Pinus Sylvestris L. Var. Cretacea Kalen. In The "Kreidova Flora" Branch Of Ukrainian Steppe Nature Reserve: Current State And Conservation Measures

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Abstract

The "Kreidova Flora" branch of Ukrainian Steppe Nature Reserve was created in 1988 to protect unique cretaceous vegetation, including pine forests on chalk. The Standing Committee of the Berne Convention in 2018 added these forests to the list of endangered habitats as "G3.4G *Pinus sylvestris* forest on chalk in the steppe zone". For the last 30 years, the area covered with pine trees has doubled, but there are threats of invasive plants, periodical fires and losses as a result of military actions since 2014. Satellite remote sensing data (Landsat archive) were used to analyze the distribution patterns and disturbances over 30-year period. The assessment of the stability and risks in this habitat shows its rareness, narrow prevalence, poor reproduction, very high (R> 83%) danger of destruction, and strong sensitivity to the environmental changes. Special set of monitoring and conservation measures are considered to provide successful protection of the habitat as a part of Emerald network.

Keywords: Scots pine, chalky outcrop, endangered habitat, Emerald network, biodiversity conservation

References:

- [1] Y.Didukh. A novel approach to the assessment of the stability and the risks of ecosystems losses. Reports of the National Academy of Sciences of Ukraine. 2014; 8:149-154.
- [2] G.Kolomytsev, D.Shyriaieva, O.Vasyliuk. The impact of fires in the zone of antiterrorist operation in Ukraine: assessment using RS and GIS data. Materiały konferencyjne GIS DZIŚ (Kraków, 17 18 listopada 2014). Krakow. 2014; p.42-43.
- [3] S.V. Limansky. Measures to preserve the biological and landscape diversity of "Cretaceous flora". Current status and protection of natural complexes in the Siversky Donets basin. Conservation Biology in Ukraine. 2017; 5: 51-52.
- [4] S. V. Limansky, E.S. Lymansky. Dynamics of growth of seedlings Pinus sylvestris L. and Pinus sylvestris var. Cretacea Kalenich. Ex com. on chalk outcrops. Industrial botany. 2010; 10: 221-225.
- [5] N. Polchaninova, G. Savchenko, V. Ronkin, V. Kletenkin, L. Borovyk, S. Limanskij Biodiversity of the chalk grasslands of Eastern Ukraine and the problems of its conservation. Book of abstracts, 14-th Eurasian Grassland Conference "Semi-natural Grasslands Across Borders" (4-11 July 2017), Riga (Latvia) and Western Lithuania. University of Latvia, 2017; p. 48.
- [6] Revised Annex I to Resolution 4 (1996) of the Bern Convention on endangered natural habitat types using the EUNIS habitat classification (Adopted by the Standing Committee on November 30, 2018)
- [7] E.I. Sennaya, N.V. Kasyanova. Cartographic accompaniment of research of unique flora and fauna at the outcrops of chalk rocks: initial prerequisites and perspectives. InterGIS International Conference. 2014; 20: 499-506.
- [8] V. S. Tkachenko. Phytocoenotic monitoring of reserve successions in the Ukrainian Steppe Nature Reserve. Kyiv: Phytosococenter; 2004. 184 p.