

## PROSPECTS FOR DEVELOPING WINTER TOURISM IN THE KARKARALY MOUNTAINS, KAZAKHSTAN

**Yerlan KEUKENOV** 

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

**Kulchikhan DZHANALEEVA** 

L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Nur-Sultan, Republic of Kazakhstan, e-mail: dzhanaleyeva\_km@enu.kz

**Abilgazi KURBANIYAZOV** 

International University of Tourism and Hospitality, Turkestan, Republic of Kazakhstan  
Khoja Akhmet Yassawi International Kazakh-Turkish University, Turkestan, Republic of Kazakhstan, e-mail: abilgazi@mail.ru

**Nurzhanat SHAKIROVA** 

Abai Kazakh National Pedagogical University, Almaty, Republic of Kazakhstan, e-mail: shakir.nur83@gmail.com

**Kulzira ORAZYMBETOVA** 

Al-Farabi Kazakh National University, Faculty of Geography, Almaty, Republic of Kazakhstan, e-mail: orazymbetova62@mail.ru

**Zharas BERDENOV** 

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

---

**Citation:** Keukenov Y., Dzhanaaleeva K., Kurbaniyazov, A., Shakirova, N., Orazymbetova K., & Berdenov Zh. (2023). PROSPECTS FOR DEVELOPING WINTER TOURISM IN THE KARKARALY MOUNTAINS, KAZAKHSTAN. *GeoJournal of Tourism and Geosites*, 47(2), 493–498. <https://doi.org/10.30892/gtg.47216-1048>

---

**Abstract:** The paper considers the prospects for developing winter tourism in the Karkaraly mountains on the basis of the identification of the tourist destination potential, the search for management approaches and social and economic measures to stimulate it. The relevance of the paper is to reduce the seasonality factor through the winter tourism development in the geosystems of the Karkaraly mountains. The purpose of the article is to identify the tourism potential and promising areas for the winter tourism development. The research results can be used to implement standard recommendations for effective planning in the recreation and tourism industry, including winter tourism at the regional level and the analysis of its contribution to economic development in the short-, medium- and long term. Research methods include field, descriptive and cartographic methods. Conclusions are made about the prospects for the winter tourism in the territory of the Karkaraly mountains. Based on the stock materials, the winter route was identified, as a result of which a map of the three-day route was developed.

**Key words:** winter tourism, environment, infrastructure, landscape, geosystem, biodiversity, eco-route

\* \* \* \* \*

### INTRODUCTION

The tourism industry is a significant factor in the economic growth of a number of countries and a strategy for increasing the wellbeing of residents by creating jobs, increasing income and reducing poverty. The development of the domestic tourism market in Kazakhstan's regions is based on both achievement and avoidance motivation.

Winter tourism is associated with seasonal sports, recreation, and activities that depend substantially on the sufficient snow cover. Many researchers have studied this type of tourism (Abegg, 2007; Breiling, 1999; Song, 2022; Tang, 2022). Winter tourism is "a specific tourism destination, which allows a tourist to engage in various sports, recreation and entertainment in the snow" (Hosseini, 2014). The development and growth of demand for it is associated with such factors as: increasing the level of professional skill, increasing demand for quality and strengthening the specialization of tourists, improving transport infrastructure. Domestic tourism in Central Kazakhstan has a distinct seasonal nature. Most of the tourist season falls in the warm season, which lasts from May to September-October. The off-season is characterized by a decline in demand and offer of tourist services, and quantitative and qualitative indicators of tourist activity are rather low in winter. Due to weather conditions, with the beginning of the winter season, some traditional tourism destinations in the region become unavailable, and the offer of ecological, rural and event tourism services decreases.

However, in the winter season tourist resources associated with winter sports, recreation and entertainment, certain types of extreme tourism become popular. Winter tours can include various forms of recreation, including ski slopes and slopes for training, snow tubing, skiing, skating, snowmobile and sleigh rides, horse and bike rides, winter fishing and hunting, New Year and Christmas celebrations, bathing in thermal springs. However, for national parks, the development of tourism, including winter tourism, is one of the key activities. Yet, the development of tourism in national parks requires infrastructure development (Gladilin, 2006). In general, the winter landscape of the Karkaraly State National Nature Park

---

\* Corresponding author

(KSNRP), designed to preserve the biological and landscape diversity and to use unique natural complexes and objects of the State Natural Reserve Fund (SNRF) with special environmental, scientific, historical, cultural and recreational value, has ideal conditions for the successful development of ecotourism (Keukenov, 2022; Dmitriyev et al., 2022; Ozgeldinova et al., 2017; Ilies, 2017) for nature protection, environmental education, scientific, tourist, and recreational purposes.

Among the scientists who have researched tourism in the Republic of Kazakhstan, it is worth mentioning the works of B. Aktymbaeva, who conducted a step-by-step review of Kazakhstan's experience in tourism during the years of independence (Aktymbaeva et al., 2020). The article includes results of studying of the patterns of the profile distribution of the morphological, physico-chemical properties of soils and their transformation under the influence of the mining industry and urban loads. Beketova conducted ecological studies of recreational areas of Western Kazakhstan. The article includes results of studying of the patterns of the profile distribution of the morphological, physico-chemical properties of soils and their transformation under the influence of the mining industry and urban loads (Beketova et al., 2019). A special contribution was also made by Zh. Aliyeva, who evaluated the throughput capacity of the recreational zone of Ile-Alatau National Park, located in the south-eastern part of the country (Aliyeva et al., 2020; Berdenov, 2016). P. Allayarov analyzed the problems and prospects of sustainable tourism in Kazakhstan (Allayarov, 2018.). Akhmedenov conducted a comprehensive assessment of the potential and conditions for developing recreational tourism that uses therapeutic mud from saline lakes in Western Kazakhstan (Akhmedenov et al., 2021). As for the latest research, Zh. Mustafayev in his article studied tourism in Southern Kazakhstan and climate change trends. The article presents the scientific results of a study for assessing climate change trends in natural areas of the Turkestan region of the Republic of Kazakhstan based on the use of long-term climate data (1940-2020) of sixteen meteorological stations located in the region (Mustafayev, 2023). And K. Battakova considered the prospects for the development of tourism in the territory of Central Kazakhstan. This study examines the scientific and theoretical foundations of the concept of medical tourism, and current trends in its development in the Republic of Kazakhstan and within the territory of Central Kazakhstan, which is of great importance in improving the professional health of the population since Central Kazakhstan is the largest industrial center (Battakova, 2023).

## MATERIALS AND METHODS

Literature data, materials of historical geobotanical studies of geosystems of the Karkaraly mountains (Gorchakovskiy, 1987), stock and published materials of republican and regional departments and institutions (Institute of Geography of the Republic of Kazakhstan, Republican State Enterprise "Management Department of Natural Resources and Regulation of Nature Use", etc.); data of the chronicle of nature for 2019-2020 were used.

Research methods include descriptive, cartographic and field methods (Figure 1.)

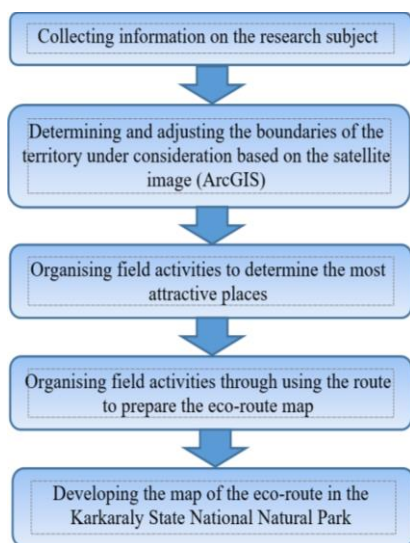


Figure 1. Research methods

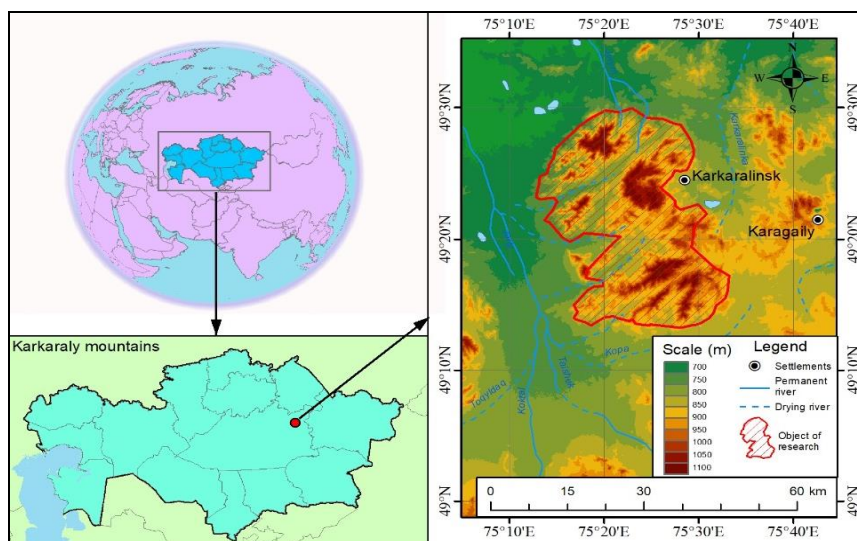


Figure 2. Location of the study area (compiled by the author in the ArcGIS program)

The geosystems of Karkaraly lowlands are located in Central Kazakhstan, in the south-eastern part of Karaganda region. The territory occupies the most elevated part of the Kazakh Upland – Sary-Arka. They represent a shallow low-lying terrain with isolated massifs of lowlands, extending from north and north-west to south-east for 30-35 km, with a width of 20-25 km. The mountains are one of the highest in Central Kazakhstan and consist of separate ridge mountains (Zhirensakal, Akterek, Myrzashoky, Karkaraly, Buguly, Koktyube, Shankoz). The highest peak is Komsomolsky with an altitude of 1,403 m above sea level, which is part of the southern ridge of Zhirensakal. Akterek, 1,230 meters above sea level, and Myrzashoky, 1,170 meters above sea level, are located to the south-east of this ridge. The Karkaraly ridge with a height up to 1115 m above sea level (which gave its name to the entire mountain and forest massif), Buguly ridge (1323 m above sea level) and the Shankoz ridge with a height up to 1360 m above sea level (Dzhanaleeva, 2010) are located to the north. The seven-summit Koktyube (1254 m above sea level) is located to the west. Karkaraly mountain and forest massif is divided by wide inter-mountain valleys Kendara, Kurozek, Karatoka and others and is abundant in fresh groundwater (Figure 2) (Keukenov, 2022). Natural and climatic zones are represented by steppe and semi-desert

landscape zones of the temperate zone. Chestnut and dark-chestnut soils prevail in the steppe landscape zone of the Karkaraly lowlands geosystems. High-altitude landscape zonality areas are apparent in the central parts. In terms of soil cover, granite lowlands differ significantly from the surrounding plain area. Dark-colored forest and mountain-forest sod-podzol soils occur under pine forests. In stream valleys, alluvial gleyey and forest-meadow soils occur under birch-aspen forests.

Forests are the main wealth of the mountains. The Karkaraly group of island pine forests is located in the southern part of the steppe zone in the dry fescue-grass steppe subzone. These preserved islets of forests are relics of the glacial period and the remains of vast forest massifs that stretched in a cooler and wetter period over a vast area from the Urals to the Altai. The park's flora includes a significant number of relic forest species: pine, aspen, bird cherry, raspberry, brambleberry, black currant, wood horsetail, wintergreen, wood bluegrass, etc (Dikareva and Leonova, 2014; Keukenov and Dzhanaleeva, 2021; Berdenov et al., 2021; Indrie et al., 2020). The climate here is sharply continental, with relatively comfortable summer temperatures and very cold winters. The wind regime is determined by general circulation processes and the orographic features of the area. The warm period is 3 to 4 months on average, mostly from mid-May to mid-September. During this period, comfortable and even hot weather is most frequent here. During the nighttime the air temperature is also comfortable and drops to chilly values only occasionally. The hottest month is July, with an average monthly air temperature of +18.0°C; during the daytime the temperature reaches +25.0°C, at night it drops to +10.3°C.

Winters are long, 5 to 6 months. Cold weather is set in October and ends only in late March. In December, January and February frosty and even very frosty weather is highly recurrent. Spring lasts 2 to 3 months, heat builds up from late March to mid-June, and the average daily air temperature steadily rises above 0°C at the end of March. In spring, cold weather prevails most often during the nighttime, and cool and sometimes comfortable weather is prevalent during the daytime.

Nighttime are characterized by cold and chilly weather, while daytime, occasionally, are characterized by comfortable weather. The average daily mean air temperature drops below 0°C in early November. The wind regime in the territory of the area under study is quite active. High wind speeds are recorded throughout the year, with wind speeds slightly lower only in the summer months and in September. At the same time, there is a sufficiently large number of windless days. Southern and south-western winds have the highest annual frequency of occurrence. The prevailing directions slightly change from winter to summer. In winter (with a probability of up to 47%) southern, south-eastern winds prevail. Summer is characterized by southern (18%), northern and north-western (16%) winds. Snow cover on the territory of geosystems is established in late November, and melts in mid-April \*(Website of the Karkaraly National Natural Park).

## RESULT AND DISCUSSION

Karkaralinsk is one of the most beautiful places in the region. Its main treasure is the unique, one-of-a-kind nature – the Karkaraly mountain and forest oasis, which is located in the Karkaraly State National Nature Park. The total area of the Karkaraly SNNP is 120.0 thousand hectares. Of these, 29.1 thousand hectares, i.e. 26% of the total area, are intended for tourist and recreational activities. For this reason, the State National Nature Park is perfectly suitable for the tourism development in the region. To develop regulated tourism and recreation in the national park, land plots with a total area of 146.6 ha were allocated for short- and long-term use for tourist and recreational purposes. 20 land plots (91.2 hectares) are provided for short-term use and 11 land plots (55.4 hectares) are provided for long-term use. It is planned to build tourist and recreation bases, campsites, catering facilities, etc. on the territory of these land plots. According to the Rules temporary facilities for the use of hiking trails and routes, bivouacs, tent camps, beaches, viewing platforms (retail outlets, catering facilities) can be located in these areas (Website of the Karkaraly National Natural Park).

Table 1. SWOT analysis

|                      | Positive effect   | Negative effect  |
|----------------------|---|--|
| Internal environment | <b>Strengths:</b><br>1) location of the State National Nature Park in the district;<br>2) variety of cultural and historical monuments in the district;<br>3) economic prospects, growth of income and tendency to travel among consumers of domestic and foreign tourism in Karkaraly district;<br>4) comprehensive development of the tourism industry in Karkaraly district;<br>5) participation in EXPO 2017. | <b>Weaknesses:</b><br>1) lack of qualified personnel from among local residents for developing ecological and rural tourism in the region (guides-translators, guides and service personnel);<br>2) sharply continental climate, low temperatures prevail most of the year, therefore, the season for some types of tourism is rather short;<br>3) remoteness of tourist sites and poor state of transport and logistics infrastructure, which complicates the accessibility of tourist sites in the region;<br>4) limited opportunities in the KSNNP territory. |
| External environment | <b>Opportunities:</b><br>1) "Business Roadmap 2020" Unified Program;<br>2) establishment of interregional ties.   | <b>Threats:</b><br>1) financial crisis as a consequence of the decreased tourist flow;<br>2) natural and human-caused emergencies;<br>3) increase in tourist demand for outbound tourism to other regions.   |

To attract tourists to Karkaraly district and to introduce them to the national nature park, the nature museum and the aviary with wild animals continue their work. 11 tourist routes (trails) are approved in the national park, 6 of which are active tourist routes (4 hiking trails and 2 bus routes). The total length of tourist routes (trails) is 785.8 km. There are certificates for all routes (trails). Several projects are being implemented \*(Website of the Karkaraly National Natural Park) to develop the tourism industry, such as:

- Construction of "Zholzhaksy" recreation center. Today, the recreation area can accommodate up to 90 people per day. The project initiator is Kent Service LLP. The infrastructure includes a two-storey cottage with two blocks with a total capacity of 20 people and a shared building with 24 rooms, 3 beds in each.

- Construction and opening of "Berloga" tourist complex in Karkaraly district on the territory of KSNNP. The project is implemented by Atlant Building KZ LLP. As of today, the first stage of construction is fully completed. Two buildings with a total capacity of 60 beds per day were constructed. 4 new jobs were created.

- Opening of "Assem" camp focused on ethno-tourism. Yurts for guests are installed on the rented land plot.

To ensure the comprehensive development of the city, the contribution of SMEs is necessary. This includes an increase in services, improvement of the service quality, etc. For this purpose, it is necessary to open entertainment centers, bowling alleys, billiard rooms, restaurants, etc. in Karkaralinsk. This will enable to increase the flow of tourists and holidaymakers to our region. The district is becoming more and more popular and attractive among holidaymakers. Ultimately, the task is to create the most favorable conditions for recreation and implement a set of measures for developing a tourist cluster in the district. The main objective is to create competitive tourist facilities in order to provide employment, stable growth of income of the state and the population by increasing the scope of inbound and domestic tourism.

As a result of the expedition research in 2021-2022, the optimal weekend route to the protected area of Karkaraly State National Nature Park (KSNNP) was identified. The program of the route is provided in Table 2 and Figure 3.

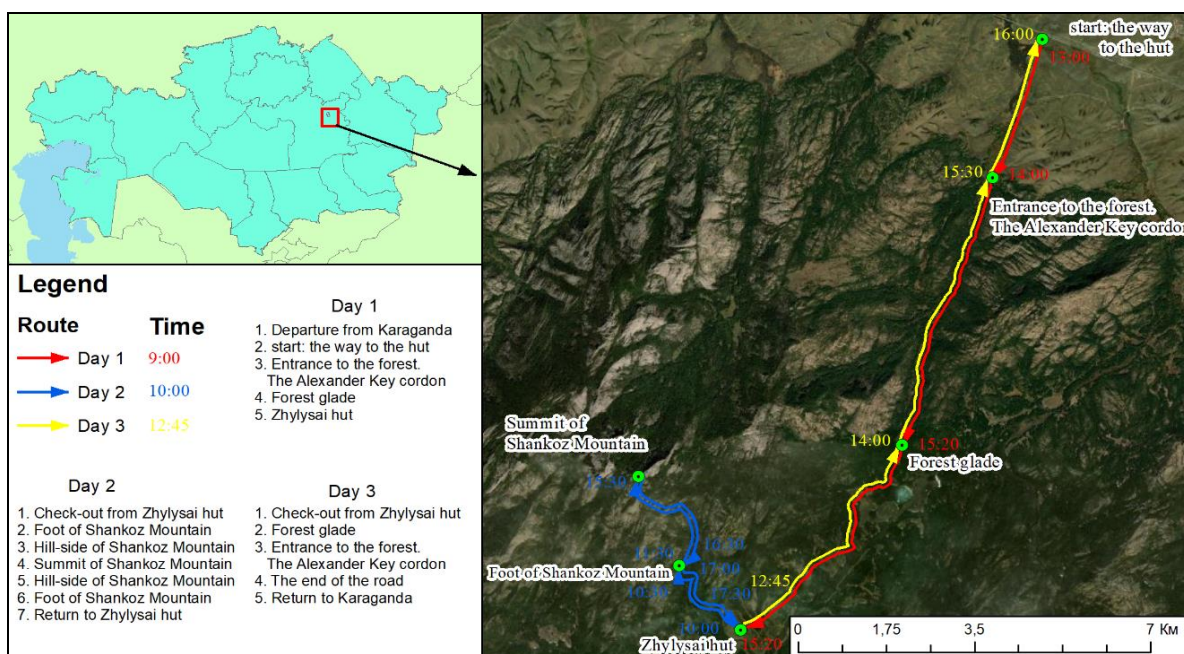


Figure 3. Map of the ecological route of the Karkaraly State National Natural Park (Source: developed by the author in ArcGIS, Photo taken from ArcGISonline)

The route was designed with the departure from the regional center, Karaganda, on February 23, 2022. The time to reach the tourist attractions (Figure 3, 4) was estimated with accommodation in the Zhylyssai hut. The route assumed recording the path on the GPS-navigator, and identifying campsites and attractive recreational areas (Table 2).

Table 2. The route to the Karkaraly State National Natural Park (KSNNP)

|              | № | Object   | Time of stay | Length, m | Coordinates          |
|--------------|---|--|--------------|-----------|----------------------|
| <b>Day 1</b> | 1 | Departure from Karaganda                         | 9:00         |           | 49.804826, 73.096554 |
|              | 2 | Start: the way to the hut                        | 13:00        | 265200    | 49.498765, 75.409177 |
|              | 3 | Entrance to the forest. The Alexander Key cordon | 14:00        | 2805      | 49.482196, 75.400317 |
|              | 4 | Forest glade                                     | 15:20        | 3503      | 49.450179, 75.384254 |
|              | 5 | Zhylyssai hut                                    | 17:00        | 3787      | 49.428012, 75.355435 |
| <b>Day 2</b> | 1 | Check-out from Zhylyssai hut                     | 10:00        |           | 49.428012, 75.355435 |
|              | 2 | Foot of Shankoz Mountain                         | 10:30        | 1123      | 49.435764, 75.344479 |
|              | 3 | Hill-side of Shankoz Mountain                    | 11:30        | 2123      | 49.435764, 75.344479 |
|              | 4 | Summit of Shankoz Mountain                       | 15:30        | 1658      | 49.446443, 75.337194 |
|              | 5 | Hill-side of Shankoz Mountain                    | 16:30        | 1658      | 49.435764, 75.344479 |
|              | 6 | Foot of Shankoz Mountain                         | 17:00        | 2123      | 49.435764, 75.344479 |
|              | 7 | Return to Zhylyssai hut                          | 17:30        | 1123      | 49.428012, 75.355435 |
| <b>Day 3</b> | 1 | Check-out from Zhylyssai hut                     | 12:45        |           | 49.428012, 75.355435 |
|              | 2 | Forest glade                                     | 14:00        | 3787      | 49.450179, 75.384254 |
|              | 3 | Entrance to the forest. The Alexander Key cordon | 15:30        | 3503      | 49.482196, 75.400317 |
|              | 4 | The end of the road                              | 16:00        | 2805      | 49.498765, 75.409177 |
|              | 5 | Return to Karaganda                              | 19:00        | 265200    | 49.804826, 73.096554 |



Figure 4. Expedition photos from the ecological route in the Karkaraly State National Nature Park (KSNNP) (photos by the author February 24, 2022) A – Start: the way to the hut; B – Forest glade; C – Zhylytsai hut; D – Summit of Shankoz Mountain

Winter tourism is attracting people who know how to enjoy all the charms of the winter period and feel the beauty of a winter forest or a snow-covered slope. Those who like quiet walks and no-risk winter activities can take part in excursions, which will be of interest to both the youngest and adult holidaymakers. Visits to souvenir shops can also entertain all holidaymakers and allow them to bring their families nice gifts. Extreme sports enthusiasts can practice mountain climbing, ice skating or snowboarding. Riding a snowmobile is also fascinating and exciting, if not to follow a straight route, but ride twisting path with sharp turns. However, one should not forget about the difficulties that may arise, so it is worth planning the route in advance and making sure that the weather is going to be favorable during the hike. Winter is a great time to cheer up, stretch your bones, and get energized for the whole year. Fresh air, peace and quiet in the sun; winter hikes strengthen the body and restore mental resources. The nature gazing has always been and always will be a source of tranquility and well-being. And when there are caps of sparkling snow in front of you, the effect multiplies by several times. It is an incomparable amazement! Winter hiking is a kind of meditation against the background of breathtaking scenery. Hiking is a sport that is both relaxing and intense, strengthening the cardiovascular system without putting too much stress on the joints.

## CONCLUSION

As a result of the study of the territory of the Karkaraly Mountains geosystems, it was found that one of the most attractive areas for the winter tourism development is the Karkaraly State National Nature Park (KSNNP). The tourist potential of geosystems of Karkaraly State National Nature Park (KSNNP) has a sufficient number of advantages: convenient geographical location, well-preserved natural potential. Karkaraly district has unique natural resources, the key of which is the Karkaraly mountain and forest massif, located on the territory of the Karkaraly State National Nature Park (KSNNP), the total area of which is about 112.12 thousand hectares, of which 29.1 thousand hectares are intended for tourist and recreational activities.

In order to further develop the tourism industry in the region, including winter tourism, it is recommended to:

- improve the transport infrastructure in the flat part of the territory;
- improve the service of tourist facilities, due to the development of the hotel and restaurant business of the city of Karkaralinsk;
- develop ecotourism as one of the most promising types of tourism that causes the most minimal damage to the environment: to develop eco-routes, organize hiking and horseback riding, organize outdoor activities, scientific and educational excursions on the territory of the geosystems of the Karkaraly Mountains;
- carry out activities to raise investment, including foreign investment;
- conduct sports tourism events: organize hiking trips, build the necessary infrastructure, organize and conduct sports tourism competitions on the slopes of the Shankoz, Saimantau, Paravozik mountains;
- organize information and advertising activities in the media to promote the development of tourism and recreation in Karkaralinsk;
- build facilities for winter tourism (ski resorts on the territory of Mount Shankoz, ice rinks on the territory of Lake Bolshoe);
- create favorable conditions for ski tourism development through the simplification and harmonization of tax and other types of regulation;
- create conditions for the accelerated development of ski tourism and resorts using the state support mechanisms, including those based on public-private partnerships;
- implement image-forming and advertising programs aimed at creating a positive image of domestic ski tourism in the international and domestic markets, to support the participation of leading tour operators in international exhibitions and events in the Karkaraly Mountains;

One of the main objectives is to ensure employment, stable growth of income of the population by increasing the scope of tourism activities. The most favorable time to organize winter tourism is late November to mid-March, because in early November there is still no sufficiently dense stable snow cover in the Karkaraly mountains, and by April the snow starts melting as the air temperature increases.

**Author Contributions:** Conceptualization, Y.K. and K.D.; methodology, K.D. and N.S.; software, A. K.; validation, K.O. and Z.B.; formal analysis, K.D.; investigation, Y.K. and Z.B.; data curation, K.D.; writing—original draft preparation, Y.K.; writing—review and editing, Z.B.; visualization, K.O. and K.D.; supervision, Z.B.; project administration, Y.K. All authors have read and agreed to the published version of the manuscript.

**Funding:** Not applicable.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data presented in this study may be obtained on request from the corresponding author.

**Acknowledgments:** The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

**Conflicts of Interest:** The authors declare no conflict of interest.

## REFERENCES

- Abegg, B., Agrawala, S., Crick, F., & De Montfalcon, A. (2007). Climate change impacts and adaptation in winter tourism, in: *Climate Change in the European Alps*, edited by: Agrawala, S., OECD Paris, 25–60. <https://doi.org/10.1787/9789264031692-en>
- Akhmedenov, K.M., & Khalelova, R.A. (2021). Salt lakes of the West Kazakhstan region as objects of medical tourism. *GeoJournal of Tourism and Geosites*, 36(2spl), 637–645. <https://doi.org/10.30892/gtg.362spl11-693>
- Aktymbayeva, B., Koshkimbayeva, U., Abisheva, Z., Tokbergenova, U., & Tumazhanova, M. (2020). Tourism industry development and governance: a comparative stage review of Kazakhstan's experience for the years of independence, 1991–2020. *GeoJournal of Tourism and Geosites*, 34(1), 69–76. <https://doi.org/10.30892/gtg.34110-621>
- Aliyeva, Z., Sakypbek, M., Aktymbayeva, A., Assipova, Z., & Saidullayev, S. (2020). Assessment of recreation carrying capacity of Ile-Alatau National Park in Kazakhstan. *GeoJournal of Tourism and Geosites*, 29(2), 460–471. <https://doi.org/10.30892/gtg.29207-482>
- Allayarov, P., Embergenov, B., & Han, S.T. (2018). Problems and Prospects of sustainable tourism in the Republic of Kazakhstan. *Business and Economic Research*, 8(2), 115–126. <https://doi.org/10.5296/ber.v8i2.12951>
- Battakova, K., & Saipov, A. (2022). Healthcare and wellness tourism for people with occupational diseases in Central Kazakhstan. *GeoJournal of Tourism and Geosites*, 45(4spl), 1586–1593. <https://doi.org/10.30892/gtg.454spl07-978>
- Beketova A., Berdenov, Z., Mendybayev, E., Safarov, R., Shomanova, Z., & Herman, G.V. (2019). Geochemical monitoring of industrial center for development of recreational areas (on the example of Khromtau-Don industrial hub, Kazakhstan). *GeoJournal of Tourism and Geosites*, 27(4), 1449–1463. <https://doi.org/10.30892/gtg.27428-447>
- Berdenov, Z.G., Atasoy, E., Mendybayev E., Ataeva G., & Wendt, J.A. (2016). Geosystems geoeological assessment of the basin of rivers for tourist valorization case study of Ilek river basin. *GeoJournal of Tourism and Geosites*, 2(18), 187–195.
- Berdenov, Z., Mendybayev, E., Beketova, A., Satkarova, N., & Gozner, M. (2021). Assessment of the Southern Urals recreational potential for the development of the Aktobe tourism industry. *GeoJournal of Tourism and Geosites*, 38(4), 1274–1279. <https://doi.org/10.30892/gtg.38435-769>
- Breiling, M., & Charamza, P. (1999). The impact of global warming on winter tourism and skiing: a regionalised model for Austrian snow conditions, *Reg. Environ. Change*, 1, 4–14. <https://doi.org/10.1007/s101130050003>
- Central Kazakhstan (information brochure). (2012). State Institution “Department of Tourism, Physical Culture and Sports of Karaganda Region”, Karaganda, Kazakhstan (in Russian).
- Dikareva, T.V., & Leonova, N.B. (2014). Phytodiversity of the Karkaraly National Park (the Republic of Kazakhstan). *Arid ecosystems*, 4 (61), 105–114 (Russian).
- Dmitriyev, P.S., Fomin, I.A., Wendt, J.A., Ismagulova, S.M., & Shmyreva, O.S. (2022). Regional aspects of creation complex routes ecological tourism on the territory of North Kazakhstan region. *GeoJournal of Tourism and Geosites*, 41(2), 485–492. <https://doi.org/10.30892/gtg.41220-854>
- Dzhanaleeva, G.M. (2010). *Physical geography of the Republic of Kazakhstan*. Astana (in Russian).
- Gladilin, V.A. (2006). If you know, then there is no need to put down the straw... efficiency management of agricultural enterprises' entrepreneurial activity. *Rossiiskoe predprinimatel'stvo*, 9, 87–91.
- Gorchakovskiy, P.L. (1987). *Forest oases of the Kazakh Uplands*, Nauka, Moscow, Russia (in Russian).
- Hosseini, S.S. (2014). Identification of potential winter tourism zones in Isfahan province (Iran) using geoinformation systems. *Bulletin of the National Academy of Tourism*, 4 (32), 52–56. DOI:10.15356/0373-2444-2016-5-109-118
- Ilies, A., Hurley, P.D., Ilies, D.C., & Baias, S. (2017). Tourist animation –a chance adding value to traditional heritage: case studys in the Land of Maramures (Romania), *Revista de Etnografie si Folclor*, 1–2(1-2), 131–151.
- Indrie, L., Zlatev, Z., Ilieva, J., Ilies, D.C., Sturza, A., Dochia, M., Gozner, M., Herman, G., & Caciora, T. (2020). Implementation of image processing techniques as a tool for form analysis of Romanian folk elements, *Industria textila*, 71(5), 492–498. <http://doi.org/10.35530/IT.071.05.1690>
- Keukenov, Y., Dzhanaleeva, K., Ataeva, G., Ozgeldinova, Z., & Orazymbetova, K. (2022). Prospects of ecotourism development in Central Kazakhstan. *GeoJournal of Tourism and Geosites*, 42(2spl), 664–670. <https://doi.org/10.30892/gtg.422spl04-875>
- Keukenov, Y.B., & Dzhanaleeva, G.M. (2021). Use of biological resources of the Karkaraly Mountains. *Vestnik KazNRTU*, 5 (143), 10–17 (in Russian).
- Mustafayev, Z., Skorintseva, I., Toletayev, A., Bassova, T., & Aldazhanova, G. (2023). Assessment of climate change in natural areas of the Turkestan region of the Republic of Kazakhstan for the purposes of sustainable agricultural and recreational nature management. *GeoJournal of Tourism and Geosites*, 46(1), 70–77. <https://doi.org/10.30892/gtg.46108-1002>
- Ozgeldinova, Z.O., Janaleyeva, K.M., David, L.D., Mukayev, Z.T., Beisembayeva, M.A., & Ospan, G.T. (2017). Estimating the potential sustainability of geosystems in conditions of anthropogenic impacts (A case study of sarysu basin, Kazakhstan). *Applied Ecology and Environmental Research*, 15(4), 1733–1744. [https://doi.org/10.15666/aecer/1504\\_17331744](https://doi.org/10.15666/aecer/1504_17331744)
- Song, C.Y., Yin, T.T., Li, J.X., & Chen, W. (2022). Characteristics and determinants of China's ice-and-snow tourism industrial cluster. *Journal of Resources and Ecology*, 13(4): 564–577. <https://doi.org/10.5814/j.issn.1674-764x.2022.04.003>
- Tang, C.C., Zeng, R., Yang, Y.Y., Xu, S., Wang, X. (2022). High-quality development paths of ice-snow tourism in China from the perspective of the Winter Olympics. *Journal of Resources and Ecology*, 13(4): 552–563. <https://doi.org/10.5814/j.issn.1674-764x.2022.04.002>
- \*\*\* <http://karkaralinskpark.kz/about> Website of the Karkaraly National Natural Park. Karkaraly District Development Program for 2016–2020.