

The role of sheep grazing for conservation of alpine grassland habitat: a case study from Eastern Alps

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Habitat Preciso Project – background and aims

Problems:

- Abandonment of traditional practices; pasture not grazed at all for 3 years → habitat degradation
- Local breed conservation at risk: lack of turnover, difficult cooperation, part time activities

Proposal:

Cooperation to return to graze the pasture on Monte Coppolo, with Lamon sheep breed, by implementing a rotational grazing plan

AIM: This research aims to explore the potential role of sheep grazing to support the restoring of the habitat in an abandoned pasture.



Lamon Sheep breed (Dad-IS 2024)

Local breed – meat production

N oh heads: 285

Herds: 18

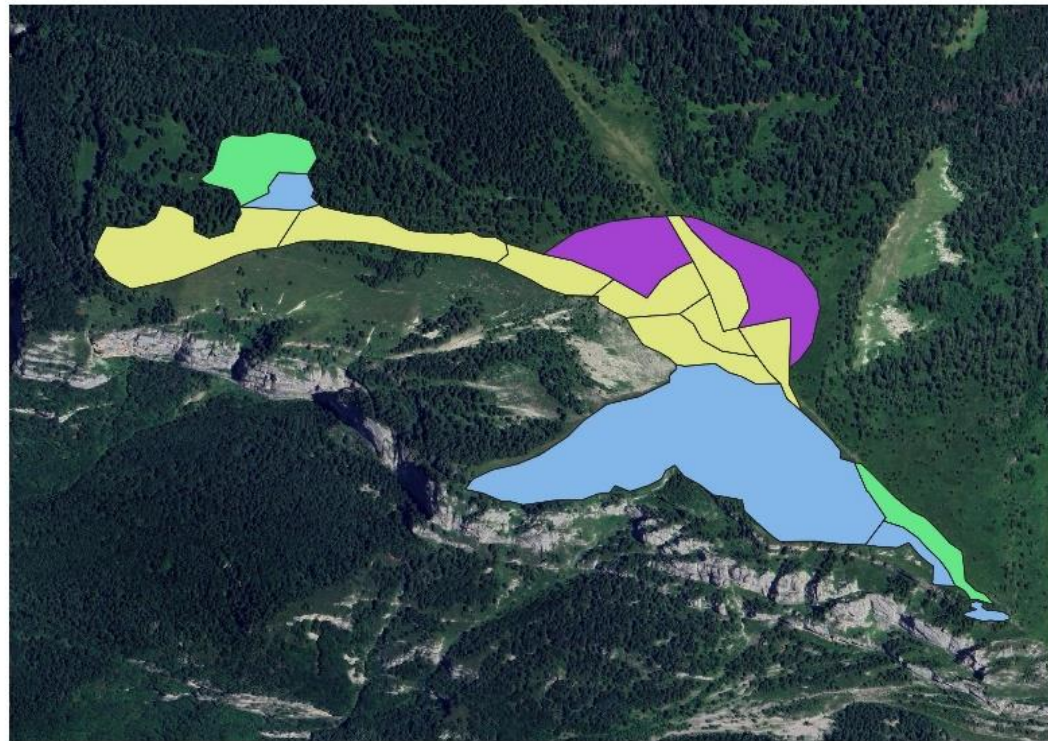
Trend: decreasing

Risk status: critical

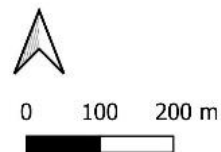


Biodiversity on Monte Coppolo

Study area - vegetation groups



Vegetation groups
Deschampsia
Nardion
Poion
Shrubs
Google Satellite



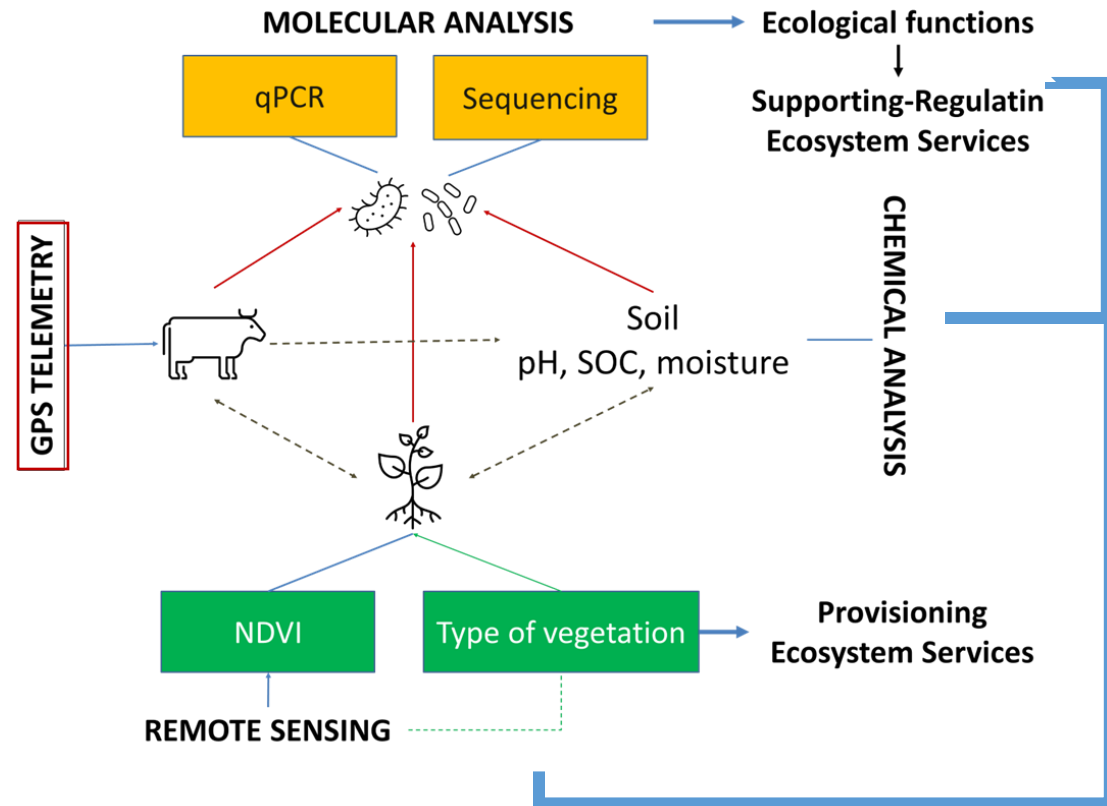
Implementation of the grazing plan

- 2022 – proposal of rotational grazing plan
- Summer 2023 - a first group of 30 sheep grazed 5 ha
- Summer 2024 - a flock of 85 sheep grazed the entire area (13.5 Ha)

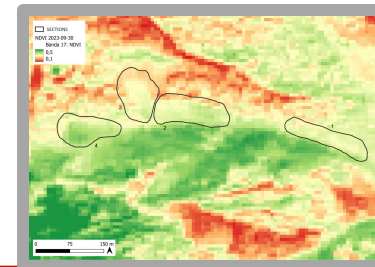
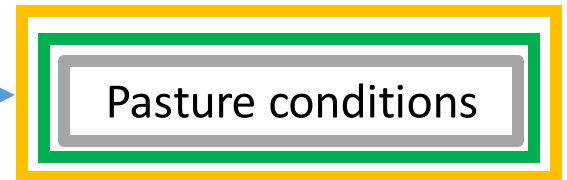


Material and Methods

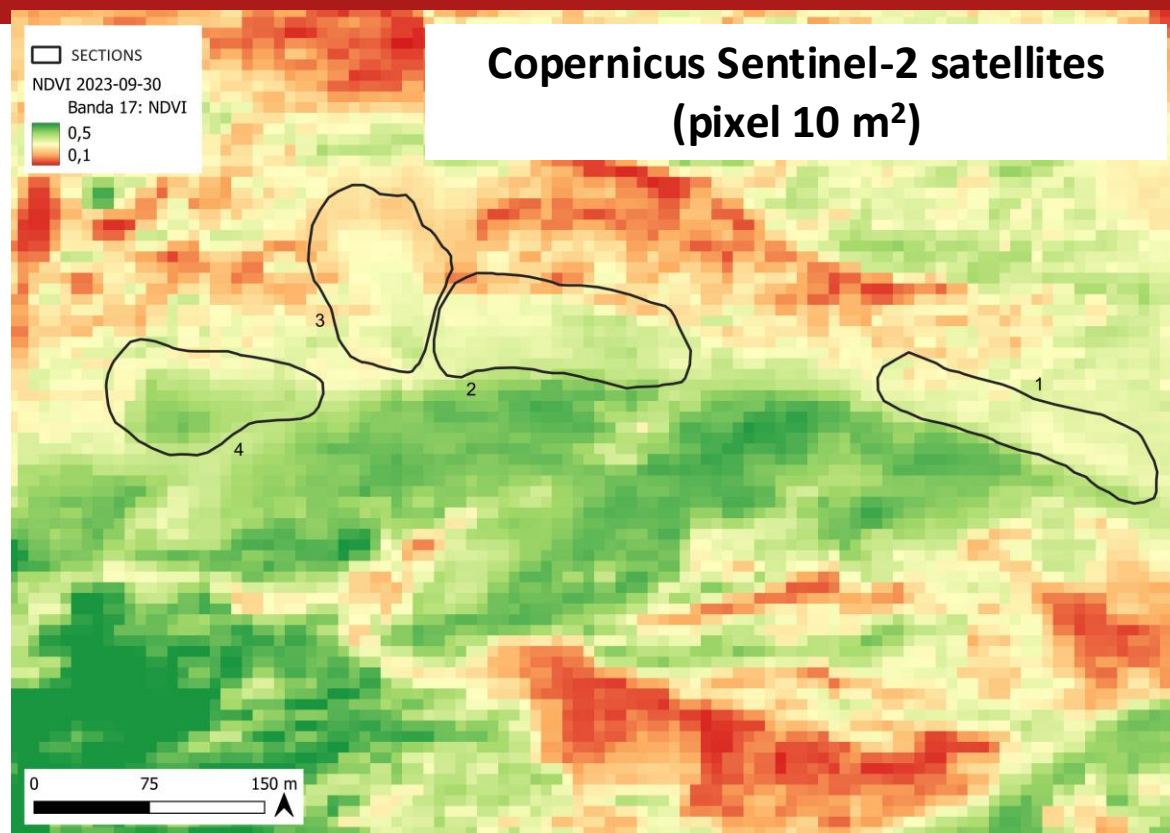
INTEGRATED APPROACH Operative Framework



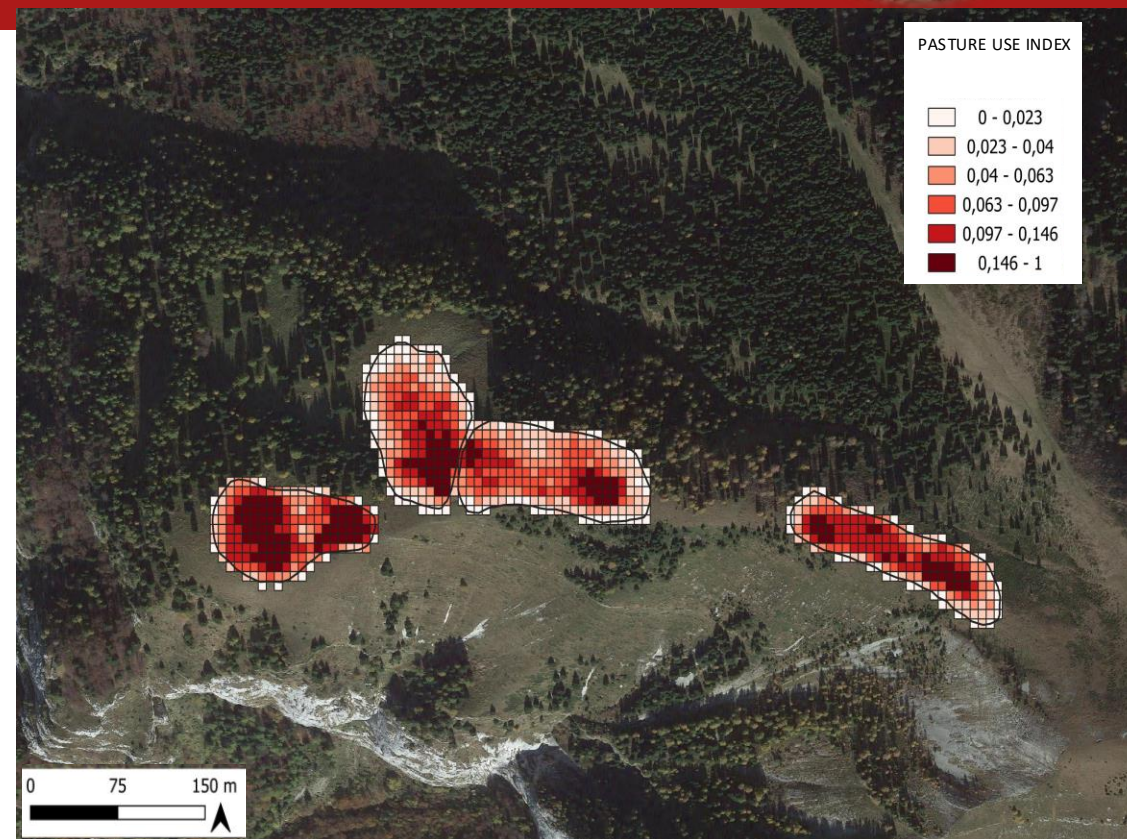
Pasture use
intensity



Vegetation –NDVI for biomass estimation



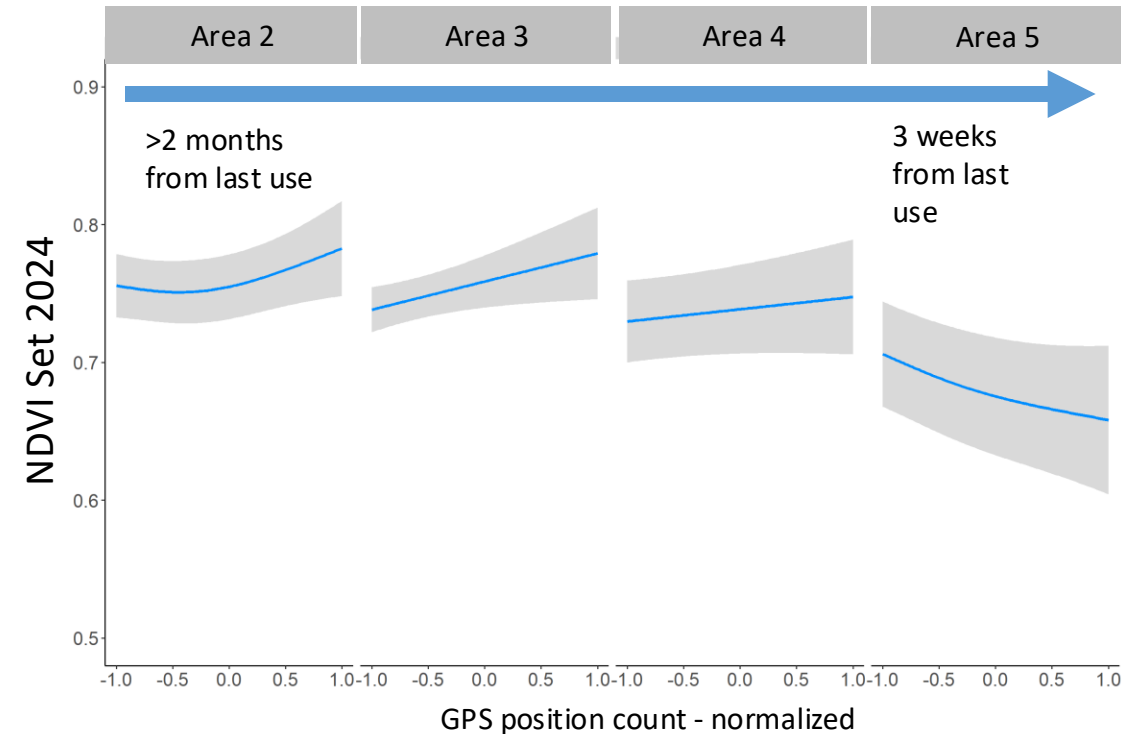
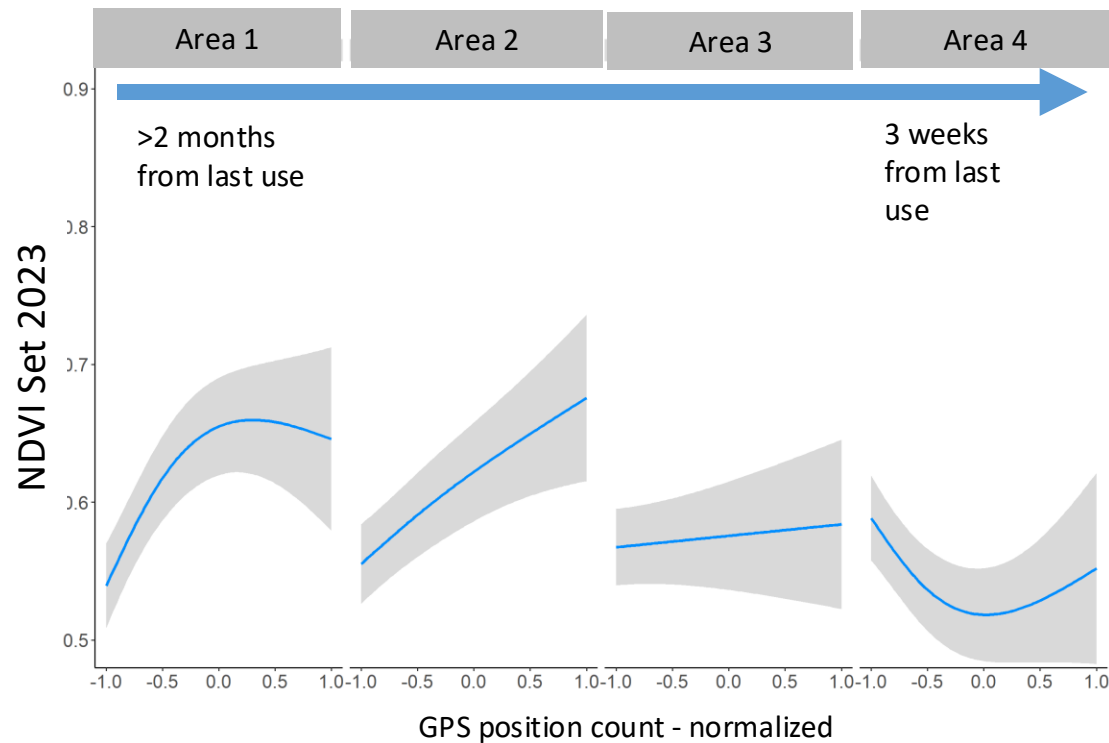
GPS tracking – pasture use index



Status of pasture after
grazing season



Relationships between pasture use intensity and vegetation indexes



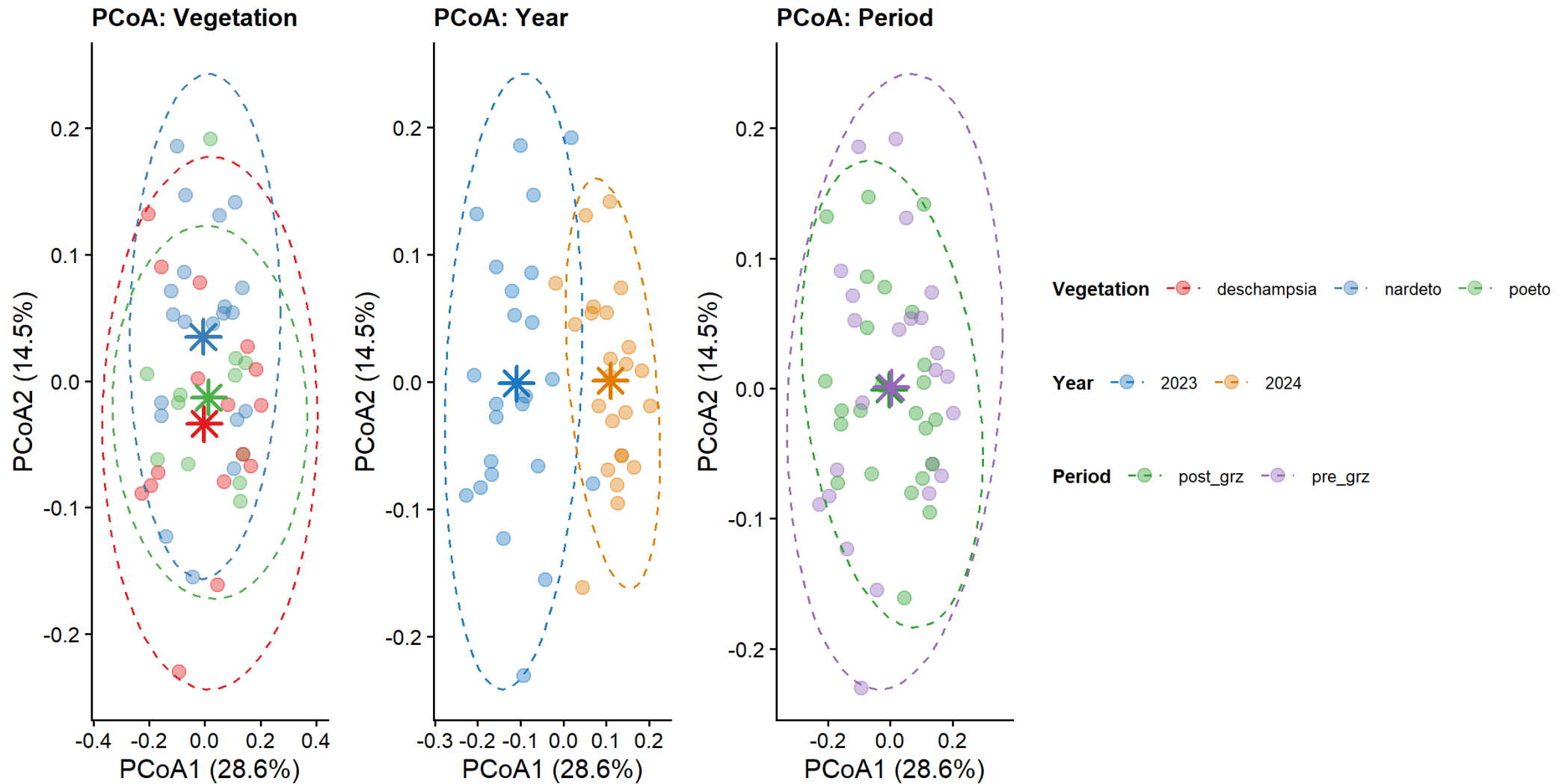
Pasture use intensity (normalized GPS positions count) was significantly related to NDVI of end September (2023-2024)



Vegetation types and year clusterized microbial diversity

Principal Coordinate Analysis (PCoA) — Bac Phy

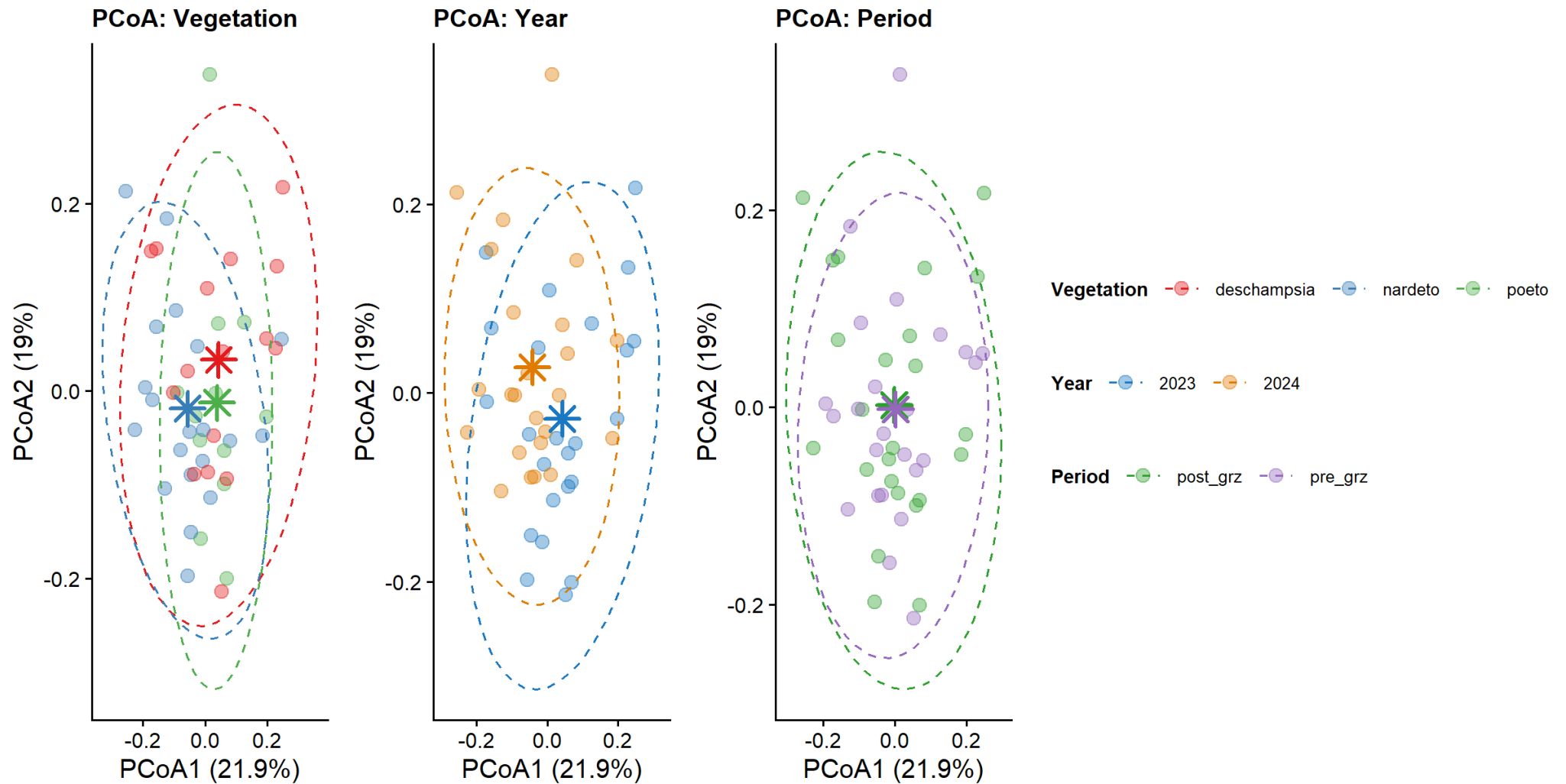
Metric ordination using real Jaccard distances (Axes 1 and 2)



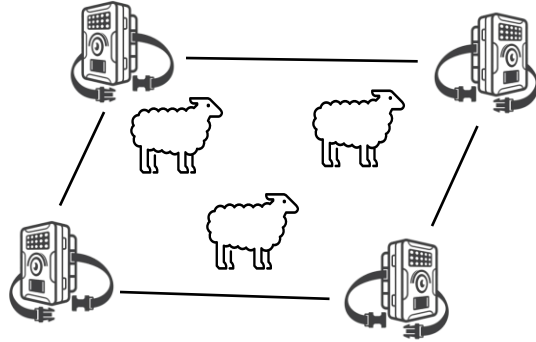
Vegetation types and year clusterized microbial functions

Principal Coordinate Analysis (PCoA) — Bac Faprotax

Metric ordination using real Jaccard distances (Axes 1 and 2)

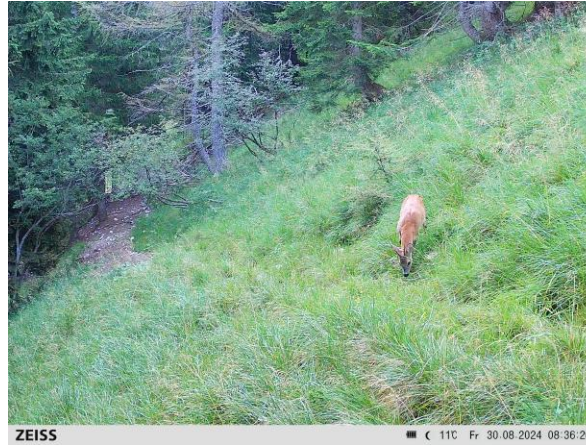


Interface between sheep and wildlife



Camera Traps

Flock monitoring and interactions with wildlife



Conclusion and next steps

- Sheep grazing can contribute to the restoring of the habitat in an abandoned pasture
- Potential implications: info for the implementation and monitoring of multifunctional grazing plans aimed to promote productive and non-productive ecosystem services of pastoral systems
- Limits – problems to solve:
 - lack of cooperation: last year the pasture was not grazed
 - Economic sustainability and risk of predation
- The synergies/collaboration between farmers, shepherds, policy makers and research institutes is fundamental to give sustainability to the project

