

MONITORING OF WATER RESOURCES OF THE AYDAR-ARNASOY WATER SYSTEM

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ANNOTATION

This article studies the reservoir, water volume, water mineralization, and monitoring of the Aydar-Arnasoy lake system in 2004-2022. As a result of the monitoring, a decrease in water level and an increase in salinity were identified, and preventive measures were proposed.

Keywords: collector, reclamation expeditions, hydrological station, ecological ministry.

KRISH. The Aydar-Arnasay lake system (hereinafter referred to as the lake system) was formed in the middle of the 20th century, saturated with the waters of the hard Qli River. It is salted from its Tuzkan part .

Later, Mirzachul developed as a result of land conversion. In particular, the construction of the Central Mirzachul Collection in 1957 and the Chordara Reservoir in 1965 led to significant changes in the high-quality water regime.

The main water resources in the Kullar system are the Central-Mirzacho'l, Chegaraviy, ARK-1, MK-9, MK-11, MK-12 and Arzon water basins of the Republic of Uzbekistan, reservoirs on the territory of the Republic of Uzbekistan and the Republic of Uzbekistan, which drain collector-drainage and flood waters in the Jizzakh and Syrdarya regions. The reservoirs consist of stored water.

reclamation expeditions, monitoring of water supplied to the system of protective lakes of the Jizzakh Aquatic Plants Department, and production mineralization works are being carried out.

ANALYSIS. hydrometeor West Arnasay hydrological station in the main main lake system It is a structure that monitors the water in the system in terms of its location, mineralization, and precipitation.

1969 flood on the Syrdarya River, 21 billion cubic meters of water were released into the Aydar-Arnasay lake system to transfer water to Chordar .

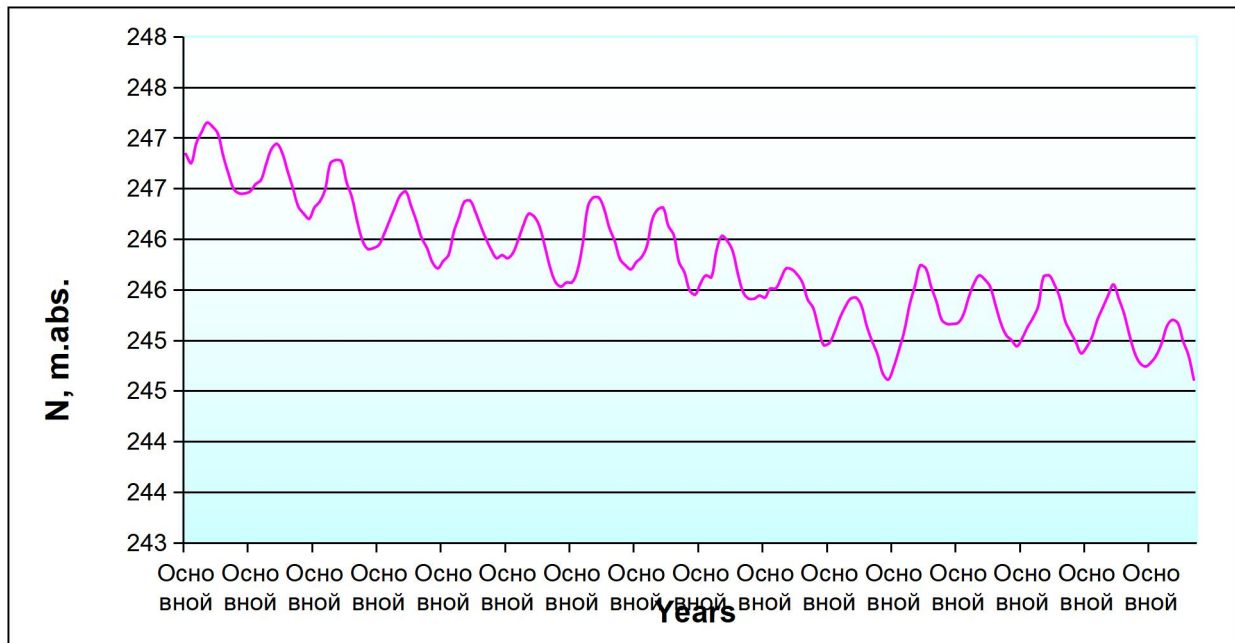
According to Uzhydromet, a large amount of water from the Chordara reservoir has been frozen for many years, resulting in a flood in 2005. **The maximum** water height in the lake system is 247.42 m. (From your Baltic Sea) rose to an absolute mark. At this mark, the water production surface of the lake system was 370.6 thousand hectares, and the volume was 44.26 billion cubic meters.

Since 2005, there has been a sharp decrease in the amount of water discharged from the Chordara reservoir into the Arnasay lake system. The ecological safety of the water system and adjacent areas has begun to deteriorate.



The redistribution of water balance elements in the lake system is associated with the distribution and annual changes in the water structure. For example, during the period 2005-2021, the water level in the lake system fluctuated between 0.56-1.17 meters.

from the Chordara reservoir to the Arnasay reservoir into the lake system in **2009 , 2011 , 2013-2016 , and 2020. As a result, the water level in the lake system** has decreased by 3.12 meters per hour for 15 years.



Changes in the water system in the Aydar-Arnasay lake system

And on time Four-legged reservoir Due to the low water flow into the Arnasay reservoir , Only water enters the lake system from collector-drainage networks .

hydrometeor According to the data, **as of February 20, 2022 ,** the water volume in the storage indicator system **was 34.03 billion cubic meters. billion cubic meters less),** and the surface of the water system **is 317.2 thousand heck (53.4) less than a thousand hectares).**

The average annual loss of water from the Aydar- Arnasay lake system was 3.9 billion cubic meters .

The annual average of 2.4 billion cubic meters of water flows from collector-drainage networks to the slave system , compared to 1.85 billion cubic meters in 2008 . 2010 **2.8 billion cubic meters If water has fallen, an average of** 2.5 billion cubic meters of water will be discharged from collector and drainage networks in 2019-2020. water has fallen.

RESULTS

WATER BALANCE of the Aydar-Arnasay lake system (million cubic meters)

Components of the balance sheet	Years of action:											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019



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1	From the Arnasay water reservoir	648		554		1316					1918	2.1	247
	From groundwater	50	50	50	50	50	50	50	50	50	50	50	50
	Rainwater harvesting	556	952	666	737	575	748	670	709	859	865	567	721
	Collectors water	1854	2574	2817	2246	2386	2201	2097	2184	220	2580	2507	256
	Total:	3109	3576	4087	3033	4328	2999	2817	2942	3129	5413	3126	358
Consumption													
2	Evaporation	4333	4046	3905	3738	3698	3563	3271	4405	3855	3932	3623	383
	Groundwater	50	50	50	50	50	50	50	50	50	50	50	50
	Total:	4383	4096	3955	3788	3748	3613	3321	4455	3905	3982	3673	388
The difference													
	Changing water management taking into account balances	-1275	-520	132	-754	580	-614	-504	-1513	-776	1431	-547	-293
	Water volume coordinate development change	-1301	-563	106	-844	703	-738	-492	-1569	-737	1427	-527	-283
	Difference	26.27	43.01	-26.3	89.48	123.1	12.43	-11.8	84.08	-394	-4.83	35.12	-8.0



As a result of the reduction in water hardness in the aquifer system, the mineralization of the water in it is increasing year by year.

hydrometeor View information, lake system, annual average water level in the lower part of the Arnasay reservoir **mineralization** was 8.25 g/l in 2006 , In 2020, this limit will increase to 10.53 g/l, and in 2022, it will increase to 12.08 g/l. organization.

CONCLUSION

This, in turn, can have a serious negative impact on the lake system and the surrounding ecological situation.

Therefore, to process the water level and mineralization in the lake system, it is necessary to release 1.5 billion cubic meters of Uzbek water, of which 1.0 billion cubic meters will be released into the Aydarkovl reservoir and 0.5 billion cubic meters into the Arnasay reservoir .

Taking measures to flush the slave system and ensure external water safety.

The project to improve water management has been implemented to reconstruct the canals feeding the Arnasay reservoir by the South Mirzachul Canal.

As part of the project , a total of 24 billion 793 million soums were allocated from the state budget in 2018-2020 to finance the construction and reconstruction of 34.9 km of canals and 27 hydraulic structures that feed the Arnasay reservoir .

was released into the Arnasay reservoir , 37 cubic meters per second into the Left Branch Canal , and 6 cubic meters per second through the Right Branch Canal. or in the autumn-winter months, an additional 350-400 million cubic meters of water can be collected in the reservoir . This will allow the Arnasay reservoir to supply water to irrigated lands connected to it.

Also, the aid to Aydarkovl is increasing from aid to additional water supply project.

The total cost of the project is 65.8 billion soums , with a total of 30.3 billion soums of capital being invested in 2018-2020 .

After the project is fully operational, 450-500 million cubic meters of gas will be delivered to Aydarkol annually between November and February. It is possible to give water to the bird.

The following measures have been taken to reduce water mineralization and provide additional water in the slave system:

Complete the project for additional water discharge into the system of lakes in the form of water management within the established regulations;

For many years, the annual average flow of water from the Chordara reservoir has been 1.5 billion cubic meters , of which 0.5 billion cubic meters is supplied to the Arnasay reservoir , 1.0 billion cubic meters to Aydarkov To agree with the Kazakh side on the implementation of the project for the release of water in the specified amount, cooperation, and additional water release. To this end, to establish an intergovernmental working group with the Government of Kazakhstan;

take measures to annually discharge additional water into the lake system through irrigation canals;

Bathymetric measurements can be used to determine the exact volume of water in a lake system. To manage the management of water at water management facilities that discharge water into the lake system;



Establishing additional hydrological and other observation points in the lake system.

efficient use of water resources in the lake system, cleaning of collector and drainage networks that feed it;

management of the production of a proposal damaged by collector drainage waters; study of the experience of Arab countries in Israel; creation of a scientific basis in society; creation of a model of the water-salt balance of the lake system.

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