



## The Shores of Lake Balkhash

by GPF Staff - April 12, 2019

During Kazakh President Kassym-Jomart Tokayev's recent visit to Moscow, Russian President Vladimir Putin proposed using "Russian technology" (a possible reference to Russian nuclear firm Rosatom) to construct a nuclear power plant in Kazakhstan. Tokayev's deputy energy minister said that while no such plans have been finalized, the plant could be built in Ulken, a town on the shores of Lake Balkhash in Kazakhstan's Almaty province.

Kazakhstan needs a new power station. Approximately 69 percent of its electricity is produced from coal, 20 percent from natural gas, 9 percent from hydropower, less than 2 percent from oil and less than 1 percent from other renewable sources. Almaty province is located in an area rich in oil and gas, and yet, it's at risk for severe power shortages.

This isn't the first time Russia has offered its help in constructing a nuclear power plant for Kazakhstan; Moscow has proposed a handful of projects since the 1990s, but these have routinely sparked public criticism in Kazakhstan and ultimately have been scrapped. This time around, Russia's offer could be seen as a play to maintain influence in Central Asia as China's Belt and Road Initiative projects proliferate across the region. Rosatom is also helping **Uzbekistan, Kazakhstan's regional power rival**, to construct its own nuclear station.

If the plan goes forward, it would also have serious implications for Lake Balkhash. Here, we take a look at the environmental effects of economic activity around Lake Balkhash.

# Environment and Economy Clash in the Lake Balkhash Basin

## Lake Balkhash

Lake Balkhash is the third largest lake in Asia (and 15th in the world). The lake, a source of fisheries and water for industry and agriculture, is vital to Kazakhstan's economy. But it has become heavily polluted with heavy metals, mining emissions and waste from fish processing. It is divided into two distinct parts by the Saryesik Peninsula:

**Western Balkhash**  
 Shallower, primarily freshwater, suitable for human consumption and agriculture

**Eastern Balkhash**  
 Deeper, more saline

## Lake Balkhash Basin

Between 1972 and 2001:

The southern part of Lake Balkhash lost about 150 square kilometers (58 square miles) of water surface area

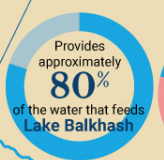
About one-third of the basin was affected by desertification.

11 of the 16 surrounding lakes dried up



Neighboring Lake Alakol, a salt lake, nearly disappeared

## Ili River



The internationally recognized safe limit of exploitation is 40%

## Kapchagay Reservoir

Completed in 1970, the reservoir was created for irrigation and electricity generation. It's filled by the Ili River, and the diversion of water from the river decreased its flow by two-thirds and lowered the depth of Lake Balkhash.

## Ulken

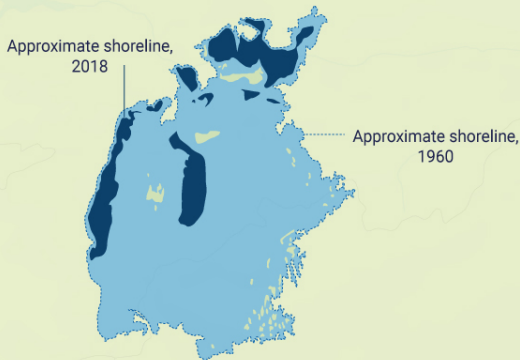
Potential site for a new nuclear power plant that would use Russian technology.

## China and the Belt and Road Initiative

18% of the water flowing into Kazakhstan comes from China.

China's Belt and Road Initiative, a development program through which Beijing is working to build infrastructure and trade that will connect China to Europe, passes through Kazakhstan.

Infrastructure development and a growing population in the region has increased the need for water, putting a strain on natural resources in the area.



## Learning From the Past: The Aral Sea

Under Soviet direction in the 1960s, waters that fed the Aral Sea (which straddles the Kazakhstan-Uzbekistan border) were diverted to irrigate the desert for the cultivation of cotton and other crops.

While the desert flourished, the sea shrank. Once the fourth largest lake in the world, much of the area around the Aral Sea is now a desert. The airborne remnants of fertilizers and saline have created a public health hazard in areas around the sea.

Source: NASA, Researchgate, BBC, Wikipedia, ecocenter.kz

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