

from the

roots

to the canopy

The FOREST EUROPE
webinar series

Problem with mistletoe in Poland

Wojciech Kędziora & Roman Wójcik

Institute of Forest Sciences, Warsaw University of Life Sciences, Poland

Mistletoe – is it a problem?



Pine mistletoe (*Viscum album* ssp. *austriacum*) contributes to Scots pine (*Pinus sylvestris*) mortality in the Rhone valley of Switzerland

By M. DOBBERTIN¹ and A. RIGLING

Matthias Dobbertin · Nadine Hilker ·
Martine Rebetez · Niklaus E. Zimmermann ·
Thomas Wohlgemuth · Andreas Rigling

The upward shift in altitude of pine mistletoe (*Viscum album* ssp. *austriacum*) in Switzerland—the result of climate warming?

Open Access Review

Impact of Common Mistletoe (*Viscum album* L.) on Scots Pine Forests—A Call for Action

by Hanna Szmidla^{1,*} , Miłosz Tkaczyk¹ , Radosław Plewa¹ , Grzegorz Tarwacki¹ and Zbigniew Sierota²

SYLWAN 164 (7): 568-575, 2020

WOJCIECH KĘDZIORA, ALEKSANDRA BOBIŃSKA, ROMAN WÓJCIK

Propozycja wielkoobszarowej metody inwentaryzacji jemioli

Effects of land use and topographic variables on distribution of pine mistletoe (*Viscum album* subsp. *austriacum* (Wiesb.) Vollm.) in northeastern Turkey

Ayhan Usta^{1,*} , Murat Yilmaz¹

Open Access Article

Occurrence of European Mistletoe (*Viscum album* L.) on Forest Trees in Poland and Its Dynamics of Spread in the Period 2008–2018

by Paweł Lech^{1,*} , Anna Żółciak² and Robert Hildebrand¹

Mistletoe – where is the problem?



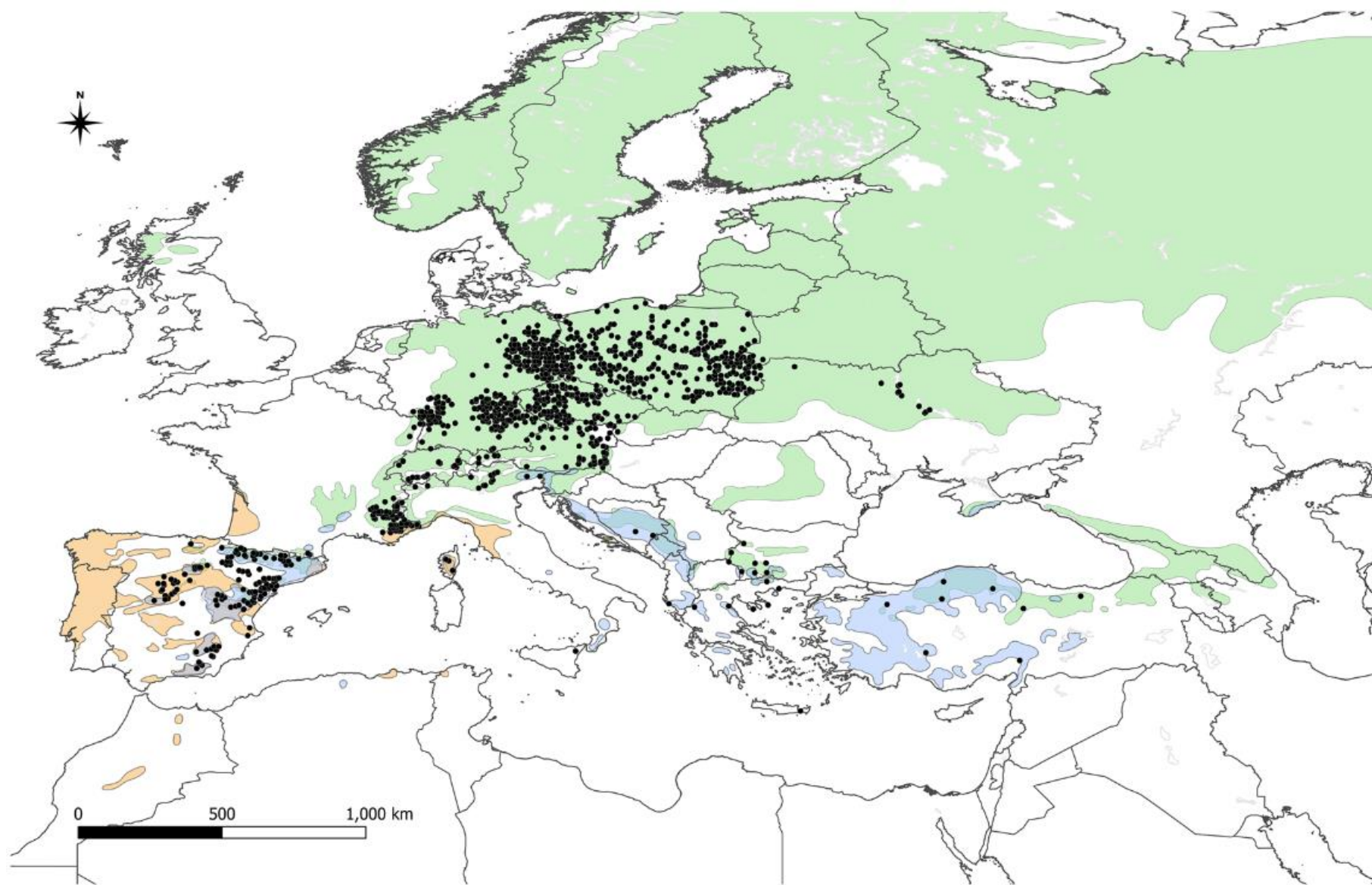


Figure 4. Stands of *Viscum album* subsp. *austriacum* used in analyses (black dots) and ranges of its hosts. Green—natural range of *Pinus sylvestris*; orange—natural range of *P. pinaster*; blue—natural range of *P. nigra* (Caudullo et al.⁷⁰).

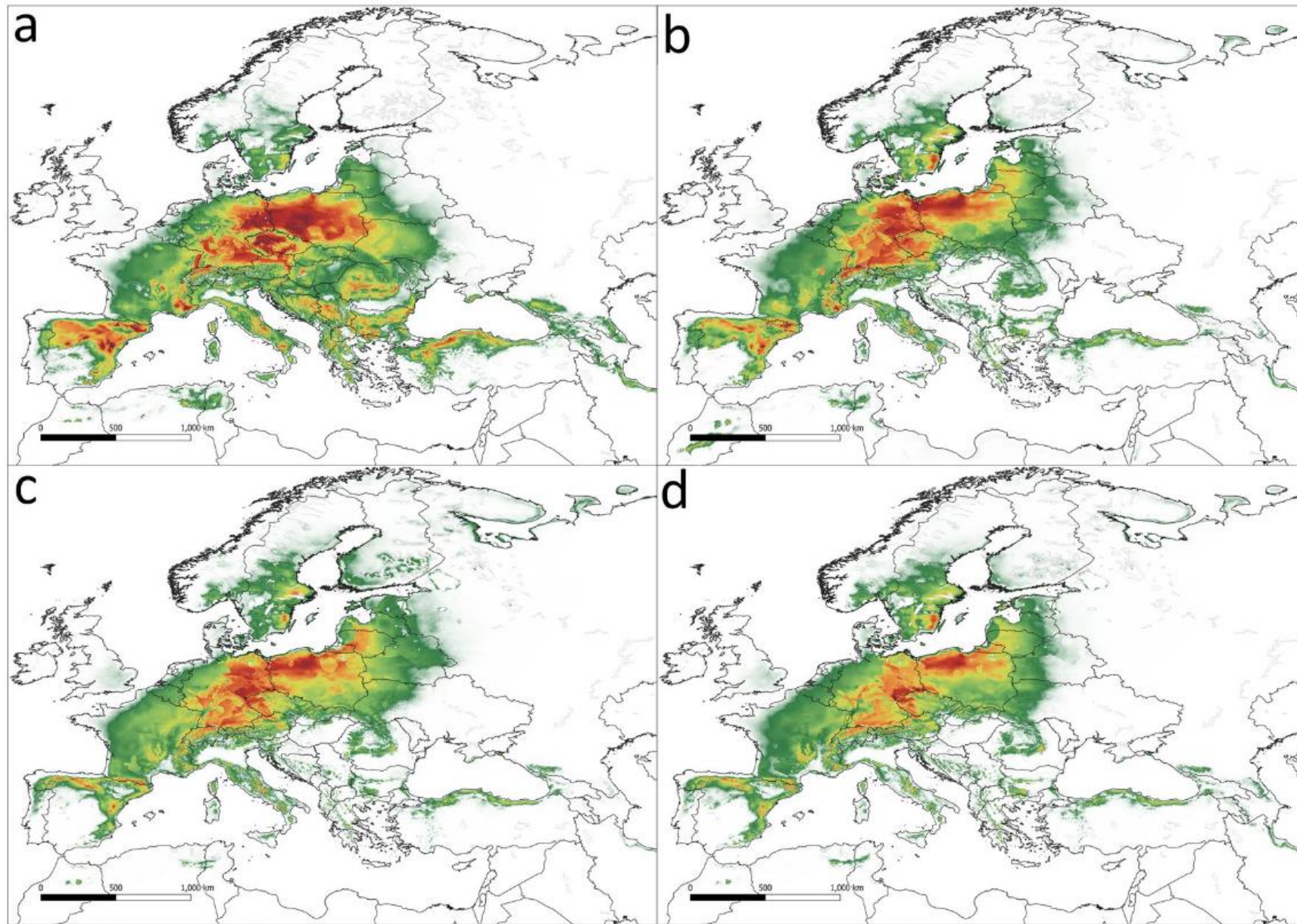
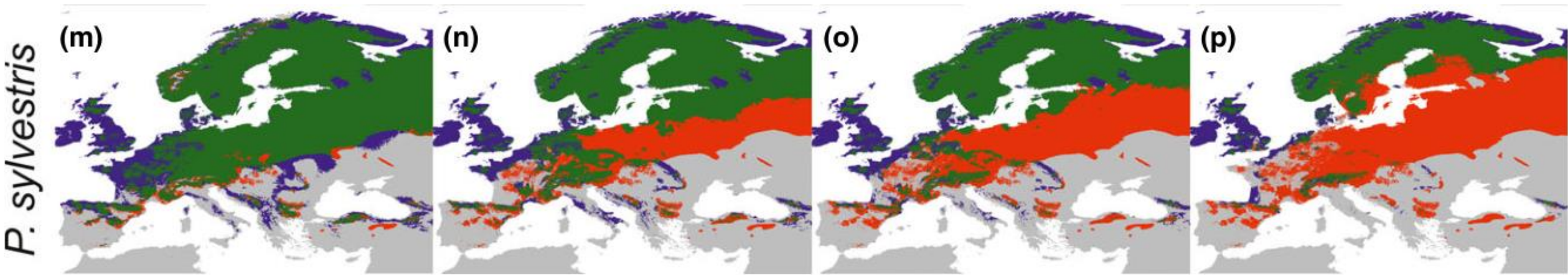


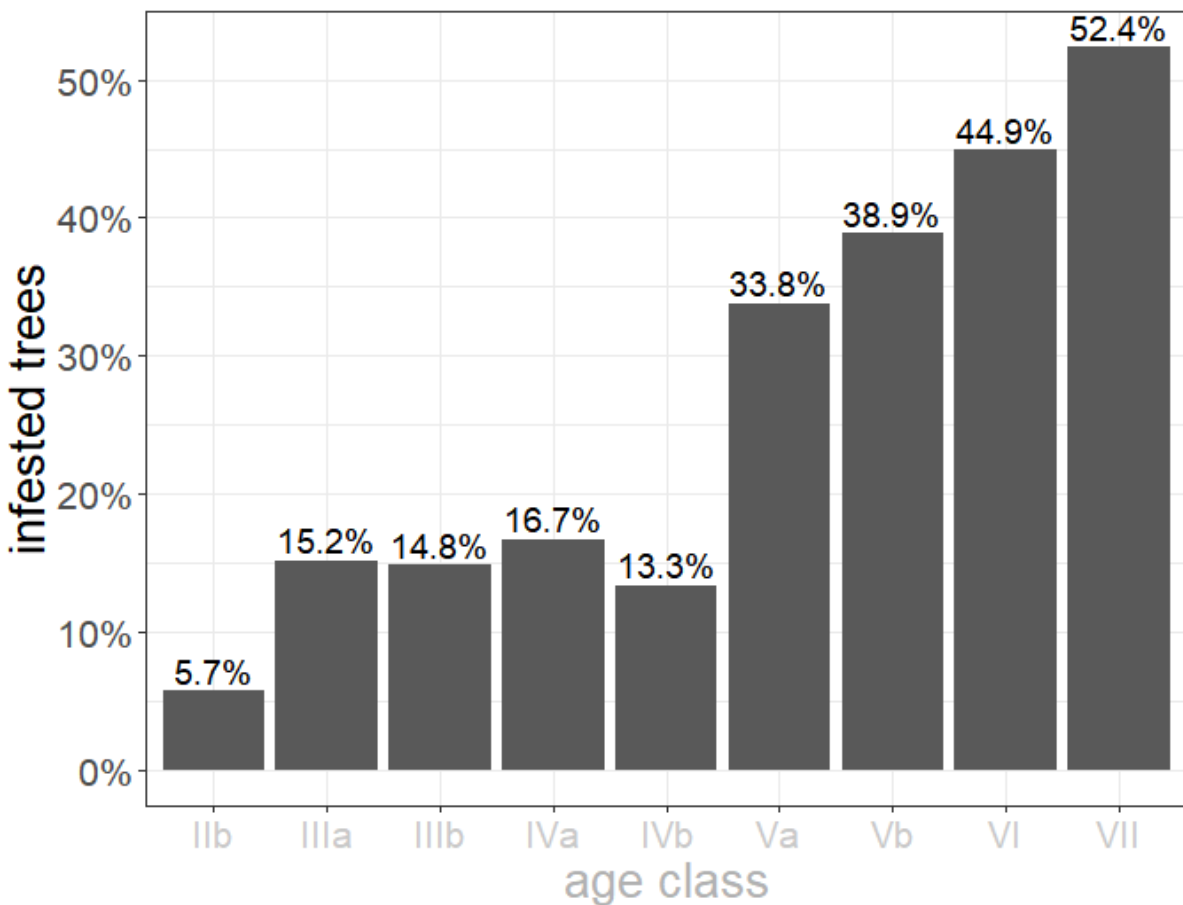
Figure 5. The potential range of *Viscum album* subsp. *austriacum*. (a) current conditions, (b) scenario SSP 1.26, (c) scenario SSP 3.7, (d) scenario SSP 5.85.



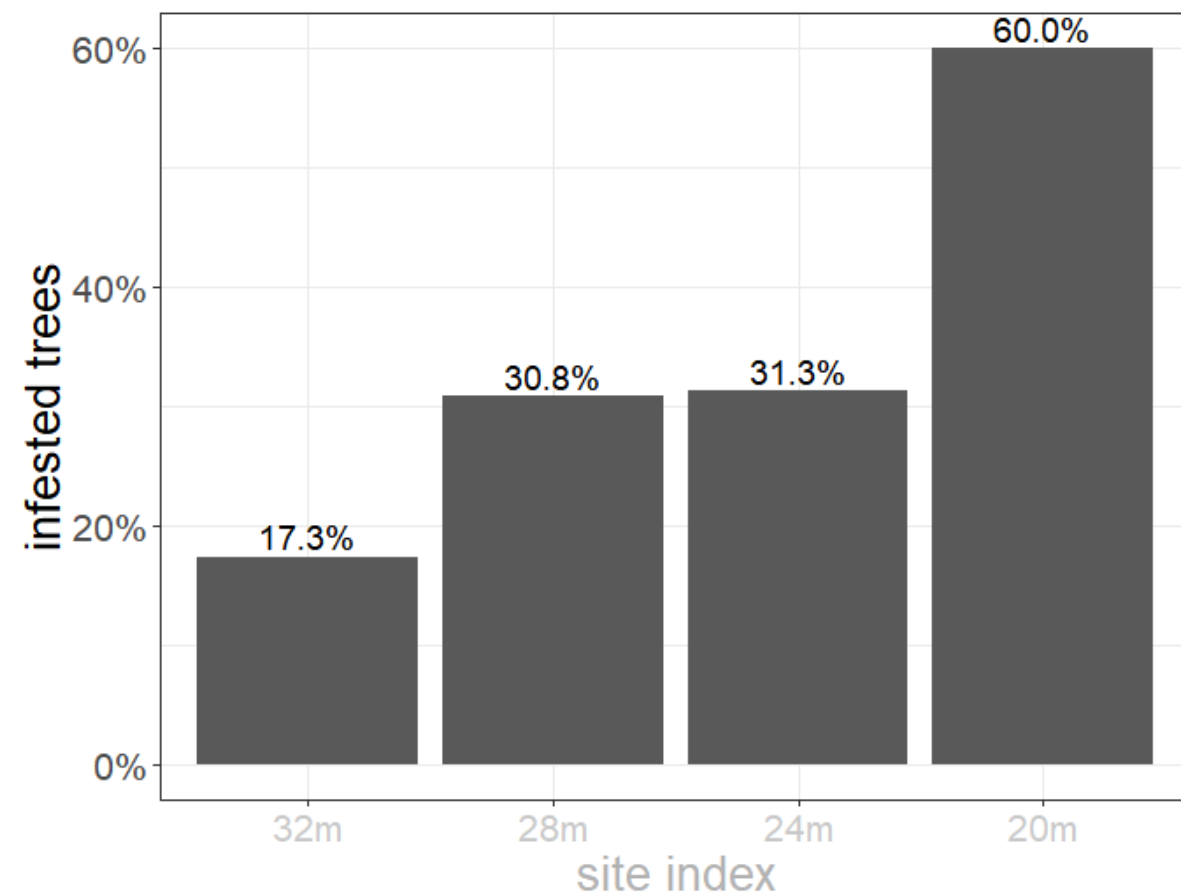
Current (m) and project ranges (n-p) of Scots pine (*Pinus sylvestris*)
optimistic (n), moderate (o) and pessimistic (p) climate change scenarios.



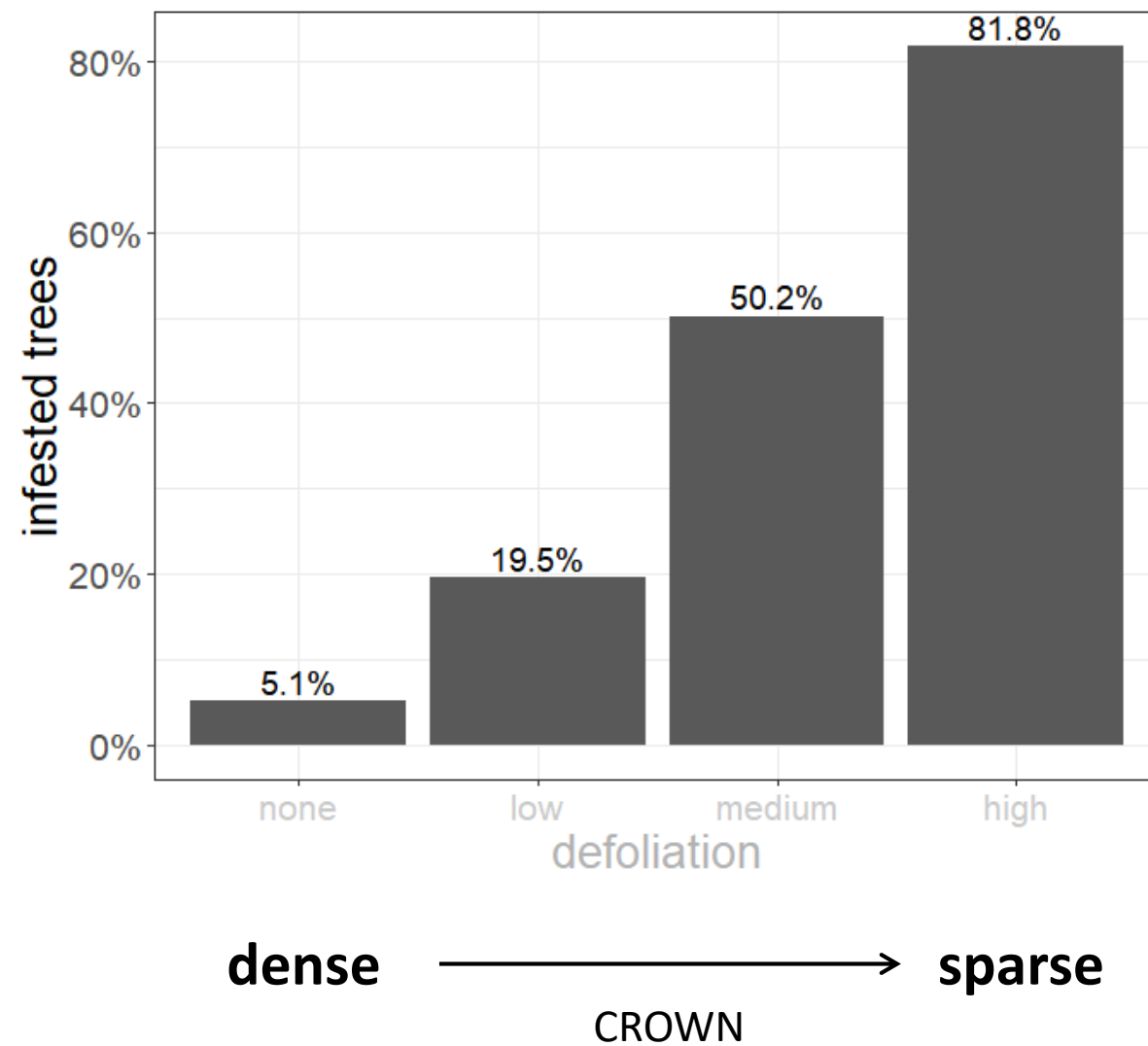
Mistletoe – “*top*” or “*light*” problem?



younger $\longrightarrow$ older
FOREST AGE



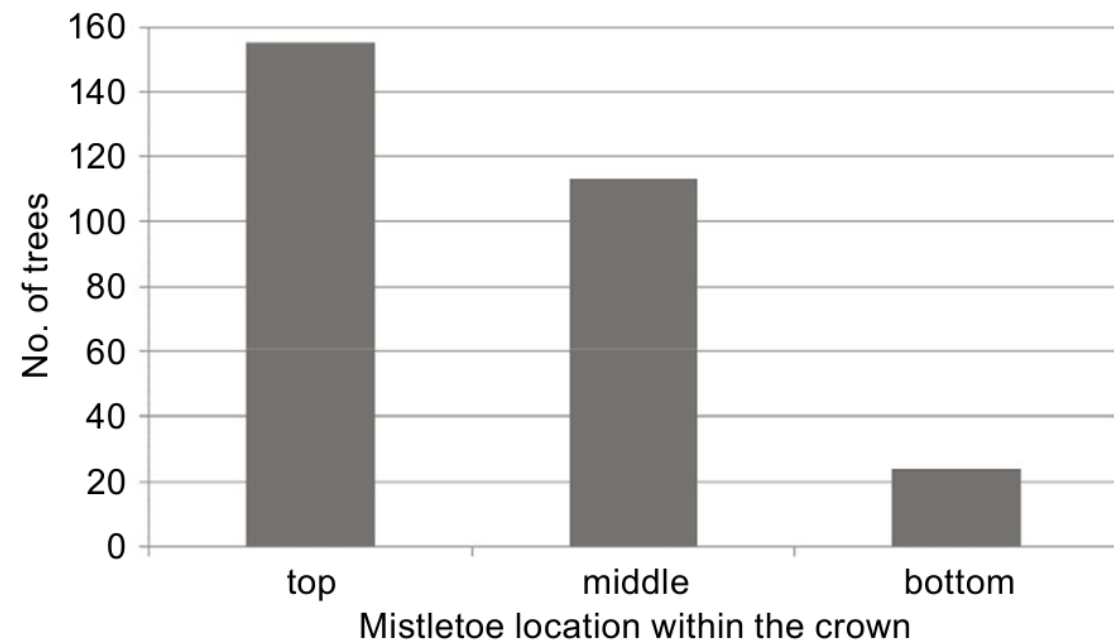
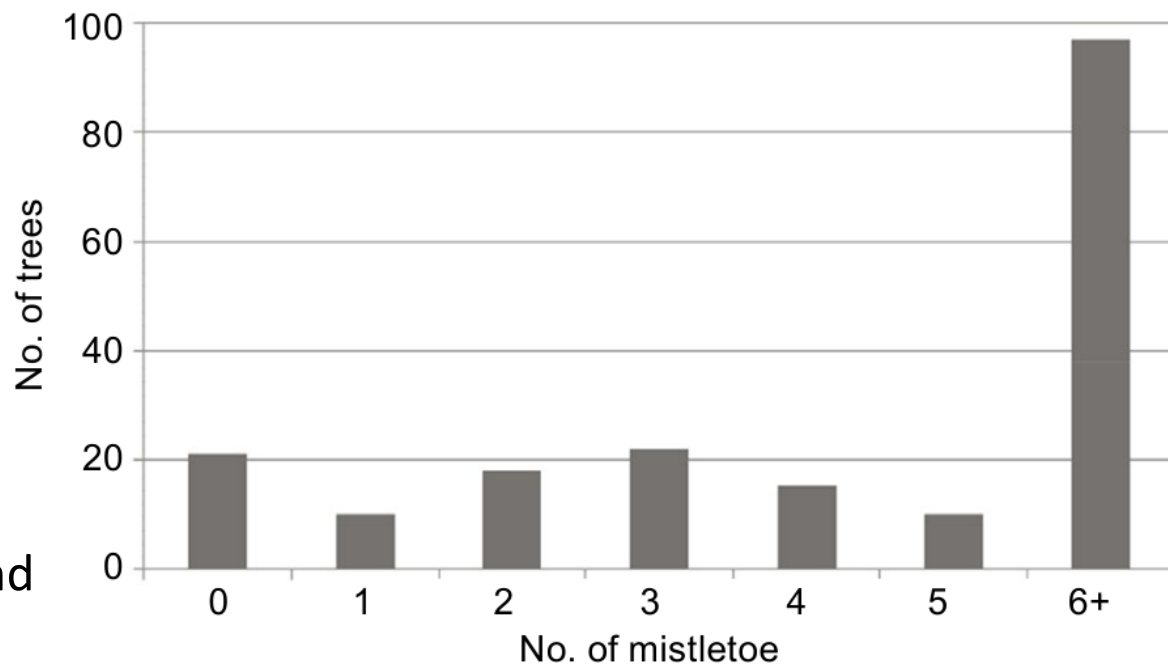
high $\longrightarrow$ low
SOIL FERTILITY





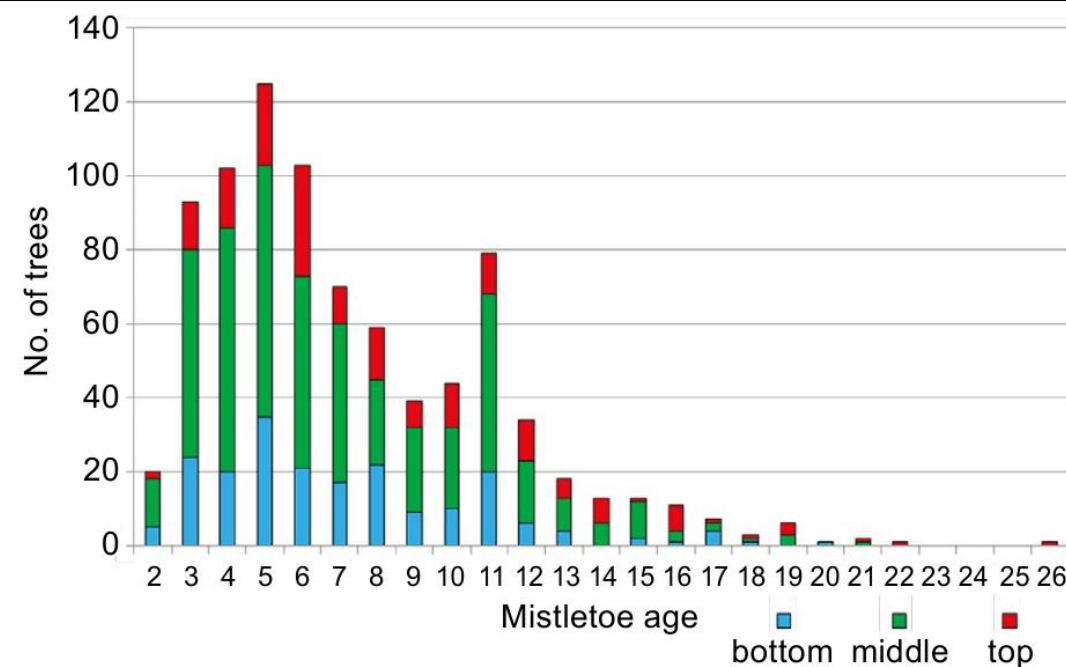
Mistletoe – do we see the whole problem?

Ground level



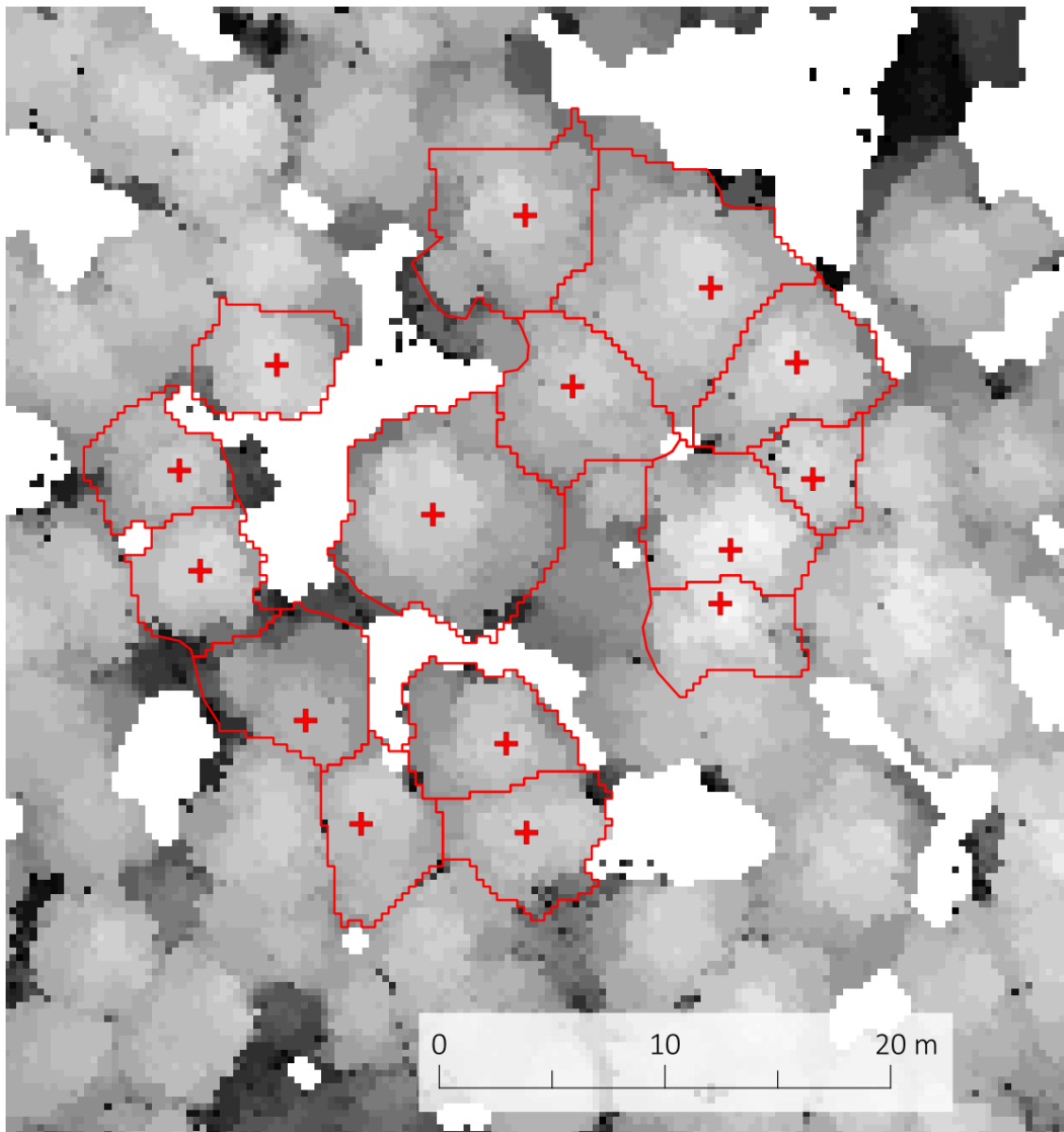
After cutting

289





Mistletoe – do we need different perspective
to see the problem?



Tree inventory from aerial perspective – red outlines mark trees



Aerial photography and mistletoe detection

Take Home Message

- Mistletoe is **spreading to the north** due to climate change
- It likes trees that provide **more light**
- It is more abundant near **forest edge**
- There is **much more** mistletoe on a tree that you can see
- It can be detected using **remote sensing**

