

Re:moss

Project leader

Daniel Pacurar

Partners

Boreal Orchard, VAST, SLU, Ecogain, LKAB, Boliden, Talga & Viscaria

Project duration

2023-11-01 – 2025-12-31





re:moss

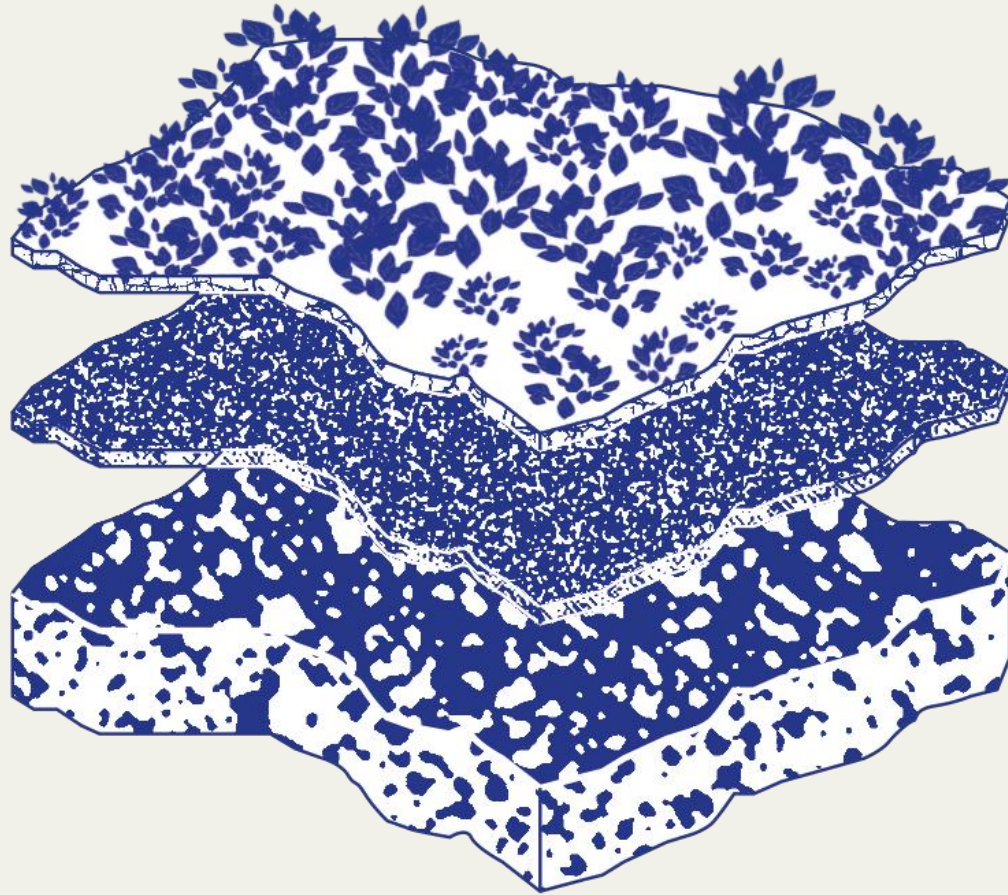
accelerating ecological restoration



Aim

Accelerate the
ecological restoration of
post-mining landscapes.

The Swedish mining industry is targeting a net biodiversity gain by 2030.



MOSS & LICHEN

TOP SOIL / MORaine

GEOMORPHIC LANDFORM



re:moss
accelerating ecological restoration

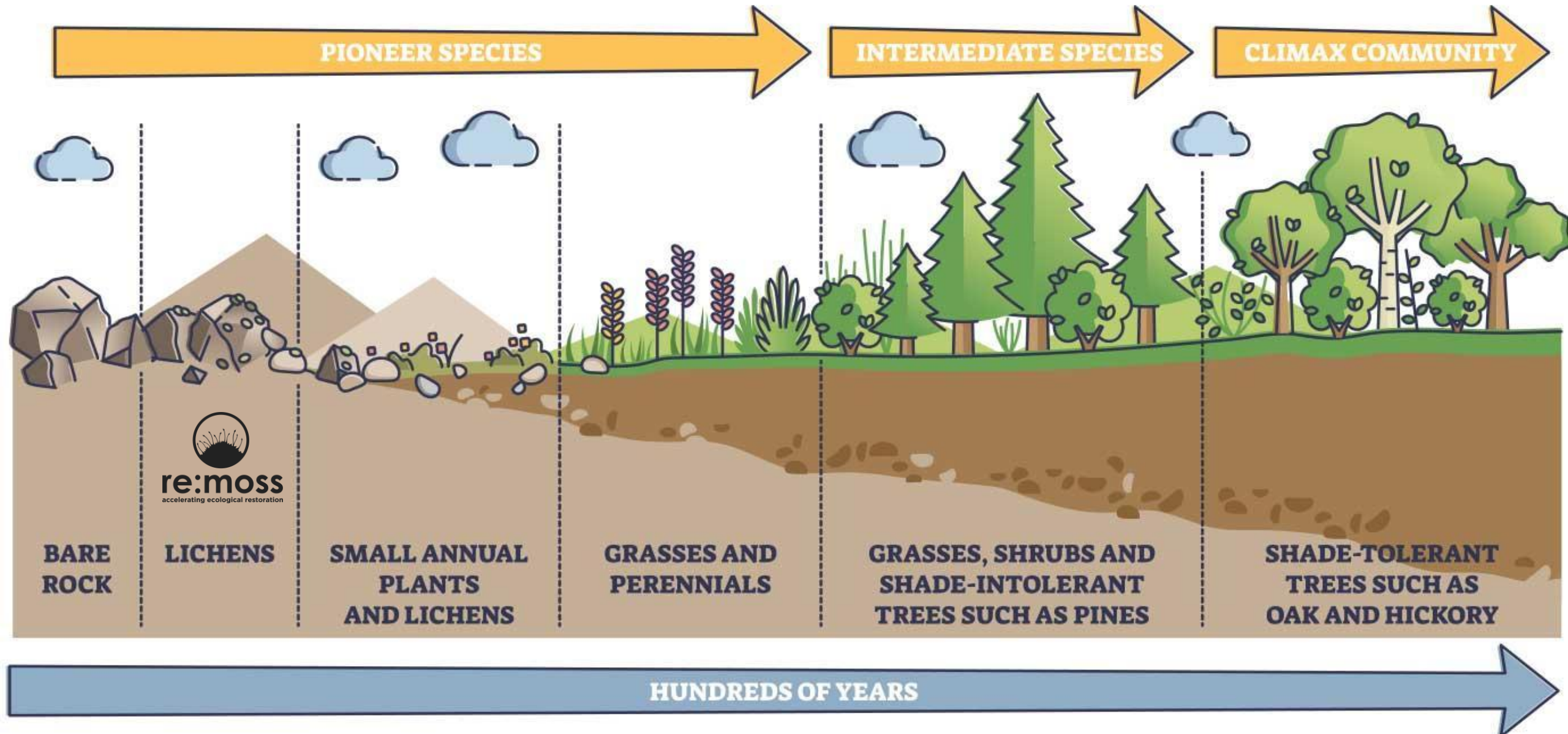


“Mosses are
amazing plants
and the hero of
our project”

- Grows in deserts & at the poles
- Eats and drinks dust and water from the air
- Stores more carbon than trees
- Can grow on bare rock
- Stabilises earth and creates soil



PRIMARY SUCCESSION



Project Stages

WP2 Moss Propagation



- Identify
- Collect
- Moss primer

WP3 Site Preparations



- Substrate
- Construction method
- Apply primer

WP4 Monitoring



- Cover rate
- Establishment success

Samples collected

10 samples

LKAB

5 samples

Talga

5 samples

Boliden



Result
20

WP1

WP2

WP3

WP4

WP5

Moss propagation

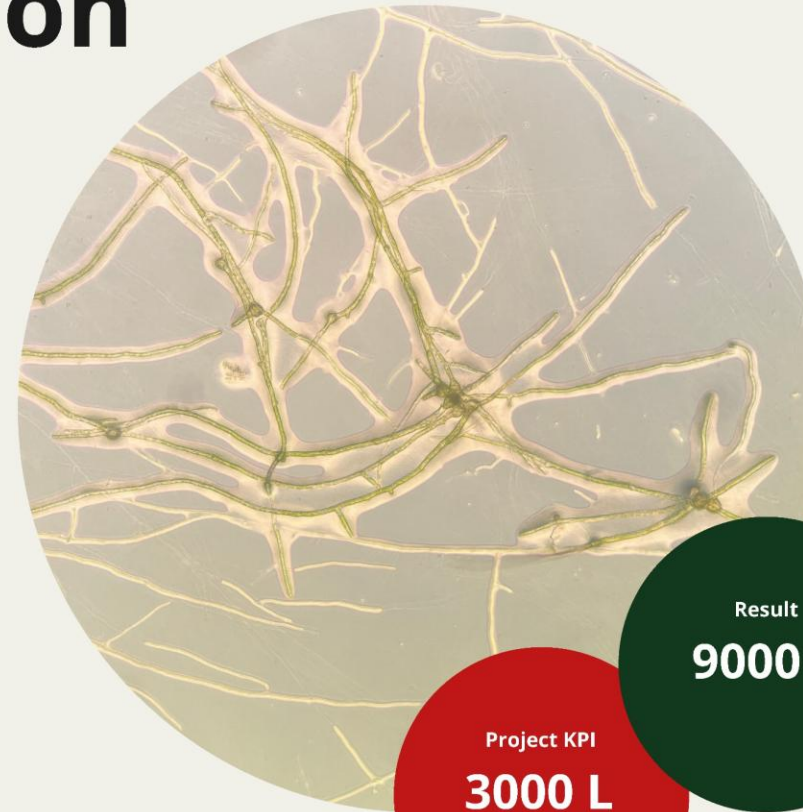
Primer Cultivation

9,000 L

2000 L Svappavaara

5000 L Svappavaara |
Nunasvaara | Niska

2000 L Maurliden



Project KPI
3000 L

Result
9000 L

WP1

WP2

Moss propagation

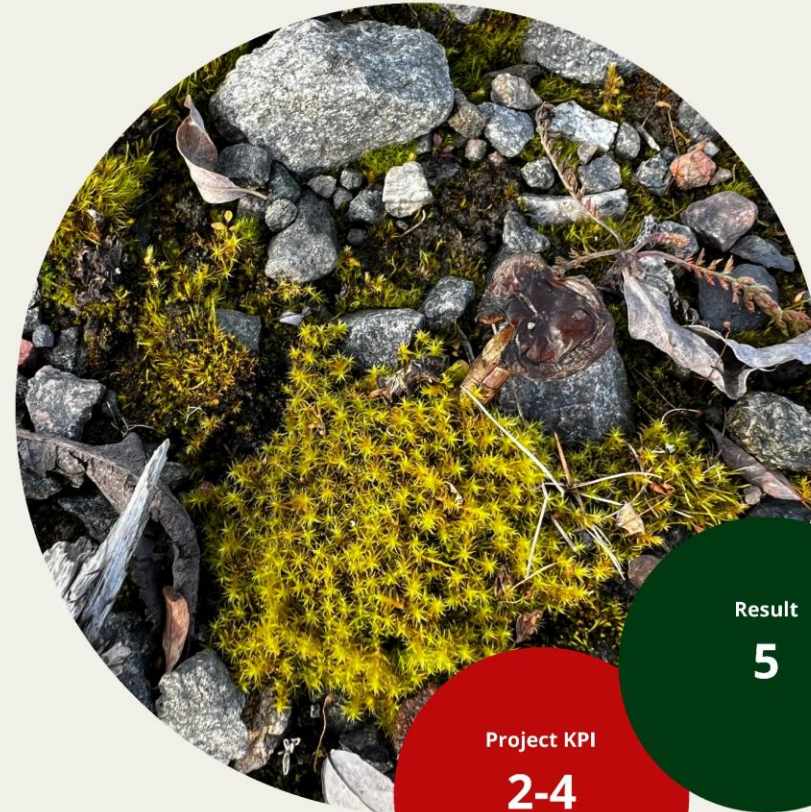
WP3

WP4

WP5

Substrates

Waste rock	Svappavaara
Moraine	Svappavaara
Moraine & wood debris	Niska
Moraine & top soil	Nunasvaara
Moraine & pine bark	Maurliden



Project KPI

2-4

Result

5

WP1

WP2

WP3

WP4

WP5

Site preparation & hydroseeding

Landform types

Terraced

Svappavaara

Geomorphic

Niska

**Other mining
disturbance**

Nunasvaara I Niska I
Maurliden



Project KPI

2

Result

3

WP1

WP2

WP3

WP4

WP5

Site preparation & hydroseeding

Primed Area

2.5 Ha	Svappavaara
1.0 Ha	Nunasvaara Niska
0.5 Ha	Maurliden Östra



Project KPI
2-3 ha

Result
4 ha

WP1 — WP2 — **WP3** — WP4 — WP5

Site preparation & hydroseeding

Seed Blends

Vägslänt

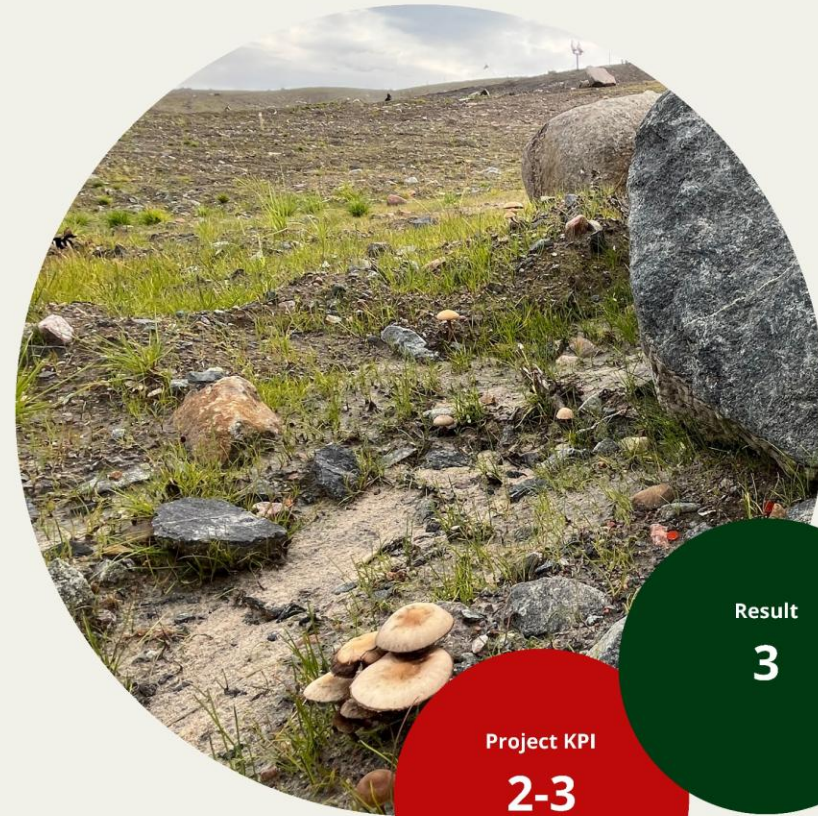
Svappavaara

Vägslänt incl.
additional species

Svappavaara

Cellulose

Svappavaara



Project KPI

2-3

Result

3

WP1

WP2

WP3

WP4

WP5

Site preparation & hydroseeding

KPI	Result	Outcome
3000 L Primer Cultivation	9000 L	300% of target – tripled the goal 🎉
2–4 different substrates	5 substrates	125% of target – exceeded the goal 🎉
2 Different WRD construction methods	3 methods	150% of target – exceeded the goal 🎉
2–3 ha Total Primed Area	4 ha	133% of target – exceeded the goal 🎉
2–3 Different Seed Blends	3 seed blends	100% of target – goal achieved ✅

Monitoring

Increased cover rate and
establishment success on
selected sites and substrates

WP1

WP2

WP3

WP4

Monitoring

WP5



Ecogain Summary

- 1 Inventory - 1-3 July 2025
- 2 Clear skies and bright sunshine
- 3 LKAB, Talga, SLU and Boreal Orchards
- 4 A cold and late spring was apparent - mosses were small
- 5 All areas had vegetation & mosses, including a variety of:
 - what had been sown;
 - what had spread to the site;
 - what was in the seed bank.
- 6 Concluded with good results
- 7 The following day the rain came

WP1

WP2

WP3

WP4

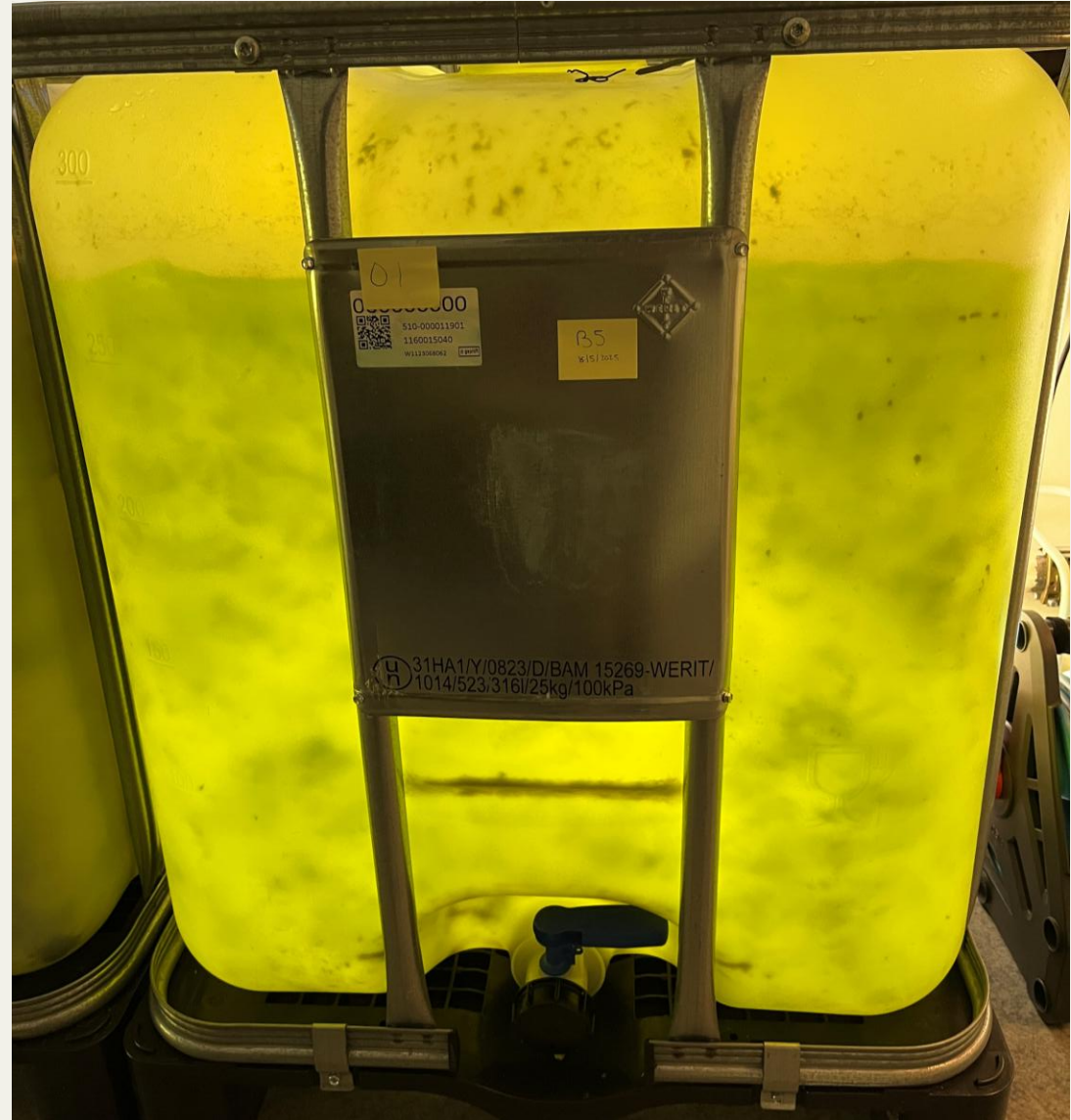
WP5

Site preparation & hydroseeding

Project Innovation

4 to 7 TRL increase

"System prototype demonstration in operational environment"





Boreal Orchards® AB

Challenging frontiers

VISCARIA



V A S T



NEW BOLIDEN



talga

Mining innovation for a sustainable future