ASSESSMENT OF ANTHROPOGENIC ACTIVITIES ON THE TOURISM AND RECREATION TERRITORY OF OLKHON ISLAND (IRKUTSK REGION, RUSSIA)

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Abstract. The article presents the current state of recreational nature management on the territory of Olkhon Island and gives estimation of the recreational load on natural complexes and vegetation cover digression in 15 key areas within the Olkhon region.

Key words: Olkhon Island, recreational activity, recreational load, recreational digression

Currently recreational nature management is getting one of the most actively developing line in the country's economy in general and in the regions, in particular. However, despite the dependence of this type of nature management on natural resources and conditions, the anthropogenic load on natural complexes only increases, which eventually can lead to their degradation. In this regard, there is the problem of optimizing of recreational areas usage to prevent the degradation of geosystems and the preservation of comfortable conditions for a variety forms of tourism.

Particularly, the recreational activity on the territory of Olkhon Island is developing exponentially, as one of the most attractive places for tourists in Baikal region, with a lot of sunny days, unique landscapes, diverse flora and fauna, etc.

According to the data of Olkhon region administration for 2011-2016 [1], the number of visitors to Olkhon Island grows annually (from 411 thousand people in 2011 to 651 thousand people in 2016) (Figure 1), so it is important to determine whether the actual recreational load exceeds the permissible recreational load.

To determine the recreational load, it is necessary to know the lump-sum of tourists per unit area. Measurements of recreational load were carried out using a route method - a visual calculation of the tourists number during the high tourist season - in July. According to OST 56-100-95 “Methods and units of recreational loads on forest natural complexes” [2] determine the recreational load, characterized by recreational density.

Permissible loads on local terrestrial ecosystems of the Baikal's natural territory ecological zone during the continuous stay of people during the vegetation period are defined in the Order of the Ministry of Natural Resources of the Russian Federation of March 5, 2010 №63 «On approval of the standards of maximum permissible impacts on the unique ecological system of Lake Baikal and the list of harmful substances, including substances belonging to the categories of especially dangerous, highly dangerous, dangerous and moderately dangerous for the unique ecological system of Lake Baikal». For the coastal strip of the western coast of Lake Baikal the permissible load is 1 person per 1 hectare for continuous stay of people during the vegetation season [3].

Fig.1. Number of visitors of the Olkhon region, 2011-2016.
According to the results of the calculations, it was found that the recreational density exceeds the permissible load in such areas of study as, Saraiskii Bay, Tashkine Creek Valley, Khankhooi Bay, Khuzhirsky Beach, Semisosenny Bay, Bolshoi Khargoy Bay. For these study areas, a recreational density of 1.33 to 9.34 people/ha was obtained.

Field research in 2017 was carried out in 15 key areas (14 on Olkhon Island and one in the Tazheran steppe).

Within the framework of the research, geobotanical descriptions were implemented, test plots and key areas were laid. Determination of the stages of recreational digression was carried out by using the method of laying trial plots. The studies were carried out both on areas intensively used in recreational activities and on unbroken reference analogues.

Investigation of trial plots on Olkhon Island showed that in almost all the study areas there are clearly signs of recreational digression of vegetation cover of 4-5 grade. And along with this, there is a regularity: the farther from the lake, the less the degree of digression, the most remote platforms from the shore were taken as reference areas.

It was noted that in relation to the influx of tourists in July, there was a noticeable increase in the trampling of soil and vegetation cover, mechanical damage to plants, and at some sites there was an increase in soil density in comparison with to measurements that were conducted in May. Thus, the bulk density, which is the most objective indicator of the level of impact on the soil, in recreation areas is 0.97-1.74 g/cm³, and in the background areas 0.88-1.27 g/cm³.

Additionally, according to Hansen Global Forest Change’s data (version 1.4) [4], it was noticed that from 2000 to 2016 around 1.7 thousand hectares of forests disappeared on Olkhon Island, primarily as a result of forest fires, as well as in consequence illegal logging. With that almost all the sources of forest fires are confined to the places where the tourist routes lie, and the most significant space of burned-out forest (about 0.8 thousand hectares) are located in the immediate vicinity to the Tashkine Creek Valley (Fig. 2). And illegal logging is also often associated with the construction of tourist facilities on Olkhon Island.

As a result of the studies, it was found that recreational activities on Olkhon Island have a significant impact on the vegetation and soil cover of the areas under investigation.

Mass tourism leads to the poaching of the flora, contributes to the intensification of forest fires on the protected area, which can lead to negative and irreversible consequences.

References
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