# Peatland

Restoration of degraded peatlands with different level interest conflict

**Peatlands have historically been seen as low value area or also named in Norwegian "water-sick" or water saturated land previously. Still there was good money in larger extraction sites for peat for fuel or soil components. Others where just ditched to draw the water out and increase log productivity. Extraction of peat and ditching of peat bogs have many negative effects, in particular on carbon emissions, carbon sequestration, hydrology and biodiversity. There are only remnants of intact peat bogs in Southeastern Norway. It is a goal to work together with landowners and the peat industry to stop peat extraction and restore these bogs.**

In Aurskog-Høland municipality, in the main valley where the towns and settlements are, we have four larger peatlands where peat has been manually and mechanically extracted during the last couple of hundred years. Only one larger peat bog in the main valley is intact – Vålermåsan (Våler peat bog). This peat bog is considered valuable on a national scale as a typical concentric raised bog. The neighboring peatland Liermåsan (Lier peat bog) has most likely been one of Norways larges raised peat bogs, before it was ditched, dried out and extracted. Still there is peat left, and enough to restore. How to reach an agreement to how this can be achieved with an active industry with the interest to keep extracting?

In forestry smaller peatlands and bogs was widely ditched with governmental financial support after WWII, to ensure rapid log production for a nation in economic growth and rebuilding. Not all these ditched peatland have seen a substantial growth of timber, and stand as an image of a failed attempt, with no incentive to put it back to its former form to bring back its peatland services. These areas are examples of areas with low interest conflict, as the loss of log value is minimal.

The municipality has an important role and responsibility in the region to preserve the intact peat bogs and to restore the industrialized peatlands. Bringing the larger ones back will take hundreds of years, but effects from their restoration on climate gas emissions, hydrology, biodiversity and water quality will be evident after a shorter time.

Aurskog-Høland was project manager for a larger mapping of industrialized and ditched peat bogs, to identify the possible restoration objects, with high retention potential, closeness to infrastructure and roads and with low log value.

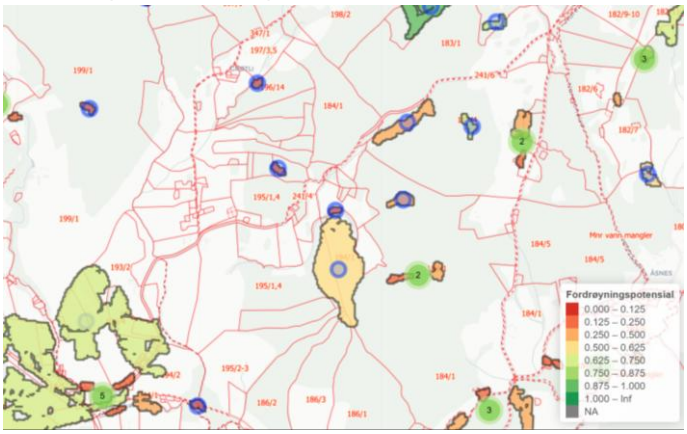
**Contact**: Ole-Christian Østreng **Mail**: ostol@ahk.no **Phone**: (0047) 4144524

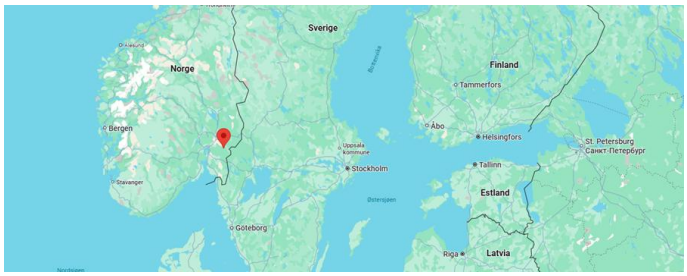
## Knowledge base

Aurskog-Høland municipality has established dialogue with landowners, peat extraction companies, energy companies and research institutes on the topic on how to combine restoration of peatlands with temporary solar panel parks on non-damaging infrastructure. We also have students from Norwegian University of Life sciences working on this subject.

A master thesis which used Bjørkelangen as study area, have discussed the combined sociological and ecological challenges and possibilities specifically with management of wetland ecosystems whereas the peatlands are part of. Another master thesis will look at sensor data on temperature and pH, to look at the influence of riparian zone and the possible peatland extraction influence on pH in the river in periods of heavy rainfall.

Together with Norwegian Institute for Water research (NIVA) and Norwegian Institute of Bioeconomy Research (NIBIO) we have been mapping possible restoration objects of damaged peat bogs, as seen in the map below. There is an initiative to use this mapping, learn from how the tools which are developed is usable I practice and to start-up actual restoration together with landowners and local contractor. In using local contractors, we are aiming to build the local interest and experience on restoration of peatlands. Some contractors are co-operations of forest landwoners or do most of their contracting work in forestry, and therefore a possible conveyer of the possibilities, effects and knowledge of restoring peatlands.




## Stakeholders

There are several initiatives on peatland restoration. With the larger peatland extraction sites, there are three peat companies that use the peat for soil components for hotriculture and propagation. One company also specializes on Norwegian traditional house construction techniques, where the roof if finished off with peat soil and low nutrient demanding greenery on top.

Landowners in the area with larger peatland have also been contacted from several energy companies that look to these areas as cheap areas to establish solar panel parks. One of the companies have been interested in looking into the possibility of being a mean to ensure restoration of extraction sites.

An early report looking on retention potential to a catchment to Bjørkelangen lake, pointed to peatlands as the area that would have the most retention and flood mitigation effects for the area. In The Bjørkelangen village is annually and maybe more than once each year affected by low energy flooding, that might damage basemenst, degrade soil and have damages to infrastructure. It is in the interest of the population of Bjørkelangen and for example the insurance companies to reduce these kind of events and reduce the effect of increased flooding due to climate change.

Together with landowners we have begun mappin possible restoration and have secured funding to begin. It will be valuable to document the effects of these and to ensure sharing the knowledge that we acquire and increase the speed of restoration.

## Possible partnerships

We are looking for sister regions, that work within the topic of flood mitigation, nature-based solution for climate adaptation or restoration of carbon rich areas for climate gas emissions compensation.

Other opertunities can be to be a living lab within the same topics. We are looking to further develop the tools for reacing restoration, through mapping, dissemination, policy or other measures.

We aim to increase the number of students in the area and for example the increased use of sensor data and other new technical advnaces to make sure to get a solid documentation of the immediate and long-term effects.

**Contact**: Ole-Christian Østreng **Mail**: ostol@ahk.no **Phone**: (0047) 4144524