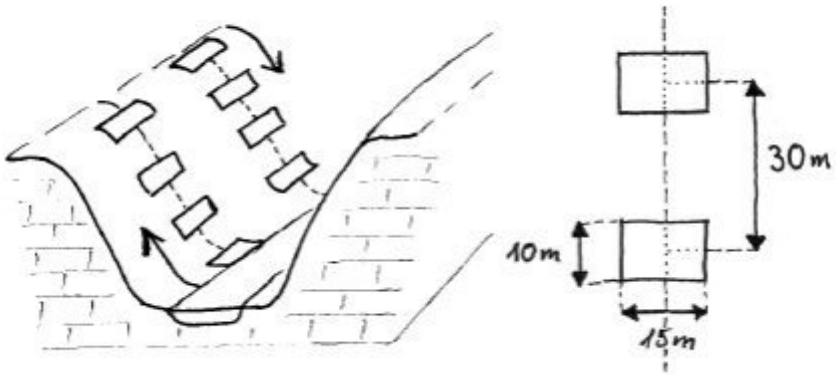
Forest vegetation data from Vltava river valley

Source of data

Zelený & Chytrý (2007)

Description of the dataset



Distribution of plots along transects across the valley.

Vegetation plots, located in even distances along transects following the steep valley slopes of Vltava river valley and collected during 2001-2003. Each transect started at the valley bottom and end up at the upper part of the valley slope. Plots are of the size 10×15 m. In each plot, all species of tree, shrub and herb layer were recorded and their abundance was estimated using 9-degree ordinal Braun-Blanquette scale (these values were consequently transformed into percentage). At each plot, various topographical and soil factors were measured or estimated (see Table below). The dataset contains 27 transects with 97 samples in total.

Locality

Vltava river valley close to Zlatá Koruna, Český Krumlov, Czech Republic. The transects follow the slopes of various aspect, and only the sites with natural or semi-natural forest vegetation were selected (no forest plantations).

The file with coordinates, which can be opened in Google Earth: vltava.kml [1)]

Environmental variables

Name of variable	Description
PLOT	plot number
ELEVATION	elevation [m a.s.l.]
SLOPE	slope [°]
ASPSSW	aspect (deviation of plot aspect from 22.5°, reaching the highest values in SSW orientation)
HEAT.LOAD	heat load, calculated from plot slope and aspect (McCune & Keon 2002)
SURFSL	landform shape in the downslope direction (three-degree ordinal scale: -1 concave, 0 flat, 1 convex)

Name of variable	Description
SURFIS	landform shape along the isohypse (three-degree ordinal scale: -1 concave, 0 flat, 1 convex)
LITHIC	lithic leptosols (shallow soils near rock outcrops)
SKELETIC	skeletic and hyperskeletic leptosols (stony soils on scree accumulatons)
CAMBISOL	cambisols (well-developed zonal soils)
FLUVISOL	fluvisols (water-influenced soils formed from alluvial deposits)
SOILDPT	soil depth [cm], measured by 0.7 m long iron rod (1.5 cm diameter) - average of 5 values measured in 5 places within the plot
pH	soil pH (measured in water solution)
COVERE3	estimated cover of tree layer [%]
COVERE2	estimated cover of shrub layer [%]
COVERE1	estimated cover of herb layer [%]
COVERE0	estimated cover of moss layer [%]
COVERE32	estimated cover of tree and shrub layer [%] (merged tree and shrub estimations, using formula p.tree + p.shrub - p.tree*p.shrub
GROUP	four vegetation types (group of samples) as determined by numerical classification (using Vltava data with herbs + merged trees and shrubs, log1p transformed and applied Ward clustering with Euclidean distance)
SPEC.NO	number of species per plot (herbs + merged trees and shrubs)
TBV.NO	Turboveg number - unique identifier under which the plot is stored in Czech National Phytosociological Database (http://www.sci.muni.cz/botany/vegsci/dbase.php?lang=en)
TRANSECT	transect number
LIGHT	mean Ellenberg indicator values for light, calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)
TEMP	mean Ellenberg indicator values for temperature, calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)
CONT	mean Ellenberg indicator values for continentality, calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)
MOIST	mean Ellenberg indicator values for moisture, calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)
REACT	mean Ellenberg indicator values for soil reaction calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)
NUTR	mean Ellenberg indicator values for nutrients, calculated as unweighted mean from data in Vltava spe (herbs + merged trees and shrubs)

Data for download

- vltava.xlsx - excel file, containing the species × sample matrix, environmental variables, explanation of species abbreviations and metadata

Direct import of data into R

```
vltava.env <- read.delim
('http://www.davidzeleny.net/anadat-r/data-download/vltava-env.txt')
```

References

- Zelený D. & Chytrý M. (2007): Environmental control of vegetation pattern in deep river valleys of the

Bohemian Massif. - *Preslia*, 79: 205-222 pdf

[1)]

you need Google Earth installed on your computer to open this file