

ADDITIONS TO VASCULAR PLANT FLORA OF THE WESTERN SUWAŁKI LAKELAND, NORTH-EASTERN POLAND
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Abstract

Pliszko A., 2016: Additions to vascular plant flora of the Western Suwałki Lakeland, north-eastern Poland [Suwałkų ežeringojo krašto vakarinės dalies (Šiaurės Rytų Lenkija) induočių augalų floros papildymai]. – Bot. Lith., 22(2): 178–181.

The present study provides a floristic list of twenty vascular plant species recorded in 2015–2016 in the Western Suwałki Lakeland, north-eastern Poland, by using the ATPOL cartogram method. Attention is drawn to the species *Camelina sativa*, *Geranium columbinum*, *Rubus corylifolius* aggr., *Salix ×mollissima* and *Vicia pannonica*, which are new to the regional flora. Through this study, the distribution status of *Allium vineale* and *Erigeron acris* subsp. *serotinus* in the region has changed from the category of very rare taxon to the category of rare taxon. Two newly recorded species, *Camelina sativa* and *Vicia pannonica*, may become established in the Western Suwałki Lakeland in the future as agricultural weeds.

Keywords: ATPOL cartogram method, distribution, floristics, rare species, Poland.

The Western Suwałki Lakeland (in Polish ‘Pojezierze Zachodniosuwalskie’), a physico-geographical region in north-eastern Poland, covers 830 km² and is bounded by the Jarka River in the north-west and by the Błędzianka and the Czarna Hańcza Rivers in the north-east. It belongs to the Lithuanian Lakeland and borders with the Romincka Forest, the Eastern Suwałki Lakeland, the Augustów Plain, the Szeskie Hills and the Ełk Lakeland (KONDRACKI, 1994). This lowland area has an early post-glacial landscape, after the Vistula Glaciation, with the predominance of morain hills, sandurs, tunnel valleys and ribbon lakes (BER, 1981). It is situated in a transitory temperate climate zone with an influence of continental climate, where the average annual air temperature is about 6.5°C and the average annual precipitation is 550–600 mm (GÓRNIAK, 2000; LORENC, 2005). The native vegetation of the area is characterized by nemoral forest communities with boreal and subboreal influences (SZAFER & ZARZYCKI, 1972).

Vascular plant flora of the Western Suwałki

Lakeland was compiled by PLISZKO (2014a) using the ATPOL cartogram method (ZAJĄC, 1978). The study area of about 740 km² was included within two large squares of the ATPOL cartogram grid (100 km × 100 km), and within 15 smaller squares (10 km × 10 km), and within 142 basic square units (2.5 km × 2.5 km) (Figs 1–2).

The floristic list was made based on field collections and inventories carried out in 2008–2011 as well as on published and unpublished data. The author listed 1051 species, including 794 natives, 161 established aliens, four species with uncertain status in the Polish flora and 92 casual aliens, from 458 genera and 114 families, with regard to taxonomic treatment after MIREK et al. (2002). Moreover, 11 non-persistent hybrids between native species were also mentioned. Since then, the flora has been updated by several additions of new taxa and localities (PLISZKO, 2014b, 2015a, 2015b, 2015c; ZALEWSKA-GAŁOZ & BOBROV, 2015; ZALEWSKA-GAŁOZ et al., 2015). The present paper provides another im-

portant contribution to the flora of the Western Suwałki Lakeland.

Data for this study were obtained from field surveys conducted in 2015–2016, by using the ATPOL cartogram method (ZAJĄC, 1978). Plant identification was based on morphological features given by RUTKOWSKI (2004). The arrangement of the floristic list is alphabetical by scientific names. The presented nomenclature follows MIREK et al. (2002), STACE et al. (2015) and PLISZKO (2015b). Geographical-historical status of vascular plants follows TOKARSKA-GUZIĆ et al. (2012) and ZAJĄC & ZAJĄC (2009). Established alien plants are indicated by asterisk ‘*’, casual alien plants are indicated by double asterisk ‘**’, taxa new to the regional flora are indicated by exclamation mark ‘!’. The ATPOL cartogram codes (ZAJĄC, 1978) are given in brackets, after the name of locality, referring to the 2.5 km square units. For each taxon, the information about the current number of localities in the Western Suwałki Lakeland is given. Specimens collected during the field surveys are deposited at the Herbarium of the Institute of Botany of the Jagiellonian University in Kraków (KRA).

The floristic list consists of twenty vascular plant species, including 14 native and six alien taxa. Five species are new to the regional flora, i.e. *Camelina sativa* (L.) Crantz, *Geranium columbinum* L., *Rubus corylifolius* Sm. aggr., *Salix ×mollissima* Hoffm. ex Elwert and *Vicia pannonica* Crantz, other 15 taxa represent the group of the rarest plants in the region (up to 20 localities). It is worth mentioning that some of the listed plants are also rare in north-eastern Poland, e.g. *Allium vineale* L., *Erigeron acris* subsp. *serotinus* (Weihe) Greuter, *Geranium columbinum*, *Pisum sativum* subsp. *arvense* (L.) Asch. & Graebn., *Rubus ×pseudidaeus* (Weihe) Lej. and *Vicia pannonica* (ZAJĄC & ZAJĄC, 2001; PLISZKO, 2012, 2015b). Moreover, *Camelina sativa* and *Pisum*

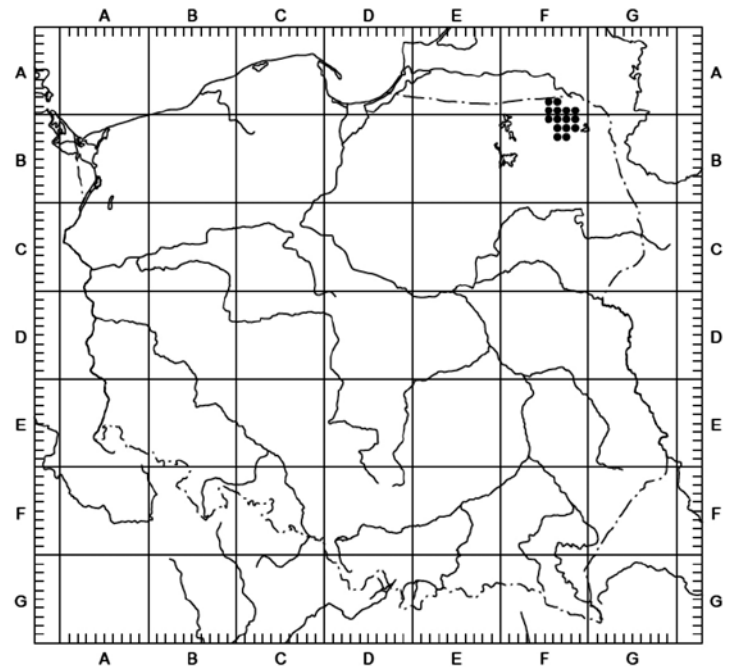


Fig. 1. Location of the study area within the ATPOL cartogram grid

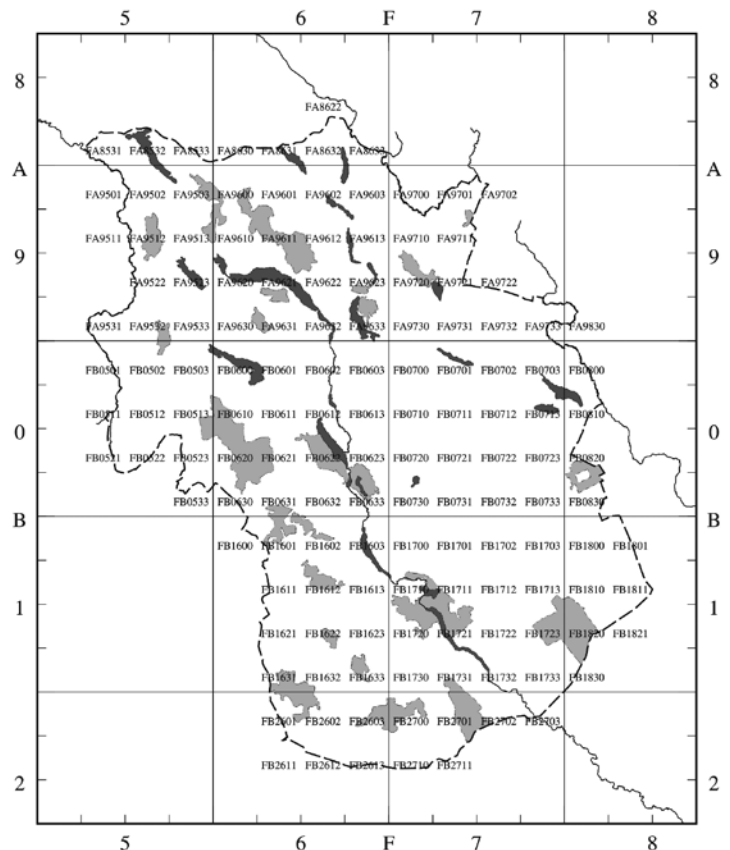


Fig. 2. ATPOL cartogram codes of the study area (boundaries, main lakes, rivers and forests in the background)

sativum subsp. *arvense* are losing their localities in Poland, being treated as nationally vulnerable archaeophytes (TOKARSKA-GUZIŁK et al., 2012). Through this study, based on the number of localities (PLISZKO, 2014a), the distribution status of *Allium vineale* and *Erigeron acris* subsp. *serotinus* in the Western Suwałki Lakeland has changed from the category of very rare taxon (1–6 localities) to the category of rare taxon (7–20 localities). Two newly recorded species, *Camelina sativa* and *Vicia pannonica*, which are currently treated as casual aliens, may become established in the future as agricultural weeds like it has been evidenced in the case of *Cuscuta campestris*, *Pisum sativum* subsp. *arvense* and *Vicia sativa* (PLISZKO, 2014a).

Floristic list

Allium vineale L. – Wólka (FA9631) and Garbas Pierwszy (FB0612), on abandoned field and balk, respectively, 16 and 31 July 2016. Currently known from seven localities.

Anthericum ramosum L. – Bakalarzewo (FB1700), on the edge of pine forest, in the Czerwonka river valley, 19 July 2016. Currently known from eight localities.

**! *Camelina sativa* (L.) Crantz – Bakalarzewo (FB1603), on arable field, as a weed in the cultivation of perennial rye-grass, and on the edge of the roadside, 19 July 2016. Currently known from one locality.

* *Cuscuta campestris* Yunck. – Garbas Pierwszy (FB0612), on arable field, as a weed in the cultivation of alfalfa, 7 and 12 July 2016. Currently known from two localities.

Erigeron acris subsp. *serotinus* (Weihe) Greuter – Wólka near Supienie (FA9631), on abandoned field, 16 July 2016. Currently known from seven localities.

** *E. ×huelsenii* Vatke – Bakalarzewo (FB0633), on arable field, as a weed in the cultivation of orchard grass, 2 August 2016. Currently known from six localities.

! *Geranium columbinum* L. – Matłak (FB0622), on pasture and balk, 17 July 2016. Currently known from one locality.

Phleum hubbardii D. Kováts – Garbas Forest near Garbaś Lake (FB0622), on the edge of pine forest, 29 July 2015. Currently known from six localities.

* *Pisum sativum* subsp. *arvense* (L.) Asch. & Graebn. – Szafranki near Zusno (FB0613), on arable field, as a weed in the cultivation of oats, 17 July 2016. Currently known from six localities.

Potamogeton friesii Rupr. – Orłowo (FB1702), in the roadside ditch, 14 August 2015. Currently known from twelve localities.

! *Rubus corylifolius* Sm. aggr. – between Garbas Drugi and Kołpakowo (FA9533), on the edge of mixed forest and by the roadside, 15 June and 12 August 2015. Currently known from one locality.

R. ×pseudidaeus (Weihe) Lej. – Filipów Drugi (FA9632), by the roadside, 2 August and 27 September 2015. Currently known from two localities.

Salix ×dasyclados Wimm. – Olszanka (FB0603), in the roadside ditch, 2 August 2015. Currently known from eleven localities.

! *S. ×mollissima* Hoffm. ex Elwert – Żelazki (FA9522), on the edge of riparian forest, in the Jarka river valley, 12 August 2015. Currently known from one locality.

Sanguisorba muricata (Spach) Greml. – Garbas Pierwszy (FB0612), by the roadside, 16 June 2015. Currently known from five localities.

Spergularia rubra (L.) J. Presl & C. Presl – Taciewo (FB0713), on abandoned field, 24 July 2016. Currently known from five localities.

Trifolium dubium Sibth. – Filipów Trzeci (FB0603), on mesic meadow, 2 August 2015. Currently known from eighteen localities.

T. rubens L. – Wólka (FA9631), on abandoned field, 16 July 2016. Currently known from five localities.

**! *Vicia pannonica* Crantz – Kotowina (FB1710), on arable field, as a weed in the cultivation of rye, 13 June 2015. Currently known from one locality.

* *Vicia sativa* L. – Filipów Pierwszy (FB0602), on arable field, as a weed in the cultivation of oats, 27 July 2016. Currently known from fifteen localities.

ACKNOWLEDGEMENTS

I would like to thank Prof. Jerzy Zieliński, Dr hab. Joanna Zalewska-Gałosz and Dr Agnieszka Nobis for assistance in the identification of some plants. I am also grateful to Józef Gajda for the preparation of the figures used in this paper.

REFERENCES

- BER A., 1981: Pojezierze Suwalsko-Augustowskie. Przewodnik geologiczny. – Warszawa.
- GÓRNIAK A., 2000: Klimat województwa podlaskiego. – Białystok.
- KONDRACKI J., 1994: Geografia Polski. Mezoregiony fizyczno-geograficzne. – Warszawa.
- LORENC H. (ed.), 2005: Atlas klimatu Polski. – Warszawa.
- MIREK Z., PIĘKOŚ-MIRKOWA H., ZAJĄC A., ZAJĄC M. (eds), 2002: Flowering plants and pteridophytes of Poland, a checklist. – Kraków.
- PLISZKO A., 2012: Materiały do flory roślin naczyniowych Pojezierza Zachodniosuwalskiego. – *Fragmenta Floristica et Geobotanica Polonica*, 19(1): 3–11.
- PLISZKO A., 2014a: Flora roślin naczyniowych Pojezierza Zachodniosuwalskiego. – *Prace Botaniczne*, 48: 1–349.
- PLISZKO A., 2014b: Nasięźrzał pospolity *Ophioglossum vulgatum* w dolinie górnej Rospudy. – *Chrońmy Przyrodę Ojczyznę*, 70(4): 355–357.
- PLISZKO A., 2015a: New floristic records from the Polish part of the Lithuanian Lakeland (NE Poland). – *Steciana*, 19(1): 25–32.
- PLISZKO A., 2015b: Taxonomic revision and distribution of *Erigeron acris* s. l. (Asteraceae) in Poland. *Phytotaxa*, 208(1): 021–033.
- PLISZKO A., 2015c: Zdolność do hybrydyzacji z rodzimymi gatunkami roślin jako przejaw inwazyjności obcych gatunków we florze Polski. – In: KRZYSZTOFIAK L., KRZYSZTOFIAK A. (eds), *Inwazyjne gatunki obcego pochodzenia zagrożeniem dla rodzimej przyrody*: 93–102. – Krzywe.
- RUTKOWSKI L., 2004: Klucz do oznaczania roślin naczyniowych Polski niżowej. – Warszawa.
- STACE C.A., PRESTON C.D., PEARMAN D.A., 2015: Hybrid flora of the British Isles. – Bristol.
- SZAFER W., ZARZYCKI K. (eds), 1972: Szata roślinna Polski, 2. – Warszawa.
- TOKARSKA-GUZIŁ B., DAJDOK Z., ZAJĄC M., ZAJĄC A., URBISZ A., DANIELEWICZ W., HOŁDYŃSKI C., 2012: Rośliny obcego pochodzenia w Polsce ze szczególnym uwzględnieniem gatunków inwazyjnych. – Warszawa.
- ZAJĄC A., 1978: Atlas of distribution of vascular plants in Poland (ATPOL). – *Taxon*, 27(5–6): 481–484.
- ZAJĄC A., ZAJĄC M. (eds), 2001: Distribution atlas of vascular plants in Poland. – Kraków.
- ZAJĄC M., ZAJĄC A., 2009: The geographical elements of native flora of Poland. – Kraków.
- ZALEWSKA-GAŁOŠZ J., BOBROV A.A., 2015: *Ranunculus kauffmannii*. – In: NOBIS M. et al., Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 3: 111–112. – *Acta Botanica Gallica: Botany Letters*, 162(2): 103–115.
- ZALEWSKA-GAŁOŠZ J., PLISZKO A., BOBROV A.A., 2015: *Ranunculus ×gluckii*. – In: NOBIS M. et al., Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 4: 311–312. – *Acta Botanica Gallica: Botany Letters*, 162(4): 301–316.

SUVALKŲ EŽERINGOJO KRAŠTO VAKARINĖS DALIES (ŠIAURĖS RYTŲ LENKIJA) INDUOČIŲ AUGALŲ FLOROS PAPILDYMAI

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Santrauka

Darbe pateiktas anotuotas floros sąrašas, kurį sudaro dvylika induočių augalų rūšių, aptiktų 2015–2016 metais Suvalkų ežeringojo krašto vakarinėje dalyje (Šiaurės Rytų Lenkija), naudojant ATPOL kartografavimo metodą. Ypatingas dėmesys skiriamas *Camelina sativa*, *Geranium columbinum*, *Rubus corylifolius* agg., *Salix × mollissima* ir *Vicia pannonica* rūšims,

kurios yra aptiktos pirmą kartą regione. Šiame darbe pakeistas *Allium vineale* ir *Erigeron acris* subsp. *serotinus* paplitimo statusas regione iš labai reto taksono kategorijos į reto taksono kategoriją. Dvi naujai rastos rūšys: *Camelina sativa* ir *Vicia pannonica* laikomos įsitvirtinusiomis Suvalkų ežeringojo krašto vakarinėje dalyje ir ateityje gali tapti dirbamų žemių piktžolėmis.