

ANNUAL REPORT FOR 2022¹

“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***

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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 spread of the bark beetle calamity in the surroundings of the Dobročský prales National Nature Reserve (hereinafter "Dobročský prales NNR") continues on a larger scale than in previous years. Due to priority of the sanitary logging, the forest manager and administrator of the area - the Forests of the Slovak Republic, State Enterprise - Horehronie Branch (due to reorganization of the Forests of the Slovak Republic, State Enterprise, valid from January 1st, 2022; the former the Čierny Balog Branch became part of the Horehronie Branch, hereinafter "FE Horehronie") did **not plan to build a new forest road** in this reporting period either.

¹ Reported period 1st September 2021 – 31th August 2022

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.

Climate change research was dominant in this reported period as well. More details on the sub-activities are given in Recommendation No. 3.

Researchers from the Institute of Forest Ecology of the Slovak Academy of Sciences in Zvolen, in cooperation with the State Nature Conservancy of the Slovak Republic, Poľana Protected Landscape Area and Biosphere Reserve Administration (hereinafter "Poľana PLA-BR Administration"), continued a **research study focused on Giant noctule (*Nyctalus lasiopterus*)**. Thanks to individuals captured in the nearby Šaling Valley and tagged with GPS radios during the reported period, it was possible to explore new tree roosts and determine the flight path of the bats. Based on the satellite telemetry results, it was determined that this species also forage near the Dobročský prales NNR. However, the presence of tree roosts in this area must be confirmed by further surveys.

The **mycological investigations** led by Prof. Vladimír Kunca from the Department of Applied Ecology of the Faculty of Ecology and Environmental Sciences of the Technical University in Zvolen continued in the lab. The data collected so far have been analysed. During the reported period, two publications were published, which also present the results of research on rare fungi from the Dobročský prales NNR^{3,4}.

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

Monitoring of invasive alien plant species (IAP) in the Dobročský prales NNR and adjacent area confirmed the presence of only one species Canadian goldenrod (*Solidago canadensis*). The situation in the Brôtovo Valley is comparable to that of last year. However, two new sites were recorded at the entrance of the valley. In the Za Dlhý grúň Valley, the number of goldenrods decreased significantly. All plants found there were removed by uprooting in accordance with the legislation in force. The area of the Dobročský prales itself is **so far free of IAP**.

Monitoring and removal of the Canadian goldenrod from the above-mentioned valleys is constantly carried out in cooperation of the Poľana PLA-BR Administration and FE Horehronie.

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.

During this reported period, field work continued as part of a **research project entitled "Trade-offs between biomass production and biodiversity in beech-fir forests under changing environmental conditions (PROBIOFOR)"**. A team of experts from the Technical University in Zvolen has been working on this project. In addition to recording climatic and

³ Kunca V., Peiger M., Tomka P., Vampola P., 2022: Old-growth forest fungi – new localities and habitat and host preferences in Slovakia (I.). Czech Mycology 74(1): 33-55.

⁴ Holec J., Kunca V., Kříž M., Zehnálek P., 2022: *Cyphella digitalis* (Fungi, Agaricales) – new data on ITS barcode, ecology and distribution in the Czech Republic and Slovakia. Czech Mycology 74(1): 77-92.

dendrometric variables, mapping of stand structure on the research plots was also carried out. The field work focused on the following activities:

- Continuous monitoring of volumetric soil moisture and soil water potential
- Continuous monitoring of forest microclimate (temperature and humidity)
- Regular determination of the 3D soil profile by 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
- Recording of stand structure with a drone.

All measurements were carried out in both the core zone and the buffer zone. In addition to the measurements mentioned above, monitoring of soil carbon was conducted in the buffer zone and in adjacent spruce stands. The research project will continue in the next reported period.

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

Since the exposition from the Pred Skalickou cottage was not suitable for outdoor use, the Poľana PLA-BR Administration produced **new outdoor design**. The new exposition was handed over on April 27th, 2022 (<https://www.youtube.com/watch?v=Nx8JPw7Tzrl>) in the open-air museum **in the Vydrovská dolina Valley**. It was installed in the summer house, which was built for this purpose already in the previous reported period. Its construction was ensured by FE Horehronie. The information about the primeval forests has taken a new dimension. Visitors to the open-air museum can be "transported" for a moment to the Dobročský prales NNR through a summer house with a green roof and a diverse range of illustrative information. Information about the Dobročský prales NNR and its award has become much more accessible and attractive to the public. For comparison, the exhibition in the Pod Skalickou cottage is seen by about 200 visitors per year, while the number of visitors in the open-air museum is about 50 000 per year.

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.

In the core zone, the "non-intervention" mode was applied. The precipitation deficit and high temperatures in spring and summer created suitable conditions for the spread of bark-beetle calamity in the core zone as well. The occurrence of scattered calamities and also concentrated calamities on smaller areas was observed. Due to climate change, it is very likely that it will continue to gradually fall out of the forest in following years.

Only **sanitary logging was carried out in the buffer zone** (windbreak calamity 278 m³, bark-beetle calamity 2 066 m³). Preferential sanitary logging has blocked interventions aimed at changing tree species composition and differentiating stands in the buffer zone also during this reported period.

The FE Horehronie announced the occurrence of the calamity through the special forest management information system. The Poľana PLA-BR Administration has surveyed the calamity area, established rules for its processing and issued a permit for its processing. During the inspections, dense rejuvenation of native tree species was observed in the stand floor. In conjunction with sufficient leaving of standing and lying deadwood, the formation of species-rich and height-differentiated stands is a prerequisite.

4. Borders

No changes.

5. More details

In February 2022, the Poľana PLA-BR Administration announced an **art contest "Life in the Primeval Forest"**. Pupils of primary art schools were invited to depict their ideas about life in the Dobročský prales NNR. The young artists could be inspired by the available document about the reserve (<https://www.youtube.com/watch?v=w5btU5UCYog>) or take a direct look into the primeval forest accompanied by Poľana PLA-BR staff. 61 children from 6 primary art schools participated in the competition. The professional jury selected the winners in two categories (<https://chkopolana.sopsr.sk/vyhlasenie-vitazov-zivot-v-pralese/>). The public could choose their favourite by voting on the Poľana PLA-BR Facebook page (<https://www.facebook.com/photo?fbid=3045310059132979&set=pcb.3045317572465561>). During the summer season, all artworks were exhibited in the open-air museum in the Vydrovská dolina Valley. Currently, the exhibition of the works together with information boards about the Dobročský prales NNR is installed in the Museum of Forestry and Wood Technology in Zvolen. It is planned to use these artworks also for the creation of new promotional materials about the Dobročský prales NNR.

During the reported period, **excursions to the Dobročský prales NNR** were also carried out. Employees of the **Poľana PLA-BR Administration accompanied 3 groups in the core zone**. Two groups consisted of children from primary school in Brezno and students from secondary school in Detva, as well as their peers from abroad (Croatia, Norway, Czech Republic, Poland, Cyprus) who visited these schools within the framework of the Erasmus Plus Program. The participants received a lecture about the importance of primeval forests and their basic characteristics, pointing out the natural features of the Dobročský prales NNR and its award with the European Diploma. There was also a discussion on the topic of biodiversity and primeval forests, which was enriched by the exchange of information and experiences of the foreign participants. At the end, the young people sent a greeting from the primeval forest in their native language (<http://chkopolana.sopsr.sk/odkazy-mladych-z-dobrocsekeho-pralesa/>). The third organized group consisted of children from art schools who participated in the above-mentioned art competition. After completing the excursion in the core area of the reserve, the children tried to create their impressions and experiences from the forest on a nearby meadow. The **total number of visitors who took part in the excursions to the core area of the reserve was 97**.

Employees of **FE Horehronie** accompanied foresters from Serbia and representatives of research institutes, the National Forestry Center and the Faculty of Forestry of Technical University in Zvolen to the reserve. The **total number of 17 visitors were present**.

The **NGO Vydra provided guided tours** to the reserve along to the educational trail for 3 school excursions (140 pupils), 8 excursions for pensioners (15 visitors) and 8 excursions for individual visitors (40 visitors), **235 in total**.

The FE Horehronie in cooperation with the Poľana PLA-BR Administration and the municipality of Čierny Balog organized the **Open Day of the Dobročský prales NNR**. It took place on October 25th, 2021 and was attended by 40 local residents. There were again selected participants who have not been yet in the core area of the forest. At the end of the excursion, they expressed their admiration for the majestic trees in the reserve and at the same time expressed their gratitude for having opportunity to see the reserve in all its beauties for the first time.

In the reported period, in addition to the exposition about the primeval forest, the **information board "On the Trace"** was added near to the maze in the open-air museum. The total number of annual visitors is estimated **up to 50 000**. This is a slight decrease in

comparison to the previous year. Estimated attendance at the main event - **Tree Day** - on July 9th, 2022 was approximately **8 000 visitors**.

During this reported period, intensive research was conducted in the forest. Its realisation, combined with field excursions, resulted in mild but visible trampling and widening of the sidewalk into the core area. Therefore, all relevant organizations met and agreed on **visitor rules**. They agreed to cancel public excursions to the core area for the duration of the research. One exception is Open Day in the Dobročský prales NNR. Excursions for experts and students will still be allowed with restrictions (maximum 1 per month, maximum 20 visitors).

Promotion of the Dobročský prales NNR and spreading awareness about its European Diploma award were carried out during this reported period through the above-mentioned art competition and the opening of a new exhibition in the open-air museum. In addition, the information material about the reserve was supplemented not only in the open-air museum, but also in Pod Skalickou cottage and in the information office of NGO Vydra. The public could also read about the Dobročský prales NNR in the following **magazines**:

"Les a lesokruhy" (<https://www.lesmedium.sk/casopis-letokruhy/2022/casopis-letokruhy-2022-01/najstarsie-lesne-rezervacie-na-slovensku>) and "Chránené územia Slovenska" (https://www.sopsr.sk/publikacie/chus/chus98_final.pdf, p. 57).

Annexes:

1. Art contest "Life in the Primeval Forest" – photo documentation
2. PROBIOFOR research project - report
3. Meeting on visitors rules – attendance list

In Zvolen, 12 December 2022

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