

# SGSII-22 Ornithogalum pyrenaicum sphaerocarpum



Ministerstvo životního prostředí

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## NEWS

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### **Project name: Preparation of the Action Plan for the *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* Plant**

**Project Nr.:** MGSII - 22

**Project location:** Hostynske vrchy Nature Park and its environs, Bile Karpaty Protected Landscape Area and its environs

**Financial support:** EEA Grants, Small Grants Scheme (SGSII) entitled “Action Plans for Endangered Species II”, support area 2: “Revision and Preparation of New Action Plans and Management Plans for Endangered Plant and Animal Species”

**Total Resources:** 373,759 CZK incl. VAT

**Financing:** Financial resources from EEA Grants are assigned in the amount of 317,695 CZK, which is 85% of the anticipated total project expenditure. The state budget grants financial resources in the amount of 56,064 CZK, which is 15% of the anticipated total project expenditure.

**Project duration:** 1.4.2015 – 30.4.2017

#### **Project partners:**

- Czech-Moravian Association for Nature Conservation (NGO)

#### **Project guarantee:**

- Mgr. Eliška Blažejová, AOPK ČR, Division of species protection, E: [eliska.blazejova@nature.cz](mailto:eliska.blazejova@nature.cz)
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### **Overall Project Summary and Effect of the Project on the Relevant Species**

The project fulfilled the anticipated objectives and outputs and was officially closed as of 30.4.2017.

We consider the main benefits of this project to be completion of the text of the action plan for the *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* plant, which aims to secure this declining species in the Czech Republic. Based on the objectives and measures set as part of the action plan, the conservation of this taxon in the Czech Republic will be easier to accomplish.

Besides the actual draft of the programme, detailed information on the historical as well as recent occurrence of the

species in the Czech Republic was obtained as the necessary underlying facts for its conservation. Its historical sites were reviewed and a survey was made in areas of its potential occurrence. In Hostynske vrchy and its surroundings, besides 15 known recent sites the taxon was newly identified at 4 other sites, one of which was confirmed after several decades. In the White Carpathians, 3 new sites were added to the 2 recent sites, and 2 new smaller populations were identified at one of the recent sites.

The critical review of the available herbaria items and the field survey at historical sites, which were localised precisely enough, showed that in the past the plant used to be much rarer in the White Carpathians than was stated. Many historical records bearing the name of the plant were found to actually relate to *Ornithogalum brevistylum*, a species occurring solely in the White Carpathians as regards its occurrence in the Czech Republic. It can still be found at several dozen sites, some of which yield highly numerous populations consisting of thousands of plants.

During the implementation of the project, much information regarding the biology and ecology of the taxon was gathered. Analysis of changes in land use, based on old maps, showed that in the oldest recorded period, i.e., 1828–1831, the taxon occurred most frequently in meadows and fields, and also in pastures. Around the year 1950 its occurrence in meadows and fields prevailed. The share of meadows grew significantly at that time, while its occurrence in fields and pastures dropped. Recent occurrence prevails in fields and in shrubs with various degrees of canopy, while its occurrence in broadleaved forests and orchards is less frequent.

Based on the evaluation of a collection of phytosociological relevés from almost all sites in the Czech Republic, it was found that the plant shows no close link to any specific vegetation type. Important factors contributing to its survival and prosperity at the known sites are low frequency and intensity of disturbance or a late date of intervention, enough light and an absence of permanent waterlogging. The most important biological factor, which is the cause of a major impairment of populations at approximately one-half of the recent sites, is nibbling by Fallow Deer (*Dama dama*).

As part of the project, germination capacity tests were made and the genome size was measured using flow cytometry. The germination capacity test results cannot be interpreted clearly: Laboratory tests gave only a minimum of seeds in 15 months, while in a trial greenhouse sowing, more than 60% of seeds germinated. Flow cytometry showed that the populations of *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* in the Czech Republic are the same as regards genome size. It was also found that the genome of *Ornithogalum brevistylum* is considerably smaller.

Facts obtained through monitoring, which also included the current management, were important underlying facts to assess the condition of each site and determine its trends. Drafts for management measures could therefore be prepared for every site, based on the general principles but adjusted to the specific conditions in each specific area. Management measures proposed in this way should lead to optimum population conditions at each site.

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## **Project Objective and Scope:**

The objective of this project was the preparation of an action plan which should seek to preserve this declining species in the Czech Republic. The action plan defined the objectives of the key measures and provides guidelines for high-quality conservation of the plant. The action plan will be used to implement the measures in subsequent years.

### **Activities within the Project**

#### **Cytogenetic Analysis – Flow Cytometry**

These activities include an analysis of 76 samples of *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* from 19 sites in the Czech Republic and 8 comparable samples of *Ornithogalum brevistylum* from 2 sites in the White Carpathians.

#### **Determination of Occurrence in the Czech Republic**

Historical and recent data was collected from the available resources pertaining to the occurrence of this species in the Czech Republic. The survey was carried out both at historical sites as well as at sites of potential occurrence of the taxon.

#### **Determination of the Germination Capacity and Viability of Seeds**

The germination capacity of seeds, determined by a laboratory test, expresses the ability of the seeds to produce, under optimum conditions within a determined time, the maximum quantity of normally developed germinating plants. As part of this activity, germination capacity tests were carried out from 9 sites.

### **Monitoring of Populations of *Ornithogalum pyrenaicum* subsp. *Sphaerocarpum* and Its Sites**

The fitness of the population, namely as regards quantity and the proportion of germinating plants, was recorded together with habitat conditions, biotope characteristics, threats and site perspective. Photographs were taken of every site and the sites were outlined on the map, indicating the occurrence of the species.

### **Determination of the Ecology and Biology of the Species**

The ecology and biology of the species was determined by using phytosociological relevés. They were subsequently assigned to individual vegetation types, and Ellenberg's indicator values were also used to determine the characteristics of the habitat conditions. This measure also included a study into the changes in land use in order to determine and document its history at the recent sites where the plant occurs. The study was carried out using old maps, namely the Stable Cadastre and aerial photographs from the 1950s, and facts on current land use obtained through the field survey.

### **Schedule of Measures – Identification of the Current Use of the Sites and the Management of the Sites**

From August to September, a second check was performed at the sites where the species occurs, focusing on a determination of whether and how each site is used, and the owners or lessees of the relevant land. These findings were taken into consideration in determining the suitable management for each site.

### **Preparation of the Action Plan**

The action plan has been prepared in accordance with the Guidelines for the Preparation of Action Plans and Management Plans for Specially Protected Plant Species, attached to the Concept of Action Plans and Management Plans for Endangered Animal and Plant Species in the Czech Republic (MoE & AOPK CR 2014).

### **Professional Review of the Action Plan Draft**

The completed draft of the Action Plan was submitted for review by two experts. The comments from the reviewers were subsequently addressed and the proposed changes were incorporated into the revised version of the Action Plan. The summary of the action plan for *Ornithogalum pyrenaicum* subsp. *sphaerocarpum* can be found here.

### **Project Publicity**

Introductory and closing informational seminars were held as part of the project publicity. Promotional materials were made – the Pairs game, trays, a leaflet on the plant and spectacle cloths. Other information on the project implementation can be seen in the news section here.

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### **Photos:**



**Partner logo:**

