= DYNAMICS OF ECOSYSTEMS AND THEIR COMPONENTS =

UDC: 504.058 (262.83)

ECOLOGICAL AND GEOGRAPHICAL ASPECTS OF THE ARAL SEA CRISIS. PART 2. RESEARCH OF CLIMATE DYNAMICS AND DRIED-UP SEA BOTTOM.

© 2020. N.M. Novikova

Water Problems Institute Russian Academy of Sciences Russia, 119333, Moscow, 3 Goubkina str. E-mail: nmnovikova@gmail.com

Received April 25, 2020. After revision May 01, 2020. Accepted Juni 01, 2020.

In the second part of the article, the researches on changes in climate parameters' in the territory of the Aral sea region, which took place in the conditions of the Aral crisis, and their current state are considered. Approaches to their study and evaluation used by different authors are described and discussed. It is concluded that by the end of the 1990s, the values of temperature, air, and the amplitude of its fluctuations at meteorological stations located earlier on islands and the sea coast, approached the values at weather stations located in the desert. This indicates that the period of climate change in the Aral sea region, caused by the fall of the sea, has ended. Studies on dust storms have shown that their activity is characterized by periods of increase and decrease, which is associated with changes in wind strength in different climatic epochs. Studies on the natural overgrowth of the sea floor indicate that the development of new terrestrial vegetation is going on very slow. Areas that were freed from water after the 2000s are not yet overgrown. Data from long-term observations of vegetation formation on integrated topo-ecological profiles on the new land, begun in the 1970s-1980s and continuing to the present, served as the basis for a theoretical generalization of the types of primary vegetation successions, factors of their development, changes in time of species richness, phytocenotic formation, the speed and direction of community changes, the final stages. It is concluded that most of the plant communities that have passed a long path of development (more than 50 years) on the coastal areas of the sea floor are still in the initial stages of formation. Experimental work on the formation of forest plantations on the dried-up sea bottom and publications on the results were actively developed in the period 1990-2010, but now there are practically no. The results of Kazakh and Uzbek scientists on the development of typology of forest growing conditions of the dried sea bottom, methods and technologies of phytomelioration for improving the survival of seedlings and the one-year-old young plants are considered.

Keywords: Aral sea, dry bottom, climate, temperature, precipitation, changes, trends, assessment, salt and dust transfer, dust storms, dusty snowfall, natural overgrowth, types of successions, assessment, soil salinization, sustainable species, phytomelioration technologies, features of plant species development in forest plantations.

DOI: 10.24411/2542-2006-2020-10062