

FLORA OF FALLOW LANDS OF THE PODLASKI PRZEŁOM BUGU MESOREGION

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S u m m a r y

Studies on flora of fallow lands of the Podlaski Przełom Bugu mesoregion were carried out between 2001 and 2003 in the area of 77 localities, situated in 20 communes. A systematic list of fallow land flora was made and its variation with respect to occurrence frequency, biological spectrum, persistence and belonging to geographic historical and sociological ecological groups was analyzed. Flora of fallow lands of the Podlaski Przełom Bugu mesoregion includes 442 species included in 60 families and 241 botanical genera. The most numerous group comprises very rare, rare and quite frequent species. In the floristic composition of the analysed flora, apophytes (72.2%) predominate over anthropophytes (2.8%) as well as perennials (61%) over ephemerals (39%). Considering the biological spectrum of flora, hemicyclopophytes (49%) and terophytes (32%) predominate over other life forms. Forest and shrub species (18.5%) as well as meadow (17%) and xerothermic sward plants (17.4%) have the largest share in the flora. The abundant occurrence of segental (15.8%) and long lived ruderal communities (8.1%) was also noted. Moreover, the occurrence of 25 species endangered with extinction in fallow land communities of the Południowopodolska Lowland was noted. They are as follows: *Nigella arvensis*, *Potentilla recta*, *Platanthera chlorantha*, *Agrostemma githago*, *Prunella grandiflora*, *Populus alba*, *Silene tatarica*, *Papaver argemone*, *Papaver rhoeas*, *Veronica polita*, *Hieracium floribundum*, *Bromus secalinus*, *Polygonum bistorta*, *Geum alleppicum*, *Astragalus arenarius*, *Centaureum erythraea*, *Veronica agrestis*, *Veronica verna*, *Cirsium rivulare*, *Allium oleraceum*, *Hierochloë odorata*, *Chenopodium polyspermum*, *Vinca minor*, *Dipsacus sibiricus* and *Campanula latifolia*.

Key words: flora, fallow lands, the Podlaski Przełom Bugu mesoregion

INTRODUCTION

The socio-economic transformation observed in Poland for the last several years has resulted in the increase of the area of cultivated fields excluded from purposeful farming. The estimated area of fallow land in the

studied communes is about 10 000 ha. The increase in the area of soil lying fallow in the investigated mesoregion is mostly an effect of the economic conditions (low agricultural productivity as a result of the dominance of poor soils) as well as the ageing of farmers settled down in this area. Thus, it is assumed that this area will still be excluded from farming in future.

In other regions of Poland, floristic studies on fallow lands were usually focused on state-run farms, which were abandoned due to constitutional transformations (Barabasz-Krasny, 2002; Kutyna, 1997), on soils which were recently excluded from farming (Łabza et al. 1997 a, b; Kutyna, 1994; Malicki et al. 2002) and were concentrated on little experimental areas (Dzienna et al. 1998; Jabłoński and Widera, 1996). Very few studies were undertaken on long-term fallow land covering large areas. The results of similar investigations were published by Faliński (1986) and Dubiel (1984).

The aim of the floristic investigations, the results of which are presented in this paper, was to make an inventory of fallow land flora of the Podlaski Przełom Bugu mesoregion (including the accurate location of species in the network of ATPOL squares) and its multiaspect analysis.

THE STUDY AREA

The examined area is situated in eastern Poland. In the physical-geographic division of Poland (Kondracki, 2000), the study area is situated in the Podlaski Przełom Bugu mesoregion, belonging to the Południowopodolska Lowland macroregion. The investigations were carried out in the 155 km long section of the Bug river valley, between the localities of Terespol and Małkinia Góra. The valley reaches 5 km in width in this region. The study area includes 20 communes, belonging to Mazovia, Lublin and Podlasie Provinces. In the

National Ecological Network ECONET-Poland (Liro 1995), the region is an important part of the nodal area of international significance, namely "The Area of the Lower Bug River Valley".

The study area is situated in the northeastern part of the former Late Cretaceous Sea and Tertiary Sea floods. Modern surface features of land were formed during the last glaciations. The present river valley was shaped by fluvioglacial waters of the Central Poland glaciations, Warta stadial (Galon, 1972; Dylikowa, 1973). The characteristic element of the Bug river valley relief are well developed terraces, flooded and non-flooded. The flooded terrace is situated 1-2 m above river level and is mainly composed of medium-grained sands, overlaid by post-flood sediments, in the form of sandy mud and dusty sands. The non-flooded terrace reaches the height of 3-5 m above river level. Within its boundaries, sand dunes, hills and sand fields are observed. Upland moraines also occupy a large part of the study area. They are found out of the river valley and can be distinguished by large relief diversity. They mainly consist of gravel-sand structures with rocky fragments and dumped clay interlayers.

Soils of the initial development state occur in a close vicinity of the river bed. They can be identified by their characteristic stratified layout of coarse-grained fractions (layers of gravel and sand). The upper parts of the valley are occupied by muds formed from fine-grained fractions – clayey soils or dusts. Brown leach and typical soils as well as pseudopodsolic soils dominate out of the river valley (Witek et al. 1981). The climate of the study area has a transitional character between the oceanic and continental climate, however, a larger impact of continental masses is observed in this region comparing with other regions of Poland. The climate of the studied area is colder than in central Poland. According to the Meteorological Station in Siedlce, annual precipitation total in the studies period ranged from 500 to 600 mm.

METHODS OF STUDY

The field studies were carried out between 2001 and 2003 in long-term (2-, 3-6, 7-10, and 11-20 year-old) fallow lands of the Podlaski Przełom Bugu mesoregion. During three-year investigations, 359 plots of vegetation were studied with an area of ca. 100 m² each, situated in 77 localities (Fig. 1).

The list of the studied localities:

1 – Grzymki, 2 – Wszebory, 3 – Zgleczewo Pańskie, 4 – Zgleczewo Szlacheckie, 5 – Zuzela, 6 – Ołtarze Gołacze, 7 – Rytele Świeckie, 8 – Rytele Olechny, 9 – Adolfów, 10 – Białobrzegi, 11 – Kielpiniec, 12 – Kolonia Nur, 13 – Kossaki, 14 – Natolin, 15 – Przewóz Nurski, 16 – Kamieńczyk, 17 – Kobyla, 18 – Wojtkowice, 19 – Głęboczek, 20 – Granne, 21 – Kruzy, 22 – Krzemień Zagacie, 23 – Leśniki, 24 – Osnówka, 25

– Teofilówka, 26 – Tończa, 27 – Wieska, 28 – Arbasy, 29 – Chrołowice, 30 – Drohiczyn, 31 – Kolonia Skrzeszew, 32 – Mołożew Wieś, 33 – Putkowice Nadolne, 34 – Skrzeszew, 35 – Tonkiele, 36 – Wasilew Szlachecki, 37 – Wierzchuca Nagórna, 38 – Wólka Zamkowa, 39 – Klekotowo, 40 – Zajęczniki, 41 – Mogielnica, 42 – Rudniki, 43 – Starczewice, 44 – Drażniew, 45 – Bużyska, 46 – Kolonia Mężenin, 47 – Mężenin, 48 – Ogrodniki, 49 – Binduga, 50 – Bużka, 51 – Franopol, 52 – Klimczyce, 53 – Kózki, 54 – Maćkowice, 55 – Wólka Nadbużna, 56 – Mielnik, 57 – Mierzwice Stare, 58 – Osłowo, 59 – Sutno, 60 – Klepaczew, 61 – Wajków, 62 – Bubel, 63 – Niemirów, 64 – Pawłów Nowy, 65 – Stary Pawłów, 66 – Błonie, 67 - Derło, 68 – Woroblin, 69 – Bohukaly, 70 – Krzyczew, 71 – Kuzawka, 72 – Łęgi, 73 – Neple, 74 – Pratulin, 75 – Zaczopki, 76 – Łobaczew, 77 – Lechuty Małe.

The systematic order of species follows Rutkowski (1998), nomenclature of species Mirek et al. (2002). The classification of species into geographic-historical groups was made according to Kornaś (1968), Zając and Zając (1975, 1979), Jackowiak (1990) and Rutkowski (1998). The origin of apophytes was determined based on the studies by Kornaś (1957), Anioł-Kwiatkowska (1974) and Zając and Zając (1992). A group of plants which temporarily escaped from cultivation (ergasiophytes) was also analyzed. The biological type of species and their persistence followed Kornaś (1957), Anioł-Kwiatkowska (1974), Jackowiak (1990), Chmiel (1993) and Rutkowski (1998). The classification of species to socio-ecological groups was adopted based on a slightly modified system of Jackowiak (1990). In total, 17 socio-ecological groups were distinguished and marked by numbers 1-16 and „n” (species of uncertain phytosociological status). The species were included in particular groups on the basis of research by Jackowiak (1990) and Matuszkiewicz (2001). The following groups of species were identified: 1. Deciduous forest and shrub communities; 2. Coniferous forests, mixed forests and their substitute communities; 3. Shrub and forest edge nitrophilous communities; 4. Xerothermic sward and thermophilic forest edge communities; 5. Psammophilous grassland communities; 6. Alder forest and peat bog communities; 7. Water, rushes, waterside forest and shrub communities; 8. Wet meadow communities; 9. Moderate wet meadow communities; 10. Nitrophilous flooded grasslands and trodden communities; 11. Communities of terophytes; 12. Mesophilous communities of high perennials; 13. Thermophilous, long-term ruderal communities; 14. Pioneer ruderal communities; 15. Weed communities of root crops; 16. Weed communities of cereal cultivations; n – species of uncertain phytosociological attachment.

The occurrence frequency of species was estimated on the basis of the modified scale of Jasiewicz (1965), assuming one stand = locality.

Fig. 1 Investigated area

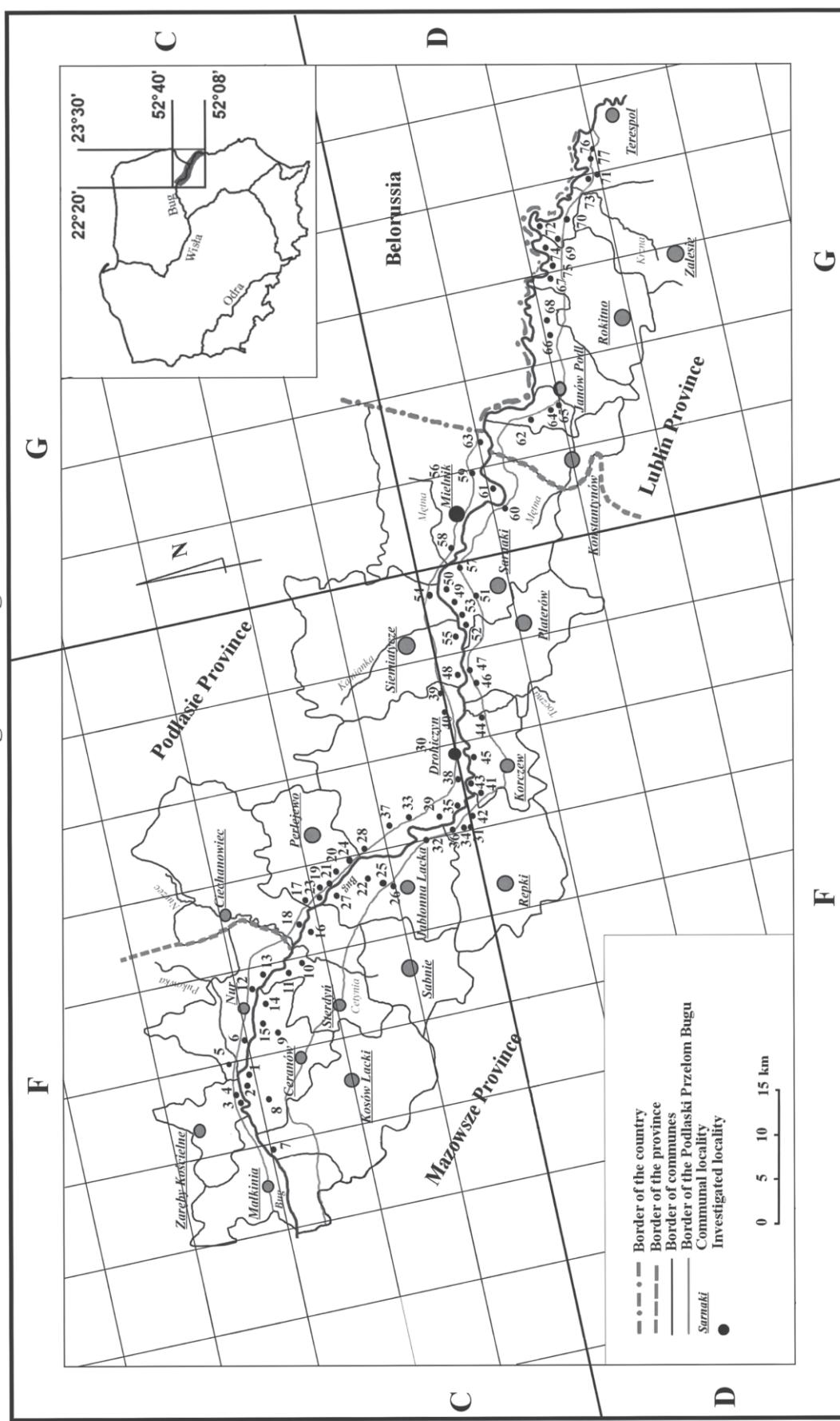


Table 1
Scale of occurrence frequency of species.

Species	Number of localites	% of total number of localites
Very rare	1 2	up to 3
Rare	3 7	3.01 10
Quite rare	8 15	10.01 20
Frequent	16 30	20.01 40
Quite common	31 46	40.01 60
Common	47 61	60.01 80
Very common	62 77	80.01 100

The following abbreviations are used in the systematic list of species: geographic-historical classification: Ar – archeophytes; He – hemiagriophytes; Ho – holagriophytes; Ep – epeophytes; Ef - ephemeroephyses; Erg – ergasiophygophytes; A – apophytes; l – forest and bushwood environments; Ł – meadows; mk – xerotermic grasslands; nw – waterside and waterland environments; ps – dunes and sands; biological type according to Raunkiaer, M – megaphanerophytes; N – nanophanerophytes; Ch – chamaephytes; H – hemicryptophytes; G – geophytes; T – therophytes.

Stands of the recorded species were presented against a background of ATPOL network squares with a side of 1 km. As regards rare species, names of their localities were given.

SYSTEMATIC LIST OF SPECIES

Equisetaceae

1. *Equisetum sylvaticum* L. - Al, G, 1, W - rare, FC76, FC97, FD08, GD00, GD11.

2. *E. pratense* EHRH. - Al, G, 1, W - very rare, Kossaki, FC75.

3. *E. arvense* L. - Ał, G, 5, W - common, FC64, FC65, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11,

Aspidiaceae

4. *Dryopteris filix-mas* (L.) SCHOTT. - Al, H, 1, W - very rare, Putkowice Nad., Wierzchucza, FC97.

5. *D. carthusiana* (VILL.) H. P. FUCHS - Al, H, 1, W - very rare, Teofilówka, FC86.

Pinaceae

6. *Picea abies* (L.) H. KARST. - Al, M, 2, W - very rare, Granne, Korczew, FC86, FD07.

7. *Larix decidua* MILL. subsp. *decidua* - Al, M, 2, W - very rare, Wieska, FC86.

8. *Pinus sylvestris* L. - Al, M, 2, W - common, FC64, FC65, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23.

Cupressaceae

9. *Juniperus communis* L. subsp. *communis* - Al, N, 2, W - rare, FC65, FC76, FC97, GD00.

Salicaceae

10. *Salix alba* L. - Al, M, 7, W - rare, GD11.

11. *S. purpurea* L. - Al, N, 7, W - rare, FC87, FD07, GD11.

12. *S. fragilis* L. - Al, M, 7, W - very rare, Frąnopol, Skrzeszew, FC97, FD09.

13. *S. caprea* L. - Al, N, 3, W - frequent, FC64, FC75, FC76, FC86, FC87, FC97, FD08, GD00, GD11, GD22, GD23.

14. *S. cinerea* L. - Al, N, 6, W - very rare, Mołżew Wieś, FC97.

15. *Populus tremula* L. - Al, M, 2, W - frequent, FC64, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD08, GD00, GD01, GD10, GD11, GD23.

16. *Populus alba* L. - Al, M, 7, W - rare, FC97, FD08, GD23.

Betulaceae

17. *Betula pendula* ROTH - Al, M, 2, W - common, FC64, FC65, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

18. *Alnus glutinosa* (L.) GAERTN. - Al, M, 6, W - rare, FC87, FD08, GD22.

Corylaceae

19. *Corylus avellana* L. - Al, N, 1, W - very rare, Niemirów, GD11.

Fagaceae

20. *Quercus robur* L. - Al, M, 1, W - frequent, FC64, FC65, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD23.

21. *Q. petraea* (MATT.) LIEBL. - Ho, M, 1, W - rare, FC97, FD08, GD01.

Ulmaceae

22. *Ulmus minor* MILL. EMEND. RICHENS - Al, M, 1, W - rare, FC75, FC86, FC98, GD11, GD23.

Urticaceae

23. *Urtica urens* L. - Ar, H, 14, K - very rare, Bubel Stary, GD11.

24. *U. dioica* L. - Ał, H, 1, W - frequent, FC64, FC86, FC87, FC97, FC98, FD08, GD00, GD22, GD23.

Polygonaceae

25. *Polygonum aviculare* L. - Anw, T, 10, K - frequent, FC73, FC76, FC86, FC97, FD07, FD08, FD09, GD00, GD22, GD23.

26. *P. bistorta* L. - Ał, H, 8, W - very rare, Wojtkowice Glinna, FC76.

27. *P. amphibium* L. - Anw, H, 10, W - quite rare, FC64, FC76, FC86, FD08, FD09, GD10, GD22, GD23, GD24.

28. *P. hydropiper* L. - Anw, T, 11, K - very rare, Skrzeszew, FC97.

29. *P. minus* Huds. - Anw, T, 11, K - very rare, Mołożew Wieś, Starczewice, FC97, FD07.

30. *P. persicaria* L. - Anw, T, 15, K - rare, FC76, FC86, FD08, FD09, GD23.

31. *P. lapathifolium* L. subsp. *pallidum* (WITH.) FR. - Anw, T, 11, K - rare, FC86, GD00.

32. *P. lapathifolium* L subsp. *lapathifolium* - Anw, T, 15, K - quite rare, FC76, FC86, FC97, FD07, FD08, FD09, GD00, GD10, GD23.

33. *Fallopia convolvulus* (L.) Á. LÖVE - Ał, T, 15, K - quite common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

34. *Fagopyrum esculentum* MOENCH - Erg, T, n, K - very rare, Osłowo, GD00.

35. *Rumex acetosella* L. - Aps, H, 5, W - very common, FC64, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD21, GD22, GD23, GD24.

36. *R. acetosa* L. - Ał, H, 9, W - common, FC64, FC65, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.

37. *R. confertus* WILLD. - Ep, H, 13, W - very rare, Derło, Zaczopki, GD22, GD23.

38. *R. obtusifolius* L. - Ał, H, 12, W - quite rare, FC75, FC76, FC97, FC98, FD08, FD09, GD11, GD22, GD23.

39. *R. crispus* L. - Ał, H, 10, W - frequent, FC73, FC75, FC86, FC97, FC98, FD07, GD00, GD11, GD22, GD23.

Chenopodiaceae

40. *Chenopodium hybridum* L. - Ar, T, 15, K - very rare, Woroblin, Arbasy, FC87, GD22.

41. *Ch. polyspermum* L. - Ar, T, 11, K - very rare, Mołożew Wieś, FC97.

42. *Ch. strictum* ROTH. - Ep, T, 14, K - rare, FC98, GD00, GD22, GD23.

43. *Ch. album* L. - Anw, T, 15, K - common, FC64, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.

44. *Atriplex patula* L. - Ar, T, 15, K - rare, FC87, FC97, GD22.

45. *Corispermum leptopterum* (ASCH.) ILJIN - Aps, T, 14, K - very rare, Adolfów, FC75.

46. *Salsola kali* L. subsp. *ruthenica* (ILJIN) SOÓ - Ep, T, 14, K - very rare, Adolfów, FC75.

Amaranthaceae

47. *Amaranthus retroflexus* L. - Ep, T, 14, K - rare, FC74, FC86, FD08.

Caryophyllaceae

48. *Arenaria serpyllifolia* L. - Aps, T, 5, K - rare, FC98, FD08, GD00, GD22, GD23.

49. *Stellaria media* (L.) VILL. - Ał, T, 15, K - quite rare, FC76, FC97, FD08, GD11, GD21, GD23.

50. *S. graminea* L. - Ał, H, 9, W - quite rare, FC76, FC86, GD00, GD11, GD22, GD23.

51. *Cerastium arvense* L. S. STR. - Aps, Ch, 5, W - very rare, Bubel Stary, GD11.

52. *C. holosteoides* FR. EMEND. HYL. - Ał, Ch, 9, W - quite rare, FC76, FC97, FC98, FD08, GD00, GD11, GD22.

53. *C. semidecandrum* L. - Aps, T, 5, K - rare, FC97, FD09, GD22.

54. *Sagina procumbens* L. - Ał, Ch, 11, W - rare, FC98, FD08, GD23.

55. *Scleranthus perennis* L. - Aps, H, 5, W - rare, FC75, FC86, FC98, FD07, FD08, GD00, GD22.

56. *S. annuus* L. - Ar, T, 16, K - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23, GD24.

57. *Herniaria glabra* L. - Aps, H, 5, K - quite rare, FC86, FC97, FD08, FD09, GD00, GD01, GD22, GD23.

58. *Spergula arvensis* L. - Ar, T, 15, K - frequent, FC64, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD22, GD23.

59. *S. morisonii* BOREAU - Aps, T, 5, K - very rare, Franopol, Błonie, FD09, GD22.

60. *Spergularia rubra* (L.) J. PRESL & C. PRESL - Anw, T, 11, K - very rare, Bubel Stary, GD11.

61. *Lychnis flos-cuculi* L. - Ał, H, 8, W - very rare, Neple, GD23.

62. *Agrostemma githago* L. - Ar, T, 16, K - rare, FC75, FC97, FC98, FD07, GD00, GD23.

63. *Melandrium album* (MILL.) GÄRCKE - Aps, T, 5, K - common, FC64, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23.

64. *M. noctiflorum* (L.) FR. - Ar, T, 16, K - very rare, Pawłów Stary, Wasilew Szl., FC97, GD11.

65. *Silene otites* (L.) WIBEL - Aps, H, 5, W - quite rare, FC75, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22.

66. *S. vulgaris* (MOENCH) GARCKE - Amk, H, 13, W - very rare, Skrzeszew, FC97.

67. *S. tatarica* (L.) PERS. - Aps, H, 5, W - very rare, Mężeñin, FD08.

68. *Gypsophila muralis* L. - Anw, T, 11, K - rare, FD07, FD08, FD09, GD11, GD23.

69. *Saponaria officinalis* L. - Aps, H, 12, W - frequent, FC64, FC75, FC86, FC87, FD07, FD08, FD09, GD11, GD22, GD23.

70. *Dianthus deltoides* L. - Aps, H, 5, W - rare, FC86, FC98, GD10.

71. *D. carthusianorum* L. - Amk, Ch, 4, W - quite rare, FC86, FC97, FC98, FD07, FD08, GD22.

Ranunculaceae

72. *Nigella arvensis* L. - Ar, T, 16, K - very rare, Klekotowo, Sutno, FC98, GD01.

73. *Consolida regalis* GRAY - Ar, T, 16, K - quite rare, FC97, FC98, FD07, FD08, GD00, GD01, GD22, GD23.

74. *Ranunculus repens* L. - Ał, H, 10, W - quite rare, FC64, FC65, FC75, FC76, FC86, FC97, FC98, FD08, GD00, GD11, GD22, GD23.

75. *R. auricomus* L. s. l - Ał, H, 1, W - very rare, Granne, FC86.

76. *R. acris* L. s. STR. - Ał, H, 9, W - very rare, Klepaczew, Wajków, GD10, GD22.

77. *Myosurus minimus* L. - Anw, T, 11, K - very rare, Bubel Stary, GD11.

Papaveraceae

78. *Papaver argemone* L. - Ar, T, 16, K - very rare, Mielnik, GD00.

79. *P. dubium* L. - Ar, T, 16, K - quite rare, FC86, FC97, FC98, FD08, FD09, GD00, GD22.

80. *P. rhoeas* L. - Ar, T, 16, K - quite rare, FC97, FD07, GD00, GD22, GD23,

81. *Chelidonium majus* L., Ał, H, 3, W, very rare, Arbasy, FC87.

Fumariaceae

82. *Fumaria officinalis* L. - Ar, T, 15, K - very rare, Bubel Stary, GD11.

Brassicaceae

83. *Sisymbrium officinale* (L.) SCOP - Ar, T, 13, K - very rare, Mogielnica, Klepaczew, FD07, GD22.

84. *Descurainia sophia* (L.) WEBB EX PRANTL - Ar, T, 14, K - very rare, Zajęczniki, Mężeñin, FC97, FD08.

85. *Arabidopsis thaliana* (L.) HEYNH. - Aps, T, 16, K - rare, FC97, FD07, GD21, GD22.

86. *Bunias orientalis* L. - Ep, H, 13, K - very rare, Pawłów Stary, GD11.

87. *Erysimum cheiranthoides* L. - Ar, T, 12, K - very rare, Mielnik, GD00.

88. *Armoracia rusticana* P. GAERTN., B. MEY & SCHERB. - Ar, G, 13, W - rare, FC97, FC98, FD09, GD22, GD23.

89. *Cardaminopsis arenosa* (L.) HAYEK. - Aps, H, 9, K - very rare, Klepaczew, Łęgi, GD22, GD23.

90. *Arabis glabra* (L.) BERNH. - Aps, H, 5, K/W - very rare, Kruzy, FC86.

91. *Berteroa incana* (L.) DC. - Amk, T, 13, K - common, FC64, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD11, GD21, GD22, GD23.

92. *Erophila verna* (L.) CHEVALL. - Aps, T, 5, K - rare, FC98, FD07, GD00, GD21.

93. *Camelina microcarpa* ANDRZ. - Amk, T, 16, K - very rare, Mogielnica, FD07.

94. *Capsella bursa-pastoris* (L.) MEDIK - Ar, T, 10, K - quite rare, FC86, FC97, FC98, FD07, GD00, GD11, GD21, GD22, GD23.

95. *Thlapsi arvense* L. - Ar, T, 15, K - rare, FC73, FC97, GD00, GD21.

96. *Lepidium ruderale* L. - Ar, T, 14, K - very rare, Adolfów, FC75.

97. *Brassica napus* L. subsp. *napus* - Erg, T, n, K - very rare, Mogielnica, FD07.

98. *Sinapis arvensis* L. - Ar, T, 15, K - very rare, Niemirów, Skrzeszew, FC97, GD11.

99. *S. alba* L. - Erg, T, n, K - very rare, Kol. Skrzeszew, Rytel Św., FC73, FC97.

100. *Raphanus raphanistrum* L. - Ar, T, 15, K - frequent, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

Crassulaceae

101. *Sedum maximum* (L.) HOFFM. - Aps, G, 5, W - frequent, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD23.

102. *S. acre* L. - Aps, Ch, 5, W - quite rare, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD22.

103. *S. sexangulare* L. - Aps, Ch, 5, W - very rare, Bużyska, Mogielnica, FC73, FD07.

Saxifragaceae

104. *Saxifraga granulata* L. - Aps, H, 5, W - very rare, Mielnik, GD00.

Grossulariaceae

105. *Ribes rubrum* L. - Erg, N, n, W - very rare, Niemirów, Wasilew Szl., FC97, GD11.

Rosaceae

106. *Filipendula ulmaria* (L.) MAXIM - Ał, H, 8, W - very rare, Ogrodniki, FD08.

107. *Rubus caesius* L. - Ał, Ch, 12, W - quite rare, FC86, FC97, FC98, FD08, GD00, GD11, GD23, GD24.

108. *Rosa rugosa* THUNB. - Ep, N, n, W - rare, Zaczopki, GD23.

109. *R. canina* L. - Ał, N, 1, W - rare, FC64, FC65, FC76, FC87, FC97, FD09, GD00.

110. *Agrimonia eupatoria* L. - Amk, H, 4, W - quite rare, FC97, FD07, FD08, FD09, GD00, GD11, GD23.
111. *Sanguisorba officinalis* L. - Ał, H, 8, W - very rare, Ogrodniki, FD08.
112. *Geum urbanum* L. - Al, H, 1, W - very rare, Zaczopki, GD23.
113. *G. aleppicum* JACQ. - Al, H, 1, W - very rare, Skrzeszew, FC97.
114. *Potentilla anserina* L. - Ał, H, 10, W - quite rare, FC64, FC76, FC86, FC87, FC97, FC98, FD08, FD09, GD22, GD23.
115. *P. erecta* (L.) RAEUSCH. - Al, H, 8, W - very rare, Osłowo, GD00.
116. *P. reptans* L. - Ał, H, 10, W - rare, FC87, FC98, GD00, GD11.
117. *P. collina* WIBEL S. STR. - Amk, H, 4, W - quite rare, FC76, FC86, FC98, FD08, FD09, GD00, GD11, GD22.
118. *P. leucopolitana* P. J. MÜLL - Aps, H, 5, W - very rare, Arbasy, FC87.
119. *P. inclinata* VILL. - Amk, H, 4, W - very rare, Osnówka, FC86.
120. *P. argentea* L. S. STR. - Aps, H, 5, W - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
121. *P. recta* L. - Amk, H, 4, W - very rare, Kiełpiniec, FC75.
122. *Fragaria x ananassa* DUCHESNE - Erg, H, n, W - very rare: Skrzeszew, FC97.
123. *Fragaria vesca* L. - Ał, H, 2, W - quite rare, FC75, FC86, FC97, FC98, FD07, FD08, GD00, GD10, GD11, GD23.
124. *Alchemilla monticola* OPIZ - Ał, H, 9, W - rare, FC98, GD00, GD23.
125. *Pyrus communis* L. - Erg, M, n, W - frequent, FC64, FC65, FC75, FC76, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
126. *Malus domestica* BORKH. - Erg, M, n, W - very rare, Ołtarze Gołacze, FC65.
127. *M. sylvestris* MILL. - Al, M, 1, W - rare, FC86, GD00.
128. *Sorbus aucuparia* subsp. *aucuparia* L. EMEND. HEDL. - Ał, M, 2, W, quite rare, FC75, FC76, FC86, FC97, FD08, FD09, GD00, GD11, GD22, GD23.
129. *Crataegus laevigata* (POIR.) DC. - Ał, M, 1, W - very rare, Putkowice Nad., FC97.
130. *Padus avium* MILL. - Al, F, 1, W - rare, FC97, GD00.
131. *P. serotina* (EHRH.) BORKH. - Erg, M, n, W - rare, FC75, FC86, FC97, GD00.
132. *Cerasus vulgaris* MILL. - Erg, M, n, W - very rare, Tonkiele, Bubel Stary, FC97, GD11.
133. *Prunus spinosa* L. - Al, M, 1, W - rare, FC76, GD22, GD23.
- Fabaceae**
134. *Sarothamnus scoparius* (L.) W. D. J. KOCH - Erg, N, 1, W - very rare, Skrzeszew, FC97.
135. *Genista tinctoria* L. - Al, N/Ch, 2, W - very rare, Skrzeszew, FC97.
136. *Lupinus polyphyllus* LINDL. - He, H, n, W - rare, FC86, GD00.
137. *L. luteus* L. - Erg, T, n, K - rare, FC73, FC86, GD00, GD22, GD23.
138. *Robinia pseudoacacia* L. - Erg, M, 3, W - rare, FC86, FC98, FD07.
139. *Astragalus glycyphyllos* L. - Al, H, 1, W - rare, FC86, FC97, GD00.
140. *A. cicer* L. - Amk, H, 4, W - quite rare, FC86, FC97, FC98, FD07, FD09, GD22.
141. *A. arenarius* L. - Aps, H, 5, W - very rare, Białobrzegi, FC75.
142. *Vicia sepium* L. - Al, H, 1, W - very rare, Teofilówka, FC86.
143. *V. angustifolia* L. - Ar, T, 16, K - frequent, FC75, FC76, FC86, FC87, FC97, FC98, FD08, FD09, GD00, GD22, GD23.
144. *V. hirsuta* (L.) GRAY - Ar, T, 16, K - frequent, FC86, FC97, FC98, FD08, FD09, GD00, GD01, GD11, GD21, GD22, GD23.
145. *V. tetrasperma* (L.) SCHREB. - Ar, T, 16, K - frequent, FC64, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, GD00, GD11, GD21, GD22, GD23.
146. *V. villosa* ROTH - Ar, T, 16, K - frequent, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.
147. *V. dasycarpa* TEN. - Ar, T, 16, K - quite rare, FC97, FC98, FD09, GD22, GD23.
148. *V. cracca* L. - Ał, H, 9, W - quite rare, FC64, FC65, FC75, FC98, FD07, FD08, FD09, GD00, GD11, GD22.
149. *Lathyrus pratensis* L. - Ał, H, 9, W - rare, FC76, FC86, FD07, GD22.
150. *L. tuberosus* L. - Ar, H, 16, W - very rare, Skrzeszew, FC97.
151. *L. sylvestris* L. - Al, H, 4, W - very rare: Teofilówka, FC86.
152. *Ononis arvensis* L. - Amk, H, 4, W - rare, FC86, FC97.
153. *Melilotus alba* MEDIK. - Amk, T, 13, K - quite rare, FC75, FC86, FC97, FD07, FD08, GD00, GD22, GD23.
154. *M. officinalis* (L.) PALL. - Amk, T, 13, K - rare, FD07, GD00.
155. *Medicago falcata* L. - Amk, H, 4, W - quite rare, FC86, FC97, FC98, FD07, FD08, GD00, GD11, GD22, GD23.

156. *M. sativa* L. S. STR. - Erg, H, n, W - rare, FC97, GD22, GD23.

157. *M. x varia* MARTYN - Erg, H, n, W - very rare, Zajęczniki, FC98.

158. *M. lupulina* L. - Amk, T, 13, K - quite rare, FC75, FC86, FC97, FC98, FD07, GD00, GD22, GD23.

159. *Trifolium dubium* SIBTH. - Ał, T, 9, K - very rare, Zajęczniki, FC98.

160. *T. campestre* SCHREB. - Aps, T, 5, K - rare, FC97, FD08, GD00, GD23.

161. *T. aureum* POLLICH - Aps, H/T, 5, K - very rare, Skrzeszew, FC97.

162. *T. repens* L. - Ał, H, 10, W - frequent, FC64, FC73, FC76, FC86, FC97, FD07, FD08, FD09, GD00, GD11, GD22, GD23.

163. *T. hybridum* L. subsp. *hybridum* - Ał, H, 8, W - very rare, Zaczopki, GD23.

164. *T. alpestre* L. - Al, H, 2, W - very rare: Teofilówka, FC86.

165. *T. medium* L. - Amk, H, 4, W - quite rare, FC65, FC76, FC87, FC98, FD07, FD08, FD09, GD00, GD23.

166. *T. pratense* L. - Ał, H, 9, W - frequent, FC64, FC65, FC76, FC86, FC87, FC97, FC98, FD07, FD09, GD00, GD11, GD22, GD23.

167. *T. arvense* L. - Aps, T, 5, K - quite common, FC64, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23.

168. *Lotus uliginosus* SCHKUHR - Ał, H, 8, W - very rare, Pawłów Stary, GD11.

169. *L. corniculatus* L. - Ał, H, 9, W - frequent, FC65, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23.

170. *Ornithopus sativus* BROT. - Erg, T, n, K - rare, FC75, FC76, FC86, FD07, FD09, GD22.

171. *Coronilla varia* L., Amk, H, 4, W, rare, FC98, FD08, GD11.

Oxalidaceae

172. *Oxalis fontana* BUNGE - Ep, G, 15, W/K - quite rare, FD08, GD22, GD23.

Geraniaceae

173. *Geranium pratense* L. - Ał, H, 9, W - quite rare, FC76, FC86, FC87, FC97, FC98, FD08, GD23.

174. *G. dissectum* L. - Ar, T, 16, K - very rare, Mielnik, GD00.

175. *G. pusillum* BURM. F. Ex. L. - Ar, T, 15, K - rare, FC64, FC97, FD07, GD00, GD11.

176. *Erodium cicutarium* (L.) L'HÉR - Ar, T, 15, K - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23.

Euphorbiaceae

177. *Euphorbia helioscopia* L. - Ar, T, 15, K - rare, FC97, GD00, GD22, GD23.

178. *E. virgultosa* KLOKOV - Amk, G, 9, W - very rare, Skrzeszew, FC97.

Aceraceae

179. *Acer negundo* L. - He, M, 1, W - quite rare, FC64, FC65, FC75, FC86, FC97, FC98, GD23.

180. *A. pseudoplatanus* L. - Al, M, 1, W - very rare, Niemirów, GD11.

181. *A. platanoides* L. - Al, M, 1, W - quite rare, FC97, FC98, FD08, FD09, GD00, GD11, GD21, GD22, GD23, GD24.

Celastraceae

182. *Euonymus europaea* L. - Al, N, 1, W - very rare, Derło, GD22.

Rhamnaceae

183. *Frangula alnus* MILL. - Al, N, 6, W - very rare, Drohiczyn, Zajęczniki, FC97, FC98.

Tiliaceae

184. *Tilia platyphyllos* Scop. - Al, M, 1, W - very rare: Mężeńin, Pawłów Stary, FD08, GD11.

185. *T. cordata* MILL. - Al, M, 1, W - rare, FC75, FC98, GD23.

Malvaceae

186. *Malva alcea* L. - Ar, H, 13, W - rare, FC86, FC98, FD07, FD08.

187. *M. neglecta* WALLR. - Ar, T, 14, K - very rare, Granne, FC86.

Clusiaceae

188. *Hypericum perforatum* L. - Amk, H, 4, W - quite common, FC64, FC65, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

189. *H. maculatum* CRANTZ - Ał, H, 8, W - rare, FC64, FC75, FC76, FC98.

Violaceae

190. *Viola arvensis* MURRAY - Ar, T, 16, K - common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23, GD24.

191. *V. tricolor* L. S. STR. - Ar, T, 5, K - rare, FC76, GD11, GD21.

192. *V. riviniana* RCHB. - Al, H, 1, W - very rare, Mężeńin, FD08.

Lythraceae

193. *Lythrum salicaria* L. - Anw, H, 8, W - very rare, Ogrodniki, Skrzeszew, FC97, FD08.

Onagraceae

194. *Oenothera depressa* GREENE - Ep, H, 13, K - rare, FD07, GD11, GD23.

195. *O. biennis* L. S. STR. - Aps, H, 13, K - common, FC64, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23, GD24.

196. *O. biennis* L. S. STR. x *rubicaulis* KLEB. - Aps, H, 13, K - rare, FC75, FC86, FC97, FD08, FD09, GD00, GD11.
197. *O. rubricaulis* KLEB. - Aps, H, 13, K - frequent, FC75, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
198. *O. acutifolia* ROSTAŃSKI - Ep, H, 13, K - very rare, Drażniew, FD08.
199. *Chamaenerion angustifolium* (L.) SCOP. - Al, H, 2, W - quite rare, FC75, FC86, FC97, GD11, GD22, GD23.
200. *Epilobium parviflorum* SCHREB. - Anw, H, 7, W - rare, FC75, FC86, FC97.
201. *E. montanum* L. - Al, H, 3, W - very rare, Skrzeszew, FC97.
202. *E. ciliatum* RAF. - Ep, H, 14, W - very rare, Skrzeszew, Zaczopki, FC97, GD23.
- Cornaceae**
203. *Cornus sanguinea* L. - Al, N, 1, W - rare, FC76, FC97, FD07.
- Apiaceae**
204. *Eryngium planum* L. - Amk, H, 4, W - quite rare, FC75, FC97, FC98, FD07, FD08, GD00, GD11, GD22, GD23.
205. *Anthriscus sylvestris* L. (L.) HOFFM. - Al, H, 3, W - rare, FC76, FC97, GD00.
206. *Pimpinella major* (L.) Huds. - Al, H, 9, W - rare, FC64, FC86, FC98, FD08, GD00.
207. *P. saxifraga* L. - Aps, H, 13, W - frequent, FC65, FC75, FC86, FC97, FC98, FD07, FD08, FD09, GD01, GD11, GD22, GD23.
208. *Aegopodium podagraria* L. - Amk, H, 3, W - very rare, Mielnik, Błonie, GD00, GD22.
209. *Selinum carvifolia* (L.) L. - Al, H, 8, W - very rare, Derło, Wólka Zamkowa, FC97, GD22.
210. *Peucedanum oreoselinum* (L.) MOENCH - Amk, H, 4, W - quite rare, FC65, FC75, FC76, FC97, FC98, FD07, GD23.
211. *Pastinaca sativa* L. S. STR. - Al, H, 13, K, quite rare, FC64, FC75, FC86, FC97, FC98, FD08, FD09, GD00, GD11, GD23.
212. *Heracleum sphondylium* L. S. STR. - Al, H, 9, W, very rare: Zajęczniki, FC98.
213. *H. sibiricum* L. - Al, H, 9, W - quite rare, FC75, FC76, FC86, FC97, FC98, FD08, GD22, GD23.
214. *Torilis arvensis* (HUDS.) LINK - Ef, T, n, K - very rare, Mężeñin, FD08.
215. *T. japonica* (HOUTT.) DC. - Al, T, 3, K - rare, FC76, FC87, GD00.
216. *Daucus carota* L. - Al, H, 9, K - frequent, FC64, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23, GD24.
- Ericaceae**
217. *Calluna vulgaris* (L.) HULL - Amk, Ch, 2, W - rare, FC65, FD09, GD00.
218. *Vaccinium vitis-idaea* L. - Al, Ch, 2, W - very rare, Zajęczniki, FC98.
219. *V. myrtillus* L. - Al, Ch, 2, W - very rare, Osłowo, Ołtarze Gołacze, FC65, GD00.
- Primulaceae**
220. *Lysimachia nummularia* L. - Al, Ch, 6, W - very rare, Tończa, FC86.
221. *L. vulgaris* L. - Al, H, 8, W - rare, FC76, FC97, FD08, GD00.
222. *Anagallis arvensis* L. - Ar, T, 15, K - rare, FC97, GD00, GD23.
- Plumbaginaceae**
223. *Armeria maritima* (MILL.) WILLD. subsp. *elongata* (HOFFM.) BONNIER - Aps, H, 5, W - quite rare, FC75, FC76, FC86, FC87, FC97, FD08, FD09, GD00, GD22.
- Oleaceae**
224. *Fraxinus excelsior* L. - Al, M, 1, W - rare, FC64, FC73, FC98, FD09, GD00, GD23.
225. *Syringa vulgaris* L. - Erg, N, n, W - very rare, Woroblin, GD22.
- Gentianaceae**
226. *Centaurium erythraea* RAFN. - Al, T, 2, K - very rare, Kózki, Mężeñin, FD08, FD09.
- Apocynaceae**
227. *Vinca minor* L. - Al, Ch, 1, W - very rare, Kol. Mężeñin, FD08.
- Rubiaceae**
228. *Galium aparine* L. - Al, T, 3, K - quite rare, FC97, FC98, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.
229. *G. boreale* L. - Al, H, 8, W - very rare, Wólk Nadbużna, Zajęczniki, FC98, FD09.
230. *G. verum* L. S. STR. - Aps, H, 5, W - frequent, FC76, FC86, FC97, FC98, FD08, GD00, GD11, GD22, GD23.
231. *G. mollugo* L. S. STR.. - Al, H, 9, W - frequent, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23.
- Convolvulaceae**
232. *Convolvulus arvensis* L. - Amk, H, 13, W - very common, FC64, FC65, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD01, GD10, GD11, GD21, GD22, GD23.
- Boraginaceae**
233. *Lithospermum arvense* L. - Ar, T, 16, K - very rare, Mielnik, GD00.
234. *Echium vulgare* L. - Ar, H, 13, K - frequent, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23.
235. *Symphytum officinale* L. - Al, H, 9, K - very rare, Ogrodniki, Skrzeszew, FC97, FD08.
236. *Anchusa officinalis* L. - Ar, H, 13, K/W - very rare, Klepaczew, Zajęczniki, FC98, GD22.
237. *A. arvensis* (L.) M. BIEB - Ar, T, 15, K - very rare, Zajęczniki, FC98.

238. *Myosotis palustris* (L.) L. EMEND. RCHB. - Anw, H, 7, W - very rare, Klepaczew, GD22.
239. *M. arvensis* (L.) HILL - Ar, T, 16, K - frequent, FC75, FC76, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD21, GD22, GD23.
240. *M. stricta* LINK EX ROEM. & SCHULT. - Aps, T, 5, K - quite rare, FC75, FC76, FC86, FC97, FC98, FD07, FD08, GD00, GD11.
241. *Cynoglossum officinale* L. - Ar, H, 13, K - very rare, Arbasy, FC87.
- Lamiaceae**
242. *Galeopsis ladanum* L. - Ar, T, 15, K - quite rare, FC75, FC86, FC97, FC98, FD09, GD00, GD10, GD11, GD23.
243. *G. pubescens* BESSER - Al, T, 1, K - very rare, Klepaczew, GD22.
244. *G. tetrahit* L. - Al, T, 2, K - frequent, FC75, FC76, FC86, FC97, FC98, GD11, GD22, GD23.
245. *G. bifida* BOENN. - Al, T, 2, K - rare, GD00, GD01, GD22, GD23.
246. *Lamium amplexicaule* L. - Ar, T, 15, K - very rare, Janów Podl., Pawłów Stary, GD11, GD21.
247. *L. purpureum* L. - Ar, T, 15, K - rare, GD00, GD01, GD10, GD11.
248. *Leonurus cardiaca* L. - Ar, H, 12, W - very rare, Rudniki, FD07.
249. *Ballota nigra* L. - Ar, H, 13, W - rare, FC87, FC97, FD08, GD22.
250. *Stachys sylvatica* L. - Al, H, 1, W - rare, Wajków, GD10.
251. *S. palustris* L. - Anw, G, 8, W - rare, FC64, FC97, FD08, GD23.
252. *Glechoma hederacea* L. - Al, G, 1, W - very rare, Mołożew Wieś, FC97.
253. *Prunella grandiflora* (L.) SCHOLLER - Amk, H, 4, W - rare, FC86, GD00, GD22.
254. *P. vulgaris* L. - Al, H, 9, W - quite rare, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD10, GD23.
255. *Thymus pulegioides* L. - Amk, Ch, 4, W - rare, FC86, FC97, FD08, GD00.
256. *Mentha arvensis* L. - Anw, H, 11, W - quite rare, FC75, FC97, FC98, FD07, FD08, GD00, GD22, GD23.
- Solanaceae**
257. *Solanum nigrum* L. EMEND. MILL. - Ar, T, 15, K - very rare, Wasilew Szl., FC97.
- Scrophulariaceae**
258. *Verbascum phoeniceum* L. - Amk, H, 4, K - very rare, Klepaczew, Sutno, GD01, GD22.
259. *V. thapsus* L. - Amk, H, 13, K - quite rare, FC75, FC86, FC97, FC98, FD08, FD09, GD10, GD11.
260. *V. phlomoides* L. - Amk, H, 13, K - very rare, Bubel Stary, Klepaczew, GD11, GD22.
261. *V. densiflorum* BERTOL. - Aps, H, 13, K - very rare, Klepaczew, GD22.
262. *V. nigrum* L. - Aps, H, 4, K - rare, FC86, FC87, FD08, GD11, GD23.
263. *Scrophularia nodosa* L. - Al, H, 1, W - very rare, Klepaczew, Teofilówka, FC86, GD22.
264. *Chaenorhinum minus* (L.) LANGE - Amk, T, 14, K - rare, FC98, GD22, GD23.
265. *Linaria vulgaris* MILL. - Aps, G, 13, W - quite rare, FC64, FC75, FC76, FC86, FC98, FD08, GD00, GD10, GD11, GD22, GD23.
266. *Veronica spicata* L. - Aps, H, 5, W - quite rare, FC75, FC86, FC97, FC98, FD09, GD00.
267. *V. longifolia* L. - Anw, H, 8, W - rare, FC76, FC98, FD08, GD00, GD10, GD22.
268. *V. serpyllifolia* L. - Ał, H, 10, W - very rare, Kamieńczyk, FC76.
269. *V. triphylllos* L. - Ar, T, 16, K - very rare, Mielnik, Pawłów Stary, GD00, GD21.
270. *V. arvensis* L. - Ar, T, 16, K - rare, FC76, FC97, FD08, GD00, GD22, GD23.
271. *V. verna* L. - Aps, T, 5, K - very rare, Mężeñin, Mielnik, FD08, GD00.
272. *V. dillenii* CRANTZ - Aps, T, 5, K - frequent, FC64, FC76, FC86, FC97, FC98, GD00, GD11, GD22, GD23.
273. *V. persica* POIR. - Ep, T, 15, K - very rare, Mołożew Wieś, Pratulin, FC97, GD23.
274. *V. agrestis* L. - Ar, T, 15, K - rare, FC64, FD08, GD00.
275. *V. polita* FR. - Ar, T, 15, K - very rare, Mielnik, GD00.
276. *V. scutellata* L. - Anw, H, 6, W - very rare, Skrzeszew, FC97.
277. *V. officinalis* L. - Al, Ch, 2, W - quite rare, FC76, FC86, FC98, FD08, GD01, GD10, GD23.
278. *V. chamaedrys* L. S. STR. - Ał, Ch, 9, W - frequent, FC65, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD11, GD21, GD22, GD23.
279. *Melampyrum pratense* L. - Al, T, 2, K - very rare, Neple, GD23.
280. *Euphrasia stricta* D. WOLFF EX J. F. LEHM. - Amk, T, 4, K - very rare, Wajków, GD10.
281. *Odontites verna* (BELLARDI) DUMORT. - Ar, T, 16, K - very rare, Mogielnica, Neple, FD07, GD23.
282. *O. serotina* (LAM.) RCHB. S. STR. - Aps, T, 9, K - rare, FC97, FC98.
283. *Rhinanthus minor* L. - Ał, T, 9, K - very rare, Wieska, Neple, FC86, GD23.
284. *R. serotinus* (SCHÖNH.) OBORNÝ - Ał, T, 8, K - rare, FC64, FC76, FC98.
- Plantaginaceae**
285. *Plantago arenaria* WALDST. & KIT. - Aps, T, 14, K - very rare, Sutno, GD01.
286. *P. media* L. - Ał, H, 9, W - very rare, Kamieńczyk, Kiełpiniec, FC76, FC86.

287. *P. major* L. S. STR. - Ał, H, 10, W - quite rare, FC87, FC97, FC98, FD07, FD08, GD00, GD11, GD22, GD23.

288. *P. intermedia* GILIB. - Ał, H/T, 11, W - rare, FC76, FC86, FC97, FC98, FD08.

289. *P. lanceolata* L. - Ał, H, 10, W - quite common, FC64, FC65, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23, GD24.

Caprifoliaceae

290. *Sambucus ebulus* L. - Al, H, 3, W - very rare, Zajęczniki, FC98.

291. *Sambucus nigra* L. - Al, N, 3, W - rare, FC75, GD22, GD23.

Valerianaceae

292. *Valerianella dentata* (L.) POLLICH - Ar, T, 16, K - very rare, Mielnik, GD00.

293. *Valeriana officinalis* L. - Anw, H, 8, W - very rare, Zaczopki, GD23.

Dipsacaceae

294. *Dipsacus sylvestris* Huds. - Ar, H, 13, W - very rare, Klepaczew, Wólka Zamkowa, FC97, GD22.

295. *Succisa pratensis* MOENCH - Aps, H, 8, W - frequent, FC75, FC86, FC87, FC97, FD08, FD09, GD00, GD10, GD11, GD22.

296. *Knautia arvensis* (L.) J. M. COULT - Ał, H, 9, W - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.

297. *K. dipsacifolia* KREUTZER - Al, H, 4, W - very rare, Pawłów Stary, GD11.

298. *Scabiosa canescens* WALDST. & KIT. - Aps, H, 4, W - very rare, Putkowice Nad., Zajęczniki, FC97, FC98.

299. *S. ochroleuca* L. - Amk, H, 4, W - rare, FC97, FC98, FD07, FD08, GD11, GD23.

Campanulaceae

300. *Campanula patula* L. S. STR. - Ał, H, 9, W - quite rare, FC76, FC86, FC97, FC98, FD08.

301. *C. rapunculoides* L. - Al, H, 4, W - very rare, Mielnik Kol., Skrzeszew, FC97, GD00.

302. *C. latifolia* L. - Al, H, 1, W - very rare, Zajęczniki, FC98.

303. *Jasione montana* L. - Aps, H, 5, K - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

Asteraceae

304. *Eupatorium cannabinum* L. - Anw, H, 7, W - very rare, Derło, Ogrodniki, FD08, GD22.

305. *Solidago virgaurea* L. S. STR. - Al, H, 2, W - quite common, FC64, FC65, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.

306. *S. gigantea* AITON - He, H, 12, W - rare, FC86, FC98, FD09, GD00, GD10.

307. *S. canadensis* L. - He, H, 12, W - quite rare, FC76, FC97, FD09, GD00, GD10, GD23.

308. *Erigeron acris* L. - Aps, H, 4, K - frequent, FC64, FC65, FC76, FC86, FC87, FC97, FC98, FD09, GD00, GD01, GD11, GD22, GD23.

309. *E. annuus* (L.) PERS - Ep, H, 13, K - very rare, Klepaczew, GD22.

310. *E. ramosus* (WALTERS) BRITTON, STERNS&POGGENB. - Ep, H, 14, K - very rare, Kózki, FD09.

311. *Conyza canadensis* (L.) CRONQUIST. - Ep, T/H, 14, K - very common, FC64, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23, GD24.

312. *Filago arvensis* L. - Aps, T, 5, K - very rare, Ogrodniki, FD08.

313. *F. minima* (Sm.) PERS. - Aps, T, 5, K - frequent, FC75, FC76, FC86, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.

314. *Gnaphalium sylvaticum* L. - Al, H, 2, W - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23, GD24.

315. *G. uliginosum* L. - Anw, T, 11, K - rare, FC75, FC86, FC97, FC98, FD08, GD00, GD23.

316. *Helichrysum arenarium* (L.) MOENCH - Aps, H, 5, W - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.

317. *Inula britannica* L. - Ał, H, 10, W - rare, FC86, FC97, GD23.

318. *Bidens tripartita* L. - Anw, T, 11, K - rare, FC76, FC97.

319. *Galinsoga parviflora* Cav. - Ep, T, 15, K - rare, FC97, FD08, GD00, GD23.

320. *Anthemis tinctoria* L. - Amk, H, 4, W - very rare, Arbasy, Mielnik, FC87, GD00.

321. *A. arvensis* L. - Ar, T, 16, K - frequent, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.

322. *A. ruthenica* M. BIEB. - Ep, T, 13, K - very rare, Klepaczew, GD22.

323. *Achillea ptarmica* L. - Ał, H, 8, W - very rare, Kamieńczyk, FC76.

324. *A. salicifolia* BESSER - Al, H, 12, W - very rare, Mężenin, FD08.

325. *A. millefolium* L. S. STR. - Ał, H, 9, W - very common, FC64, FC65, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23, GD24.

326. *Matricaria maritima* subsp. *inodora* (L.) DOSTÁL - Ar, T, 16, K - quite common, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD21, GD22, GD23, GD24.

327. *Chamomilla recutita* (L.) RAUSCHERT - Ar, T, 16, K - rare, FC97, FC98, FD08, GD22.
328. *Tanacetum vulgare* L. - Ał, H, 12, W - rare, FC75, FC97, FC98, FD08, FD09.
329. *Leucanthemum vulgare* LAM. S. STR. - Ał, H, 9, W - frequent, FC75, FC76, FC86, FC97, FD07, FD08, GD00, GD22, GD23.
330. *Artemisia absinthium* L. - Ar, Ch, 13, W - frequent, FC64, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD22, GD23.
331. *A. vulgaris* L.- Ał, Ch, 12, W - very common, FC64, FC65, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23, GD24.
332. *A. campestris* L. - Aps, Ch, 5, W - common, FC64, FC65, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
333. *Tussilago farfara* L. - Anw, G, 13, W - rare, FC87, FC98, GD00.
334. *Senecio sylvaticus* L. - Ał, T, 2, K - rare, FC98, FD08, GD11, GD21.
335. *S. vernalis* WALDST. & KIT. - Ep, T, 14, K - very rare, Błonie, Janów Podl., GD21, GD22.
336. *S. jacobaea* L. - Amk, H, 4, W - frequent, FC64, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD11, GD22, GD23.
337. *Calendula officinalis* L. - Erg, T, n, K - very rare, Drażniew, FD08.
338. *Carlina vulgaris* L. - Amk, H, 4, W - quite rare, FC97, FC98, FD08, FD09, GD00, GD01, GD10.
339. *Arctium lappa* L. - Ał, H, 12, K - rare, FC87, FC97.
340. *Carduus acanthoides* L. - Ał, H, 13, K - quite rare, FC64, FC76, FC86, FC97, FD08, GD00, GD22, GD23.
341. *Cirsium vulgare* (SAV) TEN. - Ał, H, 12, K - quite rare, FC64, FC86, FC87, FC97, FC98, FD07, FD09, GD00, GD22, GD23.
342. *C. palustre* (L.) SCOP. - Ał, H, 8, K - very rare, Błonie, GD23.
343. *C. arvense* (L.) SCOP. - Ał, G, 12, W - quite common, FC73, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.
344. *C. oleraceum* (L.) SCOP. - Ał, H, 8, W - very rare, Zaczopki, GD23.
345. *C. rivulare* (JACQ.) ALL. - Ał, H, 8, W - very rare, Zaczopki, GD23.
346. *Onopordum acanthium* L. - Ar, H, 13, K - very rare, Wasilew Szl., FC97.
347. *Centaurea cyanus* L. - Ar, T, 16, K - common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23, GD24.
348. *C. scabiosa* L. - Amk, H, 4, W - frequent, FC64, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22.
349. *C. stoebe* L. - Aps, H, 5, W/K - frequent, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
350. *C. jacea* L. - Ał, H, 9, W - frequent, FC64, FC65, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD10, GD11, GD22, GD23, GD24.
351. *Cichorium intybus* L. - Ar, H, 13, W - frequent, FC75, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.
352. *Arnoseris minima* (L.) SCHWEIGG. & KÖRTE - Aps, T, 16, K - rare, FC86, GD00, GD11.
353. *Hypochoeris radicata* L. - Aps, H, 5, W - common, FC64, FC65, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
354. *H. glabra* L. - Aps, T, 16, K - quite rare, FC76, FC98, FD09, GD00, GD10, GD11, GD23.
355. *Leontodon autumnalis* L. - Ał, H, 10, W - frequent, FC64, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD22, GD23.
356. *L. hispidus* L. - Ał, H, 9, W - rare, FC97, FC98, FD08, GD23.
357. *Tragopogon dubius* SCOP - Amk, H, 13, K - very rare, Zajęczniki, FC98.
358. *T. pratensis* L. S. STR. - Ał, H, 9, K - quite rare, FC73, FC86, FC97, FC98, GD00, GD11, GD22, GD23.
359. *Sonchus asper* (L.) HILL. - Ar, T, 15, K - quite rare, FC97, FC98, FD09, GD00, GD23.
360. *S. arvensis* L. - Anw, H/G, 15, W - frequent, FC86, FC97, FC98, FD07, FD09, GD00, GD22, GD23, GD24.
361. *Lactuca serriola* L. - Ar, H, 14, K - quite rare, FC86, FC97, FC98, FD07, GD00, GD22, GD23.
362. *Taraxacum officinale* sect. *Ruderalia* KIRSCHNER, H. ØUGAARD & ŠTĚPÁNEK - Ał, H, 9, W - common, FC64, FC65, FC73, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.
363. *Chondrilla juncea* L. - Aps, H, 5, W - rare, FC76, FC98, GD11.
364. *Lapsana communis* L. S. STR. - Ał, T, 1, K - very rare, Klekotowo, Mielnik, FC98, GD00.
365. *Crepis tectorum* L. - Aps, T, 5, K - rare, FC76, FC97, FC98, GD00, GD10.
366. *C. capillaris* (L.) WALLR. - Ał, T, 9, K - rare, FC97, FC98, GD23.
367. *C. biennis* L. - Ał, T, 9, K - very rare, Mielnik, GD00.
368. *Hieracium pilosella* L. - Aps, H, 5, W - common, FC64, FC65, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23.

369. *H. umbellatum* L. - Ał, H, 2, W - quite rare, FC65, FC76, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD1.
370. *H. sabaudum* L. - Ał, H, 1, W - very rare, Kózki, FD09.
371. *H. floribundum* WIMM & GRAB. - Ał, H, 2, W - very rare, Wierzchuca Nagórna, FC97.
372. *H. lachenalii* C. C. GMEL. - Ał, H, 2, W - rare, FC76, FC86, FC97.
- Liliaceae**
373. *Allium oleraceum* L. - Amk, G, 4, W - very rare, Klepaczew, GD22.
374. *A. vineale* L. - Amks, G, 4, W - frequent, FC64, FC65, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD11, GD23.
- Juncaceae**
375. *Juncus tenuis* WILLD. - Ep, H, 10, W - rare, FC75, GD00, GD10.
376. *J. effusus* L. - Anw, H, 8, W - very rare, Starczewice, FD07.
377. *J. conglomeratus* L. EMEND. LEERS - Ał, H, 8, W - quite rare, FC64, FC65, FC75, FC76, FC97, FD08, FD09, GD00.
378. *J. bufonius* L. - Anw, T, 11, K - very rare, Skrzeszew, FC97.
379. *J. atratus* KROCK. - Ał, H, 8, W - very rare, Skrzeszew, FC97.
380. *Luzula campestris* (L.) DC. - Ał, H, 9, W - very rare, Mielnik, GD00.
381. *L. multiflora* (RETZ.) LEJ. - Ał, H, 2, W - very rare, Bubel Stary, Teofilówka, FC86, GD11.
- Poaceae**
382. *Festuca pratensis* Huds. - Ał, H, 9, W - rare, FC76, FC97, FD09.
383. *F. heterophylla* Lam. - Ał, H, 1, W - rare, FC76, FC86, GD00, GD22.
384. *F. rubra* L. S. STR. - Ał, H, 9, W - rare, FC75, FC86, FC98, GD10, GD22.
385. *F. duvalii* (ST.-YVES) STOHR - Amk, H, 5, W - very rare, Łęgi, GD23.
386. *F. ovina* L. S. STR. - Ał, H, 2, W - rare, FC76, FC86, FC98, FD08, GD23.
387. *Lolium temulentum* L. - Ar, T, 16, K - very rare: Klepaczew, Mielnik, GD00, GD22.
388. *L. perenne* L. - Ał, H, 10, W - quite rare, FC86, FC97, FD07, GD22.
389. *Poa annua* L. - Ał, T, 10, K - rare, FC76, FD08, GD21, GD22.
390. *P. pratensis* L. S. STR. - Ał, H, 9, W - quite rare, FC76, FC97, FD08, FD09, GD22, GD23.
391. *P. angustifolia* L. - Amk, H, 4, W - quite rare, FC75, FC76, FC97, FD07, FD09, GD00, GD10, GD11, GD21.
392. *P. trivialis* L. - Ał, H, 9, W - very rare, Białobrzegi, Osłowo, FC75, GD00.
393. *P. palustris* L. - Ał, H, 12, W - very rare, Zajęczniki, FC98.
394. *Dactylis glomerata* L. - Ał, H, 9, W - quite common, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22, GD23.
395. *Cynosurus cristatus* L. - Ał, H, 8, W - very rare, Zajęczniki, FC98.
396. *Apera spica-venti* (L.) P. BEAUV. - Ar, T, 16, K - quite common, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23, GD24.
397. *Briza media* L. - Ał, H, 9, K - very rare, Ogrodniki, FD08.
398. *Melica uniflora* RETZ. - Ał, H, 1, W - very rare, Kamieńczyk, Białobrzegi, FC75, FC76.
399. *Glyceria fluitans* (L.) R. BR. - Anw, Hy, 7, W - very rare, Derło, GD22.
400. *Bromus tectorum* L. - Ar, T, 14, K - very rare, Granne, FC86.
401. *B. inermis* LEYSS. - Amk, H, 4, W - very rare, Granne, FC86.
402. *B. secalinus* L. - Ar, T, 16, K - very rare, Mielnik, Mołożew, FC97, GD00.
403. *B. hordeaceus* L. - Aps, T, 13, K - rare, FC97, GD21, GD22.
404. *Elymus caninus* (L.) L. - Ał, H, 1, W - quite rare, FC98, FD08, FD09, GD00, GD11, GD22.
405. *E. repens* (L.) GOULD. - Anw, G, 10, W - very common, FC64, FC73, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD21, GD22, GD23.
406. *Triticale rimpauri* WITTM. - Erg, T, n, K - very rare, Wasilew Szl., FC97.
407. *Secale cereale* L. - Erg, T, n, K - quite common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23, GD24.
408. *Avena strigosa* SCHREB. - Ar, T, 16, K - very rare, Wajków, GD10.
409. *A. sativa* L. - Erg, T, n, K - very rare, Osnówka, FC86.
410. *A. fatua* L. - Ar, T, 16, K - rare, FC86, FC97, GD23.
411. *Avenula pubescens* (Huds.) DUMORT. - Ał, H, 9, W - quite rare, FC75, FC86, FC97, FC98, FD08, FD09, GD23.
412. *Arrhenatherum elatius* (L.) P. BEAUV. Ex J. PRESL & C. PRESL - Ał, H, 9, W - quite rare, FC65, FC75, FC86, FC97, FC98, FD08, FD09, GD11, GD22, GD23.
413. *Deschampsia caespitosa* (L.) P. BEAUV - Ał, H, 8, W - frequent, FC64, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD11, GD22, GD23.
414. *Hierochloë odorata* (L.) P. BEAUV. - Ał, G, 8, W - very rare, Białobrzegi, FC75.

415. *Anthoxanthum odoratum* L. S. STR. - Ał, H, 9, W - quite rare, FC75, FC76, FC86, FC97, FC98, FD08, GD00, GD22.
416. *A. aristatum* BOISS. - Ep, T, 16, K - rare, FC64, FC75, FC86, FC97, GD22.
417. *Holcus lanatus* L. - Ał, H, 9, W - quite rare, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD11, GD22.
418. *H. mollis* L. - Ał, H, 2, W - very rare, Klepaczew, Wojtkowice Gl., FC76, FC98.
419. *Corynephorus canescens* (L.) P. BEAUV. - Aps, H, 5, W - quite common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD22.
420. *Agrostis canina* L. S. STR. - Ał, H, 6, W - very rare, Mielnik, GD00.
421. *A. vinealis* SCHREB. - Ał, H, 5, W - very rare, Kamieńczyk, Starczewice, FC76, FD07.
422. *A. capillaris* L. - Aps, H, 5, W - very common, FC64, FC65, FC74, FC75, FC76, FC86, FC87, FC97, FC98, FD07, FD08, FD09, GD00, GD01, GD10, GD11, GD22, GD23.
423. *A. gigantea* ROTH - Ał, H, 8, W - frequent, FC75, FC76, FC86, FC97, FC98, FD09, GD00, GD22, GD23.
424. *A. stolonifera* L. - Anw, H, 10, W - frequent, FC75, FC76, FC86, FC97, FC98, FD08, FD09, GD00, GD01, GD10, GD11, GD23.
425. *Calamagrostis epigejos* (L.) ROTH - Ał, G, 2, W - frequent, FC73, FC75, FC86, FC97, FC98, FD08, FD09, GD00, GD10, GD11, GD22, GD23.
426. *Phleum pratense* L. - Ał, H, 9, W - quite rare, FC86, FC97, FC98, FD08, GD11, GD23.
427. *Alopecurus geniculatus* L. - Anw, H, 10, W - quite rare, FC75, FC76, FC86, FC98, GD23.
428. *A. myosuroides* Huds. - Ar, T, 15, K - rare, FC97, FD07, GD10, GD22.
429. *A. pratensis* L. - Ał, H, 9, W - rare, FC97, FD09, GD23.
430. *Phalaris arundinacea* L. - Anw, Hy/H/G, 7, W - very rare, Męzenin, Tończa, FC86, FD08.
431. *Phragmites australis* (Cav.) TRIN. EX STEUD. - Anw, G, 7, W - very rare, Mołożew Wieś, FC97.
432. *Danthonia decumbens* DC. - Ał, H, 2, W - rare, FC64, FC65, FC86, FD07, FD09.
433. *Nardus stricta* L. - Aps, H, 2, W - rare, FC76, FD09, GD11.
434. *Echinochloa crus-galli* (L.) P. BEAUV - Ar, T, 15, K - quite rare, FC76, FC97, FD09, GD23.
435. *Digitaria ischaemum* (SCHREB.) H. L. MÜHL - Ar, T, 15, K - frequent, FC64, FC73, FC75, FC86, FC97, FD07, FD09, GD00, GD10, GD22, GD23.
436. *D. sanguinalis* (L.) SCOP. - Ar, T, 15, K - very rare, Derło, GD22.
437. *Setaria pumila* (POIR.) ROEM. & SCHULT. - Ar, T, 15, K - quite common, FC64, FC73, FC74, FC75, FC76, FC86, FC97, FC98, FD07, FD08, FD09, GD00, GD10, GD11, GD21, GD22, GD23.
- Cyperaceae**
439. *Carex ovalis* GOODEN. - Aps, H, 6, W - rare, FC65, FC76, GD00, GD11.
440. *C. nigra* REICHARD - Anw, G, 6, W - very rare, Wojtkowice Glinna, FC76.
441. *C. hirta* L. - Ał, G, 10, W - quite rare, FC75, FC76, FC86, FC87, FC98, FD07, FD08, GD11, GD22.
- Orchidaceae**
442. *Platanthera chlorantha* (CUSTER) RCHB. - Ał, G, 1, W - very rare, Mielnik, GD00.

CHARACTERISTICS OF FLORA

The vascular flora of fallow lands of the Podlaski Przełom Bugu mesoregion includes 442 species which constitute about 42% of the total number of species recorded in this area, that is 1050 species (various sources, after Marciuk, 2002). They belong to 241 genera and 60 botanical families. Among the most species-rich families are Asteraceae – 69 species, Poaceae – 57, Fabaceae – 38, Rosaceae – 28, Scrophulariaceae – 27, Caryophylaceae – 24, Brassicaceae – 18, Polygonaceae – 15, Lamiaceae – 15. The most species abundant genera in the examined flora are: Veronica – 13 species, Trifolium – 9, Potentilla, Polygonum – 8 species each. Very rare and rare species are predominant in the flora of the studied area (283 species – 64% of the total flora).

Among the rare species of the Podlaski Przełom Bugu mesoregion, there are 25 species of various degrees of threat in the area of Południowopodlaska Lowland (Głowacki et al. 2003), i.e.:

CR – critically endangered species (3): *Nigella arvensis*, *Potentilla recta*, *Platanthera chlorantha*;

EN – endangered species (2): *Agrostemma githago*, *Prunella grandiflora*;

VU – vulnerable species (7): *Populus alba*, *Silene tatarica*, *Papaver argemone*, *Papaver rhoeas*, *Veronica polita*, *Hieracium floribundum*, *Bromus secalinus*;

LR – lower risk species (9): *Polygonum bistorta*, *Geum alleppicum*, *Astragalus arenarius*, *Centaurium erythraea*, *Veronica agrestis*, *Veronica verna*, *Cirsium rivulare*, *Allium oleraceum*, *Hierochloë odorata*;

DD – data deficiency species (4): *Chenopodium polyspermum*, *Vicia minor*, *Dipsacus sylvestris*, *Campanula latifolia*.

The share of very common and common species accounts for 4.7% (21 species). The remaining 138 species (31.3%) are found with an average frequency (quite frequent, frequent and quite common species). The re-

son for the great floristic diversity of fallow lands of the Podlaski Przełom Bugu mesoregion is its openness for newcomers from various habitats. The studied fallow lands neighbour different types of habitats, including cultivated fields, forest complexes, forest edge communities, meadow, shrub, ruderal and roadside vegetation. Hemicryptophytes (218 species – 49%) are the most frequent life form in the flora of the studied fallow lands. Terophytes reaching a 32% share in the flora (140 species) are also numerous. The occurrence of 43 species of phanerophytes was also noted (6%). Other life forms do not exceed 5% of the fallow land flora. The dominance of apophytes (319 sp. – 72.2%) over anthropophytes (123 sp. – 27.8%) is markedly observed in the analysed flora. Among native species, the most numerous are forest and shrub ones (99 sp. – 32%) and meadow apophytes (84 sp. – 26%). Anthropophytes are most often represented by archaeophytes (78 sp. – 18%). In fallow land communities, perennial species 61% (269 sp.) predominates over short-lived plants (39% share in the flora). As regards socio-ecological groups, the most numerous are forest and shrub species (82 sp. – 18.5%) as well as meadow (75 sp. – 17%) and xerothermic sward plants (77 sp. – 17.4%). Other large groups include segetal species (70 sp. – 15.8%) and taxa of long term ruderal communities (36 sp. – 8.1%).

CONCLUSIONS

1. The flora of fallow lands of the Podlaski Przełom Bugu mesoregion is rich and diverse. It includes 442 taxa of vascular plants, including 60 families and 241 botanical genera.

2. The dominance of very rare, rare, and quite frequent species, accounting for 80.5% of the total flora, was observed in the vegetation of fallow lands in the studied area. The share of very common and common species was only 4.7%.

3. In the flora of fallow lands of the Podlaski Przełom Bugu mesoregion, a distinct dominance of apophytes (72.2%) over anthropophytes (27.8%) is noted. Among apophytes, forest, shrub and meadow species dominate, while among anthropophytes archaeophytes are predominant.

4. The biological spectrum of flora indicates the dominance of hemicryptophytes (49%) and terophytes (32%) over other life forms.

5. Perennials (61%) predominate over short-lived species (39%) in the flora of the Podlaski Przelom Bugu mesoregion.

6. The occurrence of 25 species endangered with extinction in the Południowopodlaska Lowland was noted in the fallow land communities of the Podlaski Przełom Bugu mesoregion.

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Flora odlogów Podlaskiego Przełomu Bugu

Streszczenie

Badania flory odlogów Podlaskiego Przełomu Bugu przeprowadzono w latach 2001-2003 na terenie 77 miejscowości położonych w 20 gminach. W pracy przedstawiono systematyczny wykaz gatunków flory odlogów tego terenu oraz jejróżnicowanie pod względem częstotliwości występowania, spektrum biologiczne, trwałości oraz przynależności do grup geograficzno-historycznych i socjologiczno-ekologicznych. Zinwentaryzowana flora odlogów Podlaskiego Przełomu Bugu liczy 442 gatunków, należących do 60 rodzin i 241 rodzajów botanicznych. Najliczniejszą grupę stanowią gatunki bardzo rzadkie, rzadkie i dość częste. W analizowanej florze przeważają apofity (72,2%) nad antropofitami (27,8%) oraz gatunki wieloletnie (61%) nad krótkotrwałymi (39%). W spektrum biologiczny dominują hemikryptofity (49%) i terofity (32%) nad innymi formami życiowymi. Największy ilościowy udział w grupach socjologiczno-ekologicznych mają gatunki leśne i zaroślowe (18,5%), łąkowe (17%) oraz muraw ciepłolubnych (17,4%). Licznie występują również gatunki segetalne (15,8%) i trwały zbiornisk ruderalnych (8,1%). W zbiorowiskach odlogów występuje 25 gatunków zagrożonych wyginięciem na Nizinie Południowopodlaskiej. Są to: *Nigella arvensis*, *Potentilla recta*, *Platanthera chlorantha*, *Agrostemma githago*, *Prunella grandiflora*, *Populus alba*, *Silene tatarica*, *Papaver argemone*, *Papaver rhoeas*, *Veronica polita*, *Hieracium floribundum*, *Bromus secalinus*, *Polygonum bistorta*, *Geum alleppicum*, *Astragalus arenarius*, *Centaurea erythraea*, *Veronica agrestis*, *Veronica vernia*, *Cirsium rivulare*, *Allium oleraceum*, *Hierochloë odorata*, *Chenopodium polyspermum*, *Vinca minor*, *Dipsacus silvestris*, *Campanula latifolia*.