

## Biodiversity meets music

# Greenland and grassland - restoring intensive agricultural land



Intensive agriculture has been a major driver of biodiversity loss, resulting in species impoverishment and the decline of natural habitats. The loss of species-rich wildflower and herb meadows, in particular, has had severe consequences for both humans and nature. These meadows play a crucial role as habitats for various insects, and their loss has disrupted ecosystem functioning and caused a decline in biodiversity.

One of the main causes of species impoverishment in intensive agricultural lands is the conversion of natural habitats into monocultures or heavily managed fields, where only a few species can thrive. The use of pesticides, herbicides, and fertilizers further exacerbates the loss of biodiversity, as it disrupts the natural balance of ecosystems and harms non-target species, including beneficial insects.

The consequences of the loss of species-rich wildflower and herb meadows are far-reaching. These meadows provide crucial habitat and food sources for a wide range of insects, including pollinators like bees, butterflies, and other important species such as beetles, grasshoppers, and moths. Insects play vital roles in ecosystem processes, such as pollination, decomposition, and nutrient cycling, and are essential for the functioning and resilience of ecosystems.

Moreover, they are important indicators of habitat quality and can serve as "indicator species" or "zeigerarten." These meadows are typically composed of plant species that are adapted to specific environmental conditions, such as soil type, moisture level, and nutrient availability. The presence of certain plant species in these meadows can provide valuable information about the ecological condition of an area and can help guide conservation and management efforts.

To restore biodiversity in intensive agricultural lands, there are several key recommendations that can be implemented. One important approach is the adoption of extensive management practices, such as reducing tillage, avoiding the use of pesticides and fertilizers, and promoting natural regeneration of vegetation. This allows for the recovery of natural habitats and the re-establishment of diverse plant communities, which in turn can provide suitable habitat for various insects and other wildlife.

Another effective strategy is the creation of buffer strips or field margins, consisting of wildflowers, shrubs, and trees, along agricultural fields. These buffer strips can serve as corridors and refuges for wildlife, including insects, providing them with food, shelter, and nesting sites. Similarly, the establishment of hedgerows, woody edges, or other refuge islands can provide additional habitats for insects and enhance the connectivity of fragmented landscapes.

Furthermore, the use of locally adapted seed mixtures for sowing wildflower meadows, taking into account the specific environmental conditions of the area, can help restore species-rich habitats and support the recovery of diverse plant and insect communities. Using native plant species is important as they are better adapted to local conditions and provide food and habitat for wildlife.

In conclusion, renaturing intensive agricultural lands through the restoration of species-rich wildflower and herb meadows is crucial for promoting biodiversity and supporting the recovery of important insect communities. Adopting extensive management practices, creating buffer strips, refuge islands, and using locally adapted seed mixtures can be effective strategies to restore natural habitats and promote a more sustainable and biodiverse agricultural landscape. By taking action to restore biodiversity in agricultural lands, we can contribute to the conservation of wildlife, protect ecosystem functioning, and create a healthier environment for both humans and nature.