

RAISED BOG ECOSYSTEMS IN POSTGLACIAL LANDSCAPE OF DRAWSKIE LAKELAND

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Abstract. This paper presents characteristic of vegetation cover of four raised bogs which are proposed to come under legal protection as nature reserves. These raised bogs are situated in northern and western part of the Połczyn Zdrój district. Their ecosystems are distinguished by high degree of vegetation cover naturalness and concentration of protected, rare and endangered species. Among identified communities there are plant associations protected on the strength of a decision about legal protection of nature habitats and Council Direction of European Community.

Key words: endangered species, Drawskie Lakeland, phytocenoses of protected habitats, Poland, Połczyn Zdrój district, proposed nature reserves, protected species, raised bogs, rare species, red algae, vascular plants, Western Pomerania.

INTRODUCTION

Połczyn Zdrój district is an interesting and nature valuable area situated within mesoregion Drawskie Lakeland (Kondracki 2002). Particular values of this area came under legal protection as Drawski Landscape Park. However, its area includes only the south-eastern part of the district.

Within the very differentiated land configuration of Drawskie Lakeland are placed various wetland ecosystems, among them many raised bogs. They are natural habitats of many protected and endangered plant species. There are also observed processes of overgrowing of primeval water ecosystems as a result of vegetation succession.

MATERIALS AND METHODS

During vegetation cover stock-taking and nature evaluation of Połczyn Zdrój district which were conducted in years 2001-2002, there were found four raised bog ecosystems and their documentary evidences were made (Kowalski et al. 2002). There were found concentration of protected (Rozp. Min. Śr. 2004, DzU nr 168, poz. 1764), rare and endangered species both in Poland (Zarzycki et al. 1992; Kaźmierczakowa and Zarzycki 2001) and in Western Pomerania (Żukowski and Jackowiak 1995) therefore these valuable ecosystems deserve legal protection as nature reserves. Name of each object, proposed by the authors, reflects their individual character. Characterized raised bogs are situated behind the borders of Drawski Landscape Park, in the northern and western part of the district. Their localities presents Fig. 1.



Fig. 1. Localities of surveyed raised bogs

On the base of phytosociological records, which were done within these objects, syntaxonomic differentiation of bog's plant associations was described. Beside special species of vascular flora, selected bryophytes and algae were specified.

Names of vascular plants were referred according to Mirek et al. (2002), bryophytes according to Ochrya et al. (2003) and algae according to Starmach (1977). Names of plant associations were referred according to Matuszkiewicz (2001), Brzeg and Wojterska (2001).

RESULTS

„Zabirosłowe oczka”

This locality is situated near the forest complex of the Panikielekie Hills 0.7 km to NE from

The basic part of this flat, carpet raised bog consists of the mosaic phytocenoses. Among them *Sphagno recurvi-Eriophoretum angustifolii* and *Sphagno recurvi-Caricetum rostratae* are predominating. Within the area of the raised bog, there are many cave-in lakes, which are overgrown by association *Nymphaeetum candidae*. Wetter marginal zone of these lakes is settled down by stripes of associations: *Caricetum lasiocarpae* and *Caricetum limosae*. Close to the quaking bog, in the water are floating species of *Sphagno-Utricularietum intermediae* association, which is acidophilous and more mesotrophic form of *Scorpidio-Utricularietum minoris* association. In dystrophic waters of cave-in lakes abundantly grow up fresh water red algae *Batrachospermum vagum*, the thalluses of which share open space with water forms of *Sphagnum cuspidatum*.

Within the area with less stable water conditions the seedlings of *Betula pubescens* spread. Whereas the marginal part of the bog is built by patches of *Salicetum auritae* and the floating mat of *Calla palustris*.

Flora of this raised bog is distinguished by rich populations of *Drosera rotundifolia*, *Menyanthes trifoliata*, *Scheuchzeria palustris*, *Andromeda polifolia*, *Carex limosa*, *Utricularia minor* and different species of brown mosses and peatmosses.

„Jezioro Zimne”

„Jezioro Zimne” is a ribbon lake, situated among forest hills near NE border of the district, in 359g and 359c sections of Połczyn Zdrój forest division.

This is the unique lake and raised bog ecosystem where dynamically develop processes typical for transitional peatbogs. The major part of lake basin is devoid of vegetation. The N, S and SE parts of the lake are overgrown and shallow, as a result of deposition processes. There develop initial stages of strongly hydrated and inaccessible bog overgrowing water surface. Wide stripe of marginal water part of the bog separates floating mat where above surface develops *Nupharo-Nymphaeetum albae* association. While in the water *Sphagnum cuspidatum* initiates overgrowing processes, in marginal zone are observed patches of *Callietum palustris* association and *Salicetum auritae* osier hope.

The raised bog is built by following plant associations: *Caricetum lasiocarpae*, *Sphagno recurvi-Caricetum rostratae*, *Sphagno recurvi-Eriophoretum angustifolii* and *Sphagno recurvi-Eriophoretum vaginati*. The group of abundantly occurring valuable species includes: *Drosera rotundifolia*, *Carex lasiocarpa*, *Utricularia minor*, *Nymphaea alba*, *Sphagnum* sp. div. and many others.

„Wrzońcowy mszar”

Forest bog complex placed in ribbon hollow without out flow is situated 1,7 km to NNW from Połczyn Zdrój in sections 115Ai, j, h, k, l of Połczyn Zdrój forest division.

Within this strongly hydrated raised bog with bending floating bog and numerous overgrowing cave-in lakes is observed unique vegetation cover and development of phytocenoses at different stages of succession. The most valuable associations are: *Nupharo-Nymphaeetum albae*, *Sphagno-Utricularietum intermediae*, *Sparganietum minimi*, *Caricetum lasiocarpae*, *Rhynchosporietum albae*, *Sphagno recurvi-Caricetum rostratae*, *Sphagno recurvi-Eriophoretum angustifolii*, *Sphagnetum magellanicum*, *Ledo-Sphagnetum magellanicum*, *Erico-Sphagnetum* and *Vaccinio uliginosi-Pinetum*. Such interesting species as *Andromeda polifolia*, *Carex lasiocarpa*, *Drosera rotundifolia*, *Erica tetralix*, *Ledum palustre*, *Nymphaea alba*, *Rhynchospora alba*, *Sparganium minimum*, *Utricularia minor* as well as different species of brown mosses and peatmosses were noted in these plant associations.

„Borówka bagienna”

This forest raised bog is situated 4 km to NW from Toporzyk, in section 485 of Świdwin forest division. In the past there was peat-digging but nowadays cutover peatlands are intensively cultivated.

Around overgrowing lake in the central part of the bog zonally occur peatland, wetland and aquatic vegetation. The most valuable phytocenoses include: *Caricetum lasiocarpae*, *Sphagno recurvi-Caricetum rostratae*, *Sphagno recurvi-Eriophoretum angustifolii*, *Sphagno recurvi-Eriophoretum vaginatum* and *Vaccinio uliginosi-Pinetum*. Predominating phytocenosis is marshy coniferous forest with abundantly growing *Ledum palustre*. Within more eutrophic parts of the lake there are observed associations from *Phragmitetea* class. Special flora, typical for bog ecosystems, is represented by *Carex lasiocarpa*, *Drosera rotundifolia*, *Ledum palustre*, *Vaccinium uliginosum*, *Sphagnum cuspidatum*, *S. fallax*, *S. magellanicum* and patches of *Polytrichum commune*. This raised bog is one of the few objects where *Xerocomus parasiticus* was noted.

CONCLUSIONS

Flora of described raised bogs includes 5 taxa of strictly protected species (*Drosera rotundifolia*, *Erica tetralix*, *Ledum palustre*, *Nymphaea candida*, *Xerocomus parasiticus*) and 13 partially protected species (*Aulacomnium palustre*, *Frangula alnus*, *Menyanthes trifoliata*, *Nymphaea alba*, *Polytrichum commune*, *P. strictum*, *Viburnum opulus* and six taxa of *Sphagnum*). Endangered flora within the area of Poland, is represented by *Carex limosa*, whereas in Western Pomerania by 5 taxa: *Andromeda polifolia*, *Carex limosa*, *Scheuchzeria palustris*, *Utricularia minor*, *Erica tetralix*. Moreover *Drosera rotundifolia*, as a rare species in Poland, was also observed. Both *Drosera rotundifolia* and *Nymphaea candida* have undefined threat category within the area of Western Pomerania. Some of these taxa are also mentioned in Polish Red Data Book (*Carex limosa* and *Nymphaea candida*) and in Council Directive (*Sphagnum fallax*, *S. fimbriatum*, *S. palustre*, *S. magellanicum*, *S. cuspidatum*, *S. squarrosum*) (Council Directive, 1992).

High degree of vegetation cover naturalness, its variety and rich populations of valuable species needs legal protection of these objects as nature reserves.

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EKOSYSTEMY MSZARNE W MŁODOGLACJALNYM KRAJOBRAZIE POJEZIERZA DRAWSKIEGO

Streszczenie. Zasadniczy zrąb roślinności projektowanych rezerwatów tworzą różne fitocenozy z klas: *Potametea* R.Tx. et Prsg., *Utricularietea intermedio-minoris* Den Hartog et Segal 1964 em. Pietsch 1965, *Scheuchzerio-Caricetea nigrae* (Nordh. 1937) R. Tx. 1937, *Oxycocco-Sphagnetea* Br.-Bl. et R. Tx. 1943 i *Vaccinio-Piceetea* Br.-Bl. 1939. Najcenniejszymi zespołami roślinnymi o naturalnej fizjonomii są: *Nupharo-Nymphaeetum albae* Tomasz. 1977, *Nymphaeetum candidae* Milijan 1958, *Sphagno-Utricularietum intermediae* Fijałk. 1960, *Sparganietum minimi* Schaaf 1925, *Caricetum limosae* Br.-Bl., *Rhynchosporium albae* Koch 1926, *Sphagno recurvi-Eriophoretum angustifolii* Hueck 1925, *Sphagno*

recurvi-Caricetum rostratae Steffen 1931, *Caricetum lasiocarpae* Koch 1926, *Erico-Sphagnetum magellanicum* (Osvold 1923) Moore 1968, *Vaccinio uliginosi-Pinetum sylvestris* Kleist 1929. We florze badanych ekosystemów występują liczne gatunki chronione, rzadkie i zagrożone. Do takich należą: *Andromeda polifolia*, *Carex limosa*, *Drosera rotundifolia*, *Erica tetralix*, *Ledum palustre*, *Nymphaea alba*, *Scheuchzeria palustris*, *Sparganium minimum*, *Utricularia minor*, *Vaccinium uliginosum* i inne. Ponadto dystroficzne wody strefy kontaktowej pła i lądowiejących jezior torfowiska „Żabroślowe oczka” zasiedla bogata populacja słodko-wodnego krasnorostu *Batrachospermum vagum*, a bór bagienny *Vaccinio uliginosi-Pinetum* na torfowisku „Borówka bagienna” jest siedliskiem rzadkiego i chronionego gatunku grzyba *Xerocomus parasiticus*.

Słowa kluczowe: fitocenozy siedlisk chronionych, gatunki chronione, gatunki rzadkie, gatunki zagrożone, gmina Połczyn Zdrój, krasnorosty, Pojezierze Drawskie, Polska, Pomorze Zachodnie, proponowane rezerваты przyrody, rośliny naczyniowe, torfowiska wysokie.