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# SMALL RESERVES AS AN EFFECTIVE WAY TO EXPAND THE PROTECTED NETWORK OF EASTERN PODILLYA

***Summary***

***Research objective.*** *One of the approaches to reduce the level of anthropogenic pressure on natural ecosystems is to form a network of protected habitats in areas that are intensively used by humans. An attempt was made to determine the abundance of flora and fauna and environmental efficiency in the context of intensive agricultural development in the small Podillya reserve «Ivankivskyi».*

*Methodology. The flora and fauna of the territory on the outskirts of the village Ivanky of Vinnytsia district (Lypovets territorial community) were studied with the help of generally accepted and modified methods. It was conducted to determine the environmental value of the territory, the possibility of functioning within its protected area and at the same time preserving the forms of traditional use by the locals. The birds of the territory as the largest structural component of its fauna are studied in the most detail. The factual material was collected during field research for all the seasons of 2019-2020. Materials of scientific publications, professional literature, oral reports of specialists, etc. were processed. For all species of birds, the nature of the stay on the territory, belonging to different ecological and faunal groups were established: by nesting place and dominant food spectrum.*

**Scientific novelty.** The flora and fauna of this territory have not been studied yet, as well as its environmental value has not been determined. Animal species that are protected by the Red Book of Ukraine, international protection conventions are identified.

**Conclusions.** The results of the study testify to the fact that a specific floral and faunal complex was formed within the studied area, which includes 105 species of higher vascular plants belonging to 75 genera, 26 families and 3 divisions: division Equisetophyta (1 species), Pinophyta (2 species) , Magnoliophyta (102 species); 82 species of animals of the Chordata type: class Amphibia (2 species), Reptilia (1 species), Aves (68 species), Mammalia (11 species). The results presented in this publication can be the basis for the organization of further monitoring of flora and fauna of the object, the development of a set of special actions for their preservation.

Key words: protected area, landscape reserve, Ivankivskyi reserve, flora, fauna, nature protection.

**Introduction.** Environmental issues, both at global and local levels, are becoming more acute. On account of rapid industrial development and the increase in the area of agricultural land, the habitats of many species of plants and animals, incapable of rapid and effective adaptation to increasing levels of anthropic pressure, are significantly reduced. Due to total degradation of natural ecosystems, it is obligatory to resort to radical actions - complete or partial removal of natural habitats from the structure of farmland and the formation of protected areas within them [4-6].

Among other protected areas, reserves are natural or anthropogenically transformed areas, which do not protect the entire natural complex, but only some of its components: fauna [4], flora, some species or other taxa, some historical or geological objects. Recently, small reserves has begun to attract scientific attention [7].

In general, modern flora and fauna of Vinnytsia region are relatively well studied [1-3], but to develop effective management plans for the operation of protected areas it is necessary to have a representative overview of the flora and fauna directly within them.

**Theoretical basis of the research.** Inventory of the species composition of flora and fauna is the first stage of monitoring the ecosystem state. The flora and fauna of the territory were studied during expeditions. Animals and plants were recorded during visual contact according to their characteristic traces and remains. Common methods were used.

Field studies were conducted in different seasonal periods of 2019-2020, which reflect aspects of the life cycles of plants and chordates.

The reserve covers an area of 23.5 hectares and is located in the valley of the Sibok River (a right tributary of the Sob River) within the Dniester-Dnieper forest-steppe province of the forest-steppe zone. Tectonically, the territory belongs to the Ukrainian Crystal Shield. The relief is formed mainly due to the river erosion. The territory is a flat undulating weakly dissected plateau. The climate is temperate continental, humid. The average annual temperature ranges from +6.5 to + 80C. The annual rainfall is 570-600 mm. The soil cover is dominated by gray forest podzolic soils and chernozems. Therefore, the degree of plowing of the territory is high and reaches 85%.

**Experimental part.** The studied area is a newly created landscape reserve because the composition of all the components of the landscape, flora and fauna is typical for Eastern Podillya. In conditions of significant plowing of adjacent territories and high anthropogenic load, areas with preserved natural landscapes require protection. The name "Ivankivskyi" is due to the territorial proximity to the village of Ivanky.

The species structure of groups of chordates in the studied area is determined by the combination of its orographic and climatic features, the nature and degree of anthropic impact on the habitat. The species composition and character of the station vegetation, in particular its tree plantations, play a significant role.

The surveyed area at different times of the year supports the existence of 82 species of animals belonging to the type Chordata (Table 1). In particular:

Class Amphibia (2 species): *Pelobates fuscus* (fam. Pelobatidae), *Bufo bufo* (fam. Bufonidae).

Class Reptilia (1 species): *Lacerta agilis* (fam. Lacertidae).

Class Aves (68 species): *Ciconia ciconia* (fam. Ciconiidae), *Pernis apivorus*, *Milvus migrans*, *Circus cyaneus*, *Accipiter gentilis*, *Accipiter nisus*, *Buteo lagopus*, *Buteo buteo* (fam. Accipitridae), *Falco subbuteo*, *Falco tinnunculus* (fam. Falconidae), *Perdix perdix*, *Coturnix coturnix* (fam. Phasianidae), *Vanellus vanellus* (fam. Charadriidae), *Columba palumbus*, *Columba livia f. domestica*, *Streptopelia turtur* (fam. Columbidae), *Cuculus canorus* (fam. Cuculidae), *Asio otus*, *Strix aluco* (fam. Strigidae), *Caprimulgus europaeus* (fam. Caprimulgidae), *Apus apus* (fam. Apodidae), *Merops apiaster* (fam. Coraciidae), *Upupa epops* (fam. Upupidae), *Jynx torquilla*, *Dendrocopos major*, *Dendrocopos medius* (fam. Picidae), *Hirundo rustica*, *Delichon urbica* (fam. Hirundinidae), *Galerida cristata*, *Alauda arvensis* (fam. Alaudidae), *Anthus trivialis*, *Motacilla flava* (fam. Motacillidae), *Lanius collurio* (fam. Laniidae), *Oriolus oriolus* (fam. Oriolidae), *Sturnus vulgaris* (fam. Sturnidae), *Garrulus glandarius*, *Pica pica*, *Corvus cornix*, *Corvus corax* (fam. Corvidae), *Bombycilla garrulus* (fam. Bombycillidae), *Sylvia atricapilla*, *Sylvia borin*, *Sylvia communis*, *Sylvia curruca*, *Phylloscopus collybita* (fam. Sylviidae), *Regulus regulus* (fam. Regulidae), *Saxicola rubetra*, *Saxicola torquata*, *Turdus pilaris*, *Turdus merula*, *Turdus philomelos* (fam. Muscicapidae), *Aegithalos caudatus* (fam. Aegithalidae), *Parus palustris*, *Parus caeruleus*, *Parus major* (fam. Paridae), *Sitta europaea* (fam. Sittidae), *Passer montanus* (fam. Passeridae), *Fringilla coelebs*, *Fringilla montifringilla*, *Chloris chloris*, *Spinus spinus*, *Carduelis carduelis*, *Acanthis cannabina*, *Acanthis*

*flammea*, *Pyrrhula pyrrhula*, *Coccothraustes coccothraustes* (fam. Fringillidae), *Emberiza calandra*, *Emberiza citrinella* (fam. Emberizidae). Such dominance of the Aves class in the vertebrate fauna is characteristic of all types of habitats in Podillya ecosystems [2]. In taxonomic terms, the avifauna of the studied tract is represented by 68 species belonging to 51 genera, 30 families and 13 series. Of these, 61.8% of species belong only to the Passeriformes series and only 38.2% to the remaining 12 series.

Class Mammalia (11 species): *Erinaceus europaeus* (fam. Erinaceidae), *Talpa europaea* (fam. Talpidae), *Plecotus auritus* (fam. Vespertilionidae), *Lepus europaeus* (fam. Leporidae), *Apodemus flavicollis*, *Apodemus agrarius* (fam. Muridae), *Clethrionomys glareolus*, *Microtus arvalis* (fam. Cricetidae), *Vulpes vulpes* (fam. Canidae), *Martes martes*, *Mustela nivalis* (fam. Mustelidae).

During the study of the floristic composition of the researched area, it was found that there are significantly growing 105 species of higher vascular plants. They belong to 75 genera, 26 families and 3 divisions.

Division *Equisetophyta* (1 species): *Equisetum arvense* L. (fam. Equisetaceae).

Division *Pinophyta* (2 species): *Pinus sylvestris* L., *Pinus banksiana* Lamb. (Jeck Pine) (fam. *Pinaceae*).

Division *Magnoliophyta* (102 species): *Pyrus communis* L., *Malus sylvestris* Mill., *M. praecox* Borkh., *Prunus avium* L., *Rosa canina* L., *Rosa majalis* Herrm., R. *cinnamomea sensu* L., *Crataegus ucrainica* L., *Sanguisorba minor* L., *Agrimonia eupat*oria L., *Potentilla erecta* (L.) Hampe, *P. silvestris* Neck., *P. tormentilla* Neck., *Potentilla argentea* L., *Potentilla ascendens* W. et K., *Filipendula vulgaris* Moench, *Filipendula ulmaria* (L.) Maxim, *Fragaria vesca* L., *Geum rivale* L.(fam. *Rosaceae*), *Fraxinus excelsior* L. (fam. *Oleaceae*), *Vicia cracca* L., *Vicia villosa* Roth., *Vicia tenuifolia* Roth., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium medium* L., *Trifolium hybridum*L., *Medicago lupulina* L., *Medicago falcata* L. (fam. *Fabaceae*), *Taraxacum officinale* Wigg., *Achillea millefolium* L., *Artemisia absinthium* L., *Matricaria matricarioides* (Less.) Porter ex Britton, *Matricaria dioscoidea* DC., *Chamomilla dioscoidea* Gay, *Charanthemum suaveolens* Aschers., *Erigeron Canadensis* L., *Cirsium oleraceum* Scop., *Centauréa scabiósa*L., *Centaurea cyanus* L., *Inula Britannica* L., *Artemisia vulgaris* L., *Tussilago farfara* L., *Arctium lappa* L., *Cirsium arvense* (L.) Scop., *Solidago virgaurea*L., *Carduus nutans*L., *Cirsium polonicum* (Petrak) Iljin, *Leontodon autumnalis* L., *Crepis tectorum* L., *Anthemis ruthenica* M. B., *Anthemis cotula*L., *Lapsana communis* L., *Matricaria inodora* L., *Tripleurospermum inodorum* Sch. Bip., *Hieracium umbellatum* L., *Hieracium pilosella* L., *Hieracium Bauhinii* Bess., *Tragopogon orientalis*L., *Carlina biebersteinii* Bernh. Ex Hornem, *Leucanthemum vulgare* Lam., *L. ircutianum* DC., *Chrysanthemum leucanthemum* L. (fam.*Asteraceae*), *Ranunculus acris* L., *Consolida regalis* L., *Delphinium consolida* L. (fam. *Ranunculaceae*), *Stellaria graminea* L., *Stellaria media* (L.) Cyr. (fam. *Caryophyllaceae*), *Polygonum aviculare* L., *Rumex ucrainicus* Fisch., *Rumex confertus* Willd. L., *Rumex acetosa* L. (fam. *Polygonaceae*), *Viola arvensis* Murr.(fam. *Violaceae*), *Thlaspi arvense* L., *Capsella bursa-pastoris* L., *C. hyrcana* Grosch., *Berteroa incana* (L.) DC., *Alyssum incanum* L., *Draba nemorosa* L., *Sisymbrium Loeselii* L., *Lepidium ruderale* L. (fam. *Brassicaceae*), *Urtica urens* L. (fam. *Urticaceae*), *Euphorbia Esula* L., *Euphorbia virgata* Waldst. et Kit. (fam. *Euphorbiaceae*), *Plantago lanceolata* L., *Plantago media* L., *Plantago major* L. (fam. *Plantaginaceae*), *Thymus serpyllum* L., *Ajuga genevensis* L. (fam. *Lamiaceae*), *Veronica chamaedrys* L. (fam. *Scrophulariaceae*), *Convolvulus arvensis* L. (fam. *Convolvulaceae*), *Daucus carota* L., *Aethusa cynapium* L., *Eryngium campestre* L., *Falcaria vulgaris* Bernh., *F. rivini* Host. (fam. *Apiaceae*), *Galium verum* L. (fam. *Rubiaceae*), *Erodium cicutarium* (L.) L'Herit., *G. cicutarium* L. (fam. *Geraniaceae*), *Sambucus nigra*L. (fam. *Sambucaceae*), *Myosoton aquaticum* (L.) Moench., *Cynoglossum officinalis* L. (fam. *Boraginaceae*), *Hippophae rhamnoides*L. (fam.*Elaeagnaceae*), *Scabiosa ochroleuca* L., *S. columbaria var. ochroleuca* Coult., *Scabiosa columbaria* L. (fam. *Dipsacaceae*), *Poa pratensis* L., *Poa annua* L., *Poa trivialis* L., *Poa angustifolia* L., *Vulpia myuros* (L.) C.C. Gmel, *Melica transsilvanica* Schur., *Lolium perenne* L., *Festuca pratensis* Huds., *Festuca sulcata* Hack., *Dactylis glomerata* L., *Calamagrostis epigeios* (L.) Roth (fam. *Poaceae*), *Juncus squarrosus* L. (fam. *Juncaceae*).

**Results and discussion.** Of 82 identified animal species, only 3 are included in the Red List of Ukraine: *M. migrans* («vulnerable» status), *C. cyaneus* («rare» status), and *P. auritus* («vulnerable» status). Almost all members of the Chordate fauna found within the tract are included in the IUCN Red List. Of these, 80 have the status of LC (Least Concern) and only *V. vanellus* has the status of NT (Near Threatened). The vast majority (69 species) of identified animals are included in Annexes II and III of the Convention on the Conservation of European Wildlife and Natural Habitats. Of these, 48 species are included in Appendix II (Strictly protected fauna species) and 21 species - in Appendix III (Protected fauna species). Finally, 19 representatives of the fauna of the studied area are included in Appendix II Convention on the

Conservation of Migratory Species of Wild Animals, CMS.

It is noteworthy that the representation of animals within the studied object sometimes differs significantly in various seasonal periods. The avifauna changes especially during the year due to different nature of the birds' connections with the territory. In general, there are 3 main types of such relationships. Sedentary, nesting and migratory birds, as well as migratory birds, were found in the avifauna of the studied area.

Settled are those species that during all periods of the year are in the same area or carry out only nearby nomads. In such a case, this category also includes those birds that do not nest directly within the object, but arrange their nests in adjacent stations, but regularly use the territory of the object to search for food. In general, the share of sedentary birds within the habitat is 32.4% or 22 species (Fig. 1). Of these, nesting of 8 species was observed within the studied territory - 11.8% of all avifauna.

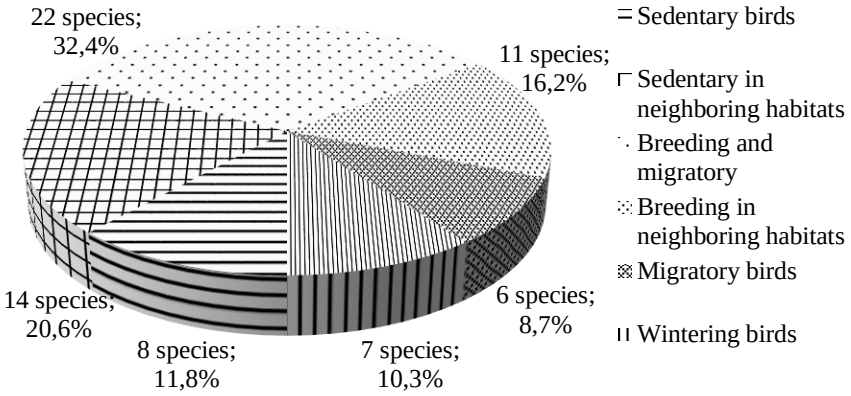


*Fig. 1. Ornithofauna of the studied area by the nature of the stay*

In addition to sedentary birds, there are also those birds that are associated with this area only during the reproductive period. They are called nesting and migratory. 33 species of such birds were found, which is almost half of the avifauna of the habitat – 46.8%. Of these, 22 species of birds nest directly within it, or 32.4% (Fig. 1). A separate and quite numerous category is formed by those birds whose nesting has not been detected directly within the studied area. Instead, they nest in adjacent habitats, periodically or regularly flying within its boundaries. There are 11 species of such birds (16.2%). During autumn and spring migrations the avifauna of the studied area is supplemented by 6 more species of birds or 8.7% of the total composition of the avifauna (Fig. 1). These are mostly representatives of the nesting avifauna of the forest belt of Ukraine or the polar regions of Eurasia. Finally, 7 species of birds (10.3%) can be considered wintering, which are regularly or periodically recorded within the studied habitat (Fig. 1).

The reduction of competition in the reproductive period is facilitated by a wide range of different adaptations of birds to nesting: the choice of the tier of nest placement, nesting material, trophic features, etc. According to the nature of the nests, nesting birds of the studied area can be divided into the following main categories: ground nesting birds, hollow nesting birds, tree nesting birds and brood parasites (Fig. 2).

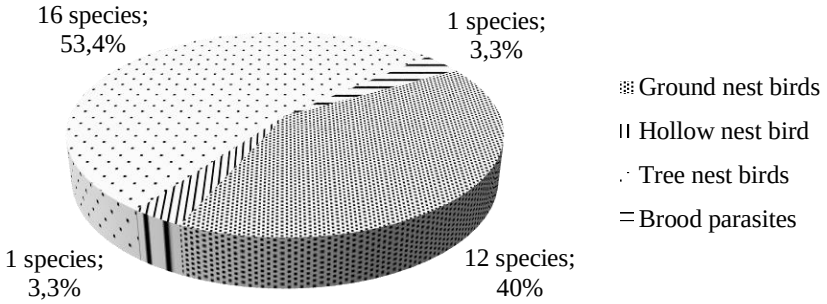


*Fig. 2. Categories of birds of the studied area by nesting place*

The dominance of chrono-nesting birds is predicted through a more profitable strategy, which allows maintaining a fairly high success rate of nesting in conditions of significant anthropic pressure and pressure from wild and domesticated carnivorous mammals. Birds that build their nests in tree canopies were found in 16 species, or 53.4% of the total nesting avifauna (Fig. 2).

The rate of degradation of meadow-pasture habitat due to self-seeding of *Pinus sylvestris* L. and *Pyrus communis* L. exceeds the rate of response of avifauna to such changes. Due to this fact, there are a

number of campophilous species that build their nests on the ground next to the birds of the forest and forest gladesin the structure of the avifauna of the biotope. Thus, the nesting of 12 species (40%) of terrestrial nesting birds was detected (Fig. 2).

The young age of tree plantations creates a shortage of trees in which hollows can be formed. Therefore, only 1 representative (3.3%) of the group of double-nesting birds – *S. vulgaris* – was found in the nesting fauna of the studied object.

The only one (3.3%) is also a representative of nesting parasites – *C. canorus* (Fig. 2).

The species composition of birds and their numbers within any area are extremely strongly related to their trophic orientation and, consequently, the trophic potential of the habitat. In the species structure of birds found within the study area, 7 main categories were identified by the type of food that dominates their food spectrum (Fig. 3).

Thus, in the structure of the food spectrum more than half of the birds are terrestrial invertebrates. Almost exclusively at different stages of their development, worms, arachnids and mollusks are eaten by 19 species of birds (27.9%) and another 17 species (25%) supplement their food spectrum with plant foods - mostly vegetative parts of plants, their berries and seeds. (Fig. 3).

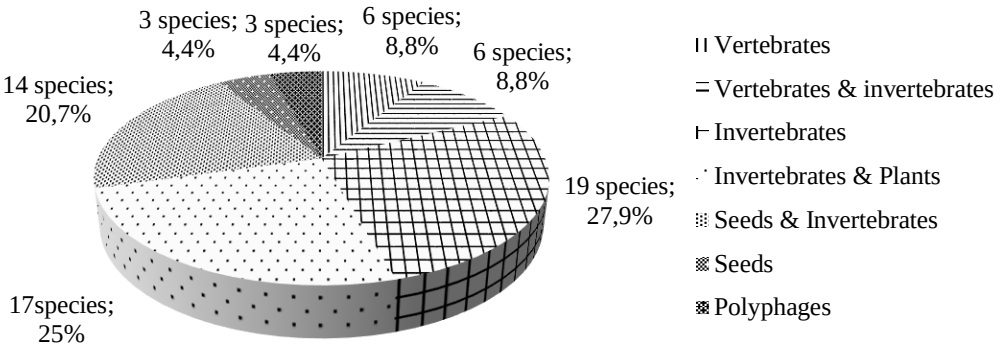


*Fig. 3. Categories of birds of the studied area by the nature of food spectrum*

Also, terrestrial invertebrates are represented in the food spectrum of 14 species (20.7%) of herbivorous birds as a supplement, either during the feeding of chicks or during the seasons of mass appearance of insects at different stages. The main component of the nutrition of these birds is the plant seeds, which they consume in the second half of summer, autumn and during the winter (Fig. 3).

Within the reserve, 6 species of birds (8.8% each) were also found, which consume both chordates and invertebrates in almost equal proportions. Such birds are traditionally called predators – they include all members of the Falconiformes series and most Ciconiiformes. Only 3 species (4.4%) of obligate phytophagous, whose diet is formed exclusively by food of plant origin. The same number of birds (3 species, 4.4%) can be attributed to polyphagous, whose food spectrum includes a variety of foods of both plant and animal origin (Fig. 3).

The ratio of large taxonomic groups of plants shows that one species (1%) belongs to the division Equisetophyta, two species (2%) – to the division Pinophyta (Gymnospermae), the other species – to the division Magnoliophyta (Anthophyta, Angiospermae). Of these, 89 species (85%) are members of the class Magnoliopsida (Dicotyledones) and 13 species (12%) belong to the class Liliopsida (Monocotyledones) (Fig. 4, Table 1).

***Table 1. Taxonomic diversity of flora of village Ivanky***

| Systematic group | Number of families | Number of series | Number of species | % of the total number of species |
|---|---|---|---|---|
| Division *Equisetophyta* | 1 | 1 | 1 | 1,0 |
| Division *Pinophyta* | 1 | 1 | 2 | 2,0 |
| Division *Magnoliophyta* | 25 | 74 | 102 | 97,0 |
| Class *Magnoliopsida* | 23 | 66 | 89 | 86,0 |
| Class *Liliopsida* | 2 | 8 | 13 | 11,0 |
| *Total* | *26* | *75* | *105* | *100* |

A general survey of 26 plant families by number of species (Table 1) revealed the leading families in the flora of the studied ecosystem of village Ivanky (Fig. 5): *Asteraceae*– 28 species (26,7%), *Rosacea* – 15 species (14,3%), *Poaceae*– 11 species (10,5%), *Fabaceae* – 9 species (8,6%), *Brassicaceae*– 6 species

(5,7%).

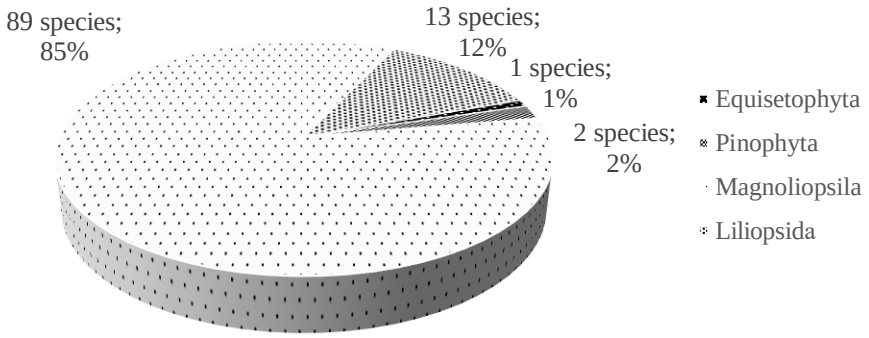


*Fig. 4 The ratio of taxonomic groups of vascular plants of village Ivanky (%)*

4 species of members of the families Polygonaceae and Apiaceae were found in the studied area, which is 3.8% of the total number of species, respectively. The family Plantaginaceae is represented by 3 species (2.8%). Two representatives were found from the families Pinaceae, Ranunculaceae, Caryohyllaceae, Euphorbiacea, Lamiacea, Boraginaceae, Dipsacaceae, which accounted for 1.9%, respectively. One species was found from the families Juncaceae, Elaeagnaceae, Sambucaceae, Geraniaceae, Rubiaceae, Convolvulaceae, Scrophulariaceae, Equisetaceae, Urticaceae, Violaceae, Oleaceae, which accounted for 0.9%, respectively.

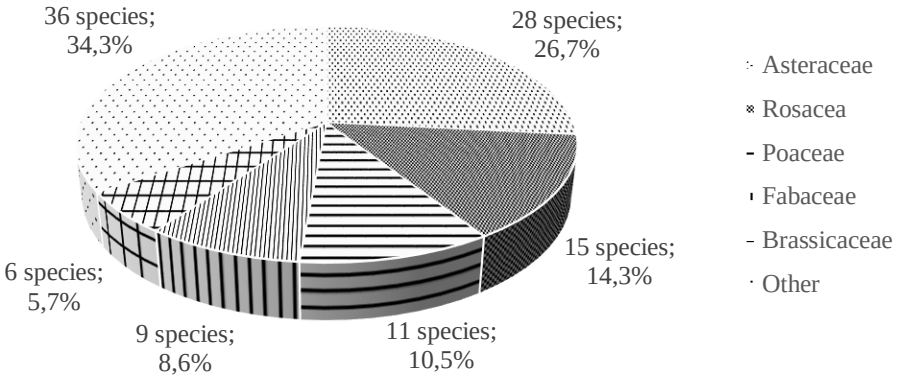


*Fig. 5 The ratio of leading families by the number of vascular plants of village Ivanky, (%)*

Among woody species, the dominant species (edificator) is *Pinus sylvestris* L. (fam. Pinaceae), which is sometimes joined *by Pyrus communis* L., *Malus sylvestris* Mill., *M. praecox* Borkh., *Rosa canina* L., *Rosa majalis* Herrm., *R. cinnamomea sensu* L. (fam. *Rosacea*), and also *Crataegus ucrainica* L., *Prunus avium* L. (fam. *Rosacea*), *Sambucus nigra*L. (fam. *Sambucaceae*) і *Hippophae rhamnoides* L. (fam. *Elaeagnaceae*) grow singly.

The study area is represented by Pinetum (sylvestris) trifollioso (pratensis) - poeosum (pratensis) group. The vegetation of the preserved areas is relatively diverse and floristically rich.

The grass cover is diverse both in terms of the number of species and their participation in the phytocenosis. The cereal base consists of Poetum (pratensis) festucosum (pratensis).

Among the herbaceous tier, the dominant (edificator) is *Festuca sulcata* Hack. (fam. Poaceae), subdominants (asectators) of which are *Poa pratensis* L., *Poa annua* L., *Poa trivialis* L., *Poa angustifolia* L., *Vulpia myuros* (L.) C.C. Gmel, *Festuca pratensis* Huds. (fam. *Poaceae*), *Juncus squarrosus* L. (fam. *Juncaceae*), *Trifolium pratense* L., *Medicago lupulina* L., *Medicago falcata* L. (fam. *Fabaceae*), *Melica transsilvanica* Schur, *Lolium perenne* L., *Dactylis glomerata* L., *Calamagrostis epigeios* (L.) Roth (fam. *Poaceae*) appear sporadically.

The following species of plants were singly found in the grassy tier in the studied area: *Sanguisorba minor* L., *Agrimonia eupat*oria L., *Potentilla erecta* (L.) Hampe, *P. silvestris* Neck., *P. tormentilla* Neck., *Potentilla argentea* L., *Potentilla ascendens* W. et K., *Filipendula vulgaris* Moench, *Filipendula ulmaria* (L.) Maxim, *Fragaria vesca* L., *Geum rivale* L. (fam. *Rosacea*); *Vicia cracca* L., *V. villosa* Roth., *V. tenuifolia* Roth., *Trifolium repens* L., *T. medium* L.,*T. hybridum* L. (fam. *Fabaceae*); *Taraxacum officinale* Wigg., *Achillea millefolium* L., *A. absinthium* L., *A. vulgaris* L., *Matricaria inodora* L., *Tripleurospermum*

*inodorum* Sch. Bip., *M. matricarioides* (Less.) Porter ex Britton, *M. dioscoidea* DC., *Chamomilla dioscoidea* Gay, *Charanthemum suaveolens* Aschers, *Erigeron Canadensis* L., *Cirsium oleraceum* Scop., *C. arvense* (L.) Scop., *Centauréa scabiósa*L., *C. cyanus* L., *Inula Britannica* L., *Tussilago farfara* L, *Arctium lappa* L., *Solidago virgaurea*L., *Carduus nutans*L., *Cirsium polonicum* (Petrak) Iljin, *Leontodon autumnalis* L., *Crepis tectorum* L., *Anthemis ruthenica* M. B., *A. cotula*L., *Lapsana communis* L., *Hieracium umbellatum* L., *H. pilosella* L., *H. bauhinii* Bess., *Tragopogon orientalis* L., *Carlina biebersteinii* Bernh. Ex Hornem, *Leucanthemum vulgare* Lam., *L. ircutianum* DC., *Chrysanthemum leucanthemum* L. (fam. *Asteraceae*); *Ranunculus acris* L., *Consolida regalis* L., *Delphinium consolida* L. (fam. *Ranunculaceae*); *Stellaria graminea* L., *S. media* (L.) Cyr. (fam. *Caryohyllaceae*); *Polygonum aviculare* L., *Rumex ucrainicus* Fisch., *R. confertus* Willd. L., *R. acetosa* L. (fam. *Polygonaceae*); *Viola arvensis* Murr. (fam. *Violaceae*); *Thlaspi arvense* L., *Capsella bursa-pastoris* L., *C. hyrcana* Grosch., *Berteroa incana* (L.) DC., *Alyssum incanum* L., *Draba nemorosa* L., *Sisymbrium Loeselii* L., *Lepidium ruderale* L. (fam.*Brassicaceae*); *Urtica urens* L. (fam. *Urticaceae*); *Euphorbia Esula* L., *E. virgata* Waldst. et Kit. (fam. *Euphorbiacea*); *Plantago lanceolata* L., *P. media* L., *P. major* L. (fam. *Plantaginaceae*); *Thymus serpyllum* L., *Ajuga genevensis* L. (fam. *Lamiacea*); *Equisetum arvense* L. (fam. *Equisetaceae*); *Veronica chamaedrys* L. (fam. *Scrophulariaceae*); *Convolvulus arvensis* L. (fam. *Convolvulaceae*); *Daucus carota* L., *Aethusa cynapium* L., *Eryngium campestre* L., *Falcaria vulgaris* Bernh., *F. rivini* Host. (fam. *Apiaceae*); *Galium verum* L. (fam. *Rubiaceae*); *Myosoton aquaticum* (L.) Moench, *Cynoglossum officinalis* L. (fam. *Boraginaceae*); *Scabiosa ochroleuca* L., *S. columbaria var. ochroleuca* Coult., *S. columbaria* L. (fam. *Dipsacaceae*).

**Conclusions.** Within the Ivankivskyi Landscape Reserve, a specific floral and faunal complex has been formed, including 105 species of higher vascular plants belonging to 75 genera, 26 families and 3 divisions: division *Equisetophyta* (1 species), *Pinophyta* (2 species), *Magnoliophyta* (102 species); 82 animal species of the Chordata type: class Amphibia (2 species), Reptilia (1 species), Aves (68 species), Mammalia (11 species). The functioning of the protected object will allow preserving the ecosystem of the landscape typical for Podillya in the natural state, increasing the area of the network of protected objects of the region, creating preconditions for the development of green tourism. The object performs recreational, educational, water-regulating functions, allows maintaining the ecological balance of natural components, ensuring the preservation of populations of background and rare species of flora and fauna of the region.

**Prospects for further research**. Continuous monitoring of the state of plant and animal groups in order to identify potential threats in advance, development of programs of regulated recreation, measures to prevent changes in natural complexes, combating the spread of invasive species, preservation of traditional economic activities seem to be promising.

**References**

1. Holunova L.A., Shevchuk O.A. Pryroda Vinnychchyny. Roslyny. Chastyna 1. Vinnytsia 2019.
2. Matviichuk O.A., Pirkhal A.B., Reminnyi V. Yu. Kadastr nazemnykh tetrapod Vinnytskoi oblasti. Vinnytsia 2015.
3. Matviichuk O.A. Pirkhal A.B., Viduetskyi A.V. Ptakhy Vinnychchyny. Vinnytsia 2017.
4. Matviichuk O.A., Pirkhal A.B. Struktura ornitofauny zaplavy serednoi techii r. Zghar. *Ukrainian Journal of Ecology*. 2018. № 8(1). 297-306. https://doi.org/10.15421/2018_215
5. Pavlacky David C. Jr., Hagen Christian A., Bartuszevige Anne M., Iovanna Rich *at all.* Scaling up private land conservation to meet recovery goals for grassland birds. *Conservation Biology*. 2021. № 35(5). 1564-1574. https://doi.org/10.1111/cobi.13731
6. Shevchuk O.A., Kryklyva S.D., Shevchuk V.V., Khodanitska O.O., Tkachuk O.O. *et all.* Vydovyi sklad efemeroidiv rehionalnoho parku mistsevoho znachennia «Nemyrivske Pobuzhzhia» s. Hvozdiv. *Science Rise: Biological Science.*2020. №1(22). 39-43 https://doi.org/10.15587/2519-8025.2020.198951
7. Volenec Zoe M., Dobson Andrew P. Conservation value of small reserves. *Conservation Biology*. 2020. № 34(1). 66-79. https://doi.org/10.1111/cobi.13308

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