

## ECOLOGICAL TOURISM DEVELOPMENT IN THE NATIONAL PARKS OF BELARUS

**Natallia V. HAHINA** 

Belarusian State University, Faculty of Geography and Geoinformatics, Minsk, Republic of Belarus, e-mail: nata-gagina@yandex.by

**Elena I. GALAI** 

Belarusian State University, Faculty of Geography and Geoinformatics, Minsk, Republic of Belarus, e-mail: E\_Galai@mail.ru

**Duman T. ALIASKAROV**\* 

Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Almaty, Kazakhstan, e-mail: duman\_06@mail.ru

**Yerkin A. TOKPANOV** 

Zhetysu University named after I. Zhansugurov, Faculty of Natural Sciences, Taldykorgan, Kazakhstan, e-mail: tokpanov60@mail.ru

**Zhansulu INKAROVA** 

L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Nur-Sultan, Kazakhstan, e-mail: inkarzh@mail.ru

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**Abstract:** The article is devoted to the development of ecological tourism in the national parks of Belarus. The methodological basis of the study was a systematic scientific approach, comparative geographical, cartographic, expert assessment methods. As a result of the research, the data on environmental requirements for ecological tourism organisation in the national parks of the Republic of Belarus such as state environmental institutions "National Park "Narochansky", "National Park "Bralav Lakes", "National Park "Belovezhskaya Pushcha", "National Park "Pripyatsky" are systematized. Landscape features of the national park's territories are considered as a factor determining the direction of ecotourism activities. The analysis of ecotourism infrastructure development, innovativeness and complexity of the offered tourist services is given. Prospective directions of development of domestic and international inbound ecological tourism in the national parks of Belarus are substantiated.

**Key words:** national parks, specially protected natural areas, landscapes, ecological tourism, ecotourism infrastructure, Belarus

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### INTRODUCTION

Nowadays there are various forms and methods of organizing tourism in the world, and ecological types of tourism are becoming increasingly important. According to various estimates, the number of ecotourists in the world annually has increased by 7-20% (Afanasieva and Afanasieva, 2017; Tokpanov et al., 2021; Dunets et al., 2020). Ecotourism is one of the fastest growing sectors of the global tourism industry (Berdenov et al., 2016). Scientific research on the problems and prospects for ecological tourism development at the macro-regional, country and local levels has received sufficient coverage in scientific publications (Afanasieva, 2020; Akhmedenov, 2020; Berdenov et al., 2021). Foreign scientists studied the principles and structural components of ecotourism, the peculiarities of its organisation and management (Dunets et al., 2020; Welford and Gouldson, 1993; Cooper et al., 1998). There are five key structural components (characteristics) of this tourism direction: the natural environment, environmental sustainability, education, income and benefits for the local population and the satisfaction of all participants in this type of activity (Newsome et al., 2002).

The most important ideas about the development of ecotourism as one of the leading forms of sustainable tourism are reflected in international documents: Principles of environmentally sustainable tourism UNEP (2002), Quebec Declaration on the development of ecotourism (2002), etc. The issues of natural, cultural and historical resources estimation for the development of ecotourism activities in Belarus, possibilities of tourist and recreational use of quarry ponds, natural, historical and cultural heritage interpretation, strategic directions for the development of green routes and green tourism, formation of ecotourism clusters are considered in the works (Khomitch et al., 2019; Tarasenok, 2003; Hoppstadius and Dahlström, 2015).

The analysis of literary sources has showed the ambiguity of interpretation of "ecological tourism" concept both in different countries and within one country. Drozdov A.V. refers to ecotourism all types of environmentally oriented tourism, not only within the borders of specially protected natural areas (water areas), but also outside their borders. Tarasenok A.I. has identified three groups of definitions of the concept: definitions given in official documents, formulated by scientists based on tourism environmental management studies, as well as definitions used in the field of tourist consumption (Tarasenok, 2003). In this paper, we adhere to the concept of ecotourism, which is formulated by

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\* Corresponding author

the International Ecotourism Society as a responsible travel in natural areas (territories), which preserves the environment and supports the well-being of local residents. The Covid-19 pandemic has led to a global tourism crisis (Munne et al., 2021; Rogerson, 2021). In many states, including Belarus, the number of inbound and outbound tourist flows has significantly decreased, and the activity of a number of tourist entities has been suspended. Under such conditions, the importance of ecological tourism has increased, since the Republic of Belarus has a significant natural potential for its development. The main ecotourism activity is concentrated in specially protected natural areas.

The development of ecological tourism in specially protected natural areas (SPNA) has specific features associated with compliance with the requirements of environmental legislation. On the territory of all specially protected natural areas of the Republic of Belarus (wildlife reserves, national parks and natural monuments) environmental education activities, which can be scientifically substantiated and organised in various forms and types of ecological tourism, are allowed.

State environmental institutions, which tasks include environmental education and organisation of tourist, recreational, health-improving activities, taking into account a number of environmental restrictions, have been created for national park management. Within the category of specially protected natural areas, ecotourism activities are differentiated by functional zones. The recreational zone is intended for recreation, tourism, relaxation and health improvement of citizens. Location of environmental information centers, tourist camps, equipped zones and recreation areas is determined by the management plan developed for each national park or by the decision of local authorities (Suleimenov et al., 2022). It is allowed to equip recreation areas and ecological paths, houses for hunters and fishermen, and environmental information centers within the borders of the regulated use zone. Hunting, fishing and other types of use of the fauna during certain seasons are prohibited in certain parts of this zone. It is possible to conduct scientific and educational excursions along the routes and ecological paths determined by the management plan only accompanied by the employees of the state environmental institution and in compliance with the allowable load standards in the protected area.

Thus, management plans define the location of ecotourism infrastructure - environmental information centers, ecological paths, places for tents and campsites, tourist camps, equipped and recreation areas. The possible number of recreants in each national park, as well as the area that can be anthropogenically transformed into infrastructure facilities, is also scientifically substantiated (Berdenov et al., 2015; Shomanova et al., 2019). The development of ecological tourism including visits to the territory of national parks is also carried out at individual agro-eco-estates, with organization of green routes, ecotourism clusters. Taking into account the diversity and potential of organisational ecotourism forms, the most important task for the development of ecotourism is to create partnerships based on the state environmental institutions and local private initiatives with a joint strategy for sustainable tourism development in the regions (Miyazaki et al., 2011).

## MATERIALS AND METHODS

The object of the research is the national parks of the Republic of Belarus, which include National Park "Narochansky", National Park "Braslav Lakes", National Park "Belovezhskaya Pushcha", National Park "Pripyatsky", their location is presented on Figure 1. The methodological basis of the research is a systematic scientific approach, comparative geographical, cartographic and expert assessment methods. The research scheme includes a consistent consideration of the territory of the national parks based on the following aspects:

- ecological value: landscape diversity (specific landscapes and rare local landscape complexes), biological diversity (typological diversity of forest vegetation), the area of natural subfossil ecosystems, international statuses assigned to a specially protected natural area;

- ecotourism activities: types of ecotourism determined by the purpose of travel (recreational, educational, scientific), types of ecotourism routes by mode of transportation (walking, cycling, water routes);

- ecotourism infrastructure: equipped eco-paths, environmental information centers, equipped places for tourist camping and other objects of educational ecotourism (arboretums, safari parks), eco-routes with their description have been developed;

- basic tourist infrastructure: stationary accommodation facilities within specially protected natural areas and in a cross-border region;

- geo-information support: official Internet web-sites of the protected areas.

Materials from directories of the protected areas of the Republic of Belarus, large-scale (1:100 000) landscape maps of the national parks, cartographic and reference materials on the official websites of the national parks have been used in the process of carrying out the research.

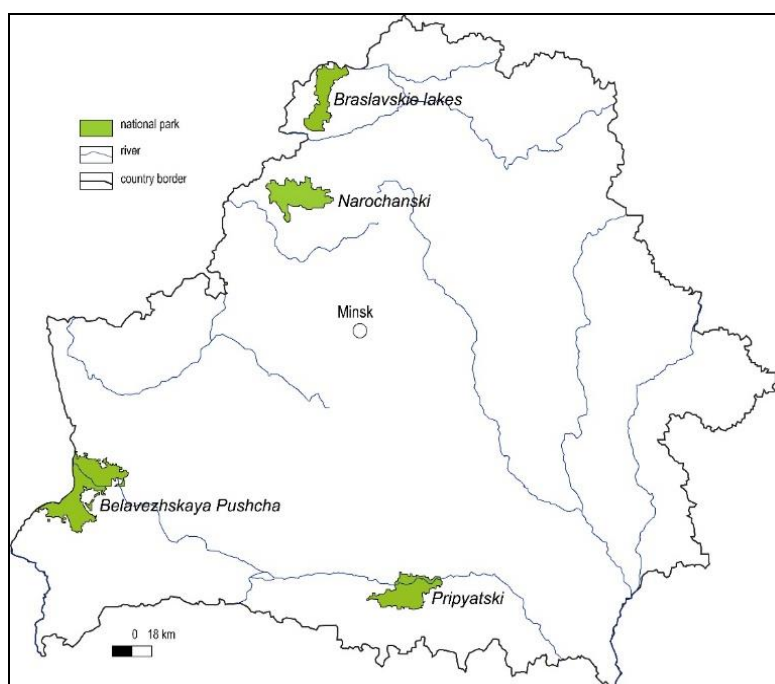


Figure 1. Location of the national parks of Belarus

## RESULT AND DISCUSSION

Belarusian national parks were created in the 1990s in order to preserve natural complexes as a standard of natural landscapes in various regions of the country, genetic and biological diversity and sustainable nature management in the process of environmental, scientific, educational, tourist, recreational, health-improving activities. Organisation of ecotourism activities in the national parks relies on the resources of the natural complexes and objects that are attractive to tourists, but also depends on the inherited types of nature management that previously existed here, the peculiarities of residential, transport, and economic developed land. National parks "Braslav Lakes"\*\*\* and "Narochansky"\*\*\* represent reference landscapes typical for the region of Belarusian Pooserie, the territory of national park "Belovezhskaya Pushcha"\*\*\* is located on the border of Predpoleskaya and Polesseye provinces, and national park "Pripyatsky"\*\*\* presents typical natural complexes of Polesseye region. These regional differences are manifested in the peculiarities of ecological tourism development and in the creation of ecological infrastructure. Landscapes, the morphological appearance of which is determined by the structure of the terminal moraine relief, as well as landscapes formed within the borders of the former large glacial lake basin are widespread in Braslav lakes national park. Lacustrine-glacial, kame-moraine and lacustrine-boggy landscapes are the most expanded (Kovalevskaya et al., 2020). Landscapes formed in the zone of the marginal glacial upland are common and a large area is occupied by the aqueoglacial plain in national park "Narochansky". Therefore hilly-moraine-lacustrine, aqueoglacial landscapes and areas of lacustrine-boggy landscapes are typical for this park (Hahina et al., 2021). The landscape structure of these two national parks is significantly complicated due to the extension of kame hills, esker and eolian ridges, swampy basins, runoff ravines, deeply incised river valleys with an underdeveloped floodplain (Table 1).

Table 1. Landscape features and ecological value of the national parks of Belarus for ecotourism development (Hahina et al., 2020)

Indicators	Braslav lakes	Narochansky	Belovezhskaya Pushcha	Pripyatsky
Characteristic landscapes	kame-morainic, lacustrine-glacial, lacustrine-boggy	hilly-moraine-lacustrine, aqueoglacial	aqueoglacial, lacustrine-alluvial and secondary moraine landscapes and lacustrine-boggy landscapes	alluvial terraced, lacustrine-boggy, inundable
Local landscape complexes	esker ridges, kame hills, eolian ridges, peaty basins	esker and eolian ridges, kame hills, peat basins, hollows	mineral remains, eolian dunes	oxbow lakes, channels, eolian dunes, hollows, basins
Typological diversity of forest vegetation	59 forest types	88 forest types	120 forest types	87 forest types
Area of aquatic ecosystems, %	18.2	17.6	0.5	2.0
Status of the territory of international importance	Territory of importance for birds, key botanical area	Key botanical area	UNESCO Biosphere Reserve, territory of importance for birds, key botanical area, Ramsar site, List of world heritage sites	Territory of importance for birds, key botanical area, Ramsar site

A distinctive feature of national parks "Narochansky" and "Braslav lakes" is a large number and variety of lake reservoirs. There are lakes of dammed, eversion, hollow, complex types. The considered national parks have the status of Key botanical area. National Park "Braslav Lakes" also has the status of Territory of importance for birds. It is a part of trans-border specially protected natural area "Augshdaugava - Braslav Lakes" (Lithuania - Belarus).

A specific feature of National Park "Belovezhskaya Pushcha" and "Pripyatsky" is high preservation of their natural complexes (over 80% of the territory) and the presence of strict environmental regulations that existed before the declaration of these territories as national parks. National Park "Belovezhskaya Pushcha" is the oldest protected area, the first mention of which dates back to the 15th century, and is the only large forestland of Western European type preserved in its natural state in Europe. Pripyatsky National Park was formed by the reorganization of Pripyatsky state landscape-hydrological reserve, founded in 1969. These national parks have the status of Territory of importance for birds, Key botanical area, and Ramsar site. Besides national park "Belovezhskaya Pushcha" has the status of UNESCO biosphere reserve, and a part of its old-growth forest is included in the List of world heritage sites. Landscape structure of the parks differs significantly from each other. The most common landscapes in national park "Belovezhskaya Pushcha" are aqueoglacial, lacustrine-alluvial, secondary moraine and lacustrine-boggy ones. Alluvial terraced, lacustrine-boggy and inundable landscapes are common in Pripyatsky national park (Hahina et al., 2021). Landscape expressiveness of the territory, lakes, high recreational potential of forests, drainage conditions are natural factors for organization of recreational park areas (Table 2).

The share of recreational areas in national parks "Braslav Lakes" and "Belovezhskaya Pushcha" is about 5% of the total area, in national park "Narochansky" it is slightly less – 3.4%, in national park "Pripyatsky" it is considerably reduced to 1.2 %.

Table 2. Functional zones of the national parks of Belarus

Indicators	Braslav lakes	Narochansky	Belovezhskaya Pushcha	Pripyatsky
Total area of the park, ha	64500	87400	153000	88600
Protected area, %	5	8.8	37	35
Recreational area, %	5	3.4	5.1	1.2
Regulated use zone, %	69	64.7	25.4	55
Economic zone, %	21	23.1	32.2	9.1

Ecotourism and basic infrastructure of the national parks is represented by equipped tourist camps, eco-paths, stationary recreation facilities, developed tourist hiking, cycling, water routes, accompanied by descriptions and excursions. There are nature museums, visitor centers, safari parks and other facilities in the parks, which are reflected in Table 3. The development of this or that type of ecotourism is largely determined by the landscape structure of the territory. In national parks "Braslav Lakes" and "Narochansky" kame-morainic, hilly-moraine-lacustrine, aqueoglacial and lacustrine-glacial with eolian hills landscapes

in the relief are represented by a combination of moraine ridges and kame hills, complicated by small boggy basins, eolian hills, areas of wavy and hilly aqueoglacial and lacustrine-glacial relief. The natural vegetation cover is represented by pine, spruce-pine, birch forests. There are pine-birch and black alder boggy forests in the hollows. Active development of recreational and educational ecotourism, including active hiking, cycling, and water tourism, is possible for these territories.

Table 3. Development of ecotourism infrastructure and services on the territory of the national parks of Belarus (Source: compiled on the basis of the official websites of the national parks of Belarus)

Indicators	Braslav lakes	Narochansky	Belovezhskaya Pushcha	Pripyatsky
Priority of development of different ecotourism types	recreational, educational, scientific	recreational, educational, scientific	educational, recreational, scientific	educational, recreational, scientific
Types of ecotourism routes, number	cycling, water, walking, combined	walking, cycling, water	walking, cycling	river sightseeing tours, botanical, ornithological multi-day ecotours
Equipped eco-paths, number	3	1	3	-
Other ecotourism sites	safari park "Mekyany"	park of rare plants, arboretum, safari park	animal enclosures, museum of nature, museum of folk life, archaeological museum, "The estate of Belarusian Father Frost"	nature museum, safari park, historical and cultural complex
Equipped tourist camping, number/capacity	27/795	14/1235	3 (holiday resorts)	-
Other basic accommodation facilities, number/total capacity	5/181	11/3149	10/355	5/138
Official websites of the parks	<a href="https://braslavpark.by">https://braslavpark.by</a>	<a href="https://narochpark.by">https://narochpark.by</a>	<a href="https://npbp.by">https://npbp.by</a>	<a href="https://www.npp.by">https://www.npp.by</a>

Lacustrine-glacial, flat-hollow, aqueoglacial and lacustrine-boggy landscapes are characterized by a flat, inexpressive relief, often swampy. Spruce forests, large areas of broad-leaved spruce, aspen and birch forests, boggy pine forests are widespread here. Natural and recreational potential of the territory allows to develop educational types of ecological tourism, including the organization of ornithological and botanical tours, bogging (in the zone of regulated nature management). For ecotourism development in Braslav Lakes national park 3 ecological trails have been developed and equipped («Mayak mountain», «Slobodkovskaya os ridge», «Belmont Park»), «Mekyany safari park» has been organized on an area of 1,234.65 hectares, cycling, walking and water eco-routes have been developed. Basic infrastructure includes 5 recreation centers and a fisherman's house with a total capacity of 181 beds (Table 3).

One of the most interesting ecotourism sites representing rare local landscape complexes of the marginal glacial hills is «Slobodkovskaya os ridge» ecological trail in Braslav Lakes national park, which passes through a small-hilly os complex between two lakes. The route includes rare forms of glacial relief, thickets of common juniper, areas of steppified ground cover, habitats of rare and protected plant species. The length of the trail is 4.6 km and includes 7 stops with information stands, benches, signs. In national park "Narochansky" 1 ecological path is equipped. There is an ecological and educational center, a park of rare plants, a dendrological garden, bicycle routes of various lengths and complexity between tourist stops. The natural complex in the region of Bolduk group of lakes is distinguished by high environmental and recreational value. It is a complex system of kame hills, deep lake basins and esker ridges with pine and spruce-pine forests, areas of oak-spruce and birch forests. A part of its territory is equipped with «Blue Lakes» ecological trail, which is very popular nowadays. Plots of hilly-wavy aqueoglacial landscapes with pine and spruce-pine forests on the coast of Lake Naroch are the most recreationally developed and included in the recreational zone of the park. There is a high potential for the development of ecological recreational tourism, including rest in numerous recreational facilities, large tourist camps. Location of tourist infrastructure in the national park is presented in Figure 2.

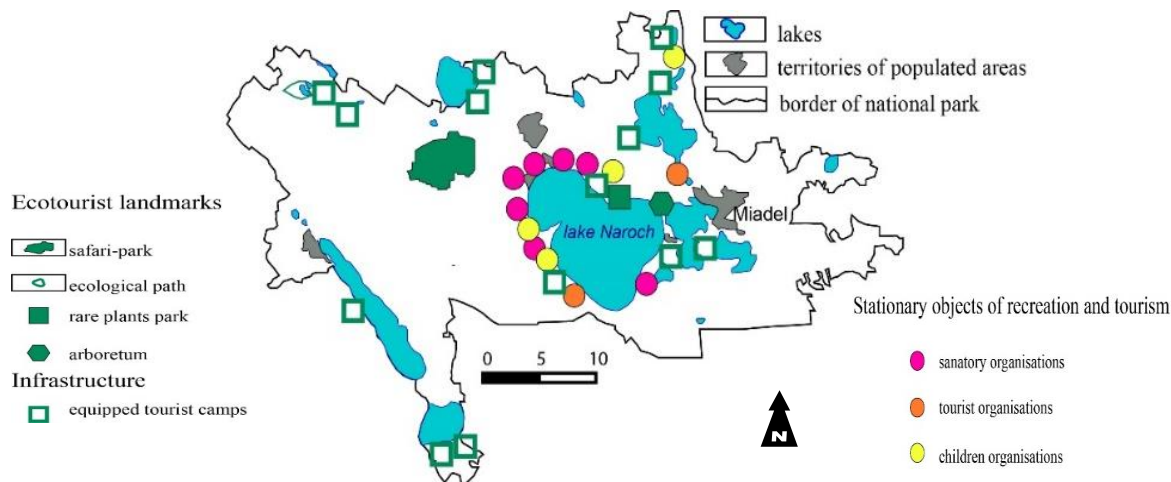


Figure 2. Tourist infrastructure of national park Narochansky

Within North-Narochanskaya terminal moraine ridge, there is a unique object of educational ecotourism "Park of rare plants", located on an area of 90 hectares, where a wide range of little-transformed natural ecosystems is presented. There are coniferous and deciduous forests, steppified areas with junipers, upland meadows, transitional and lowland swamps in the

park of rare plants. 8 species of plants listed in the Red Book of the Republic of Belarus are recorded on the territory. Ecological and educational excursions are organized by the scientific department of the national park scientific ecotourism is being developed with the opportunity to participate in monitoring observations of the state of protected plant species habitats. Numerous Park lakes make it possible to develop various types of water tourism and recreation here, including swimming and beach recreation, water kayaking routes, yachting, scuba diving, water skiing (Shevtsova, 1998). Tourist camps organized on the costs of the lakes are very popular – in Braslav Lakes national park there are 27 camps with a capacity of 795 people, in Narochansky national park – 14 tourist camps and a car camping, with a total capacity of 1235 places. Agro-ecotourism has been developed in these national parks, the services are provided by 65 agro-eco-farmsteads in Narochansky park and 139 agro-farmsteads in Braslav Lakes park. A distinctive feature of Narochansky national park is the presence of the largest resort area in Belarus and good knowledge of the recreational resources of the territory (Yurkevich et al., 1989). There are 11 sanatoriums, resort and health organizations with a total capacity of 3149 beds: 7 health resort organizations for 2030 beds, 2 children's health organizations for 710 beds, 2 tourist and health organizations for 409 beds. All sanatoriums and health organizations are located on the northwestern and western shores of Lake Naroch, which creates high recreational pressure on coastal landscapes and the lake itself. Territories of the sanatoriums are well-organised, equipped for beach and swimming holidays. Visitors of the organisations under consideration can be considered as a potential target group for educational ecotourism of the excursion type. A flow of international inbound tourists is formed by visitors to sanatoriums and healthcare resorts.

A different strategy for ecological tourism development has been formed in the southern parks of the country, which are characterized by less residentially developed territories. Natural potential of "Belovezhskaya Pushcha" national park focuses on the development of cognitive and scientific ecotourism, including international one. Aqueoglacial landscapes with hilly-wavy, rolling relief, where many eolian forms have been preserved, are quite widespread here. The vegetation cover is presented by pine and broad-leaved-spruce-pine forests. Areas of secondary moraine landscapes with complex old-aged broad-leaved and broad-leaved-spruce-pine forests that grow on the remnants of moraine ridges are of particular interest for scientific and educational ecotourism. Lacustrine-alluvial landscapes with flat relief are significantly waterlogged, there are mineral islands, eolian ridges among the marshes. The vegetation is presented by pine, broad-leaved-pine, broad-leaved-black alder forests, swamp pine-birch, black alder and fluffy-birch forests, there are areas of sedge and sedge-grass-sphagnum bogs. As well as in other swamp areas, it is possible to organize cognitive biological ecotours and bogging here.

National park "Belovezhskaya Pushcha" has the largest museum of nature in Belarus, which is visited annually by up to 150 thousand people. You can get acquainted with traditions, customs, beliefs and everyday life of Pushcha indigenous population in the museum of folk life and ancient technologies. An open-air archaeological museum and animal enclosures have been opened in the national park. The area of the enclosures with wild animals is 20 hectares. Tourists of the national park can see a bison, deer and roe deer, lynx, bear, fox, some species of birds of prey, among which the largest owl – the eagle owl attracts close attention. The enclosures contain some animals brought to the territory of Belarus: spotted deer, raccoon dog, etc. A new ecological tour "Photo-safari" has been developed here, the route of which runs along traditional places for scientific research and breeding of ungulates. During a photo safari, tourists have the opportunity to see wild animals in their natural habitat. Tourist infrastructure includes 2 hotel complexes, 2 hotels, 2 guest houses, guest rooms of 4 forestries, 3 equipped recreation areas. Natural potential of "Belovezhskaya Pushcha" national park for the development of mass recreational ecotourism is less obvious in comparison with the national parks of Belarusian Pooserie. The most popular place of mass recreational tourism is tourist site "The Estate of Belarusian Father Frost".

Landscape features of Pripyatsky national park determine educational ecotourism as its priority. Floodplain landscapes of the park have complex and mosaic structure. Natural vegetative cover of near-river flat floodplains with channels, old rivers, small ridges is represented by flooded grass-sedge meadows, oaks on edges and areas of black alder forests in lowlands. Alluvial terraced poorly drained flat and flat hilly landscapes are represented by two terraces above the floodplain of the Pripyat River with broad-leaved pine forests, areas of oak forests, black alder forests, and lowland swamps. Lacustrine-boggy landscapes in the form of several large high and transitional bogs are located in the central part of the park. Pine forests typical of aqueoglacial landscapes with eolian dunes are stretching in a narrow strip along the southern border of the park.

High preservation, diversity and inaccessibility of the natural complexes of Pripyatsky national park determine the priority of developing here unique tourist offers in the field of educational ecotourism. For international ecotourism development a program has been created to promote the park to the European market. The national park staff provide botanical tours as well as bird-watching tours with guaranteed species observation of five, seven and ten days. You can see 120-140 species of birds in the spring, during a ten-day tour. Rare species of birds that do not nest in Western Europe – the great spotted eagle, the great gray owl are particularly attractive to Western European ornithological tourists. Each ecotourist is provided with a tour program, brochures about the park, information on populations and ecology of rare species. Water, walking, automobile routes, view towers are used for ecological tours, shelters for photo hunting are equipped there.

A boat tour along Pripyat is popular and fee-paying amateur fishing is organized there. The park has a museum of nature, an open-air historical and cultural complex, and a demonstration platform of the safari park. An interesting object of ecological and educational tourism is the first safari park or park of wild animals in Belarus. It is an enclosure with an area of 4716 hectares, designed to keep a significant number of wild ungulates. It is organised like hunting ranches in various countries of the world. A bison, elk, deer, wild boar, roe deer, European fallow deer live in the safari park.

Ecological routes with a length of 32 kilometers have been laid through the safari park. The routes are convenient for observing both wild ungulates and diurnal birds of prey: white-tailed eagle, field harrier, Montagu's harrier, as well as various types of ducks and waders in reservoirs. Tourist infrastructure includes 2 hotels, a cottage, a tourist complex with a total capacity of 138 beds. Accommodation facilities are scattered throughout the whole national park. High tourist potential of the national park attracts tourists from various countries. In 2011, over 10,000 people visited the park for various purposes.



## CONCLUSION

The development of ecotourism activities in national parks should be consistent with the goals of preserving reference natural landscapes, genetic and biological diversity, and sustainable nature management. It is recommended to take into account environmental value and structure of natural landscapes, natural and recreational resources that determine the priority areas of ecotourism, as well as ecotourism and basic tourism infrastructure, information support when studying ecological tourism development in national parks.

A comparative analysis of ecotourism development in the national parks of Belarus has revealed the differentiation of priority areas for ecotourism development, largely related to the structure and preservation of natural landscapes. In national parks "Belovezhskaya Pushcha" and "Pripyatsky" there are natural areas in the central parts, and rural settlements on the outskirts, which contributes to the development of educational ecotourism. In national parks "Braslav Lakes" and "Narochansky" the attractiveness of landscapes, the high lake potential, the developed ecotourism and basic infrastructure contribute to the priority development of recreational ecotourism.

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