the coexistence of vascular plants with different ecological niches and origins



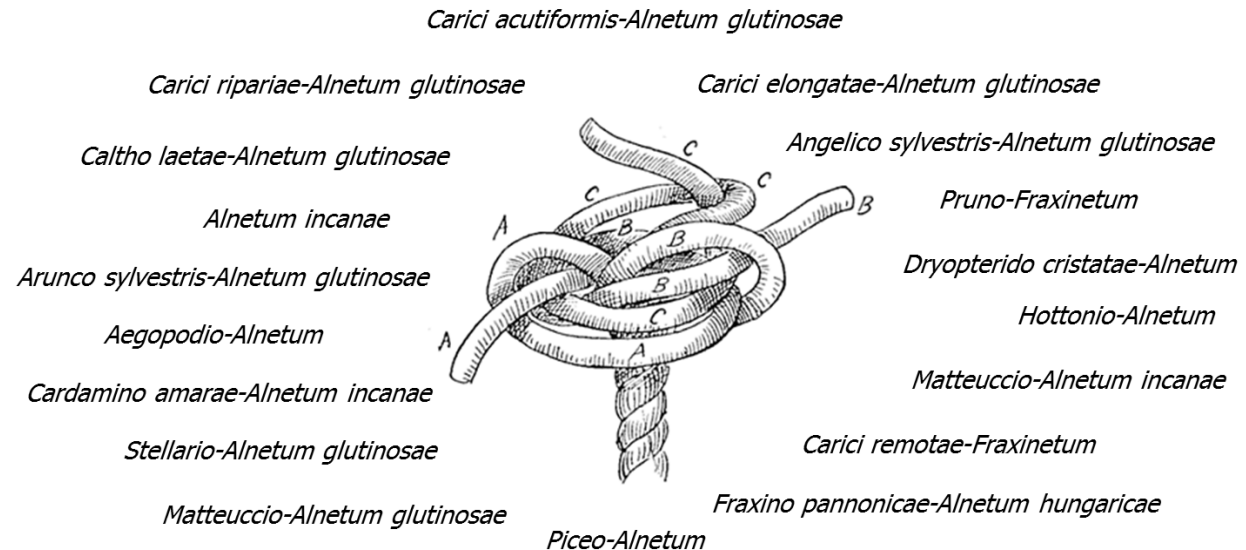
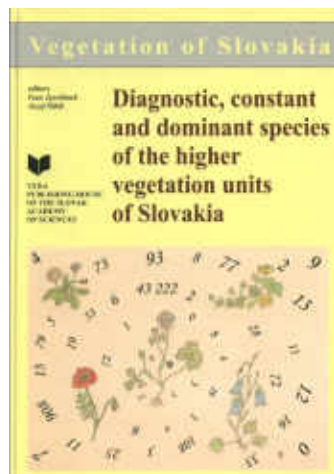
Research area

- Effect of the Pannonian climate is evident in the southern part, whereas the more humid and cooler Carpathian climate affects its northern part
- Intensive phytosociological research of floodplain forests since the 1950s



Aims

- i) what is the floristic variability and syntaxonomy of riparian and swamp alder forests in Slovakia?
- ii) what are the main ecological gradients responsible for their compositional variability?





Methods

- Slovak Vegetation Database, Turboveg and Juice software
- only relevés with tree layer cover $\geq 50\%$ and plot size 100–400 m² (= 918 relevés)
- numerical classification in PC-ORD
- Vegetation-ecological relationships were analysed using detrended correspondence analysis (DCA) in Canoco for Windows

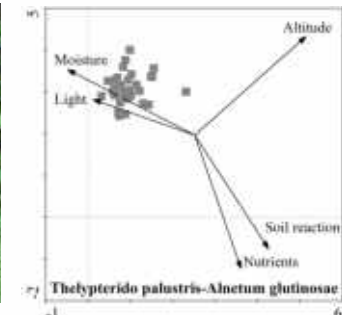
Results

1. *Thelypterido palustris-Alnetum glutinosae* (32 rels.)

Alnion glutinosae

Diagnostic species (DgS*)

Aulacomnium palustre (E₀), *Betula pendula*, *B. pubescens*, *Frangula alnus*, *Molinia caerulea* agg., *Peucedanum palustre*, *Pinus sylvestris*, *Potentilla erecta*, *Sphagnum palustre* (E₀), *S. squarrosum* (E₀), *Thelypteris palustris* (+ ass. 2), *Viola palustris* (+ ass. 9)

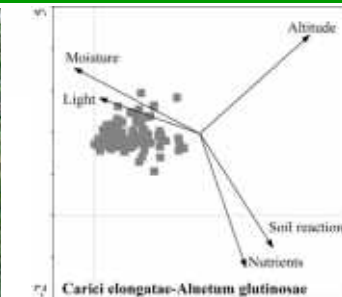


2. *Carici elongatae-Alnetum glutinosae* (105 rels.)

Alnion glutinosae

Diagnostic species

Calamagrostis canescens, *Calystegia sepium*, *Carex elata*, *C. elongata*, *C. pseudocyperus*, *C. riparia*, *Iris pseudacorus*, *Lycopus europaeus* (+ ass. 3), *Phellandrium aquaticum*, *Solanum dulcamara* (+ ass. 3), *Stachys palustris*, *Symphytum officinale*, *Thelypteris palustris* (+ ass. 1)

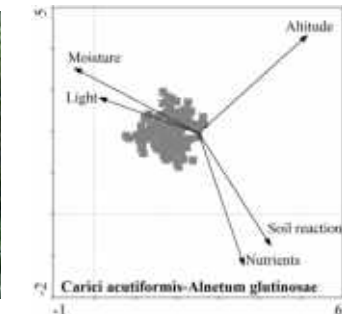


3. *Carici acutiformis-Alnetum glutinosae* (140 rels.)

Alnion glutinosae

Diagnostic species

Carex acutiformis, *Equisetum arvense*, *Lycopus europaeus* (+ ass. 2), *Scirpus sylvaticus*, *Scutellaria galericulata*, *Solanum dulcamara* (+ ass. 2)



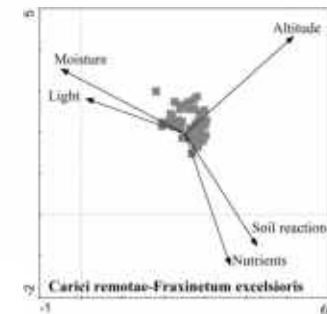
Results

4. *Carici remotae-Fraxinetum excelsioris* (49 rels.)

Alnion incanae

Diagnostic species

Circaea × *intermedia*, *Fraxinus excelsior*, *Geranium palustre*, *Poa palustris*, *Ribes uva-crispa*, *Thuidium delicatulum* (E₀)

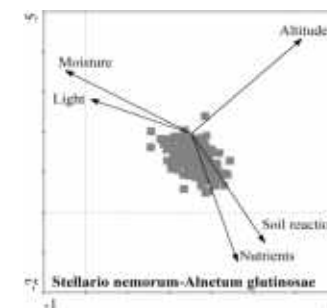
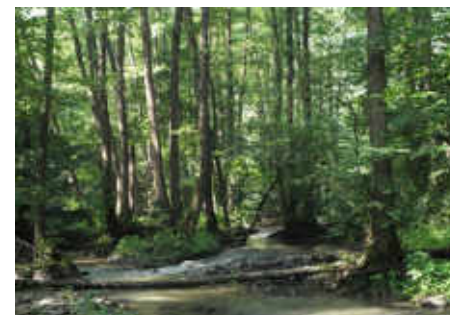


5. *Stellario nemorum-Alnetum glutinosae* (229 rels.)

Alnion incanae

Diagnostic species

Acer campestre, *Aegopodium podagraria* (+ ass. 7), *Alliaria petiolata* (+ ass. 7), *Circaea lutetiana*, *Euonymus europaeus*, *Geum urbanum* (+ ass. 6), *Glechoma hederacea* agg., *Pulmonaria officinalis* agg., *Sambucus nigra* (+ ass. 6), *Stellaria holostea*, *Swida sanguinea*



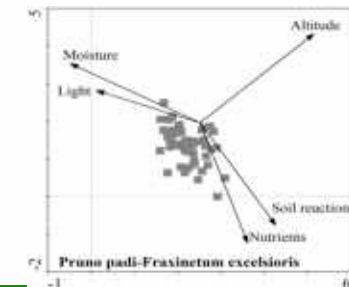
Results

6. *Pruno padi-Fraxinetum excelsioris* (55 rels.)

Alnion incanae

Diagnostic species

Cucubalus baccifer, *Geum urbanum* (+ ass. 5), *Sambucus nigra* (+ ass. 5)

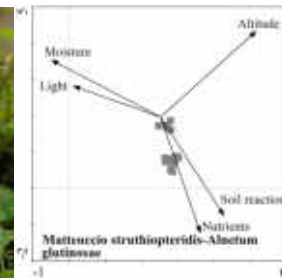


7. *Matteuccio struthiopteridis-Alnetum glutinosae* (18 rels.)

Alnion incanae

Diagnostic species

Adoxa moschatellina, *Aegopodium podagraria* (+ ass. 5), *Alliaria petiolata* (+ ass. 5), *Chrysosplenium alternifolium*, *Dentaria glandulosa*, *Euonymus verrucosus*, *Galeobdolon luteum* agg., *Galium aparine*, *Juncus inflexus*, *Matteuccia struthiopteris*

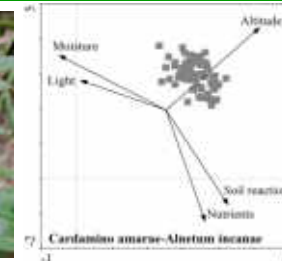


8. *Cardamino amarae-Alnetum incanae* (72 rels.)

Alnion incanae

Diagnostic species

Alnus incana (+ ass. 10), *Chaerophyllum hirsutum*, *Gentiana asclepiadea*, *Geum rivale* (+ ass. 10), *Picea abies* (+ ass. 9), *Rhytidadelphus subpinnatus* (E₀), *Veratrum album* subsp. *lobelianum*



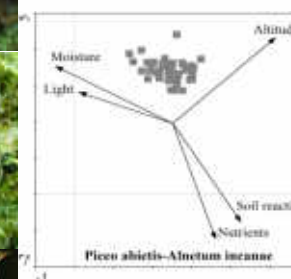
Results

9. *Piceo abietis-Alnetum glutinosae* (52 rels.)

Alnion incanae

Diagnostic species

Calamagrostis villosa, *Calypogeia integristipula* (E₀), *Cardamine amara*, *Carex canescens*, *C. echinata*, *Chiloscyphus polyanthos* (E₀), *Dicranum scoparium* (E₀), *Equisetum sylvaticum*, *Eurhynchium angustirete* (E₀), *Galium uliginosum*, *Gymnocarpium dryopteris*, *Lepidozia reptans* (E₀), *Lonicera nigra*, *Luzula pilosa*, *Picea abies* (+ ass. 8), *Plagiochila asplenoides* (E₀), *Pleurozium schreberi* (E₀), *Polytrichum commune* (E₀), *Rhytidiadelphus triquetrus* (E₀), *Sphagnum centrale* (E₀), *Stellaria alsine*, *Tetraphis pellucida* (E₀), *Vaccinium myrtillus*, *V. vitis-idaea*, *Valeriana dioica* agg., *Viola palustris* (+ ass. 1)



10. *Alnetum incanae* (166 rels.)

Alnion incanae

Diagnostic species

Alnus incana (+ ass. 8), *Asarum europaeum*, *Carduus personata*, *Chaerophyllum aromaticum*, *Geum rivale* (+ ass. 8), *Heracleum sphondylium*, *Mercurialis perennis*, *Petasites hybridus*, *Poa nemoralis*, *Primula elatior*, *Ranunculus lanuginosus*, *Roegneria canina*, *Salix purpurea*, *Silene dioica*, *Thalictrum aquilegifolium*

