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# Srovnání obsahu živin a zásob uhlíku v půdách "hospodářských" a "přírodě blízkých" lesů v České republice

*Comparison of carbon stock and nutrient content in the soils in close-to-nature and managed forests in the Czech Republic*

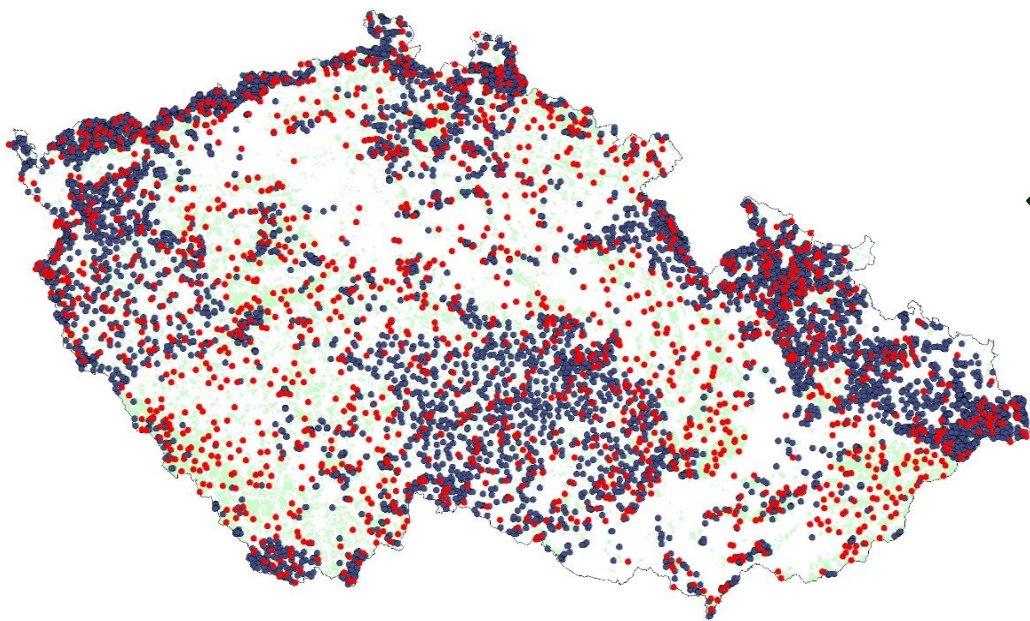


# Projekt TAČR

Kvantifikace zásob uhlíku v lesních půdách ČR a možnost jejich **ovlivnění lesnickým hospodařením**

## *Research project*

*Quantification of Carbon Storage in Forest Soils of the Czech Republic and **Consequences of Forest Management***



A lot of forest soil data

... but majority just in **manged forests!**

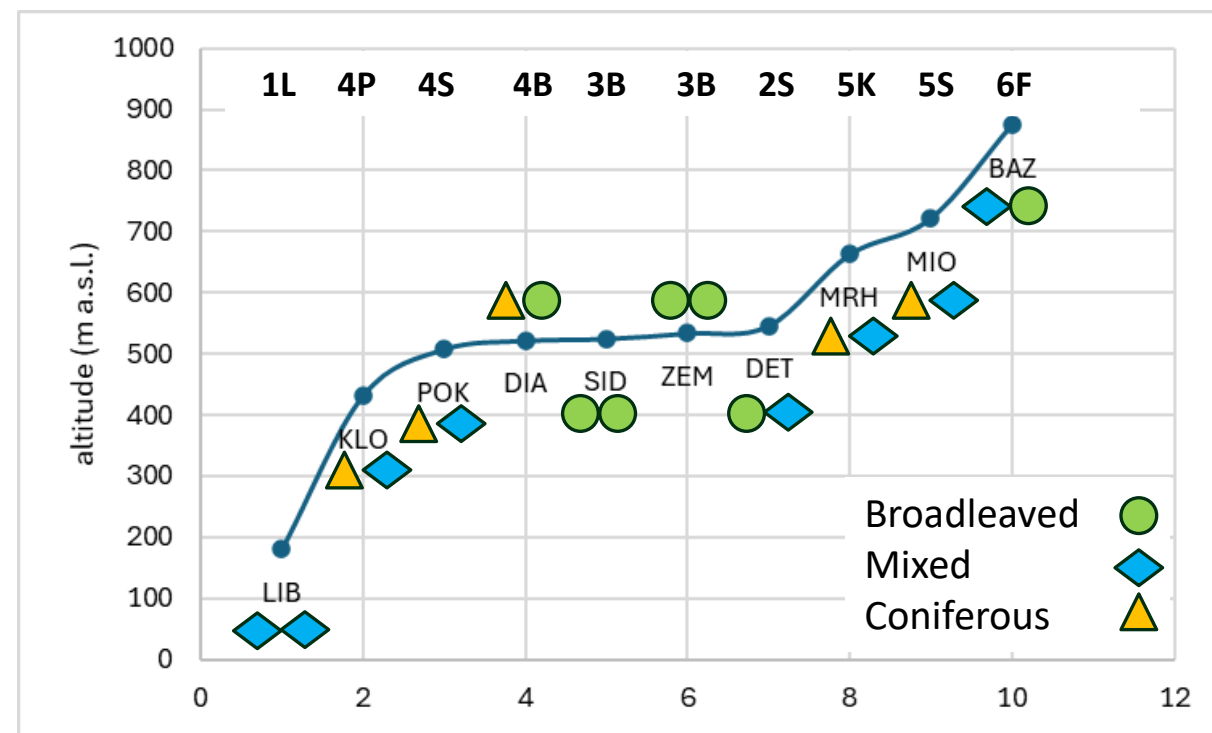
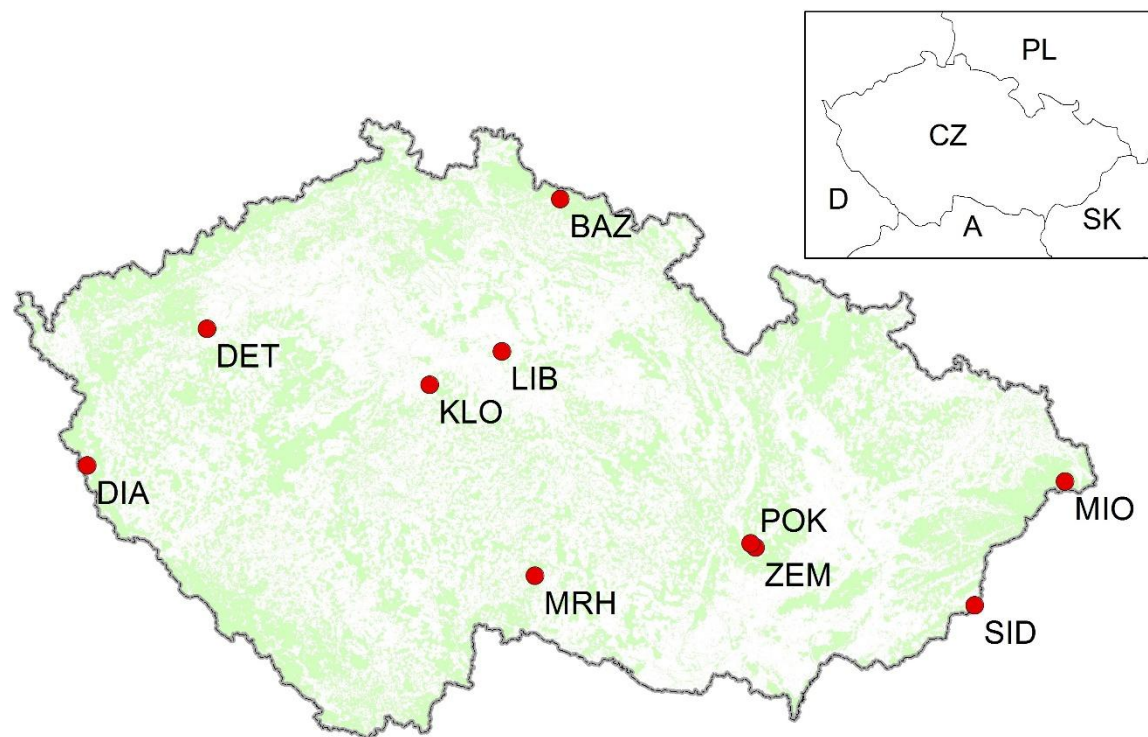


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# Výběr ploch / Plot selection

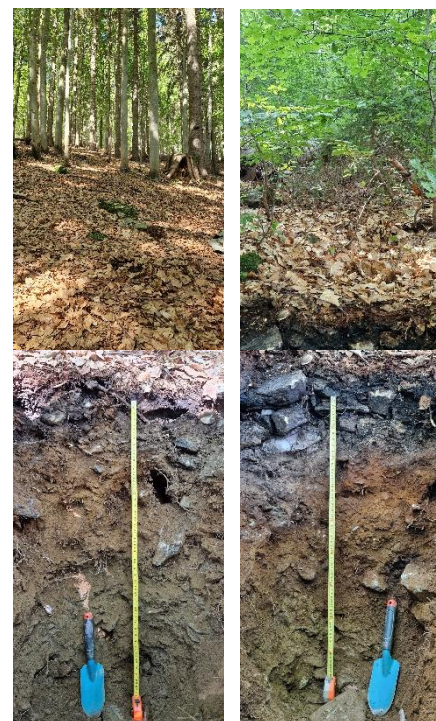
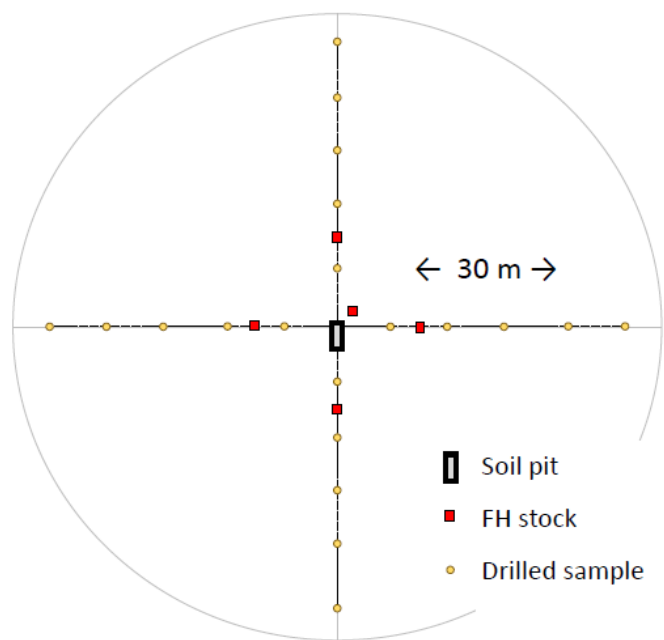
- 10 pairs of plots in „CLOSE-TO-NATURE“ forests and „MANAGED“ forest stands in similar env. conditions
- Different altitudes and site quality covered
- In some cases the same tree species, in other different species or mixtures condition





# Soil Sampling

- *Modified ICP Forest method – pooled samples from a soil pit and 4 drilled sites (red squares) – complex chemical analysis*
- *+ 20 individual samples of FH horizon and upper mineral soil (0-30 cm) – pH, Corg*



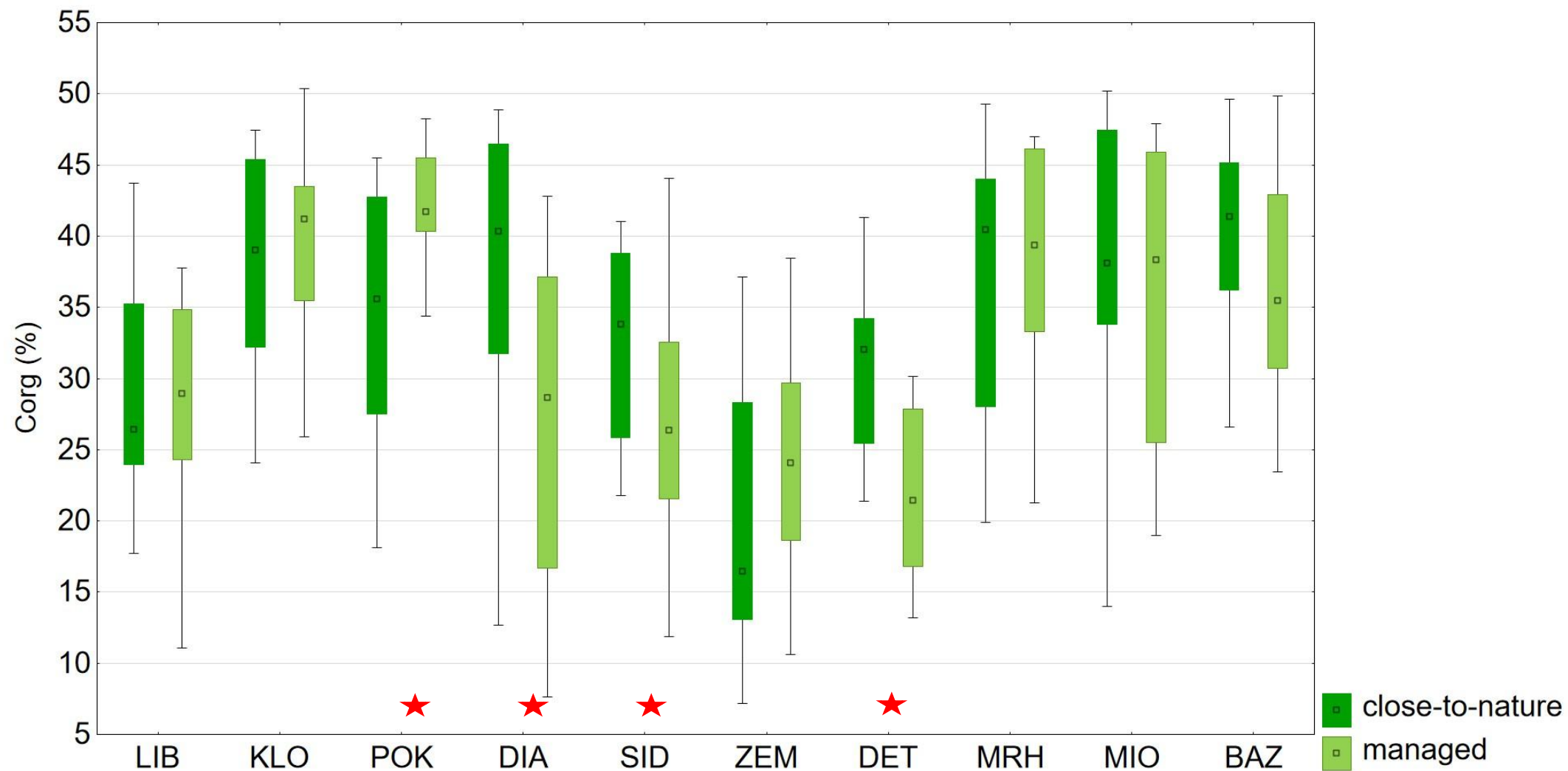
Mísečky – Bažinky



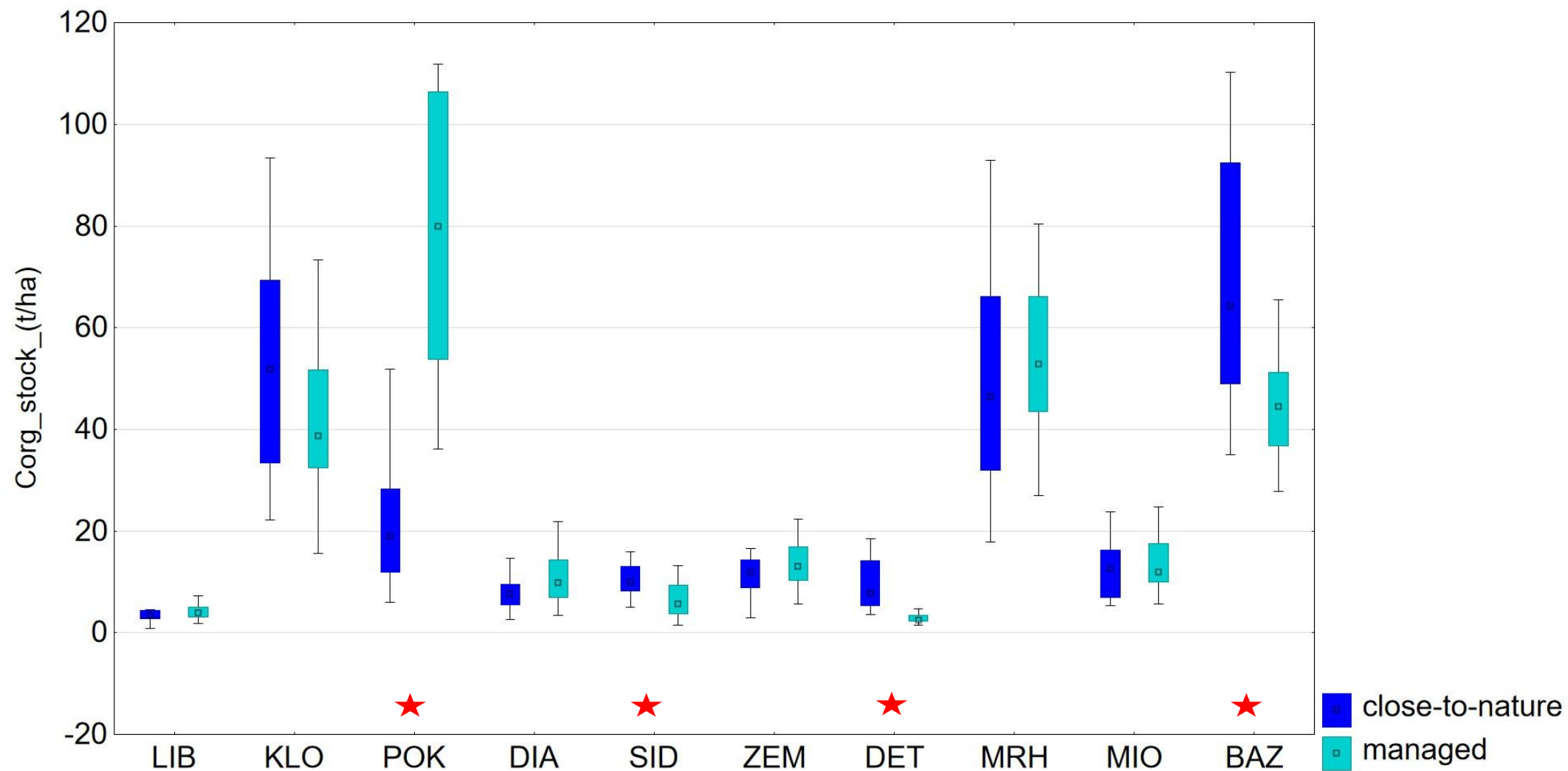
Mionší



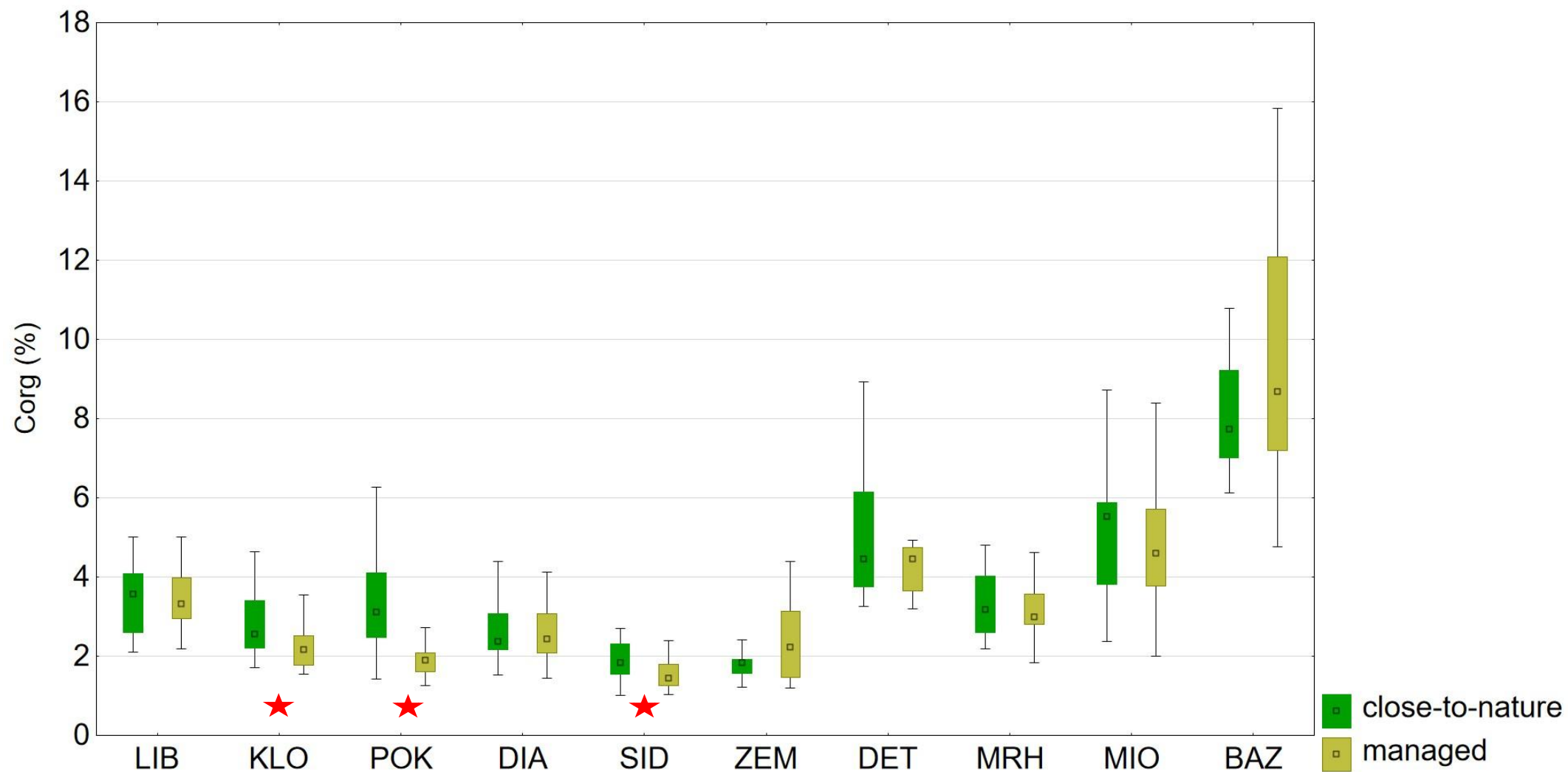
## Results – Corg in upper organic layer - *concentration*



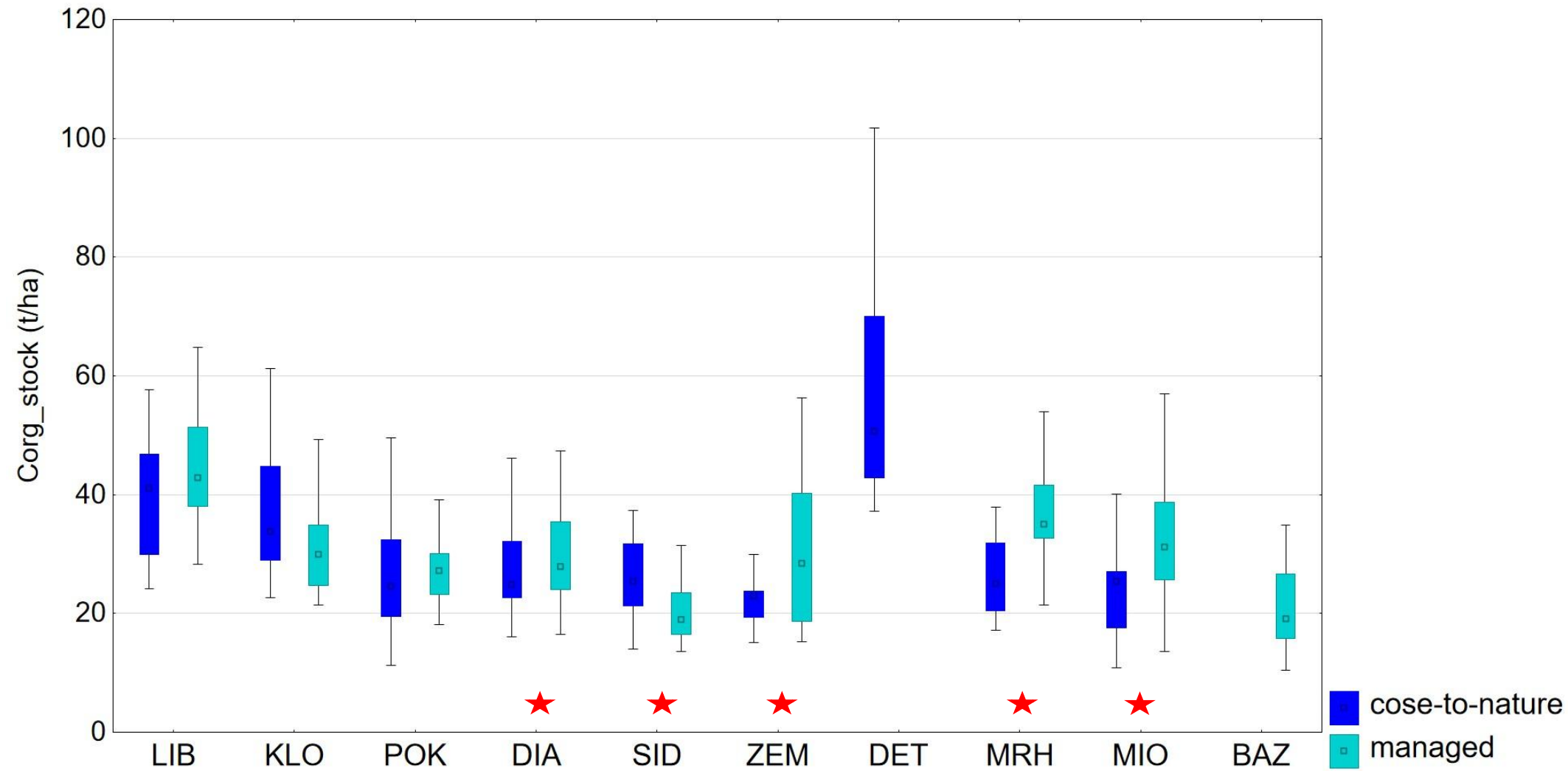
## Results – Corg in upper organic layer - *stock*



## Results – Corg in upper mineral layer (0-30 cm) - *concentration*



# Results – Corg in upper mineral layer (0-30 cm) - stock



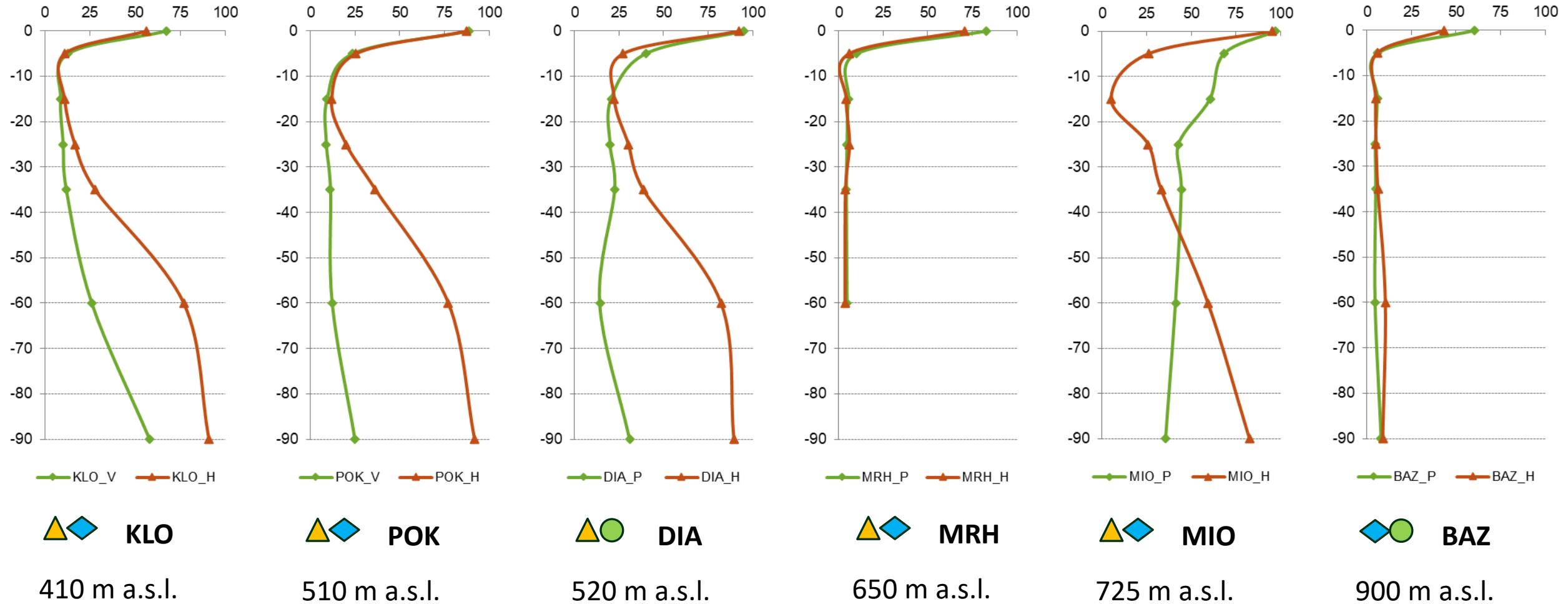


## ***(careful) conclusions I:***

- *Higher **Corg concentration in FH** horizon seems to be connected with broadleaved species – but can be influenced by quality and time of sampling*
- *Higher **Corg stock in FH** horizon seems to be connected with denser stands or prevailing coniferous litterfall*
- *Higher **Corg concentration in upper mineral soil** seems be connected with higher share of broadleaves*
- ***Corg stock in upper mineral horizon** depends mainly on coarse fragments (stoniness) of the individual site*



# Base cation saturation in the soil pits – interesting results:



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## ***(careful) conclusions II:***

*Especially under Norway spruce (with flat root system) we can found compared to broadleaved stands:*

- In lower altitudes decreased Base Saturation in the top-soil, but higher BS in the deeper soil layers.*
- In higher altitudes the patterns of BS are identical under N. spruce, mixtures or broadleaved stands.*
- The course of BS through the soil profile at individual site are driven by (historic) atmospheric deposition of acidic compounds and the bedrock.*



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**Děkuji za pozornost / *Thank you for your attention***



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