показал превышение ПДК по ДДТ и гексахлорциклогексану для водоемов рыбохозяйственного назначения. Полученные предварительные результаты показали крайнюю необходимость в разработке программы государственного мониторинга для озера Сон-Куль и проведения мониторинга на содержание СОЗ на постоянной основе.

Ключевые слова: мониторинг, озеро Сон-Куль, загрязнение, стойкие органические загрязнители, пестициды, очистка, ДДТ, полихлорированные бифенилы.

INTRODUCTION

A high-mountain Lake Son-Kul is the largest natural freshwater reservoir of Kyrgyzstan, a unique natural object, a beautiful geographical location of the Kyrgyz Republic and a potential center for ecological tourism in the country[1]. The lake is located in a huge cavity between two internal ridges of Tien Shan on 3016 m high above the sea level in the northwestern part of the Naryn region of the Kyrgyz Republic. The lake area is 36869 hectares (geographical location 41°50'N 75°07'E), the surface area is 278 km^2, the fresh water volume is 2.4 km^3, the length is 28 km, the width is 18 km, the maximum depth is about 14 m.

The eastern territory of the lake is a part of the Karatal-Zhapyryk National Nature Reserve. Ten species of fish have been recorded in the lake, and from 41 to 69 bird species are native for the lake area, while Son-Kul is an important migration point for waterfowls.

Currently, the Kyrgyz republic has faced an actual problem of cleaning Son-Kul Lake from pollution. An intensive fishing activity on Son-Kul Lake has resulted in accumulation of a large number of old abandoned lead weighted fishing nets at the bottom of the lake. When considering a way for removing the nets from the lake, an additional problem arose – a problem of the lake pollution with pesticides, the most of which are hazardous chemicals belonging to the group of persistent organic pollutants (POPs), whose production and use are currently prohibited by the Stockholm Convention on POPs [1, 2].

The lake was polluted by POPs in 1979 after a large locust breeding had occurred in the surrounding area followed by applying pesticides to find the solution. Subsequently, the pesticides had been washed out by atmospheric precipitation and the waters of small rivers and were gradually transferred into the water space of the lake, which led to the mass fish mortality, and catastrophically disrupted the established biocenosis of the lake.

The goal of the study was as follows. Before taking measures to clean the bottom of the lake by removing the old fishing nets, it was necessary to carry out an environmental monitoring for determining potential level of toxic pollution of water and bottom sediments of the lake, as well as pollution of fish inhabiting the lake. In addition to assessment of general risks to human health and the environment, it was also important to prevent the further spreading hazardous substances resulting from the stirring-up of contaminated sludge during the cleaning process. The results of the investigations are presented here.

CHEMICAL COMPOUNDS – MONITORING OBJECTS

All pesticides, which were found in the samples collected during monitoring

[1] https://www.youtube.com/watch?v=6HW0kkZP9mo