

# NORWEGIAN HEATHLANDS VEGETATION UNDER DROUGHT TREATMENT ACROSS SUCCESSIVE PHASES.

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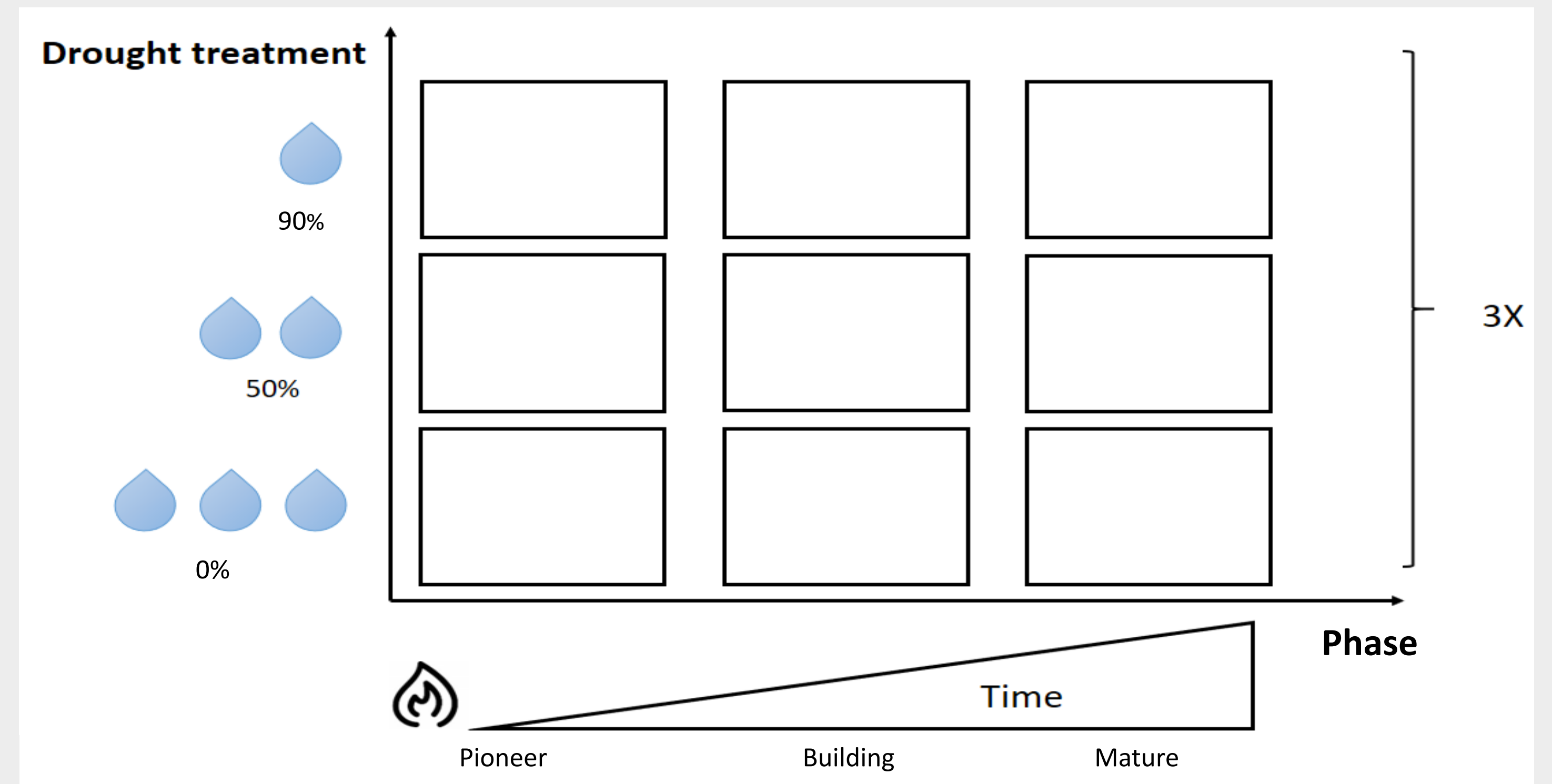
## Background

The LandPress project studies the effect of climate and land use changes on heathlands. Heathlands are landscapes characterized by a low vegetation dominated by heaths. Heathlands are located along the European coast and have been created by humans. The Norwegian coast being initially a woodland, the heathlands require proscribed fires to be maintained. With the arrival of industrial agriculture, the decline of traditional management of the land and climate changes, and the heathlands are in deterioration as a result.

## Objective

Measuring the primary production and describe the vegetation among drought treatment and succession stages.

## How the field looks like

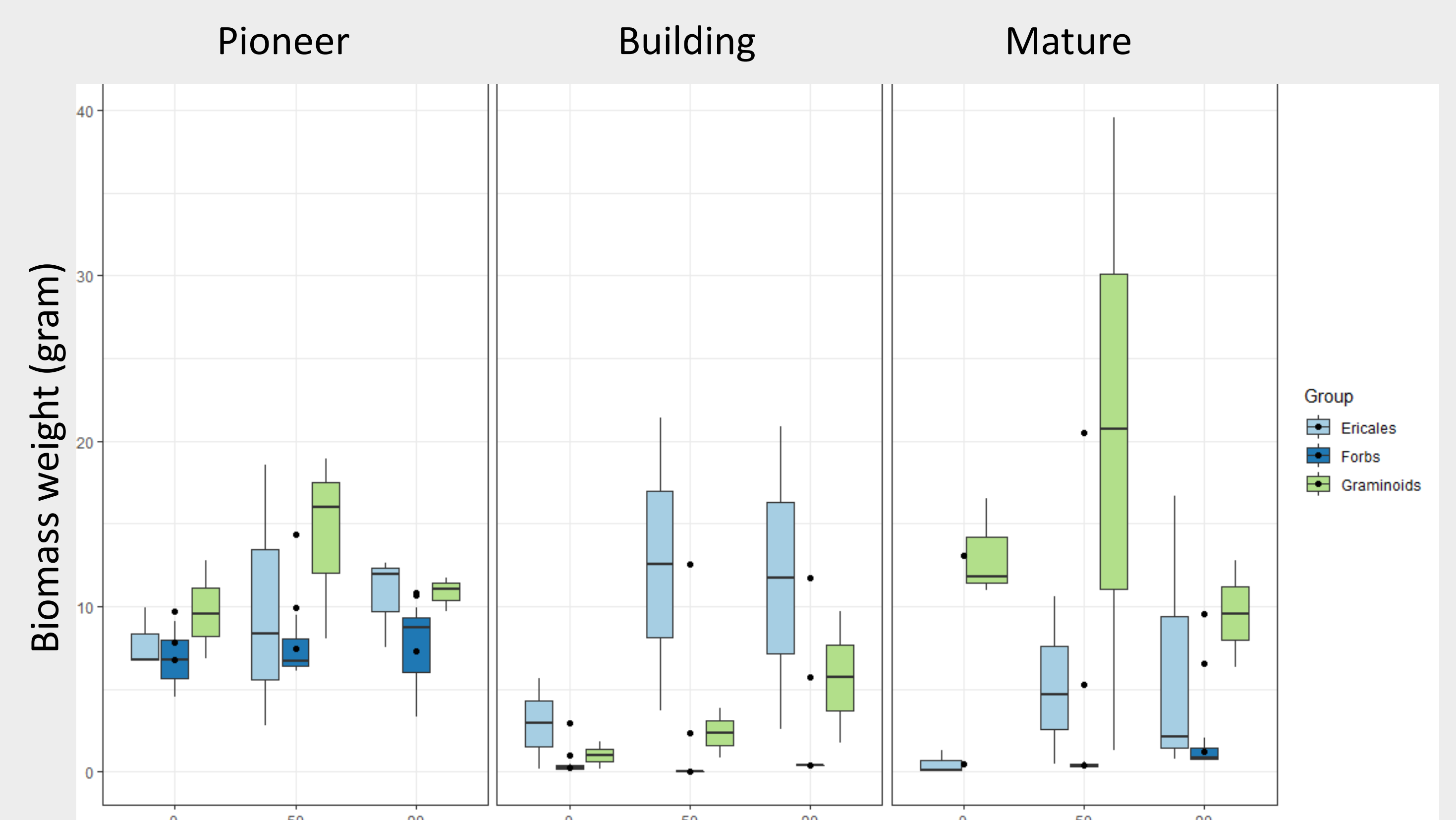


Vegetation above ground has been collected in each plot during summer 2017, sorted in different functional groups, then weighted.

## Primary production



**Fig.1** Dried biomass weight of the three most represented functional groups (*Calluna*, Bryophytes and Litter) from control and treatment plots within the succession phases. Note the extreme value (714.15g) of *Calluna* in the control plot from mature phase.



**Fig.2** Dried biomass weight of the three less represented functional groups (Ericales, Forbs and Graminoids) from control and treatments plots within the succession phases.

**Calluna** biomass increases from the pioneer to the mature phase likewise with the drought treatment for pioneer and building phase.

**Bryophytes** and **Forbs** seem to not be affected by the dryness and their abundances decrease from the pioneer to the mature phase.

The amount of **litter** is stable according to phases and drought levels even though it seems to increase with the treatment in the pioneer phase.

Both **Graminoids** and **Ericales** tend to develop more with precipitation reduction. However, Graminoids are more abundant in the pioneer and mature phase than in the building one, while Ericales abundance is stable over phases.

## What the study highlighted

- Most plants develop with time so their biomass increases from the pioneer to the mature phase. Nevertheless, Bryophytes and Forbs decrease with heathland age, possibly due to over-competition with *Calluna*.
- No vegetation type decreases significantly with drought, probably because the treatment reduces soil saturation in water, which enables plants to grow even better or, because the treatment is not fully efficient due to the humid area or due to the early stage of the study.
- Litter shows no accumulation with time and drought.



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