

Restoration of coppicing management in Devín: can a biodiversity decline trend be reversed?

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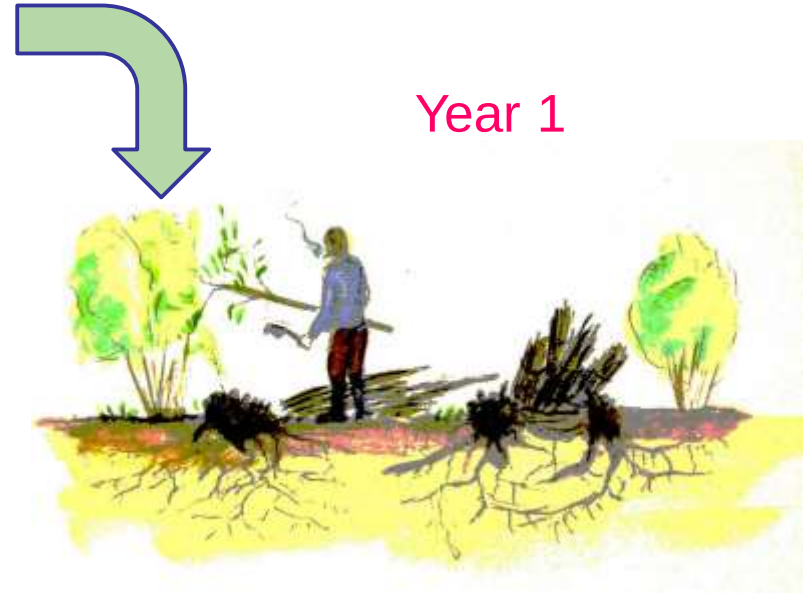
Coppicing

Short-rotation forest management system utilizing natural resprouting ability of deciduous tree species

Year 5-20+



Year 1



Year 2-4



note the woodbanks,
coppice stools,
coppicing rotation



Abandoned coppice-with-standards
Děvín, Pálava, SE Czech Republic

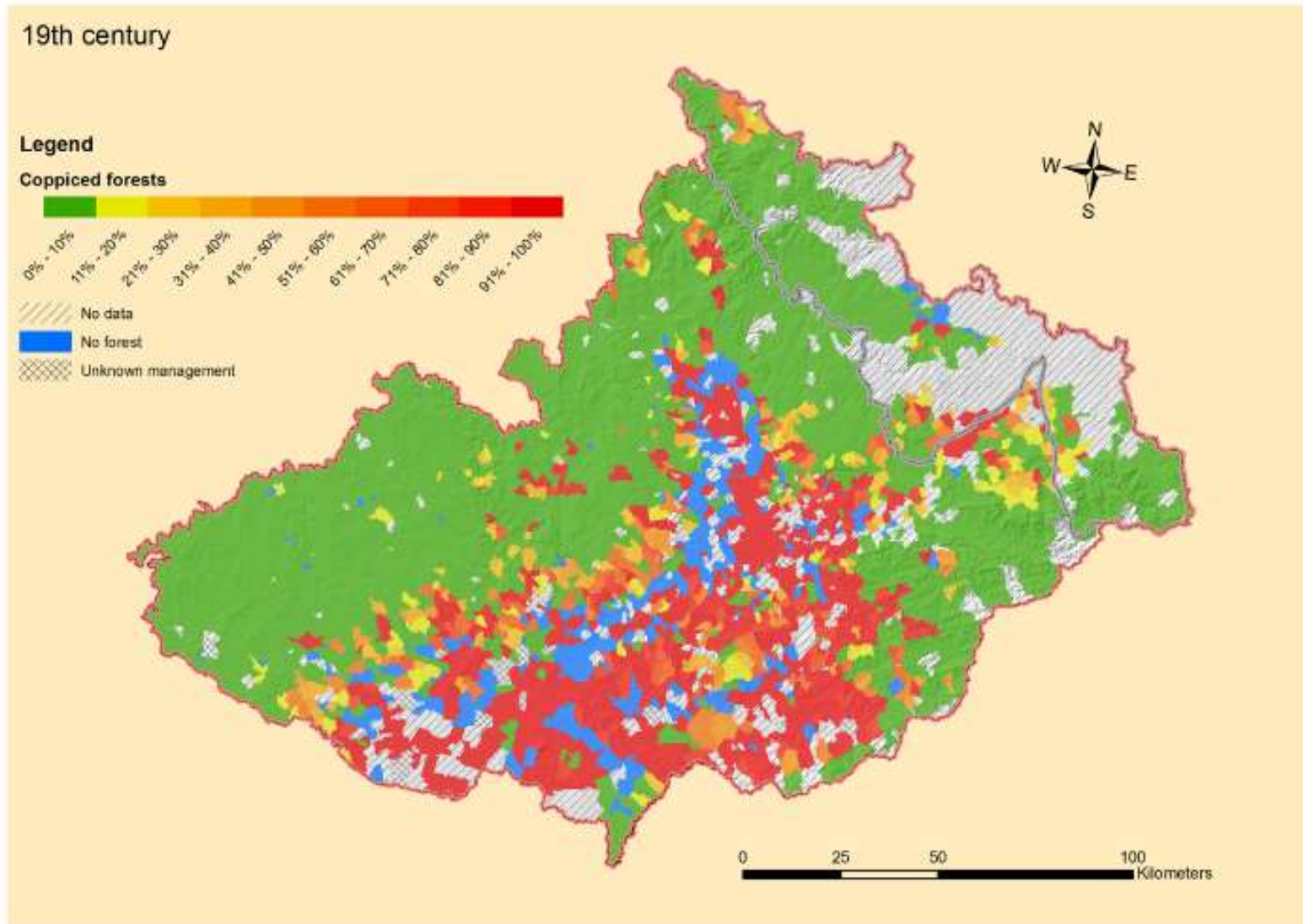


Converted coppice-with-standards
Bacín, central Bohemia, Czech Republic

Coppicing in the 19th century

Moravia, eastern Czech Republic, 28,000 km²

Source: historical forest database, www.longwood.cz



Conversions to high forest

From the 19th to the mid of the 20th century

Člověk pařezinovým hospodařením velmi silně zasahoval do produkční podstaty lesní půdy, a toto hospodářství se projevilo dnes převážně již tak škodlivě, že místy vedlo k úplné degradaci půd a tím i k většímu nebo menšímu snížení půdní úrodnosti a tím i dřevní produkce.

Prof. J. Pelíšek

Otázka převodů však zůstává stále otevřenou, ... pařezina jako hospodářství a pěstební způsob může být zdokonalena (na př. vytvořením etáže výstavkové a pod.) a může být za určitých okolností dobře využita.

Prof. B. Polanský

(both quotations are from the special issue of „Lesnictví“ from **1957** on the conversion of coppices to high forest)

Perspectives of coppicing research in ecology

1. Long-term legacy of coppicing at the landscape scale
2. Consequences of coppicing abandonment in the 20th century
3. Effects of coppicing restoration

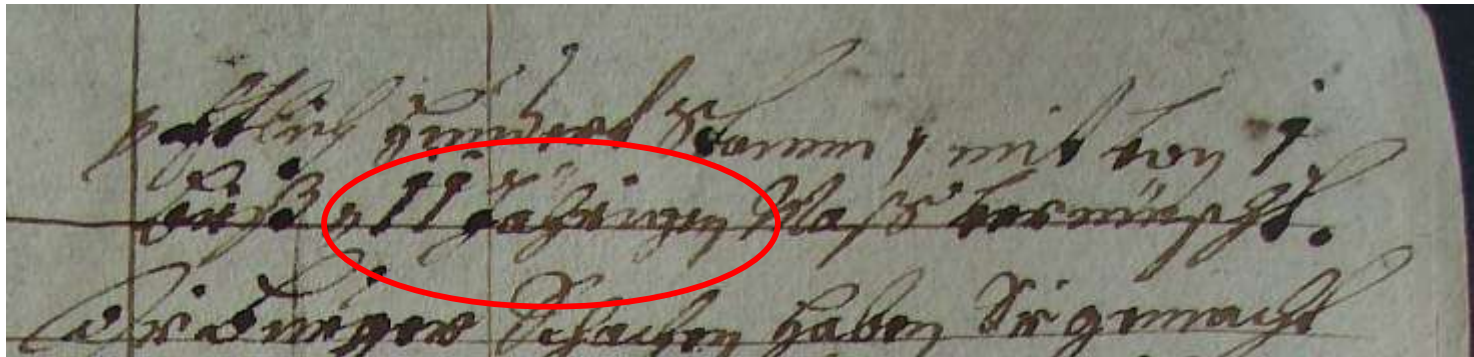
Coppicing cycles

Mikulov estate (SE Czech Republic)

Urbarium from 1384:

“Das holcz, das do get niderhalb des wegs durich die Chlausen, das haist der Lelasch, und ist deselb zeit 2 jar alt gevesen; wann er zw 7 jarn chumpt, so schaczt mann für 36 lb. und 2 lb. ze leitchauff.”

Forest description from 1692:



Increasing forest age in the past two centuries

forestry maps, Děvín, ca. 380 ha

J. Müllerová et al. / Forest Ecology and Management 331 (2014) 104–115

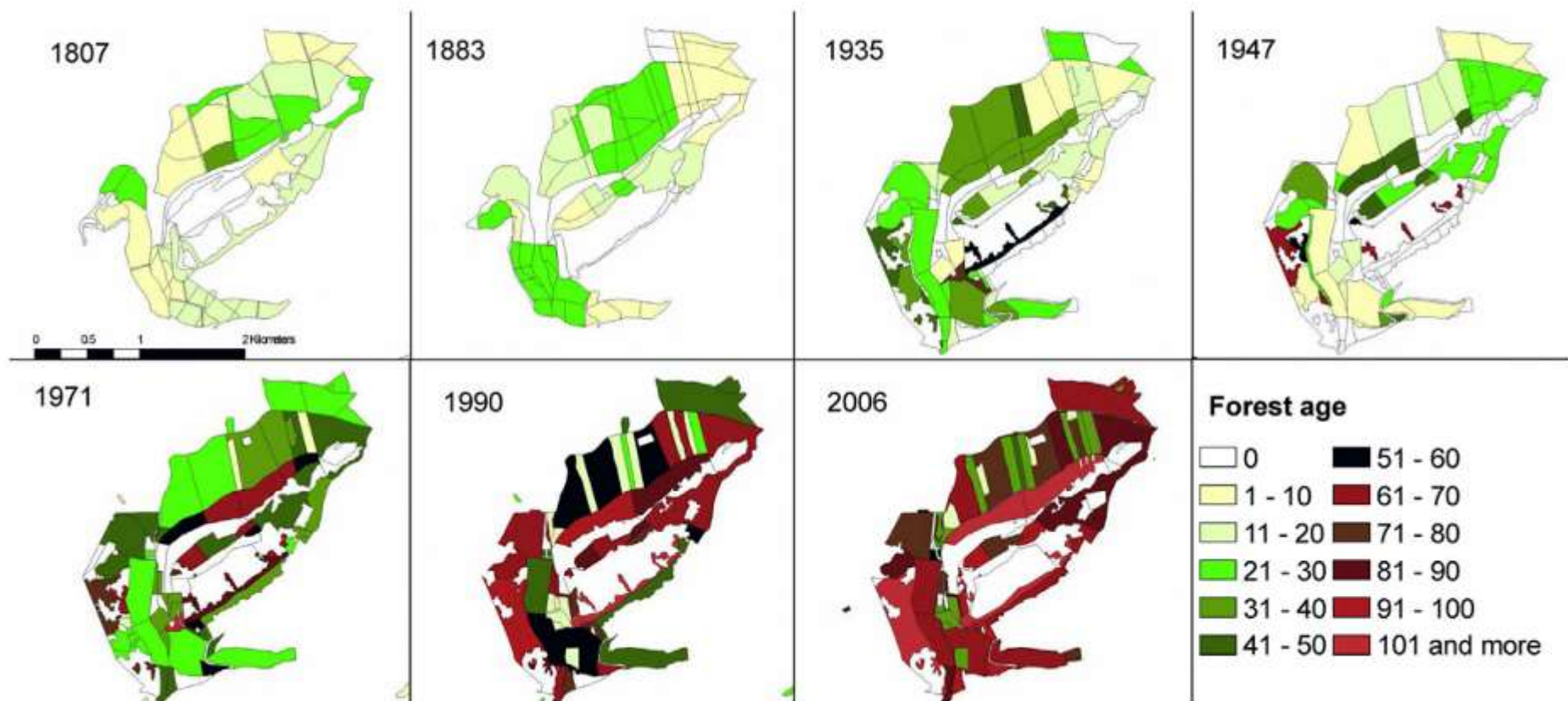


Fig. 6. Aging of Děvín Wood throughout 200 years.

Mikulov estate: historical coppicing

J. Müllerová et al. / Forest Ecology and Management 331 (2014) 104–115

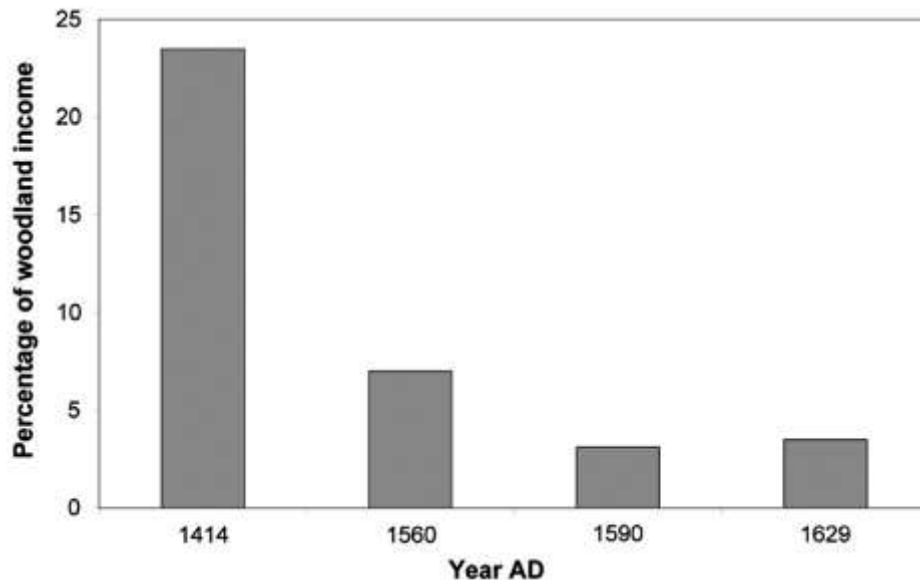
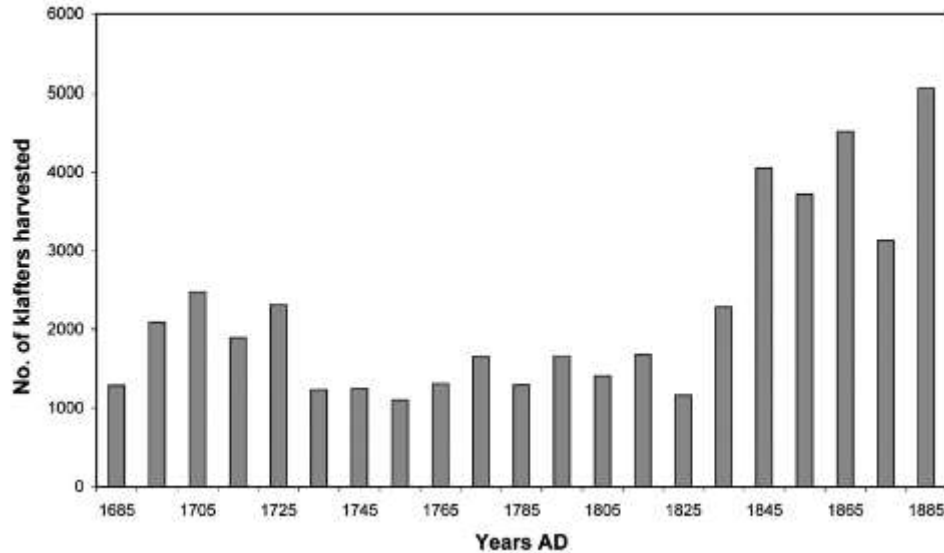


Fig. 1. Map of the study area.

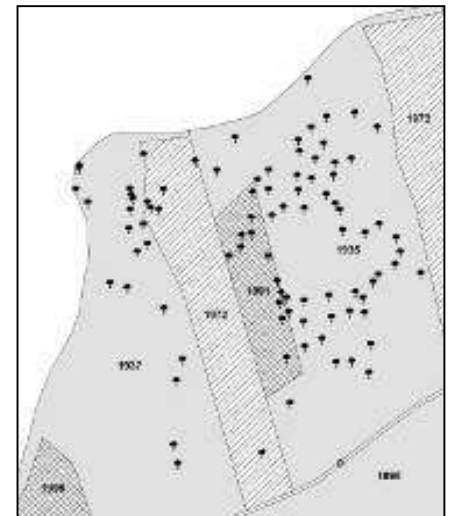
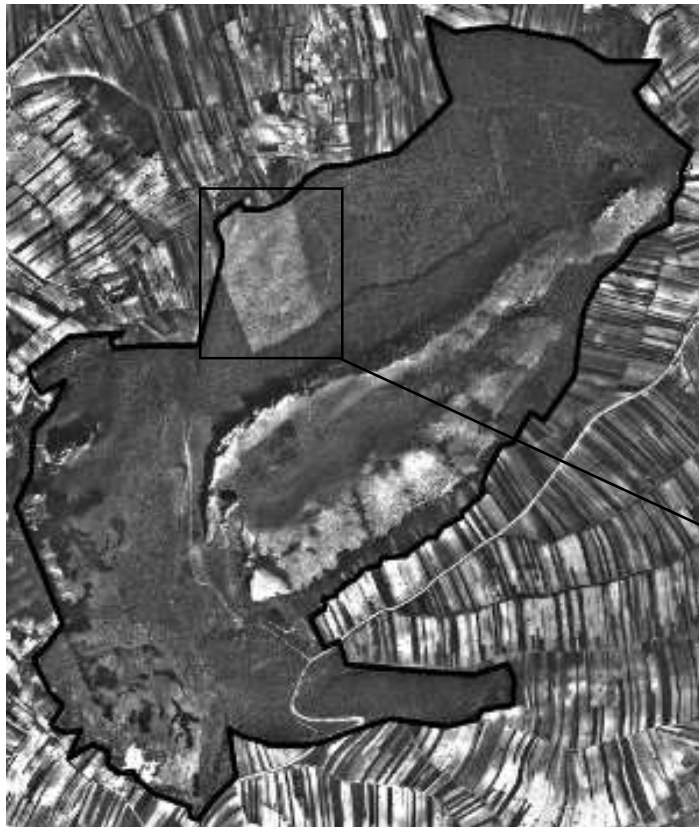
↑ amount of firewood harvested
1685-1885

↓ income from woodlands
1414-1629

Müllerová, Szabó, Hédli
2014 Forest Ecol Manag

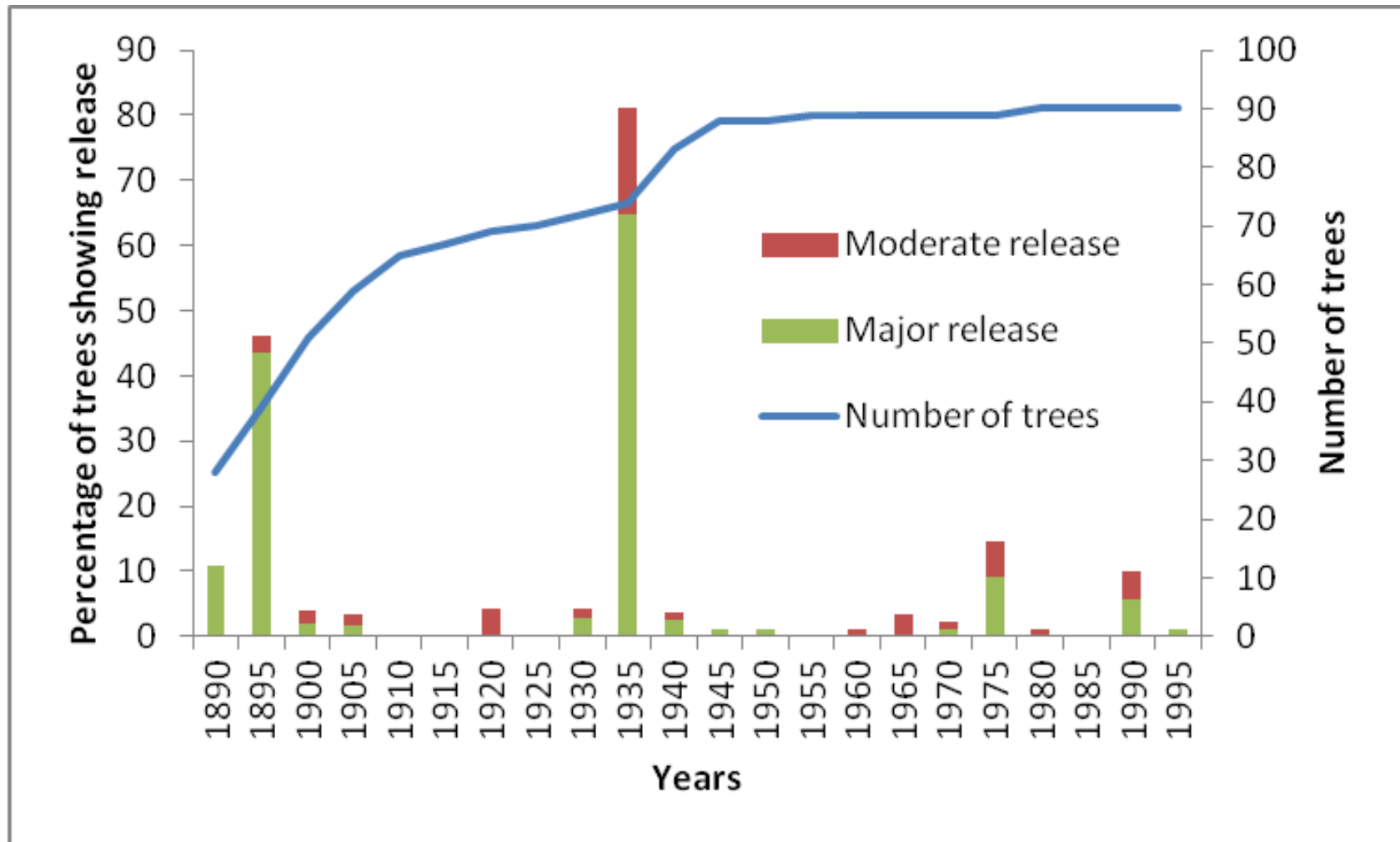
Coppicing cessation in Děvín

Detection in tree-rings of oak standards



Coppicing cessation in Děvín

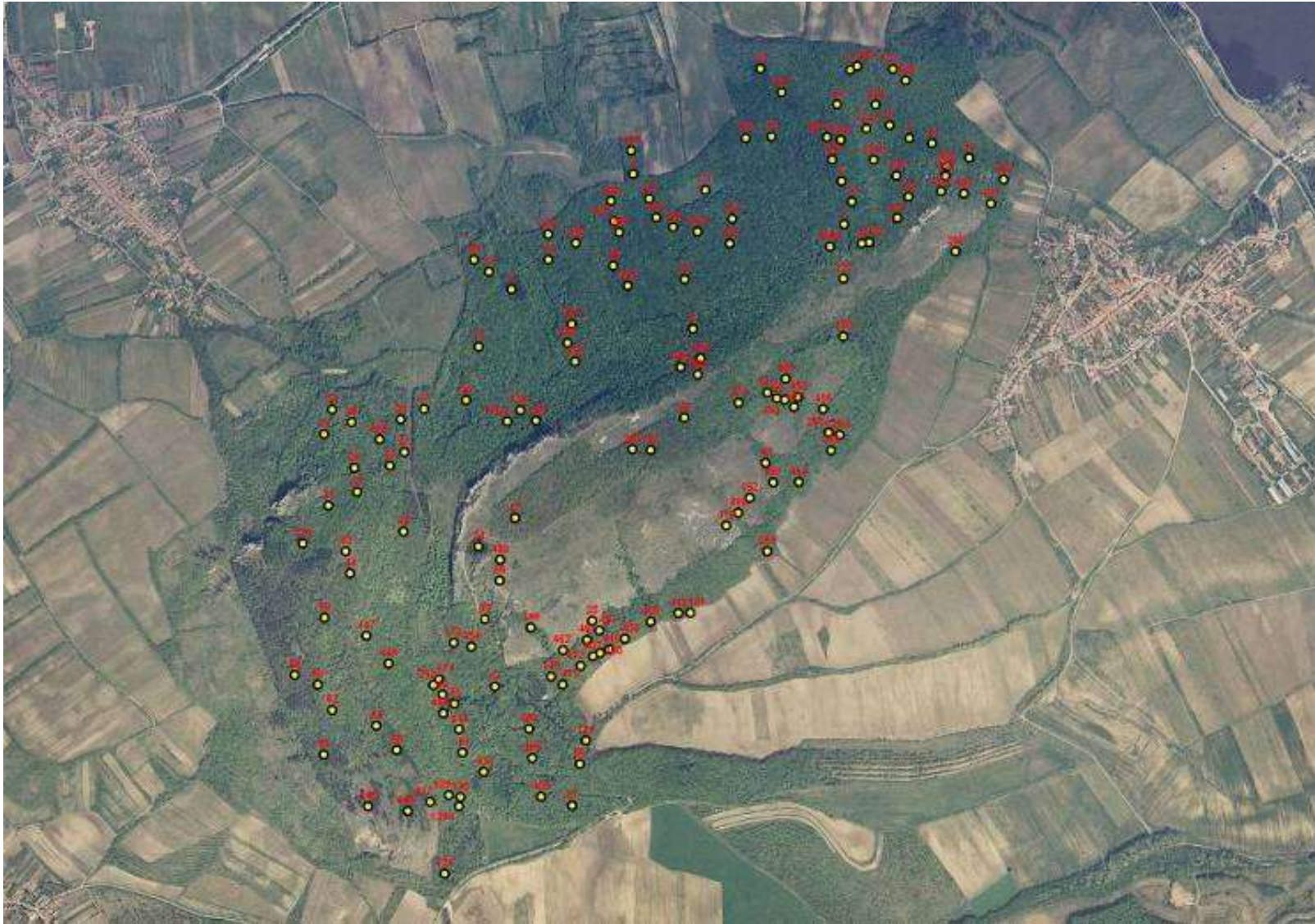
Detection in tree-rings of
oak standards



Děvín: Vegetation change in since the 1950s

From coppices to high forest

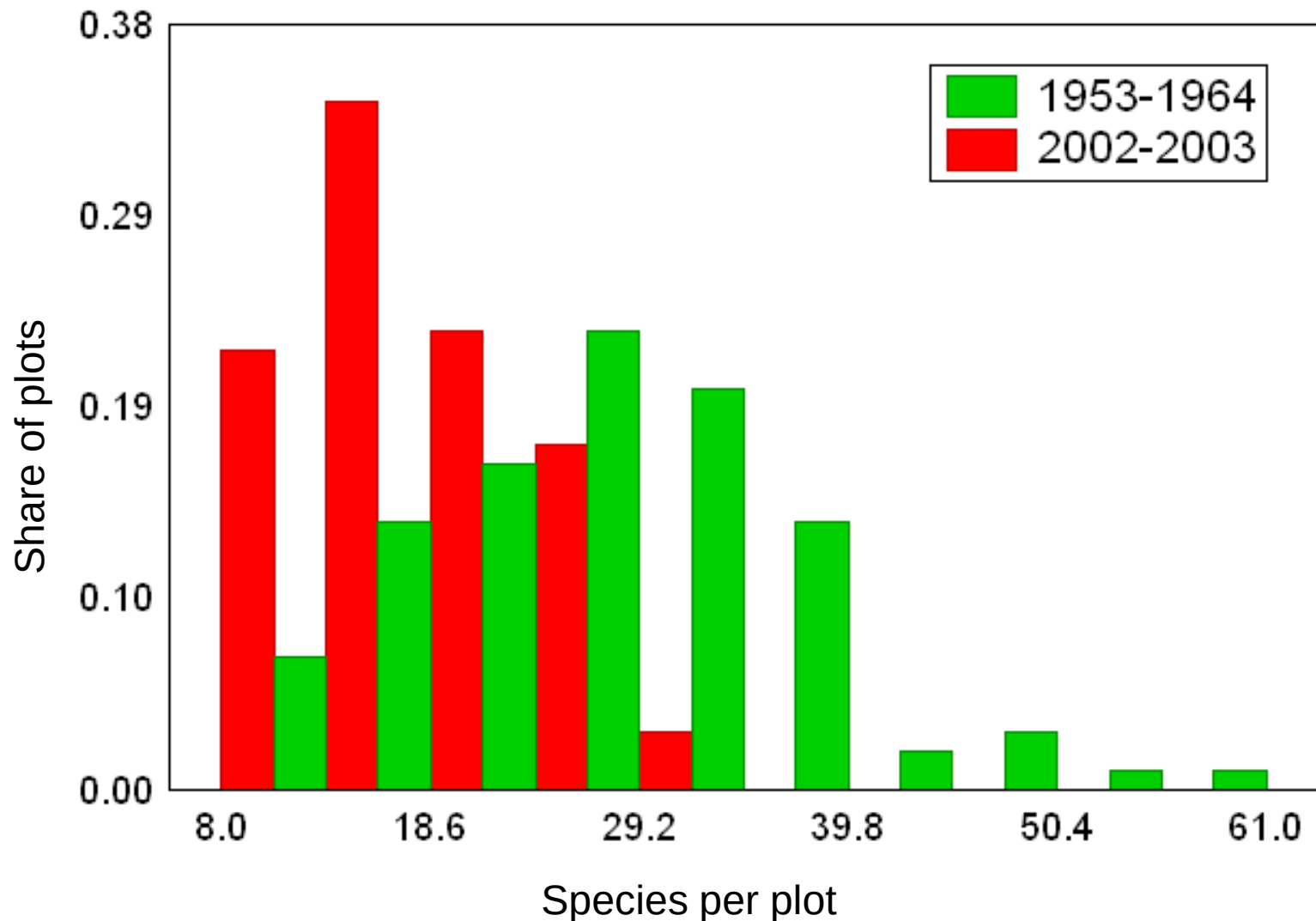
Resurvey of 122 plots 1953-2003



Děvín: Vegetation change in since the 1950s

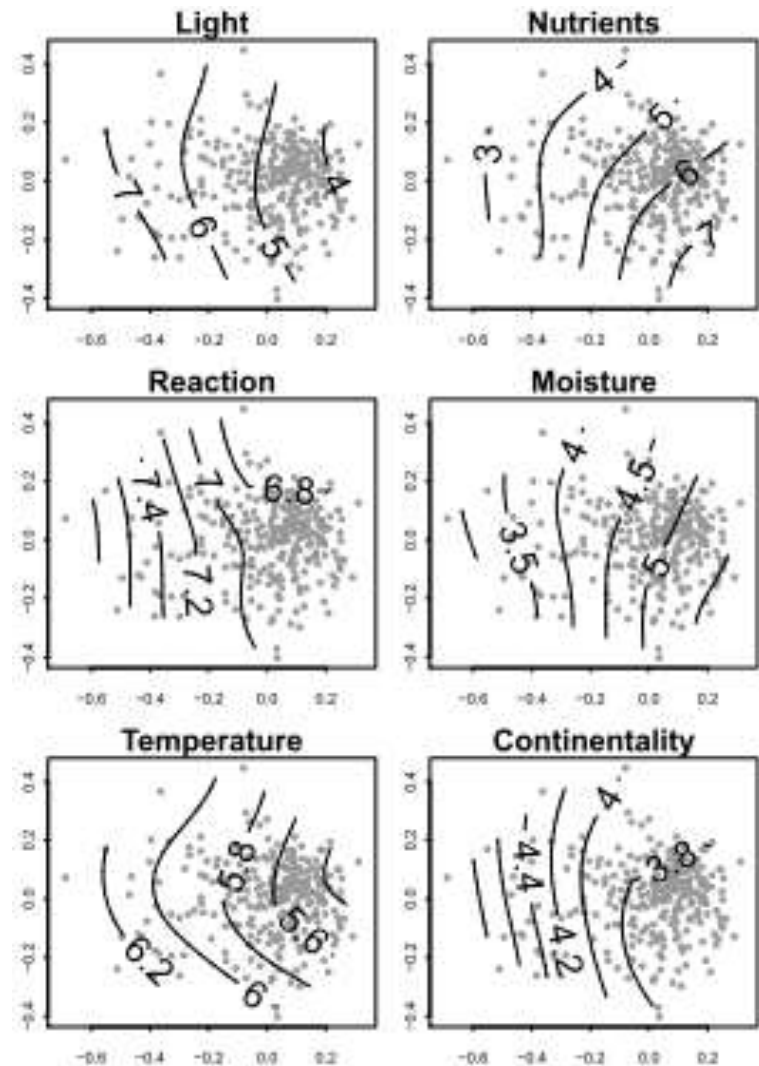
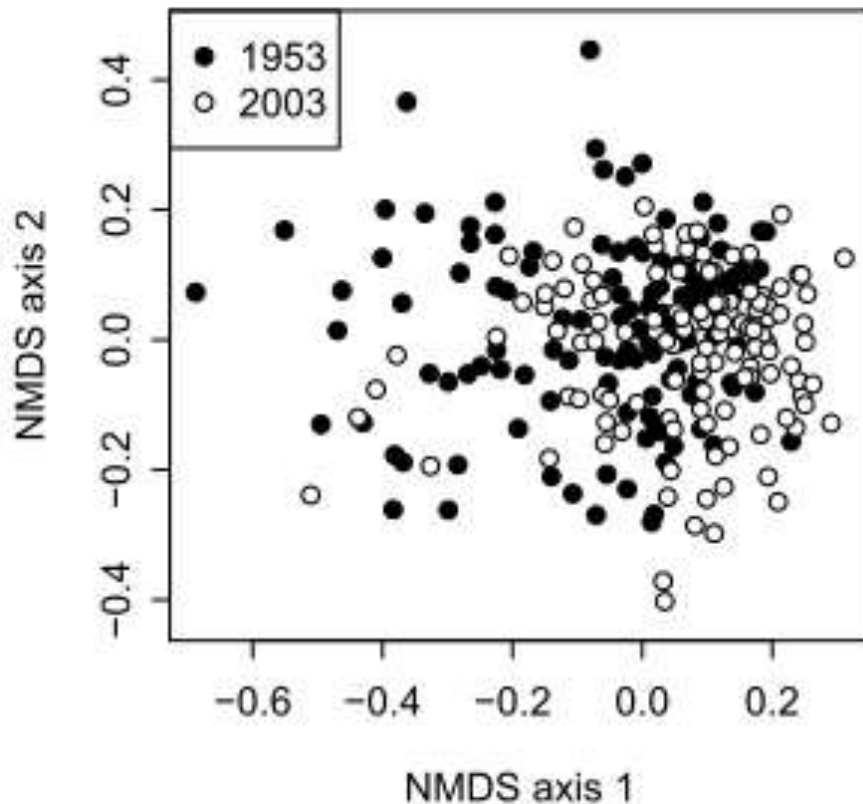
Number of species per plot (alpha-diversity)

Species richness impoverishment



Děvín: Vegetation and environment change since the 1950s

- Darker
- Nutrient-rich
- Moister



Coppicing restoration

2008-2016

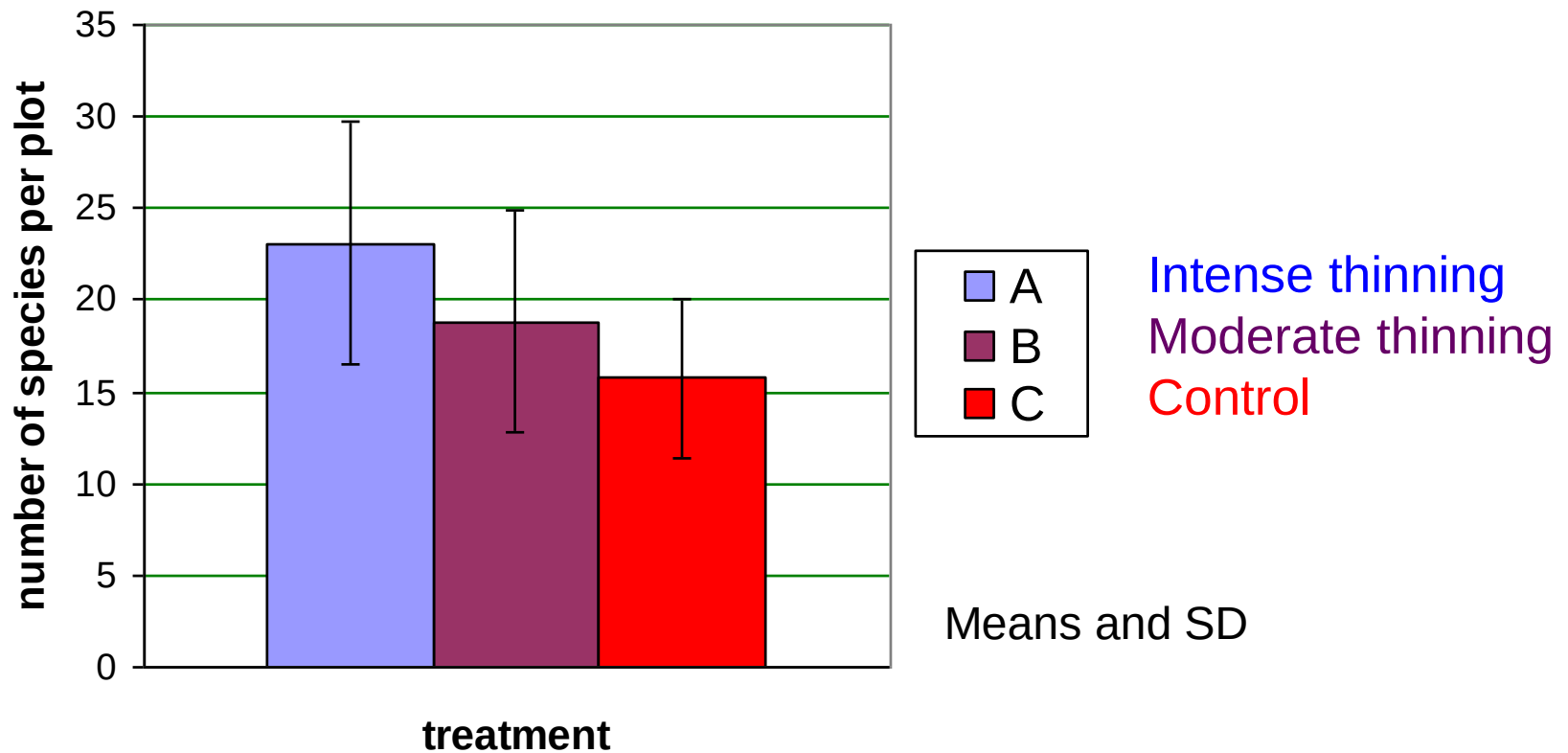


Coppicing restoration

2008-2016

Three types of stands

135 plots in a nested design, plot size 3.15 m²

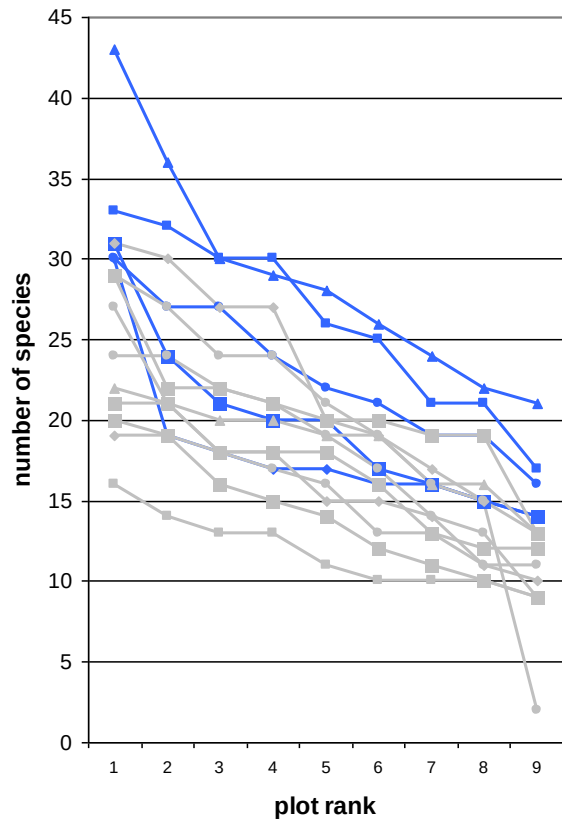


Coppicing restoration

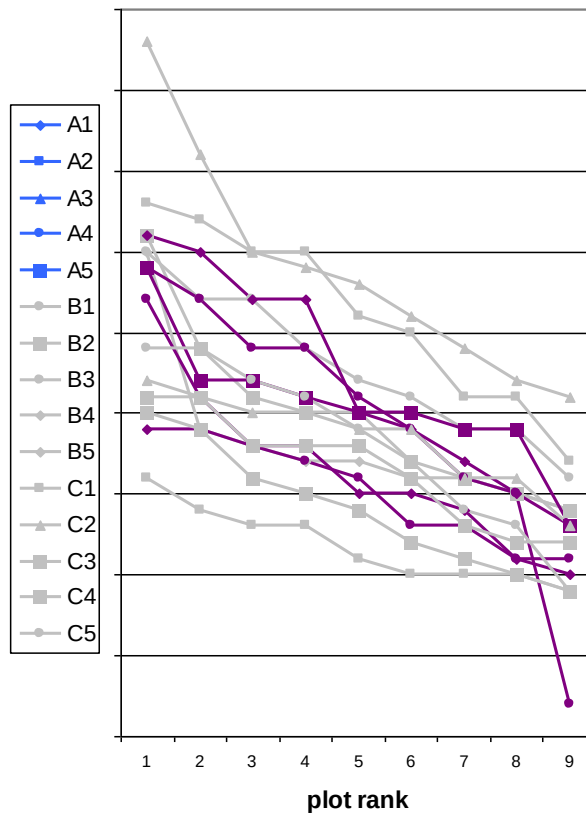
2008-2016

Three types of stands

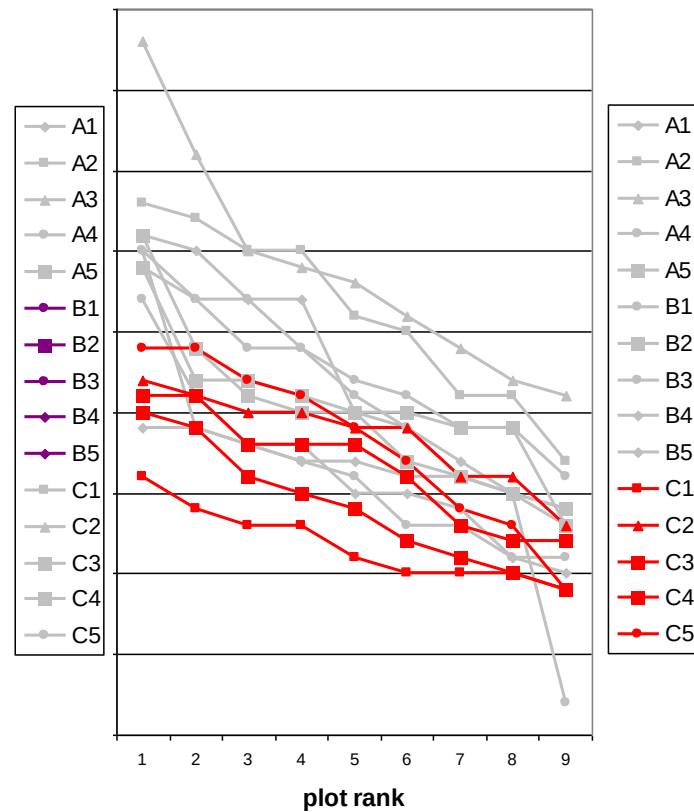
135 plots in a nested design, plot size 3.15 m²



Intense thinning



Moderate thinning



Control



Thank you

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www.longwood.cz

