

## Biodiversity meets music

# Raised bogs - renaturation of valuable CO<sub>2</sub> reservoirs



Raised bogs, with its unique ecosystem and remarkable biodiversity, has long been a precious natural resource. However, in recent years, the loss of this valuable habitat has become a cause for concern. The degradation of raised bogs due to human activities, such as drainage for agriculture, forestry, and peat extraction, has resulted in severe consequences for both humans and nature alike.

One of the critical functions of raised bogs is their role as carbon sinks. They store vast amounts of carbon in the form of peat, a waterlogged accumulation of partially decayed plant material. Peatlands act as effective carbon storage, capturing and storing high amounts of atmospheric carbon dioxide (CO<sub>2</sub>), which is a major greenhouse gas responsible for climate change. However, the degradation of raised bogs disrupts this storage process, releasing CO<sub>2</sub> into the atmosphere and contributing to global warming.

Furthermore, raised bogs are home to unique and specialized plant and animal species that are adapted to the wet and acidic conditions of peatlands. These "indicator species" or "bioindicators," provide crucial information about the health and condition of the ecosystem. For example, peat mosses (*Sphagnum*), are the dominant plants and play a vital role in maintaining the hydrological balance by retaining water and creating the acidic conditions necessary for peat formation. Other bioindicator species like the carnivorous plant Sundew (*Drosera*) and the Black Grouse, are also dependent on healthy bogs for their survival.

The loss of raised bogs has severe consequences for both humans and nature. As they are drained and degraded, they not only release stored carbon into the atmosphere but also lose their ability to continue sequestering carbon. This increases the effects of climate change, contributing to a harmful cycle of increased greenhouse gas emissions and global warming. Moreover, the loss of raised bogs also leads to the decline and loss of specialized plant and animal species that depend on these ecosystems for survival, resulting in a loss of biodiversity and ecological imbalance.

## What can we do?

However, there is hope. Restoration, through various techniques such as re-wetting, blocking drainage ditches, removing invasive species, and clearing coniferous plantations, can help to reverse the damage and restore the vital functions of these ecosystems. Re-wetting raised bogs by blocking drainage ditches and filling in ditches with peat, for example, can help to restore the hydrological balance and promote the growth of peat mosses, which are crucial for peat formation and carbon sequestration. Removing invasive species and clearing coniferous plantations, which are known to dry out peatlands, can also help restore the natural habitat and support the recovery of bioindicator species such as *Sphagnum* and Sundew.

In conclusion, the restoration of raised bogs is a critical step towards mitigating climate change and conserving biodiversity. The protection and restoration of moorland habitats, with their unique characteristics and functions, are essential for maintaining healthy ecosystems, sequestering carbon, and preserving specialized plant and animal species. As individuals, communities, and governments, we must take action to support and implement measures to restore and conserve these ecosystems. By promoting sustainable land management practices and supporting restoration efforts, we can contribute to a more sustainable and resilient future for both humans and nature.