



# Science in the sand

What cases a high biodiversity?

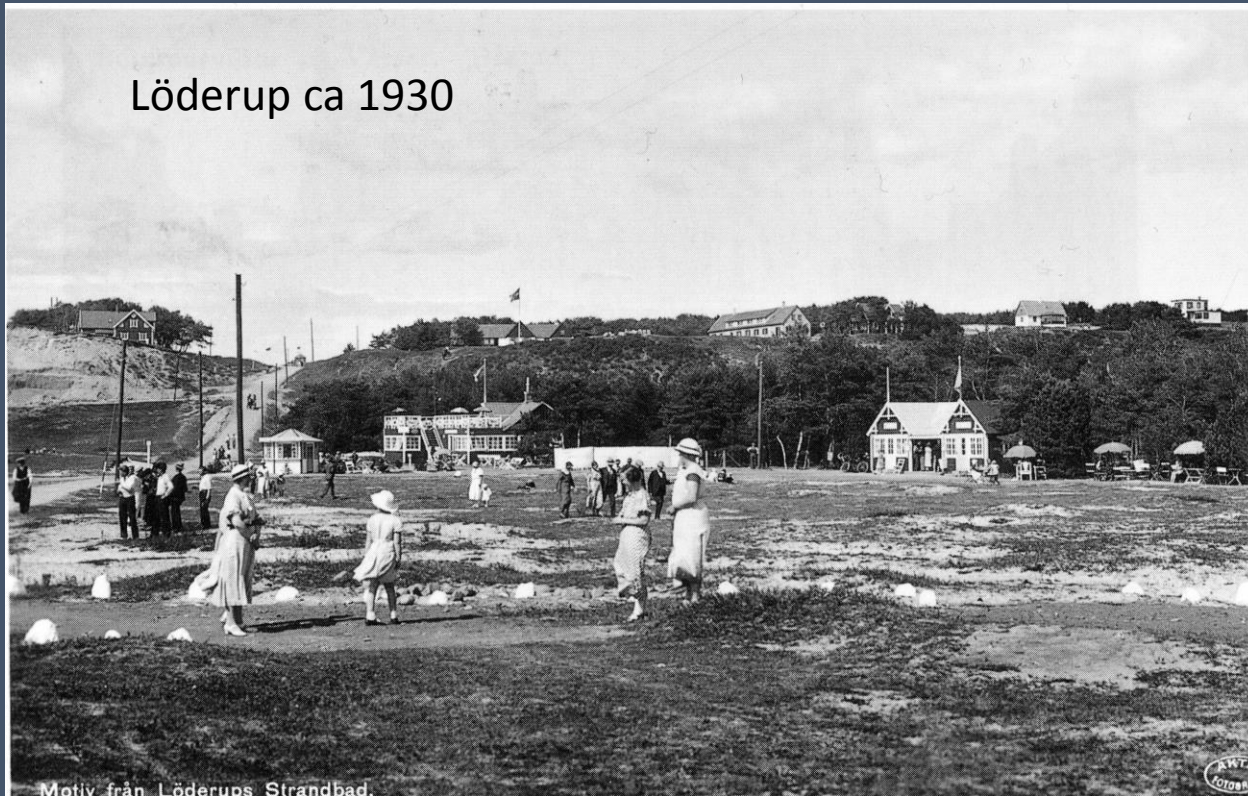
**Pål Axel Olsson**

Department of Biology  
Lund university





Löderup ca 1930



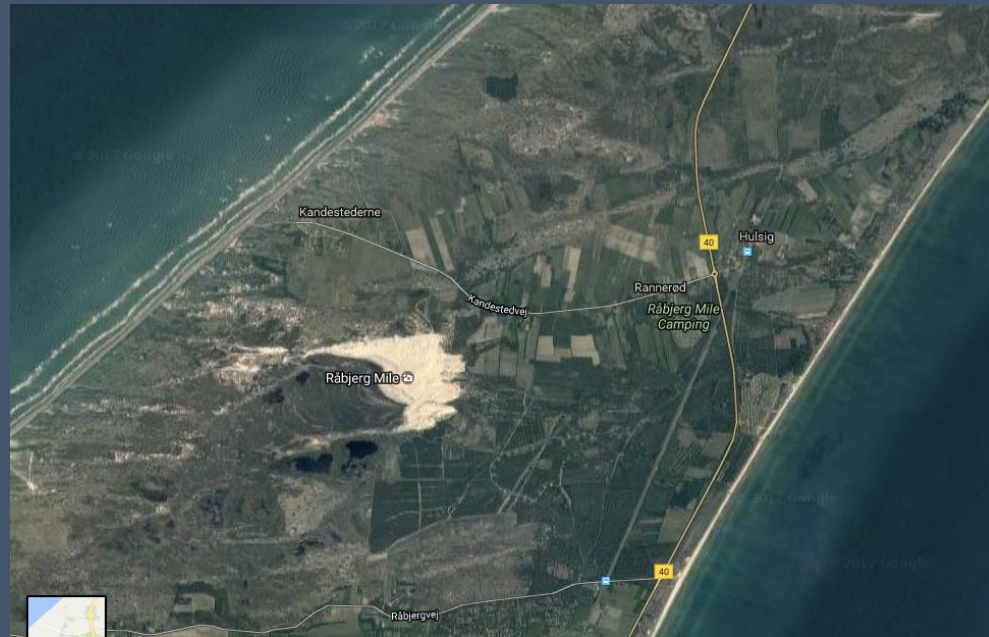
Motiv från Löderups Strandbad.

... and today





# Skagen

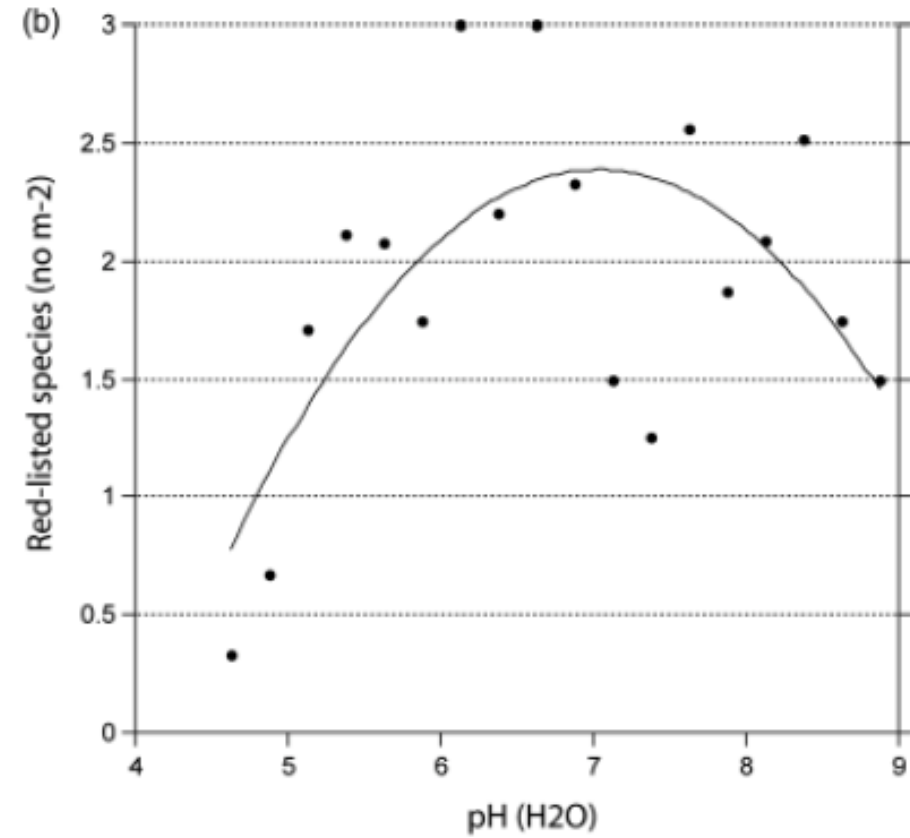
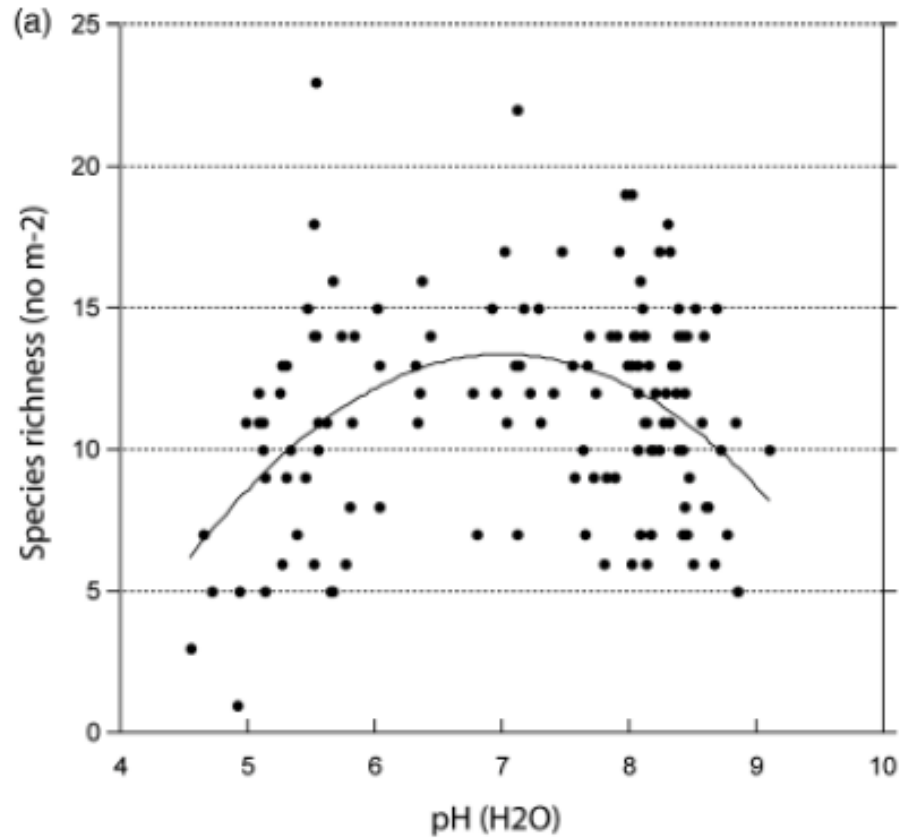






## Acidification of sandy grasslands – consequences for plant diversity

Olsson, Pål Axel\*; Mårtensson, Linda-Maria & Bruun, Hans Henrik



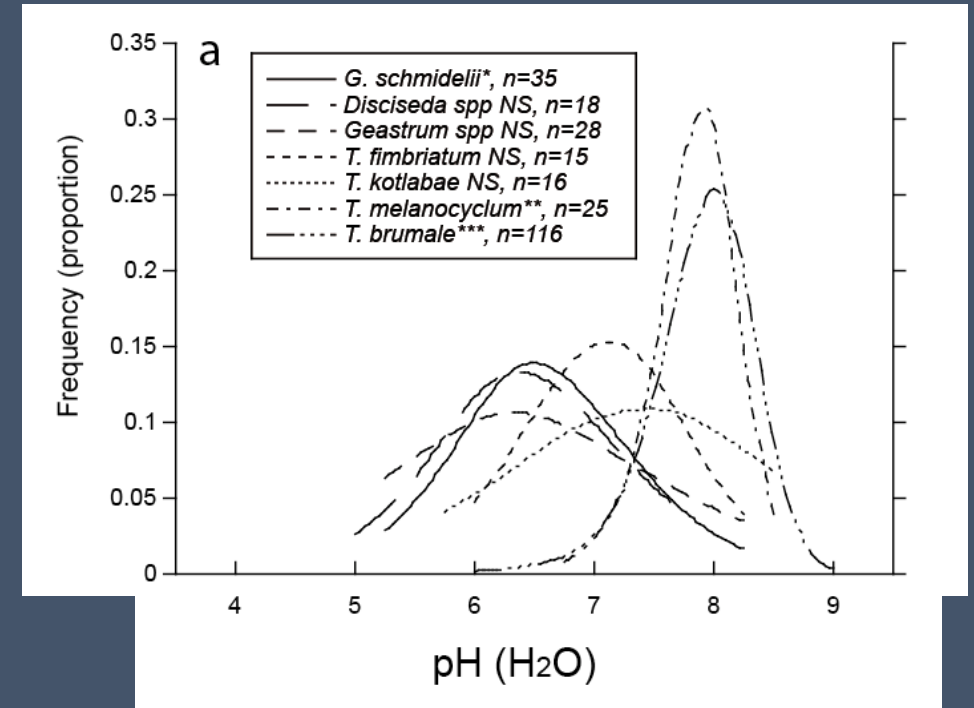


# pH preferences of red-listed gasteromycetes in calcareous sandy grasslands: Implications for conservation and restoration

Pål Axel Olsson <sup>a</sup>✉, Tim Krone Schnoor <sup>a</sup>, Sven-Åke Hanson <sup>b</sup>



Fransig stjälskröksvamp  
*Tulostoma fimbriatum* EN



# What cause high diversity in sandy habitats?

Soil quality:

Low P availability

Low N availability

(High pH)

Continuity (grazing, erosion etc)

----- Historical land use?

Connectivity

# **Assessing Conservation Action for Substitution of Missing Dynamics on Former Military Training Areas in Central Europe**

Anke Jentsch,<sup>1,2,3</sup> Silke Friedrich,<sup>1,4</sup> Thomas Steinlein,<sup>4</sup> Wolfram Beyschlag,<sup>4</sup>  
and Werner Nezadal<sup>5</sup>

- Our results suggest that topsoil removal most effectively resets the successional clock and creates self-sustaining vegetation dynamics by affecting both filters in community assembly: the abiotic filter related to soil resources and the biotic filter related to competition between species.



# Restoration of calcareous sandy grassland

Lund university – Kristianstad collaboration in 2006

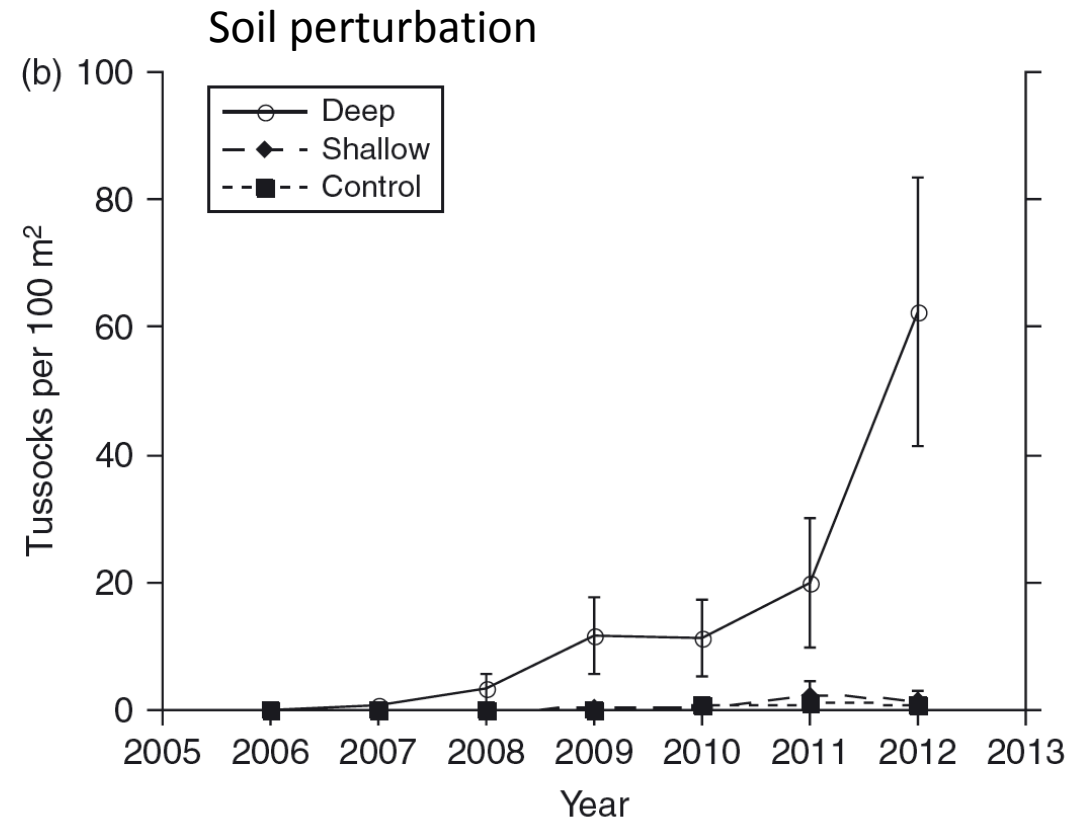
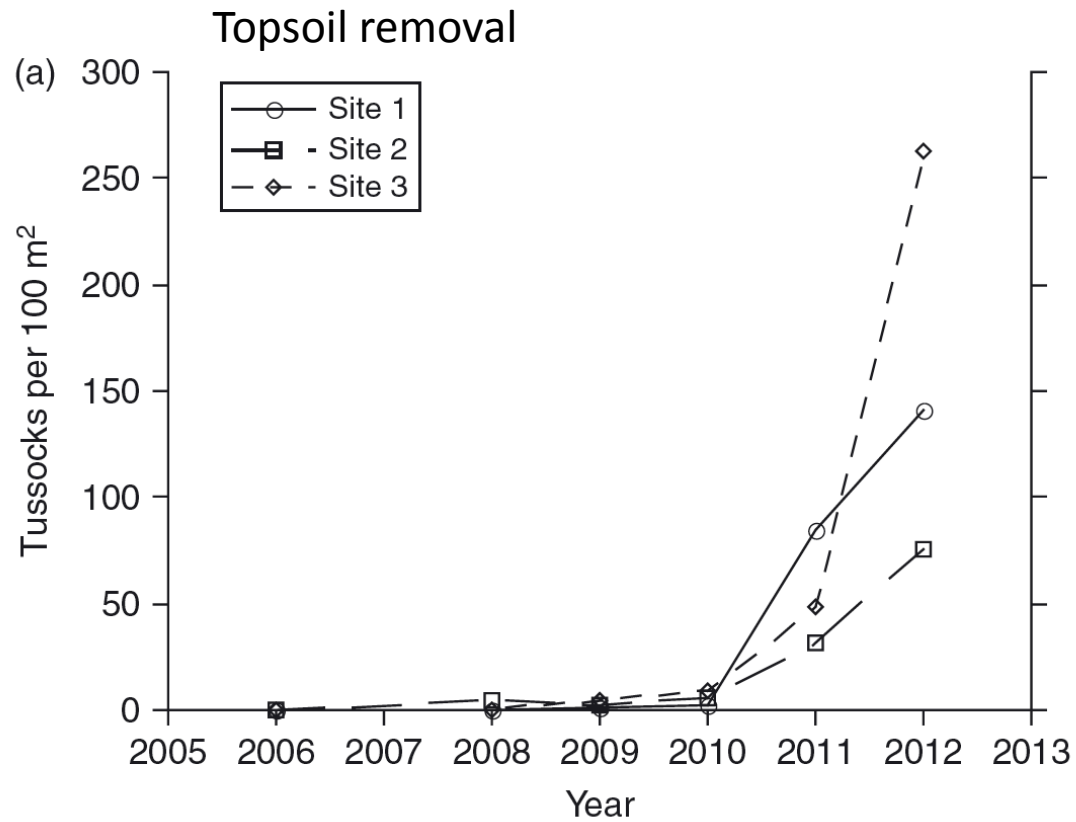




*Koeleria glauca* (VU) in restored plot







*Koeleria glauca*

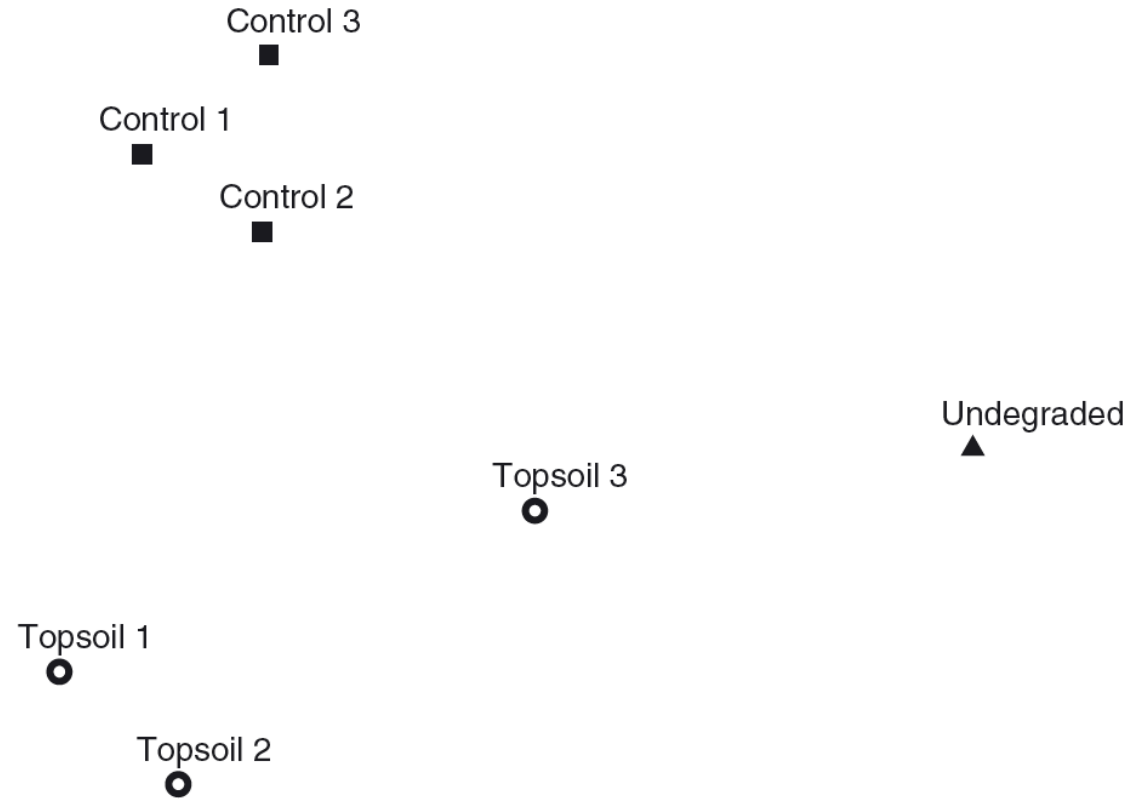
Restoration Ecology  
THE JOURNAL OF THE SOCIETY FOR ECOLOGICAL RESTORATION

RESEARCH ARTICLE

## Natural Establishment of Specialist Plant Species after Topsoil Removal and Soil Perturbation in Degraded Calcareous Sandy Grassland

Pål Axel Olsson<sup>1,2</sup> and Anja Madelen Ödman<sup>1</sup>

(b)



RESEARCH ARTICLE

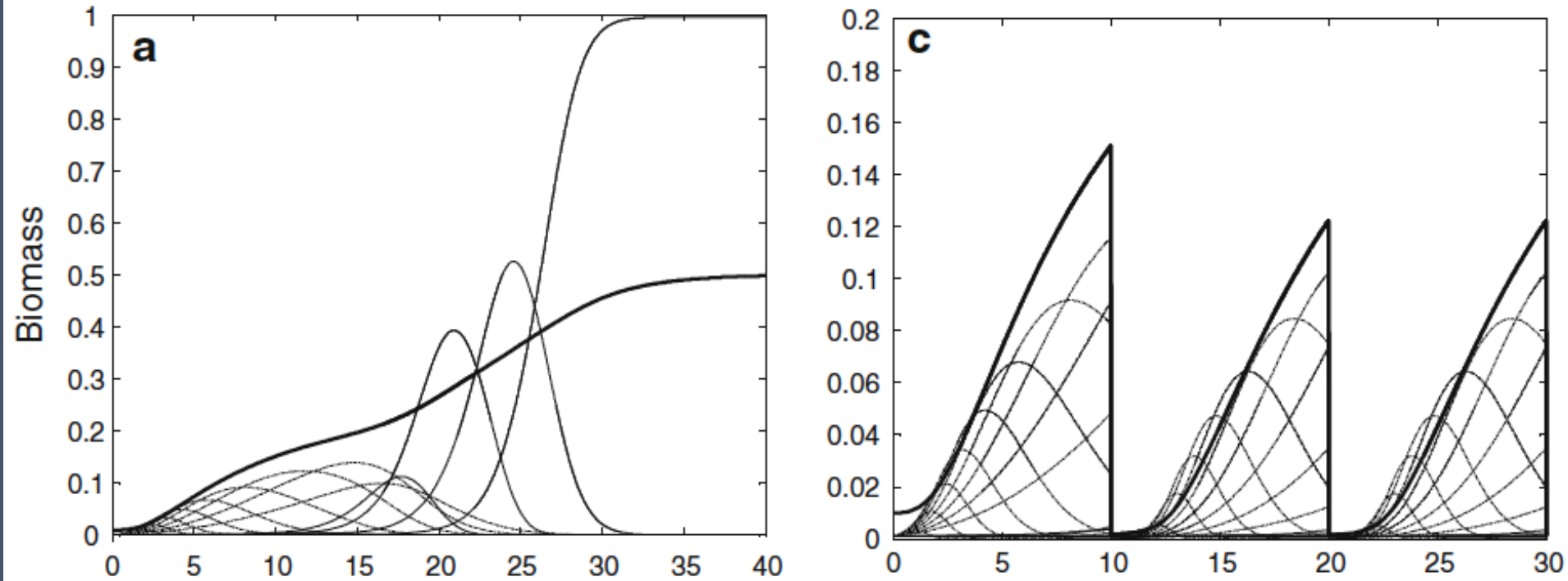
# Natural Establishment of Specialist Plant Species after Topsoil Removal and Soil Perturbation in Degraded Calcareous Sandy Grassland

Pål Axel Olsson<sup>1,2</sup> and Anja Madelen Ödman<sup>1</sup>



Turquoise blue (VU)





Biodivers Conserv (2012) 21:1921–1935  
 DOI 10.1007/s10531-012-0292-4

REVIEW PAPER

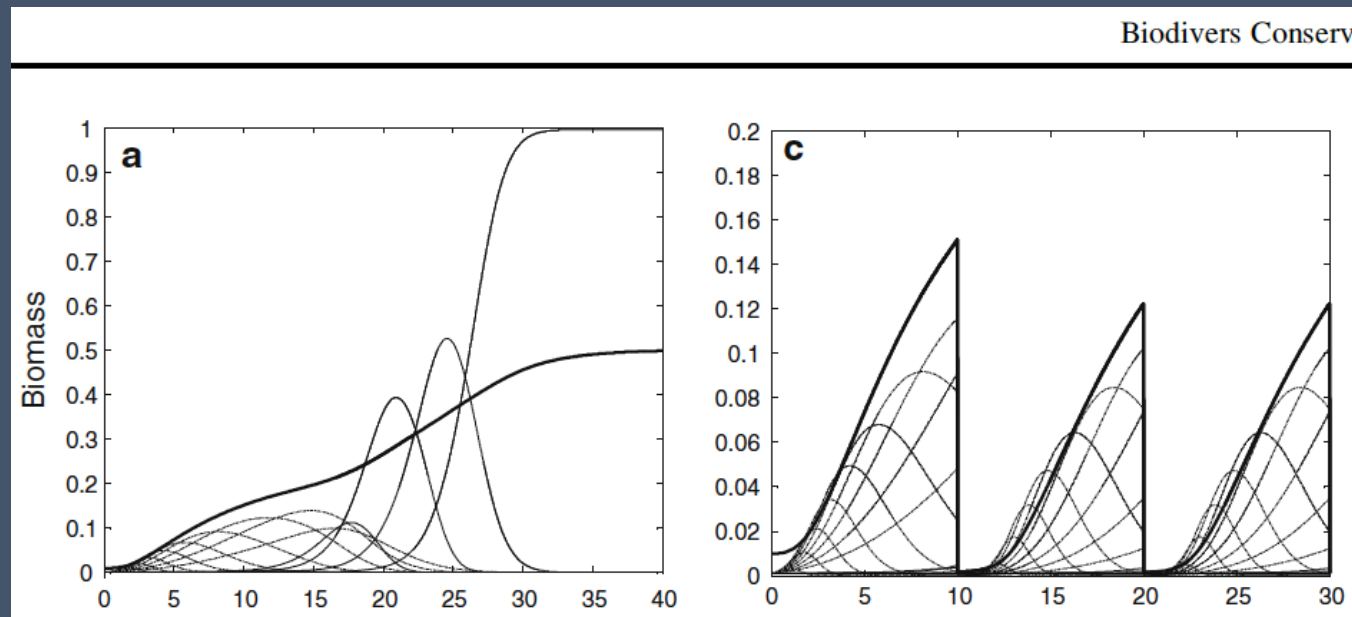
## Soil disturbance as a restoration measure in dry sandy grasslands

Anja Madelen Ödman · Tim Krone Schnoor · Jörgen Ripa ·  
 Pål Axel Olsson



# Selection of disturbance /disturbance regime

- Abiotic conditions ok?
- Yes: Low intensity disturbance: e.g. grazing, burning, harrowing
- No: Top soil removal or deep perturbation











## Moth survey in mountain pine plantation





Mosaiktallvecklare



Smaragdgrön lundmätare (EN)



Linjerat gräsmott



Ekspinnare





## Moth survey

31 trap nights in summer  
1262 moths, 185 species

