

UDC 322.2

**RECREATIONAL LAND USE: ISSUES OF DEVELOPMENT AND
ASSESSMENT OF POTENTIAL**

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Abstract. *The article is researched and constructed on the basis of the use of general scientific and special methods of scientific cognition, which yielded valuable results. Key theoretical developments of the article are based on modern achievements, provisions and postulates of the environmental economics, applied research of the world and national level on the study of the recreational land use.*

The research was carried out on the basis of statistical and analytical data of the Ministry of Environmental Protection, State Geocadaastre of Ukraine, State Committee of Statistics of Ukraine, Ministry of Economy of Ukraine, materials of scientific-practical conferences, symposia, seminars, author's own calculations.

The assessment of recreational land is central to the natural and recreational potential of the area under investigation. They cover primarily geological and geomorphological recreation resources, climatic conditions, vegetation, water and land recreation resources, recreational resources of wildlife, and resources of educational tourism.

The functional model of the cadastral valuation of the value of potentially suitable lands for recreation is developed and the scheme of the methodological process of cadastral valuation of the recreational potential of land and other natural resources is substantiated.

The most important problems of recreational land use in Ukraine are ensuring a high quality of recreation, expanding the possibilities to use recreational land and resources that are closely linked to it, meeting the needs of people for communion with wildlife and recovering public health. However, the radical transformation of landscapes and the large-scale urbanization have led to a decrease in the recreational

value of landscapes and thus to the formation of recreational zones on land of little use for other economic purposes. All of this has a negative impact on the quality of recreation, the variety of recreational activities and the ability to stay in the recreational sphere of landscapes that meet the need of the population for rest.

Key words. *Recreational land use, natural resource potential, recreational potential, cadastral valuation, functional use of recreation land.*

Problem statement. Despite the positive trends associated with the land reform in Ukraine, there are still some problems that do not make it possible to make full use of the available recreational potential [1]. In many ways, this is conditioned by the inconformity of the methods of assessment and the established structure of the recreational land use management and the new conditions of functioning of the recreational industry, which is the main setback for its further, more successful development. The research is relevant owing to the need for improving the methodological foundations of the assessment of land and other natural resources potentially suitable for recreational activities and their cadastral valuation, taking into account the possible use for recreation and health improvement.

The purpose of the article is to study the approaches to the assessment of lands and other natural resources potentially suitable for recreational activities.

Results. The Zhytomyr region falls into the category of former military regions. Such regions are characterized by attractive land for recreation with valuable parameters for health improvement as well as sites of natural and cultural heritage (Table 1) [2]. According to the data from Table 1, there are considerable natural and recreational resources in the region. Overall, their relative share in the region is 5.6%, and in some raions (Novohrad-Volynskiy, Korosten, Zhytomyr, Baranivka, Berdychiv), from 6.9 to 13.6%, respectively. At the same time, in present-day conditions, most land and other natural resources suitable for recreation actively become degraded, lose their recreational value mainly due to the intensive, uncoordinated use. This is not the case when it comes to land with valuable recreational resources which is not involved in the recreational industry; such land is not used for the designated function. This feature is associated with the lack of a

scientifically substantiated approach to the study and assessment of the potential of the recreational land and related resources. In particular, according to Article 50 «Definition of Recreational Lands of the Land Code of Ukraine, the land used for recreational purposes includes the land used for recreation, tourism and sporting events» [9] .

Table 1. Composition of natural and resource potential of Zhytomyr region

Raions	Resource potential, %						
	Mineral	Water	Land	Forest	Fauna	Natural recreational	Total, UAH million
In the region overall	5.5	15.9	59.8	12.6	0.7	5.6	39265
Andrushivka	15.5	8.3	67.6	2.6	0.9	5.1	2005
Baranivka	2.5	18.5	50.0	18.4	0.5	10.1	1112
Berdychiv	0.5	11.5	69.9	3.0	1.5	13.6	1615
Volodarsk-Volynskyi	23.7	13.0	54.4	4.0	0.3	4.6	1222
Dzerzhynsk	0.2	18.3	61.0	14.9	0.8	4.7	1025
Yemilchyn	3.1	20.5	58.1	14.5	0.5	3.2	1957
Zhytomyr	1.6	12.3	62.4	13.7	0.6	9.4	1950
Korosten	7.8	15.9	56.0	11.5	0.5	8.3	2008
Korostyshiv	7.5	10.9	63.6	11.9	0.6	5.6	2402
Luhyn	9.7	22.2	42.3	21.9	0.3	3.7	952
Lyubar	1.4	14.7	77.5	1.7	1.3	3.4	1325
Malyn	4.9	14.9	56.7	17.5	1.1	4.8	1645
Narodychi	13.0	15.2	53.0	17.0	0.1	1.7	1878
Novohrad-Volynskyi	1.2	19.3	57.8	14.3	0.5	6.9	2237
Ovruch	3.5	21.3	32.8	37.2	0.3	4.9	3835
Olevsk	5.1	39.9	31.4	18.6	0.2	4.9	1562
Popilnya	1.7	11.1	79.0	3.6	0.9	3.6	1675
Radomyshl	3.8	11.6	67.0	12.9	0.6	4.1	1822
Ruzhyn	4.8	10.8	78.3	1.6	1.4	3.1	1968
Chervonoarmiisk	2.1	14.3	74.0	5.8	0.5	3.2	1202
Chernyakhiv	10.9	8.4	75.3	1.7	0.4	3.2	1615
Chudniv	0.5	10.4	78.6	3.5	1.1	5.9	19785

According to Article 51 «Composition of Recreational Land, the recreational land includes land areas of green zones and green spaces in cities and other settlements, educational and tourist as well as nature trails, marked trails, land plots occupied by holiday centers, boarding houses, facilities for physical training and sport, tourist places, campsites, yacht clubs, stationary and tent tourist camps for health improvement, houses for fishermen and hunters, children tourist stations, children's and sports camps, other similar objects, as well as land plots provided for building country houses and construction of other stationary recreation facilities» [9] . In terms of special location, these territories are land and property complexes, represented by different categories of land, land structure as well as engineering and transport infrastructure.

In this regard, there is an obvious need to define the term 'recreational land use' and to analyze the natural, ecological and economic parameters of natural and cultural landscapes as well as to develop methodological foundations for recreational cadastre valuation of land in the regions of Ukraine. According to the research of A.M. Tretiak and G.V. Hrebennyk [3], recreational land use is a part of the earth's surface with defined boundaries in nature (terrain) that is used on the basis of different rights of ownership and is used for recreational activities as an object of land, ecological, recreational, city-planning and other relations. In the applied aspect, the concept of recreational land use in the field of environmental management is considered as a system of forms and methods of land use, which is either introduced by the state or developed in the country in accordance with the established environmental and land relations and land management under the influence of objective socioeconomic factors.

Hrebennyk G.V. [4] offered to divide recreational land use into four main subtypes according to the pattern of use of natural recreational resources:

- recreational-treatment (*for example, land plots occupied by holiday centers and boarding houses where there is treatment with mineral waters*);
- recreational-health-improving (*for example, green zones and green spaces in cities and other settlements, stationary and tent tourist camps for health*

improvement, bathing and beach areas, land plots provided for building country houses, etc.);

➤ *recreational-sporting (for example, land plots of ski centers and other tourist bases, facilities for physical training and sport, yacht clubs, houses for fishermen and hunters, children tourist stations, children's and sports camps and other similar objects);*

➤ *recreational-informative (for example, land plots of educational and tourist trails).*

At the same time, in present-day conditions most land resources are already used subject to the designated purpose in the respective land categories. For example, according to the State Land Cadastre (*form 6- 3em*) as of January 1, 2016 (*information in subsequent years is missing due to changes in forms and the fact that they were not prepared*) recreational land in Zhytomyr region was used according to such designated purposes as agricultural land, forestry and other purposes (Table 2).

Table 2. Description of the current recreational land use in Zhytomyr region as of January 1, 2016.

No.	Title of landowners and land users within land categories	Land area, thousand hectares	of them recreational use, hectares	Relative share of recreational land, %
1	Agricultural land	1582.2	-	-
2	Built-up land	89.0	3.3	3.7
3	Land used for nature protection	105.6	50.4	47.7
4	Recreational land	0.5	0.5	100.0
5	Land used for health improvement	0.1	0.1	100.0
6	Land used for historical and cultural purposes	0.2	0.1	50.0
7	Forests and forested areas	1123.4	111.7	9.9
8	Inland waters	48.6	0.2	0.4
	Total	2949.6	166.3	5.6

Source: State Land Cadastre (form 6-3em) as of January 1, 2016 StateGeoCadastre of Ukraine.

The analysis of the data in Table 2 shows that out of the total recreational land area, which is 166.3 thousand hectares, 67.2% is used within the category 'forest land' and 30.3% within the 'land used for nature protection' as the second auxiliary function

of land use. Only 0.5 thousand hectares of land or 0.4% are used exclusively for recreation purposes. There is no information on the availability of land for recreational use within agricultural land.

Therefore, there is a need to develop approaches to the identification of land and other natural resources potentially suitable for recreational activities and their cadastral valuation, taking into account possible use for recreation and health improvement. Cadastral valuation of such land, which is intended primarily for the study of the potential of recreational natural resources, contributes to the organization of use of land and other natural resources from narrow sectoral to specialized multifunctional. Recreational land requires a deep, systematic and comprehensive study, since only in such a way it will be possible to identify the properties of the environment necessary to people, which provides means for meeting their recreational needs and interests. *Secondly*, the framework for the development of the basics of recreational cadastral valuation were the historical conditions for the formation of recreational areas, which resulted in a tourist and recreational complex consisting of separate, fragmented and isolated recreational territories.

In the course of the investigation of the recreational land of the Zhytomyr region, the analysis of regulatory and legislative documents, theoretical and methodological foundations of recreational and cadastral land valuation, we proposed a functional model of cadastral valuation of the potential use of recreational land and other natural resources associated with them (Fig. 1) .

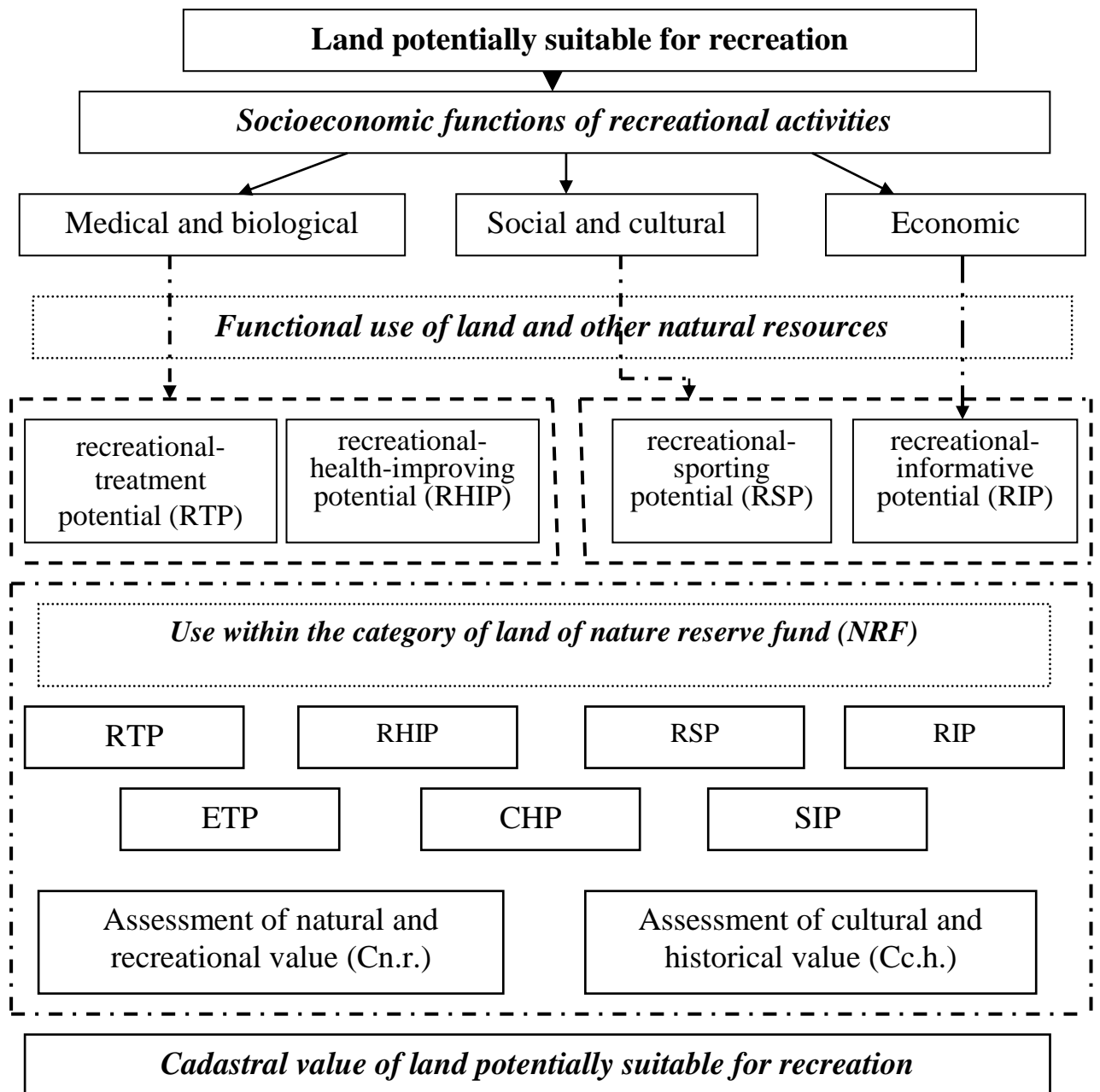


Figure 1. Logical and profound functional model of the cadastral valuation of the value of land potentially suitable for recreation

Thus, in order to assess the recreational potential of land and other natural resources that are closely related to a land plot, it is necessary to identify and evaluate their capabilities according to the available recreational-treatment, recreational-health-improving, recreational-sporting and recreational-informative potential. As a matter of fact, the cadastral valuation of the potential use of recreational land is an integral indicator that takes into account the specific features of land and other natural resources and their recreational value, which can be used for recreational purposes. It

also provides for the determination of the value of potential and characterizes their investment attractiveness. In this case, according to the proposed model recreational land should be considered from the standpoint of functional suitability, economic and recreational value and environmental status bearing in mind their zonal differences.

Along with that, most of the land potentially suitable for recreation is already used in the relevant land category according to the main designation. According to the functional use of recreational land in the respective land category, it is proposed to assess their cadastral value depending on the nature of the potential use with available natural and recreational resources, determining their conservation role and recreational value, taking into account the developed recreational infrastructure.

For example, according to the proposed model different kinds of potential are defined in the category of land of nature reserve fund, namely natural resource recreational treatment potential (RTP), recreational health-improving potential (RHIP), recreational sporting potential (RSP), recreational informative potential (RIP), as well as eco-touristic potential of tourist trails (ETP), cultural and historical potential of individual historical sites located in the area of functioning of recreational natural resource potential (CHP), social and infrastructural potential of suburban areas (SIP). They are based on the combination of methods of assessment such as natural and resource, biomedical, technological, psychological, aesthetic and land use. The correlation between cadastral and recreational assessment is carried out through the coefficients of natural-recreational (Cn.r.) and cultural-historical (Cc.h.) values.

The forecast of the potential exploitation of natural and recreational resources is a particular problem, the significance of which goes beyond the tasks of their cadastral valuation. Therefore, a cadastral valuation of recreational resources of the potential exploitation of natural resources should be distinguished in the process of current recreational activity. At the first stage, cadastral valuation of natural and recreational resources causes key problems related to the proportions and priority of the designated use of natural and recreational resources; distribution of land resources between recreational facilities; determining the parameters of exploitation of natural and recreational resources, etc. Fig. 2 shows a logical scheme of the methodology used for

the process of cadastral valuation of the natural and recreational potential of land and other natural resources for recreational purposes.

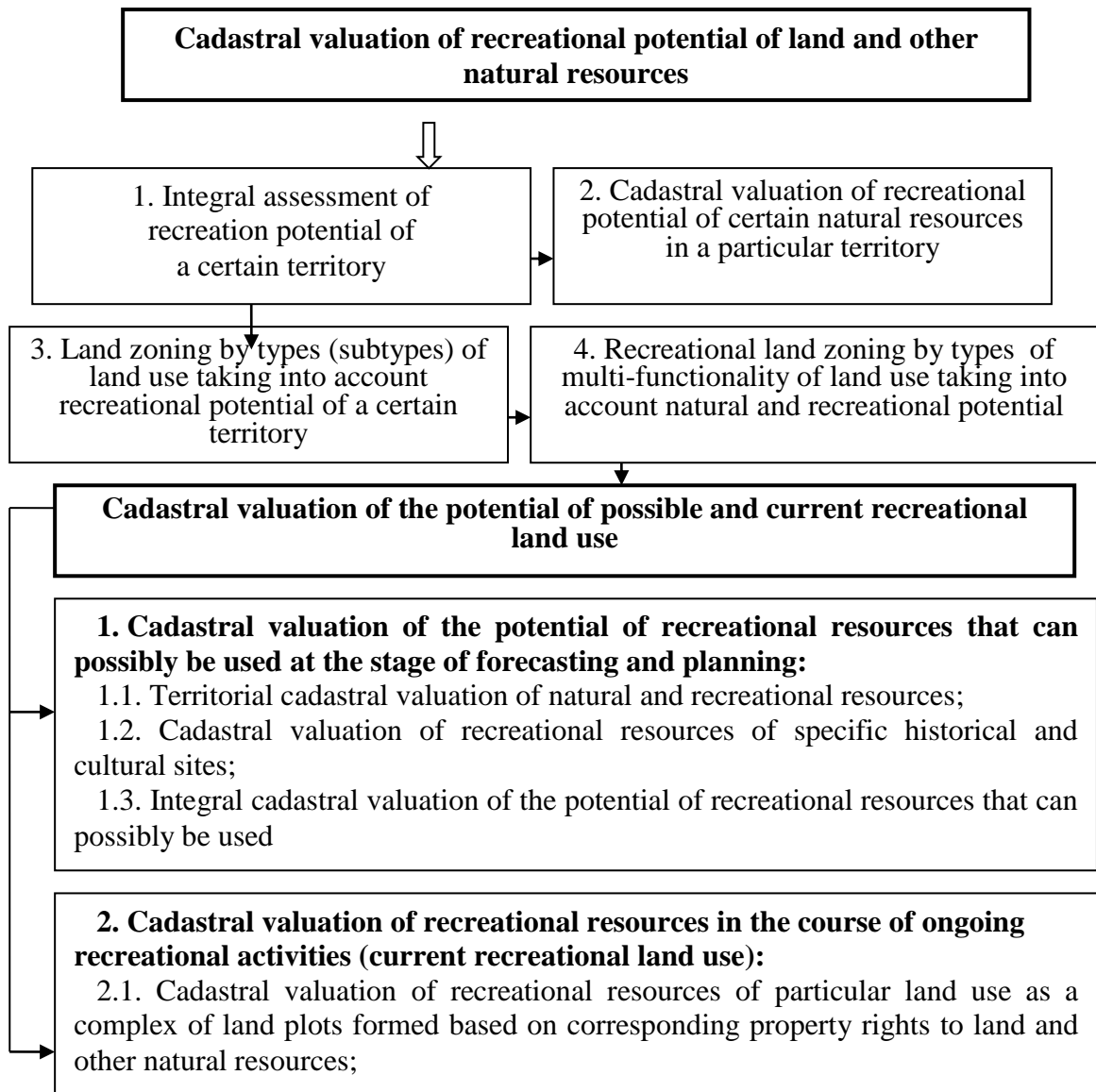


Figure 2. Logical scheme of the methodology for the cadastral valuation of the recreational potential of land and other natural resources

The methodological framework for the cadastral valuation of the potential of land and other natural resources for recreational purposes is the harmonization (*planning*) of boundaries of types (subtypes) of land use taking into consideration the recreational potential of the respective territory and recreational land zoning by types of multifunctional land use considering the recreational [6, 7, 8] potential as the basis for boundaries of subtypes of recreational land use. Another thing that should be considered is the territorial location of elements of the land use system: territories

(types (subtypes) of land use); territories (within recreational land use subtypes); settlements; territories of national and regional nature parks, suburban areas; communication and travel routes; the nature of the use of land and other natural resources, recreational resources of specific land use as a complex of land plots formed on the basis of the corresponding property rights to land and other natural resources.

Conclusions. Formation of recreational land use should be carried out taking into account the cadastral valuation of the potential use of recreational land, which is an integral indicator that takes into account the specific features of land and other natural resources and their recreational value, which can be used for recreational purposes and provides for the determination of value of potential as well as characterizes their investment attractiveness. In this case, according to the proposed model recreational land should be considered from the standpoint of functional suitability, economic and recreational value and environmental status bearing in mind their zonal differences. A logical scheme of the methodological process of cadastral valuation of the recreational potential of land and other natural resources is proposed.

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РЕАКРИЦИОННОЕ ЗЕМЛЕПОЛЬЗОВАНИЕ: ПРОБЛЕМЫ ФОРМИРОВАНИЯ И ОЦЕНКИ ПОТЕНЦИАЛА

Аннотация. Статья исследования и построена на основе использования общенаучных и специальных методов научного познания, что позволило получить ценные результаты. Ключевые теоретические разработки статьи базируются на современных достижениях, положениях и постулатах экономики природопользования и прикладные исследования мирового и национального уровня по изучению рекреационного землепользования.

Исследование осуществлялось на основе статистических и аналитических данных Министерства охраны окружающей природной среды, Держгеокадастру Украины, Государственного комитета статистики Украины, Министерства экономики Украины, материалов научно-практических конференций, симпозиумов, семинаров, собственные расчеты автора.

Центральное место в природном-рекреационном потенциале исследуемой территории занимает оценка рекреационных угодий, охватывающих в первую очередь геологические и геоморфологические ресурсы рекреации, климатические условия, растительные, водные и земельные ресурсы рекреации, рекреационные ресурсы животного мира, ресурсы познавательного туризма. Разработаны функциональная модель кадастровой оценки стоимости потенциально пригодных земель для рекреации и обоснованно схему методологического процесса кадастровой оценки рекреационного потенциала земельных и других природных ресурсов.

Важнейшими проблемами рекреационного землепользования в Украине является обеспечение высокого качества отдыха, расширение многообразия возможностей использования рекреационных земель и ресурсов, тесно связанные с ними, удовлетворение потребности людей в общении с природой и восстановления здоровья населения.

Однако коренное преобразование ландшафтов и широкомасштабное развитие урбанизации привели к снижению рекреационной ценности ландшафтов и тем самым к формированию рекреационных зон на землях, малопригодных для других видов хозяйственного использования. Все это негативно сказывается на качестве отдыха, разнообразия рекреационной деятельности и на способности оставаться в рекреационной сфере ландшафтов, которые обеспечивают потребность населения в отдыхе.

Ключевые слова. *Рекреационное землепользования, природно-ресурсный потенциал, рекреационный потенциал, кадастровая оценка, функциональное использование рекреационных земель.*

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РЕКРЕАЦІЙНЕ ЗЕМЛЕКОРИСТУВАННЯ: ПРОБЛЕМИ ФОРМУВАННЯ ТА ОЦІНКИ ПОТЕНЦІАЛУ

Стаття дослідження та побудована на основі використання загальнонаукових і спеціальних методів наукового пізнання, що дало змогу отримати цінні результати. Ключові теоретичні розробки статті базуються на сучасних досягненнях, положеннях і постулатах економіки природокористування, прикладних дослідженнях світового та національного рівня щодо вивчення рекреаційного землекористування.

Дослідження здійснювалося на основі статистичних та аналітичних даних Міністерства охорони навколишнього природного середовища, Держгеокадастру України, Державного комітету статистики України, Міністерства економіки України, матеріалів науково-практичних конференцій, симпозіумів, семінарів, власні розрахунки автора.

Центральне місце в природному-рекреаційному потенціалі досліджуваної території займає оцінка рекреаційних угідь, що охоплюють насамперед геологічні і геоморфологічні ресурси рекреації, кліматичні умови, рослинні, водні та земельні ресурси рекреації, рекреаційні ресурси тваринного світу, ресурси пізнавального туризму.

Розроблено функціональна модель кадастрової оцінки вартості потенційно придатних земель для рекреації та обґрунтовано схему методологічного процесу кадастрової оцінки рекреаційного потенціалу земельних та інших природних ресурсів.

Найважливішими проблемами рекреаційного землекористування в Україні є забезпечення високої якості відпочинку, розширення різноманіття можливостей використання рекреаційних земель і ресурсів, що тісно пов'язані з ними, задоволення потреби людей у спілкуванні з дикою природою і відновлення здоров'я населення. Однак докорінне перетворення ландшафтів і широкомасштабний розвиток урбанізації призвели до зниження рекреаційної цінності ландшафтів і тим самим до формування рекреаційних зон на землях,

малоприсадних для інших видів господарського використання. Все це негативно позначається на якості відпочинку, різноманітності рекреаційної діяльності і на здатності залишатися в рекреаційній сфері ландшафтів, які забезпечують потребу населення у відпочинку.

Ключові слова. Рекреаційне землекористування, природно-ресурсний потенціал, рекреаційний потенціал, кадастрова оцінка, функціональне використання рекреаційних земель.