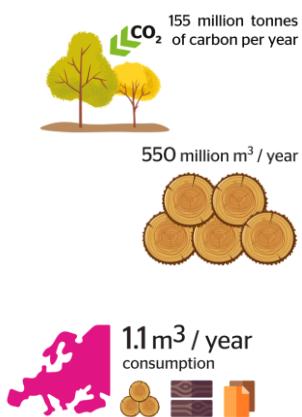


Klimawandel & Störungen: Wie resilient sind unsere Wälder?

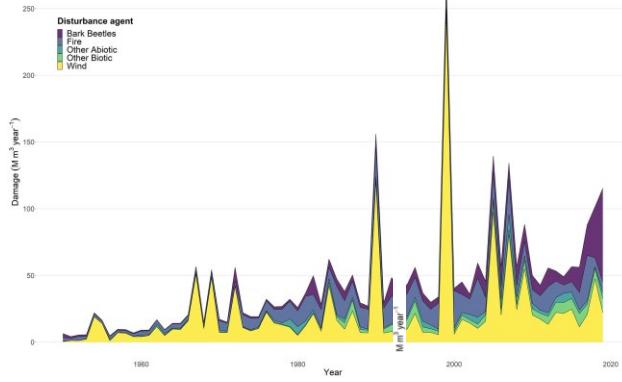
Johannes Sonnweber Mohr
Technische Universität München

1

Leistungen von Europas Wäldern



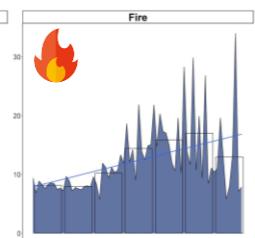
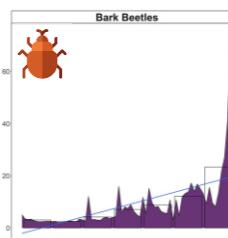
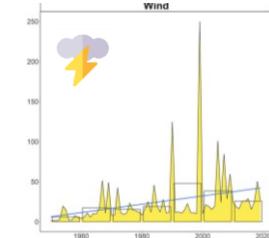
Störungen wurden mehr



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Patacca et al. (2024, GCB)

3

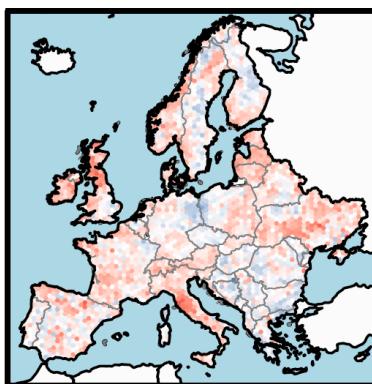


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Störungen wurden mehr



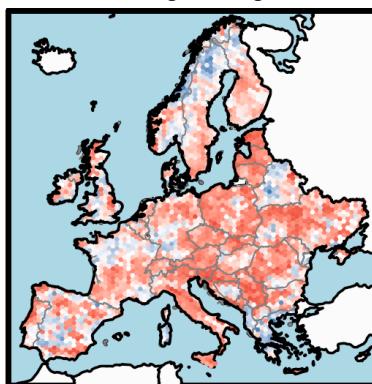
Änderung in Störungsgröße



Change per year (%)

-4	-2	0	2	4	6	8
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Änderung in Häufigkeit



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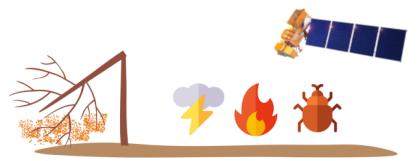
Senf and Seidl (2021, Nature Sustainability)

4

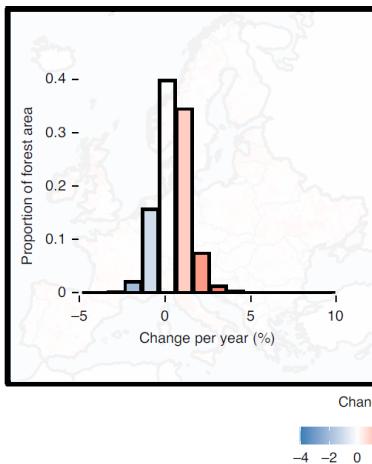
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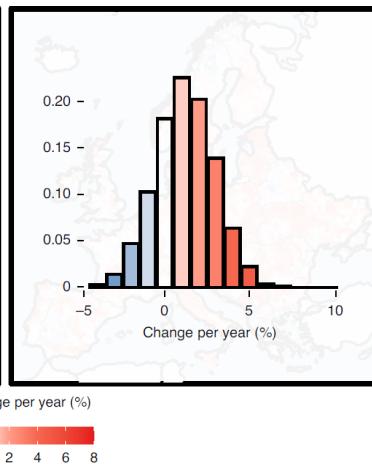
Störungen wurden mehr



Änderung in Störungsgröße



Änderung in Häufigkeit



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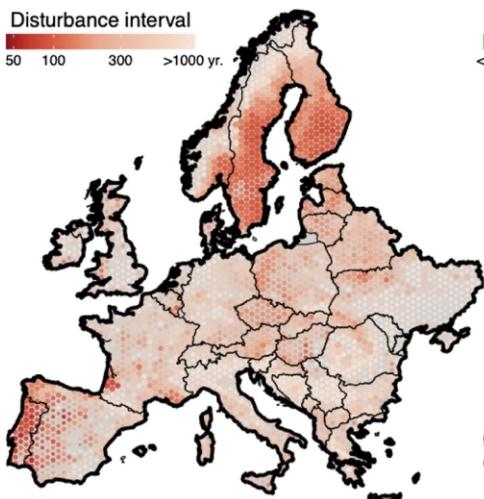
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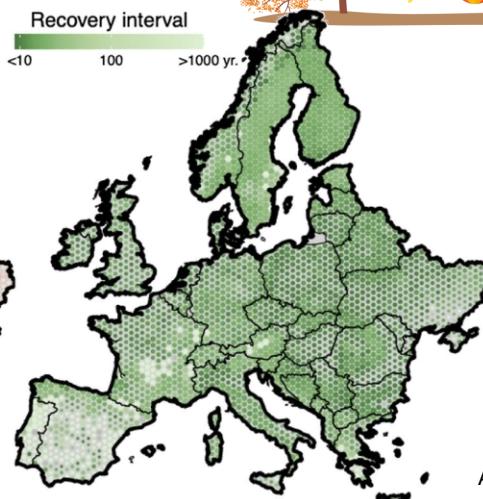
Wälder sind bisher resilient



Disturbance interval



Recovery interval



ABER...

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Senf and Seidl (2021, GEB)

6

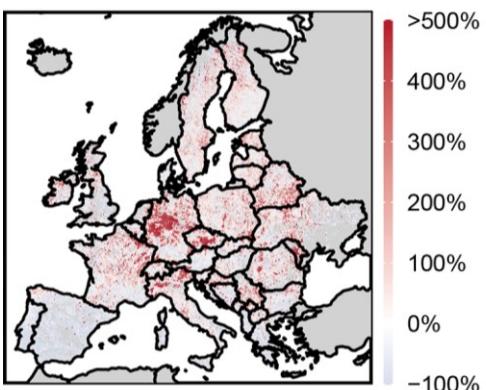
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3

Störungen wurden extremer



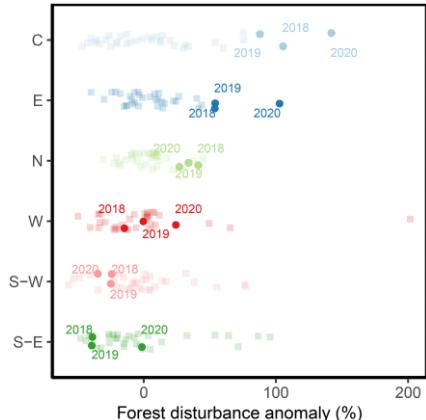
Übersterblichkeit 2020



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Senf and Seidl (2021, Biogeosciences)

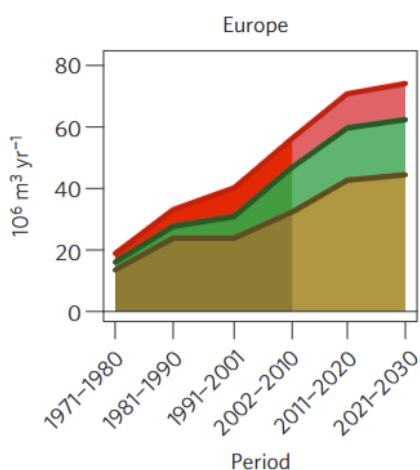
7



Forest disturbance anomaly (%)

7

Störungen werden noch mehr



- Disturbance agent
- Forest fire
- Bark beetles
- Wind

im Mittel mehr, bedeutet aber auch mehr Extreme

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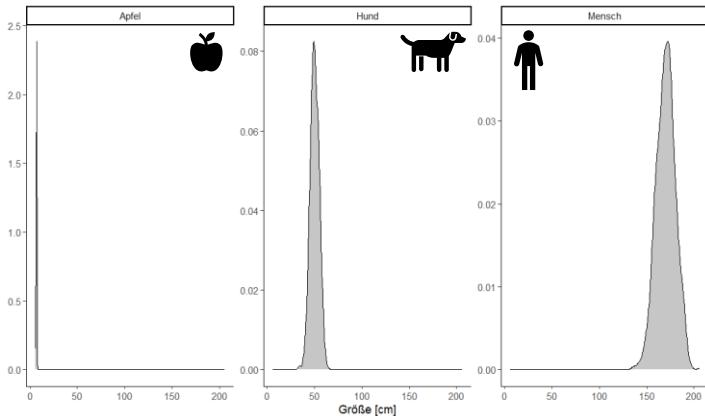
Seidl et al. (2014)

8

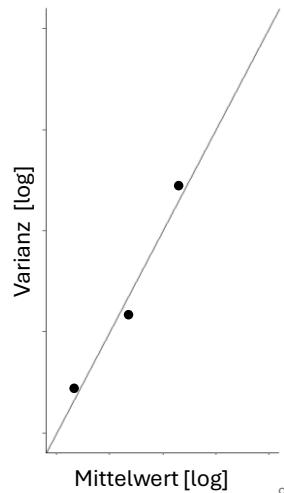
8

Taylors Law

- Potenzgesetz zwischen Mittelwert und Varianz



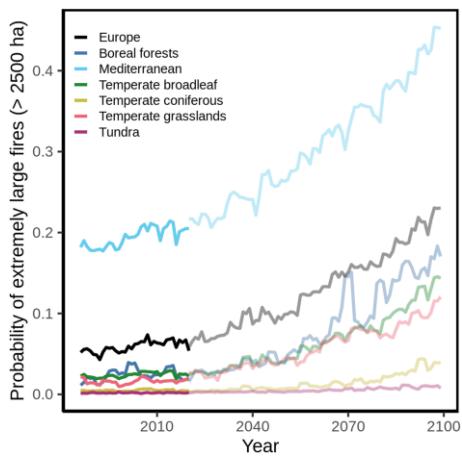
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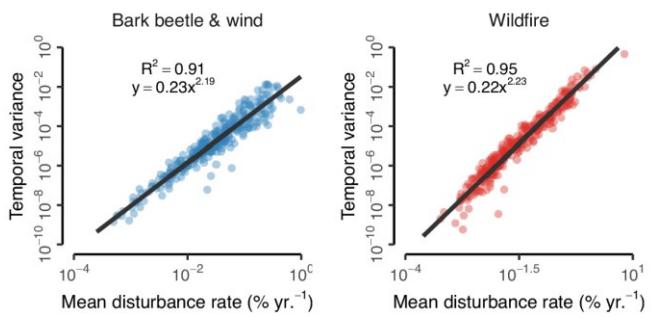
9

9

Störungen werden extremer



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Grünig et al. (2023, Global Change Biology),
Senf et al. (2025, Nature Communications)

10

10

Konsequenzen von mehr Störungen

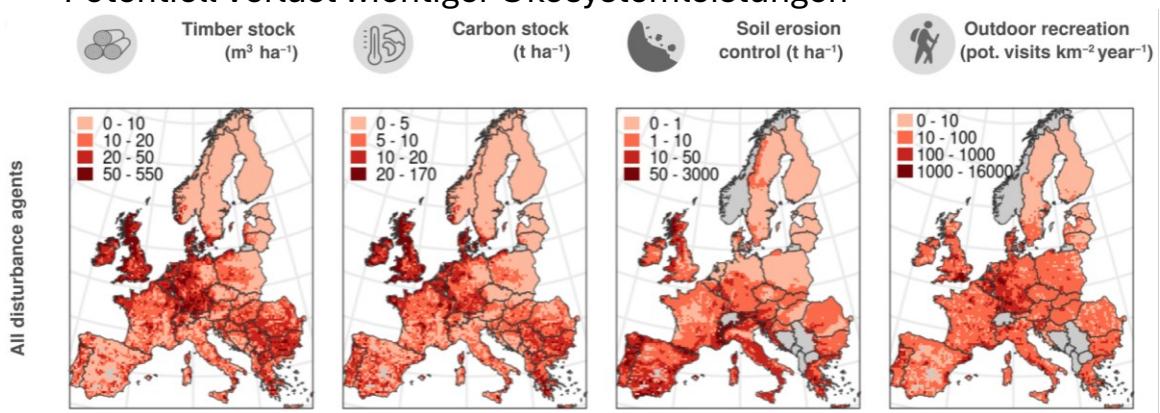
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11

Konsequenzen von mehr Störungen

- Potentiell Verlust wichtiger Ökosystemleistungen



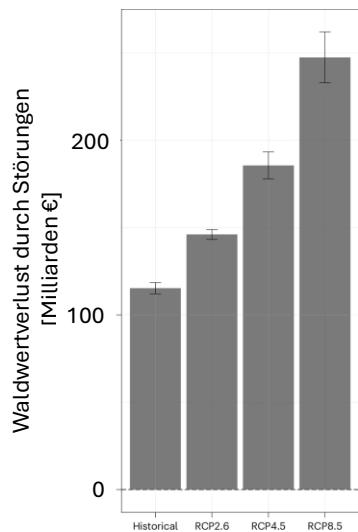
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Lecina-Diaz et al. (2024, Global Change Biology)

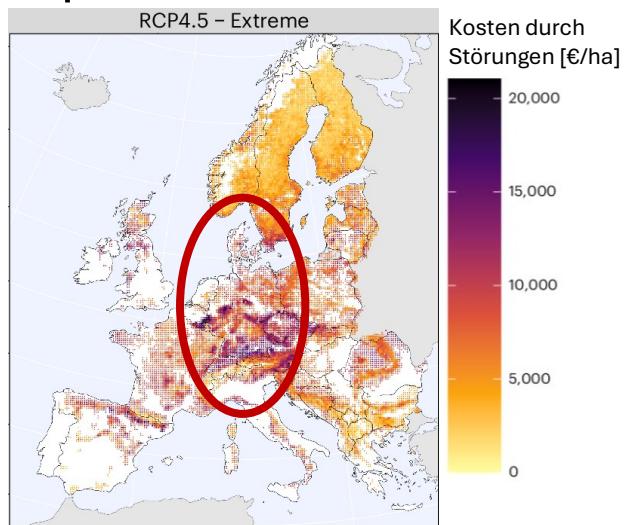
12

12

Ökonomische Konsequenzen



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13

13

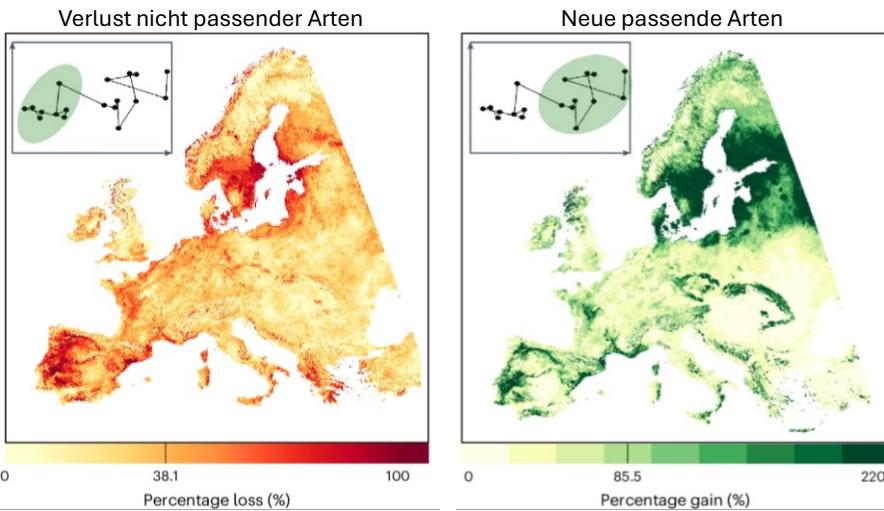
Wie können wir unsere Wälder anpassen?

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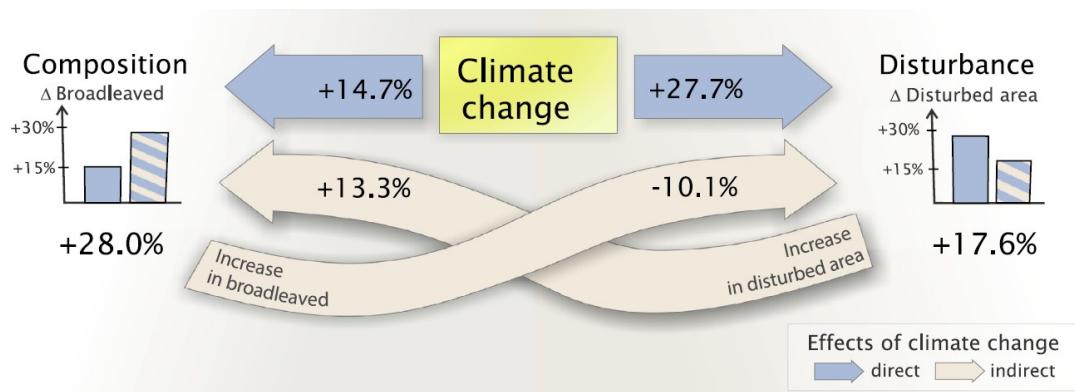
14

Automatische Anpassung



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Dämpfende Rückkopplung



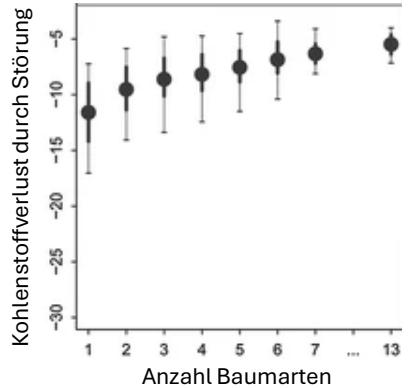
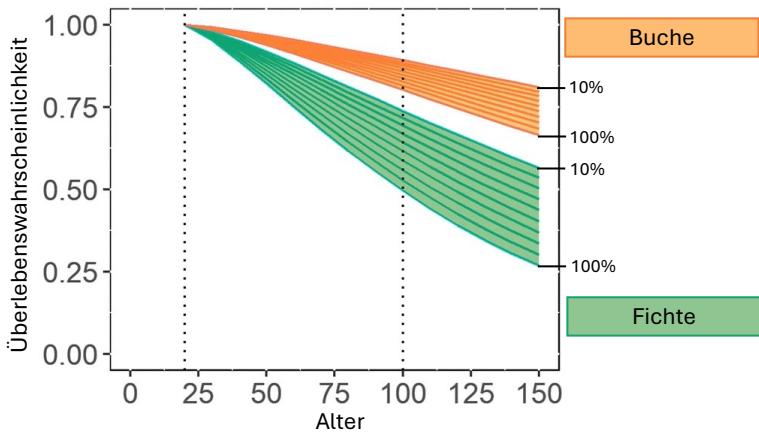
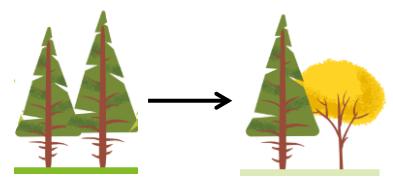
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Thom et al. (2017, Ecological Monographs)

16

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Baumartenmischung



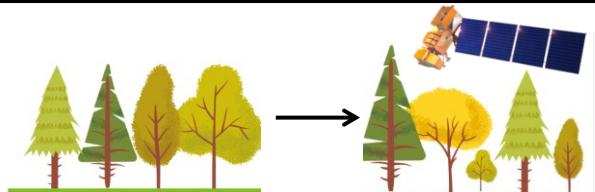
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Paul et al. (2019, Annals of Forest Science), Silva Pedro et al. (2015, Oecologica)

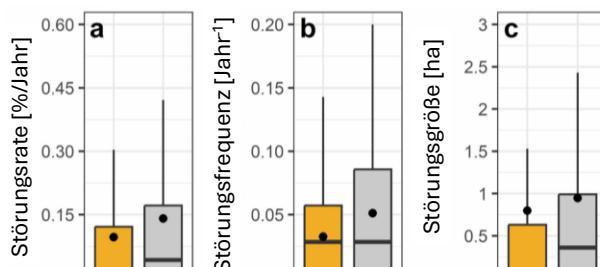
17

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Strukturreichtum



Management Plenter Altersklassen



Struktur reduziert Störungseffekte

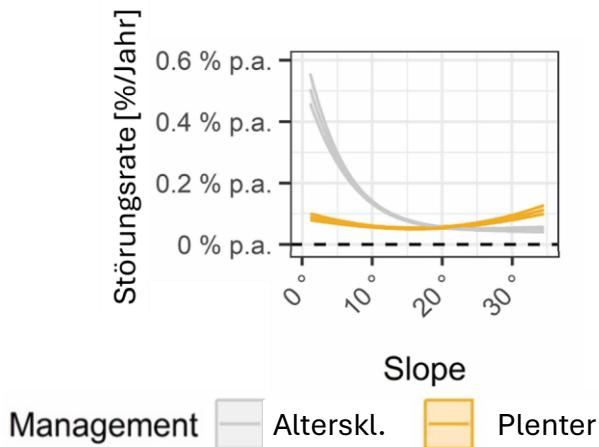
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Mohr et al. (2024, Forest Ecology and Management)

18

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Das eiserne Gesetz des Örtlichen



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Mohr et al. (2024, Forest Ecology and Management)

19

19



Danke für Ihre Aufmerksamkeit!

Johannes.mohr@tum.de



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