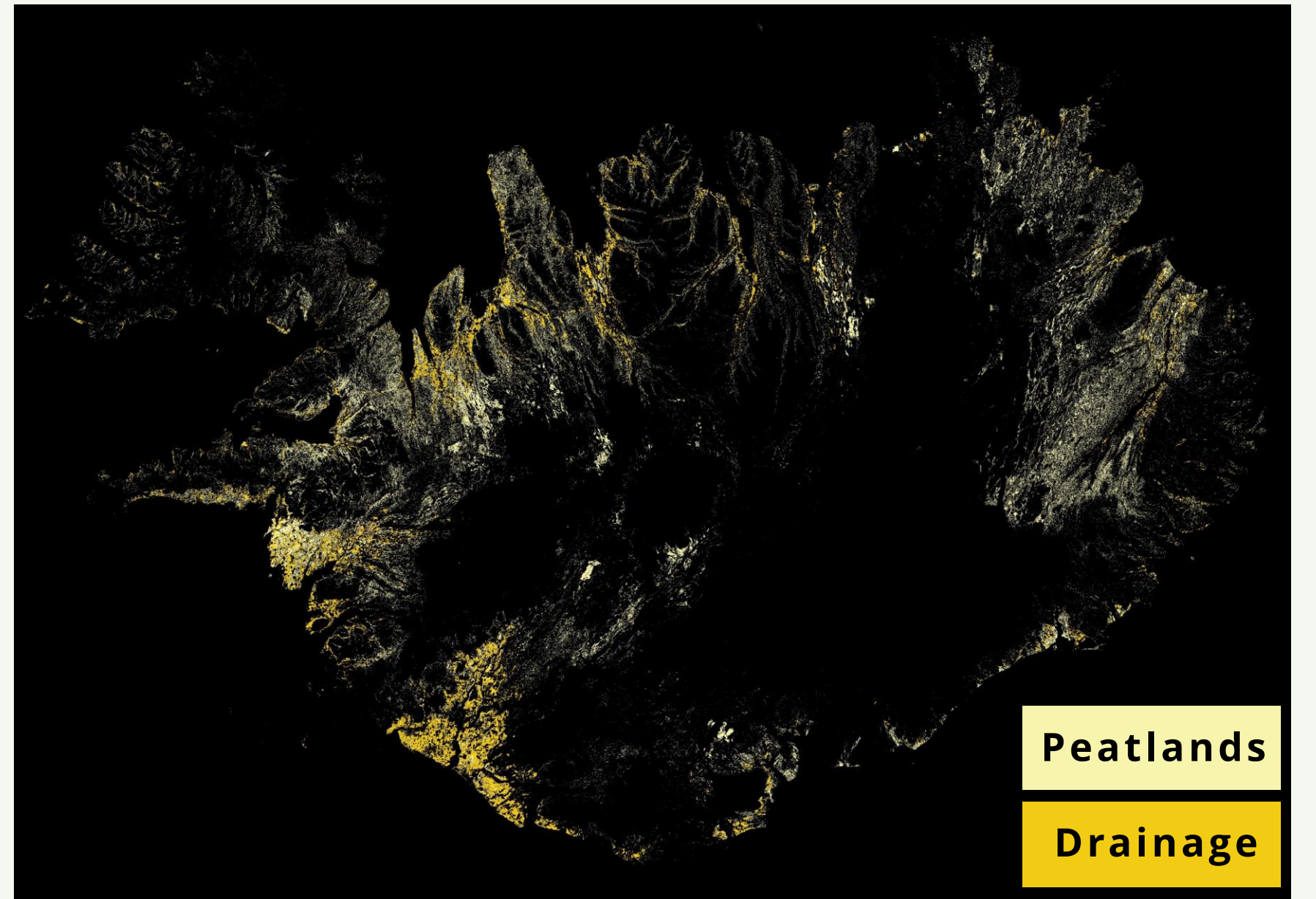
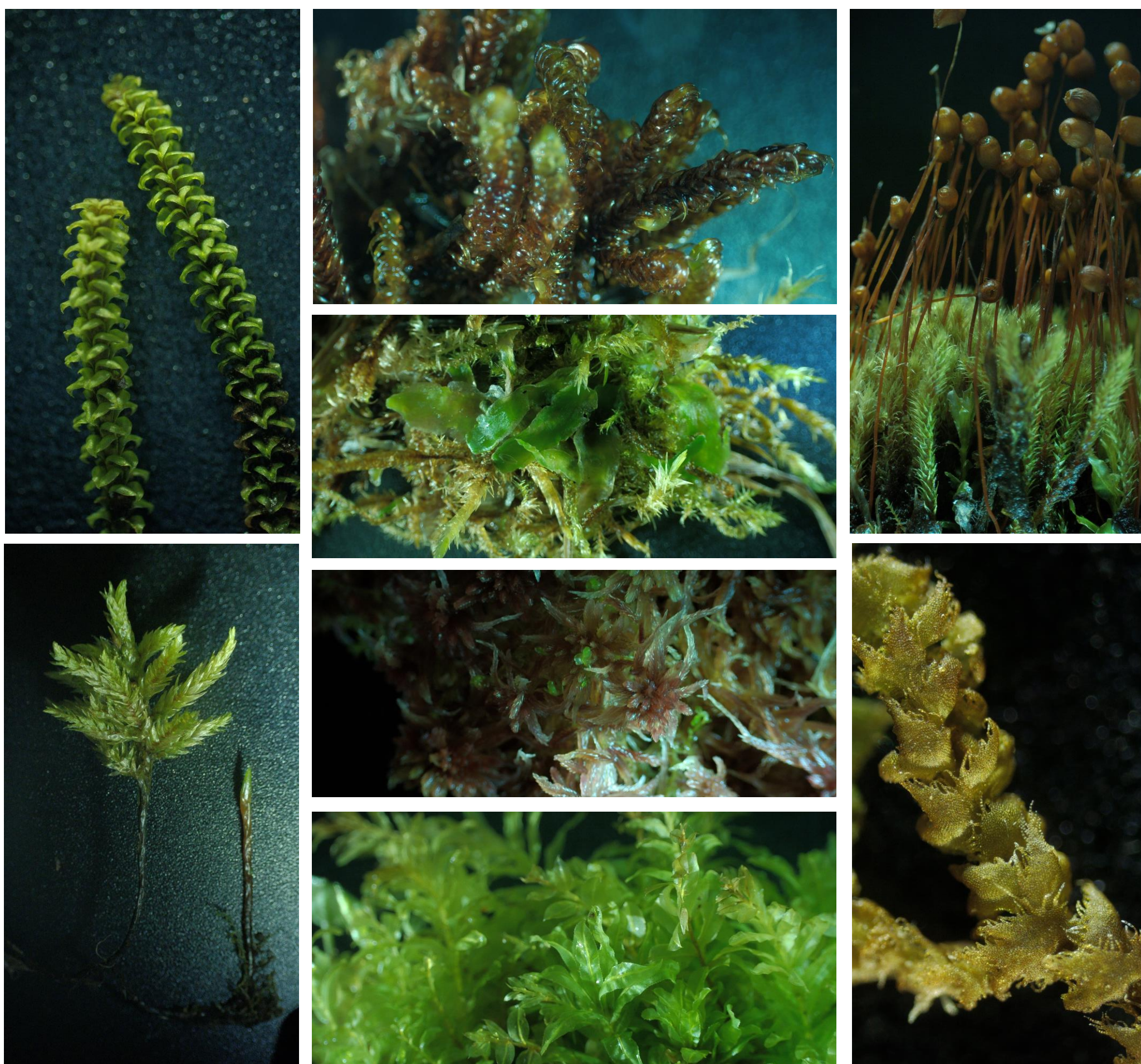




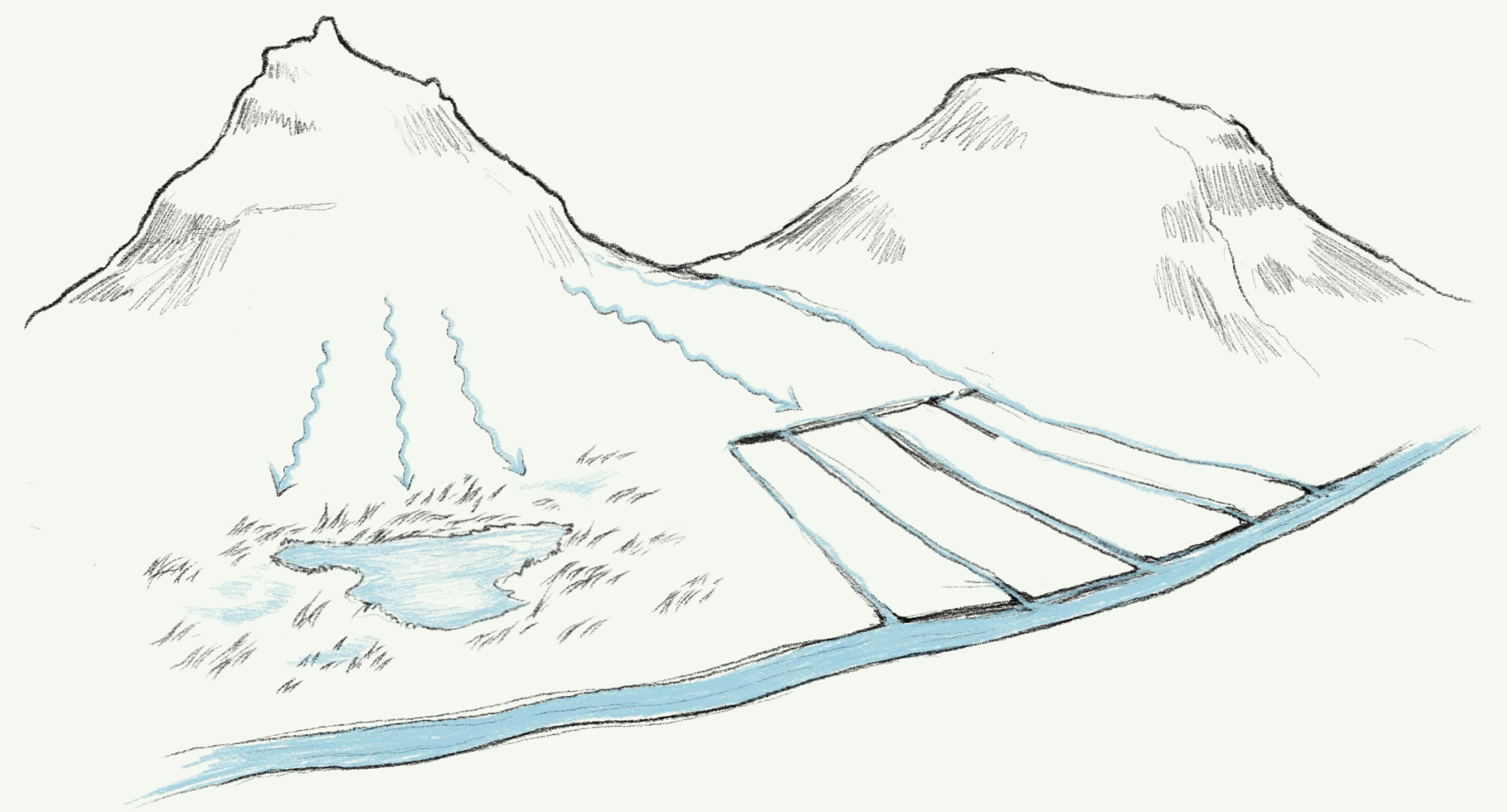
Icelandic peatlands have been extensively drained in past decades, and now efforts are being made to restore these endangered ecosystems. Because of their prominence, vascular plants have overshadowed bryophytes in peatland research in Iceland. Therefore, it is unknown how drainage affects the cover and species composition of bryophytes. In spring of 2023, a field study was conducted with 40 plots located in SW Iceland. The main aim was to monitor greenhouse gas fluxes from peatlands in varied conditions; intensity of drainage, land use, distance from the sea, altitude and proximity to active volcanic zones. Other assessed factors included habitat types, vegetation cover and plant species composition, and an attempt was made to evaluate the level of degradation. At first glance, bryophytes appear to be sensitive to disturbance, and their abundance and species composition are good indicators of the level of peatland degradation.



Relatively short history of drainage (1950's). In some lowland areas up to 90% of peatlands are impacted by drainage.



Examples of bryophytes species in pristine peatland.



Examples of bryophytes species in altered or degraded peatland.

pristine peatland

Water table stable and close to surface.
Active peat accumulation from since last ice age.
Peatland vascular plants and bryophytes sp. present.



Peatland vascular plants sp. still present.
Increased distribution of dryland bryophytes.
Decreased distribution of peatland bryophytes.

altered

Drainage
Water table lowered
No tillage
Hummocks
Peat subsidence

degraded

Decades since drainage/tillage.
Dryland vascular plants and bryophytes sp. dominant with shrubs.
Often intense horse grazing.

shrub encroachment



grassland



crop field

Drainage actively maintained
Frequent tillage
Rapid decomposition of peat
Peatland vegetation gone

