https://biodiversa.se/project-ideas/

Our projects Researchers News Publications

Project ideas

+ Butterfly ecology and behaviour on Gotland
+ Changes in landscape and populations
+ Oak biodiversity
+ Biodiversity assessment at Finsjöbrännan, Småland

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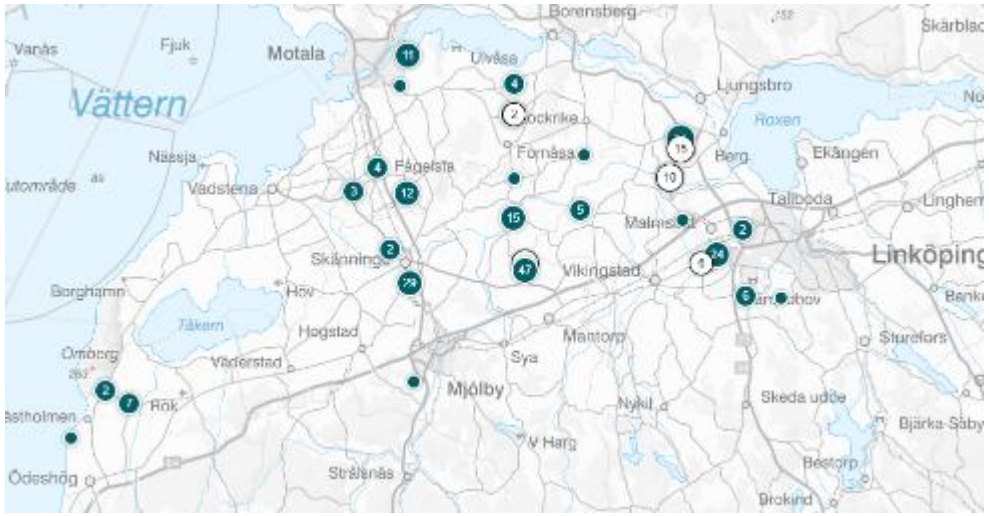
Ecology and behavior of *Megachile lagopoda*

Megachile lagopoda (Stortapetserarbi, NT)

Host plant - Centaurea scabiosa (Väddklint)

- Habitat requirements
- Pollen/nectar plants
- Nesting choice
- Population dynamics
- Local population size
- Connectivity
- Genetic structure



Spatial distribution of the metapopulation

Capture-mark-release?

Megachile Leafcutter bees (this is another species in the same family)

Burnet moths

Habitat preferences
Landscape distribution
Changes over time
Population dynamics
- Local population size
- Connectivity
- Genetic structure

Ontogenetic shift?

Small blue (*Cupido minimus*)

Habitat preferences
Landscape distribution
Changes over time
Population dynamics
- Local population size
- Connectivity
- Genetic structure

Ontogenetic shift?

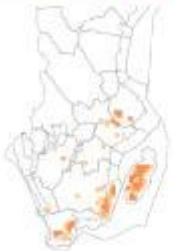
Ecology and conservation of the Rattle grasshopper (Trumgräshoppa)

Projects ideas:

+ 1. Long-term population dynamics of rattle grasshopper:
+ 2. Habitat restoration and management:
+ 3. Metapopulation dynamics of grasshoppers:
+ 4. Impact of climate change on grasshopper life cycles:
+ 5. Role of grazing in habitat maintenance:
+ 6. Invasive species and predator impact:
+ 7. Public engagement and citizen science in grasshopper monitoring:
+ 8. Restoring fire as a management tool:
+ 9. Microhabitat preferences of rattle grasshopper:
+ 10. Conservation genetics of rattle grasshopper:

Ecology and behavior of threatened butterflies on Gotland

The Large Blue (*Maculinea arion*)



Swedish distribution
(red-listed as NT)

The marsh fritillary – (*Euphydryas aurinia*)

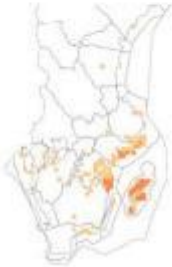
Unfertilized calcareous wet grasslands

Host plant: *Succisa pratensis*
Univoltine (one generation per year)
Adults fly from late May to late June

Lay eggs under the leaves of the host plant (50-500 eggs)
Larvae spin a silken net around the host plant– larvae autumn nest

Suitable habitat

The Apollo butterfly (*Parnassius apollo*)



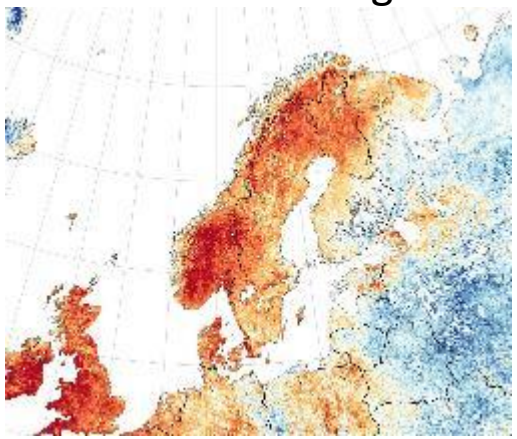
Swedish distribution
(red-listed as NT)

Host plant – *Sedum album*

Woodland brown (*Lopinga achine*)

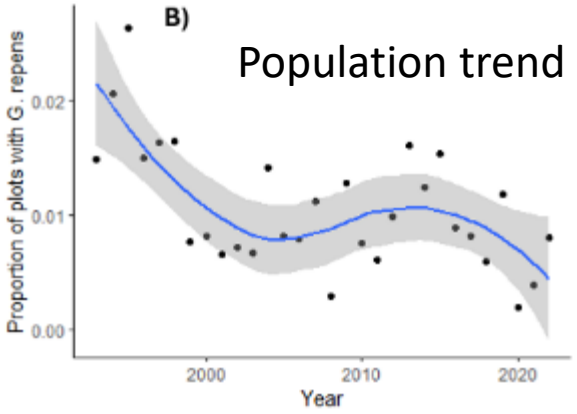
Threats

Climate change



Intense grazing

Expanding limestone quarry



Population trend

Ecology of a threatened orchid -
***Goodyera repens* (knärot)**

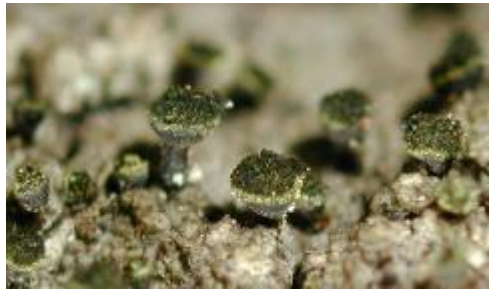
- Habitat requirements
- Pollination?
- Seed dispersal?
- Population size?
- Population dynamics

***"Goodyera repens* stops logging"**

The importance of connectivity for lichen occurrence

Do rare lichens associated with oak colonize younger trees in well-connected patches?

Cliostomum corrugatum



Calicium adspersum

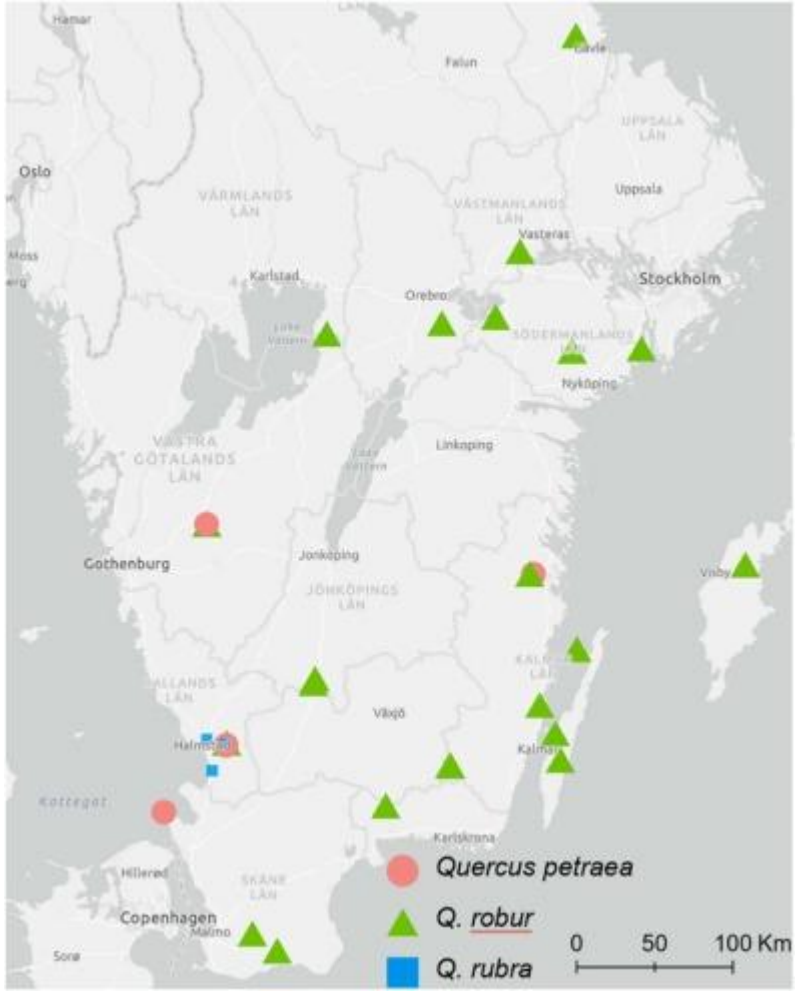
Large variation in connectivity

Spatial distribution of large oaks (>1 m in diameter)

Groups of oaks in a gradient of connectivity

The Oak Project

Biodiversity in oak-forests



Investigate the biodiversity within oak forests by conducting surveys of various taxa, including plants, insects, birds, and fungi. Assess how oak tree density, age structure, and health influence the richness and abundance of species.

https://quercusproject.com/

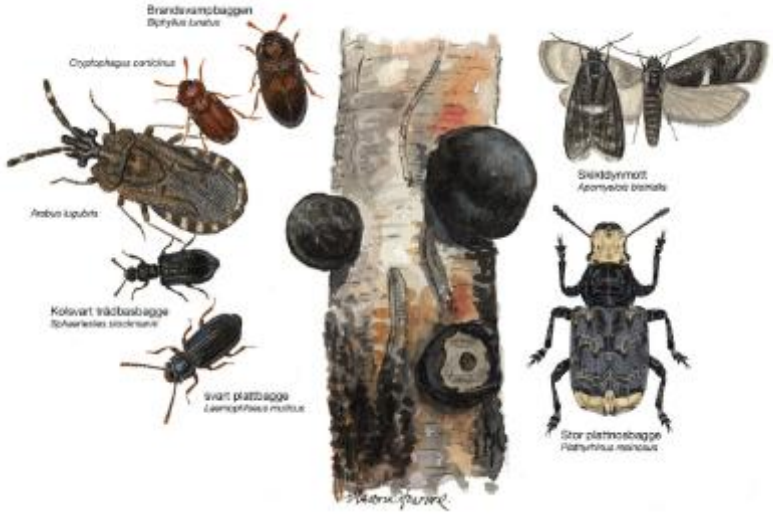
− Biodiversity assessment at Finsjöbrännan, Småland

Large fire area in Finsjö, Småland (2021)

Study the biodiversity at Finsjöbrännan, the site of a significant forest fire in Småland, to understand how fire events impact species diversity and ecosystem recovery. This project will focus on the immediate and long-term effects of the fire on various taxa, including plants, insects, birds, fungi, and soil microorganisms, and how these ecosystems recover over time.

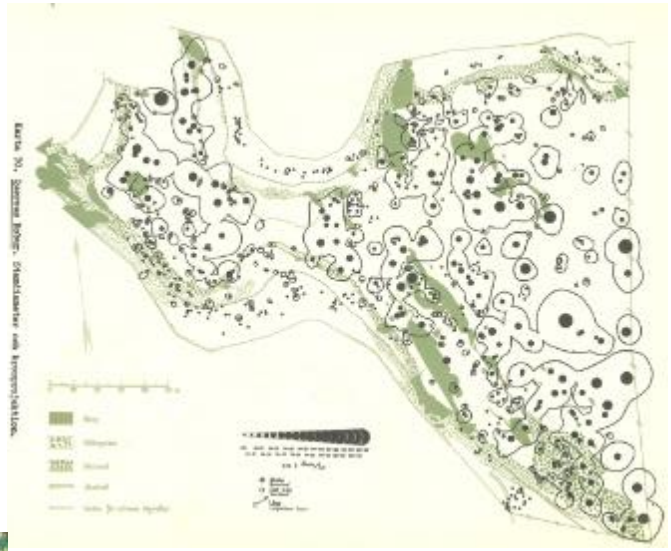
Project outlines:

+ 1. Baseline biodiversity survey:
+ 2. Fire impact assessment:
+ 3. Long-term biodiversity monitoring:
+ 4. Resilience and recovery dynamics:
+ 5. Habitat and microclimate analysis:
+ 6. Implications for forest management and conservation:

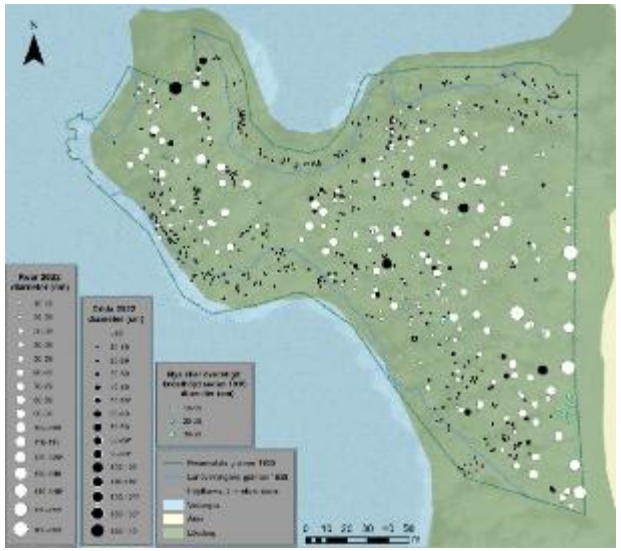


Tree dynamics and biodiversity at Vessers udde and Säby Västerskog

1935



2022



Long-term data on oak growth and mortality from “Vessers udde” which has been left for “free development” with restricted visitor access.

- Bean project – pollination and temperature (Andreas Nord, Lund)

- Crop, live-stock and land-use dynamics in Östergötland since 1700 (Per M)

Butterfly ecology in the Amazon

- Effect of tree fall gap age. New gaps, 20 year old gaps and intact forest
- Forest variation in understory and butterflies. Importance of small scale variation.
- Different baits, fermented bananas vs rotten fish
- Compare 200 year old forest area, with 700 years.

Evaluation of wetland restoration

- Three calcareous fens has been restored
- Reference untouched areas exists
- Vegetation and carabid beetles
- In collaboration with the county administration board of Östergötland

The importance of forest continuity for lichens in swamp forests

- Forest continuity is difficult to study
- Some lichens maybe good indicators
- Historical maps from the 1800s

Supporting matrix or real habitat?

- Current amount of grasslands is far less than historical levels, yet some grassland butterflies persist
- Are grasslands sources for butterfly populations in the landscape?
- Can alternative habitats maintain independent local populations?
- Study alternative habitats at different distances from grasslands

Influence of landscape composition on pollinator diversity

- How important is the surrounding landscape to support a rich pollinator fauna?
- Plants in pots will be used to estimate the influence of landscape composition on pollinator diversity.
- A gradient from poor landscapes dominated by arable fields to rich landscapes with a mix of forests, semi-natural grasslands and arable fields will be used.

How much do low-productivity forests contribute to the Kunming-MontrealTargets?

- Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity
- The protected areas should be ecologically representative.
- In Sweden, low-productivity forests cover 18% of the forested land and should, according to the current forestry law, be left unmanaged.
- In this project we will compare low-productivity forests with randomly selected woodland key biotopes and compare substrate diversity and maybe some selected species communities

Flight activity of Trichoptera

- A large dataset exists from 1970s
- Flight patterns, habitat selection can be analysed
- The same sites can be sampled again – unique data