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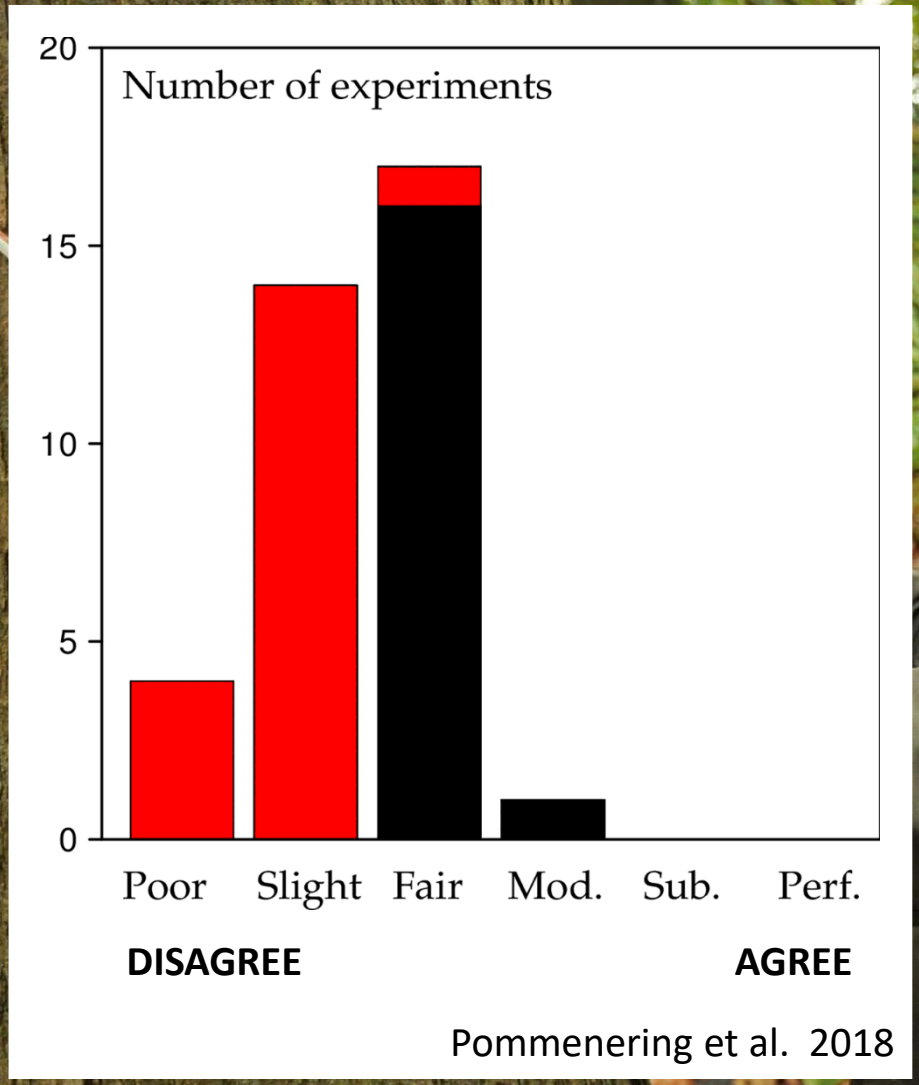
Which tree to pick? Unravelling tree selection decision-making in marteloscope settings

Cosyns Hannes • Schulz Tobias

WSL

EFI

UNI FREIBURG



Pommenering et al. 2018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Stockholm
Tallinn
ESTONIA
LATVIA
North Sea
Baltic Sea
DENMARK
UNITED KINGDOM
IRELAND
Dublin
Irish Sea
Manchester
Birmingham
London
North Sea
Hamburg
Bremen
NETHERLANDS
Amsterdam
Hannover
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NORTH MACEDONIA
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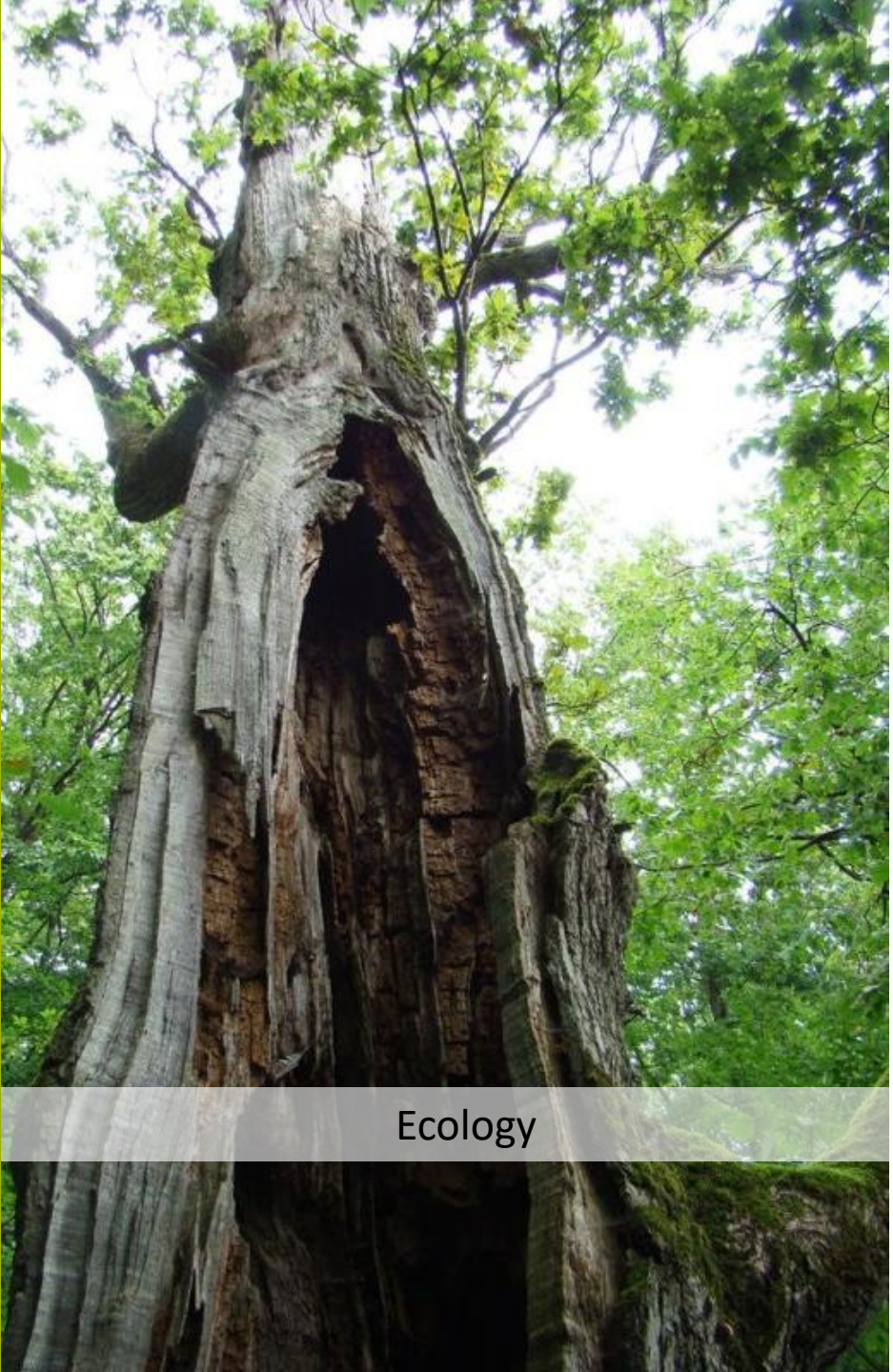
SPAIN
Rome
Bursa
ALBANIA
Balearic Sea
Valencia
Naples
Tyrrhenian Sea
GREECE
Izmir
Seville
Athens
GIBRALTAR (U.K.)
Alboran Sea
Ionian Sea
Palermo
Sea of Crete


Ecology


Economy

Goals

- What kind of quasi-experimental **research designs** are possible on **marteloscope**?
- Do **different treatments** (information about microhabitats, framing of decision problem) have an impact on tree selection?
- Do **different professional backgrounds** / formations make a difference with respect to tree selection?

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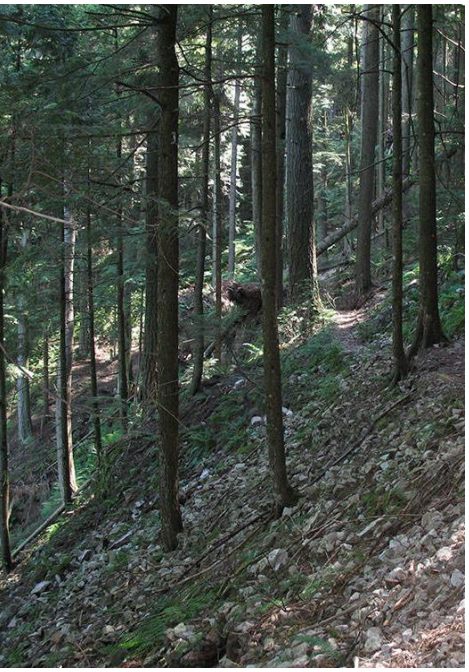
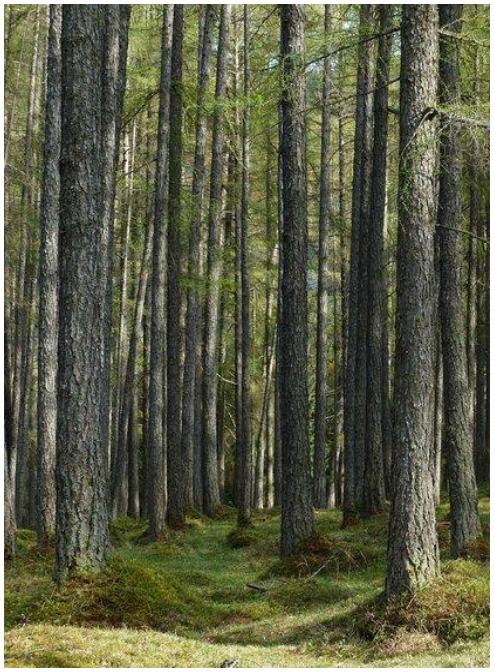
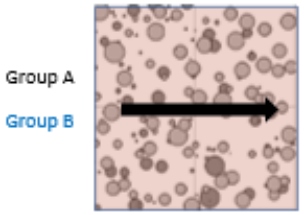





Rosskopf, Steinkreuz, Groenendaal, Renan, Ettingen, Sihlwald, Falkenberg, Jägerhäuschen

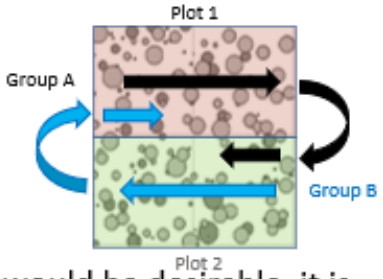
Methods

- **No post observation but entire plot (no randomization)**



  - Different treatments
  - Post observation on the same plot makes no sense

- **Split plot to allow for pre/post observation (no randomization possible)**
  - Groups can conduct exercise at the same time
  - "Learning Treatment" can be applied after first half is completed



- **Randomization**
  As much as a randomization of groups would be desirable, it is very difficult to implement in a marteloscope exercise setting as
- **Group comparison (no experimental design)**
  This is the only design that can be applied to examine the impact of professional backgrounds / formation / "schools of thought"
- **Collection of qualitative data, observation**
  Qualitative data can be collected during the exercise (following and observing decision makers) or with group discussions after the exercise, to make up for lacking experimental design or collect gain additional insight in i.a. underlying reasoning
- **Ex-post facto / large N Statistical approach**
  Exercises on the plot should be minimally comparable or meta-data about the type of exercise should have been collected to allow ex-post control. Quality of available data so far too low.

Combine research and praxis

Praxis/Educational objectives

Contraints
(e.g time, group size, hardware, randomization)

Research objectives

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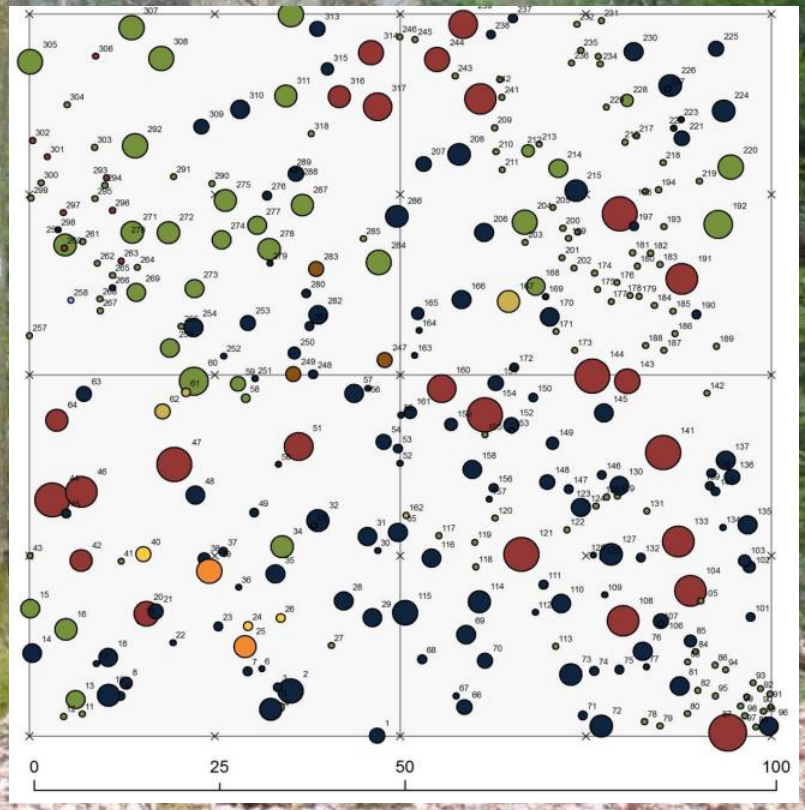
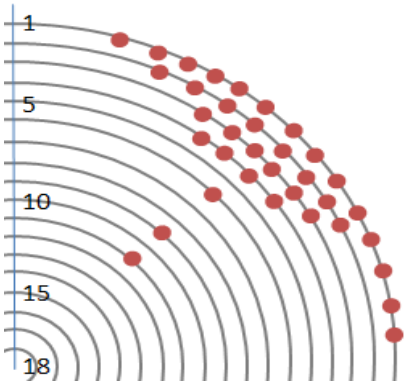
Rosskopf

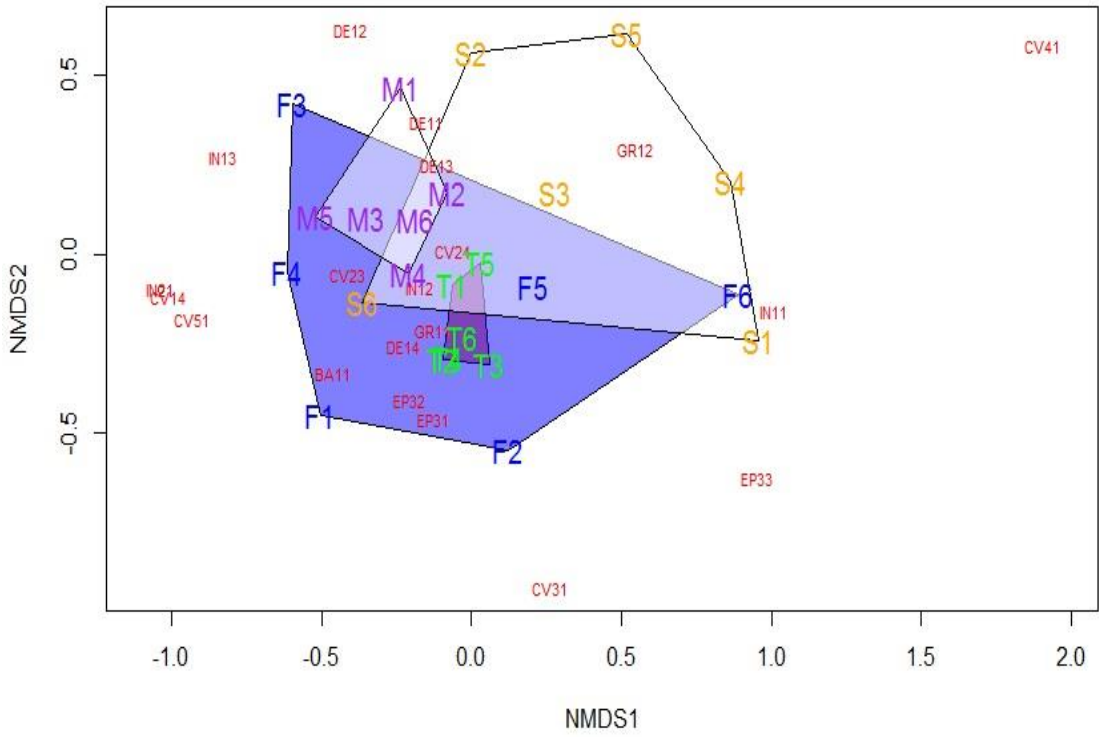
Freiburg - Germany



Group comparisson:
Habitat tree selection

- 6 Students
- 6 Waldbautrainer
- 6 Revierleiter





Cosyns, H., D. Kraus, F. Krumm, T. Schulz and P. Pyttel (2018). "Reconciling the Tradeoff between Economic and Ecological Objectives in Habitat-Tree Selection: A Comparison between Students, Foresters, and Forestry Trainers." Forest Science 65(2): 223-234.

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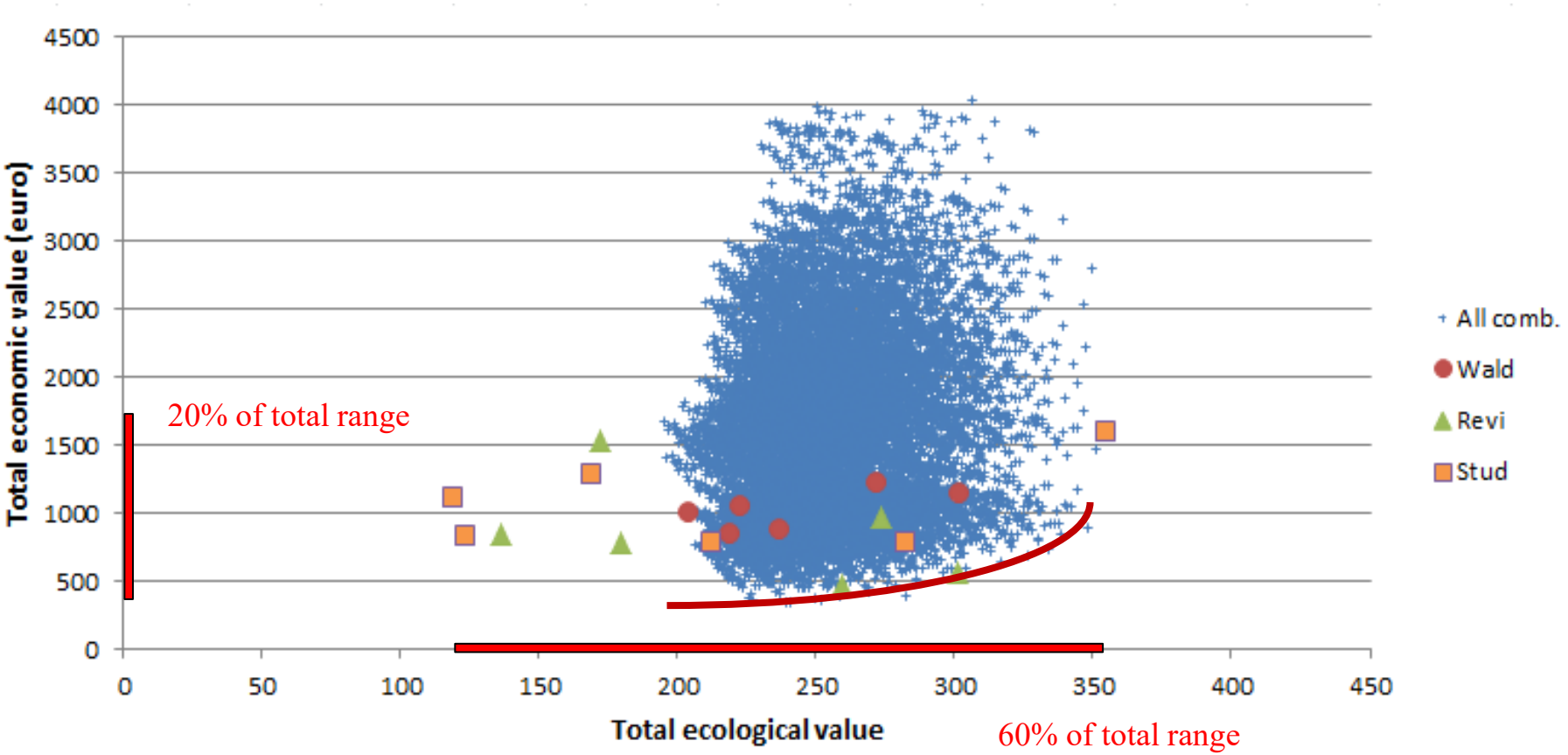
Group comparisson:

Habitat tree selection



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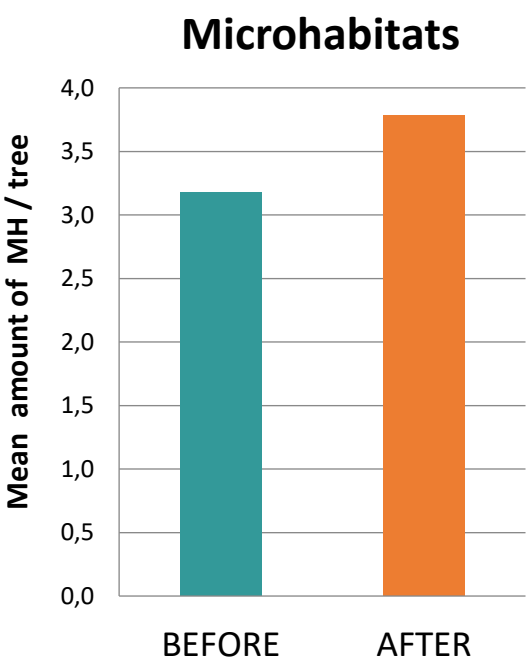
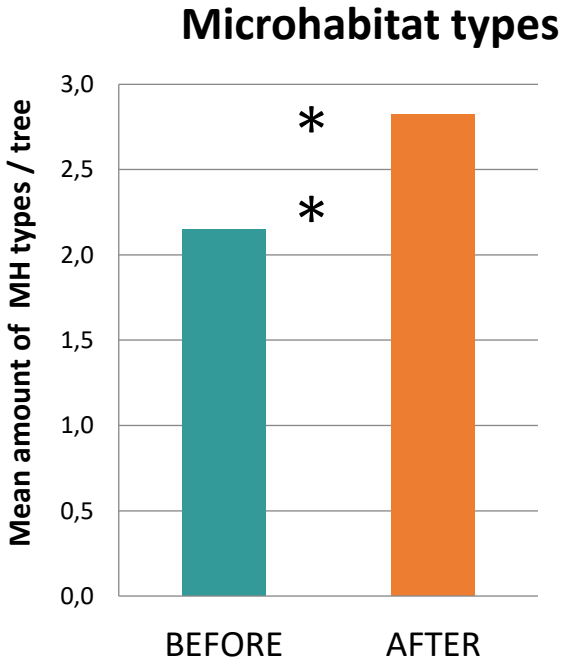
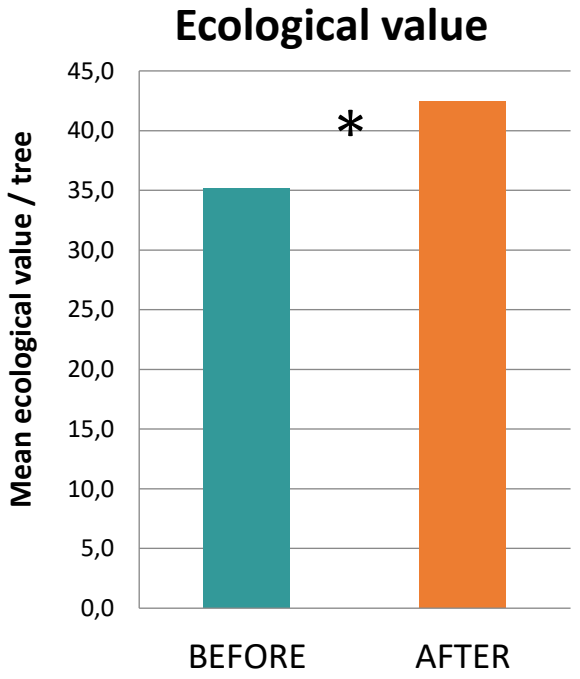
Quasi-experimental design – split plot:
Habitat tree selection







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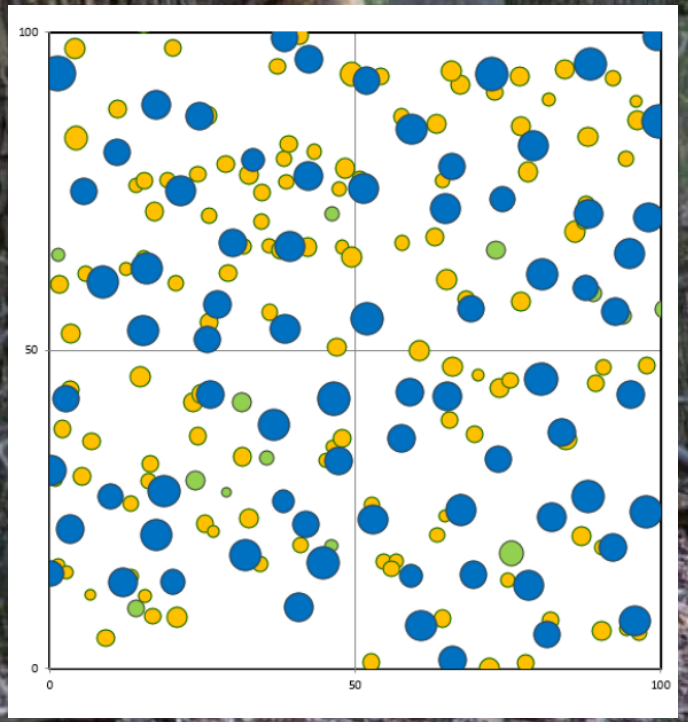
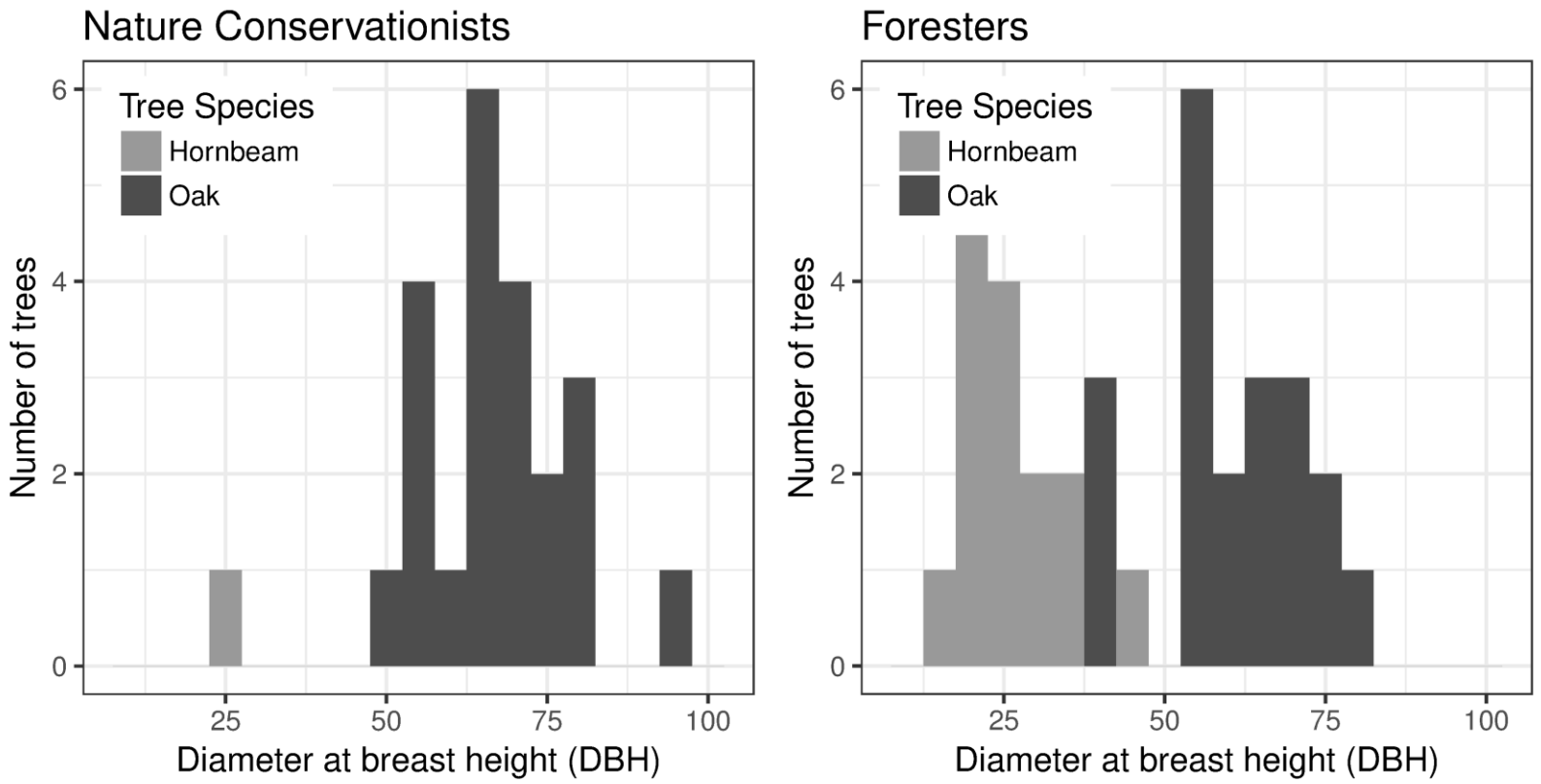
Jägerhäuschen

North Rhine - Westphalia - Germany



Group comparison: Foresters & Nature conservationists

Habitat tree selection



Cosyns, H., B. Joa, R. Mikoleit, F. Krumm and A. Schuck, G. Winkel, T. Schulz (2020). "Resolving trade-offs in integrated forest management: comparing tree selection practices of foresters and conservationists“ Biodiversity and Conservation 29: 3717–3737.

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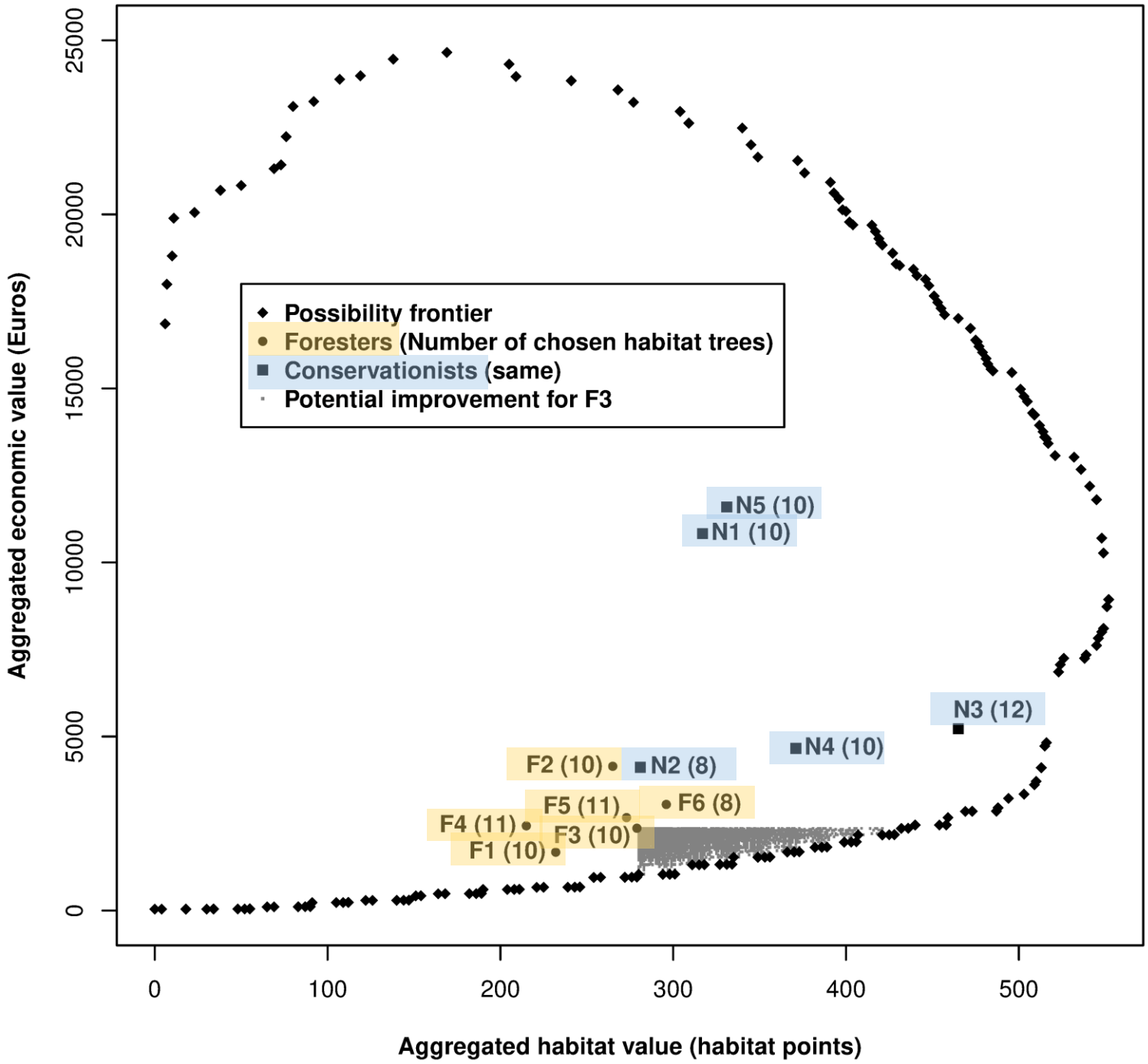
Possibility frontier
Foresters (Number of chosen habitat trees)
Conservationists (same)
Potential improvement for F3
N5 (10)
N1 (10)
N3 (12)
N4 (10)
F2 (10)
N2 (8)
F5 (11)
F6 (8)
F4 (11)
F3 (10)
F1 (10)
Aggregated economic value (Euros)
Aggregated habitat value (habitat points)
0
5000
10000
15000
20000
25000
0
100
200
300
400
500

Lessons learnt

for research

- “No treatment” group virtually impossible to implement
- “Learning Treatments”: long-term effects?
- Group comparisons bear the strongest effects but only allow for the weakest research design regarding causality. Collection of qualitative information!
- Challenge: conflicting stakeholder groups on the same plot at the same time

for praxis

- Learn about the motivations and restrictions of others
- Potential as exchange platform ex. between forestry nature conservation

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BLIJFT DEZE OPLEIDING OOK AAN JE PLAKKEN?

Deel jouw ervaringen en foto's op sociale media met de hashtag

#TRAINEDBYINVERDE

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EFI – Martelscopes Flanders

Hannes Cosyns

- Tessenderlo - Pine

- Sonian – Beech & oak

INSTITUUT
NATUUR- EN
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Kris Vandekerkhove

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Merci … bis im Wald