

## **Anthropocene and bioclimatic potential of mountain resorts in the North Caucasus**

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There has been studied the influence of anthropocene (A) on natural curative resources (NCR) of the mountain resorts in the North Caucasus (MRNC) according to long-term monitoring (M) of NCR condition which is carried out by PRIC FMBA, aerosol of IFA RAS, landscape of SNP, and also references on the state of the environment (E). The healthcare effects of NCR were estimated from the position of the methods[1] accepted in balneology. Typification of anthropogenous factors of the surface atmosphere for MRNC is constructed on the basis of semirational analysis of rehabilitation properties of climate and landscape studied in the course of recovery treatment and health-improving rest of profile patients in clinics of PRIC FMBA taking into account the factors of aerosol pollution of the atmosphere by the technique[2].

In the development of A in the MRNC it is possible to allocate three conditional periods:

- 1803 - 1880 - the natural ecosystem of MRNC is almost not changed (10-20%), there were the first signs of influence A on E;

- 1881-1970 - the natural ecosystem of MRNC is slightly changed (21-70%), the formation of new forms of the resort landscape and town-planning, the development of mountain-sanitary control zone to decrease anthropogenic pollution of E. According to M the medical and health-improving potential of NCR is increased and high (2,35-2,75 points; 78-92%);

- 1971-2015 - the natural ecosystem of MRNC is moderately transformed (71-85%), there is a consolidation of building of city and resort zones, signs of global climate change (the increase in the annual amount of precipitation by 10% (since 2002), episodes of excessive heat (max >30) for 12.4%, thermal balance of the person is higher than +600 W/m<sup>2</sup> for 11%. There have been revealed some new specific rehabilitation properties of NCR and there have been denoted some criteria of their protection. According to M the medical and health-improving potential of NCR is increased and high (2,18-2,68 points; 73-89%).

The multicomponent analysis of the received materials is the basis for a valuation technique of the pathogenic action of anthropogenic factors on NCR and it can be used for justification of measures to decrease the development of A.

### References:

1. Resort Study of Caucasian Mineralnye Vody region / Under the general edition of MD, prof. V. V. Uyba. Scientific publication. - Pyatigorsk: PSRIRS FMBA. Volume 1. -2009. -335p.; Volume 2. -2011.-368p.
2. A technique of balneological assessment of forest-park landscapes of mountain territories for climatolandscapetherapy at resort treatment of the contingent which is subject to the service of FMBA of Russia//Textbook for doctors. (Authors: Efimenko N.V., Povolotckaya N.P., Kaisinova A.S.) – Pyatigorsk, 2015.-24p.