The impact of forest diversity on tree growth and recovery to drought

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RESEARCH HYPOTHESES

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RESEARCH HYPOTHESES

- Trees growing in **mixed stands** will have a stronger resistance and recover quickly from drought than trees in monocultures.
- Defoliated trees will grow less and show the lowest resilience to drought.
- Significant differences in the effect of, and recovery from, successive drought episodes on tree growth.



Studies have shown that forests are sensitive to droughts, causing severe stress and limiting how much they can grow and store carbon.



If droughts return more frequently and recovery times shorten, vegetation is likely to degrade and ultimately transition to a new state.

MEASURED PARAMETERS



DISCOLORATION CROWN DEFOLIATION DAMAGES TREE DIAMETER



DROUGHT

















MAIN CONCLUSIONS



Drought caused a sharp decline in tree growth.



Trees growing in mixed stands were more resilient to drought than those that grow in pure stands.



Recovery after drought events was fastest and more pronounced in mixtures than in monocultures.



Defoliated trees showed a higher susceptibility to drought-induced growth decline.

TAKE-HOME MESSAGE



A clear link between a reduction in tree productivity and an increase in drought conditions, associated with longer recovery times.



Higher tree species diversity allows for a greater growth resilience to drought events.



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