



Growing
ideas
through
networks

Characterization of phytocoenological databases and their role for studying of flora, vegetation and habitats in the context of riparian and floodplain communities

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Why phytocoenological databases are so important nowadays?

- TURBOVEG is the widest used phytocoenological database
- Friendly useful for storage of plots (relevés)
- Different kind of exports
- Easy ways for import of data from different format
- Selection procedures
- Local vs. regional classification

European Vegetation Archive (EVA)

- Data may be used for analysis of flora, ecosystem services, mapping of habitats, etc.
- 74 databases (1 496 368 vegetation plots – 2018) – 65 % semi-restricted regime, 23% restricted regime & 15% free regime
- Data have been used for 64 projects, 18 started in 2018
- Up to now data have contributed for 11 journal papers, 1 book, 9 technical reports, 1 bachelor thesis & 43 presentations at conferences & workshops
- <http://euroveg.org/eva-database>

Global Vegetation Database (sPlot)

- sPlot is the largest repository for plant community data in the world, containing more than 1 million records with full lists of plant species co-occurring in small areas (plots)
- sPlot aims at understanding global patterns in plant diversity across facets, biomes and scales
- National and regional databases are stored in Turboveg 3 software
- sPlot is an international consortium formed by 140 scientists from > 100 institutions
- https://www.idiv.de/en/sdiv/working_groups/wg_poll/splot.html

Global Index of Vegetation-Plot Databases (GIVD)

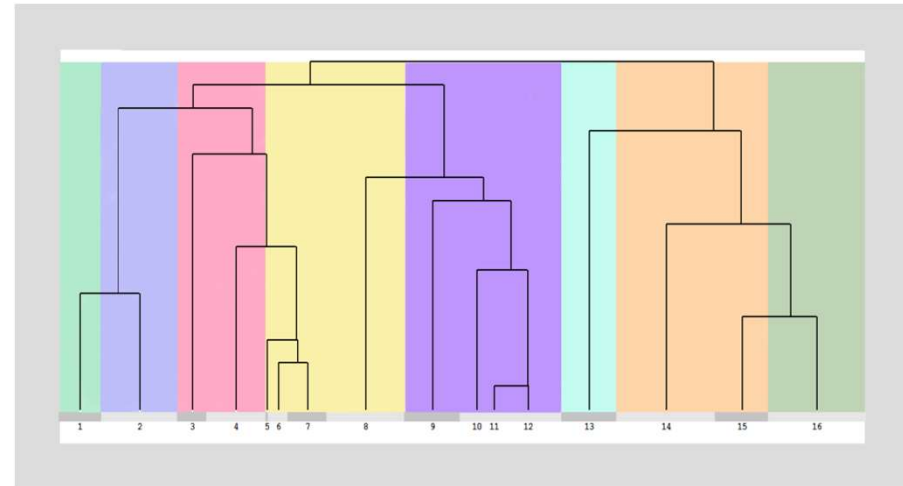
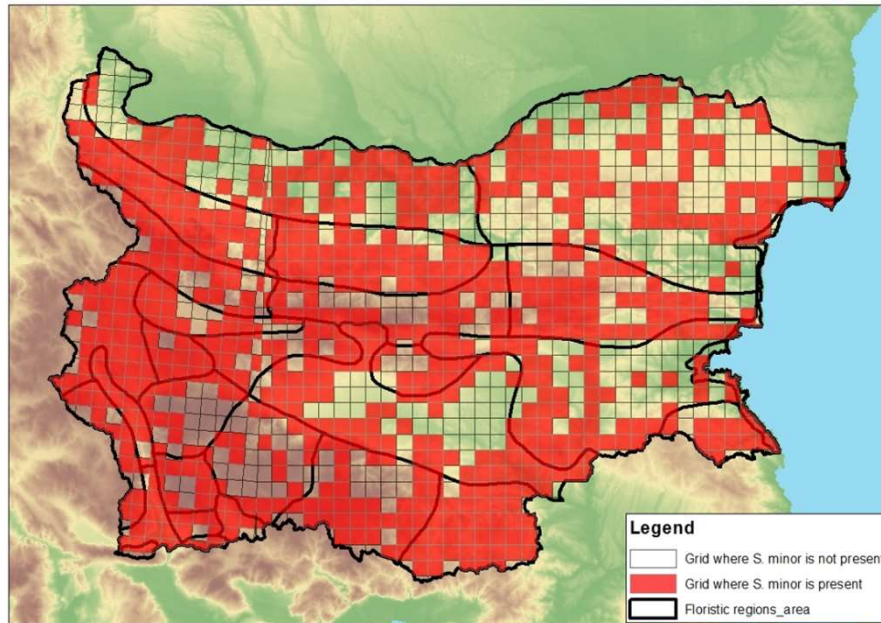
- a global metadatabase of vegetation data that is publicly available
- provides an overview of existing data, allow researchers to retrieve suitable data for specific research questions
- <https://www.givd.info/index.xhtml>

How phytocoenological databases may be used for studying of flora?

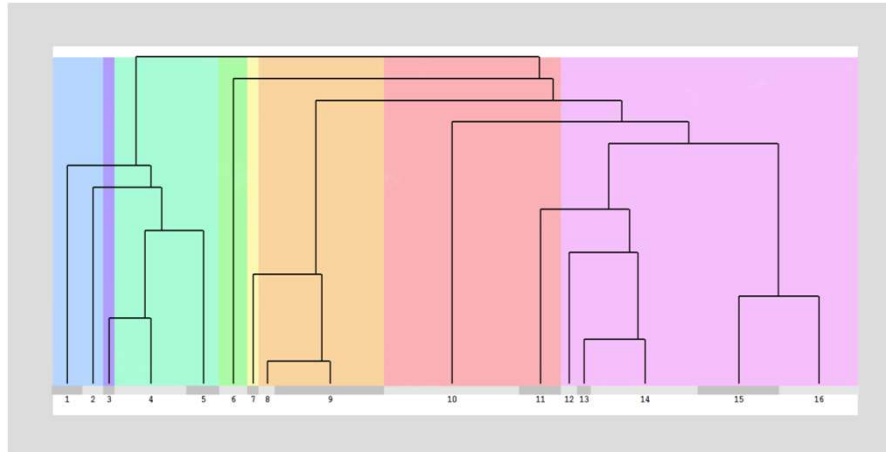
- Data stored in Turboveg format is standardized
- Georeferenced data
- Full species composition of vegetation plots (relevés)
- Layer information
- Header data information
- Balkan vegetation database & Balkan Dry Grassland Database (709 244Records/BG – 371 186)

How phytocoenological databases may be used for studying of flora?

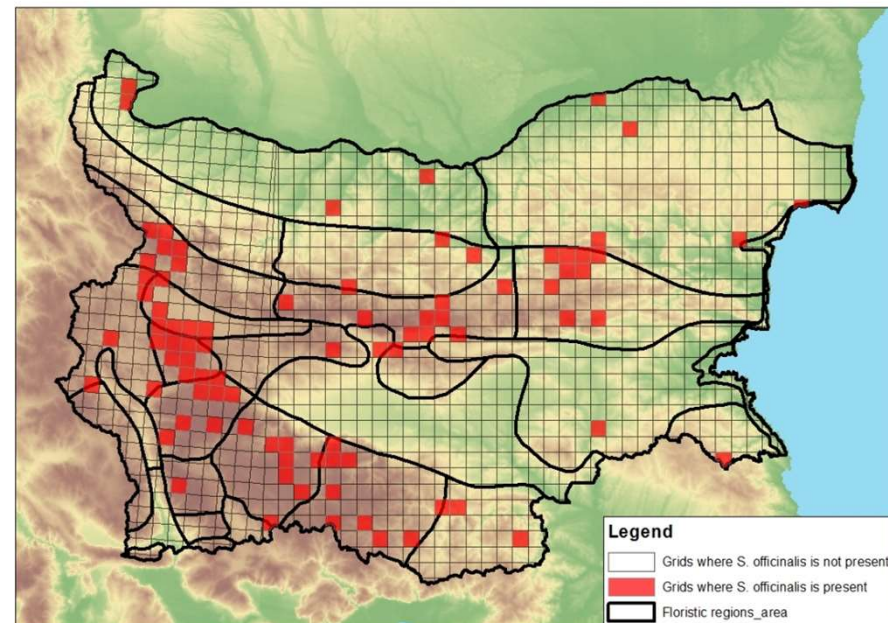
- Summarizing the available data on distribution of *Sanguisorba* species in Bulgaria as well as their ecological preferences to abiotic conditions (altitudinal range, basic rock, exposition, etc.) and occurrence in certain vegetation and habitat types
- Using data from floristic and phytocoenological literature sources, herbarium collections (SOM, SO, SOA) and phytocoenological databases
- About 5% of localities from herbarium materials and literature were missing or have too broad range of distribution and were not georeferenced and used for analysis



Modified TWINSpan classification for *S. minor* relevés: **Clusters: 1** – FES/62A0/E1.21; **2** – FES/62C0/E1.2D1 & E1.2b; **3 & 4** – FES/62A0/E1.21; **5-8** – FES/6210/E1.222; **9-12** – TUB/6220/E1.332; **13** – FES/6210/E1.234; **14 & 15** – MOL/6510 & 6520/E2.2 & E2.3; **16** – FES/6210/E1.234



Modified TWINSpan classification of *S. officinalis* relevés: **Clusters: 1-2** – SCH/7230/D4.1&; **3** – ULI/6230/E4.318; **4 & 5** – MOL – *Molionion coerulae* & *Deschampsia*/6410/E3.51; **6** – FES/6210/E1.222; **7** – FAG&PUB/9130 & 91M0/ G1.6932 & G1.7372; **8 & 9** – FES – *Cirsio-Brachypodium*/6210/E1.234; **10 & 11** – FES – *Chrysopogono-Danthonion*/6210/E1.234; **12 - 16** – MOL/6510 & 6520/E2.2 & E2.3



Summarized information about *S. minor*

- altitudinal range (0-1758 m a.s.l., optimum between 0 - 900 m a.s.l.)
- found mainly on flat to moderately-steep terrains with slope inclination up to 20° (82%), on S (25.5%) and W (11.2%) expositions or with different exposition NE-5.3%, E-9.6%, SE-9.7%, SW-10.7%, N-6% & NW-9.8%).
- Bedrock type is limestone (76%), silicate (11%) and no-data (12%).
- Soils are mainly shallow (40%) and moderately deep (57%) and only for 3% of all plots deep.
- Soil pH is in the range 4-8 but optimum is between 5 and 7 (86%).

Summarized information about *S. officinalis*

- Distributed predominantly in mountainous regions from 0 to 1950 m a.s.l., optimum between 600 and 1200 m a.s.l.
- Found on flat to slightly inclined terrains with slope inclination up to 10° (85%) and only 15% are found on steeper slopes.
- Different exposition (NE-8.5%, E-9.7%, SE-6.1%, S-12.1%, SW-8.5%, W-9.3%, N & NW by 10.1%).
- Soil are mainly moderately deep (70%) and deep (20%) and only for 10% are shallow.
- Soil pH is in the range 4-8 but optimum is between 5 and 7 (84%).

Habitat type - Directive 92/43/EEC	% of <i>S. minor</i> relevés classified to habitat type	% of <i>S. officinalis</i> relevés classified to habitat type
7230 Alkaline fens		6
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils		13
91CA Rodope and Balkan Range scot pine forests		0.3
6230 *Species rich <i>Nardus</i> grasslands, on siliceous substrates on mountain areas (and submountainous areas in Central Europe)		3.4
9130 <i>Asperulo-Fagetum</i> beech forests		0.3
91M0 Pannonian-Balkan turkey oak- sessile oak forests	0.7	1
6510 Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)/6520 Mountain hay meadows	18.3	37
62A0 Eastern sub-mediterranean dry grasslands (<i>Scorzoneretalia villosae</i>)	16	
62C0 *Ponto-Sarmatic steppes	9.3	
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites)	36	39
6220 *Pseudo-steppe with grasses and annuals of the <i>Thero-Brachypodietea</i>	19,4	
9170 <i>Galio-Carpinetum</i> oak-hornbeam forests	0.3	
5130 <i>Juniperus communis</i> formations on heaths or calcareous grasslands	0.06	

Thank you for your attention!

