

THE IMPACT OF WILD GAME AND LIVESTOCK ON ACTIVELY MANAGED COPPICE

DENDROMETRIC RESULTS

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THE AIMS OF THE PROJECT

- Evaluate the effects of grazing and litter raking on coppice conditions and its influence on dendrometric, pedological, and geobiocoenological indicators.
- Analyze the impact of wild game presence on coppice conditions.

RESEARCH PLOTS

- Research plot Hradisko, Masaryk's Forest Křtiny (Fig. 1).
- Established in 2017.
- Sessile oak stands converted to coppice with standards.
- 80 standards per hectare left.
- 15 research plots, 40 × 30 m each.
- Different management regimes: coppice with standards - CWS, with litter raking - R, with grazing - G, and with combined raking and grazing - R+G.

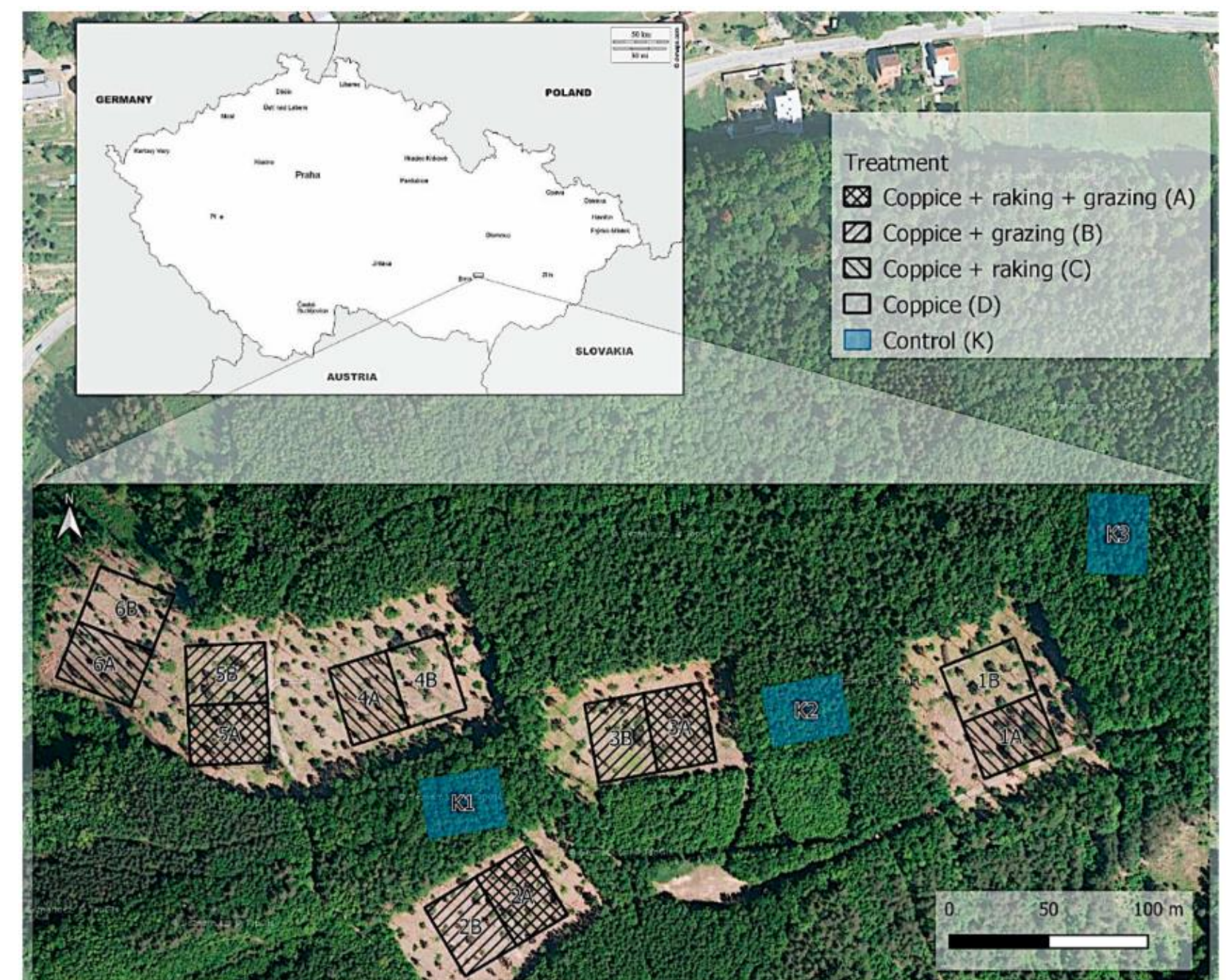


Fig. 1: Location of research plots at locality "Hradisko", TFE Masaryk Forest Křtiny

THE METHODS AND MATERIALS

- Measurements of the sessile oak diameters of standards since 2017 ⇒ measurements 1 year before and 6 years after harvest.
- Measurements of the number of sprouts, the upper diameters and heights of the five thickest sprouts within the stool.

RESULTS

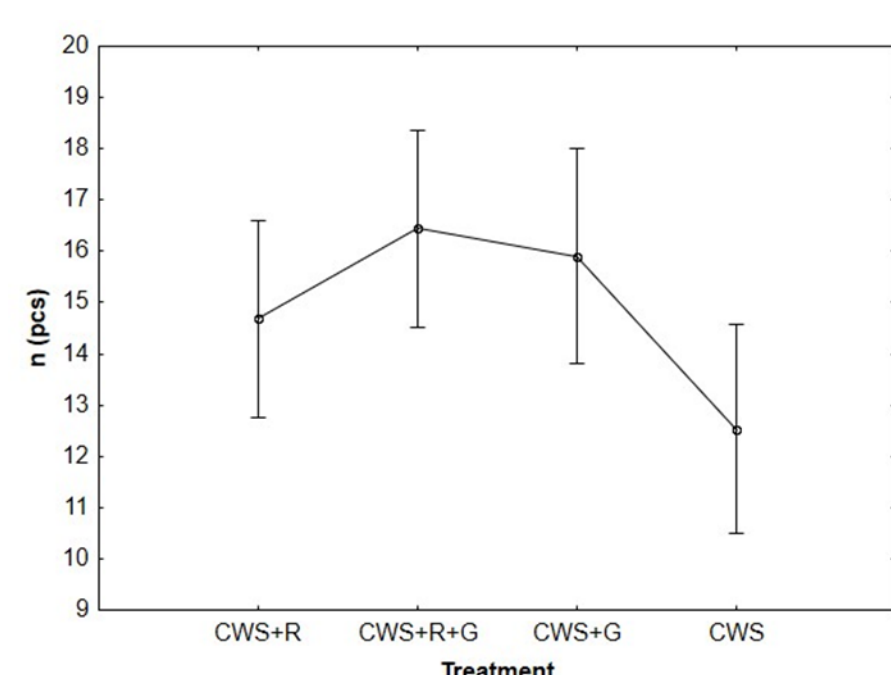


Fig. 2: Comparison of mean values of sprouts number (with 95 % confidence intervals) between different treatments

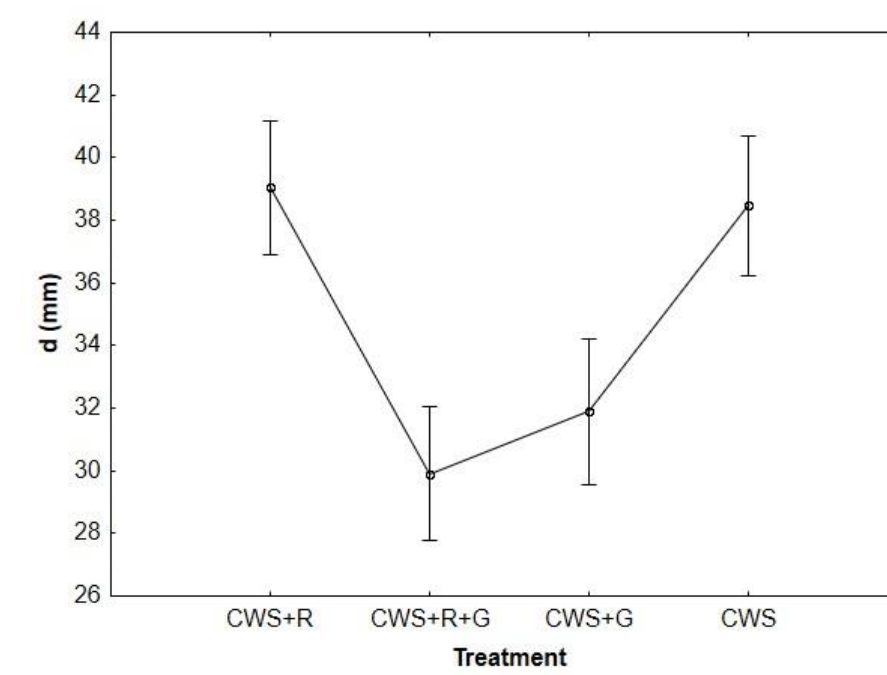


Fig. 3: Comparison of mean values of upper sprouts diameter (with 95 % confidence intervals) between different treatments

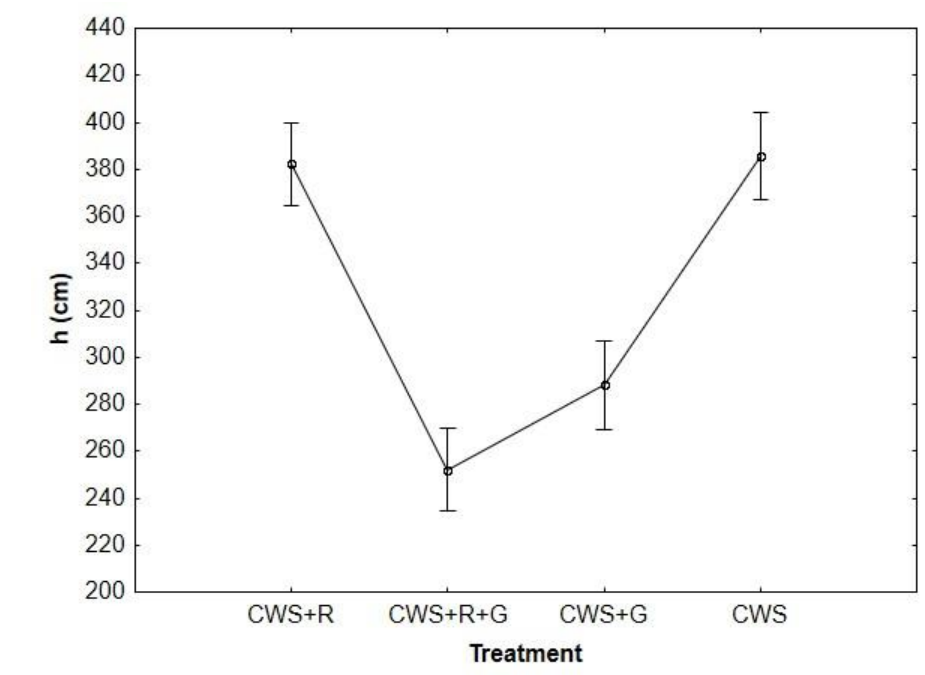


Fig. 4: Comparison of mean values of upper sprouts height (with 95 % confidence intervals) between different treatments

The seven-year RGR time series shows that the DBH increment of the standards peaked in 3 to 4 after the release and is now declining, but is still higher in all treatments than in the control plots. No statistically significant differences were ever found between treatments up to and including 2022. However, by 2023, a significant difference between treatment CWS+R+G and both ungrazed treatments has already been confirmed (Fig. 6). Treatment CWS+G has statistically identical growth values to treatment CWS+R+G, but it also has higher values than both ungrazed treatments, although this difference is not yet statistically conclusive. It was also found from the last measurement of sprouts (the year 2022) that the number of sprouts per stool is not statistically different between treatments (Fig. 2), but for both the upper diameter of sprouts (Fig. 3) and upper height of sprouts (Fig. 4) both treatments without grazing have statistically higher mean values in comparison with treatments with grazing.



Fig. 5: Research plot - treatment coppice, raking and grazing (CWS+R+G)
Photo by B. Uherková, 2024

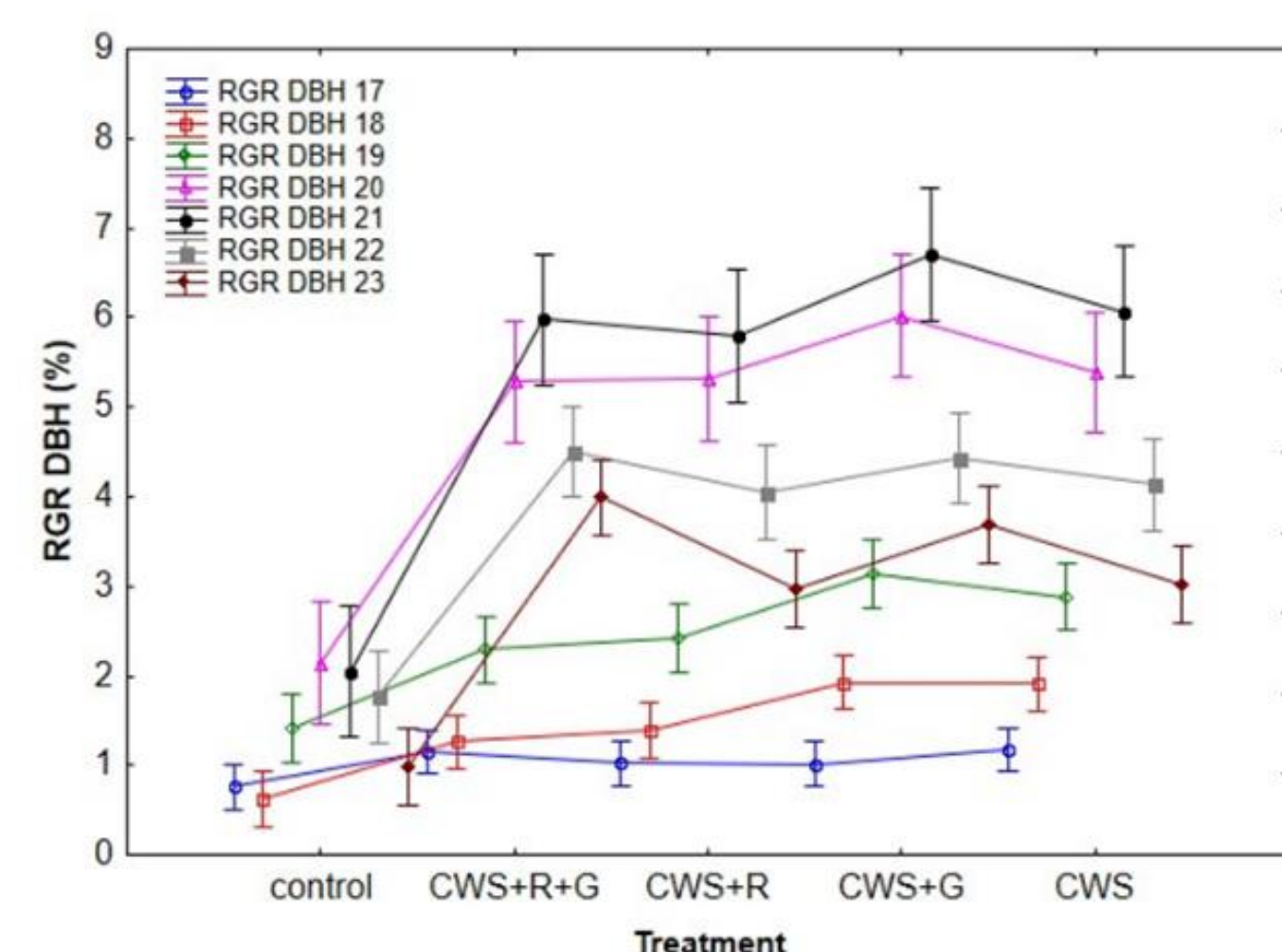


Fig. 6: Comparison of mean values of standards RGR (with 95 % confidence intervals) between different treatments in the years 2017-2023

CONCLUSION

The larger (taller and thicker) stools in the ungrazed areas are greater competitors for the standards than the smaller stools in the grazed areas. This higher competitive pressure is reflected in a lower increase in the diameter of the sessile oak standards in the ungrazed areas.

ACKNOWLEDGEMENT

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