Prospects and limitations of urban protected areas as a resource base for the regional recreational and tourism industry

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Abstract. The paper presents work on assessing external and internal factors influencing the sustainable development of a recently created protected natural area (PNA) of regional significance – the Educational and Scientific Station (ESS) “Titovskaya Sopka” in the city of Chita. This territory is a unique location with numerous archaeological heritage monuments, has high environmental significance and is very popular among residents as a vacation spot. The demand for this territory as a tourist and recreational site was confirmed by a survey of the local population.

The area of the protected area is 736.5 hectares, of which 124.97 hectares are occupied by archaeological monuments. The strengths and opportunities for the development of the scientific station, including the expansion of tourism and recreation, are analyzed. A wide range of possibilities has been identified, which is due to the wide variety of display objects, high historical significance, landscape attractiveness and good transport accessibility of the territory. Among the negative and limiting factors are anthropogenic disturbance of natural complexes, uncomfortable winter conditions, low level of improvement and development of tourism infrastructure, etc.

The priority of preserving ecosystems of protected areas and their environment-forming functions over economic development is emphasized, since urban protected areas are important as a source of ecosystem services for city residents.

1 Introduction

Protected natural urban areas are one of the elements of a modern city, an indicator of its environmental well-being, quality of life and positive image. In addition, they perform a range of social functions and ecosystem services. Throughout the world, there is a changing attitude towards protected areas within cities, with a continuously growing demand for green spaces near residential areas. This trend has been particularly evident during the coronavirus pandemic and continues to increase. Ambitious goals have been set in global practice to cover 50% of urban areas with natural and nature-like ecosystems for sustainable urban development [1, 2]. However, in practice, *

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achieving such a ratio remains a challenging task for territorial nature conservation planning.

The goal of this study is to assess the significance, identify the prospects, and delineate the limitations of the functioning of the recently established specially protected natural area in the city of Chita.

2 Research methods

Using SWOT analysis, an assessment was provided of favorable and unfavorable factors for the sustainable development of tourism, and opportunities and threats for various aspects of the functioning of the protected natural area (PNA) were analyzed. The recreational needs of city residents and attitudes towards the creation of the PNA were identified using a social survey methodology (questionnaire survey).

3 Results and discussions

Urban protected natural areas (hereinafter referred to as PNAs) located within cities or in close proximity to them are recognized in both global and Russian scientific literature as having a number of characteristics that distinguish them from other PNAs. Often emphasized is their special significance in reconnecting urban residents with nature – the “land” on which they live. In addition to forming the ecological framework of the territory and being created for the preservation of any areas close to natural territories, thus serving for biodiversity conservation, performing environmental protection, and water-regulating functions, they also hold high social significance for residents in recreational, scientific, and aesthetic aspects.

Trans-Baikal Territory is part of the Far Eastern Federal District. The experience of creating urban PNAs among other major cities in the Far Eastern Federal District shows that such practice has been ongoing for many years. Among the leaders in terms of the proportion of urban PNAs in the Far Eastern Federal District are Blagoveshchensk (42.2%) and Vladivostok, Petropavlovsk-Kamchatsky (each accounting for 28% of the city's area).

Recently, two protected natural areas of regional significance were created in Chita – the Titovskaya Sopka Educational and Scientific Station (ESS), with an area of 736.5 hectares, and the Krasnaya Gorka natural monument with an area of 1.65 hectares (which totaled 1.3% of the city area). Promising territories for the creation of protected areas of different categories are more objects.

Among the urban protected natural areas of Russia and the Far Eastern Federal District there are objects of federal, regional and local significance. The most popular category of regional significance among urban protected areas are natural monuments, which are completely different objects of protection – river valleys, individual peaks, trees and lakes.

The category of Educational and Scientific Stations the first facility of its kind for urban protected areas; this category of regional significance involves the combination of security, scientific functions with scientific, educational and tourism activities.

The main activities of the Educational and Scientific Station (ESS) “Titovskaya Sopka” include:

1) Ensuring the protection and restoration of natural complexes;
2) Preserving historical and cultural objects;
3) Creating conditions for regulated tourism and recreation;
4) Conducting environmental education activities, including practical training for students, excursions for schoolchildren, etc.;
Conducting scientific research by natural conservation, scientific, and educational organizations. The Educational and Scientific Station is located mostly in the southwestern outskirts of Chita on the Titovskaya Sopka mountain range. The area of the Educational and Scientific Station is 736.51 hectares, of which 691.81 hectares are located within the administrative boundaries of the city of Chita, 44.69 hectares are in the Chita district. The territory is a unique concentration of numerous archaeological heritage monuments. Within the boundaries of the educational and scientific station, 26 monuments with traces of ancient human habitation were identified (Figure 1). The total area of the territory under archaeological monuments was 124.97 hectares. In a wide chronological range, archaeological monuments from the Middle Paleolithic to the 18th century have been discovered here, which are united by researchers into the Sukhotinsky archaeological complex [6; 7].

The creation of the Educational and Scientific Station "Titovskaya Sopka" was primarily aimed at protecting and consolidating as a scientific research object the unique complex of archaeological monuments, as uncontrolled tourist flow and economic activities in the vicinity of the natural site lead to excessive anthropogenic pressure and loss of archaeological objects, degradation of vegetation, etc. Furthermore, the territory has significant nature conservation value. In particular, a total of more than 25 rare and endangered species are reliably recorded or presumed to inhabit (or grow) within the station's territory: 10 plant species and 17 animal species (including 3 species listed in the Red Data Book of the Russian Federation (Cygnus bewickii, Anser fabalis, Emberiza rustica)). Located in the contact zone between steppe (Chitino-Ingodinskaya depression) and boreal (Chersky Range) ecosystems, the station's territory exhibits a high species diversity of vascular plants (210 species). Eight out of 16 key biotopes forming the biological diversity of the forest-steppe of Transbaikalia are included in the PNA. To a large extent, the modern forest-steppe appearance of the territory is the result of anthropogenic human influence. All of this makes the plant communities of the station an interesting object for study.

The significance of this territory for the residents of the city and the local tourist community is confirmed by a conducted sociological survey of the population. A total of 103 individuals participated in the survey, with the majority belonging to the age group of 18 to 45 years old. According to the survey results, "Titovskaya Sopka" leads the list of popular natural attractions to visit. City residents visit natural sites throughout the year, with the highest number of responses indicating "regularly throughout all seasons, cold weather does not deter me," indicating a high demand among the population for natural sites as recreational areas. The purpose of visiting includes spending leisure time with family or friends (28.9%), being alone with nature and enjoying the tranquility (23.7%), learning something new and spending quality time (21.5%), admiring the landscapes and escaping from the city (17.0%), and engaging in sports (8.1%).

The largest number of people prefer to visit natural areas with friends or family. Almost all respondents claim that they would like to visit natural sites as often as possible. This is hampered by such factors as: great distance from home, lack of personal transport, bad roads, lack of recreational infrastructure, pollution and litter in natural areas.

Urban protected natural areas (PNAs) differ from other protected areas: they perform not only environmental protection functions but also social functions and the function of developing internal tourism, particularly deep internal tourism oriented primarily towards city residents. This is their key role, and they constantly face significant anthropogenic pressure and the threat of urban development encroachment.
Fig. 1. Complex of archaeological monuments of the "Titovskaya Sopka" Educational and Scientific Station. The factors and conditions influencing the sustainable development of various activities on the territory of the Educational and Scientific Station were identified using SWOT analysis.
SWOT analysis is a practical methodology used, among other things, to analyze strengths, weaknesses, opportunities and threats for decision making. The development strategy chosen as a result of the analysis should take advantage of strengths and opportunities, eliminate weaknesses and avoid or mitigate threats [8]. It is based on two main categories: analysis of internal (strengths and weaknesses) and external factors (opportunities and threats) [9, 10]. SWOT analysis is a preliminary stage in drawing up any level of strategic plans and is widely used in studies devoted to the development of tourism in protected areas [11, 12, 13]. In a number of foreign countries, this analysis is mandatory and is legally included in the process of preparing territorial development plans for protected areas [14].

In relation to the task at hand, the strengths and weaknesses that influence the development of tourism in a protected natural area within the city were assessed. At the same time, the development opportunities and threats to tourism development that would arise as a result of the excessive predominance or weak influence of a particular factor or condition were assessed (see Table 1).

Table 1. SWOT analysis of factors and conditions of PNA activity

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<th>S – Strengths</th>
<th>W – Weaknesses</th>
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<td>Transport accessibility (located within the city limits), Unique archaeological and historical-cultural heritage; Presence of several pilgrimage sites, Attractive and picturesque natural landscapes; Nature conservation value and high biological diversity; City viewpoint; The city has several educational and scientific organizations; Opportunity to attract personnel for research and excursions (tour guides, scientific staff); Interaction with the Ethno-Archeopark &quot;Sukhotino&quot; and the regional local history museum named after A.K. Kuznetsov.</td>
<td>Anthropogenic disturbance of natural complexes; Seasonality of tourist services related to climatic conditions; Uncomfortable climatic conditions in winter; Low level of infrastructure and amenities at visitation sites; Absence of sanitary zone; Extended wildfire season, during which visiting natural sites is prohibited; Lack of tourist brand (image) for the territory; Population outflow, especially youth, from the region; High share of the shadow economy in the tourism service market; Level of visitor service does not meet international standards; Absence of a permanent staff at the scientific station; Land ownership rights issues with landowners</td>
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<th>O – Opportunities</th>
<th>T – Threats</th>
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<td>Development of multiple types of tourism, increasing the quantity and quality of services; Utilization of all seasons of the year for organizing excursions and events; Organization of field trips for students of universities and colleges specializing in natural sciences and historical-cultural disciplines; Attraction of sponsors or commercial partners; Engagement of the local population as entrepreneurs in the service sector and in the production of souvenir products; Promotion of domestic tourism in Russia</td>
<td>Over-tourism may lead to degradation of natural complexes; Spring fires can result in the loss of parts of landscapes and a decrease in the scenic attractiveness of the territory; Vandalism, unauthorized vehicle access leading to the loss of archaeological sites; Urban sprawl, growth of urban development; Littering, emergence of makeshift dumps, light and noise pollution, air and water pollution, and the introduction of invasive alien species; Excessive commercialization and, as a result,</td>
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and growth of the inbound tourism market from China; Presence of major investors and business communities.

As a result, the establishment of facilities and activities on the territory unrelated to or conflicting with the nature conservation functions; Risk of exceeding and abusing powers by officials for personal commercial interests; Lack of financial resources for development, high investment and entrepreneurial risks.

Further, we examined possible combinations of strengths and weaknesses with threats and opportunities. This allowed us to address several questions regarding the future development of tourism in the urban PNA and the potential for it to fulfill ecosystemic and social functions, as well as propose solutions to emerging contradictions.

"Strong Points" - "Opportunities":
- Organizing and conducting all Russian and international scientific expeditions, forums, conferences on the study of archaeological heritage.
- Development of various types of tourism (ecological, geological-mineralogical, educational, scientific, pilgrimage, sports, adventure, etc.).
- Creating new visitation formats - "Expedition with a Biologist" (archaeologist, geologist, etc.).
- Development of nature-oriented tourism directions such as birdwatching, phenological journey, wildlife observation, etc.
- Expansion of hobby tourism directions, for example: yoga breakfast; art party, etc.
- Popularizing travel within one's own region for students in grades 5-9, children from orphanages by issuing free certificates.
- Attracting visitors by organizing and conducting festivals, trainings, corporate programs; creating entertainment areas, photo zones, etc.
- Creating specially equipped routes for people with disabilities and the elderly.
- Inclusion in a comprehensive sightseeing tour of the city's attractions.
- Active formation of the station's personnel potential, attracting volunteers from universities, both for conducting excursions and for arranging tourist trails and routes.
- Increasing the number of visitors through the construction of objects of the Ethno-Archaeo-park "Sukhotino".
- Creating an audioguide in several languages, including languages of indigenous peoples (Russian, English, Chinese, Buryat, Evenki).
- Attracting entrepreneurs to produce souvenir products.
- Increasing the station's own funds, including creating a fund for donations, charitable contributions, cooperation, and interaction with business structures.

"Weaknesses" - "Opportunities":
- Mitigating harsh climatic conditions and short daylight hours in the winter period through additional lighting and equipment of thermal traps.
- Arranging a zone for winter sports and entertainment (sledding, ice skating, ski trails).
- Conducting research to regulate loads on natural areas, creating zones (territories) for natural landscape restoration.
- Studying global experience in creating infrastructure and increasing the recreational capacity of the territory through its development (eco-trails, platforms, observation decks).
- Creating an informational portal, social media groups to disseminate information and eliminate information gaps.
- Establishing cooperation with tour operators in the city of Chita.
- Undertaking work to transfer urban land and forest land into the category of recreational land or protected natural area land.

"Strengths" - "Threats":

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Establishment of a dedicated staff at the educational and scientific station. Conducting an inventory of eco-tourism resources and assessing eco-tourism potential. Strengthening the protection of the territory, installing video and photo traps, developing a protocol for managerial actions when interacting with law enforcement agencies. Conducting marketing research to assess demand. Developing a framework document for the strategy, master plan, and business plan for the development of the protected area for 5 and 10 years. Development of tourism, construction, and entrepreneurial activity regulations within the protected natural area, with strict regulation of conditions. Establishing cooperation with representatives of various religious denominations to prevent the emergence of conflict situations during various events.

"Weaknesses" - "Threats": Conducting annual monitoring of the territory to identify illegal dumpsites and areas requiring infrastructure development. Developing a mechanism for regulating anthropogenic loads on ecosystems and adopting internal regulatory acts to assess the impact of anthropogenic loads on ecosystem preservation. Regularly organizing clean-up events and waste removal from the area, including involving volunteers. Creating and updating a database on the state of the natural environment, environmental violations by visitors and nature users. Attracting government investments by incorporating the protected area into tourism development plans and programs in Chita city, Chitinsky district, and Trans-Baikal Territory. Collaborating with government agencies in the field of environmental control and prevention of environmental offenses. Adopting and approving official documents (regulations on environmental and entrepreneurial activities in the protected natural areas of Chita city).

4 Conclusion

The establishment of the Educational and Scientific Station "Titovskaya Sopka" represents an important step in the implementation of state protection of the historical and cultural heritage, as well as in expanding the range of tourist and recreational services within the city, catering to various segments of the population. Over time, it will become a recognizable symbol of the city. From the perspective of local economic development, it can contribute to increasing the revenue part of regional budgets through taxes paid. The local population can benefit not only directly from employment at the institution but also from entrepreneurial activities. With the correct approach and targeted planning, a significant portion of negative factors can be neutralized and even turned into advantages. For example, by creating convenient and nature-friendly infrastructure, which can itself become a separate attraction for visitors. The establishment of a protected natural area with in the city limits has a unique mission, which involves preserving natural landscapes to maintain a favorable ecological environment and habitat for the local population, studying archaeological sites, natural processes in nature, as well as educating and enlightening the population, conducting educational and scientific practices for students, and informative excursions. Collectively, this will expand and enhance the level of scientific data about the territory, contributing to the growth of cognitive activity among the local population.
The territory of the educational and scientific station represents an inseparable unity of natural and anthropogenic complexes. In fact, these are landscapes, the protection of which contributes to understanding the history of interaction between humans and the surrounding landscape, starting from ancient times. This is a valuable resource for educating and instilling in young people a love for their native land.

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