

Ramsar Information Sheet

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- 1. Date this sheet was completed:** 7 October 1997
- 2. Country:** Czech Republic
- 3. Name of wetland:** Wetlands of Libechovka and Psovka Brook
- 4. Geographical co-ordinates:** 50°30 - 50°20'N 14°25 - 14°35'E
- 5. Altitude:** 175 - 290 m above sea level
- 6. Area:** 350 ha

7. Overview

A system of small shallow calcareous wetlands along the deep valley of the brooks Libechovka and Psovka. Wetlands include springs, brooks, alder carrs, flooded and wet meadows, reed swamps, calcareous fans and several ponds with endangered and rare flora and fauna.

- 8. Wetland type:** Xf U 2 Tp M Y
- 9. Ramsar Criteria:** 1a, 1d, 2a, 2b, 4a
- 10. Map of site included:** Yes

11. Name and address of compiler:

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12. Justification of criteria selected under point 9:

- 1a: Wetlands are a good example of wetlands along the smaller brooks.
- 1d: Some wetlands are good examples of specific wetlands - e.g. special type of calcareous wetlands (Polabské cernavy), calcareous wetlands in the area of acid sandstones.
- 2a: Wetlands are inhabited by groups of endangered and rare species, e.g. molluscs, plants.
- 2b: Wetlands have an important role for maintaining biodiversity, at least in Bohemia.
- 4a: New fish species, which is very abundant here, will be described as new for science.

13. General location:

Wetlands are situated between the district towns Melník and Česká Lípa (Central and northern Bohemia).

14. Physical features:

Wetlands are situated in the deep valleys of the Libechovka and Psovka Brook in the area of acid sandstones with a good infiltration capacity. The beds of lime sandstones laying lower enrich running water by calcium compounds. Valleys were created by water erosion of brooks. Two main brooks - Libechovka and Psovka - are small rich tributaries (Libechovka - 0.89 m³/s, 157 km², 24 km; Psovka - 0.86 m³/s, 158 km², 33.6 km) of the Elbe River. Climate is relatively hot and dry - average year temperature is about 8.5°C and yearly rainfall is about 600 mm.

15. Hydrological values:

Wetlands accumulate water from the major river basin and clear possible pollution. The area is an important reservoir of groundwater for a major part of Central Bohemia.

16. Ecological features:

A system of small shallow wetlands along the deep valleys of the Libechovka and Psovka Brook. Wetlands include springs, brooks, pools, ponds, alder carrs, flooded and wet meadows, reedswamps and calcareous fens.

Plant communities of the wetland include the following alliances: Potametum alpini, Potametum natantis, Beruletum angustifoliae, Batracietum circinati, Lemnetum trisulcae, Caricetum paniculatae, Caricetum acutiformis, Sparganietum ramosi, Eguisetum fluviatilis, Phragmitetum communis, Typhetum latifoliae, Nupharo lutei - Nymphaetum albae, Caricetum gracilis, etc.

Specific calcareous fens on the lower part of the Psovka Brook are inhabited by plant communities Phragmitetum communis, Caricetum gracilis, C. davallianae a Molinion.

17. Noteworthy flora:

Important species in the Psovka valley include *Potamogeton alpinus* (one of the most extensive populations in the Czech Republic), *Hippochaete hyemalis*, *Thelypteris palustris*, *Ranunculus lingua*, *Parnassia palustris*, *Pedicularis palustris*, *Menyanthes trifoliata*, *Leucojum vernum*, *Dactylorhiza majalis*, *Epipactis palustris*, *Nasturtium officinale*. Among algae, the occurrence of *Batrachospermum moniliforme* in the Psovka Brook is very interesting. This species has only several last localities in the Czech Republic.

Calcareous fens along the lower part of the Psovka Brook are inhabited by rare and endangered species *Schoenus ferrugineus*, *S. nigricans*, *Cladium mariscus*, *Tofieldia calyculata*, *Epipactis palustris*, *Liparis loeselii*, *Pinguicula vulgaris*, *P. bohemica* (an endemic species, probably extinct), their hybrid *P. x dostalii*, *Orchis palustris*, *O. militaris*, *O. ustulata*, *Dactylorhiza incarnata*, *D. majalis*, *Drosera rotundifolia*, *D. anglica*, *Gentianella amarella*, *Sesleria uliginosa*, *Trioglochin palustre*, *Menyanthes trifoliata*, *Ophioglossum vulgatum*, *Taraxacum paucilobum*, *T. calcem-amans*, *T. turfosum*, *T. ancoriferum*, *T. irrigatum*, *Tetragonolobus maritimus*, *Gymnadenia conopsea*, *Parnassia palustris*, *Juncus subnodulosus*, *Calamagrostis varia*.

The wetlands in the Libechovka Valley have not been particularly investigated yet except a small wetland at its upper part. Several noteworthy species occur here, e.g. *Equisetum telmateia*, *Nasturtium x sterile* (probably the last locality known in Bohemia), *Parnassia palustris*, *Daphne mezereum*, *Menyanthes trifoliata*, *Dactylorhiza fuchsii*, *D. majalis*, *Epipactis palustris*, *Carex davalliana* and *Batrachospermum moniliforme* (algae).

18. Noteworthy fauna:

The highest importance of the whole area is that it serves as a refuge for extensive populations of relict invertebrate species inhabiting a much wider range in the past. Now, their populations are in decline due to climatic changes or by hydro-engineering, agriculture, forest management, drainage. Most of the species belong to species which are (or were) typical for the Elbe Lowland, but due to a climate inversion a lot of species belong to mountain species. These species include especially molluscs *Cochlicopa nitens*, *Vertigo moulinsiana*, *Vertigo angustior*, *Vallonia enniensis* (all these species are listed in the IUCN Red List, first two species live in the Czech Republic probably only in these wetlands), *Pisidium amnicum* (in the Czech Republic endangered species, the largest known population - more than 1 000 000 individuals - lives in the Libechovka Brook), *Astacus astacus* (species listed in the IUCN Red List, more than 20 000 individuals), *Astacus leptodactylus*, spiders *Allomengea vidua*, *Ceratinella wideri*, *Aphileta misera*, *Diplocephalus permixtus*, *Dolomedes fimbriatus*, *Drepanotylus uncatus*, *Enoplognatha caricis* (the first known locality from the Czech Republic), *Entelecara congenera*, *Erigonella ignobilis*, *Hilaira excisa*, *Hygrolycosa rubrofasciata*, *Kaestneria pullata*, *Maro minutus*, *Marpissa radiata*, *Microninyphia impigra*, *Ozyptila scabricula*, *Pellenes nigrociliatus*, *Pirata piscatorius*, *Rugathodes bellicosus*, *Taranucnus setosus*, *Theonoe minutissima*, *Walckenaeria nodosa* (all these spiders are rare in the Czech Republic). Important vertebrate species are *Salamandra salamandra*, *Triturus alpestris* and *Rana dalmatina* among amphibians, birds *Rallus aquaticus*, *Cinclus cinclus*, *Alcedo atthis* and insectivorous mammal *Neomys anomalus*, but the most important is the occurrence of undescribed fish species from genus *Cobitis* in the Psovka Brook. The complex of *Cobitis taenia* and *Cobitis* sp. was discovered in this brook. Karyotype of undescribed species is not comparable to other species of *Cobitis* and this species is new for the Earth (but probably is not endemic for these wetlands).

19. Social and cultural values:

The wetlands are used for scientific research and especially the surrounding area is used for tourism and recreation.

20. Land tenure/ownership of:

A part of the wetland is state property, the rest is private or municipal.

21. Current land use/principal human activities:

Only about 10% of the area could be interesting for use (forestry, recreation) in recent economical and social conditions. Surrounding area is used for forestry, agriculture and recreation.

22. Factors adversely affecting the site's ecological character, including changes in land use and development projects:

The area was more used by agriculture in the past compared to today. Brooks were regularly cleaned by local farmers. The majority of fields, meadows and pastures were left by the original population after World War II and landscape changed into wetlands. Newly awakened interest arose in using an area which has not been managed for the last 40 years (e.g. cleaning brooks, building ponds instead of present wetlands). Water pollution is a problem especially in the upper part of the Libechovka Brook. Intensive agriculture and forestry are the main problems of the surrounding area. The main adverse recent factor is alteration of groundwater level in the lower parts of both basins due to the use of groundwater for drinking.

23. Conservation measures taken:

The biggest part (257.766 ha) is situated in the Kokorínsko Protected Landscape Area (in a core zone) and the most important parts in small-size protected areas too ("Kokorínský dul" Nature Reserve - wetlands 64,5143 ha, "Mokradý horní Libechovky" Nature Reserve - 75,1178 ha, "Prameny Psovky" Nature Monument (8,7727 ha). Wetlands besides the Kokorínsko Protected Landscape Area are not protected, except "Polabská cernava" National Nature Reserve (7,3834 ha). The management plan exists for all wetlands in the Kokorínsko protected Landscape Area and for Polabská cernava National Nature Reserve. The mowing of suitable parts of the meadows is the most important conservation activity for Polabský cernava NNR.

Conservation issues:

- a/ Brooks cannot be cleaned, especially in the parts where they create wetlands.
- b/ Pools and ponds cannot be built instead of wetlands (only instead of fields, intensive meadows or dry parts of wetlands).
- c/ Some wet meadows, reedswamps and sedge marshes should be mown
- d/ Surrounding area must be managed according to the management plan of Kokorínsko Protected Landscape Area Administration.

24. Conservation measures proposed but not yet implemented:

Protection of important parts of wetlands besides Kokorínsko Protected Landscape Area (especially enlargement of the Polabská cernava National Nature Reserve from 8 ha to 78 ha).

25. Current scientific and research facilities:

Botanical research was carried out only for the Psovka Valley. Basic research of vertebrates has been performed since the 1980s. Detailed research of molluscs has been started since 1994 as well as the research of several taxonomic groups of Arthropoda (Arachnida, Coleoptera). Research is performed by specialists from the Kokorínsko PLA Administration, Faculty of Science of the Charles University at Prague, National Museum, Regional Museums of Kolín, Česká Lípa and Rožtoky, Institute of Animal Physiology and Genetics of the Czech Academy of Sciences and Botanical Institute of the Czech Academy of Sciences.

26. Current conservation education:

The tables with text explaining the importance of wetlands and their functions are installed.

27. Current recreation and tourism:

Wetlands are not directly interesting for tourists but the surrounding area is frequently visited by them because of the unique geomorphological phenomena.

28. Jurisdiction:

Ministry of Environment of the Czech Republic.

29. Management authority:

Administration of Protected Landscape Areas of the Czech Republic - Kokorínsko Protected Landscape Area Administration (Ceská 149, 276 01 Melník, Czech Republic).

Polabská černava NNR: Ministry of Environment of the Czech Republic.

30. Bibliographical references:

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31. Reasons for inclusion:

The wetlands of the Libečovka and Psovka brooks are unique examples of calcareous wetlands in an area of acid sandstone with occurrence of endangered or rare species of invertebrates and plants and with the occurrence of undescribed new fish species. The site meets Criteria 1a, 2a, 2b, 4a and some parts also 1d of the Ramsar Convention.