Bryophyte monitoring in **the framework of the National Biodiversity Monitoring System (Beáta Papp, Erzsébet Szurdoki)**

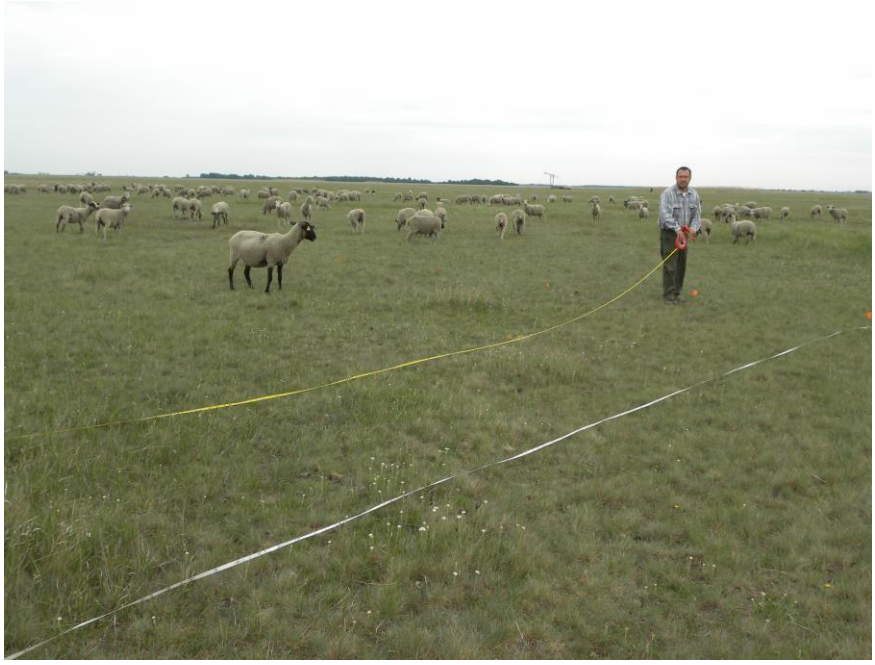
1. Monitoring the species listed in the Annex II of the European Union Habitats and Species Directive (*Buxbaumia viridis, Dicranum viride, Mannia triandra*) in Hungary; tracking changes in population sizes and searching for new populations.

2. Monitoring the changes in bryophyte vegetation in selected stands of habitats rich in bryophytes (wetlands, dry grasslands, saline-alkali grasslands, and forests).

Buxbaumia viridis

Dicranum viride

Mannia triandra



Bryophyte monitoring in a saline grassland in Hortobágy puszta

Bryophyte monitoring in a dry grassland in Somogy County

Methods and further details

Exploration of the bryophyte flora of the Balkans (Beáta Papp, Erzsébet Szurdoki)

Several bryological collecting trips have been carried out in the Balkans in the last 10–15 years. In comparison with other parts of Europe, the bryophyte flora of the Balkans is not well known. The main reasons for this are the limited number of local experts in the past and the lack of properly managed bryophyte herbaria. While our first expeditions were in Serbia and Montenegro, we made sporadic field trips in Bulgaria, Greece and Turkey as well. We have been exploring the bryophyte flora of Albania and the Republic of Macedonia since 2009 and that of Croatia since 2011. As a result, almost 12,000 specimens have been added to our bryophyte collection and more than 50 articles have been published. We have reported 409 species as new national records and several new populations of European red-listed species have been found.

Tomentypnum nitens, a rare moss of wetlands, found for the first time in Croatia in 2012

Grimmia anomala, found in 2002 for the first time in the Balkans in Serbia. Later we collected in Montenegro, Greece and the Republic of Macedonia, as well

Conservation of bryophytes (Beáta Papp, Erzsébet Szurdoki)

1. Protection

In Hungary, 58 bryophyte species gained legal protection (in addition to the already earlier protected 20 *Sphagnum* species) in 2000. The recommendations were made according to the threatened species list of the Red Data Book of European Bryophytes.

2. Red List of Hungarian Bryophytes

According to the Hungarian bryophyte red list, published in 2010, 17.3% of the Hungarian bryoflora are near threatened (NT) and 26.2% of them are threatened, marked by the following categories: CR (3%), EN (13.7%), VU (9.5%).

For further details see: red list

3. Important Bryophyte Areas

These areas are habitats of rare and threatened species. In Hungary, 97 sites were selected on the basis of 126 populations of 28 European red listed species.

Further details: Papp B. 2008: Selection of Important Bryophyte Areas in Hungary. – *Folia Cryptogamica Estonica* **44**: 101–111. pdf

4. New Red Data Book of European Bryophytes

Since the publication of the previous Red Data Book of European Bryophytes, our knowledge of the European bryophytes has improved, especially concerning taxonomy and distribution. Furthermore, the International Union for the Conservation of Nature (IUCN) has refined its criteria and categories for the assessment of threat status. In this project we contribute with data from Hungary and the Balkans.

For further details see: New Red Data Book of European Bryophytes

Enthostodon hungaricus, protected species typical to Pannonian saline grasslands

Pyramidula tetragona, rare protected species occurring on open rock swards