



Zarafshan National Nature Park as an Object of Ecological Tourism

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Abstract: The article provides information about the potential of the Zarafshan National Natural Park as an object of ecological tourism. The unique nature of the tugai forest is described, the importance of natural ecosystems in maintaining biological diversity is given.

Keywords: nature reserve, nature, forest, nature, park, ecosystem, biodiversity.

Introduction.

The preservation of natural forest ecosystems, against the background of the general deterioration of the ecological situation in the region, is a task of paramount importance. In the National Biodiversity Strategy and Action Plan for Uzbekistan, tugai forests are classified as ecosystems requiring urgent conservation measures [5].

Forests, performing protective, protective, medical functions, contributing to climate regulation, are one of the most powerful factors for improving the environment and the ecological situation. Uzbekistan is a country with a rare forest cover. The area of forests in the republic is only 18.2% of the total territory of the country [7].

Floodplain forests or tugai have been preserved in the form of narrow strips or islands in the valley of some rivers of Uzbekistan on an area of about 75 thousand hectares - less than 1% of the total forest fund and make up only 2% of the strictly protected territory in Uzbekistan. Floodplain forests are of particular interest, since here there is a special complex of flora and fauna inherent only in this natural ecosystem. This is due to the combination of the river and the arid territories through which these rivers flow, as a result, a peculiar and complex ecosystem is formed, including such components as forests, wetlands, semi-deserts and a river.

Methods. Tugai forests are unique biotopes of great importance for the conservation and maintenance of biodiversity in Uzbekistan. That is why the ecosystem of the Tugai forest is included in the Global List of 200 of the World Wildlife Fund (Eco-region 134).

In addition to the richest biological resources, forests also have significant recreational and economic resources. Tourism is considered as a priority sector in the structure of the national economy and one of the main factors of regional development in the Republic of Uzbekistan, one direction of which is ecological tourism. There are enough unique places in the region that could successfully become objects of ecological tourism.

Zarafshan National Nature Park is considered an example of such a peculiar corner of nature. Located in the middle reaches of the Zarafshan River, a narrow intermittent strip of tugai forest,

originally dedicated to forestry, was transformed into the Zarafshan State Reserve in 1975, which was reorganized in 2018, giving it the status of the Zarafshan National Natural Park. Previously, the area of the territory was 2,066 hectares, by now it has increased to 2,426.4 hectares, of which 868 hectares are covered with forest. The nature park unites two narrow (300 - 1500m) sections stretching for 47 km on the right bank of the Zarafshan River.

Analysis. Tugai forests are the arena of life for many animals [1], here they find favorable living conditions. Dense thickets create protective conditions during the breeding season and in winter. The presence of a rich food base provides many birds and animals with food. One of the key factors of the rich diversity of plants and animals in the Tugai is the abundance of water. During floods that occur when snow melts in the mountains, all depressions are filled with water and for a long time enrich the tugai thickets with moisture.

The territory of the reserve is quite diverse in biotopic terms. This is due to the presence of two different natural ecosystems: tugai and semi-desert. This explains its rather high biodiversity: there are 24 species of mammals, birds – more than 200 species, reptiles – 10 species, amphibians – 2 species, fish – 18 species, invertebrates about 150 species and about 400 species of plants. As a percentage of the total biodiversity of the republic, this is: mammals - 22.2%, birds - 50.7%, reptiles - 17.2%, amphibians - 66%. 2 species of mammals, 26 species of birds, 2 species of fish, insects – species are included in the International and Republican Red Books [2].

There are many natural attractions in the Zarafshan National Nature Park that can serve as objects of an ecological tour. Vegetation. Despite the small territory, the flora of the park is quite diverse. According to the results of field research and processing of literary data, 376 species belonging to 229 genera and 69 families have been identified since the formation of the reserve to the present, the most complete of which are the families of cereals (48 species), compound (40), legumes (23), cruciferous (20), rosaceae (16), norichnik (12) [3].

The only relict tugai forest in the valley of the Zarafshan River is composed, mosaically mixing, of alder, willow, sea buckthorn, willow, grebenshchik, cattail, veinik, mixed-grass sea buckthorn, and others, in various combinations, formations. The sights of the Zarafshan Natural Park include 14 hectares of a relict species - turanga ivolistnaya. This is the only place in the region where turanga grows in such a compact form. Turangovniki consist of two species - Turanga glaucous (*Pópulus pruinósa*) and Turanga variegated (*Populus diversifolia*) - a species of deciduous trees from the genus Poplar (*Populus*) of the Willow family (*Salicaceae*) - low trees with an uneven, curved trunk and a sparse, tent-shaped crown.

To visit as a tourist attraction, turang forests are attractive in all seasons of the year. In spring - when the first sticky leaves break through, in summer – giving a pleasant coolness on a hot day, in autumn – crowns with light yellow foliage. In the Tugai, representatives of the Willow genus have become widespread, there are several species of it here: Wilhelms willow, Junger willow and Zarafshan willow. Only in the tugai of Zarafshan there are huge white willow trees. On the territory of the natural park, more than 100 hectares of the most valuable medicinal plant – buckthorn buckthorn, which is not found in such large quantities anywhere else in Uzbekistan, has been preserved and grows. This plant is represented by a wide variety of forms, differing in shape, color and size of berries.

In autumn, during the fruiting period, sea buckthorn thickets attract attention with an abundance of harvest and bright colors. Narrow-leaved loch is widespread throughout the reserve, composing sea buckthorn – loch, sea buckthorn - loch - turang, loch-hawthorn formations. The proximity of the Turkestan and Zarafshan ranges to the territory of the reserve explains the enrichment of flora by mountain representatives. Turkestan and Dzungarian hawthorn, wild plum, various types of rosehip, whole-edged barberry, blue blackberry grow here. The shrub layer consists

mainly of the comb and chingil, which occupy a significant area on the territory of the natural park and are represented by a rough comb, a branched comb, a spreading comb. A typical tugai species is the silvery chingil, which forms a tier of low-growing shrubs. Herbal tugai is composed of veiny, reed, licorice, erianthus, kendyr, cereal, wormwood formations. The most common types of herbaceous plants are erianthus ravenna, common reed, lanceolate kendyr, cylindrical imperata, ground vine, allep sorghum, knobby foxtail, field granary, meadow fescue, pochechuiny highlander, late mar, naked licorice, straight-horned fenugreek, forest prosvirnik.

The forms of herbaceous lianas are represented by fence vine, field bindweed, eastern clematis, Siberian tsinanchum, etc. The juicy bright greenery of the grass taiga attracts tourists in spring, during the flowering period of herbs. Two types of plants are included in the Red Book of Uzbekistan - Korolkov saffron and Kesselring's evergreen, whose exuberant flowering is celebrated in early spring.

Animals. Starting in the mountains, the intrazonal biotope of tugai thickets serves as a place for the exchange of animals of mountain and floodplain complexes. Tugai are among the richest habitats and are inhabited by a variety of animals. In the Zeravshan Nature Park. tolai hare, big-eared hedgehog, tamarisk gerbil, slepushonka, several species of voles, jackals, karaganka fox, steppe and reed cats are found, occasionally porcupine and badger. Of particular interest is the Bukhara deer (*Cervus elaphus bactrianus*), an endangered species listed in the International Red Book and Uzbekistan [4].

Thanks to the International Program for the Protection and Restoration of the Bukhara deer in its former habitat, an aviary group of Bukhara deer was created in the reserve, in 2005 several individuals were reintroduced to the tugai forest in order to restore the population of these animals. Currently, there is a population of Bukhara deer in several dozen individuals on the territory of the natural park. Representatives of the bird class include about 200 species of birds, among which there are rare and endangered. Among them is the Zarafshan pheasant. This is one of the most attractive birds of the tugai forests. Of particular interest are such bird species as the white-winged woodpecker, the croaker, the common turtle dove. Birdwatching in the nature park is possible in all seasons of the year. During the spring and autumn migration, one can observe the flights of cranes, birds of prey, goose-like, stork-like, a large number of passerines.

Only in spring and summer there are tyuvik, cheglok, golden squint, blue-lark, splyushka, southern and tugai nightingales. Gray and white herons, buzzard, white-tailed eagle, sparrowhawk, black-throated thrush and blackbird, red-backed redbird, finch, gray crow and other bird species winter in the reserve. Typical for this territory are such reptiles as the steppe turtle, yellow-bellied, desert gologlaz, water snake, patterned runner, snake arrow, amphibians - green toad and lake frog.

The Zarafshan River, which flows along the natural park, is the main water source of the protected area. The existence of the tugai largely depends on the river. Zeravshan, changing its course, often washes away the shore along with vegetation, which leads to a sharp reduction in the area of tugai. Insufficient moisture leads to the fact that the tugai vegetation dries, and with them the whole complex of animals living in them dies. One of the main problems of preserving natural ecosystems is that all forests, despite the special protection regime, experience a colossal negative anthropogenic load. Tugai forests, in addition to the natural habitat of species, are also a source of livelihood and life support for the local population. The economic crisis and the strong dependence of the population on the use of natural resources for current needs, weak financing of environmental protection measures complicate this problem.

The situation is aggravated by the low awareness of the population about the need to preserve natural communities. Misunderstanding of the negative consequences of consumer attitudes to the environment leads to the fact that the rural population living near the natural park violate the

protected regime. The impacts inflicted by rural residents on the fauna and flora of forest ecosystems are different, but the most harmful of them are the following: grazing, haymaking, picking berries, fruits, medicinal herbs, poaching, cutting down trees and shrubs, collecting brushwood and dead wood. This leads to a change in forest ecosystems with the whole complex of its inherent components of flora and fauna.

The organization of an eco-tour of the Zarafshan National Nature Park, both for schoolchildren and for other age groups of the population, can contribute to raising awareness of the uniqueness of the nature of the region, will contribute to the involvement of the local population in environmental activities, will create additional jobs, increase employment, will contribute to improving environmental literacy and instilling skills of ecological culture the younger generation and the local population. Uzbekistan is a country located on the Great Silk Road. Historical and educational tourism is one of the main ones in the republic. Using this well-known product on the market as the main "magnet" for tourists, it is necessary to offer along the way what is still little known to foreign and domestic consumers, linking them together in one tour. Such by-products are ecological and ethnographic tourism, which has begun its development in the country, but has not yet gained a foothold in the international market. To attract foreign tourists, these two types of tourism should be considered as a whole.

Conclusion. Improper organization of the work of the initial stages of the development of ecological tourism can be accompanied by negative effects on natural complexes. The creation of infrastructure involving the construction of buildings is often accompanied by the destruction of woody and shrubby vegetation, contamination of the territory with construction and household garbage, chemical treatment of plants in the economic zone, the work of construction and agricultural machinery, violation of the environmental regime by tourists - far from a complete list of negative impacts on nature.

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