

Mini Review

Open Access

Caspian and Manych will Save the World

I. V. Kuzminov^{1,2}

¹Russian Geographical Society (Russian Academy of Sciences) 10 per. Grivtova, SPb 190000 (member N 13267-23) Russian Federation

²Royal Geographical Society 1 Kensington Gore London SW7 2AR (Ordinary member 1090229) UK

ABSTRACT

One of the consequences of global warming is an increase in the level of the world's oceans. The only natural reservoir for collecting excess meltwater is the Caspian Basin. The article suggests using this tank. This requires the construction of a spillway. The discharge of oxen is supposed to be from the Sea of Azov to the Caspian Sea. The Sea of Azov communicates with the World Ocean, respectively, the discharge will be from the World Ocean.

*Corresponding author

Igor Kuzminov, Russian Geographical Society (Russian Academy of Sciences) 10 per. Grivtova, SPb 190000 Russian Federation.

Received: May 09, 2023; **Accepted:** May 15, 2023; **Published:** May 30, 2023

Keywords: Global Warming, Sea Level Rise, A Natural Reservoir, The Caspian Sea, Manych.

Introduction

Currently, the climate process is in the stage of warming [1]. At this stage, the melting of glaciers leads to an increase in the level of the world Ocean. The rise and fall of the world ocean level is a natural oscillatory process. Currently, the economic activity of humanity stimulates the natural process of climate warming and rising sea levels.

The article suggests the causes of warming and rising sea levels. A proposal was made about a possible action in the fight against rising ocean levels. The Caspian basin is proposed as a natural reservoir for collecting excess water, and the Manych trough is proposed as a discharge channel.

The calculation shows that an increase in the level of the world ocean by 1 mm corresponds to an increase in the level of the Caspian Sea by 1m, in the case of discharge into the Caspian. The current rate of sea level rise is 0.5 mm/year. Dumping excess water into the Caspian Sea is the only way to somehow resist the rise in the level of the world ocean. The approximate geometric calculation does not take into account the significant increase in the area of the Caspian Sea with an increase in the level. In turn, accordingly, the evaporation area will increase, which may reduce the level rise. It is likely that a more accurate calculation and modeling will show a less significant increase in the level of the Caspian Sea.

The purpose of this article is to propose the use of the Caspian and Manych as natural objects for collecting excess water of the world ocean. We will also consider the technical feasibility of this project. The water discharge scheme is shown in Figure 1, 2.

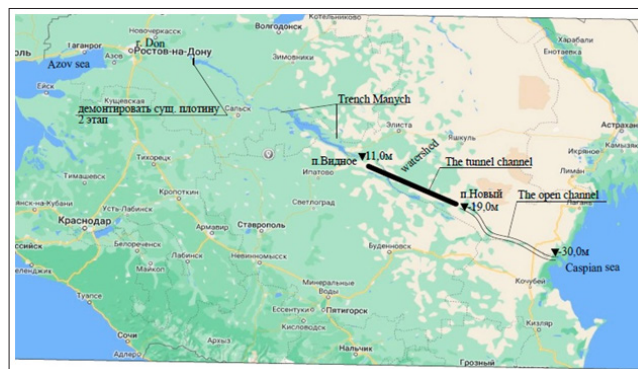


Figure 1

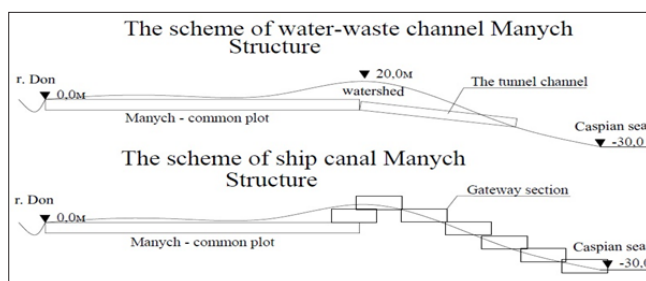


Figure 2

According to the hypothesis about the origin of the Black Sea, Manych and the Caspian [2] were previously natural regulators of the level of the world ocean and significantly influenced the Earth's climate. In order for the Caspian-Manych system to be naturally incorporated into the world ocean, the level of the world ocean must rise by 20m. By this time, several million km² of land will be flooded. For humanity, this will be a time of loss and deprivation.

The volume of annual melting of ice on the whole earth is 213 km³, this amount of water increases the level of the world ocean by 0.5 mm / year. If this amount of water is dumped into the Caspian Sea, its level will increase by 0.5 m/year. The solution of this problem can suspend the process of sea level rise, smooth this process. An increase in the evaporation area in the Caspian region will increase the average humidity in this region, climatic characteristics will shift from continental to marine, milder. An increase in air humidity will have a positive effect on the climate of the adjacent territories, it is quite possible that the Aral Sea will be revived. It is even possible that the optical properties of the atmosphere will change in the direction of reducing climate warming.

Now let's consider the technical possibility of implementing a project to use Manych as a discharge channel. The history of attempts to lay a shipping channel between the Volga and the Don has several centuries. Attempts were realized by the Volga-Don canal. Manych was also involved in projects and today represents an unrealized project of a shipping channel between the Azov and the Caspian Sea. The main obstacle to the canal is the watershed from the Ergeni hill. The land marks on the watershed are about 25m. To discharge huge volumes of water, a gravity channel is needed. To overcome the watershed, it is proposed to lay a tunnel-type discharge channel. The length of the canal is 85 km from the point. Vidnoe top. Novoe. The diameter of one channel thread is 10m. The throughput capacity is 6 km³/year. Laying 1 thread of the channel is the 1st stage. Stage 1 also includes work on laying an open channel from p. Novoe to the Caspian Sea and drainage discharge of water from the Proletarian reservoir. At stage 2, it is necessary to perform dredging of the Manych fairway

in the drained area to minus 3m marks. The advantage of the tunnel section is that with this method of laying there are fewer earthworks, the work can be carried out in parallel, independently increasing the number of threads. The navigable section on the watershed can be performed by locks and reservoirs with gravity feed through closed pipes from the Tsimlyansk reservoir.

The throughput of one thread with a diameter of 10 m is 3% melting of snow caps. It is quite possible that there is no need to provide a 100% reset. For example, 10 threads will provide a 30% reset, or it is necessary to increase the thread diameters - this is a very real solution to the problem.

Conclusions

The project implementation solves the following tasks:

1. It will stabilize the level of the world ocean
2. It will increase the humidity in the region
3. It will normalize the global balance of evaporation, condensation and melting of moisture on the earth as a whole.

The proposed solution is global in nature. Accordingly, the decision on the implementation of the project should be made at the level of international organizations.

References

1. Kuzminov I V (2022) Physics of global warming-cooling cycles. Environment Pollution and Climate Change 6: 259
2. Kuzminov I V (2013) Hypothesis of the Black Sea origin. Eastern European Scientific Journal N6 http://www.auris-archiv.de/mediapool/99/990918/data/DOI_10.12851_EESJ201312.pdf