

FIELD NOTES 24 July 2017

Restoring Estonian alvar grasslands to save unique species

A huge project to return one of Europe's most biodiverse habitats to its former glory is already seeing success.

Julianna Photopoulos reports from the site

By **Julianna Photopoulos** in Estonia, on Muhu island

It's hot and sunny, and the long, flat fields are covered in grasses, with patches of shrubs and trees here and there. In the distance, a large herd of cows is grazing.

"The area was overgrown with junipers and pine trees," says Anneli Esko, project coordinator at the Environmental Board of Estonia. "I think we have created the landscape that was here about 40 years ago."

I'm on the island of Muhu in the Baltic Sea. Here, one of the largest wildlife restoration projects in Europe – part of the LIFE+ Nature programme – is under way to make 2500 hectares of alvar grasslands great again. Altogether, there are 25 restoration areas: two on the mainland and the rest spread over three islands: Muhu, Saaremaa and Hiiumaa.

Unusually for a conservation project, the work involves cutting down shrubs and trees, which threaten species – including some unique to this habitat. Only one-third of the restored areas will be left with junipers and pine trees.

Estonia used to be home to approximately one-third of the world's calcareous alvar grasslands, one of the most species-rich plant communities in Europe. However, the total area has plummeted from 43,000 hectares in the 1930s to only 8000 hectares today.

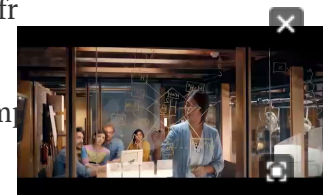
Human-created habitat

Most of these semi-natural habitats were formed and maintained through long-term grazing by sheep, cows and horses.

This meant the 198-square-kilometre island was completely open 100 years ago. "You could actually see the church in the middle fr corner of the island," says Aveliina Helm at the University of Tartu.

But some of these grasslands were abandoned – and consequently overgrown by the junipers that had previously been a minor com

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Grazing maintains the species-rich grass

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Removing trees and shrubs boosts biodiversity

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On the other hand, pine trees – although native to Estonia – aren't naturally found on Muhu. And because most alvars have a thin soil and limestone bedrock, the afforestation process during the Soviet era included furrowing and even blasting planting holes with explosives.

This huge effort was designed to increase the economic value of alvars. Instead, it made the land unproductive and reduced biodiversity, says Helm.

Today, only around 2500 hectares are used for grazing and the rest of the unmanaged alvars are overgrown. Many plant species that used to cover large areas of the grasslands are now threatened. “We need to enlarge the areas and restore these habitats to prevent extinction,” says Helm. Other species, such as butterflies and birds, are also threatened.

Gobbling trees

The huge noisy, shredder in front of us gulps down small junipers, leaving millions of wood chips behind. “Junipers are shredded like this when they are up to 1.5 metres tall,” says Eika, raising her voice to make herself heard over the machine.

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The result is masses of timber and other wood materials. Some goes to make handicrafts, but most gets used for heating. “We have produced so many wood chips that we have even exported some to Sweden,” says Esko.

Although using wood chips for biomass is not ideal, given the carbon emissions they generate, juniper shrubs have traditionally been used to provide heating on the islands. Additionally, it reduces the need to use shale oil for heating – the largest source of energy in Estonia.

As we walk away from the demonstration area, Esko tells me that the shrubland and pine plantations contain few species and so their removal offers large benefits for biodiversity.

Big bloom

Indeed, species recovery has been astounding after only a year or two, with a big bloom of orchids, including the rare golden lady slipper, and more butterflies and bumblebees.

“We’re very lucky here in Estonia because all these remnant, open patches were preserved in various spots, so they could quickly colonise the sites that we opened,” says Helm.

Already 15 species new to Estonia have been found, including lichens, spiders and wasps. The grasslands are also home to about 40 per cent of the world’s known species of a special class of fungi, says Helm.

Local people have been involved from the beginning, with 600 landowners already participating in the project. The grasslands will be maintained by grazing livestock until at least 2024 under a 10-year contract signed through a scheme supported by the Estonian government.

As I leave the island, I feel hopeful for the future of these grasslands and its locals. Helm’s words have stuck with me: “We can consider this a big conservation success story.”

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