

Vascular Plants of the Indyuk Mountain Plant Associations Listed in the Red Book (RDBRF)

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The floristic diversity of the Caucasus includes 1,255 endemic species, among which orchids (Orchidaceae Juss.) are of particular ecological significance. They form the foundation of plant communities not only in the subalpine and alpine belts but also in foothill and low-mountain areas. According to various literary sources, the family is represented by 41–47 species along the Black Sea coast of Krasnodar Krai.

The study of orchids within the territory of the natural monument "Indyuk Mountain" (Tuapsinsky District, Krasnodar Krai) is becoming particularly relevant. Despite its status as a specially protected natural area, it experiences significant recreational pressure due to its proximity to populated areas and its popularity among tourists. The territory is officially recorded as hosting 6 orchid species from 4 genera: *Cephalanthera rubra* (L.) Rich, *Cephalanthera longifolia* (L.) Fritsch, *Orchis mascula* (L.) L., *Orchis purpurea* Huds., *Limodorum abortivum* (L.) Sw., and *Platanthera chlorantha* (Custer) Rehb. The lack of current data on the distribution, abundance, and structure of their coenopopulations makes it impossible to properly assess their vulnerability. This applies not only to regional climatic changes, which significantly impact their well-being, but also to the increasingly intense anthropogenic impact on the area.

The vegetation cover of the territory was studied using the route method. At sites where coenopopulations were found, a detailed stand and herb-dwarf shrub layer descriptions followed standard geobotanical methods. Plant associations were identified based on an ecological-phytocoenotic (primarily dominant) approach. The age states of the orchids were identified according to standard approaches. Morphological characteristics of above-ground plant parts (without digging up specimens) were used to determine ontogenetic stages. A soil pit was dug in each sample plot, and a brief description of soil morphology was completed. The main habitat characteristics were determined: aspect using a compass, and slope inclination using a protractor with a plumb line. The location of description points and encounters with rare species was recorded.

During field research on the territory of the Indyuk Mountain natural monument, the presence of 4 out of the 6 orchid species listed in literary sources was reliably confirmed. Determining the possible reasons for the absence of *C. rubra* and *O. purpurea* from our observations is quite difficult. The coenopopulation of *C. longifolia*, confined to sparse oak forests (*Quercetum rhododendroso varioherbosum*), appears to have the greatest presumed resilience to potential environmental changes. *P. chlorantha* (*Quercu-Castanetum rhododendroso varioherbosum*) and *O. mascula* (*Quercu-Fagetum primuloso varioherbosum*) form small groupings with a left-sided age spectrum. A single record of *L. abortivum* (*Carpineto-Fagetum ruboso varioherbosum*) does not confirm the presence of a stable coenopopulation for this species within the surveyed areas.