

Dundurpļavas grassland complex, Ķemeri National Park

Dundurpļavas (*dundurs – gadfly, pļavas – meadows*) lie in the SW part of Ķemeri National Park (~ 400 ha lowland floodplain grassland area). Historically, until the mid-20th century, Dundurpļavas was used as a hay-making area by the surrounding homesteads and villages, probably also for pasturing. The area was seasonally flooded. The first hydrological alterations were done in the 1930s by straightening two small lowland rivers. Then, in the 1960s the floodplain was severely modified by introducing a drainage system, straightening Slampe River, and establishing arable land and sown grasslands in the former floodplain meadow area. The area was intensively used for agriculture (though predominantly as grassland) until the 1990s when the largest proportion of the grassland became abandoned, the rest was used as arable land or cattle pasture.

The need for hydrological restoration and re-introducing regular grassland management was identified in the late 1990s, along with the designation of Ķemeri National Park (established in 1997). From the perspective of biodiversity conservation, the area was highly modified, degraded and had lost its original species diversity and ecosystem functions. The main purpose was to re-create a bird habitat for migratory birds, corncrake, predatory birds, etc. by restoring a meandering near-natural stream, re-creating seasonal flooding, as well as gradually increasing the plant species richness in grassland, and restoring a semi-natural grassland.

Land ownership: the pasture, adjacent forest, and most hay meadows are state property (under Ministry of Environmental Protection and Regional Development; since 2010 managed by NGO Ķemeri National Park Fund (land leased). Some land parcels were purchased by the state from private owners in the 1990s using EECONET funding, later additional parcels were purchased with the support of LIFE projects. LIFE support allowed the implementation of two large restoration projects in this area to re-establish grassland management for biodiversity conservation.

Restoration actions were supported by LIFE projects:

- **Conservation of wetlands in Ķemeri National Park, Latvia (2002–2006).** In Dundurpļavas, the actions included re-meandering of Slampe River (2005), re-establishing grassland management (fence, semi-wild cattle and horses (since 2005), hay mowing (since 2004). Slampe River was created in a new place (from 2,1 km ditch to 4,7 km meandering stream); still, eutrophication problem exists and cannot be effectively prevented due to intensive agriculture upstream; however, the main target – restored flooding regime (meadows, migratory birds) and recovery of semi-natural grassland as a functioning ecosystem has achieved).
- **Restoring the hydrological regime of the Ķemeri National Park, LIFE10 NAT/LV/000160 HYDROPLAN (2012–2019).** In Dundurpļavas, the actions included re-meandering of Skudrupīte River (tributary of Slampe River), filling in and blocking ditches in the grassland and surrounding wet forests (large-scale drainage system removal), enlarging the fenced area and connecting it to Dundurpļavas pasture (mowing replaced by round-year grazing in large part of the grassland area).

Currently, ~ 200 ha fenced grassland area (+ forest) with ~ 200 semi-wild Konik horses and Heck cattle (round-year grazing, additional feeding in winters), mostly in grassland, partly in the adjacent forest (formation of diverse forest pasture). Grazing since 2005, the number of animals has considerably increased since their introduction. The grazing animals come from several areas in Latvia, the Netherlands, Belgium; to avoid inbreeding, there has been animal exchange among different areas (a collaboration between animal keepers). Hay mowing in the S part (outside pasture) to ensure hay in winter.

Since 2005, agri-environmental scheme has been used: first managed by the NP administration, later taken over by ĶNP Fund, an NGO. Since re-establishing management, most of the grassland area has achieved status of botanically valuable grassland (HD Annex I habitats). The conflict between corncrake vs. grazing intensity, grazing vs. river quality (soil erosion, trampling effect).

To overcome the lack of semi-natural grassland plant species in the area, since 2008, semi-natural grassland vegetation re-establishment. Initially (2008–2012) – 5 x 5 m experimental plots with control. Since 2020, at a larger scale, the hand-picked seeds (ca. 15 kg every year, ca. 20 g/m²) sown on disturbed soil (several larger plots within pasture and in the mown grassland). Seed mixtures adjusted to soil conditions. Involvement of volunteers.

During the last few years, hay from other botanically species-rich areas is brought to Dundurpļavas, with a hope of increasing the species diversity (it has increased in terms of semi-natural species numbers).

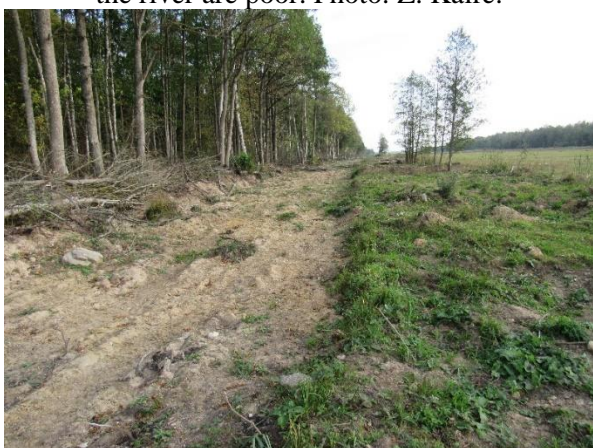




The old (straight) and re-meandered Slampe River, the fenced pasture. The river was restored in 2005 by excavating a new riverbed and blocking the old ditch. The flooding regime is restored; still, the water and ecological quality of the river are poor. Photo: Z. Kaire.



Semi-wild pasture (ca. 200 ha) in Dundurplavas. Grazing was introduced in 2005. Large boulders and boulder heaps were created in 2018 to increase the niche diversity in the ecosystem.



Skudrupīte was turned into a straight ditch in the 1930s. The straightened Skudrupīte ditched stream was completely filled in (photo in 2018); a new meandering stream was created.



The re-created Skudrupīte stream, next summer after re-restoration (in 2018). Historical meanders were restored as far as possible in their original shape (both in grassland and forest).



Grazing in the forest, especially in the forest-grassland contact zone, increases the niche diversity, opens gaps in the forest canopy and increases light availability to the ground vegetation. Photo in 2018.



Re-creating the semi-natural grassland vegetation using native seed mixtures – volunteers involved in seeding and planting native species, selected for the particular site. Photo from 2023; action supported by LIFE-IP LatViaNature.