

Dry grasslands in European countries

This section is devoted to overviews of dry grassland research activities in different countries/regions of Europe. We believe that exchange of information can help all of us to get a better understanding of the overall situation of dry grassland research and conservation. Our expectation is that stimulating articles on dry grassland research topics and stories of successful protection will encourage everybody to seek for closer cooperation and for new horizons in dry grassland research.

Different types of contributions are welcome for this section as the present status of dry grassland research and protection in a particular region is determined by several aspects, e.g. the history of overall vegetation (ecosystem) research, nature conservation priorities in the area, the possibilities of cooperation among scientists and practitioners, etc.

We would highly appreciate contributions of our members to this section. They should preferably fit in one of the following categories:

- *overview of dry grassland research/protection/restoration in your country/region (incl. list of publications etc.);*
- *single aspect of dry grassland history in your country/region e.g. history of dry grassland research/protection/restoration;*
- *personalities who contributed or who are contributing to dry grassland research/protection/restoration;*
- *successful/significant project contributing to dry grassland research/protection/restoration;*
- *interesting results of dry grassland research, information on the state of the phytosociological database, etc.*

Current Status of Dry Grassland Vegetation Research in Latvia

During the last 10–15 years research on dry grasslands has been carried out mainly in two directions: syntaxonomy of plant communities and long-term vegetation research.

Long-term Vegetation Research

At present, only one monitoring project is devoted primarily to dry grasslands. It started in 2000 and was implemented by the Latvian Fund for Nature (<http://www.ldf.lv>) with the financial support of the Province

of Overijssel of the Netherlands, the Netherlands Ministry of Agriculture, Nature Management and Fisheries and the Foreign Ministry of the Netherlands, within the framework of the [Eurograssland](http://www.veenecology.nl) (<http://www.veenecology.nl>) projects initiated by the Dutch Province of Overijssel. There were three monitoring sites, all situated in the most spectacular dry calcareous grassland area in Latvia – the Abava River valley. The aim of the monitoring was to evaluate several management types to restore dry calcareous grasslands after two decades of abandonment. Results of the very first



*Calcareous grasslands (*Filipendulo-Helictotrichetum*) in The Abava River Valley Photo: S. Rūsiņa.*

years were published (Jermacāne et al., 2002). The data from 2001 to 2007 were analysed, and results were presented at the 1st Meeting of the Working Group on Dry Grasslands in the Nordic and Baltic Region. The [poster](#) is available at the EDGG homepage. The monitoring was carried out without any financing during the last five years.

Since 1996, long-term dynamics of plant and invertebrate communities have been studied in the protected nature area of coastal grasslands "Randu Meadows", which is situated on the northern coast of the Riga Gulf. Several permanent plots have been established in dry grassland plant communities. The studies were carried out at the Laboratory of Bioindication of the Institute of Biology (www.lubi.edu.lv). Long-term changes in coastal meadow communities under the impact of the interaction between natural environmental factors and management practice were studied (Melecis et al., 1997, 2005).

Several monitoring activities were carried out in the framework of EU LIFE-Nature programme. The aim was to monitor the impact of restoration and management activities on the vegetation development. Unfortunately, the data were recorded only for several years (duration of these projects were three to five years). Only the results of a four-year dry grassland vegetation monitoring after management reintroduction in the Gauja River valley (the project "Protection and Management of the Northern Gauja Valley" homepage: <http://www.zgauja.lv>) have been published so far (Rūsiņa, 2008).



Grassland monitoring site in the Gauja River. S. Rūsiņa.



Goats grazing in forest. Photo: S. Rūsiņa.

was low due to low number of scientists interested in this vegetation type (only 2–3 persons). During the last nine years less than 15 publications dealing with dry grassland syntaxonomy have been published. Twelve of them were prepared by the author (with co-authors) of the present overview (see the list of publications in the page 22 of the [Bulletin No. 1](#)) and some publications by botanists basically working on other vegetation types (Laime, 2000; Kļaviņa et al., 2001). The most important publication containing a phytosociological analysis of dry grasslands of Latvia was published in 2007

Syntaxonomy

First publications on dry grassland syntaxonomy appeared in 1999–2000 (Laiviņš & Jermacāne, 1999; 2000; Jermacāne, 2000a, 2000b; Laime, 2000). However, until now the progress in dry grassland research



Dry grassland monitoring site in the Abava River Valley. Photo: S. Rūsiņa.



Filipendulo-Helictotrichetum in Latvia. Photo: S. Rūsiņa.

(Rūsiņa, 2007). It contains the description of 19 association-level communities of dry grasslands (Table 1) and includes phytosociological tables of the individual relevés. Another important publication has been prepared by Brigita Laime and Didzis Tjarve recently (Laime, Tjarve, 2009) dealing with syntaxonomy of grey dune vegetation on the Baltic Sea coast in Latvia (the class *Koelerio-Corynepherea*).

At present, the largest phytosociological database of dry grasslands is owned by the Laboratory of Geobotany at the Institute of Biology of the University of Latvia. The database is developed by the means of Turboveg software (Hennekens & Schaminee, 2001). Presently, approximately 780 dry grassland vegetation relevés are stored in the database incl. 80 relevés of *Trifolio-Geranietea*, 400 relevés of *Festuco-Brometea*, and 300 relevés of *Koelerio-Corynepherea*. The relevés were collected from 1997 to 2006 and the size of relevés changed between 1 m² and 100 m² (the majority of them was 4 m² or 9 m²). The database is being renewed continuously. Latvian dry grassland relevés

have been included into the database of [the Working Group on Dry Grasslands in the Nordic and Baltic region](#) (Dengler et al., 2006.).

More than 3000 relevés of grey dune vegetation have been collected by Brigita Laime (Faculty of Biology, University of Latvia) (Laime, Tjarve, 2009). Possibly, several hundreds of relevés are possessed privately by some vegetation scientists, but there is no official or published information about that.



Scorzonera humilis Photo: S. Rūsiņa.

Synopsis of dry grassland vegetation of Latvia (Rusina, 2007)

Cl. *Koelerio-Corynephoretea* Klika in Klika et Novak 1941

- O. *Corynephorotalia* Klika 1934 em. R. Tx. 1955
 - All. *Corynephorion* Klika 1931
 - Ass. *Helichryso arenarii-Jasionetum* Libbert 1940
 - All. *Thero-Airion* R. Tx. ex Oberd. 1957
 - Ass. *Airo caryophyllea-Festucetum ovinae* Sommer 1971
- O. *Festuco-Sedetalia acris* R. Tx. 1951
 - All. *Plantagini-Festucion* Passarge 1964
 - Ass. *Diantho-Armerietum elongatae* Krausch ex Pötsch 1962
 - typical variant
 - Equisetum hyemale* variant
 - Festuca trachyphylla* variant
 - Poa angustifolia* com.
 - typical variant
 - Galium boreale* variant
 - Deschampsia flexuosa* variant
 - Hypochoeris radicata* variant
 - All. *Koelerion glaucae* Volk 1931
 - Ass. *Poetum compressae* Kizienè 1998
 - Ass. *Festucetum polesicae* Regel 1928
 - Koeleria glauca* com.
 - Silene otites-Koeleria glauca* com.
- O. *Alysso-Sedetalia* Moravec 1967
 - All. *Alysso-Sedion* Oberd. et T. Müller in T. Müller 1961
 - Ass. *Saxifrago-Poetum compressae* (Kreh 1951) Géhu et Lericq 1957
 - Sedum sexangulare* com

Cl. *Festuco-Brometea* Br.-Bl. et R.Tx. ex Klika et Hadač 1944

- O. *Brometalia erecti* Koch 1926
 - All. *Koelerio-Phleion phleoidis* Korneck 1974
 - Ass. *Pulsatillo-Phleetum phleoidis* Passarge 1959
 - All. *Mesobromion erecti* (Br.-Bl. et Moor 1938) Oberd. 1957
 - Ass. *Medicagini-Avenetum pubescentis* De Leeuw in Br.-Bl. et Moor 1938
 - All. *Filipendulo vulgaris-Helictotrichion pratensis* Dengler et Löbel in Dengler et al. 2003
 - Ass. *Filipendulo vulgaris-Helictotrichetum pratensis* ass.,prov. Rusina 2007
 - Subass. *typicum* subass. prov.
 - typical variant
 - Carex caryophyllea* variant
 - Helictotrichon pubescens* variant
 - Dianthus deltooides* variant
 - Festuca ovina* variant
 - Subass. *caricetosum flaccae* subass. prov.
 - typical variant
 - Sesleria caerulea* variant
 - Ass. *Centaureo scabiosae-Fragarietum vescae* Rusina 2007
 - typical variant
 - Fragaria viridis* variant
 - Artemisia campestris* variant

Cl. *Trifolio-Geranietea* T. Müller 1961

O. *Origanetalia vulgaris* T. Müller 1961

All. *Geranion sanguinei* R. Tx. in. T. Müller 1961

Brachypodium pinnatum com.

Geranium sanguineum com.

Veronica teucrium-Bromopsis inermis com.

Calamagrostis epigeios variant

Fragaria viridis variant

All. *Trifolion medii* T. Müller 1961

Ass. *Trifolio-Agrimonetum eupatoriae* T. Müller 1961

typical variant

Plantago media variant

Ass. *Agrimonio-Vicetum cassubicae* Passarge 1967



Astragalus danicus in dry calcareous grassland, Latvia. Photo: S. Rūsiņa.

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