



Diversitätstrends im Wald und Agrarbereich

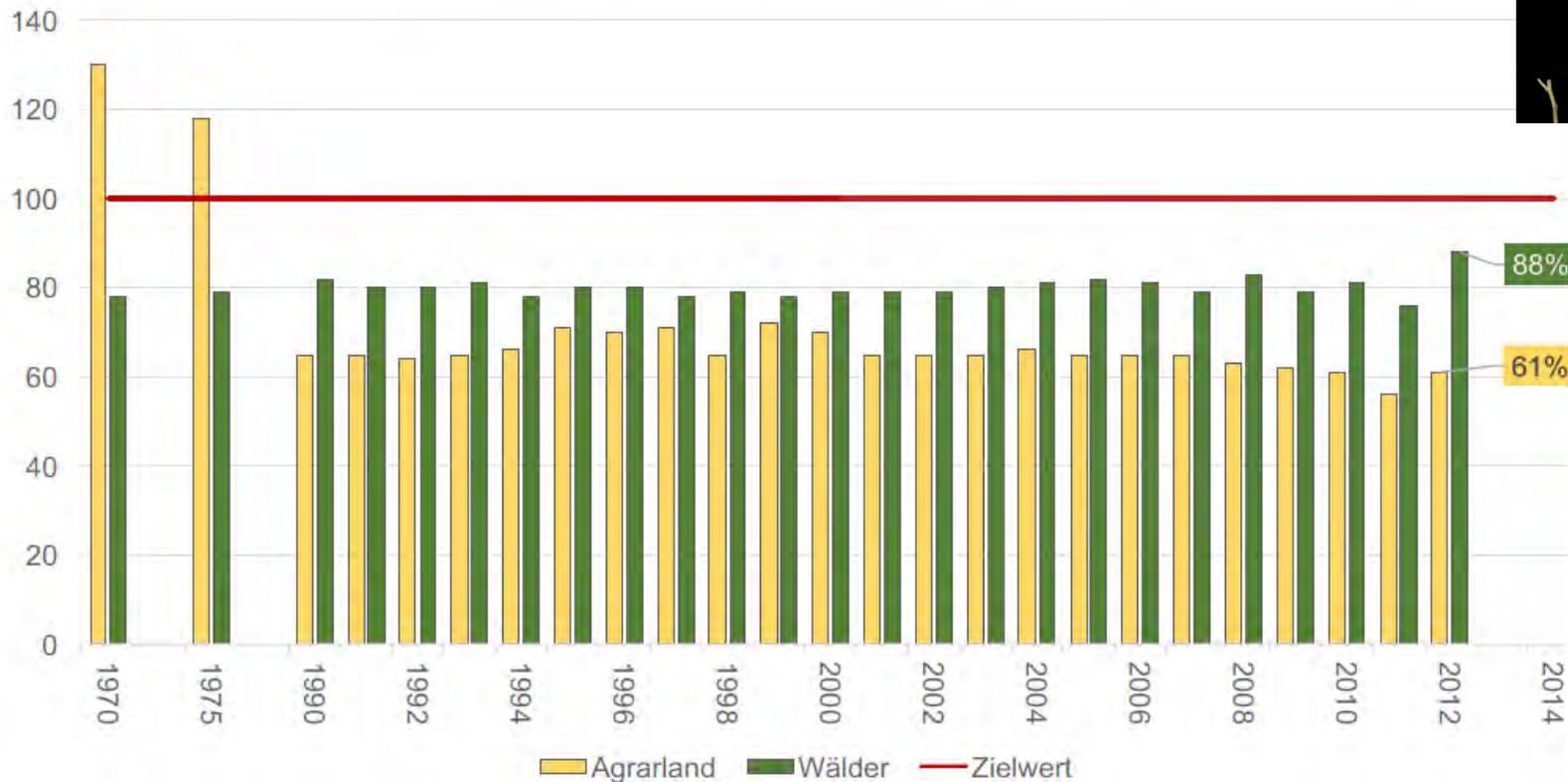


Gliederung

- 1. Veränderungen im Klimawandel**
- 2. Landnutzung**
- 3. Herausforderungen**

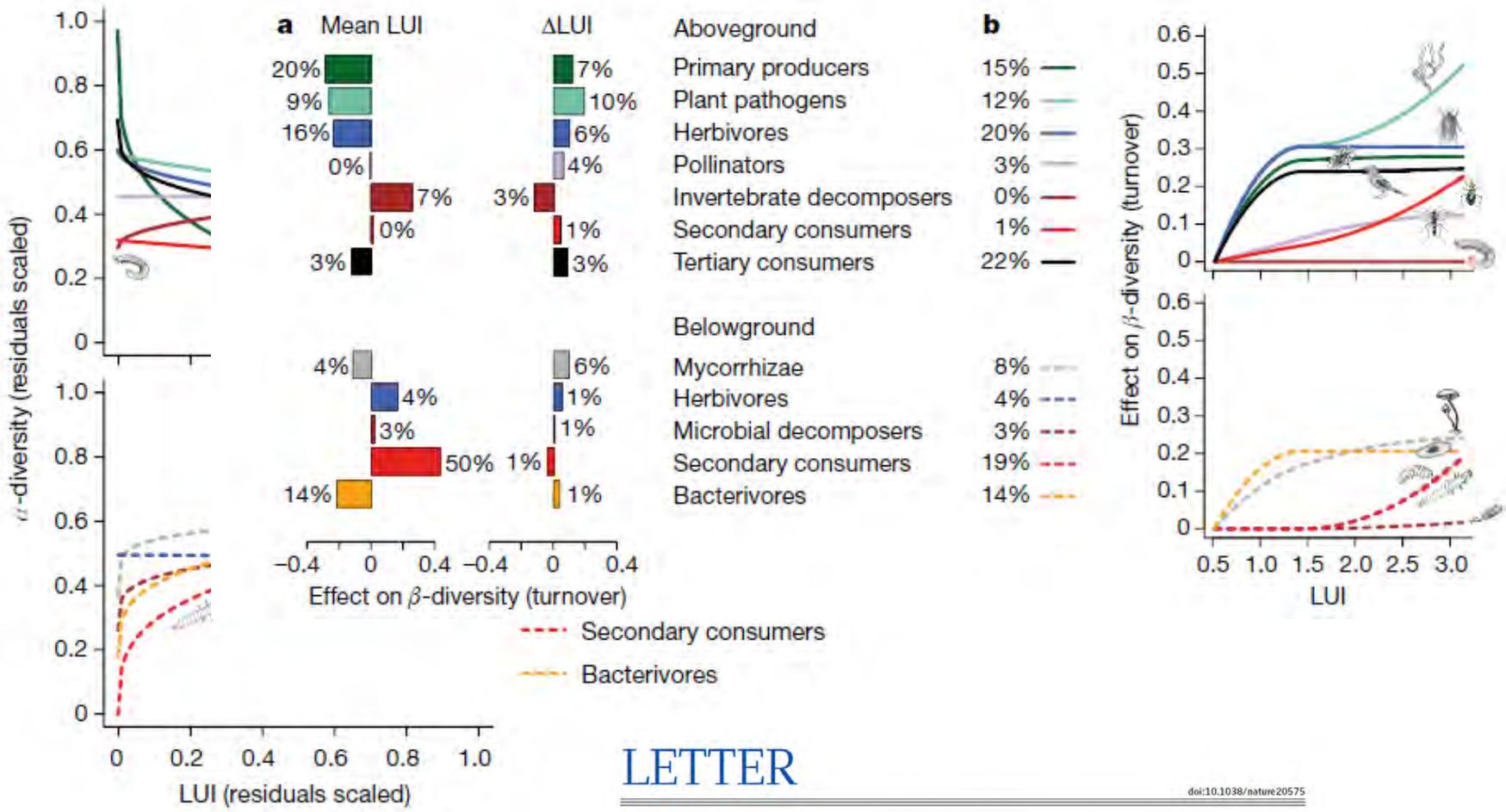
Landnutzung und Artenschwund

Artenvielfalt: Entwicklung der lebensraumbezogenen Teilindikatoren Agrarland und Wälder



Quelle: Wahl, J., R. Dröschmeister, B. Gerlach, C. Grüneberg, T. Langgemach, S. Trautmann & C. Sudfeldt (2015):
Vögel in Deutschland – 2014. DDA, BfN, LAG VSW, Münster.

Landnutzung und Artenschwund



LETTER

doi:10.1038/nature20575

Land-use intensification causes multitrophic homogenization of grassland communities

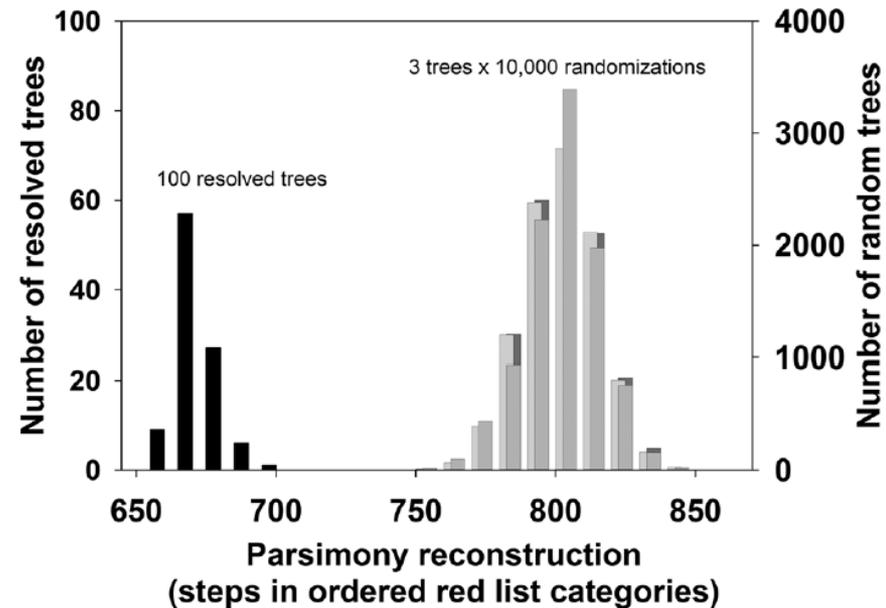
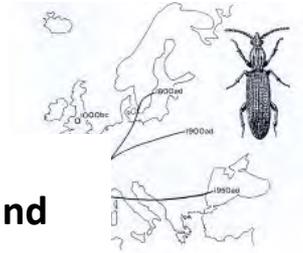
Martin M. Gossner^{1,2,3}, Thomas M. Lewinsohn^{1,4}, Tiemo Kahl^{5,6}, Fabrice Grassein⁷, Steffen Boch⁷, Daniel Prati⁷, Klaus Birkhofer^{8,9}, Swen C. Renner^{10,11}, Johannes Sikorski¹², Tesfaye Wubet^{13,14}, Hartmut Arndt¹⁵, Vanessa Baumgartner¹², Stefan Blaser¹⁶, Nico Blüthgen¹⁶, Carmen Börschig¹⁷, Francois Buscot^{13,14}, Tim Diekötter^{18,19}, Leonardo Ré Jorge², Kirsten Jung¹¹, Alexander C. Keyel²⁰, Alexandra Maria Klein²¹, Sandra Klemmer^{22,23}, Jochen Krauss¹⁷, Markus Lange^{2,23}, Jörg Müller²⁴, Jörg Overmann²⁵, Esther Pasalic^{2,2}, Caterina Penone¹, David J. Perovic^{25,26}, Oliver Purschke^{2,27,28}, Peter Schall²⁹, Stephanie A. Socher³⁰, Ija Sonnemann³¹, Marco Tschapka³¹, Teja Tschardt²⁶, Manfred Türke^{1,2,14,27}, Paul Christian Venter¹⁵, Christiane N. Weiner¹⁶, Michael Werner¹⁶, Volkmar Wolters³², Susanne Wurst³³, Catrin Westphal¹⁶, Markus Fischer¹, Wolfgang W. Weisser¹² & Eric Allan^{7,32}

Waldnutzung und Artenschwund



„Saproxylic Insects and the unsustainable Management of Forests: A 5000-Year European Experiment “

Grove 2002



Seibold et al 2015 Conservation Biology

Grove 2002 Annu Rev Ecol Syst



Megapenthes lugens



Species of the lowlands more threatened



Ceruchus chrysomelinus



Large species and species of large dead wood more threatened



Dicerca berolinensis

Species of broadleaf trees more threatened



Eurythrea austriaca

Species of sunny habitats more threatened

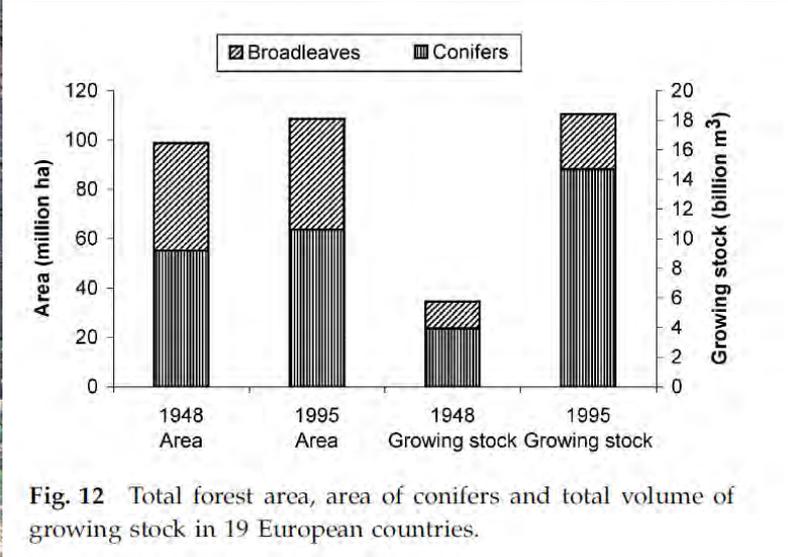
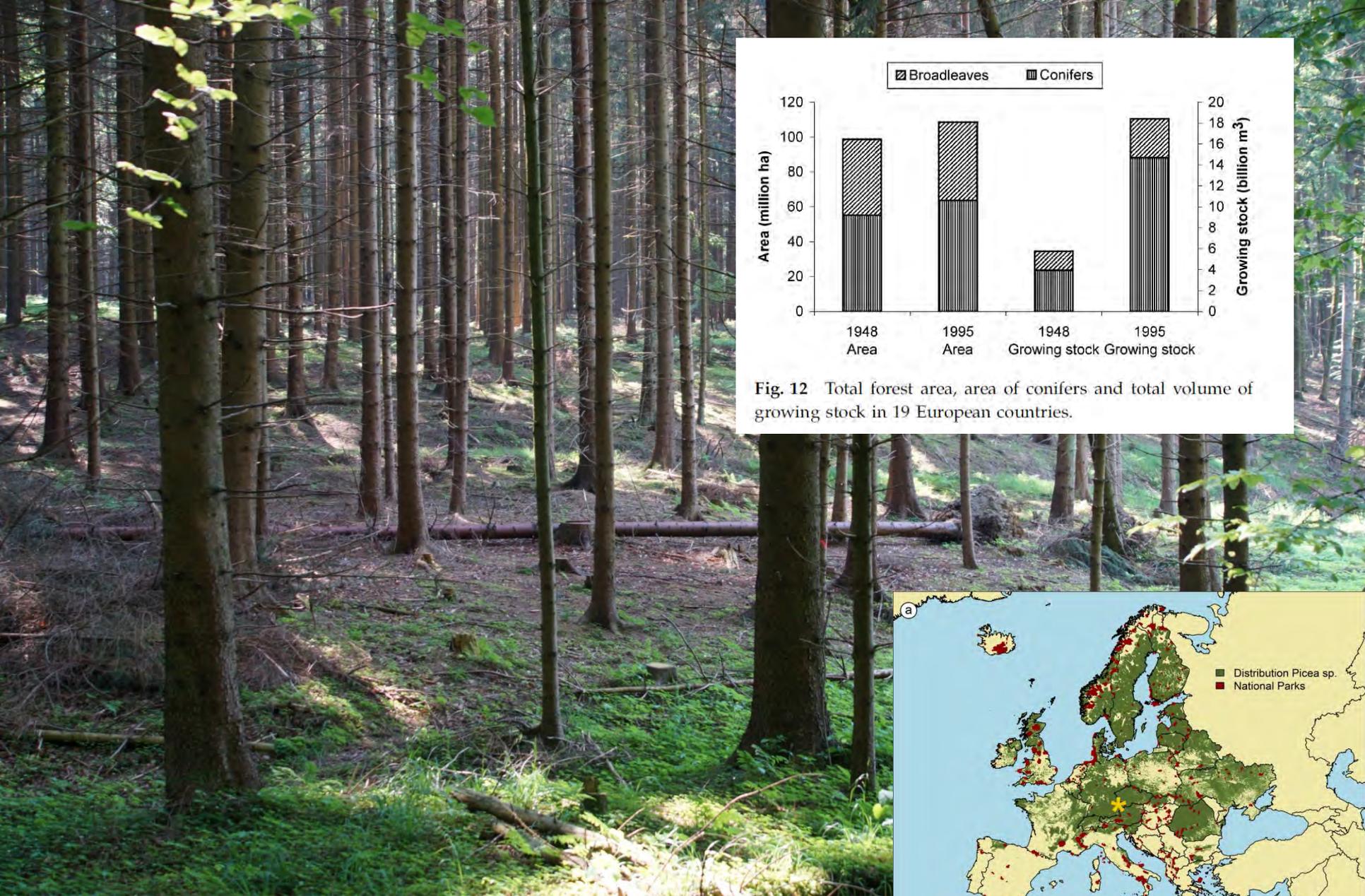
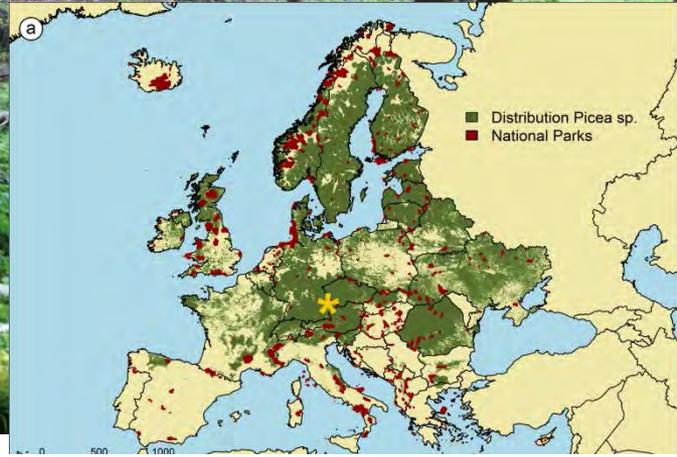
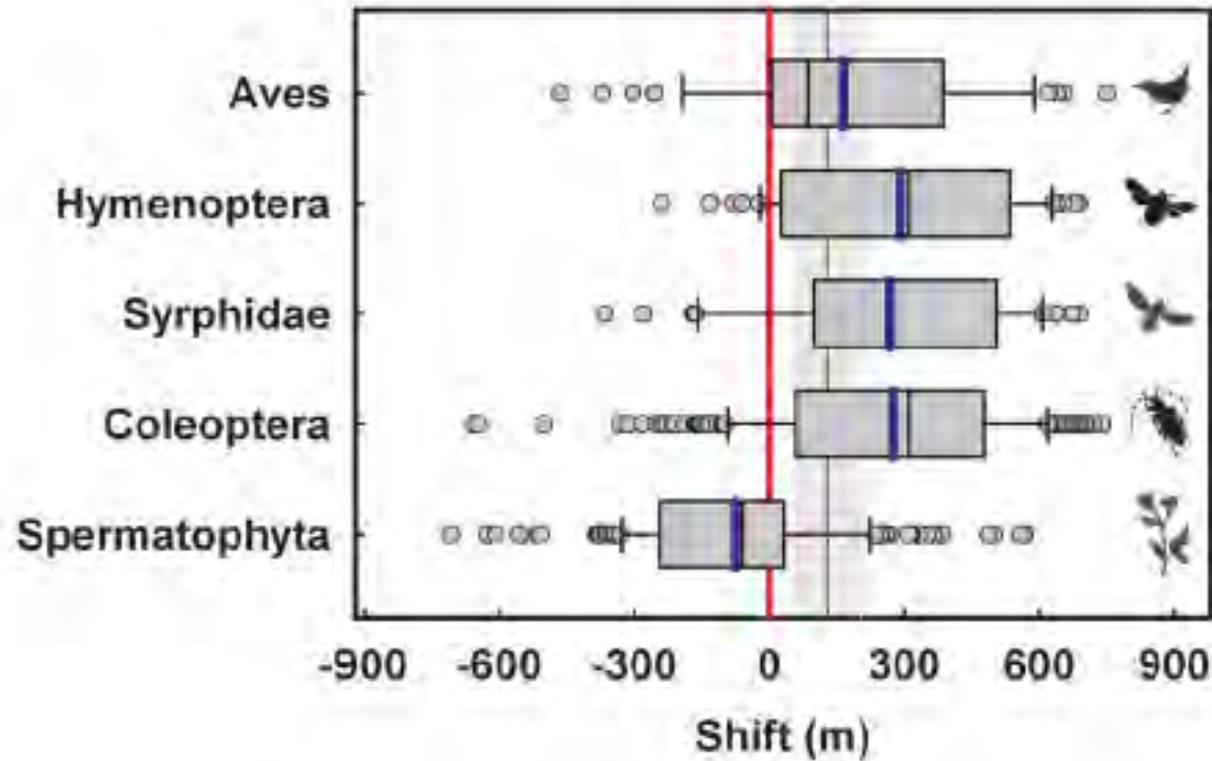


Fig. 12 Total forest area, area of conifers and total volume of growing stock in 19 European countries.

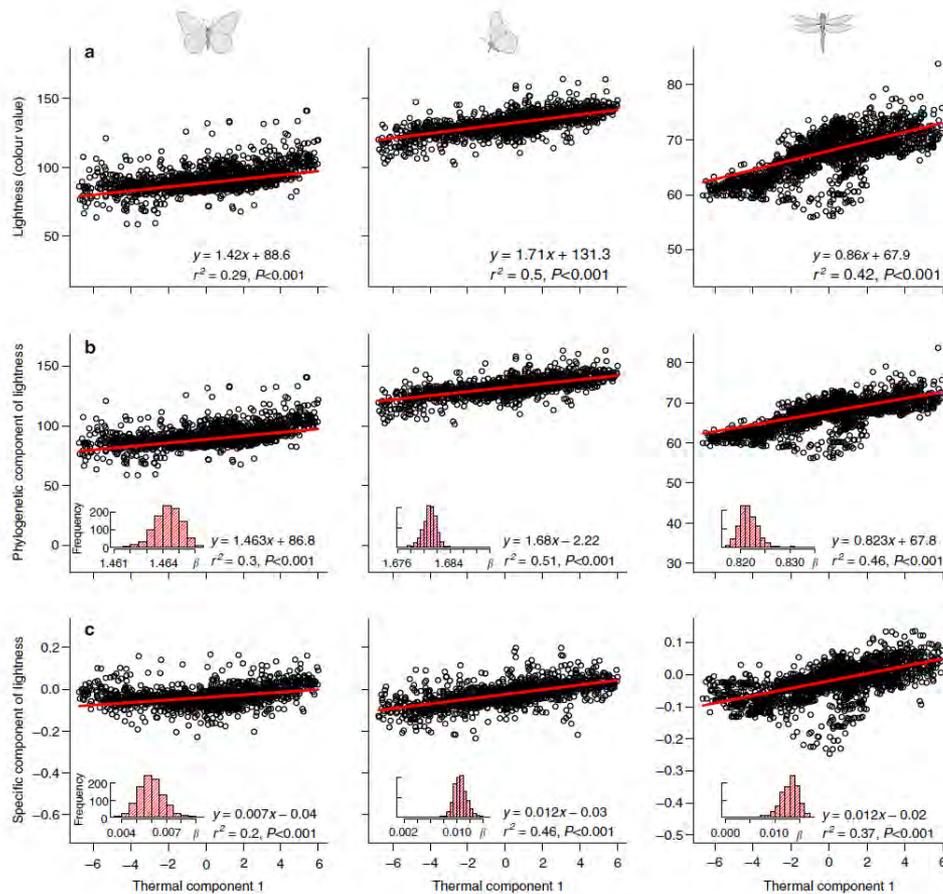


Arten im Klimawandel



Insects Overshoot the Expected Upslope Shift Caused by Climate Warming

Arten im Klimawandel



ARTICLE

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OPEN

Global warming favours light-coloured insects in Europe

Dirk Zeuss¹, Roland Brandl¹, Martin Brändle¹, Carsten Rahbek^{2,3} & Stefan Brunzel¹

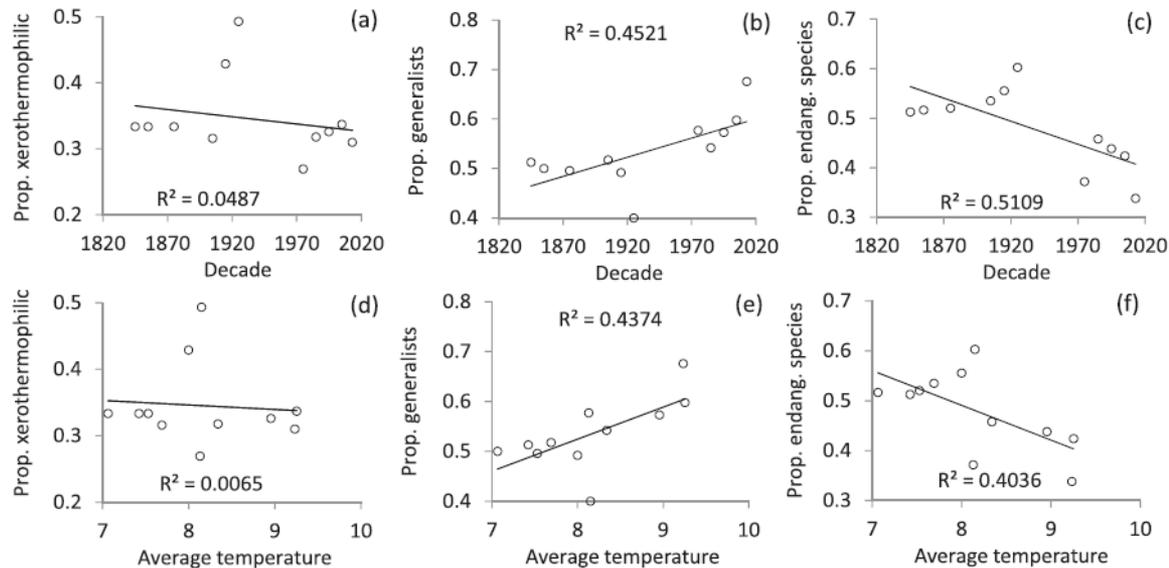
Schmetterlinge auf einem Trockenrasen

Conservation Biology

Contributed Paper

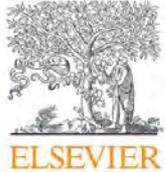
Butterfly community shifts over 2 centuries

Jan Christian Habel,^{*¶} Andreas Segerer,[†] Werner Ulrich,[‡] Olena Torchyk,^{*} Wolfgang W. Weisser,^{*} and Thomas Schmitt^{§**}



Schmetterlinge auf einem Trockenrasen

BIOLOGICAL CONSERVATION 128 (2006) 542–552



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The severe decline of butterflies on western German calcareous grasslands during the last 30 years: A conservation problem

Miriam Wenzel^{a,1}, Thomas Schmitt^{b,*1}, Matthias Weitzel^c, Alfred Seitz^a

ABSTRACT

Butterflies and burnet moths are a suitable model species group with which to analyse the general decline of invertebrate biodiversity over the last few decades. In this study, we analysed which ecological groups of butterflies and burnet moths are most affected and how the recent modifications of the landscape have influenced them. Therefore, we studied the species composition of seven calcareous grassland remnants in south-western Germany in 1972 and 2001. We observed a strong change in the community composition and a severe decline in species richness. In general, the incidence of the autochthonous non-ubiquitous species declined by more than 50%, whereas ubiquitous species showed no significant difference in numbers during this period. Especially affected by the decline were those species which need structured habitats, those which are poor dispersers, species which need habitat sizes of 16 ha and more, monophagous species, K strategists and Red Data Book species. Most probably, either habitat outside the reserves is affecting dynamics within the reserves or loss of habitat outside the protected areas has reduced the overall area and connectivity of habitat for some species, increasing extinction rates and reducing colonisation rates in meta-populations. We conclude that these negative trends can only be stopped or even reversed if the landscape structure is made less hostile for species with conservation interest.

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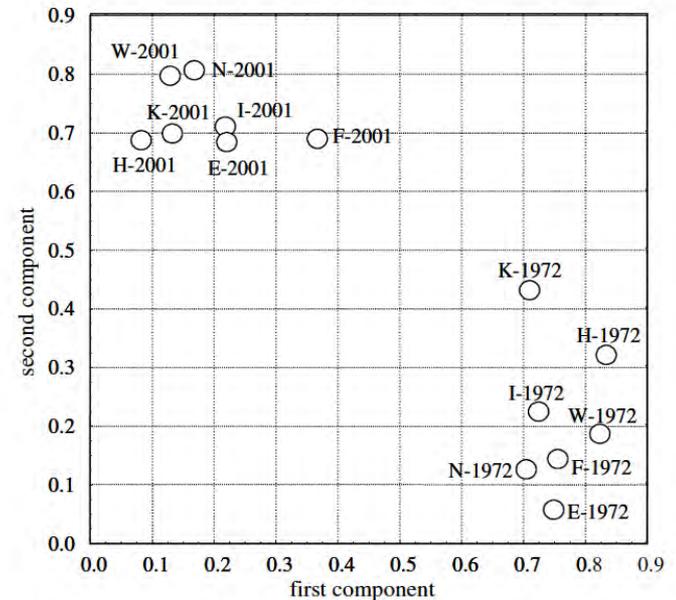
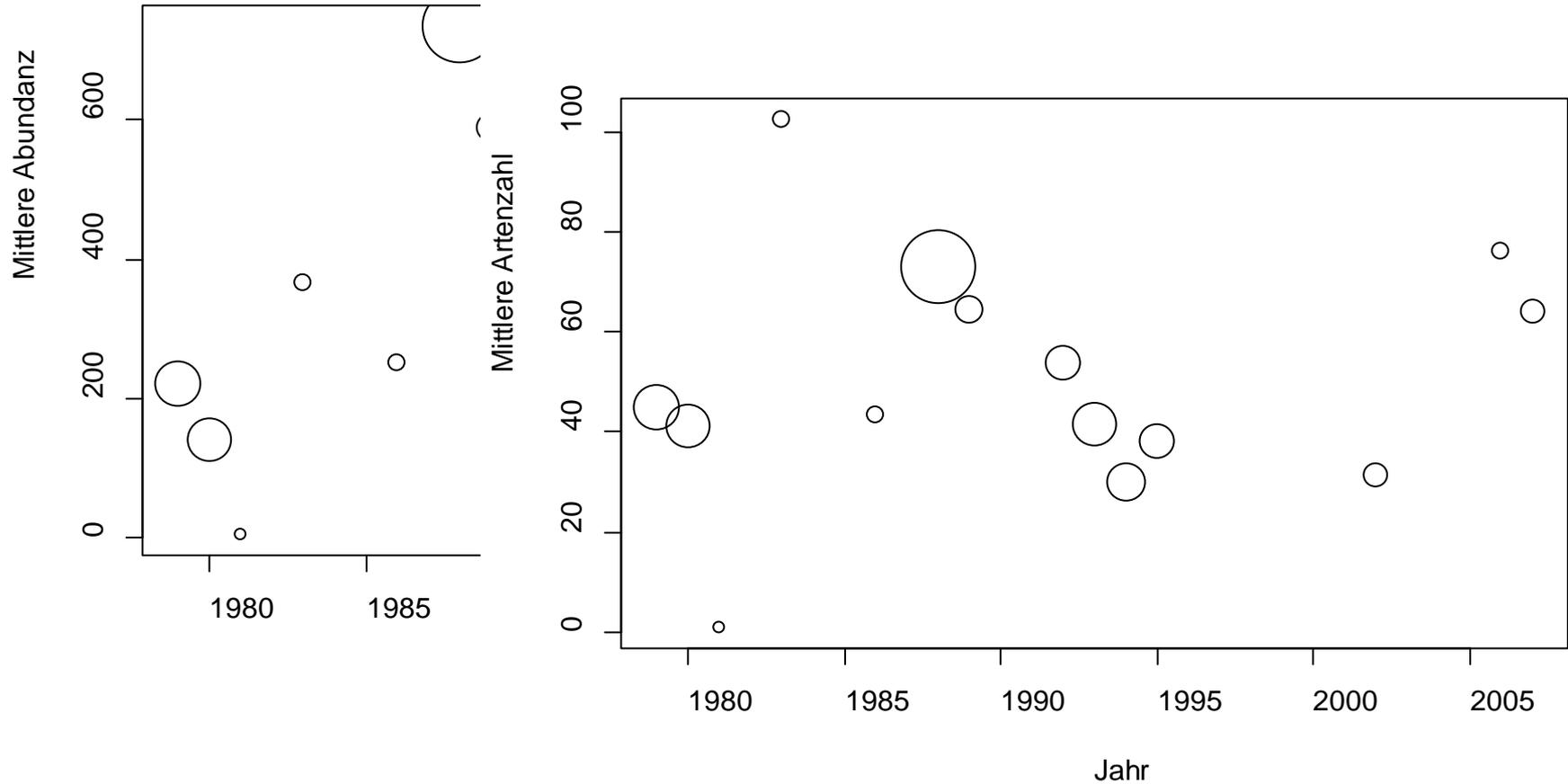


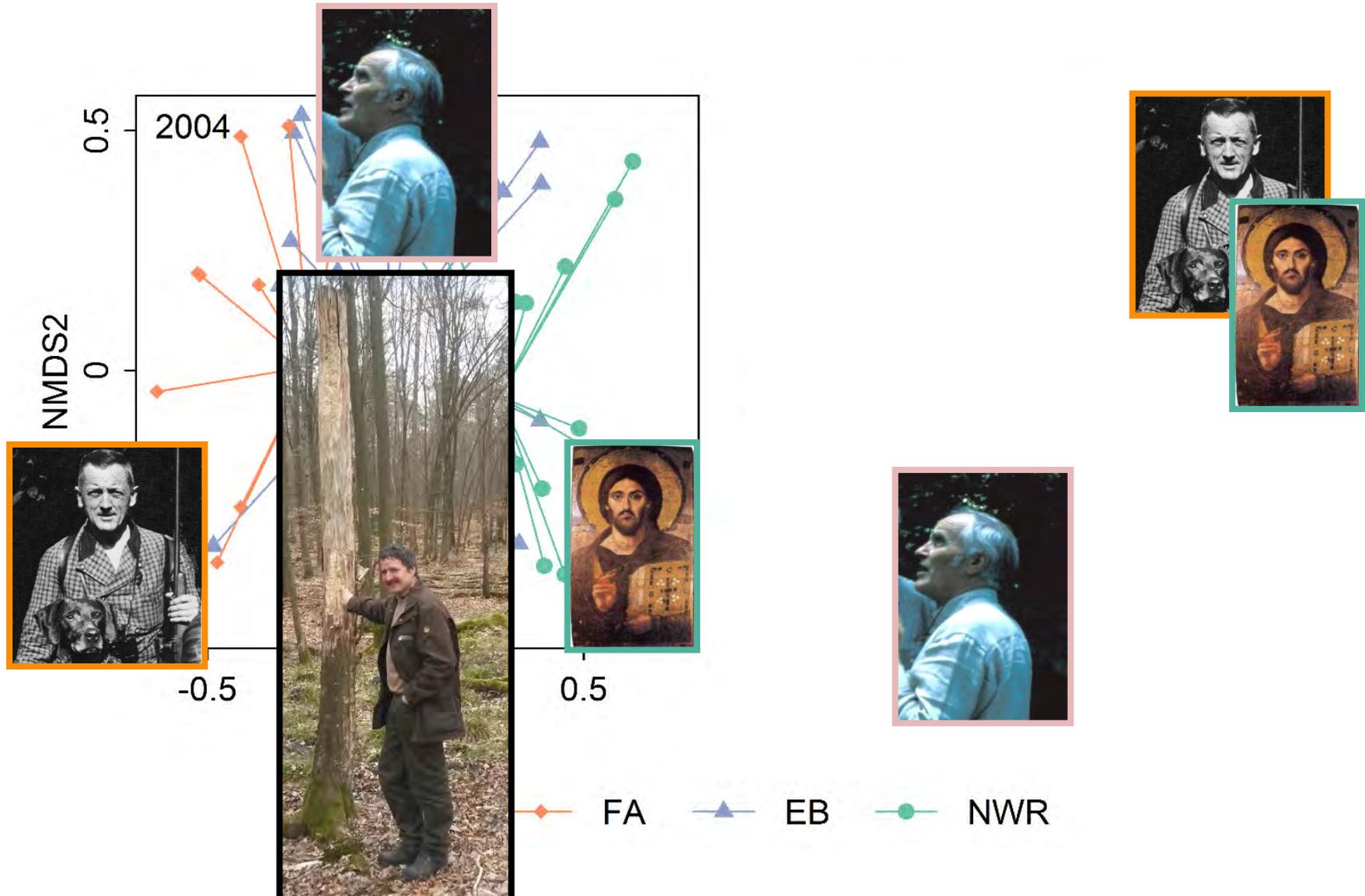
Fig. 2 – Principal components analysis of the species compositions of the seven analysed calcareous grassland remnants in 1972 and 2001. The first component explains 30.9%, the second 29.1% of the total variance. E: Echternacherbrück; F: Freudenburg; H: Hüttingen; I: Igel; K:

Langzeitrends im Eichen-Mittelwald

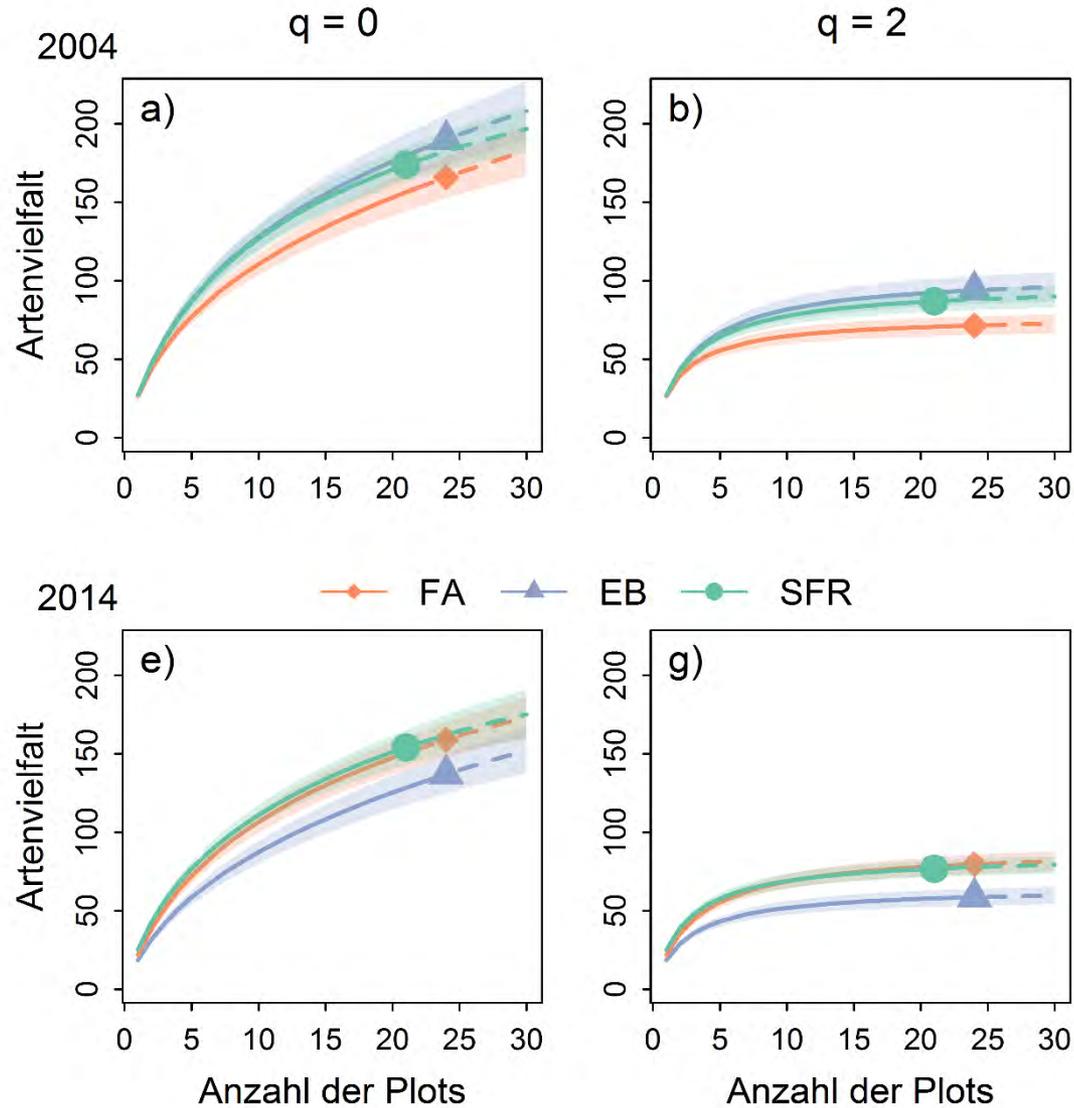




Langzeitrends im Buchenwald

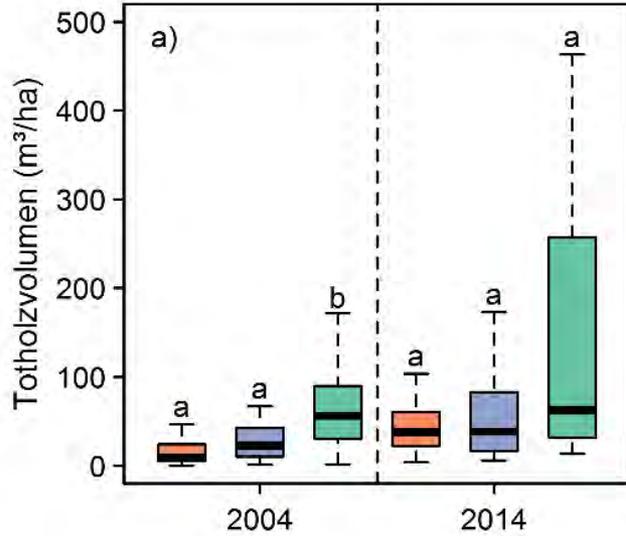


Artenvielfalt

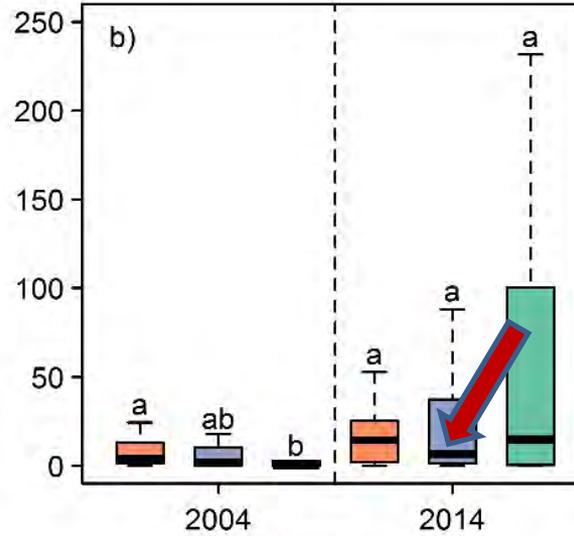


Totholzvolumen

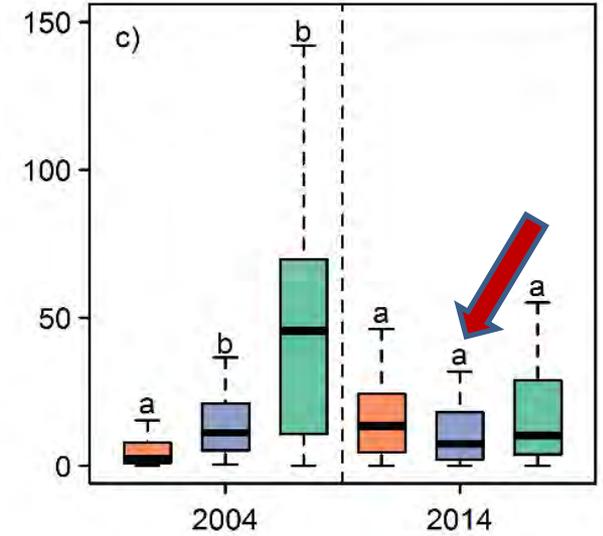
Gesamt



Zersetzungsgrad 1 & 2



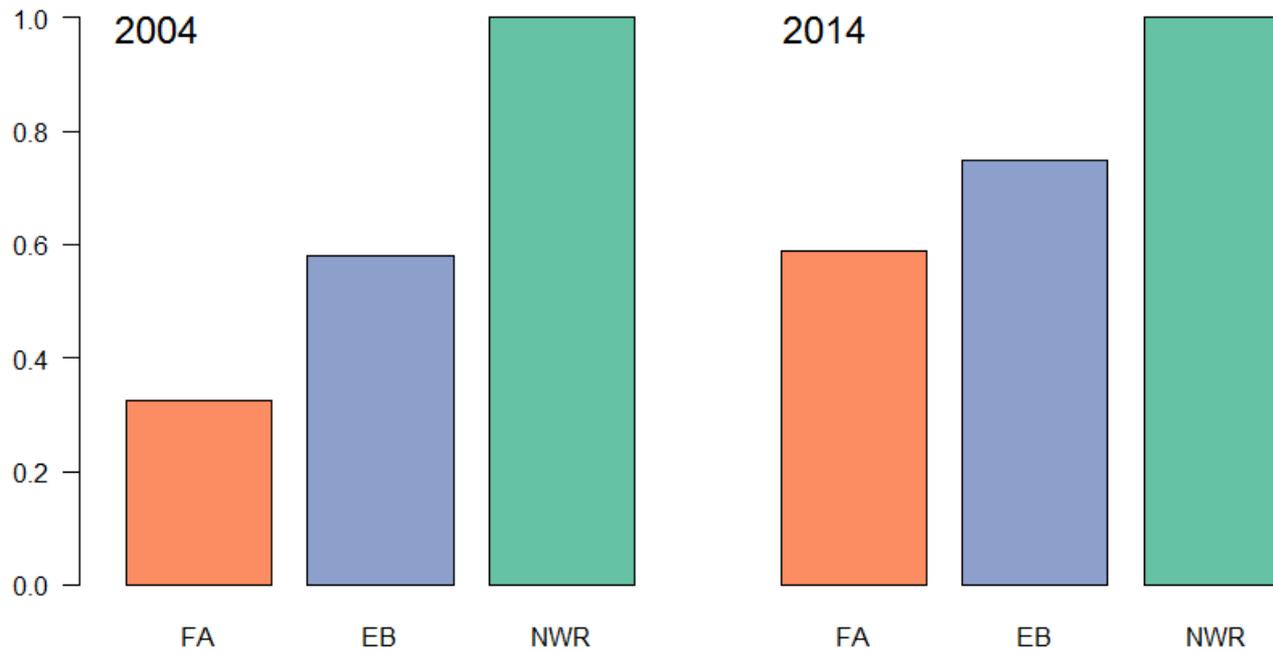
Zersetzungsgrad 3



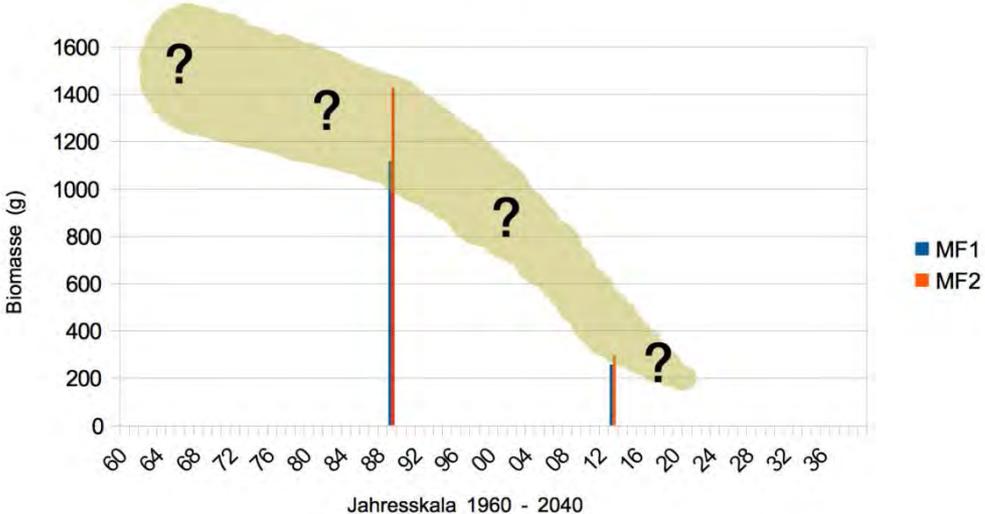
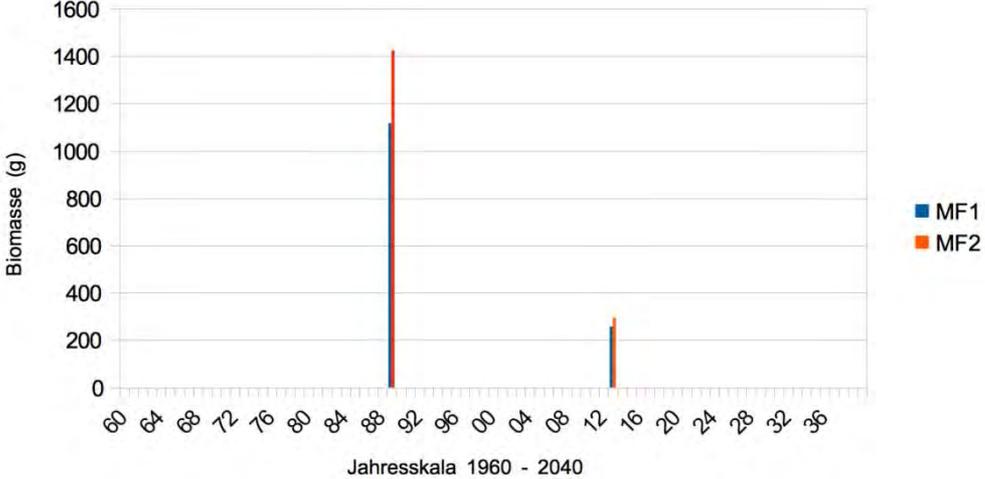
FA EB NWR



Naturnähezeiger



Landnutzung und Artenschwund



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Ermittlung der Biomassen flugaktiver Insekten im Naturschutzgebiet Orbroicher Bruch mit Malaise Fallen in den Jahren 1989 und 2013

Herausforderungen

Datenreihen? Datenzeitschnitte?

Wald und Offenland?

Confounding Entwicklungen (Klimawandel,
Pestizideinsatz, Anbaufrüchte, Vorrat in Wäldern)

Lter Deutschland