Establishment of monitoring of several priority and important habitats and plant species in NP Galicica

Within the framework of the Research Center for Environment and Materials at the Macedonian Academy of Sciences and Arts, a project *"Establishment of monitoring of several priority and important habitats and plant species in NP Galichica"* was implemented, financially supported by PONT.

Participants: Vlado Matevski – team leader (MASA) and five participants from the Institute of biology, Faculty of Natural sciences and mathematics, University Ss Cyril and Methodius, Skopje (Mitko Kostadinovski, Renata Ćušterevska, Cvetanka Cvetkoska, Sara Cvetanoska and Angela Ivanova).

The main topics of the project were to increase knowledge about the quality of the habitat of black alder (*Alnus glutinosa*), establishment of monitoring for *Angelica palustris* and assessment of *Centaurea tomorosii* according to IUCN methodology for National Red List.

During the field research that was undertaken in the localities of Sveti Naum and Galichitsa - Tomoros, the planned tasks of the project were realized.

I. **A monitoring protocol for the habitat of Alnus glutinosa - Habitats Directive Annex I - 91E0 * Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) was established.**

The habitat with alder (Alnus glutinosa) is developed near the monastery "Sveti Naum", near the village of Ljubanishta, on the shore of Lake Ohrid, on an area of about 5,5 ha. A control vegetation relevé was made (with precisely determined GPS coordinates), which will be the basis for the establishment of long-term monitoring.

The comparative analysis from the established monitoring will indicate the present tendencies in maintaining the stable state of the plant community or tendencies in the direction of the advanced succession of the monitored plant community. Those changes would be brought into the context of various factors (increase or decrease in average monthly and annual temperatures in the context of permanent climate changes and changes in other environmental factors, anthropogenic influence, etc.).

The monitoring team will deliver information to the Administration of NP Galichica and to the MoEPP, in order to determine the reasons for the situation and propose appropriate measures.

Fig. 1. * Alluvial forests with Alnus glutinosa – Ohrid Lake – St. Naum-Ljubanishta

II. A monitoring protocol for the species Angelica palustris (Besser) Hoffm was established and a Species Management Plan for the species was developed.

The species *Angelica palustris* (Besser) Hoffm. is a rare and endangered plant species throughout its range. Therefore, it is included in the list of the Bern Convention, as well as in Annex II of the EU Habitat Directive. On the territory of North Macedonia, it develops only in a limited area near the monastery "St. Naum", in the coast of the small lake formed by the sources of Crn Drim river. According to the IUCN methodology it is assessed at the National level, as critically endangered (CR).

For the comprehensive protection of the population of this species, an Action Plan was developed, which aims to ensure a stable population of the species for as long as possible. *Angelica palustris* should have a special protection status, considering that the locality where it grows is part of the most significant and attractive tourist center in our country – St. Naum, especially in summer and autumn, when the plant has an optimal vegetative and reproductive period of development.

Fig. 3 Angelica palustris - St. Naum

III. National assessment according to ICUN methodology for the endemic plant species Centaurea tomorosii Micevski

Centaurea tomorosii was described by famous Macedonian botanist Kiril Micevski (Acta Botanica Croatica, 1985). It is an endemic species, with widely accepted taxonomic status appearing in the southwestern part of Balkan peninsula. This is strictly protected species on the territory of the Republic of North Macedonia. The evaluation was prepared according to IUCN methodology (VU - criterion D2).

The species has a small range of distribution, occurring only in the Galičica Mountain in North Macedonia (on grasslands and rocky areas) and around the Lake Prespa in Greece. The working team lists 45 localities where species was found collected by various experts (K. Micevski, V. Matevski, R. Ćušterevska, E. Bergmeierm, data from NP Galičica) from the entire known range of the plant species.

The species has a stable population. It is not used for medical purposes. In the past, an antenna system and a sky slope were established in the area of its distribution. The monitoring activities since 2012 show that population is stable, despite recreative activities (hikers) in the area.

The reviewer of this evaluation concludes that the red list status of the species Centaurea tomorosii is well prepared. In doing so, all available data were taken into consideration, all available information about

population, habitats, ecology, use of species, threads, and conservation and prepared well-founded assessment based on IUCN criteria

Fig. 3. *Centaurea tomorosii* – Galičica: Tomoros

Such projects, financially supported by PONT, represent a significant contribution to improving the protection of rare and important plant species and habitats, which are part of international documents (EU habitat directive, Bern Convention, Local legislation). This promotes their value as a significant components of biological diversity and raises public awareness of their importance.