CONSERVATION AND MANAGEMENT OF PRIORITY WETLAND HABITATS IN LATVIA LIFE - WETLANDS LIFE13 NAT/LV/000578

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Wetlands include important habitats for conservation of plant and animal species, particularly raised bogs, petrifying springs with tuft formation, mineral rich springs and transition mines. All of them are rare in Europe and most endangered have a priority conservation status. Wetlands have been affected negatively by various human activities, like drainage, peat extraction, forest planting and land reclamation.


PROJECT OBJECTIVES:
- Secure the most favourable conservation status for priority wetland habitats - Petrifying springs with tuft formation (Cranesbill) (‘7209’) and Active raised bogs (‘7110’) of Habitats Directive
- Management and improvement of conservation status of Petrifying springs with tuft formation (Cranesbill) (‘7209’)
- Restoration of active raised bog habitats (‘7110’) and site hydrology in the drainage influenced area in the 3 project sites, long-term water logging and maintenance of the blocked ditches, increase the raised bog area by re-establishing of Sphagnum species
- Management of transition mines and quaking bogs (‘7140’)

PROJECT SITES

Sudās – Zviļnedre Mire (257 ha) is the largest raised bog in Gauja National Park. The site has developed as a result of ground peatification and includes raised bogs with 3.3 lakes, bog pools and mineral islands, as well as sulphur springs. To stop the degradation of raised bog habitat, restoration of site hydrology and habitats is planned.

HABITAT AND HYDROLOGICAL STUDIES IN THE PROJECT SITES

Habitat and hydrological studies are carried out in the project sites – Sudās – Zviļnedre Mire, Raņas Mire and Ziemēja Mires. Data is summarised in the Management Plans for the implementation of raised bog restoration actions.

Palaentological studies reveal that Sudās – Zviļnedre Mire has developed as a result of ground peatification about 9200 – 9400 ago. Spoore-pollen studies show that medium decomposed fen grass peat started to accumulate on the clayey sand. The lowest peat layer was covered by medium decomposed transitional mire type reed-wood-cotton grass peat. Low decomposed raised bog Sphagnum peat has been accumulating since the beginning of the Holocene Thermal Maximum until nowadays.

Nowadays Sudās – Zviļnedre Mire is a typical raised bog with a labyrinth of bog pools. There are lots of smaller and larger lakes in the mire. In the southern part sulphur springs occur and also several mineral islands. Sphagnum magellanicum and Empetrum nigrum – Sphagnum fuscum characterise the bog hummocks, but Rhyynchostrobus robori, Caricium imosum and Scleranthus – Sphagnum cuspidatum are found in the hollows. Sphagnum magellanicum lawns with Trichophorum cristatum occur also. Sudās – Zviļnedre Mire includes a rare mire community in Latvia – Eriophorum – Trichophorum community.

The presence of mineral islands with different types of forest adds to the species richness of the mire. The mire supports a peculiar species composition, having together species of western and eastern distribution in Latvia, such as, Trichophorum cristatum and Chamaedaphne calyculata.

Culiva Springs are located on the left bank of Vālve River. It is a place where 34 springs run out. Small waterfalls are located on the steep slopes. From the spring water iron hydroxides are deposited. It is a complex including Monte-Cardamioneta communities on the steep slopes, Phragmites – Magnocaricentes and fragments of Scleranthus – Carexaceae fusca mire vegetation. Here are springs, streams, small-ridge communities near the flushes and stream small-ridge vegetation. Characteristic species are Circaum oleraceum, Deschampsia cespitosa, Veronica beccabunga, Myosoton aquaticum, Equisetum palustre, Phragmites australis, Caltha palustris, Carex trifurca, Alnus incana, Carex acetabulum and Equisetum palustre.

PROJECT ACTIVITIES

Management of wetland habitats

Conservation of wetland habitats will be achieved by particular management measures, including (1) elimination of invasive species; (2) restoration of active raised bog and petrifying springs with tuft formation; (3) cutting of shrubs and tree in transition mines in the area of 7 ha, (4) re-establishing the active raised bog habitats and restoration of site hydrology (501 ha).

HABITAT AND HYDROLOGICAL MONITORING

The success of management measures of active raised bog habitat (‘7110’), petrifying springs with tuft formation, transition mines and quaking bogs are evaluated during monitoring of habitats and site hydrology. In order to obtain reference data the monitoring was started prior to the practical management actions. The following indicators were chosen for monitoring – plant species composition, vegetation structure and the height of the groundwater level. Vegetation in the drained part is compared to that in the intact area. In the plots, groundwater level measurement is carried out. Plant species composition and the percentage cover are determined. The size of the plot determined is 1x1 m. Records about Sphagnum re-establishment in the ditches will be made. Monitoring results are revealed in Monitoring Protocols and summarised in Reports.

Raised bog restoration area in Sudās – Zviļnedre Mire

In the area of Culiva springs, there are slopes with springs and streams, but in places spring fen vegetation has developed. The characteristic species in the fen vegetation is Carex hostiana, C. paniculata and Eriophorum palustre. In separate places in the fen springs reach the surface and include other species like Circaum oleraceum and Carex trifurca.