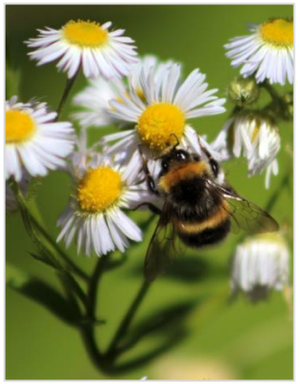
Biodiversity monitoring at Berchtesgaden National Park

Biodiversitätsmonitoring im Nationalpark Berchtesgaden


Danilo Ré 2024 - Friday, January 19th

Robin Reiter, Lisa Geres, Tobias Richter, Sebastian König, Sebastian Seibold and Hanna Kastein

Comprehensive questions …

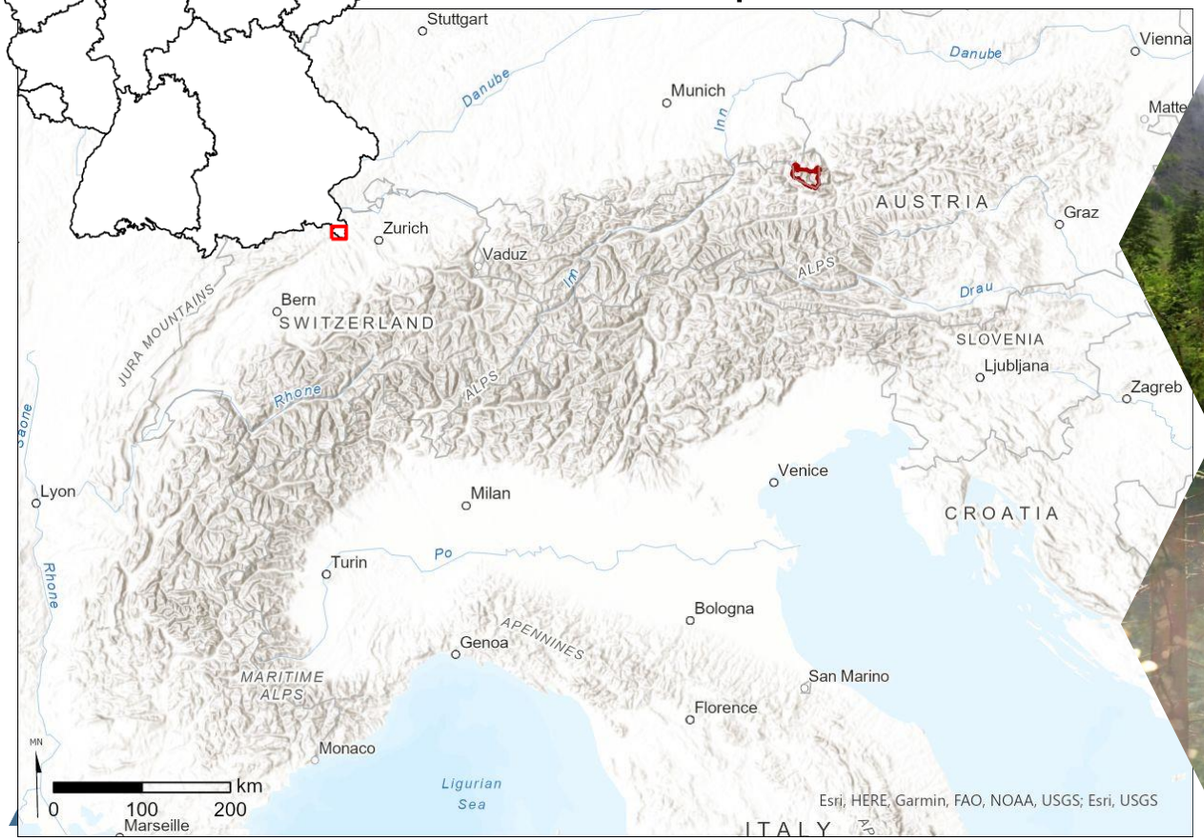
- How do ecosystems and species communities change over space and time?
- Which role does the climate change play now and in future?
- Which role does succession and natural disturbances play?
- Which kind of impact has anthropogenic use?





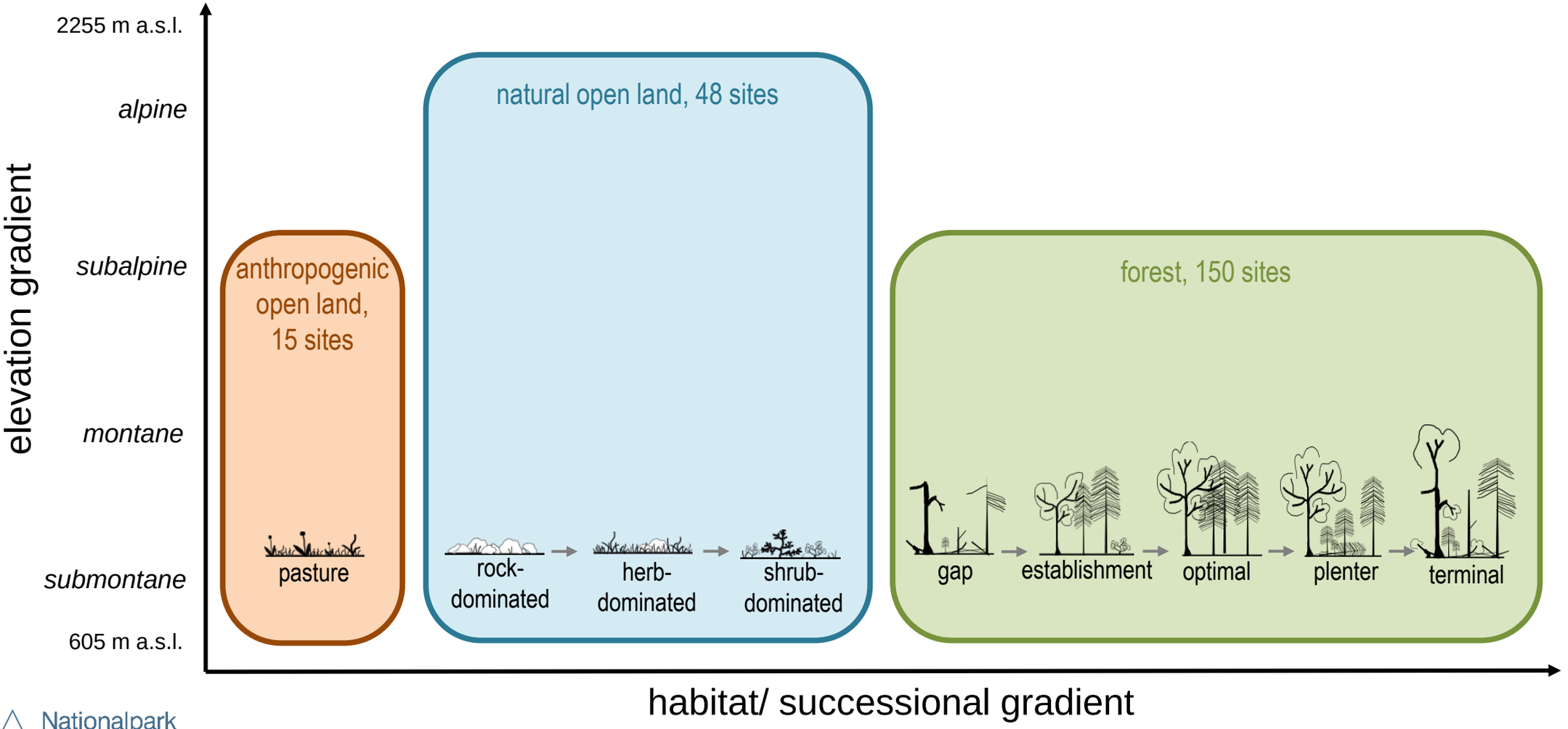
Berchtesgaden National Park

- 21,000 hectares (= 210 km^2)
- Alpine character (elevations from 603 m - 2713 m a.s.l.) and alpine specialists
- Natural ecosystem dynamics (e.g. avalanches, landslides, …)
- Landscape mosaic with wide range of (micro-)habitats



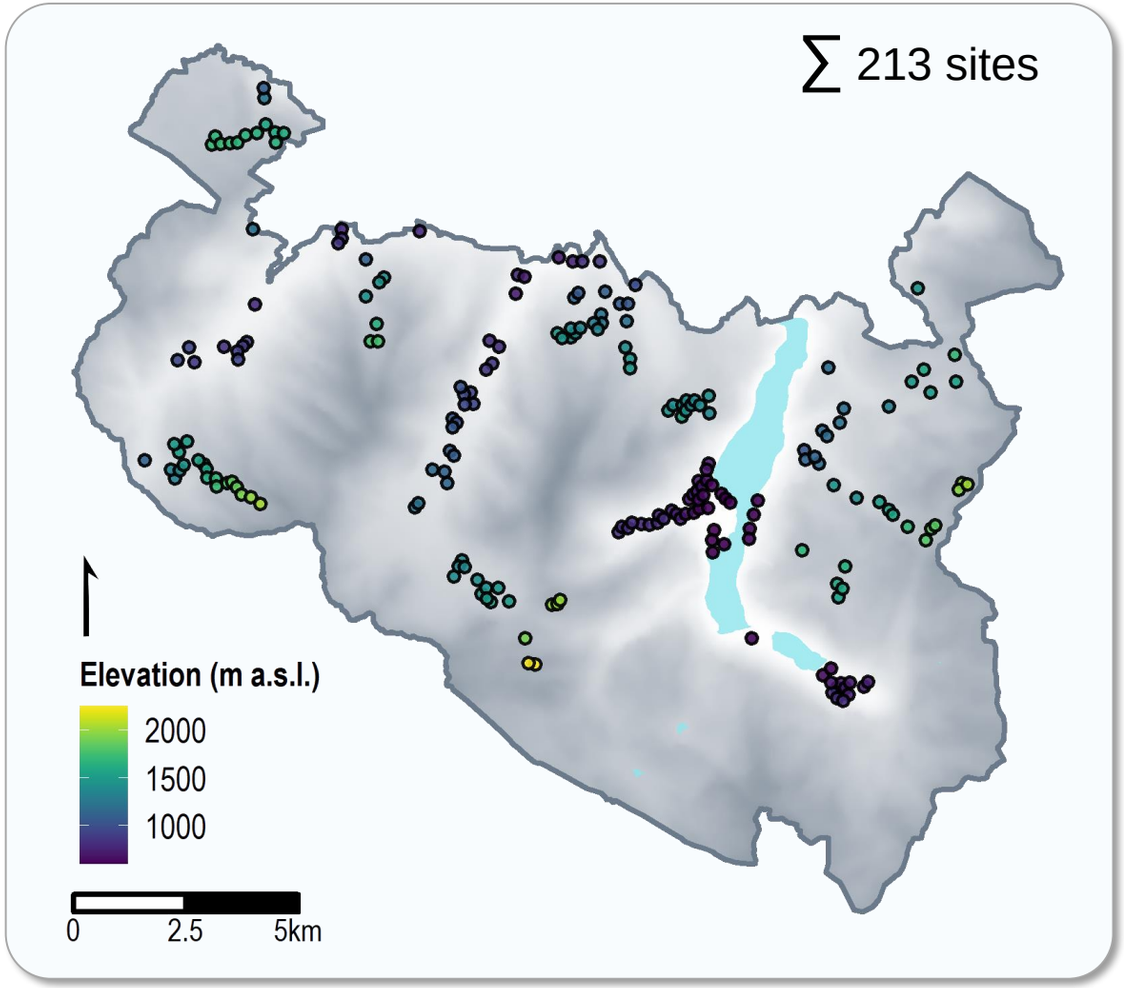
Design

1. Make use of our natural gradients

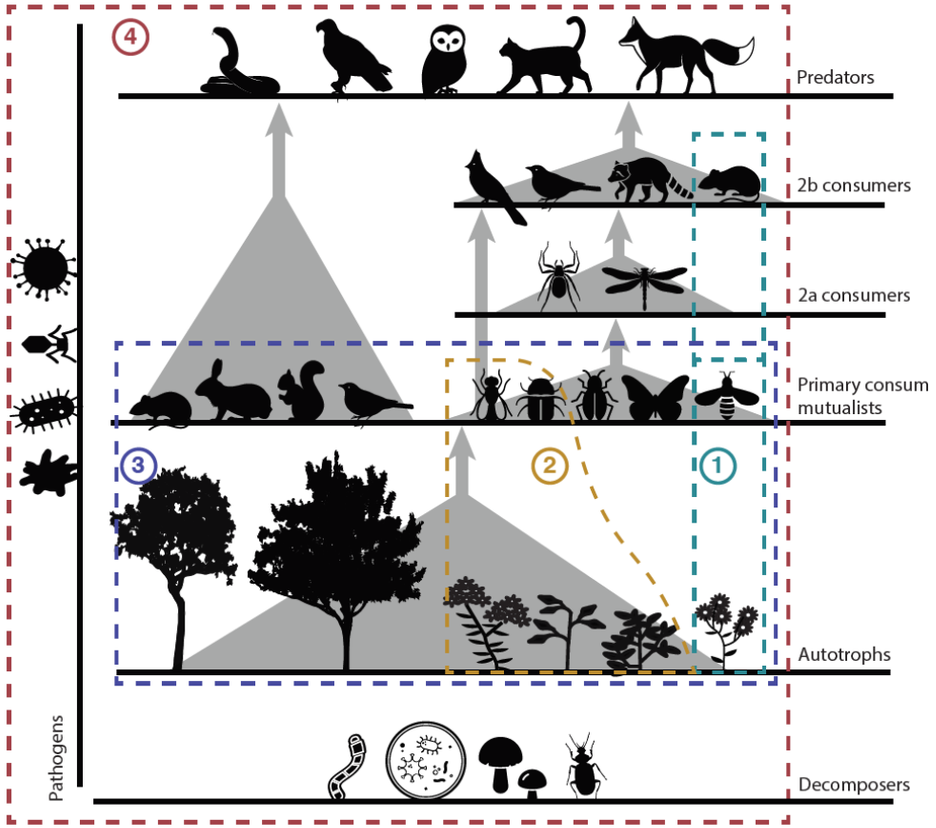


Design

2. Cover all landscapes within the park



3. Integrate all trophic levels

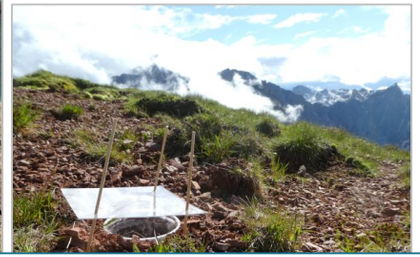


Seibold et al. (2018) *Trends in Ecology & Evolution*

Data Collection

Birds

Small and large mammals



Insects (and other arthropods)

CONSUMERS

Plants

PRODUCERS

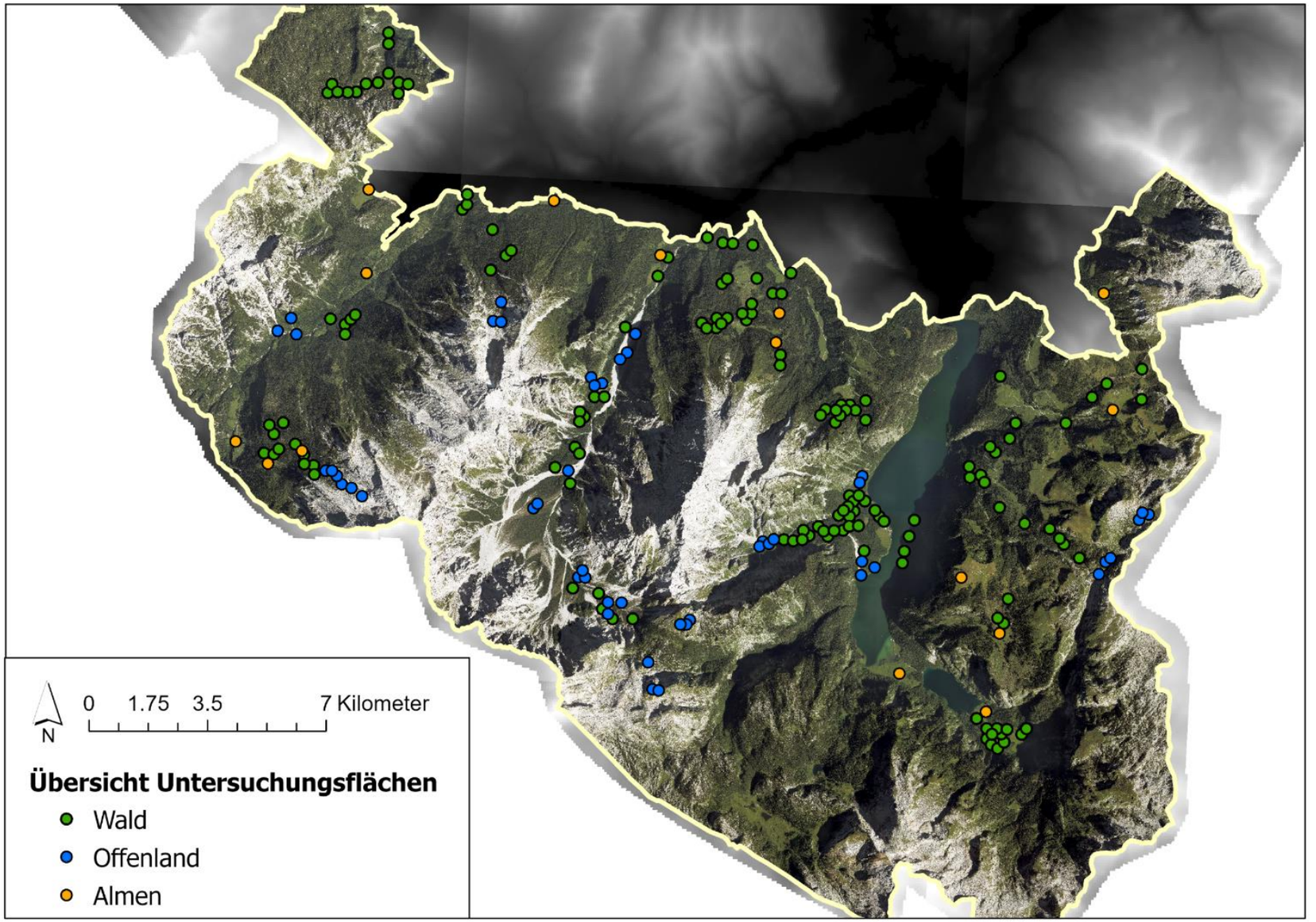
Soil bacteria and fungi

Dead wood bacteria and fungi

DECOMPOSERS

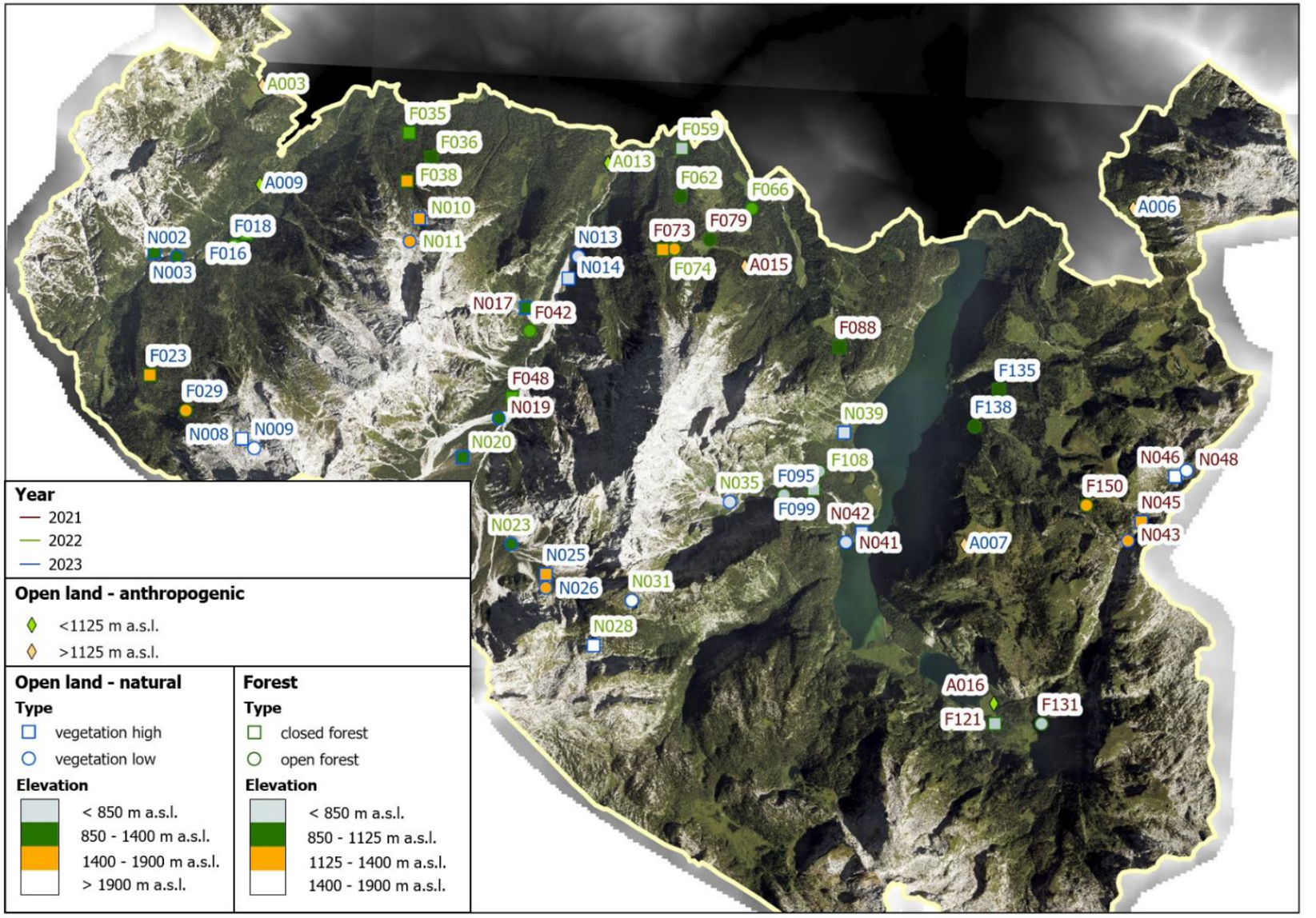
Timetable

- 2021 & 2022 → Inventory of all 213 plots
- from 2023 onwards → permanent monitoring at 55 plots, triannual cycle → 18 (+1) per year



Permanent monitoring plots

- 18 – 19 plots/ year
- Data collection every 3 years
- 24 x natural open land
- 24 x forest
- 7 x anthropogenic open land



First results…

- Plants: 575 species (max: 60 species at 16 m^2)
- Insects and other invertebrates
  - incl. rare and recent species (i.e. *Pericallia matronula)*
  - 346 moth species
  - 705 beetle species
- Birds: 86 species
  - incl. rare species, i.e. *Tichodroma muraria*, *Prunella collaris, Dendrocopos leucotos*, *Tetrastes bonasia*, *Ficedula parva, Aegolius funereus*.
- Bats: 10 species
  - incl. 5 species (FFH directing): *Rhinolophus hipposideros, Barbastella barbastellus*, *Myotis emarginatus*, *Myotis myotis*, *Myotis bechsteinii*.

Thank you for your attention!