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RARE AND THREATENED VASCULAR PLANTS SPECIES OF TOWN ŁEBA

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Abstract

This paper presents results of floristic investigation in the town Łeba. In 2002-2004 and 2006 vegetation seasons 66 interesting and rare vascular plants were found. Among them there are 31 species protected by law (21 strictly and 10 partially) (Rozporządzenie... 2004) and 7 (*Drosera anglica*, *D. intermedia*, *D. rotundifolia*, *Dryopteris cristata*, *Linaria odora*, *Lycopodiella inundata* and *Salsola kali*) are included in "Red Lists" of threatened vascular plants in Poland, Western Pomerania and Wielkopolska (Zarzycki and Szelağ 2006, Żukowski and Jackowiak 1995). 22 species belong to the group of threatened species in the scale of the Gdańskie Pomerania (Markowski and Buliński 2004). According to "Red List" one of them is endangered (EN) – *Lycopodiella inundata*; 11 species are vulnerable (VU) – *Cymbalaria muralis*, *Drosera anglica*, *D. intermedia*, *Epipactis atrorubens*, *Erica tetralix*, *Glaux maritima*, *Linaria odora*, *Myrica gale*, *Nepeta cataria*, *Salsola kali* and *Triglochin maritimum*.

Key words: Łeba, Pomeranian Region, rare and vulnerable species, ATPOL localities

INTRODUCTION

The studies area extends between latitude 54°47' north and longitude 17°33' east. Town Łeba occupies area of 14.85 km², so as 6.5 km² cover forests, however 2.1 km² are used for agricultural purposes. There are Sections 1-3 of Rąbka Conservation area (Słowiński National Park) and Sections 1-10 and 14-15 Łeba Forest District – Lębork Forest Division (the "Sarbska Spit" nature reserve). The town is occupied with 3 857 inhabitants (mat. unpubl. Łeba municipal borough). According to Kondracki (2000), Łeba belongs to the macroregion Koszalin Coastland and mesoregion Słowińskie Coast. The axis of Łeba, since the beginning of its

development, is Łeba River. The hydrographic network of the town complete: Chełst Channel, Łabędzi Pond and Marina – yachtport, created in the valley of Łeba River. Important role play a wide complex of drainage ditches in the valley of the southern-eastern part of Łebsko Lake. To the southern-western boundary of Łeba adjoins Łebsko Lake, to the southern-eastern and northern boundary – Sarbsko Lake.

Regarding the results of studies on the potential, natural vegetation of Koszalin Coastland and East Pomerania Lakeland (Wojterski et al. 1995) one can assume that the dominant type of vegetation on the studied area were south-baltic coastal pine forest *Empetro-nigri-Pinetum*. Smaller area was covered by subatlantic acidophilous beach-oak forest (Pomerania vicariant) *Fago-Quercetum petraea* and lowland forb-rich beach forest *Galio odorati-Fagetum*. The complex of marshy meadow forest (ash adler forest *Fraxino-Alnetum*) was related to the valley of the Łeba River. As an addition to forest complex were middle-european adler fen forest distributed punctually near the coast of Łebsko and Sarbsko Lakes.

In the geobotanical division of Poland (Matuszkiewicz 1993) Łeba belongs to Łebsko Spit Region included into the Baltic Shore Zone District.

The subject of this work is distribution of rare and threatened vascular plants species on the area of town Łeba (central part of Polish Pomerania).

MATERIALS AND METHODS

Field work was carried out between 2002 and 2004, with additional field work in 2006, and 127 relevés were collected with the standard Braun-Blanquet methods (Pawłowski 1977). For each locality the number of ATPOL square is given, according to the system applied in the *Distribution Atlas of Vascular Plants in Poland* (Zając 2001). The nomenclature of vascular plants is after Mirek et al. (2002).

Explanation of symbols and abbreviation: pos. – position, !! – species under full protection, ! – species under partial protection, * – species of anthropogenic station.

LIST OF SPECIES

Endangered species facing extinction (EN)

Lycopodiella inundata (L.) Holub – !!, 1 pos.: CA 34 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve), blow-out. In large numbers. The work of Mieńko (1987) gives the position of marsh club-moss.

Species vulnerable to extinction (VU)

Cymbalaria muralis P. Gaertn., B. Mey. & Scherb. – 1 pos.: CA 43, a few flowering and fruiting clumps in concrete slits of the canal revetment in port.

Drosera anglica Huds. – !!, 1 pos.: CA 34 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve), blow-out.

- Drosera intermedia* Hayne. – !!, 1 pos.: CA 34 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve), blow-out.
- Epipactis atrorubens* (Hoffm.) Besser – !!, 1 pos.: CA 33 – Section 11 of Łeba Forest District, grey sand-dune.
- Erica tetralix* L. – !!, 1 pos.: CA 43 – Section 11 of Łeba Forest District, blow-out, in large numbers.
- Glaux maritima* L. – !!, 1 pos.: CA 43 – the Łeba mouth from Łebsko Lake, a few individuals.
- Linaria odora* (M. Bieb.) Fisch. – !!, 1 pos.: CA 34 – Marina, a few individuals. The position was published by Piotrowska et al. (1997).
- Myrica gale* L. – !!, 3 pos.: CA 43 – Sections 1, 2, 3 of Łeba Ranges, in large numbers.
- Nepeta cataria* L. – 1 pos.: CA 43 – railway embankment.
- Salsola kali* L. – 1 pos.: CA 34 – Section 6 of Łeba Forest District (the “Sarbska Spit” nature reserve), sea-side, a few dozen of individuals.
- Triglochin maritimum* L. – 1 pos.: CA 43 – Chełst Channel bank.

Protected species

- Carex arenaria* L. – !, 2 pos.: CA 43 – Marina, Mampe Dune, in large numbers.
- Centaureum erythraea* Rafn – !!, 1 pos.: Jachtowa Street, peaty meadow.
- Convallaria majalis* L. – !, 3 pos.: CA 33 – near “Posejdon” health resort, CA 43 – Section 2 of Łeba Range, CA 44 – Section 10 of Łeba Forest District, in large numbers.
- Dianthus carthusianorum* L. – !, 1 pos.: CA 43 – Mampe Dune, a few individuals.
- Drosera rotundifolia* L. – !!, 1 pos.: CA 34 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve), blow-out.
- Frangula alnus* Mill. – !, 2 pos.: CA 43 – Nadmorska Street, brushwood; near St. Nicolas church ruins.
- Galanthus nivalis* L. – !!, 1 pos.: CA 43 – Nowęcińska Street, *municipal cemetery.
- Goodyera repens* (L.) R. Br. – !!, 2 pos.: CA 43 – Section 2 of Łeba Range, CA 44 – Section 10 of Łeba Forest District (the “Sarbska Spit” nature reserve), in large numbers. The position of creeping rattlesnake plantain was given by Markowski and Fałtynowicz (2000).
- Hedera helix* L. – !, 2 pos.: CA 43 Nowęcińska Street, *municipal cemetery; Brzozowa Alley.
- Helichrysum arenarium* (L.) Moench. – !, 3 pos.: CA 43 – sand-dune near beach „A”; Section 2 of Łeba Range. CA 44 – Section 10 of Łeba Forest District (the “Sarbska Spit” nature reserve), grey sand-dune.
- Hepatica nobilis* Schreber. – !!, 1 pos.: CA 34 – Section 4 of Łeba Forest District (the “Sarbska Spit” nature reserve), grey sand-dune.
- Ledum palustre* L. – !!, 1 pos.: CA 43 – Section 2 of Łeba Range, in large numbers.
- Lilium martagon* L. – !!, 1 pos.: CA 43 – Nowęcińska Street, *municipal cemetery, a few individuals.

- Listera cordata* (L.) R. Br. – !, 1 pos.: CA 34, Section 10 of Łeba Forest District (the “Sarbska Spit” nature reserve), pine coniferous forest.
- Lonicera periclymenum* L. – !, 1 pos.: CA 43 – Łabędzi Pond, brushwood.
- Lycopodium annotinum* L. – !, 2 pos.: CA 43 – Nadmorska Street, pine coniferous forest; CA 44 – Section 10 of Łeba Forest District (the “Sarbska Spit” nature reserve), a few dozen of individuals.
- Lycopodium clavatum* L. – !, 1 pos.: CA 43 – Section 1 of Łeba Range, a few individuals.
- Matteucia struthiopteris* (L.) Tod. – !, 1 pos.: CA 43 – Noweścińska Street, *municipal cemetery.
- Ononis spinosa* L. – !, 2 pos.: CA 43 – Noweścińska Street side, Chełst Channel bank.
- Polypodium vulgare* L. – !, 3 pos.: CA 33 – pine coniferous forest near “Mazowsze” health resort, CA 43 – Marina; near St. Nicolas church ruins.
- Ribes nigrum* L. – !, 1 pos.: CA 34 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve).
- Viburnum opulus* L. – !, 1 pos.: CA 44 – Section 9 of Łeba Forest District (the “Sarbska Spit” nature reserve), lake shore.
- Vinca minor* L. – !, 2 pos.: CA 43 – Noweścińska Street, *municipal cemetery; *Brzozowa Alley.

Rare species in Western Pomerania

- Achillea ptarmica* L. – 2 pos.: CA 43 – Chełst Channel side, Jachtowa Street, peaty meadow.
- Aethusa cynapium* L. – 1 pos.: CA 43 – 10 Marca Street, roadside.
- Agrostemma githago* L. – 1 pos.: CA 43 – Ogrodowa Street, garden.
- Anthyllis vulneraria* L. ssp. *maritima* (Schweigger) Corb. – 2 pos.: CA 34 – Section 11 of Łeba Forest District; CA 43 – beach near fishing port.
- Ballota nigra* L. – 1 pos.: CA 43 – Turystyczna Street, wasteland.
- Barbarea vulgaris* R. Br. – 1 pos.: CA 43 – Noweścińska Street, soil bank near municipal cemetery.
- Bromus secalinus* L. – 1 pos.: CA 43 – St. Jacob Alley, wasteland.
- Cakile maritima* Scop. – 1 pos.: CA 33 – beach, 181 km of sea-coast.
- Conium maculatum* L. – 1 pos.: CA 43 – St. Jacob Alley side.
- Digitaria ischaemum* (Scherb.) H. L. Mühl. – 1 pos.: CA 43 – Mampe Dune.
- Diplotaxis muralis* (L.) DC. – 1 pos.: CA 43 – Nad Ujściem Street side.
- Dryopteris cristata* (L.) A. Gray – 1 pos.: CA 43, Section 2 of Łeba Range, alder forest.
- Empetrum nigrum* L. – 2 pos.: CA 43 – Marina; Section 12 of Łeba Forest District, in large numbers.
- Euphorbia peplus* L. – 1 pos.: CA 43 – Łąkowa Street, garden.
- Filago minima* (Sm.) Pers. – 1 pos.: CA 43 – Dworcowy Place, wasteland.
- Galeopsis ladanum* L. – 1 pos.: CA 43 – Zawiszy Czarnego Street, garden.
- Herniaria glabra* L. – 2 pos.: CA 43 – fishing port; Marina.

- Honckenya peploides* (L.) Ehrh. – 1 pos.: CA 43 – Section 2 of Łeba Range.
- Hypericum humifusum* L. – 1 pos.: CA 44 – Section 15 of Łeba Forest District (the “Sarbska Spit” nature reserve), field-path side.
- Juncus tenuis* Willd. – 1 pos.: CA 44 – Section 8 of Łeba Forest District (the “Sarbska Spit” nature reserve), field-path side.
- Medicago x varia* Martyn – 1 pos.: CA 43 – Derdowskiego Street, rubble dump.
- Monotropa hypopitys* L. – 1 pos.: CA 44 – Section 10 of Łeba Forest District (the “Sarbska Spit” nature reserve).
- Plantago intermedia* Gilib. – 1 pos.: CA 33 – field-path near “Mazowsze” health resort.
- Pyrola minor* L. – 1 pos.: CA 43 – Marina.
- Salix repens* L. subsp. *repens* var. *arenaria* (L.) Ser. – 2 pos.: CA 43 – Marina; Mampe Dune.
- Sambucus racemosa* L. – 1 pos.: CA 43 – Łabędzi Pond, bushwood.
- Spergula morisonii* Boreau – 1 pos.: CA 43 – Mampe Dune.
- Teesdalea nudicaulis* (L.) R. Br. – 2 pos.: CA 43 – Mampe Dune; Section 1 of Łeba Range.
- Veronica dillenii* Crantz – 1 pos.: CA 43 – Powstańców Warszawy Street, sandy area.
- Vicia grandiflora* Scop. – 1 pos.: CA 43 – St. Jacob Alley, fallow land.
- Vicia tetrasperma* (L.) Scherb. – 1 pos.: CA 43 – Noweckińska Street, fallow land.

CONCLUSIONS

1. In the town Łeba 66 interesting and rare vascular plants were found: 31 species protected by law (21 strictly and 10 partly) and 7 (*Drosera anglica*, *D. intermedia*, *D. rotundifolia*, *Dryopteris cristata*, *Linaria odora*, *Lycopodiella inundata* and *Salsola kali*) included in “Red Lists” of threatened vascular plants of Poland, Western Pomerania and Wielkopolska, and 22 species belonging to the group of threatened species of the Gdańskie Pomerania.
2. According to „Red List” 1 of them is endangered (EN) – *Lycopodiella inundata*; 11 species are vulnerable (VU) – *Cymbalaria muralis*, *Drosera anglica*, *D. intermedia*, *Epipactis atrorubens*, *Erica tetralix*, *Glaux maritima*, *Linaria odora*, *Myrica gale*, *Nepeta cataria*, *Salsola kali* and *Triglochin maritimum*.

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RZADKIE I ZAGROŻONE GATUNKI ROŚLIN NACZYNIOWYCH MIASTA ŁEBY

Streszczenie

W pracy podano stanowiska 66 gatunków roślin naczyniowych, w tym 31 chronionych prawem oraz 22 rzadkich i zagrożonych na Pomorzu Gdańskim i Zachodnim. Do tej ostatniej grupy należą taksony wymierające (EN): *Lycopodiella inundata*, zagrożone wyginięciem (VU): – *Cymbalaria muralis*, *Drosera anglica*, *D. intermedia*, *Epipactis atrorubens*, *Erica tetralix*, *Glaux maritima*, *Linaria odora*, *Myrica gale*, *Nepeta cataria*, *Salsola kali* i *Triglochin maritimum*.

Wykaz obejmuje również gatunki nie ujmowane dotychczas na listach roślin zagrożonych, ale uznawane na Pomorzu Zachodnim za rzadkie: *Achillea ptarmica*, *Agrostemma githago*, *Cakile maritima*, *Filago minima*, *Pyrola minor*, *Salix repens* subsp. *repens* var. *arenaria* i *Vicia grandiflora* (Fukarek 1992, Warcholińska 1994).