

Electronic Supplementary Material

Is uneven-aged silviculture best for maximizing ecosystem functioning, services, biodiversity and resilience in Walloon forests?

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Table S1 Incomes and expenses associated with economic operations considered in the simulations

Operation	€/ha ¹
Ground vegetation clearing	572
Regeneration clearing	1 526
Sales costs per thinning ²	200
Sales costs for the clear-cut ²	250
Annual expenses ³	33
Annual income ⁴	50

¹Prices include VAT

²These costs include tree marking before the cut and the organization of the sale

³Property and personal income taxes

⁴Hunting rent

Table S2 Timber price list considered in the simulations

	<i>Quercus petraea</i> ¹	<i>Fagus sylvatica</i> ¹	<i>Fraxinus excelsior</i> ¹	<i>Acer pseudoplatanus</i> ¹	<i>Picea abies</i>	<i>Pseudotsuga menziesii</i>	<i>Larix decidua</i>	<i>Pinus sylvestris</i>	<i>Carpinus betulus</i> ²	<i>Betula pendula</i> ²
Crown wood	20	20	20	20	5	5	5	5	20	20
Stem wood DBH classes										
< 6.4 cm	30	30	30	30	5	5	5	5	30	25
6.4 - 12.7 cm	30	30	30	30	6.5	6.5	6.5	6.5	30	25
12.7 - 19.1 cm	30	30	30	30	17.5	10	10	10	30	25
19.1 - 22.3 cm	30	30	30	30	32.5	25	22.5	12.5	30	25
22.3 - 28.6 cm	30	30	30	30	47.5	47.5	35	25	30	25
28.6 - 31.8 cm	30	30	30	30	60.75	60	50	35	30	25
31.8 - 38.2 cm	72	43.5	45.375	35	60.75	60	50	35	30	25
38.2 - 47.7 cm	118	58.75	74	35	72	70	60	40	30	25
47.7 - 57.3 cm	167	68.75	84	50	72	76.5	63	36	30	25
57.3 - 63.7 cm	200	75.5	94	70	72	81	63	36	30	25
63.7 - 70.0 cm	245	80.75	99	70	72	81	63	36	30	25
70.0 - 79.6 cm	245	82.5	99	70	72	81	63	36	30	25
> 79.6 cm	250	82.5	99	70	72	81	63	36	30	25

Listed prices (€/m³) are based on the price list established by the Belgian National Federation of Forest Experts for autumn 2023

¹The prices considered for stem wood DBH classes <31.8 cm are for firewood

²All prices considered for stem wood are for firewood

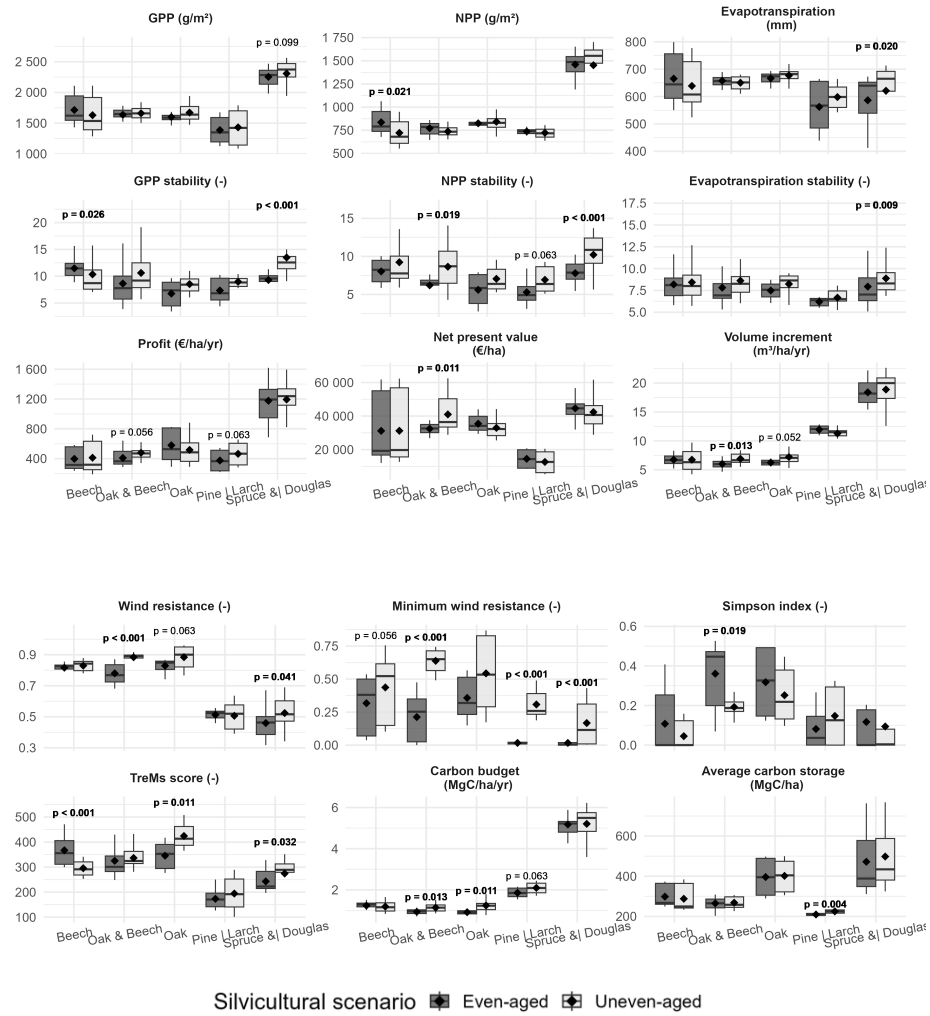


Fig. S1 Assessment of the silvicultural scenario effect on various indicators for different stand species compositions. In each boxplot, the inner horizontal line represents the median value, the diamond symbol represents the mean value, the lower and upper ends of the box correspond to the 25th (Q1) and the 75th (Q3) percentiles, respectively, which delimit the interquartile range (*IQR*), and the extremities of the whiskers correspond to the minimum and maximum values determined as $Q1 - 1.5 \times IQR$ and as $Q3 + 1.5 \times IQR$, respectively. Significant differences among silvicultural scenarios for a given species composition ($P\text{-value} \leq 0.05$) are indicated in bold, while potential but non-significant trends ($0.05 < P\text{-value} \leq 0.1$) are shown in regular font.

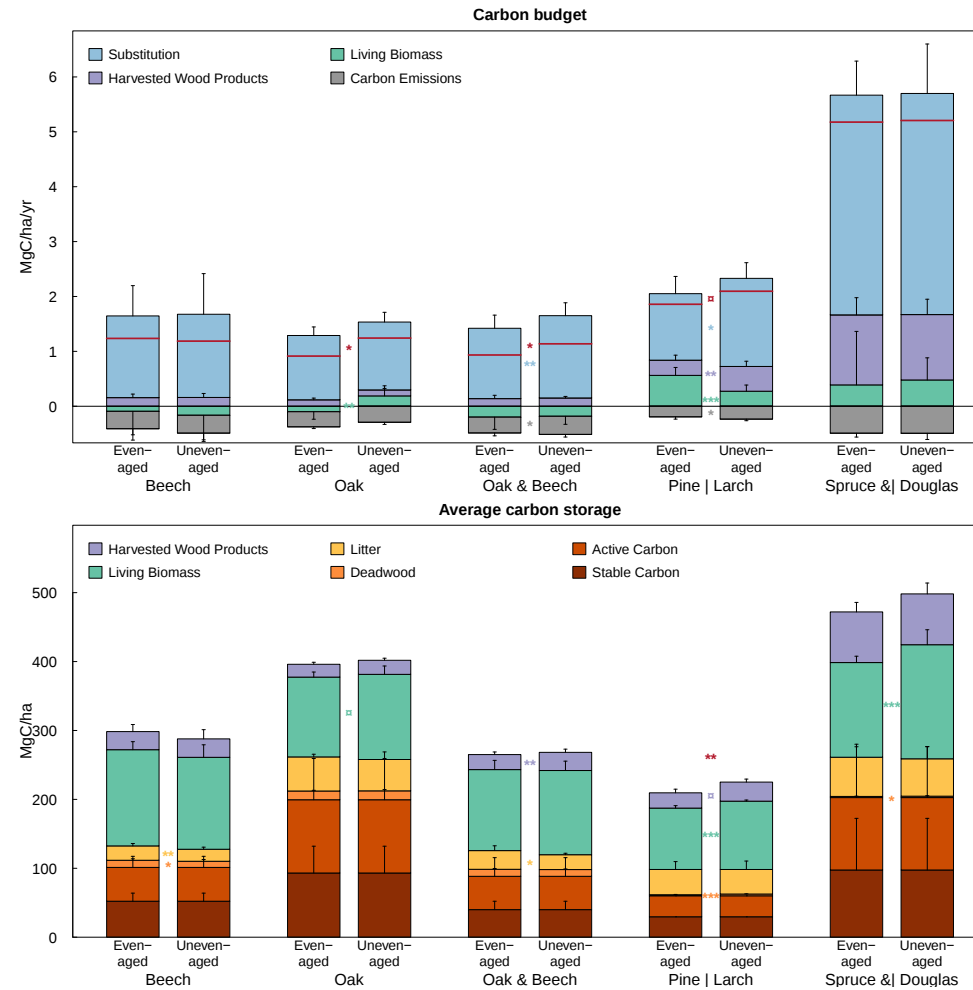


Fig. S2 Effect of the silvicultural scenario on carbon budget and average carbon storage components for different stand species compositions. The error bars represent the standard deviations for each component. The red horizontal lines show the net carbon budget level. The stars indicate significant differences. Active carbon and stable carbon are two components of mineral soil carbon. Active carbon is the fraction that is readily decomposed by macro-organisms, while stable carbon is the fraction that is more resistant to decomposition.