

Source of financing	Grant funding of young scientists under the "Zhas Galym" project for 2023-2025 (Ministry of Science and Higher Education of the Republic of Kazakhstan)
Priority directions	Life and Health Science
Specialized scientific areas	Study, conservation and rational use of genetic resources of Kazakhstan. Innovative approaches to environmental monitoring and protection. The influence of environmental factors on human health;
IRN of the project:	AP19175101
Name of the project:	«Algoflora of water bodies of urbanized territories of SNNP "Kokshetau"»
Project Manager	Aizhan Zadagali, master of natural science
Implementation deadlines	2023-2025
Relevance	The problem of pollution with organic elements, leading to eutrophication of water bodies, is still relevant today for water bodies located even within specially protected natural areas (SPNA). The ecological state of aquatic ecosystems depends on anthropogenic factors. Natural phenomena such as climate change also lead to disturbances in the water balance and functional disturbances of the ecological system as a whole; also within the Kokshetau State National Park there are lakes such as Zerenda, Imantau, Shalkar, Kopa, etc., which are located near urban areas. In aquatic ecosystems, plants, including algal flora and higher vegetation, play a key role at the beginning of the food chain. The rest of life and the ecological sustainability of the system depend on the quality and quantity of aquatic flora. Algae indicator species are known in the world literature. However, different regions and different climatic zones may have their own types of indicators. In this regard, in relation to Kazakhstan's water bodies, not only indicator species, but in general, the taxonomic composition and floristic structure have been studied very poorly. All lists of algal flora are somewhat outdated, or even completely absent. The implementation of the project is necessary for the scientific substantiation and development of comprehensive measures for the conservation of biodiversity, aquatic ecosystems and water resources in general. An assessment and audit of the taxonomic composition of the algal flora of urbanized areas of water bodies of the SNNP "Kokshetau" will make it possible to prepare recommendations for the regulation and management of water resources.
Target	Study of the current state of biological diversity of aquatic algocenoses anthropogenically disturbed ecosystems using the example of SNNP "Kokshetau", monitoring of abundance and biomass for the purpose of bioindication of the state of water bodies.
Expected Result	2023: published sources on the state of polluted aquatic ecosystems will be analyzed, the ecological state of water bodies will be assessed based on hydrophysical and chemical indicators, and the main stressors affecting the structure of the phytocenosis will be identified. 2024: water sampling, identification, systematic analysis of microphytes, morphotaxonomic analysis of phytoplankton with assessment of the degree of water pollution by indicator species and assessment of diversity indices, assessment of the degree of water pollution by indicator algae will be carried out 2025: morphotaxonomic bioindication of aquatic flora with assessment of the degree of water pollution by indicator species, comparative morphotaxonomic analysis of phytoplankton in the studied water bodies.
Target consumers of the results obtained	Environmental institutions of Kazakhstan, students and teachers of higher educational institutions, scientific community