

Problems of using specially protected natural territories in cities

Irina Kustysheva^{1,*}

¹Industrial University of Tyumen, 38, Volodarsky St., Tyumen, 625000, Russia

Abstract. This study addresses the issue of using the city's green zone as a specially protected area. The purpose of the study is to study the problems of using the green zone of the city to determine ways to optimize the management of these components of natural complexes as an environment-forming factor in the population. The ways of optimizing the management of these components of natural complexes as an environment-forming factor of the population are determined. It was revealed that the architectural and artistic appearance of the city largely depends on the number and condition of green areas, providing comfortable conditions that will satisfy the needs of citizens in leisure, social relations, economic activity and in general, ensure a high level of quality of life.

1 Introduction

Important tasks of urban specially protected natural areas include “conservation of biodiversity” and “sustainable use of ecosystem resources”. Currently, due to the strong anthropogenic impact on the environment, the problem of rational use of natural resources, including recreational ones, is very acute. There was a need to consider environmental responsibility and environmental knowledge among the population. In these conditions, leisure and the development of ecotourism is the most effective form of environmental education.

The relevance of the research topic is due to the fact that the architectural and artistic appearance of the city largely depends on the number and condition of green areas located within it. Therefore, one of the main tasks of urban development is to provide a comfortable environment that will satisfy the needs of citizens in leisure, social communication, economic activity, and will ensure a high quality of life in general. Green spaces are included in the city's life support system as the most important environmental and environmental protection factor providing comfort and quality of human life, therefore there is an urgent need to create, maintain and restore the green city fund. In the context of an increasing technogenic process, the need to use the useful functions of green spaces to create and stabilize a human-friendly environment has received worldwide recognition.

* Corresponding author: chernyheg@tyuiu.ru

2 Method of investigation

The basis of the study is the analytical method, which is aimed at analyzing the existing stages of creating "green zones" in cities.

The city's green zone is the territory outside the city or within the city, occupied by forests, forest parks and other green spaces.

Green areas perform sanitary and hygienic functions, contribute to the improvement of the air basin around settlements, mitigate adverse environmental, climatic and anthropogenic factors and are a place of recreation for the population. The main tasks of creating green areas:

- ensuring the environmental sustainability of the territories of cities and towns;
- the formation and preservation of long-term healthy and picturesque forests around cities and towns that can withstand adverse environmental conditions, intensive attendance of the population, which has a beneficial effect on the climate and clean air;
- the creation of favorable conditions for the rest of the population, both in summer and in winter.

The city's landscaping system in different eras, from the feudal to the present, is presented in the form of five groups of its layout (Table 1) [1].

Table 1. The development of urban landscaping systems in different eras.

Era	The layout of the city's gardening system
Feudal Cities	City ring system
XVIII-XIX centuries The collapse of feudal society	Rectangular urban landscaping system
The end of the XIX first half of the XX centuries	Radial layout of urban landscaping with green wedges
Mid XX century	Combined system (rectangular and radial ring)
The second half of XX - the first half of XXI centuries	Continuous urban landscaping system model

Citywide landscaping objects are presented in the form of various city parks and gardens, which are usually located in the city center or near water areas (if any). This model of the city's landscaping system is supplemented by an external landscaping system, which is a protective strip and territory for occasional recreation of the population. The peculiarity of this model is that it provides for an even distribution of the gardening system throughout the city, as well as an environmentally friendly separation of the functional zones of the city. It is possible to use this model for all planning structures of cities.

A significant contribution to the theory of urban planning, in particular to the development of urban greening systems, was made by scientists of various eras: Plato, Aristotle and Hippocrates, L. Alberti and others (information on their activities is given in Table 2).

The green zone is an element of urban development containing green spaces (woody, shrubby and herbaceous plants). Serves to maintain the quality of the urban environment and environmental protection. Green areas can be located both around cities and other settlements, and in their composition. Given their ecological significance, these territories should be attributed to specially protected natural territories.

A new stage in the development of a modern understanding of natural protected areas in Russia is associated with the reign of Peter I (1672-1727), when state measures for the protection of nature gained significant scope, and around the world specially protected natural areas began to spread only from 1872, when Yellowstone National Park was created

in the USA. Since then, their number has been steadily increasing, which indicates the undoubted recognition of specially protected natural areas in the world [1-3].

Table 2. The Development of green urban development in different eras.

A period of time	Urban development activities
Plato - Ancient Europe	The book "Laws" discusses the organization of the landscape of the city
Aristotle and Hippocrates - Ancient Europe	The book "Politics" discusses the organization of the landscape of the city
L. Alberti - Renaissance	Beautification of the city associated with the system of green spaces
J. Chambery - Renaissance	The basis for the planning project is the landscaping system
T. More - 1516	Optimal increase in the size of the city and the green system of the urban environment
T. Campanella - 1623	Creating a green urban environment system
XIX century - R. Owen	Creation of collective settlements with a population of 300 to 2000 inhabitants. The basis of the settlement is a park area with public buildings and structures. It is proposed to place a residential zone around the perimeter of this open space.
S. Fourier - mid-19th century	The urban space offers to be divided into three rings: the center, the quarter and the suburbs, along the borders, which are organized by green corridors
E. Howard - the end of the XIX century	Creation of a city - garden
Le Corbusier - 20 years. XX century	It is proposed to organize urban space in the form of a closed ring, the core of which is a community center
Architect V.A. Lavrov - 1928	Compiled the first project of a linear city
V.N. Semenov - 30 years. XX century	Practically implemented a linear city project in the planning and development of Stalingrad
French town planner E. Enard - 1904	The city's landscaping system was divided into a ring frame, from which blotches of spots diverged in different directions
German urban planners R. Eberstadt, B. Moring and R. Petersen - 1910	The territory of the city was proposed to be organized in the form of green wedges, from the spring green belt to the city center
Professor N.V. Baranov - mid XX century	He proposed the creation of a single city landscaping scheme in the form of large green areas

The evolution of the urban landscaping system has developed in one direction, the urban landscaping system needs to be brought closer to the natural framework by introducing a continuous landscaping system into the city's structure, which contributes to the development of the urban environment and improving the quality of human life. The historical aspects of the development of protected areas are considered in many scientific guides. For example, Nikolai Fedorovich Reimers and Felix Robert Shtilmark in their work "Specially Protected Natural Areas" note that, based on historical experience, there are three approaches to the organization of specially protected natural territories:

- the first approach is based on the idea of protecting natural resources: water, forests, soils and others;
- the second arises from the understanding of the need to protect the animal and plant world;
- the third is associated with the desire to preserve the beauty and aesthetic values of nature for the recreational needs of man [4].

Currently, organizations of specially protected natural areas are available in almost all countries of the world. At the same time, each state has its own categories of organization of specially protected natural territories, in accordance with their national traditions and the experience of other countries. Owing to the enormous diversity of organization of specially protected natural territories, a classification that would cover all categories well-known in the world has not yet been created [2].

The leading international organization in the field of territorial nature conservation is the International Union for Conservation of Nature (IUCN), which was created in 1948. The classification of specially protected natural areas developed by IUCN is one of the most popular worldwide. The first classification was developed by IUCN in 1978, the next in 1994. In accordance with this classification, six main categories and two subcategories are distinguished (Table 3) [5].

Table 3. IUCN Classification by Categories of Protected Areas.

Category	Description
I-A Strict Nature Reserve	Land and (or) sea area, including unique or typical ecosystems, geological or biological objects and (or) species, protected mainly for scientific research and (or) environmental monitoring
I-B Wilderness Area	A large undisturbed or slightly disturbed area of land and (or) sea, which has retained its natural properties and communications, has no permanent or significant settlements, is protected and managed in such a way as to maintain its natural state
II National Park	A natural plot of land and (or) sea, intended for: preserving the ecological integrity of one or more ecosystems in the interests of present and future generations
III Natural Monument	Territory, including one or more natural or cultural objects of outstanding or unique ecological, scientific, aesthetic, cultural or other value due to its representativeness, rarity or other properties
IV Habitat/Species Management Area	A plot of land and (or) sea, managed by active human intervention in order to maintain habitats and (or) maintain other conditions necessary for the existence of certain species
V Protected Landscape/Seascape	A land plot, and, where necessary, a coast and a sea, on which long-term interaction of man and nature formed a landscape (sea landscape) with valuable environmental, aesthetic and (or) cultural characteristics and a high level of biological diversity. Maintaining the integrity of such a traditional interaction is a necessary condition for maintaining, maintaining and developing the territory
VI Managed Resource Protected Area	Territory including predominantly unchanged natural systems managed to ensure long-term conservation and maintenance of biological diversity while ensuring a steady flow of natural goods and services to meet public needs

The distribution of protected areas of the world by IUCN classification categories is presented in Table 4.

Table 4. Distribution of protected areas of the world by IUCN categories.

Category	Area, km ²	Percentage of protected area,%
I-A	1 033 888	5.5
I-B	1 015 512	5.4
II	4 413 142	23.6
III	275 432	1.5
IV	3 022 515	16.1
V	1 056 008	5.6
VI	4 377 091	23.3
Uncategorized	3 569 820	19.0

Total	18 763 407	100
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Thus, based on the data in the table on the area and percentage of the protected area occupied by the area, category II - national parks and category VI - protected areas with managed resources prevail among all categories.

This classification of the categories of specially protected natural areas of IUCN differs significantly from the categories of specially protected natural territories of the Russian Federation. When using it, it is worth considering such aspects as: tourism and recreation, sustainable use of natural resources, nature management in general.

State nature reserves and national parks are specially protected natural areas of federal significance. State nature reserves, natural monuments, dendrological parks and botanical gardens can be assigned to specially protected natural territories of federal significance or specially protected natural territories of regional significance. Natural parks are specially protected natural areas of regional importance [6].

Figure 1 shows the scheme of the Russian Federation with the display of shares by area and the number of specially protected natural territories of each subject by federal, regional and local value.

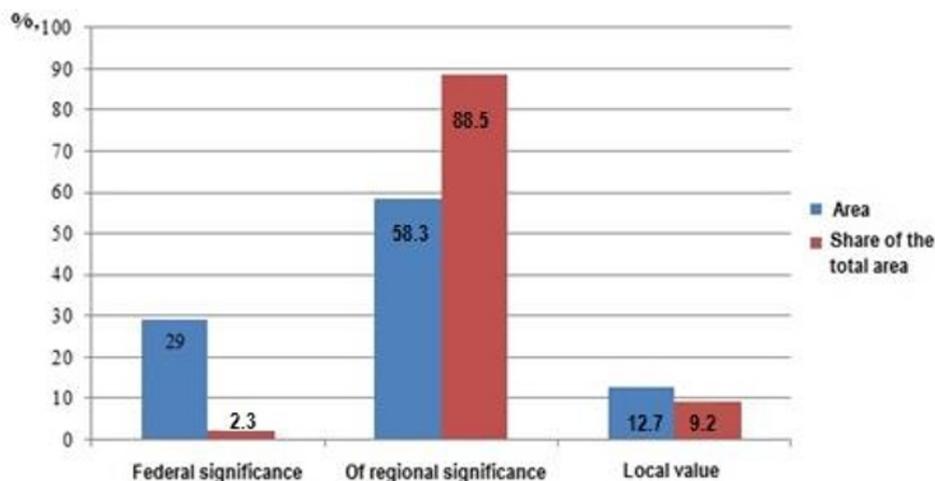


Fig.1. The proportion of specially protected natural areas of various importance from the total area and quantity.

In the Russian Federation in 2017, there were about 12,000 specially protected natural territories of federal, regional and local significance, the total area of which amounted to 232.7 million hectares (taking into account the marine area). Since 2010, the total number of specially protected natural areas decreased by 38 units (0.3%), the total area occupied by specially protected natural areas increased by 25.4 thousand ha (10.9%) and amounted to 13.6 % of the territory of the Russian Federation (in 2010 this figure was 12.3%). A particularly active increase in the number of specially protected natural areas was noted in 2013, and areas in 2017.

3 Problems of development of the green zone in the city border

In modern conditions, the problem of preserving and improving the environment surrounding a person in a city, of creating conditions in the city that have a beneficial effect on a person's psychophysical state, which is especially important when, during a period of intensive growth and development of a city, the person's communication with nature is

more and more reduced, is very important. and inner-city plantations support this connection.

Green areas in the city are territories that create an integrated architectural and landscape complex, form the individual look of a residential district and a microdistrict of the city, fulfill an ecological function and are used to relax the population.

Unfortunately, there are a number of problems that affect the development of the recreational complex and hinder the functioning of the network of specially protected natural areas.

Problems are divided into two types: external and internal. External issues include:

- lack of effective public administration of the system of specially protected natural territories;
- inadequate financial support from the state in the field of development of the tourist and recreational complex;
- imperfection of the regulatory and legal framework for managing the system of specially protected natural territories;
- the lack of medium and long-term strategic planning documents for the development of specially protected natural areas.

The problems of an internal nature include:

- low activity of investors in the tourism sector;
- low development of tourist routes and the level of service that does not meet modern requirements, which reduces the efficiency of using regional recreational resources;
- low rate of development of the market of health, active and other specialized types of leisure and tourism in demand;
- the need for modernization and reconstruction of areas for recreation.

Among the above problems, a special role is played by the problem of land management of specially protected natural territories as the basis for their functioning. It should be noted the poor development and insufficient number of scientific studies of this aspect. The solution to the problem of the lack of financing of specially protected natural territories includes the promotion of ecological tourism in these territories.

The relationship of recreation, tourism, on the one hand, and specially protected natural areas, on the other, has a long history. For example, one of the most widespread categories of specially protected natural territories in the world - national parks, was originally planned as territories where nature protection will be combined with recreation. Moreover, in specially protected natural areas, recreation and tourism, of course, cannot be represented by their traditional (mass) forms. There are many examples in the world of how mass tourism causes significant damage to the environment, which is incompatible with the solution of tasks assigned to specially protected natural territories. Despite the fact that the relationship between tourism and specially protected natural areas is complex and often contradictory, it cannot be denied that tourism is a significant factor when considering the creation of many specially protected natural areas and their management.

The concept of ecological and sustainable tourism is reflected in the works of foreign authors, including the scientist B. Steck [7].

Thus, according to domestic and foreign authors, the implementation of ecological tourism within the boundaries of objects of specially protected natural territories should be carried out taking into account the safety of such territories, as well as their sustainable development.

To date, the problem of the state and development of facilities for leisure and recreation of the population is relevant. Much attention is paid to the issues of modernization, improvement of urban angry territories and projects for the reconstruction of green areas

are being developed. The main objective of the construction of a new or reconstruction of an existing facility is to create an architectural and artistic setting contrasting with the city.

4 Discussion

It is worth noting that the development of territorial forms of nature conservation in Russia in comparison with other countries is very specific. This is due, first of all, to the huge size of the country, a significant part of which is not affected by human activities, low average population density (with very high regional contrasts), scientific traditions, in accordance with which the emphasis has long been placed on the development of specially protected natural territories organization of reserves [8-10].

At the heart of the development of Russian specially protected natural areas there are several components:

1. Creation of new specially protected natural territories. Despite the underfunding of even existing facilities, the new specially protected natural territories nevertheless receive legal protection (in the best case, at the land user level). In recent years, the support of the World Wildlife Fund has been of great importance for organizing new specially protected natural territories, because the international community sees in Russia a country with rich reserves for creating specially protected natural territories for the effective protection of the landscape and biological diversity of northern Eurasia.

2. Improvement within the regional network of specially protected natural areas on the basis of a systematic approach, the creation of individual networks of specially protected natural areas of ecological networks.

3. Ecological restoration of disturbed territories, especially in the old developed regions, with restoration of landscapes and biodiversity close to the original ones.

Thus, it is worth paying special attention to the regulation of the recreational use of natural complexes of specially protected natural territories, including by optimizing the functional zoning, identifying sites for each territory where tourism and recreation are allowed, as well as possible restrictions for these sites related to their natural features. In general, the regulation of the recreational use of specially protected natural areas is a weakness for a significant part of specially protected natural areas of regional and local significance.

Today, the attitude is largely consumer on the part of the population (primarily as an object of recreation) and hostile on the part of authorities and business structures as an obstacle or obstacle to the development of a particular economic activity. The lack of proper support for specially protected natural areas, both from public authorities and from the general public, is a problem of the system of domestic specially protected natural territories of all levels. And the stable functioning of this system is unthinkable without the growth of such support. As foreign experience shows, one of the mechanisms for the formation of such support is consistent, thoughtful and professional enlightenment, and the promotion of nature conservation ideas carried out in the system of specially protected natural territories, both federal and regional.

It is worth noting that the system of specially protected natural areas in the United States is based on the organization of national parks, which were created primarily to provide people with conditions aimed at rest and acquaintance with wildlife. The activity of the parks system is subordinated to the main goal - to make the rest of people the most useful and comfortable, which does not interfere and even is an incentive for many parks to preserve large territories almost in their original form [4, 10-11].

The area of US national parks varies from 360 hectares to 890 thousand hectares. National parks, in fact, are natural laboratories for research in the field of geology, zoology, botany, ecology, geography. Some of them serve as the last refuge for endangered species

of animals. In addition, a large number of unique natural monuments in the territory of national parks attract tourists and vacationers, which provides large revenues from the realization of the recreational potential of these territories. In the national parks of America, planning and organization of the territory is carried out in order to ensure the conservation of wildlife, while the priority is given to meeting the needs of people in the recreational, cognitive and other uses of specially protected natural territories.

In Western Europe, unlike the United States, with its vast territories of undisturbed nature, the system of specially protected natural territories and ecotourism are developing against the backdrop of a densely populated and almost fully developed landscape. This explains the small size of the protected areas, their dispersion, as well as the predominance of non-strict forms of nature conservation. However, overseas Europe accounts for more than 1/2 of all protected areas of the world and more than 1/3 of their total area. According to the number of national parks, the top five include Finland, Sweden, Poland, Norway, Italy, and by the size of the territory they occupy - Norway, Italy, Great Britain, Romania and Germany. The most significant areas of unspoiled nature are preserved in the north of Europe.

The main form of nature management in specially protected natural areas of Western Europe, as well as in the USA, is recreational (or ecological tourism). However, the West European model of eco-tourism is different from the model used in the USA. The Western European model involves ensuring maximum comfort for human life in nature: the construction of hotels and campsites, the development of a transport network. Such tourism, on the one hand, is expensive, but on the other hand, it brings higher incomes. However, the main drawback of the model is the large anthropogenic pressure on natural territories, which leads to disturbances in natural landscapes, air, soil and water pollution, an increase in the disturbance factor for wild animals, and so on [4].

With regard to the global experience of nature conservation, based on the materials of the Fifth World Congress of Protected Areas, which was held in Durban, South Africa, in September 2003, some principles and methods of territorial nature conservation that are new to Russian reality can be proposed. These materials clearly show a desire to increase the practical contribution of specially protected natural territories to the economic activity of the regions, including in the interests of indigenous peoples, without prejudice to the basic environmental functions of these territories.

The Durban Congress also proposed a fundamentally new paradigm of protected areas. It is based on the concept of protected areas as providers of various goods beyond their own borders. Protected areas should cease to be perceived in society as islands of ecological well-being isolated from the outside world.

Based on the numerous works of domestic and foreign researchers, the following can be attributed to the number of “provider functions” of specially protected natural territories:

1. Atmospheric air, saturated with oxygen, purified from harmful impurities, “ennobled” with useful substances, volatile substances.

2. Water resources arising and enriched in specially protected natural areas, flowing through them, replenished and subjected to biological self-purification, regulated due to the action of natural factors, enriched in fish and other aquatic organisms. Soils saved from erosion and pollution.

3. Useful animals, in particular, hunting, insectivorous birds and others, moving outside the specially protected natural territories and “enriching” the animal world of the surrounding regions.

4. Plants - useful and neutral - gradually moving out of the specially protected natural territories.

5. The aesthetic function of specially protected natural areas, comfort and enjoyment received by the population from contemplation of beautiful landscapes, unique objects of nature, when getting acquainted with them using various media.

6. The general role of specially protected natural territories as a stabilizer of local and regional natural equilibrium, the ecological balance of territories [11].

5 Conclusion

The most common is the ecological and geographical approach to the organization of the system of natural protected areas. According to this approach, the main task of organizing systems of specially protected natural territories is to achieve a system-ecological balance. This means that such a system should fulfill two opposite functions simultaneously: first, to ensure the conservation of natural homeostasis as the basis for a certain level of economy and the possibilities for its development in the future; and secondly, to protect the natural environment for the existence of people. That is, it is necessary to create conditions for the relatively conflict-free functioning of all systems of nature and society [12].

Such a task can be accomplished in the course of environmental planning - calculating the potential withdrawal or other exploitation of natural resources or territories without noticeably violating the existing or expected (economically feasible) natural balance and without causing significant damage to one economic sector by another if they use their natural goods in a competitive manner.

Work in the region should begin by determining the nature of the composition of ecosystems of various levels of complexity. In this case, the most noticeable natural formation is the basin of the river, stream, and other waterways and reservoirs, the optimization of the water regime of which is a developed task. Further, the absorptive capacities of ecosystems, the optimum ratio of their sizes with agricultural systems, taking into account the flora and fauna requirements, recreational needs and others can be established. It is advisable to compare the environmental optimum with the existing land use grid, determine cadastral land differences and, on the basis of all planned and actual materials, select a system of plots that best meets the needs of nature conservation and the economy, taking into account the prospects for its development and increased "pressure" on the environment.

Thus, this approach to the organization of specially protected natural territories proceeds from a management-environmental concept. Protected areas should be a single, focused and functional system capable of managing ecological balance and the environment in accordance with the needs of human society.

The most common type of nature management in specially protected areas is recreational nature management. The problems of organizing recreational nature management are currently receiving increasing attention. On the one hand, this is due to the growing popularity of ecotourism, the main objects of which in its classical interpretation are specially protected natural areas. On the other hand, this is dictated by the aggravation of the contradictions between the tasks of nature conservation and the consequences of the recreational - the degradation of protected natural complexes and the emergence of a number of other geoecological problems.

One of the main forms of organizing the territory for the implementation of leisure and environmental education are environmental routes. Unlike ordinary tourist routes, ecotopes are designed to solve three main tasks at once:

- expansion of basic knowledge among visitors about objects, processes and environmental phenomena;
- training in their skills to identify and evaluate the results of human exposure to the environment;

- education of environmental culture of human behavior.

But along with solving the problems of training, education and recreation, ecological paths contribute to the protection of nature. They are a kind of regulator of the flow of visitors. In addition, the trail provides the opportunity to comply with the environmental regime in a certain territory, as it facilitates control over attendance and the implementation of established rules.

The accumulated world experience demonstrates that the implementation of recreational nature management in specially protected natural areas, provided it is scientifically based on territorial planning and management, can make a significant contribution to:

- 1) the protection of natural complexes;
- 2) socio-economic development of the region;
- 3) increasing the overall level of environmental education and culture of tourists and local people.

Having studied the theoretical foundations of the development of green areas of the city, we can conclude that the landscaping system plays a large and significant role in the formation of the urban environment.

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