Summary

INFLUENCE OF ACTIVE PROTECTION ON THE CONDITION OF NATURAL HABITATS IN THE MOUNTAIN GLADES IN BESKIDY MOUNTAINS

The landscape of the Beskids, besides specific natural and geological conditions, has been shaped as a result of historical human activity. The mowing and shepherding economy conducted over the last centuries resulted in the formation of mountain glades, in which non-forest communities developed. They have many different advantages. On the one hand, they open up beautiful panoramas, increasing tourist attractiveness, on the other, they are centers of biodiversity, rich in rare and protected species as well as valuable and often endemic plant communities. Unfortunately, due to the decline in profitability of the extensive economy, most of the clearings have been abandoned. This is the main threat to this type of ecosystem, which results in rapid succession. The expansion of highly competitive herbaceous plants and the gradual overgrowing by woody vegetation causes the disappearance of light-consuming species and the degeneration of phytocoenoses. The protection and improvement of this type of habitat is a serious challenge. The necessary treatments are complicated, costly and long-lasting, yet, according to the literature data, they often bring little or no improvement.

In the years 2014-2018, the Complex of the Landscape Parks of the Śląskie Voivodeship implemented the LIFE12 project LIFE12 NAT / PL / 000081 under the name "*Conservation of Non-forest Habitats in the Area of the Landscape Parks in the Beskid Mountains" within the framework of I LIFE+ Nature and Biodiversity Component. The Silesian Voivodeship for the Compound of Landscape Parks in the Silesian Voivodeship*", under which active protection treatments were carried out in clearings located in the Beskid Śląski and the western part Beskid Żywiecki. As part of these activities, self-sown trees and shrubs were removed from the glades, and the clearings were mowed once and the biomass was removed. The patches of expansive alpine dock (*Rumex alpinus*) were also mown. These were preliminary procedures to prepare for the introduction of sheep grazing. Shepherd management, considered the basic method of protecting the natural habitats of mountain glades, was in a way the core of the project. For the purposes of analyzing the impact of protective measures, environmental monitoring was conducted in 2014-2020. The monitoring results were the basis for the analysis underlying this work.

The aim of the study is to assess the impact of active protection on the state of preservation of nardus grasslands and hay meadows, which are a phytosociological identifier of natural habitats occurring in mountain clearings in the Beskid Śląski and Beskid Żywiecki.

The methodology of environmental monitoring implemented as part of the State Environmental Monitoring by the Chief Inspectorate of Environmental Protection was adopted for the research, which was developed in such a way as to enable obtaining information about changes occurring in natural habitats over a specified period of time, updating information about their condition, as well as the direction and pace of changes. The assessment of the conservation status of a habitat was characterized by three parameters: habitat area, structure and function, and the chance of habitat conservation, based on specific indicators specific for a given habitat type. An integral element of the assessment was the taking of relevés with an area of 25 m^2 in patches of habitats, as the basis of the discussed methodology for assessing the conservation status is the analysis of plant communities referred to as phytosociological identifiers of a given habitat. Ultimately, the conservation status of the habitat was assessed on a three-level scale:

- proper condition (FV),
- unsatisfactory condition (U1),
- bad condition (U2).

The research concerned two natural habitats in 36 glades: Nardus grasslands (6230) and mountain meadows of conetlice and moss meadows used extensively (6520). The presence of Nardus grasslands was demonstrated in 34 clearings, and of mountain meadows in 23. A total of 484 relevés were made. The presence of 210 plant taxa was found (202 taxa of vascular plants and 8 bryophytes).

Additionally, the relevés taken were compiled into 8 tables, which were used to calculate the Shannon-Wiener species diversity index.

Active protection measures carried out in 2014-2020 resulted in clear, favorable changes in the conservation status of habitats 6230 and 6520. The results of assessments for the conservation status of both habitats indicate that after the first year of active protection, positive changes are insignificant, but they become very clear in subsequent years of extensive grazing.

In the case of habitat 6520, an increase in diversity, expressed by the Shannon-Vienner index, was initially observed, but in the last year it was reported to decline on 59% of the research areas. An increase in coverage of the woolly spikelets Holcus lanatus was also observed, showing an expansive tendency, the dominance of which may be a sign of the degeneration of plant communities resulting from the lack of fertilization. Therefore, it should be concluded that the fertilization of the habitat should be increased.