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TRANSFORMATION OF TRADITIONAL CULTURAL LANDSCAPES

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*Abstracts and Guide Book*



Matevž Lenarčič



## **IGU Thematic Conference »Transformation of Traditional Cultural Landscapes« – Abstracts and Guide Book**

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## **GEOSYSTEMS-INDICATORS OF CLIMATE CHANGE AND CULTURAL LANDSCAPE RECOVERY IN TIGIREKSKY RESERVE AND ITS PROTECTIVE ZONE (ALTAI KRAI, RUSSIA)**

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The Tigireksky Reserve was established in 1999 that contributed to recovery processes there. Economic development of the territory began in the XVIII century and led to a significant decrease in forest areas due to logging, fire and plowing. The northern part of the reserve is more anthropogenically transformed; for instance, 22 alien plant species are noted here, and 2 – in the southern part. In the northern part, the forest-steppe belt is expressed; its geosystems are climatic change indicators by the forest/treeless area ratio. Since 1838, a positive trend in surface air temperatures of 2.86°C/167 years in Barnaul was revealed (Kharlamova, 2013). According to ECMWF ERAI in 1979–2017, an increase in average temperatures of the year by 0.22°C/39 years (16.1%) and warm period by 0.57°C (5.8%) for the reserve was registered. The analysis of the landscape map (Chernykh, Zolotov, 2015) of the reserve northern part allowed us to rank the geosystems by Transformation (slightly – Ts, medium – Tm, heavily – Th), Recovery potential (high – Rh, medium – Rm, low – Rl), Indicativeness (Ih, Im, Il). To monitor solely climate changes, it is advisable to consider the geosystems Ts-Rh-Ih (0.2 km<sup>2</sup>, 0.1%) and Ts-Rh-Im (18.9 km<sup>2</sup>, 9.0%). For complex monitoring of climatic changes and recovery processes, the most promising geosystems are Tm-Rh-Ih (12.0 km<sup>2</sup>, 5.7%), Tm-Rm-Ih (0.7 km<sup>2</sup>, 0.3%), and Th-Rm-Ih (5.7 km<sup>2</sup>, 2.7%). The research was supported by RFBR grant 18-05-00007-a.

**Keywords:** landscape mapping, anthropogenic transformation, indicativeness, forest/treeless area ratio