

Igor Malenovský

Ústav botaniky a zoologie

Univerzitní kampus Bohunice: D31-118

Přírodovědecká fakulta MU, Brno

malenovsky@sci.muni.cz

Výuka

- Informační zdroje v zoologii
- Terénní cvičení ze zoologie (Bransouze)
- Základy entomologie
- Terénní cvičení z entomologie („Biojaro“)

- Taxonomie, fylogenetika a zoologická nomenklatura
- Systém a fylogeneze hmyzu
- Entomologie pro pokročilé
- Aplikovaná entomologie
- Speciální botanicko-zoologické cvičení v terénu („Bioléto“)

Systematika a ekologie hmyzu řádu Hemiptera

Polokřídlí (Hemiptera)

ploštice (Heteroptera)

křísi (Auchenorrhyncha)

mery (Psylloidea)

molice (Aleyrodoidea)

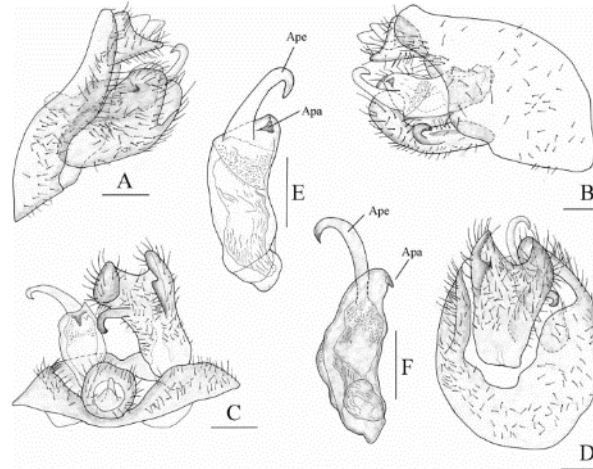
mšice (Aphidoidea)

červci (Coccoidea)

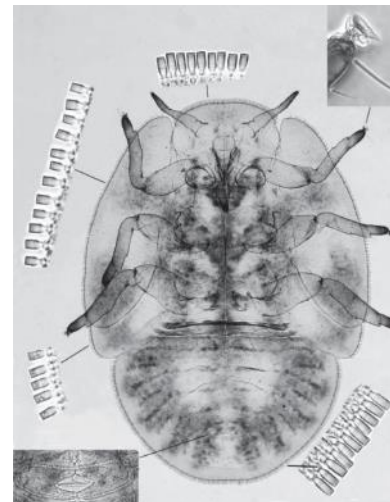
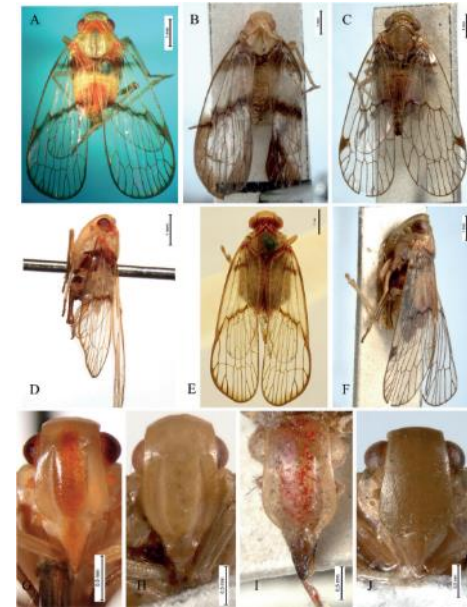


Taxonomie a morfologie mer a kříšů

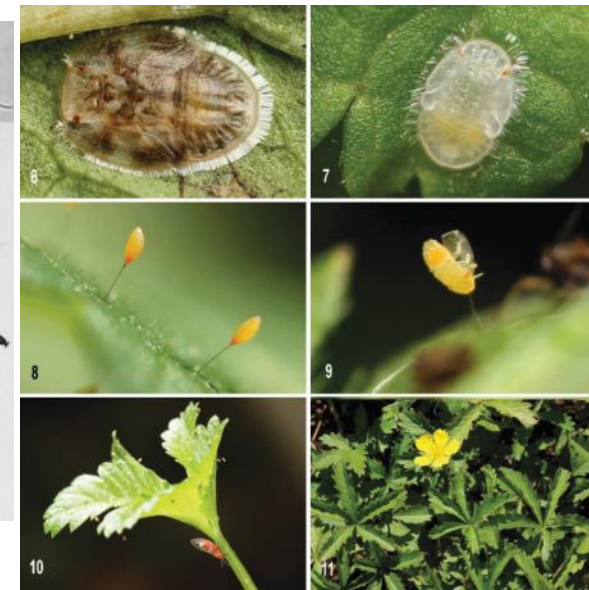
- popisy druhů
- taxonomické revize
- srovnávací morfologie a fylogenetika
- faunistika
- biologie: hostitelské rostliny, bioakustika



Wang et al. 2013



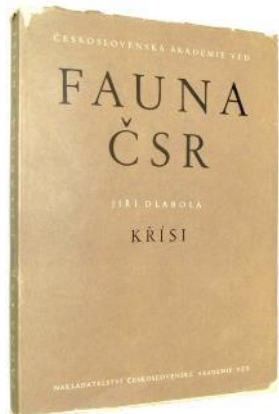
Seljak & Malenovský 2014



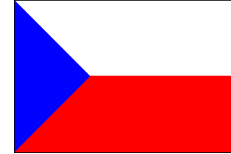
- biodiverzita křísů České republiky (606 spp.)
 - příprava nové určovací příručky, aktuálního seznamu druhů, červeného seznamu



Jiří Dlabola:
Fauna ČSR –
Křísi (1954)



Fieberiella bohemica Dlabola, 1965



Igor Malenovsky, Robert Biedermann, Rolf Niedringhaus

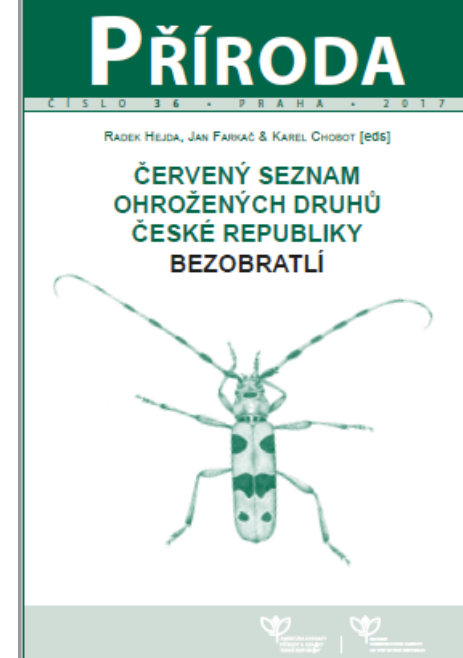
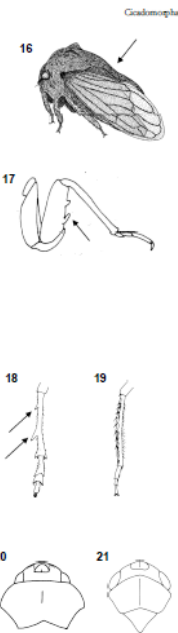
The Planthoppers and Leafhoppers of the Czech Republic

Identification keys to all families and genera and all Czech species not recorded from Germany

Fründ

The Planthoppers and Leafhoppers of the Czech Republic Key to families

- 12(2) Pronotum large, with widely backwards elongated appendage exceeding scutellum (Fig. 16).....Membracidae, p. ##
- Pronotum without such appendage.....13
- 13(12) Fore femur distinctly thicker than median and hind femur, on its upper side with two or three stiff spines (Fig. 17); three ocelli at head arranged in triangle.....Cicadidae, p. ##
- Fore femur not thicker than median and hind femur, without spines; at most two ocelli at vertex, these at fore margin of vertex or at face between the eyes.....14
- 14(13) Hind tibia in cross-section round, without edges or keels, relatively short, on outer margin one or two robust, stiff spines before distal row of spines (Fig. 18).....15
- Hind tibia in cross-section angular or edged, without stiff spines on outer margin (Fig. 19).....Cicadellidae, p. ##
- 15(14) Fore wing with red and black colour (very rare completely black), head distinctly smaller than pronotum (Fig. 20).....Cercopidae (Cercopis)
- Fore wing without red colouring, head about as broad as pronotum (Fig. 21).....Aphrophoridae, p. ##



The Planthoppers and Leafhoppers of the Czech Republic

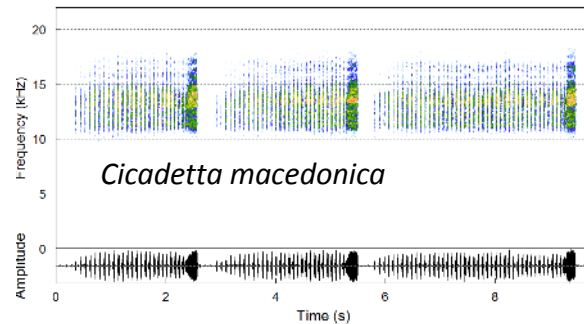
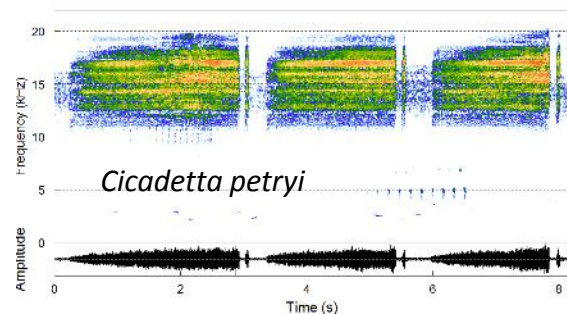
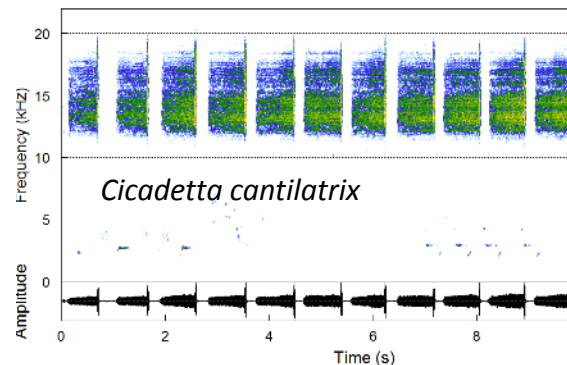
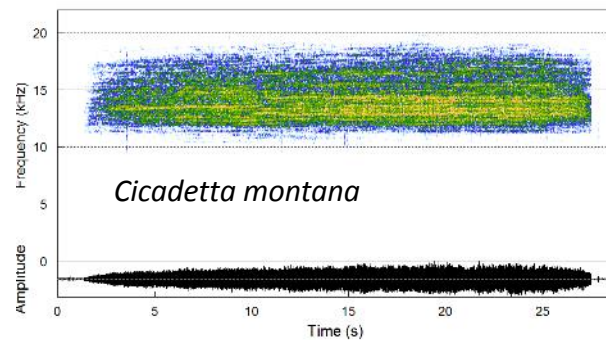
Species not recorded from Germany

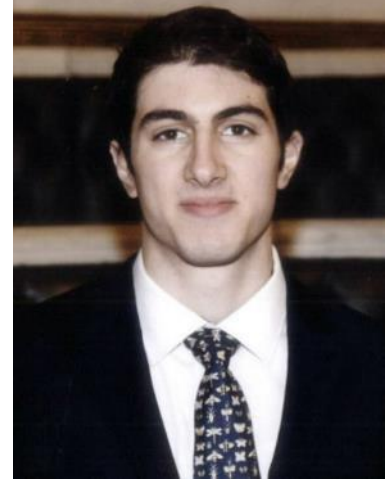
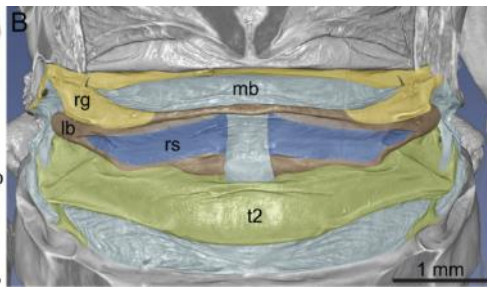
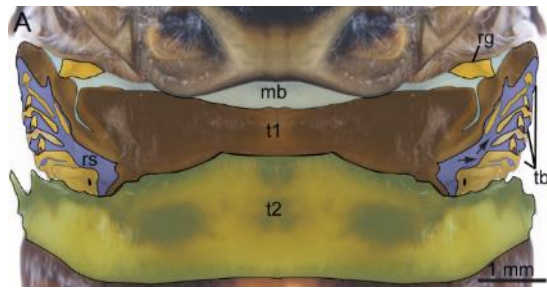
Male genitalia from behind and from the right (Fig. 22) 22a/24b-c	Male genitalia from behind and from the right (Fig. 23) 23a/24b-c	Male genitalia from behind and from the right (Fig. 24) 24a/24b-c
Male anal tube from below (Fig. 25) 25a/24g	Left genital style, male anal tube from below (Fig. 26) 26a/24d-f	Left genital style, male anal tube from below (Fig. 27) 27a/24d-f
Aedeagus from the left and from the right (Fig. 28) 28a/24e-f	Aedeagus from the left and from the right (Fig. 29) 29a/24d-f	Aedeagus from the left and from the right (Fig. 30) 30a/24d-f
Caudal part of female abdomen from below (Fig. 31) 31a/24c	Caudal part of female abdomen from below (Fig. 32) 32a/24c	Caudal part of female abdomen from below (Fig. 33) 33a/24c
Ende abno (Wagner, 1940) (Fig. 142, Pl. Fig. 4.3) (Fig. 277, Pl. Fig. 142, Pl. Fig. 4.3)	Palpus venosus (Linné, 1758) (Fig. 289, Pl. Fig. 140, Pl. Fig. 247)	Tarsus tertius (Lubbock, 1878) (Fig. 78, Pl. Fig. 147, Tars. Fig. 64b-64d) (Fig. 307, Pl. Fig. 140)

- biodiverzita kříšů České republiky
 - faunisticko-ekologický výzkum cikád (Cicadidae)



Ministerstvo životního prostředí



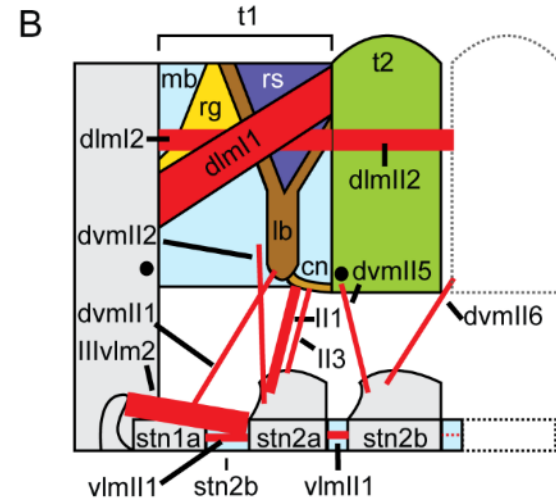
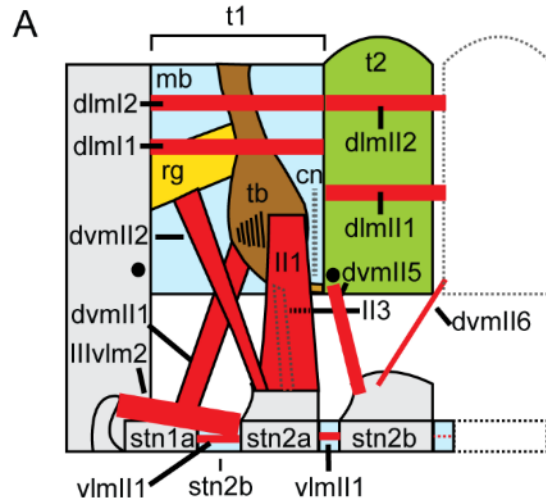
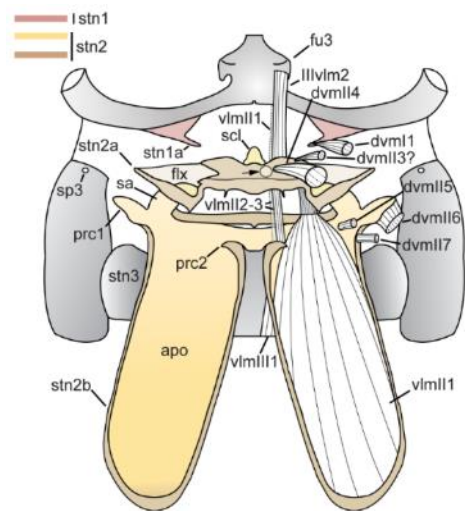
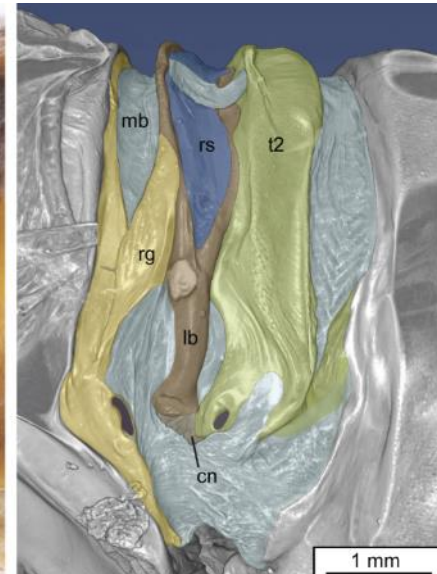
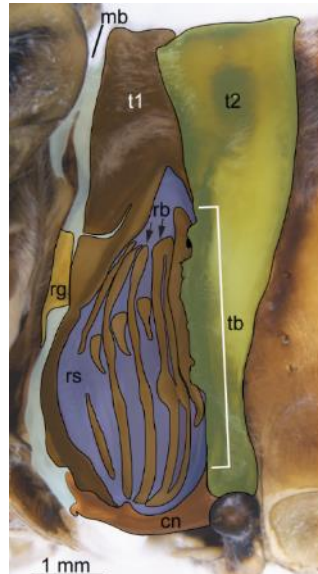


Leonidas Davranoglou

- srovnávací morfologie vibračních orgánů křísů

„tymbal“
(Cicadomorpha)

„snapping organ“
(Fulgoromorpha)

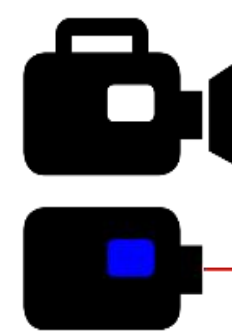
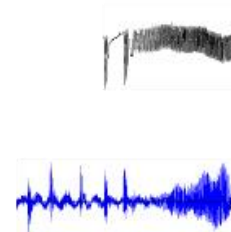
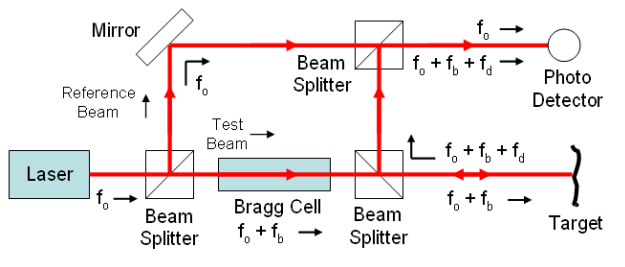


- mechanismus tvorby vibrací a struktura a evoluce vibračních signálů u mer rodu *Cacopsylla*

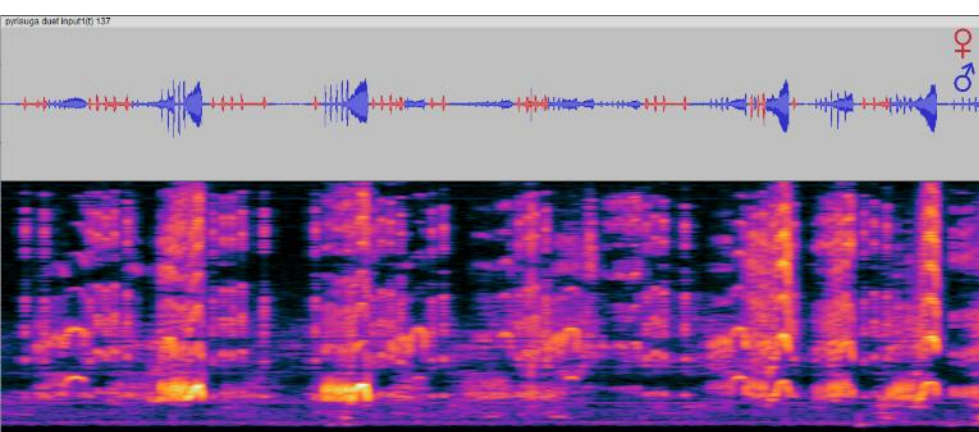
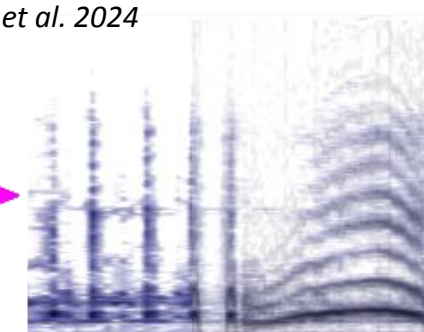
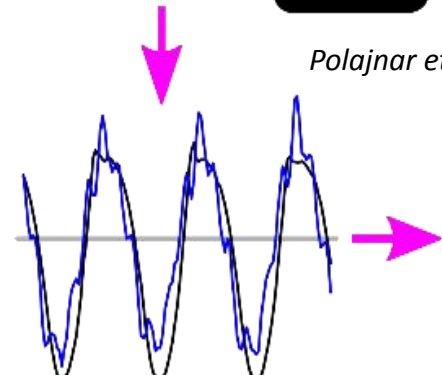
Cacopsylla pyrisuga



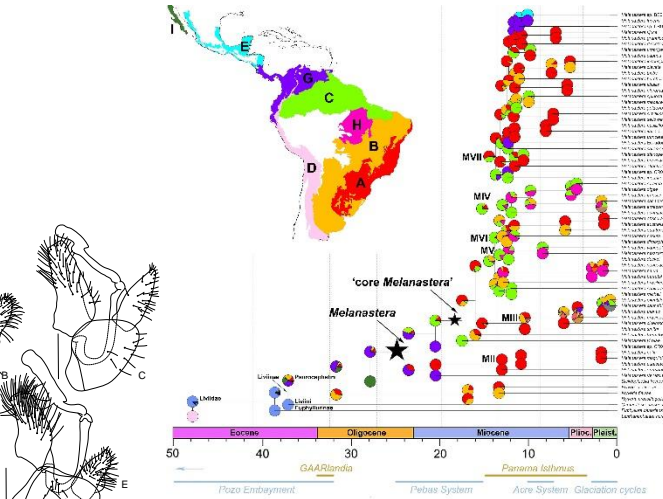
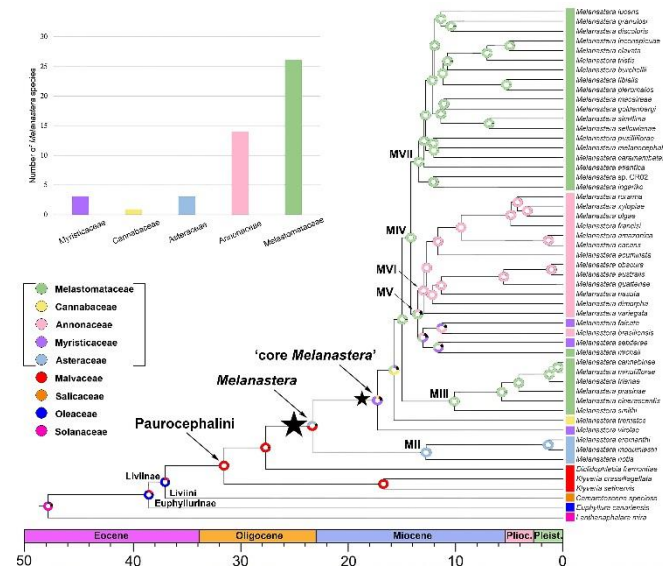
Liza Kvinikadze



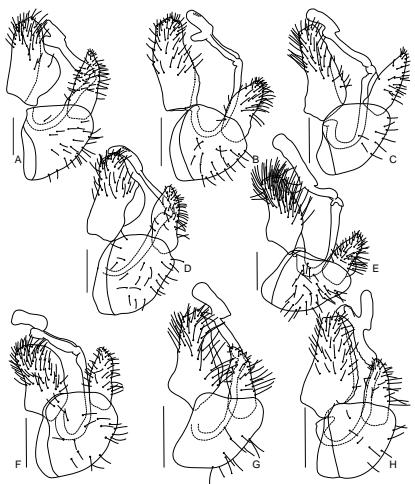
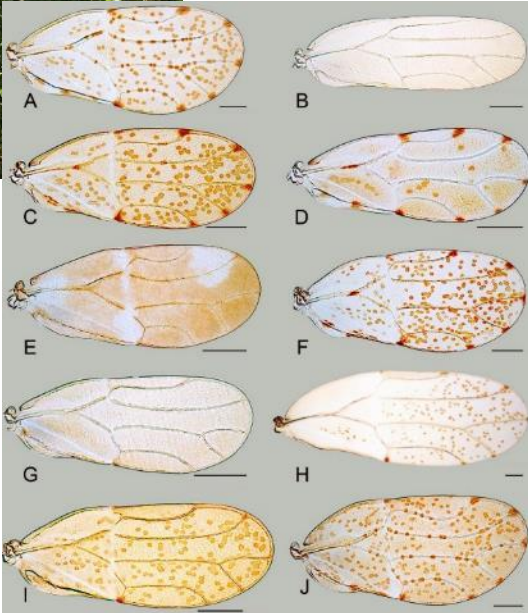
Polajnar et al. 2024



• systematika mer podčledi Liviinae



Liliya Serbina



Serbina et al. 2024

Proč je důležité rozlišovat druhy Hemiptera?

- řada hospodářsky významných škůdců
- přenašeči chorob rostlin (virů, fytoplazem a dalších bakterií)



Cacopsylla picta



Cacopsylla pyri



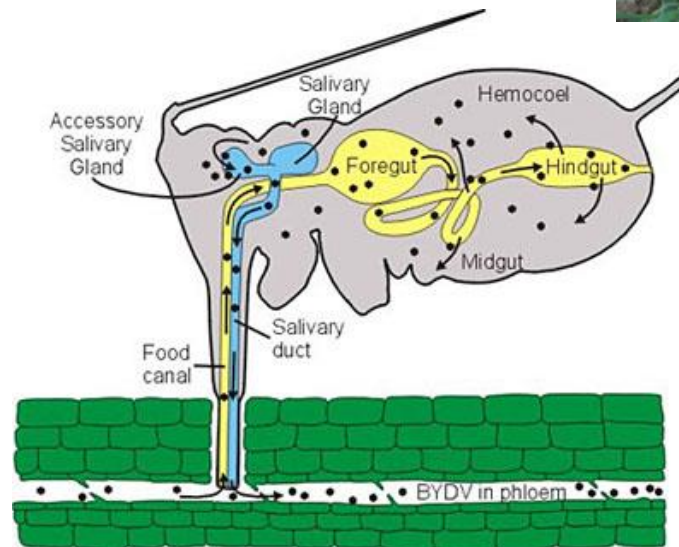
Cacopsylla pruni



Psammotettix alienus



virová zakrslost ječmene



Scaphoideus titanus

©Gernot Kunz

Proč je důležité rozlišovat druhy Hemiptera?

- vhodná indikátorová skupina v ekologickém výzkumu a ochraně přírody, zejména v travních porostech
- mnoho druhů, vysoké abundance, různé životní strategie



generalisté



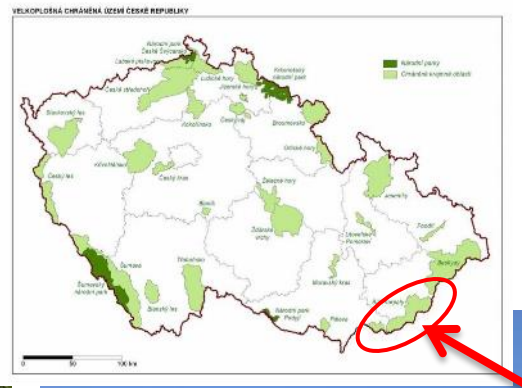
specialisté

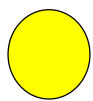
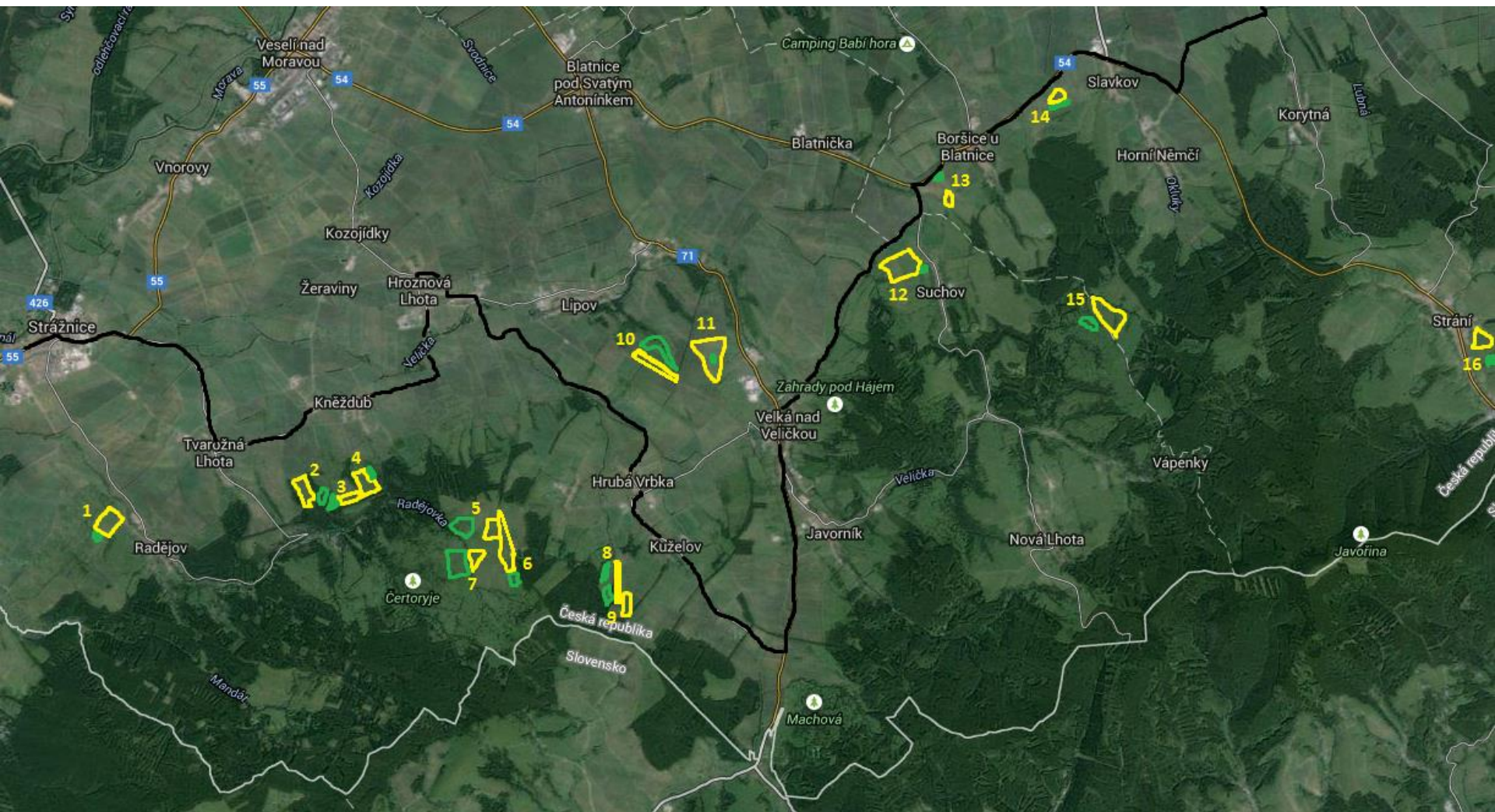


- obnova druhově bohatých luk v Bílých Karpatech z pohledu fytofágního hmyzu

Eliška Chalupová

Karel Kizek



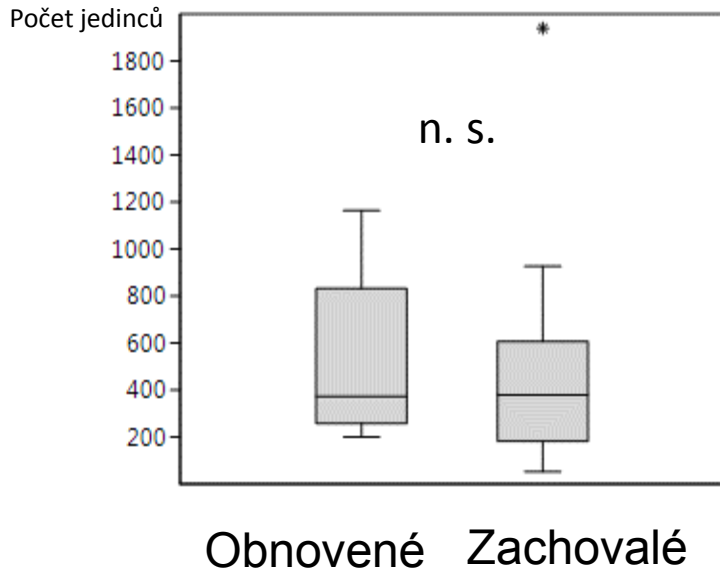


Plochy obnovené regionální směsí, 2000–2009



Referenční plochy

Abundance



Druhové složení (PCA)



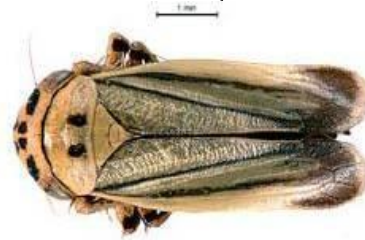
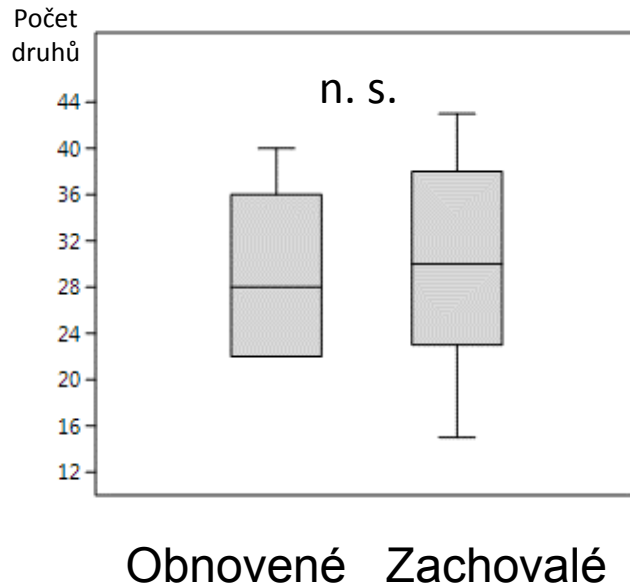
PC2

Zachovalé

Obnovené

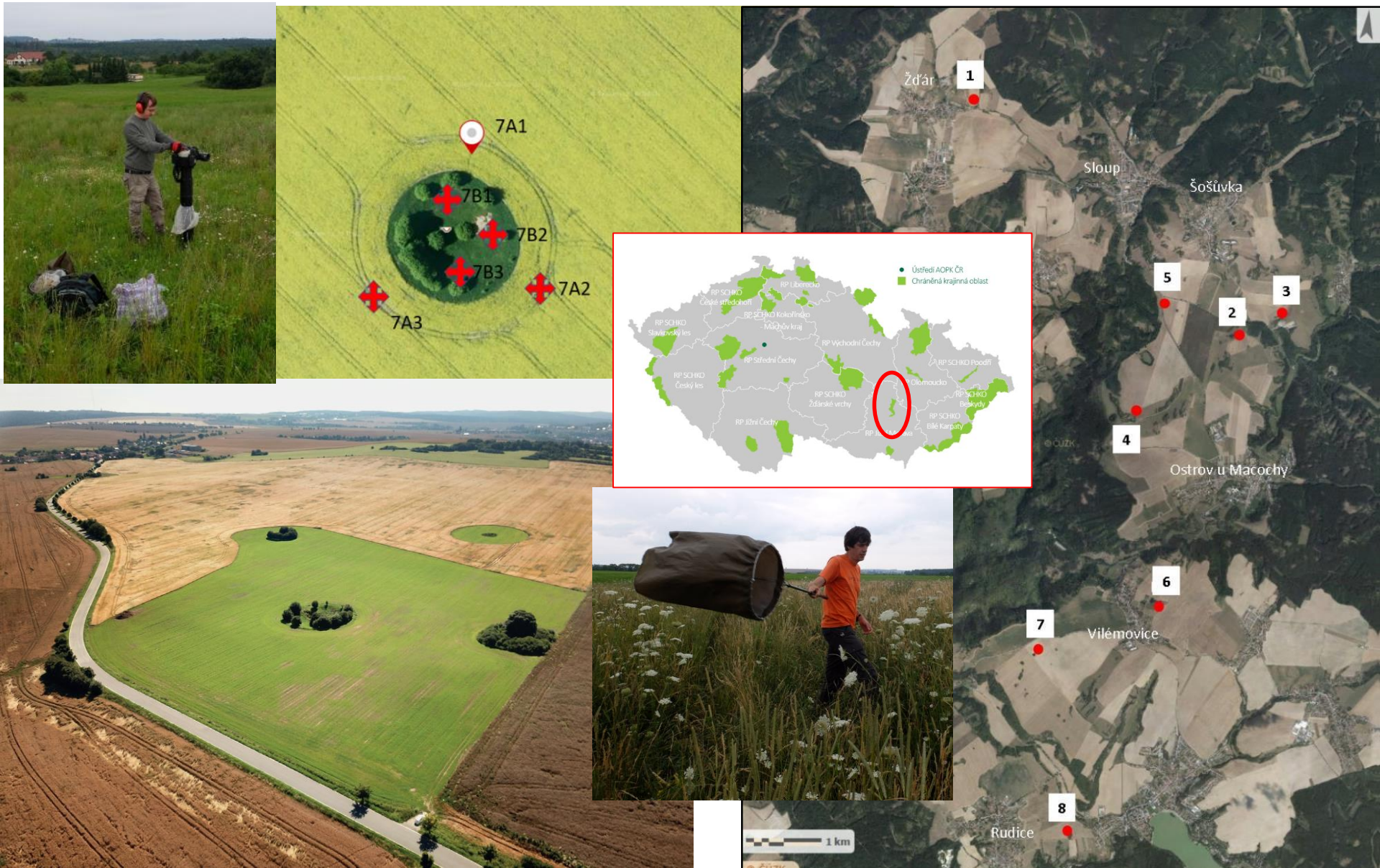
PC1

Druhová bohatost



- obnova úspěšná z hlediska abundance, druhové bohatosti, funkční diverzity a počtu ochranně významných druhů
- druhové složení společenstev se však liší
- denní motýli reagují výrazně pomaleji než křísi a plošnice

- obnova travních porostů na plošinách v Moravském krasu (zalučně 2019/2020)

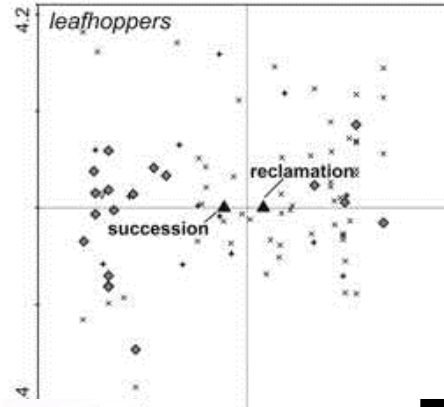


- obnova postindustriálních stanovišť (výsypek, lomů, odkališť, pískoven)
- sukcese v opuštěných vojenských prostorech

Zdenko Večerík



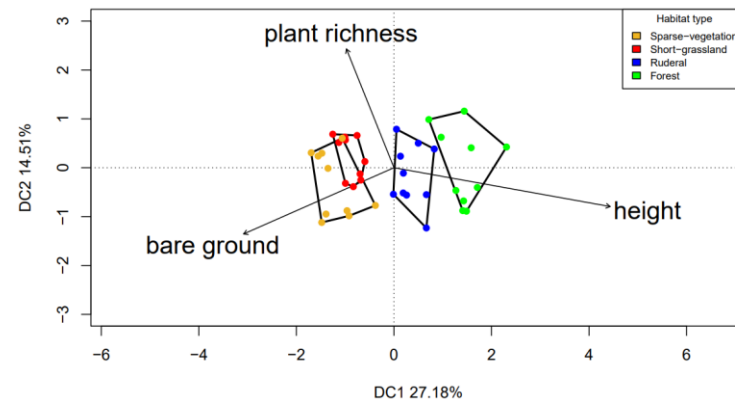
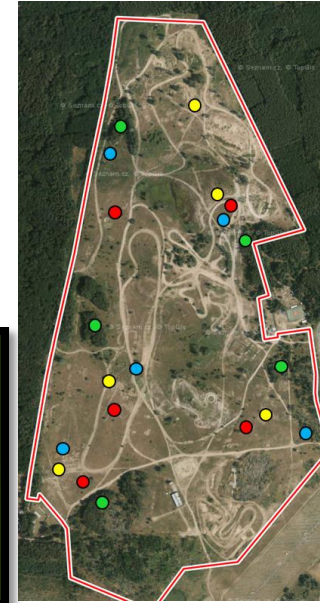
Tropek et al. 2010



Psammotettix excisus

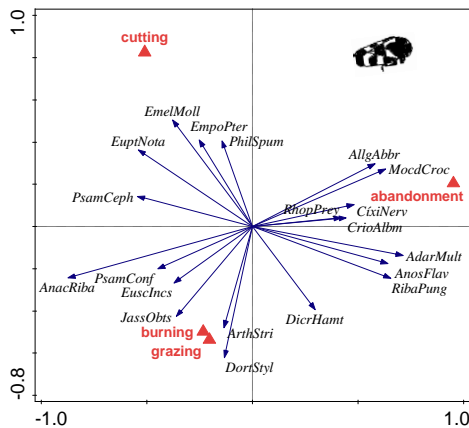
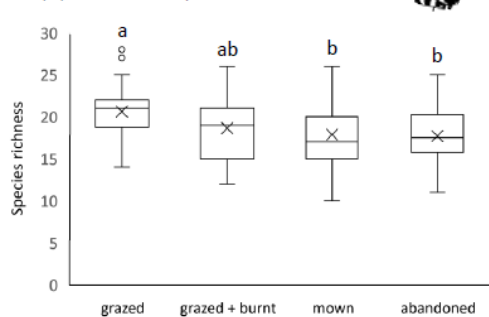


Pinumius areatus



- vliv různých způsobů obhospodařování a poloparazitických rostlin na společenstva členovců v druhově bohatých travních porostech

(B) Auchenorrhyncha



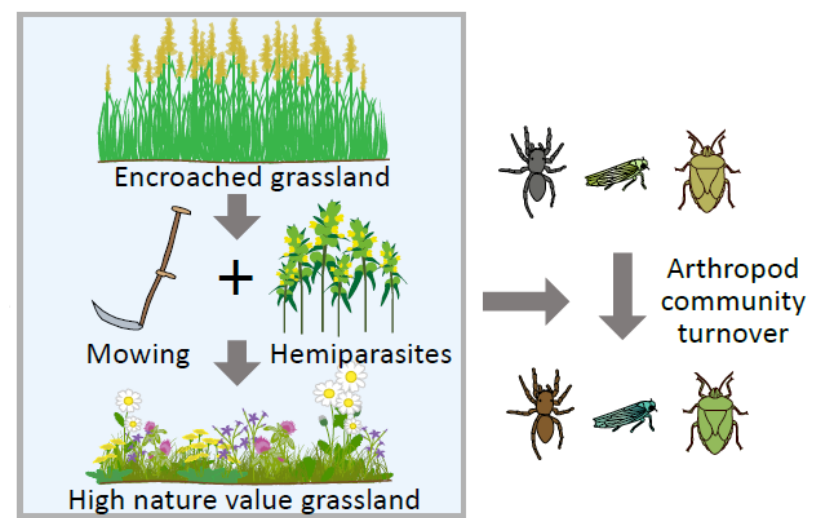
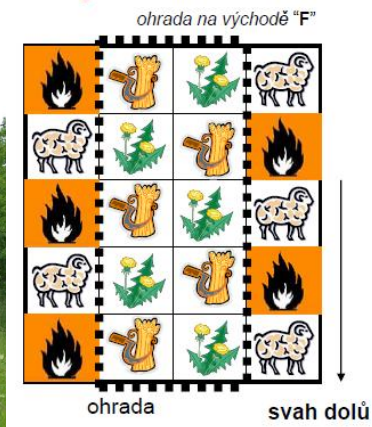
třtina křovištní
(*Calamagrostis epigejos*)



kokrhel menší
(*Rhinanthus minor*)



Martin Vašíček



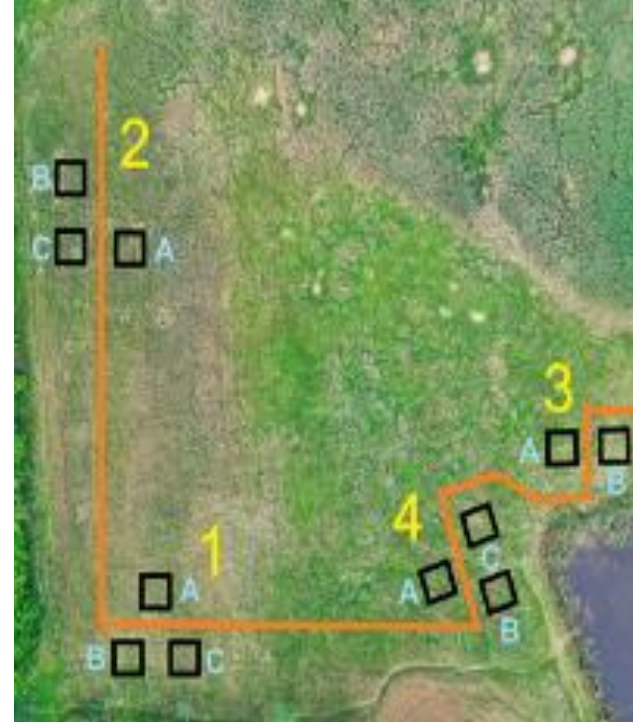
- ekologická obnova lučního mokřadu na jižní Moravě – vliv na křísy (2020–2022)



T A
Č R

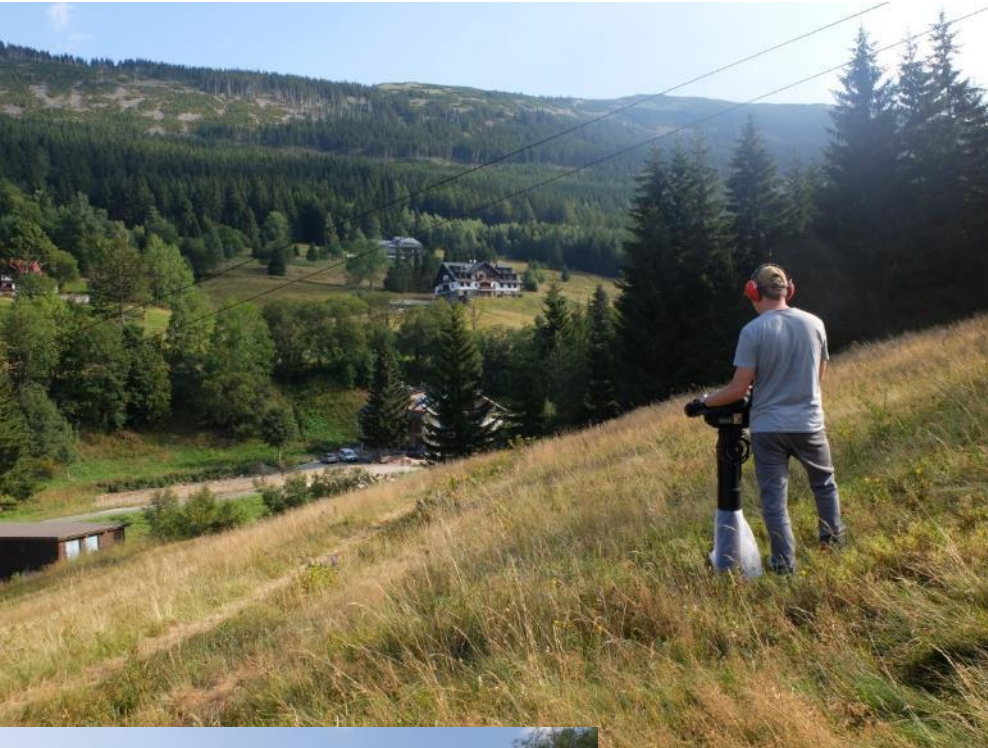
Technologická
agentura
České republiky

Program Zéta



- vliv sjezdového lyžování na přírodu v Krkonošském národním parku (2018–2022)

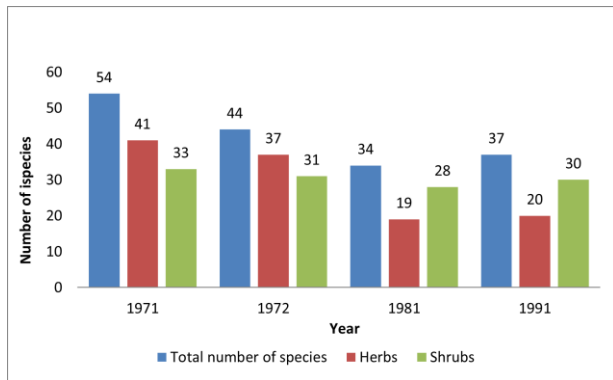
Pavλίna Podholová



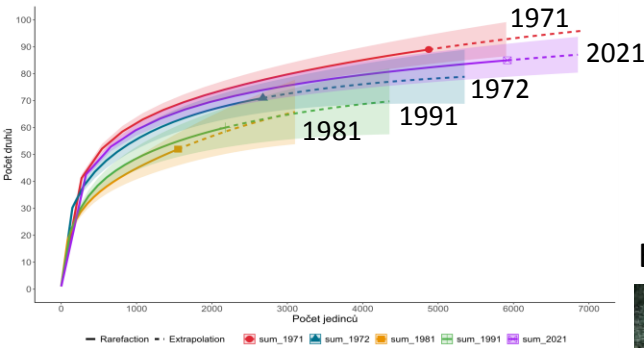
T A
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- změny ve společenstvu křísů tvrdého luhu na dlouhodobě sledované lokalitě Horní les u Lednice



Pavel Lauterer



Eva Švancarová



Společenstvo bylinného patra 1971-2021

