Berner
Fachhochschule

Wildnispark Zürich Sihlwald: die Rückkehr der Urwaldreliktarten

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Zurich Wilderness Park Sihlwald

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2000: end of wood harvesting

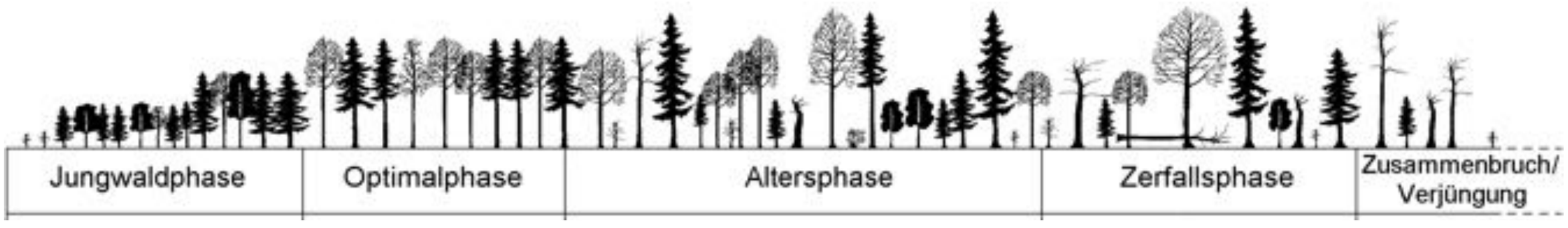
2007: protected as a natural forest reserve

2009: Nature Discovery Park

2016: biodiversity monitoring

> 500 years of management

Further development?

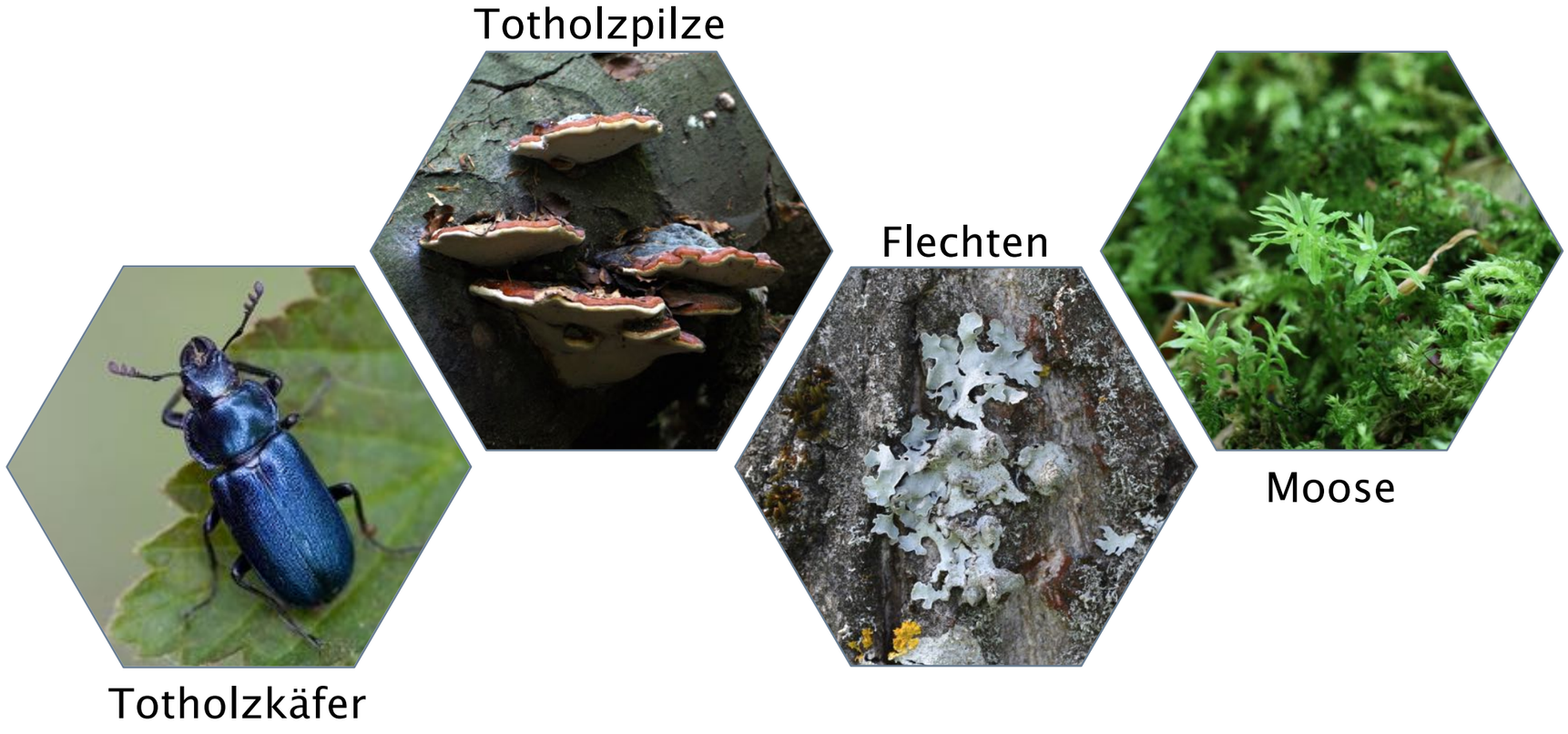


Goals

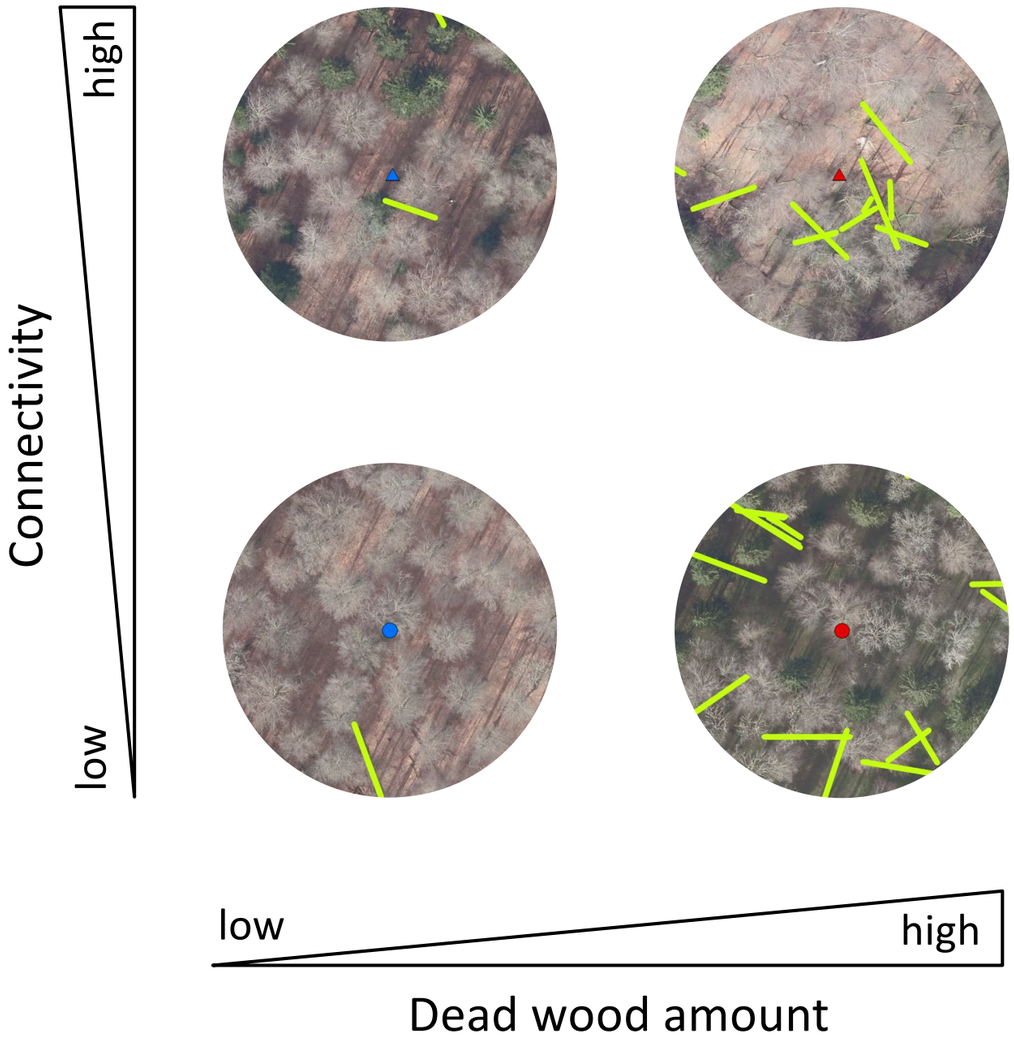
- Study species that depend on late forest development stages and deadwood
- Starting point for a longterm monitoring

Questions

- What is the effect of deadwood amount and connectivity on biodiversity?
- On which scale do we find effects?



Plots


high
Connectivity
low
low
high
Dead wood amount


0
0.5
1 Kilometers

Species richness

beetles: 327 (41 - 116)
fungi: 387 (7 - 55)
bryophytes: 74 (4 - 31)
lichens: 35 (0 - 8)

Highlights

Zitronengelbe Trametes

Grünes Koboldmoos

Vielsporige Braunsporflechte

Small brown beetle without a german name

Highlights

Zitronengelbe Trametе

Grünes Koboldmoos

Vielsporige Braunsporflechte

Abraeus parvulus

Model averaging – on different scales

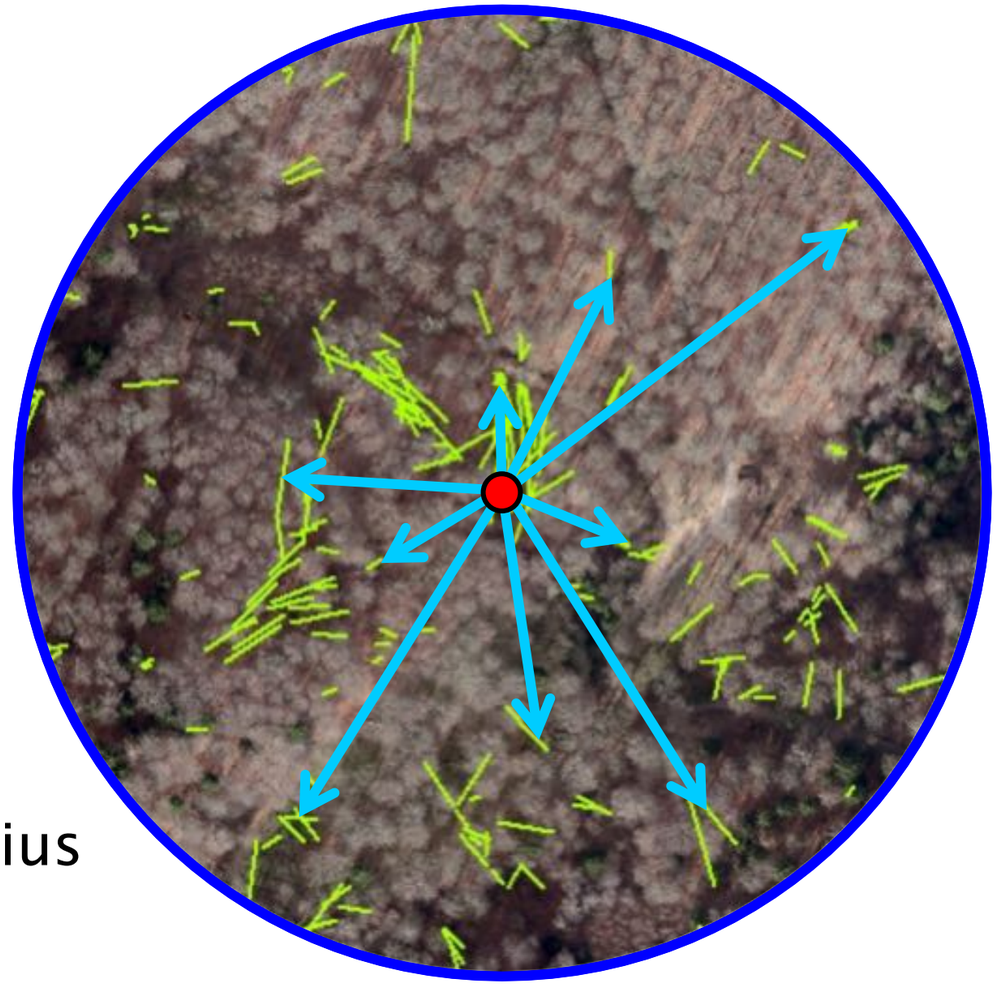
- Forest variables (tree height, basal area per ha, tree species diversity, …)
- Environmental variables (temperature, light availability)

- Dead wood

  Dead wood amount

  Median distance to the plot

  20m → 200 m



- Average of best models per scale/radius

Conclusions

- Species richness of saproxylic species is affected by dead wood amount and it's spatial distribution
- Patterns differ between species groups
- Patterns depend on scale

beetles

fungi, bryophytes, lichens

Conclusions

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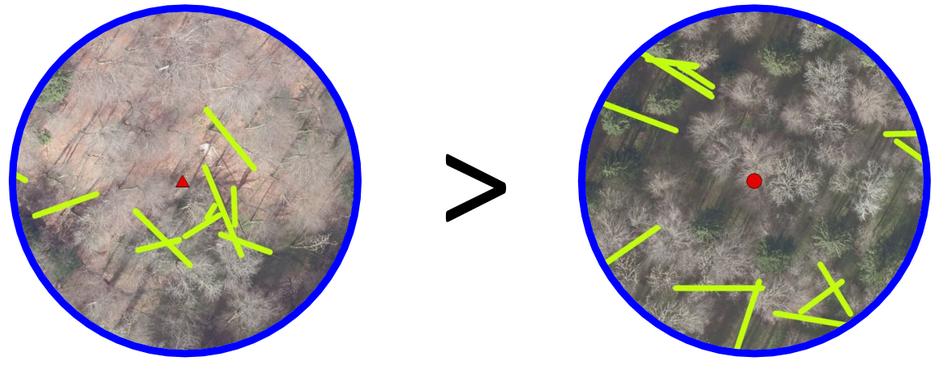
Implications

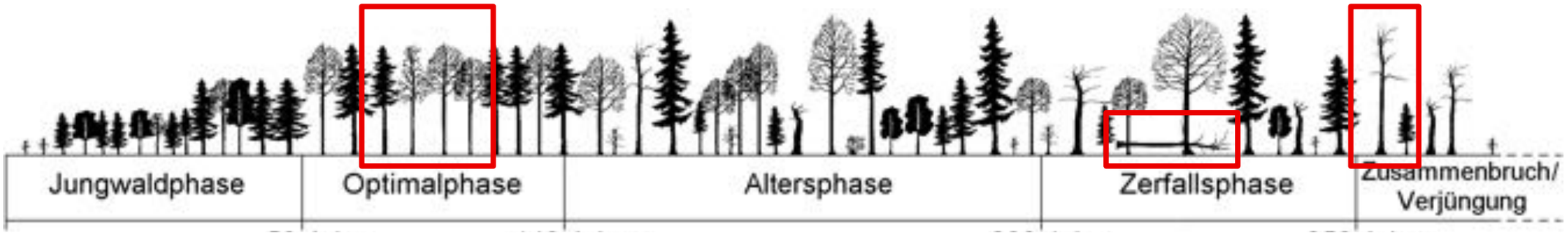
- Conservation measures should not only focus on dead wood amount on one scale and single species groups
- Forest management → dead wood enrichment
- Large protected areas important to study forest and/or deadwood dynamics



What's next?

tree species diversity

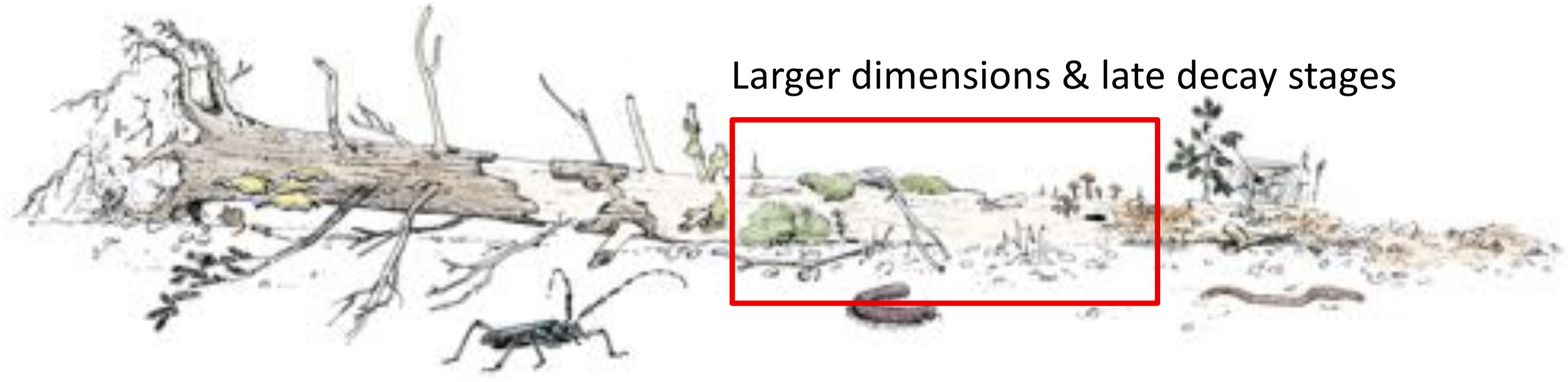
deadwood amount



Forest development?

Development of biodiversity?

Larger dimensions & late decay stages



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Funding: FOEN, Pilot study «Ökologische Infrastruktur in Pärken»

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