Early stages of revegetation after two years of rewetting an extracted peatland in Sweden

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Ekebymossen

2017 — Peat extraction terminated

2018 May — Soil sampling and GHG measurements

2018 October — Introduction of *Sphagnum* fragments & Rewetting

2019 – 2020 — Vegetation survey, GHG measurements, water and soil sampling ...

Sphagnum Ekeby

Area

- Area 1: 100% Sphagnum
- Area 1: Straw
- Area 1: SLU
- Area 2: 10/90% sphagnum/black peat
- Area 2: 50/50% Sphagnum/black peat
- Area 3: 100% sphagnum + black peat
- Area 3: Straw

Water sample

- EM1 - utgående vatten
- EM2
- EM3
- EM4 - inkommande vatten
- EM5
- EM6
- Adjustable outlet

SLU

Ekebymossen

Objective

Investigate early stages after rewetting in:

- GHG-emissions
- Water quality
- Soil properties
- **Vegetation**

- Interactions between these components

→ Evaluation of rewetting as an after-use measure

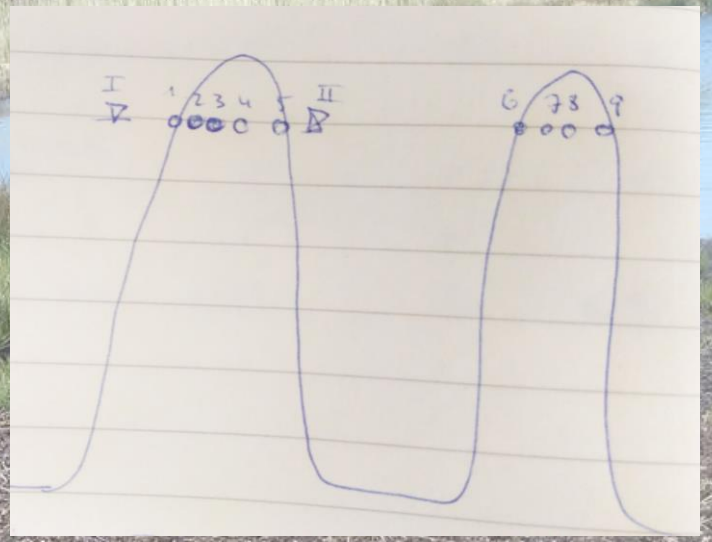
Vegetation survey

Drone flights:

- From 2018 onwards

Vegetation mapping:

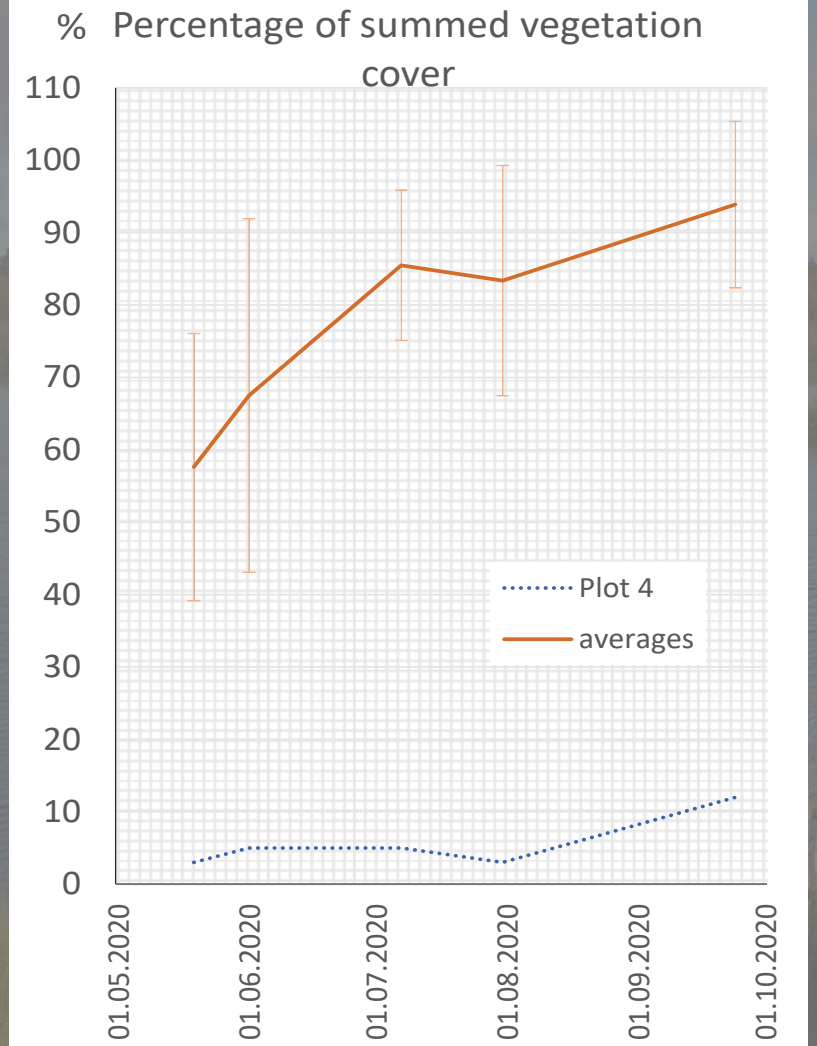
- Transect
- Continuously throughout the vegetation period 2020 (& 2021)
- Coverage after Braun-Blanquet
- 25 cm x 25 cm frames

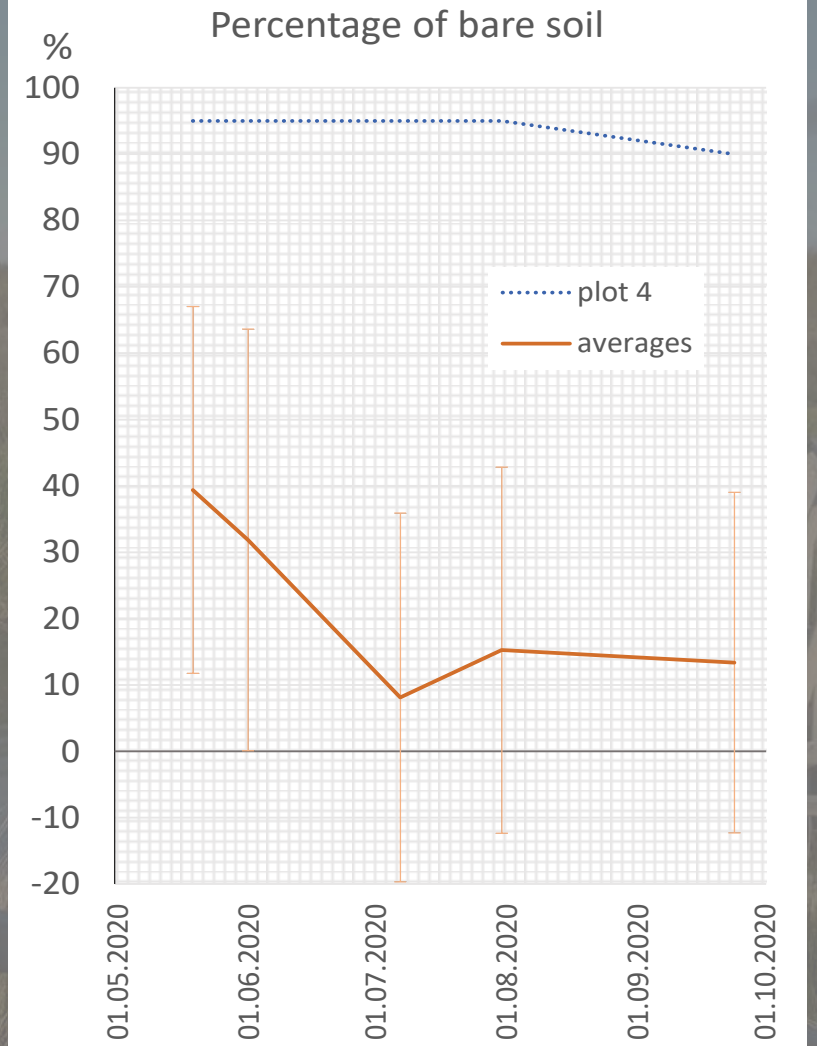


A	B	C	D	E
Plot 2			19.05	01.06
bare soil			10	10
mosses (without *Spagnum*)			15	20
litter			5	10
species	German	Swedish		
	number of species		4	4
	summed coverage		62	82
Juncus effusus	Flatterbinse	Veketåg	30	55
Carex canescens	Grau-Segge	Gråstarr	30	25
Rumex acetosella	Kleiner Sauerampfer	Bergsyra	2	2
Sphagnum spec.			0	0

Vegetation survey: Drone flights

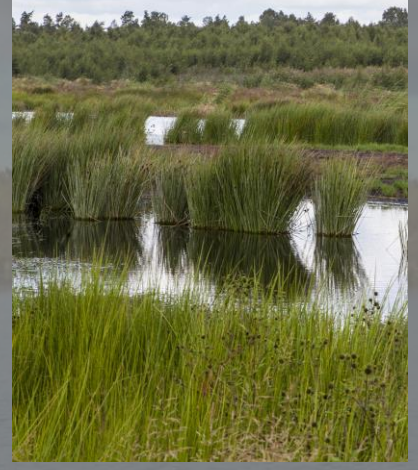
Vegetation survey: Mapping





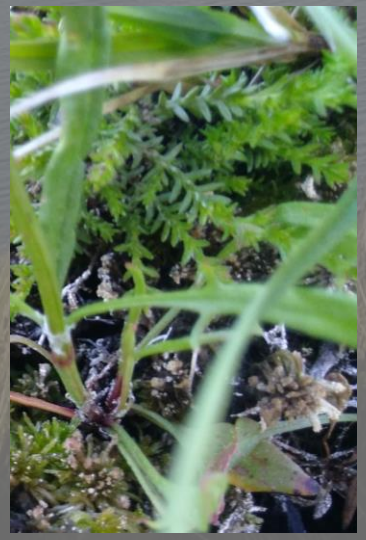
Vegetation survey: Mapping

Dominant species:



Nurse plants:

Other species:



Conclusion

- Fast recolonization by typical peatland vegetation
- High abundance and coverage of peat-forming species
- Indicator for degradation dominant

Rewetting is a good measure for restoration
BUT
Needs further research and monitoring

SLU
Swedish University of Agricultural Sciences

HASSELFORS GARDEN

Stiftelsen Lantbruksforskning

Thank you!

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