

ANNUAL REPORT FOR 2023¹

“DOBROČSKÝ PRALES NATIONAL NATURE RESERVE”

State: **Slovak Republic**

Name of the area: **Dobročský prales National Nature Reserve**

Year and number of years since the award or renewal of the European Diploma of Protected Areas:
The Resolution CM/ResDip(2018)12 on the renewal of the European Diploma for the Dobročský prales National Nature Reserve (Slovakia) adopted at the 1321st meeting of the Committee of Ministers on 4 July 2018, valid by 18 September 2028 /hereafter “Resolution No (2018)12”²

Central authority concerned:

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1. Condition

The following condition is determined by the Resolution No (2018)12:

Conduct a study involving all stakeholders to verify necessity of a new forest road into the buffer zone and identify measures guaranteeing a least intervention solution to minimise the impact of the road, provided that the construction is not carried out during the vegetation period and in the breeding season, and that the felling itself does not include heavy machinery; a natural re-cultivation of the road should be foreseen once the forestry work has been carried out; report to the Council of Europe before starting the road works.

The situation with the bark beetle calamity in the surroundings of the Dobročský prales National Nature Reserve (hereinafter "Dobročský prales NNR") is still critical. Its spread throughout the region has not been halted yet. At the same time, calamities caused by drought are increasing. Due to the priority of processing calamity logging, the forest manager and administrator of the area - the Forests of the Slovak Republic, State Enterprise - Horehronie Branch (hereinafter "FE Horehronie") did not plan to build a new forest road in this reported period either.

¹ Reported period 1st September 2022 – 31th August 2023

² Originally resolution No (2003)6, resolution No (2008)19 and resolution No (2012)11, respectively

2. Recommendations

Four recommendations set up by the Resolution No (2018)12 are:

1. Add a chapter on scientific research to the management plan defining clearly the needs of the management of the nature reserve and including a timetable to avoid surveys that are not directly connected to the further development of the area.

During this reported period research in the Dobročský prales NNR complied with the rules set out in the Management Plan for the Dobročský prales National Nature Reserve (Special Area of Conservation SKUVE0047 Dobročský prales) for the period 2018-2047.

The research focussing on climate change continued according to the planned project schedule. The research is described more detailed in Recommendation No. 3.

Activities related to the study of the Giant noctule (*Nyctalus lasiopterus*) in this reported period consisted only of captures by misnetting, without GPS telemetry. Researchers from the Institute of Forest Ecology of the Slovak Academy of Sciences in Zvolen confirmed its presence in the Čierny Balog area again this season.

Research of rare fungus associated with dead wood led by Prof. Ing. Vladimír Kunca PhD. from the Department of Applied Ecology of the Faculty of Ecology and Environmental Sciences of the Technical University in Zvolen, continued by analysing of collected data. During the reported period, a paper was published on a rare species of fungus (*Mycena laevigata*), which was also detected in the Dobročský prales NNR³.

2. Develop, according the precautionary principle, a strategy on how to deal with invasive alien species, in case of their appearance.

Canadian goldenrod (*Solidago canadensis*) was, as in the previous reported period, the only invasive alien plant species detected in the Dobročský prales NNR and its surroundings.

In July, FE Horehronie mowed the roadsides in the Brôtovo and Za Dlhý grúň Valleys, which reduced the vitality of potential individuals. The frequent use of roadside areas for the temporary storage of wood probably also had a positive effect. In the Za Dlhý grúň Valley, no individuals were found during the monitoring by the staff of the State Nature Conservancy of the Slovak Republic, the Poľana Protected Landscape Area and Biosphere Reserve Administration (hereinafter "Poľana PLA-BR Administration ") in August. In the Brôtovo Valley, 12 specimens of goldenrod were found. They were removed by uprooting in accordance with the legislation in force. The area of the Dobročský prales NNR itself is so far free of invasive alien plant species.

3. Prepare a study on the effects of climate change and global warming, both on the nature reserve itself and on the regional forests, including the strategy on how to manage the surrounding forest to avoid negative impact in the nature reserve.

Climate change research continued by the scientific project of an expert team from the Technical University in Zvolen entitled PROBIOFOR - "The relationship between biomass production and biodiversity in fir-beech forests under the influence of changing environmental conditions." The fieldwork in this reported period was mainly focused on:

³ Holec J., Dvořák D., Zíbarová L., Beran M., Peiger M., Kunca V., 2023: *Mycena laevigata* in the heart of Central Europe – a prominent species of old-growth forests. Czech Mycology 75(1): 35–52.

- Continuous monitoring of volumetric soil moisture and soil water potential
- Continuous monitoring of the forest microclimate (air temperature and humidity)
- Regular determination of the 3D soil profile using tomography
- Continuous monitoring of seasonal growth of fir, beech and spruce using dendrometers
- Continuous monitoring of the transpiration (sap flow) of beech and spruce
- Sampling to quantify the microbial diversity in the soil
- Monitoring of the carbon content in the soil in the buffer zone and in the neighbouring spruce forests.

Preliminary results indicate a better water retention function of the soil/stand in the core zone of the primeval forest compared to the neighbouring spruce forest of the same age. The researchers were also able to record the different reactions of trees to the extreme drought of 2022. While Silver fir and European beech showed a similar increment in the extremely dry year 2022 as in the relatively better year 2021, the situation in case of Norway spruce was reversed. The Norway spruce trees had almost none increment in 2022. At the same time, this drought significantly reduced the Norway spruce's resistance to bark beetle, which led to large-scale disturbances. The evaluation of the growth for 2023 has not been completed yet. The research project will continue in the next reported period.

The Poľana PLA-BR Administration and the scientific team planned a field presentation of preliminary research results. During the reported period, 3 working meetings were held to organise the workshop. It was planned for October 2023. Summary of the workshop, as well as its popularization will be reported next year. We can conclude, however, that the seminar named "*Adaptation of forest trees and carbon flows in forests ecosystems at the time of global climate change*" was of great importance for scientists, but also for representatives of forestry and conservation practice.

4. Explore the possibility of moving the exhibition from the Pred Skalickou cottage to the Forest Museum.

The new exposition about the Dobročský prales NNR, which was installed in 2022 in the summerhouse in the open-air museum in the Vydrovská dolina Valley, has been attracting the attention of visitors since the last reported period.

The number of visitors of the open-air museum fell slightly this season due to the spreading of the bark beetle calamity. It was processed in the open-air museum, which led to restrictions on visitors' free movement. The number of visitor is expected to increase once the calamity will be fully processed.

Routine maintenance work was carried out at the Pred Skalickou cottage, the surrounding area was mowed and promotional materials about the Dobročský prales NPR were added.

3. Local management

During the reported period, the local management respected the principles and measures defined in the Management Plan for the Dobročský prales NNR (Special Area of Conservation SKUVE0047 Dobročský prales) for years 2018-2047.

The "non-intervention" regime was applied in the core zone. The precipitation deficit in the previous vegetation period also affected the defence capability of the trees in the core zone. Most of the Norway spruce trees were damaged by bark beetle and dried out.

Only sanitary logging was carried out in the buffer zone (wind calamity 23 m³, bark beetle calamity 3 207 m³, drought 765 m³). The FE Horehronie reported the occurrence of the calamity via the forestry information system. The Poľana PLA-BR Administration carried out an inspection in the affected stands and agreed on the principles of processing the calamity

material. On its initiative, the District Office Brezno limited the processing of calamity material to a total volume of 1 321 m³. The reason for leaving a certain amount of dry wood mass was to improve habitat conditions by increasing the proportion of dead wood and thus creating suitable conditions for rare beetle species associated with dead wood.

Either during this reported period, interventions aimed at changing tree species composition and differentiating stands in the buffer zone has been blocked because of preferential sanitary logging. The differentiation of the stands and changing tree species composition, however, occurs spontaneously through the drying out of the Norway spruce trees and the growth of natural regeneration.

In view of the current calamities in the region and the ongoing climate changes, the spread of calamities is not expected to stop.

4. Borders

No changes.

5. More details

In the previous reported period, the Poľana PLA-BR Administration organised an art contest for children entitled "Life in the Primeval Forest". Visitors of the Museum of Forestry and Wood Technology in Zvolen were able to view the works of art participating in the contest together with information boards about the Dobročský prales NNR from October 2022 to the end of December 2022. As part of the exhibition, the Poľana PLA-BR Administration also organised creative workshops. Children designed a forest diorama from natural materials, painted their dream tree, cut out animals living in the forest and modelled them (<https://chkopolana.sopsr.sk/dobroccky-prales-ozil-v-muzeu/>).

From February 2023 to June 2023, the exhibition was also open to the public in the Podpolianske Museum in Detva. The children's works were complemented by photos from the lives of forest animals by forester and photographer Ján Slovák. As part of the Night at the Museum event on 12 and 13 May 2023, visitors learned about the uniqueness of the Dobročský prales NNR and its European Diploma award through a documentary film (<https://www.youtube.com/watch?v=w5btU5UCYog>), while the younger participants listened to the story of the tree and played as "Cinderella" while sorting different types of tree seeds. Totally 677 visitors saw the exhibition. The artistic works involved in the contest were also used for the production of promotional materials (postcards, bookmarks) about the reserve.

Intensive research work was also carried out in the forest during this reporting period, which is described in detail in Recommendation No. 3. Therefore, following the agreement between the FE Horehronie, the Poľana PLA-BR Administration and the NGO Vydra of August 2022, excursions in the core zone were kept to a minimum. The FE Horehronie, in cooperation with the Poľana PLA-BR Administration and the municipality of Čierny Balog, organised The Open Day of the Dobročský prales NNR for the residents of Čierny Balog. It took place on 22 October 2022. As usual, the number of participants was limited to 40 people.

In addition to the Open Day, the FE Horehronie offered a guided tour in the core zone for 2 professional excursions (10 participants). The NGO Vydra accompanied 2 excursions for pensioners (10 participants), 5 excursions for individual visitors (40 participants) and 1 excursion for employees of the Office of Labour, Social Affairs and Family in Brezno (12 participants) along the nature trail in the buffer zone.

In the reported period, the activities of the open-air museum were slightly limited by the bark beetle calamity in its surroundings. This is also related to the decrease in the total number of visitors. However, the main event of the State Enterprise Forests of the Slovak Republic, the Day of the Tree, on 8 July was well attended. There were an estimated 10,000 visitors.

Promotion of the Dobročský prales NNR and spreading awareness of its European Diploma award was realized during the reported period through the above-mentioned art contest and accompanying events during exhibitions of the works of the children participating in the competition. Another event was the "Day of the school" at the open-air museum for

around 100 children from the primary school in Valaská. One of the stops was dedicated to primeval forests and the Dobročský prales NNR in particular.

The short documentary film about Dobročský prales NNR, directed by Zdeno Vlach, was broadcast as part of a documentary series about the Slovak primeval forests.

Information about the reserve can be found on the following pages:

<https://chkopolana.sopsr.sk/european-diploma/dobroccky-prales/>

<https://chkopolana.sopsr.sk/european-diploma/news/>

<https://www.lesy.sk/pre-verejnost/lesnicky-skanzen/npr-dobroccky-prales/>

Information material about the reserve is available to the public in the open-air museum, in the Pod Skalickou cottage and in the information office of the NGO Vydra. For the duration of the exhibition, it was also available at the Museum of Forestry and Wood Technology in Zvolen and the Podpolianske Museum in Detva.

During the reported period, new material was also produced for the renovation of information boards about the Dobročský prales NNR in the Brôtovo Valley.

Annexes:

1. PROBIOFOR research project - report
2. Art contest "Life in the Primeval Forest" – exhibitions, workshops - photo documentation
3. Open Day of the Dobročský prales NNR - photo documentation

In Zvolen, 14 November 2023

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