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METHODOLOGY FOR ASSESSING THE NATURAL BLOCK OF TOURIST AND RECREATIONAL POTENTIAL OF THE STUDIED TERRITORIES

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Abstract: The purpose of the study is to create and approbation of the author's methodology for assessing the tourism and recreational potential of components included in the natural block, on the example of the Republic of Mordovia and North Kazakhstan region. Materials and Methods: The results of field research and analysis of available scientific materials, previously conducted studies, cartographic materials, and publications were used in the work. Comparative geographical and historical geographical methods and the method of GIS technologies were used in the analysis. The method of mapping allowed visualising the components of the natural resource potential included in the natural block, including relief, rivers, lakes, and objects with the status of specially protected natural areas. To create a methodology for assessing the natural-resource potential, a four-point scale was used, which included the following indicators: Unfavourable (U), Relatively favourable (RF), Favourable (F), Most favourable (MF), which made it possible to give a qualitative and point assessment of the studied territories. Results and discussions: The potential of natural block resources used in tourism and recreational activities is the sum of the results of an assessment of a number of indicators: relief, climatic conditions, flora and fauna and specially protected natural areas, water resources. The assessment of the tourist and recreational potential of the natural block for the compared administrative territories based on the developed methodology is given in points reflecting the level of attractiveness based on the developed methodology. It was 17 points for the Republic of Mordovia, and 15 points for the North Kazakhstan region. There is no critical difference in the total score of the natural block, which perhaps suggests a sufficiently high and favorable level of potential for both territories. The methodology adapts well and, if necessary, can be modified by changing the evaluation criteria, supplementing, reducing or replacing them. The presented methodology for assessing the tourism and recreational potential of the components of the natural block is developed on the basis of analysing existing methods. The proposed methodology can be used to assess the tourism and recreational potential not only for the studied territories, but also for regions characterised by similar conditions for the development of tourism and recreational activities.

Keywords: natural and recreational potential, tourism and resource potential, natural conditions and resources, biodiversity, tourism resources, sustainable development, tourism industry, natural block, assessment methodology

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INTRODUCTION

The peculiarity of the development of the tourism industry of any region or country is the presence of natural, historical, socio-cultural objects (Minenkova & Potapova, 2021; Bógdał-Brzezińska et al., 2023). The presented objects can be used to show and satisfy cognitive interest, as well as to meet the spiritual needs of tourists. At the same time, all tourist sites and routes should contribute to the recovery and development of spiritual and physical strength. In recent decades, the study of tourism and recreational potential has become of great importance, as this indicator is the basis for the development of the tourism industry. In many countries, tourism has become an integral part of a country's economy, sustainable development (Wendt, 2020; Wendt & Bógdał-Brzezińska, 2024; Berdenov et al., 2024; Brzezińska-Wójcik & Skowronek, 2024; Stojanović et al., 2024). Therefore, scientific research aimed at studying the natural, recreational, tourist potential of a certain territory has become relevant and in demand (Blij & Muller, 2010; Gushchina, 2012; Kicis & Vavilova, 2017).

The formulation of potential received scientific substantiation and began to be used for the assessment of resources and environmental conditions (Garifullina & Safin, 2020). Scientists have been working on the development of methods for assessing tourism and recreational potential since the 70s of the last the century. Despite the rather long period of time of studying methodologies and subsequent changes and transformations of this scientific direction, its theoretical and methodological problems are still poorly developed (Dunets et al., 2011; Teslenok et al., 2021).

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At the same time, the problems of tourism and recreational potential assessment are relevant for scientists (Mamraeva & Tashenova, 2020; Ribeiro & Vareiro, 2012; Baasannamjii et al., 2015; Avila-Robinson & Wakabayashi, 2018; Canteiro et al., 2018; Cutler & Carmichael, 2018; Doran & Hanss, 2019). In this regard, the development and further improvement of the methodology for assessing the tourist and recreational potential of regional territories are still in demand and of great scientific importance. Currently, there are quite a large number of methodologies for assessing the tourism and recreational potential of territories of different levels (Afanasyev, 2016; Dirin et al., 2017; Mahmudov et al., 2020; Surzhikov & Kravchenko, 2022). In addition, to assess the tourist and recreational potential of the territory and visualise the obtained results, spatial analysis of tourist flows, objects of tourist interest, it is necessary to widely involve the capabilities of new information technologies (Dmitriyev et al., 2020; Moskaeva & Teslenok, 2020; Ryzhakova & Folomejkina, 2022). Geographic information system technologies play a particularly important role in these processes (Dirin et al., 2017). Geographic information systems are the basis of modern methodology and techniques aimed at identifying and assessing the state and prospects of the spatial organisation of the tourism industry (Grudtsyn et al., 2024; Zeng et al., 2025).

Despite the diversity of studies and approaches in the study of tourism resources for practical use, researchers combine them into the tourism-resource potential of the territory under study. Tourism and recreational potential of a territory or region is a set of tourist resources and conditions: natural, historical, cultural and socio-economic, including tourist infrastructure. Their condition and perspective variants of their territorial combinations determine the potential and opportunities for the development of certain types of tourism in the territory. They can be used to meet the needs in recreation and leisure of both tourists coming to the region and the local population. At the same time, tourism and recreation potential has a social nature, represented by the human factor. Its main purpose is the development of physical and spiritual development of man. National programmes are aimed at spiritual and physical improvement, for example, the strategy 'Cultural Heritage', which are manifested also in the development of tourism potential and tourism activities. Of particular interest is the authenticity of a country as well as of a particular region (Bancerova et al., 2018; Ismagulova et al., 2020; Wendt, 2020; Ilies et al., 2022). The territory of any region is a unique system represented by unique natural and cultural and historical objects. This is of interest for the study of tourism and recreational potential and can serve as a basis for the development of the tourism industry and economy of the region. Systematic targeted study of natural and recreational potential will help to identify existing problems, preserve the uniqueness and sustainable development of the territory (Hardy & Pearson, 2016; Asmelash & Kumar, 2019; Fomin et al., 2020; Dmitriyev et al., 2021; Berdenov et al., 2024). It is necessary not only to assess and systematise the objects and resources of natural and recreational potential, but also spatial zoning, which is an important part for the development of tourist routes and for the tourism industry in the study area (Nazarova et al., 2019; Dmitriyev et al., 2021; Aliyeva, 2023).

Planning and management of tourism and recreation in the territories of regions cannot be carried out without assessing the tourist and recreational potential of the territory and taking into account the results obtained in this process (Agakishieva & Ismayilova, 2024). For this reason, the territory of a region should be considered as a basis for assessing the prerequisites and prospects of tourism development in it (Dirin et al., 2017; Kicis & Vavilova, 2017; Zhulina et al., 2019; Mahmudov et al., 2020; Surzhikov & Kravchenko, 2022). The assessment of tourism and recreational potential of any territory is an important stage for the subsequent optimisation of the spatial and economic organisation of the region, for determining the significance of individual recreational resources and conditions. In addition, it is necessary for rational and optimal use of tourism and recreational resources and sustainable development of the territory of the region as a whole (Muresan et al., 2016; Pasieka et al., 2021; Grishutkin & Schuryakov, 2023; Topchiyiv et al., 2023; Chau, 2024; Saparov et al., 2024).
Thus, the purpose of the study is to create and approve the methodology for assessing the tourism and recreational potential of the components of the natural block, on the example of the Republic of Mordovia and North-Kazakhstan region (Figure 1).

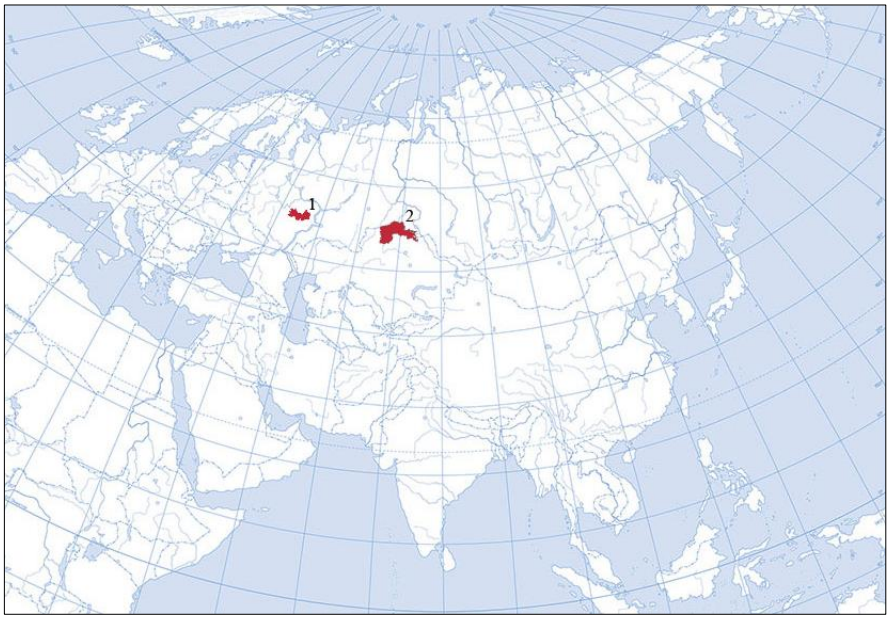

Figure 1. Map of the geographical location of Mordovia and North Kazakhstan region (Source: developed by the authors)

MATERIALS AND METHODS

As it was noted, there is no unified approach for assessing tourism and recreational potential (Sergeeva & Omirzakova, 2020; Minenkova & Potapova, 2021; Tsestsiv, 2021; Kerimbay et al., 2024; Saparov et al., 2024; Omirzakova et al., 2024). Based on the analysis of scientific material and available estimation techniques, the author's methodology was developed. This methodology is based on the study of the available diversity of objects and conditions of different categories that characterise the studied territories. As a result, it is proposed to carry out the assessment according to the criteria, which were united in three blocks: natural, cultural-historic and socio-economic. As noted, the article evaluates the components of the natural block of the studied territories for the possibilities of their use in the tourism industry. The following components are included in the natural block: relief, water, climatic resources, resources of fauna and flora, presence of specially protected natural territories, as well as structures included in the concept and composition of the listed components. The proposed methodology for assessing the natural resource potential of the territory is based on a four-point scale Table 1.

Table 1. Natural resource valuation systems (Source: developed by the authors)

Qualitative assessment	Score
Unfavourable (U)	0
Relatively favourable (RF)	1
Favourable (F)	2
Most favourable (MF)	3

The developed assessment system was proposed for assessment of the territories of the districts of the Republic of Mordovia and the territory of the North Kazakhstan region as one of the administrative parts of the Republic of Kazakhstan. For convenience, the concept of administrative unit is used. It combines the structures of administrative-territorial division of Mordovia, where the concept of municipal district and North Kazakhstan region - administrative district is accepted. The choice of analysis of these territories is not accidental, determined by the author's team, which has many years of scientific ties. The geographical location of the studied territories is characterised by similar latitude coordinates. The regions are close in several physical and geographical characteristics: they have a flat relief, continental climate, a large number of lakes, floristic and faunistic diversity.

The unifying factor is also the presence of forest and steppe zones. The flatness of these territories determines the free movement of air masses, wind activity.One of the main factors in the development of health and recreational tourism is relief. Contrast of changes in the forms of relief of the territory is determined based on the degree of its dissection, according to the indicators of relative height (Table 2).

Table 2. Stages of relief dissection (Source: developed by the authors)

Relative height, metres	Stage
Less than 10	1
10 – 20	2
20 – 50	3
50 – 100	4
100 and more	5

In addition, the values of a number of indicators were used to assess the block under study, for example:

- Lakeiness of the territory or the share of the area of all lakes from the total area of the territory in percent;
- Forest cover or the share of forest area from the total area of the territory in percent;
- The area of specially protected territories from the total area of the studied territory.

The results of field research and analyses of available scientific materials were used in the work. Comparative-geographical and historical and geographical methods were applied in analysing the results of the research. The method of mapping allowed visualising the components of the natural-resource potential included in the natural block. The listed research methods allowed to identify and assess the tourist and recreational potential by the presence of objects and resources included in the natural block. The sequence of methods used has the following structure: 1. analysis of available scientific and cartographic materials; 2. development of an author's assessment methodology using a four-point scale; 3. assessment of the tourist and recreational potential of the compared administrative territories in points; 4. comparative analysis of the results obtained. Thus, an attempt has been made to create a universal methodology for assessing the tourist and recreational potential of the territory, with the possibility of further modification and use for the territories of different regions. The current state of the components of the natural block of the studied territories was assessed and analysed, and the possibilities of using the structures included in them for the development of the tourism industry were revealed. In our opinion, this will serve as an additional basis for the creation of a unified methodology for assessing the tourist and recreational potential. The methodology reflects the opportunities, prospects and problems of its application, which is an important stage for the assessment and development of the tourism industry in the regions.

RESULTS AND DISCUSSION

The assessment of tourism and recreational resources is based on indicators expressed in points. The indicators of the components of the natural block of the studied territories contribute to the development of various types of tourism.

These are balneological, ecological, recreational, sports and recreational, fishing, hunting and other types. To assess the natural block, the results of the assessment of water resources, animal and plant resources, the presence of specially protected natural areas, the peculiarities of climatic conditions, relief and others were used (Kabiyev et al., 2018; Fomin et al., 2020; Azbantayeva et al., 2022; Aliyeva et al., 2024; Franceschinis et al., 2022).

The natural resource potential of the studied territories is of interest for the development of the tourism industry at the interregional and international levels (Ismagulova et al., 2020; Bógdał-Brzezińska & Wendt, 2021; Mikhaylova et al., 2022). The geographical position and relief features serve as a basis for the development of transport routes. This is one of the factors that make it possible to form tourist routes. Mordovia is located on a flat territory. Its central and eastern parts are located on the Volga Upland, the western part lies on the Ox-Don Plain. The average altitude of the surface is about 100 metres above sea level. The most part of the North Kazakhstan Region is located on the West Siberian plain, the surface elevations do not exceed 200 metres above sea level (Figure 2).

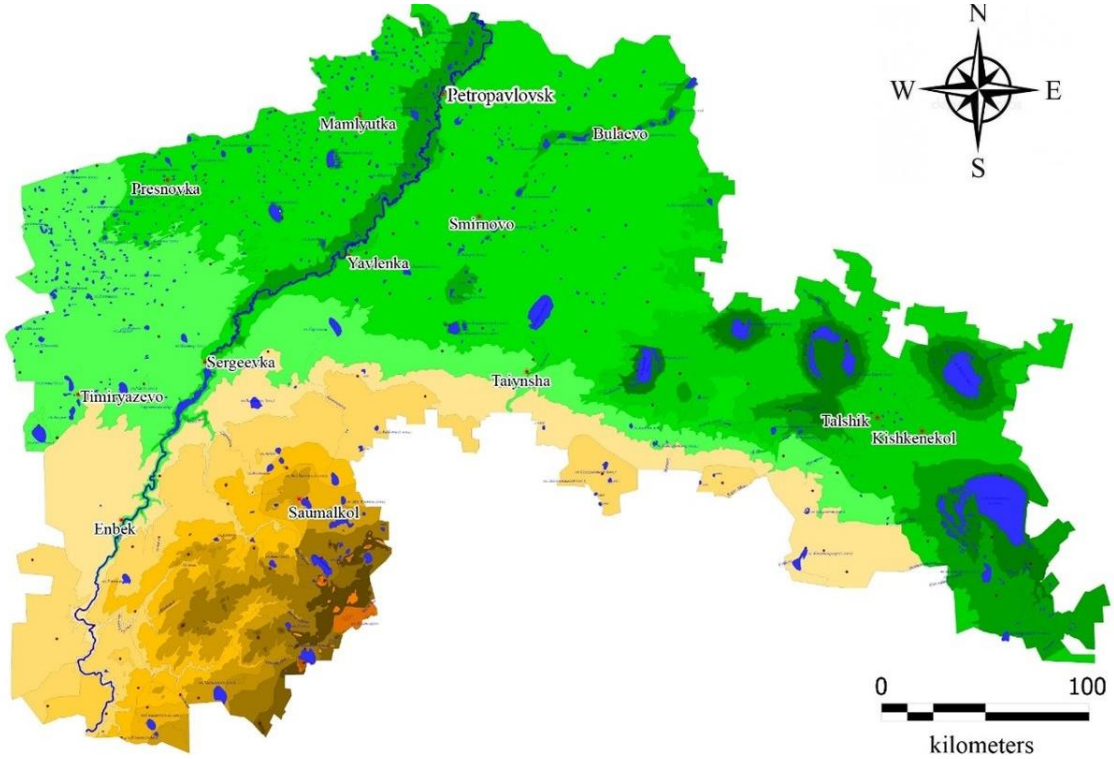

Figure 2. Physical map of North Kazakhstan region (Source: developed by the authors)

The territory is characterised by a weak degree of dissection and undulation. A small part of the study area, which belongs to the northern slopes of the Kokshetau Upland, is located at an elevation above 200 metres above sea level. High hills are rare and are represented by the Syrymbet Mountains. Orlinaya is the northernmost island mountain of the lower tier of relief of the North-Kazakhstan region, its height is 372 metres above sea level. In general, the relief within the entire territory of the Republic of Mordovia (RM) and North Kazakhstan region (NKR) is flat. On this basis, only the first five stages of relative height, which are the most typical for the prevailing flat relief, are presented. Qualitative and point estimation of contrast of different types of plain relief (taking into account the degree of its dissection) is presented in Table 3.

Table 3. Qualitative and point estimation of relief contrast (Source: authors' elaboration)

Relief type	Stages of relief dissection										In total	
	1		2		3		4		5			
	NKR	RM	NKR	RM	NKR	RM	NKR	RM	NKR	RM	NKR	RM
Plain, dissected, elevated	0	2	0	1	1	0	2	0	3	0	6	3
Plain, dissected, low-lying	0	2	0	1	1	0	2	0	3	0	6	3
Plain, slightly dissected, elevated	1	3	0	2	1	1	3	0	3	0	8	6
Plain, slightly dissected, low-lying	0	3	0	2	1	1	3	1	2	0	6	7
Total	1	10	0	6	4	2	10	1	11	0	26	19

The analysis of the relief contrast assessment allowed to compare the studied territories. Considering five stages of relief dissection from 0 to 3 points, four predominant types of relief were obtained. For the Republic of Mordovia, the index was 19, and for the relief of the territory of the North Kazakhstan region - 26, which allows first of all to speak about weak relief dissection and about prevailing heights of flat territories, and in general is a favourable assessment of this component of the natural block. At the same time, the predominantly flat relief of the territories favoured the active

economic development of lands and cultivation of agricultural crops. Plain areas lying at an altitude of about 100-200 metres above sea level are the most favourable for the development of health tourism. Consequently, they can be recommended for tourists who prefer a relaxing holiday and the calming value of the plains. In addition, the high level of agriculture makes it possible to develop rural and gastronomic tourism in the region (Wendt et al., 2021; Kerimbay et al., 2024).

Climatic conditions of the territory for tourism and recreation are the category that determines comfort. The climate of the territory of Mordovia is moderately continental. The average temperature in January is -11°C, in July +19°C. The average annual temperature is about +4.1°C. The average amount of precipitation is 450-500 mm, with the bulk of precipitation falling in the warm season. Unfavourable climatic phenomena include droughts, dry winds and soil freezing.

The specifity of inland position in the zone of temperate latitudes of the Eurasia continent causes climatic conditions of the North Kazakhstan region associated with the prevalence of temperate air masses. Average annual wind speed is 4-5 m/sec, with maximum values of 15 m/sec in April and May and the lowest 3.6-4.3 m/sec in August***.

The average annual precipitation is 317 mm, although in some years precipitation may reach extreme maximum or minimum values. Special atmospheric phenomena of the region are fogs, thunderstorms, dust storms, ice and others. Arctic and tropical air masses also take part in climate formation. The region is characterised by a sharply continental climate, which is expressed in sharp amplitudes of summer and winter temperatures and insufficient moisture.

The average long-term temperature in January is -18.6°C, in July +19.0°C, the average annual temperature is +0.8°C. Winters are quite cold and long, while summers are warm and short. November-January is characterised by maximum cloudiness, with cloudy conditions accounting for about 70%.

At the same time, sunshine per year is about 2000 hours. For comparison, the territories of the Russian Plain at the same latitudes receive less solar radiation than the North Kazakhstan region. Despite the differences in indicators characterising the area and length of the two territories, climatic conditions of the presented administrative units can be characterised as homogeneous, relatively favourable, with relatively similar indicators.

Accordingly, these indicators in the process of assessing the tourism and recreational potential of administrative districts can be excluded from the final assessment. Climatic features determine the opportunities for the development of certain and seasonal types of tourism. Good warming, long daylight hours and the smallest number of cloudy days in the summer period, makes the territory attractive for the development of recreational, ecological, health and wellness and other types of tourism. A good warming of the territory in summer with a high position of the Sun provides favourable conditions for the development of agricultural and gastronomic tourism (Dmitriyev et al., 2023b).

To evaluate and organize tourist activities in the study area, it is important to take into account the presence of surface waters, expressed in the number of reservoirs. The water resources of the districts were estimated by the presence, first of all, of lakes. The lake area indicator is important, which is the proportion of the lake area from the total area of the studied territory. Lakes are places for swimming, fishing, outdoor activities, and more. The possibility of organizing beach and bathing holidays is influenced by many indicators of water bodies and adjacent territories. Lakes, as well as rivers, characterize the possibilities of recreation and tourism. Based on this, it was revealed that Mordovia and the North Kazakhstan region are distinguished by the presence of a large amount of surface water. Two major waterways flow through the territory of Mordovia, these are the Sura and Moksha rivers, which have many tributaries. The North Kazakhstan region is represented by the Yesil River (Ishim), which is the main waterway. Yesil, this is the longest second-order tributary in the world. Both territories are characterized by many rivers and temporary water courses. All rivers have a relatively calm and slow current of about 0.1-0.5 m/s. The number of lakes in Mordovia is about 500, of which 80 are large lakes with a total area of 9 km^2. The North Kazakhstan region has 2,328 lakes (with an area of more than 0.1 km^2). The lake area of the region is 4.6%, which is the highest in Kazakhstan, but despite the large number of lakes in the region, about 80% of them are subject to the process of eutrophication (Nazarova et al., 2021; Dmitriyev et al., 2024b; Dmitriyev et al., 2024b). The lake area of Mordovia is about 1.0%. Nevertheless, among the lakes of the studied territories there are quite large lakes of recreational interest. In addition, the resources of eutrophized lakes can be used as a balneological resource in medical and wellness tourism (Dmitriyev et al., 2023a).

When assessing water resources, it is important to take into account that many reservoirs are located in places that have high landscape attractiveness. The tourist and recreational attractiveness of the region will be higher if there are mineral springs or salt lakes on its territory, which are known for their healing properties (Dmitriyev et al., 2022). The wetlands of the territory and coastal areas also affect the tourist and recreational attractiveness. A high degree of swamp distribution can be considered as an unfavorable factor for the development of recreation and tourism. This is typical for the valleys of the Moksha and Sura rivers, as well as the western part of Mordovia. At the same time, the use of marshes in some cases has a recreational value. In the North Kazakhstan region, there is a natural monument sphagnum swamp "Ryam", which is a relic of the glacial era. It is used as an object for ecological and educational tourism. In Mordovia, a number of marshes also have the status of specially protected areas. In addition, a type of active tourism has appeared in the modern tourism industry – wading. It is gaining popularity among fans of extreme outdoor activities.

The next component that determines the features of the natural landscape are forests. Forests have a beneficial effect on the human body, therefore, in order to organize tourism and recreation, it is important to know the degree of forested area, that is, the ratio of the area covered by forests to the total area of the region (Teslenok et al., 2021; Ozgeldinova et al., 2024). As already noted, the studied territories are characterized by an uneven distribution of forests and relatively high forest cover. For Mordovia, this figure is about 25%, and for the North Kazakhstan region about 8%. Despite the

difference, the majority of forests in the North Kazakhstan region have a pronounced concentration and fall on the northern part of the region. This increases the forest cover in the administrative districts located in this part of the territory.

The diversity of landscapes, the presence of forest and forest-steppe zones, has led to a rich species diversity of fauna and flora of the territories. This factor has determined the creation of specially protected natural areas.

Among other natural zones and subzones, forest and forest-steppe landscapes have a high degree of attractiveness for tourists and recreationists, characterized by the maximum species diversity of berries, medicinal plants, mushrooms, hunting animals and commercial fish (Kustov et al., 2023). Specially protected natural areas also largely determine the tourist and recreational attractiveness of a particular territory (Moskayeva et al., 2020; Teslenok et al., 2021; Kuzina et al., 2022; Ryzhakova & Folomejkina, 2022). Specially protected natural areas are divided into categories: state nature reserves, including biosphere reserves; national parks; natural parks; state nature reserves; natural monuments; arboretum parks and botanical gardens; health-improving areas and resorts (Dmitriyev et al., 2020).

To assess the potential of specially protected natural areas, such indicators as their number and the proportion of their area to the total area of the region were used (Vlasova & Teslenok, 2016; Ryzhakova & Folomejkina, 2022). On the territory of Mordovia, specially protected natural areas are represented by national and regional levels (Figure 3).

Their total number is 109. There are two national parks, «Smolny» National Park and Mordovian State Nature Reserve named after P.G. Smidovich. There are 5 regional reserves: Ardatov Integrated State Reserve, «Lesnoy» State Integrated Hunting Reserve, «Zalesny» State Hunting Reserve, Krasnoslobodsk Integrated State Reserve, Chamza State Hunting Reserve. The rest of the predominant part of specially protected natural territories is represented by nature monuments of regional importance, there are 101*. The total area of specially protected natural territories is 763.44 km^2, which is 2.9% of the area of the republic.

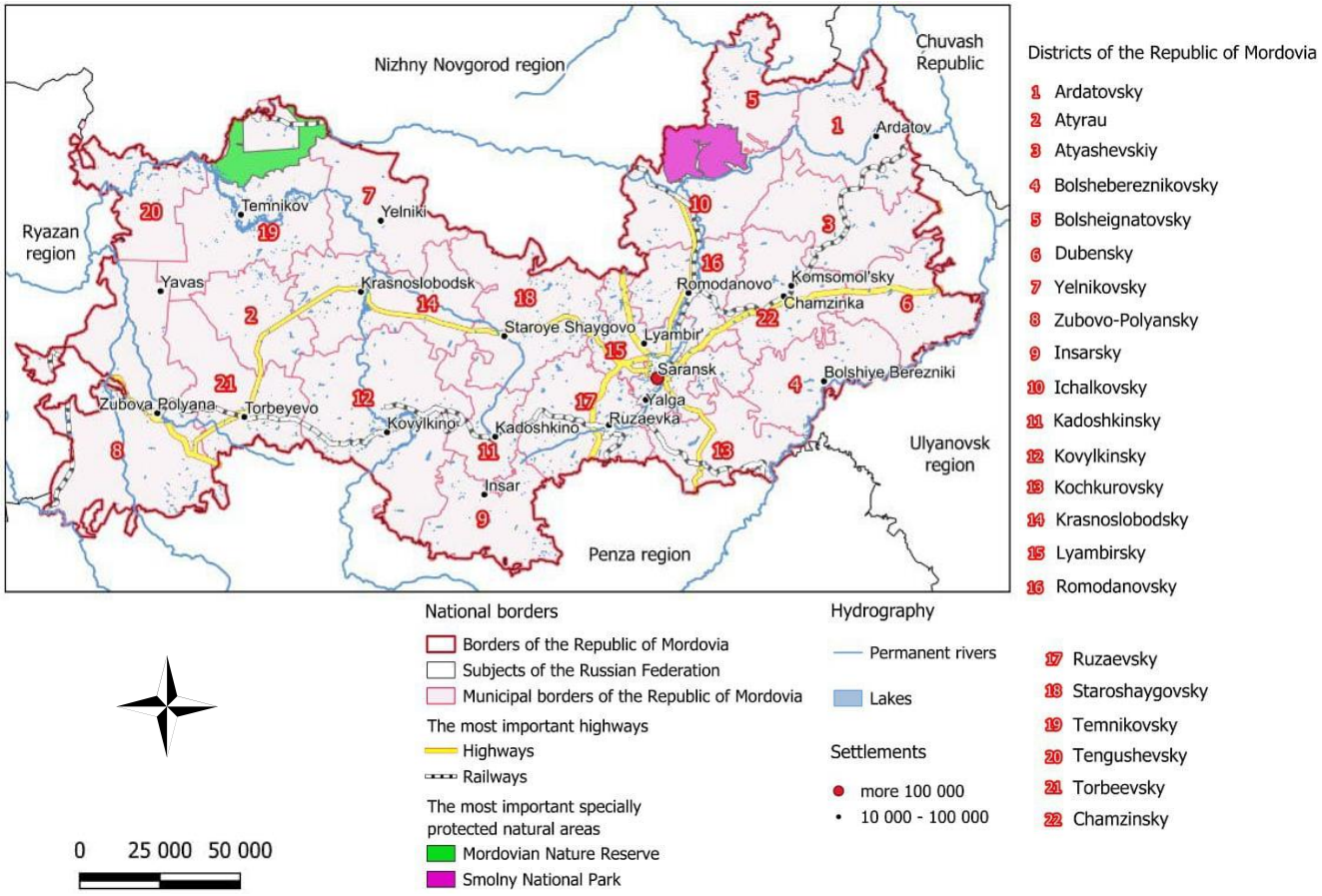

Figure 3. Water bodies, specially protected natural territories, transport routes of the Republic of Mordovia (Source: Developed by the authors)

The total number of specially protected natural territories of the North Kazakhstan region is 18. The region includes the Kokshetau National Park, four state reserves of Sogrovsky, Mamlyutsky, Smirnovsky, Orlinogorsky, two reserves of regional significance - Akzhansky and Aksuatsky (Figure 4). The rest have the status of a natural monument. The total area of specially protected natural areas is about 1306 km^2, which is 1.33% of the total area of the region**.

Specially protected natural territories of the regions are characterized by a variety of animals and plants. Flora and fauna play a very significant role in the organization and development of tourist and recreational activities. To assess the potential of vegetation and wildlife, one can use indicators characterizing the biological resources of the territory of the districts: the degree of diversity of mushrooms and berries; the degree of species diversity of medicinal plants; species diversity of hunting animals and birds; species diversity of commercial fish; forest cover of the territory (Kustov et al., 2023).

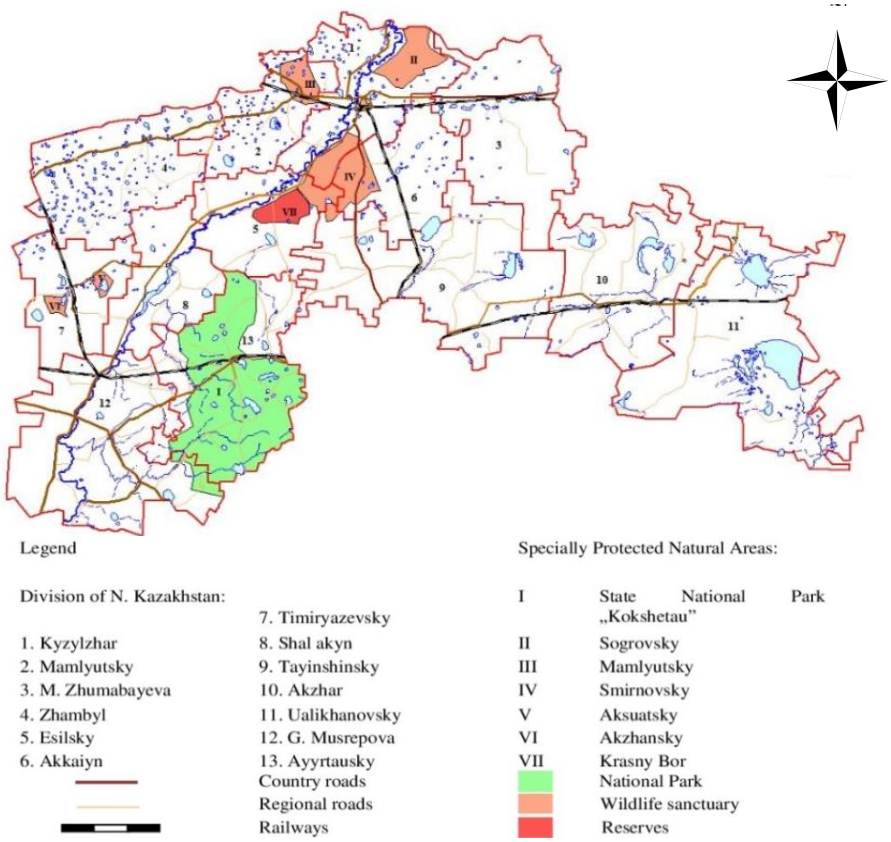

Figure 4. Water bodies, specially protected natural territories, transport routes of the North Kazakhstan Region (Source: Dmitriyev et al., 2021)

Despite the economic development of the territory of Mordovia, there is a wide variety of plant and animal species. The high forest cover of the republic contributes to the diversity of mushrooms and berries. More than a thousand plant species have been identified, of which about 150 are medicinal, and 13 are endangered. There are 247 species of birds, 73 species of mammals, 11 species of amphibians, 7 reptiles, and about 40 species of fish. There are about 20 species of rare and endangered birds and animals, as well as 47 small species*. The flora of the North Kazakhstan region is also diverse, with about 758 species, including 65 species of medicinal plants. Deciduous and mixed forests determine the presence of a variety of mushrooms and berries. An analysis of the research revealed that about 260 species of vertebrates live in the region. Of these, 36 species of mammals, 210 species of birds, 3 species of reptiles, 5 species of amphibians, and more than 30 species of fish. The territory is characterized by many species of birds arriving at nesting grounds, passing birds, entering animals and stray birds (Vilkov, 2010; Zuban et al., 2020). There are permanently living species in the studied territories, for example, moose, roe deer, badger, fox, partridge, house sparrow and dozens of others. This can actively influence the development of ecological, hunting, fishing, ornithological tourism and other areas (Akbar et al., 2020; Liu et al., 2021).

Thus, the analyzed administrative units are characterized by the presence of a number of categories of specially protected natural territories, combining a large number of species of animals and plants. Their presence and diversity highlight the level of environmental protection activities. This is of great importance for tourism activities and is aimed at developing various types of tourism. A system of qualitative and point-based assessment was used to assess the components of the tourist and recreational potential of the studied territories included in the natural block (Table 4).

Table 4. The system of qualitative and point evaluation of the components of the natural block (Source: Developed by the authors)

Evaluation		Evaluation indicators						
Quali-tative	score	Forested area, %	Lake area of the territory, %	Relief contrast	Number of types of berries, medicinal plants, mushrooms, units	Number of commercial species of animals and fish, units	Number of specially protected natural territories, units	The specific weight of the specially protected natural territories in the total area of the district, in %
U	0	less than 5	less than 1	less than 5	less than 5	less than 2	less than 5	less than 2
RF	1	5-10	1-2	5-10	5-10	2-5	5-10	2-5
F	2	10-20	2-5	10-20	10-20	510	10-20	5-10
UF	3	more than 20	more than 5	more than 20	more than 20	more than 10	more than 20	more than 10

Using the developed system, we evaluated a number of indicators of the components of the potential of the studied territories included in the natural block. The assessment of woodlands, lakes, relief, species diversity of flora and fauna, and specially protected natural areas is given. The final comparative assessment of the tourist and recreational potential of the studied components of the territories of the Republic of Mordovia and the North Kazakhstan region is presented in the Table 5.

Table 5. Comparative assessment of the tourism and resource potential of the natural block of the studied territories (Source: developed by the authors)

Comparable territories	Evaluation indicators														Total score
	Forested area, %		Lake area of the territory, %		Relief contrast		Number of types of berries, medicinal plants, mush-rooms, units		Number of commercial species of animals and fish, units		Number of specially protected natural territories, units		The specific weight of the specially protected natural territories in the total area of the district, in %		
	value	score	value	score	value	score	value	score	value	score	value	score	value	score	
Republic of Mordovia	25	3	1.0	1	19	2	>70	3	>40	3	109	3	2.9	2	17
North Kazakhstan region	8	1	4.6	2	26	3	>70	3	>40	3	18	2	1.33	1	15

The assessment of the tourist and recreational potential of the compared administrative territories was determined in points. It was 17 points for the Republic of Mordovia, and 15 points for the North Kazakhstan region. Analyzing the individual components of the natural block, there is a slight difference, which is primarily related to the peculiarities of the physical and geographical location of the regions. It was revealed that the territory of Mordovia, in comparison with the territory of the North Kazakhstan region, has a relatively high score for a number of components.

In terms of forest cover, the number and area of specially protected natural areas. At the same time, the North Kazakhstan region has a high score of lacustrine and weak relief division. But there is no critical difference in the total score of the natural block, which perhaps suggests a fairly high level of potential for both territories. On a qualitative level, the tourism and recreational potential of the natural block can be assessed as favorable for the development of the tourism industry. Thus, a methodology for assessing the potential of natural block resources used in tourism and recreational activities is proposed. It is the sum of the following indicators: relief, climatic conditions, water resources, flora and fauna, and specially protected natural areas. Based on the data analysis, a qualitative and point assessment of the natural resource potential of the territories of the Republic of Mordovia and the North Kazakhstan region was obtained. The final score of the assessment of the studied territories does not have a high difference, it is defined as favorable. The methodology used made it possible to assess the tourist and recreational potential of the natural block, which is a prerequisite for the possibility of developing and managing the tourism industry.

CONCLUSION

Tourism is an actively developing industry, therefore its development is an important part for the economy of any country or individual region. For the formation of a tourist cluster, it becomes important to study and evaluate the tourist and recreational potential of the region. The presented methodology for assessing the tourist and recreational potential of the components of the natural block was developed based on an analysis of existing methods. The natural block for assessing the potential of territories includes: the availability of water, plant and animal resources, the specifics of the relief, the development of a network of specially protected natural areas. The methodology has shown effectiveness in assessing territories of various types of territorial and administrative divisions. The methodology is highly adaptive and, if necessary, can be modified by changing the evaluation criteria, supplementing, reducing or replacing them.

In practical terms, the assessment of territories serves as the basis for optimizing the territorial organization of tourist and recreational systems, for improving activities in the field of recreation and tourism. At the same time, this is an important aspect for developing an effective regional tourism policy, considering the sustainable development of territories, the preservation of the natural environment, as well as cultural and historical heritage. In addition, the definition and assessment of the tourist and recreational potential allows us to identify ways to increase the importance of the incoming components in order to increase domestic and inbound tourist flows. When developing the assessment methodology, the regional natural features of the Republic of Mordovia and the North Kazakhstan region, which do not have well-known and popular tourist sites and routes, were considered. The obtained results of the assessment of the tourist and recreational potential of the components of the natural block of the compared regions show a fairly high level. This is of particular importance for the formation and development of the tourism industry.

The proposed methodology, according to the authors, can be used to assess the tourist and recreational potential not only for the studied territories, but also for regions characterized by similar conditions for the development of tourist and recreational activities. First of all, this concerns territories with the possible development of cross-border, cross-border and international tourism. For example, in the context of the creation and operation of the interregional tourist and recreational cluster "Sarov - Temnikov – Sanaksyr" in Mordovia and the neighboring Nizhny Novgorod region. Or, for example, for the development of tourist routes in the North Kazakhstan region and the Kurgan, Tyumen, and Omsk regions bordering it.

The methodology presented by us for assessing the tourist and recreational potential does not pretend to be complete and exclusive. There are still many unresolved problems and issues of a theoretical and methodological nature that require appropriate additional study. All this highlights the interest for further improvement and practical use of this methodology in assessing the tourist and recreational potential of territories.

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