An assessment of the natural value of selected meadow-pasture communities in the Middle Sudetes region

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Abstract: The paper presents an assessment of the natural values of grassland communities situated in the region of the Middle Sudetes in meso-regions of the Sowie, Kamienne and Wałbrzyskie Mountains. The study was carried out in the years 2009–2010 on utilised meadows and pastures. Two hundred and thirty two phytosociological relevés were made with the Braun-Blanquet method to estimate phytosociological affiliation of grassland communities. Moreover, species richness and the index of floristic diversity were calculated. Protected species were recorded and their risk categories were estimated.

The studies showed that grassland communities belonged to the class Molino-Arrhenatheretea. Five phytosociological units in the rank of association or community with the dominating species were distinguished within this class: Arrhenatheretum elatioris, the community Poa pratensis-Festuca rubra, the community with Agrostis capillaris, the association Lolio-Cynosuretum and the community with Alopecurus pratensis. The distinguished grassland communities were characterised by relatively high species richness ranging from 57 species in the community with Alopecurus pratensis to 103 species in the community with Agrostis capillaris and by mean diversity indices $H'$ ranging from 2.6 to 3.1.

In part of analysed grasslands there were 10 strictly or partly protected species. Six of them: Dactylorhiza maculata (L.) Soó, Gymnadenia conopsea (L.) subsp. conopsea R. Br., Trollius europaeus L. s. str. Dactylorhiza majalis (Rchb.) P. F. Hunt & Summerh., Colchicum autumnale L. and Platanthera bifolia (L.) Rich belonged to endangered or rare species in Lower Silesia. The presence of protected and rare species in grasslands increases their natural value. Most valuable phytocoenoses classified as the association Arrhenatheretum elatioris and the community Poa pratensis-Festuca rubra are identifiers of valuable habitats protected within the Natura 2000 system. Obtained results indicate that the studied grassland communities are characterised by a high natural value.

Key words: grasslands communities, natural value, protected and endangered plant species, rare, the Sudetes