

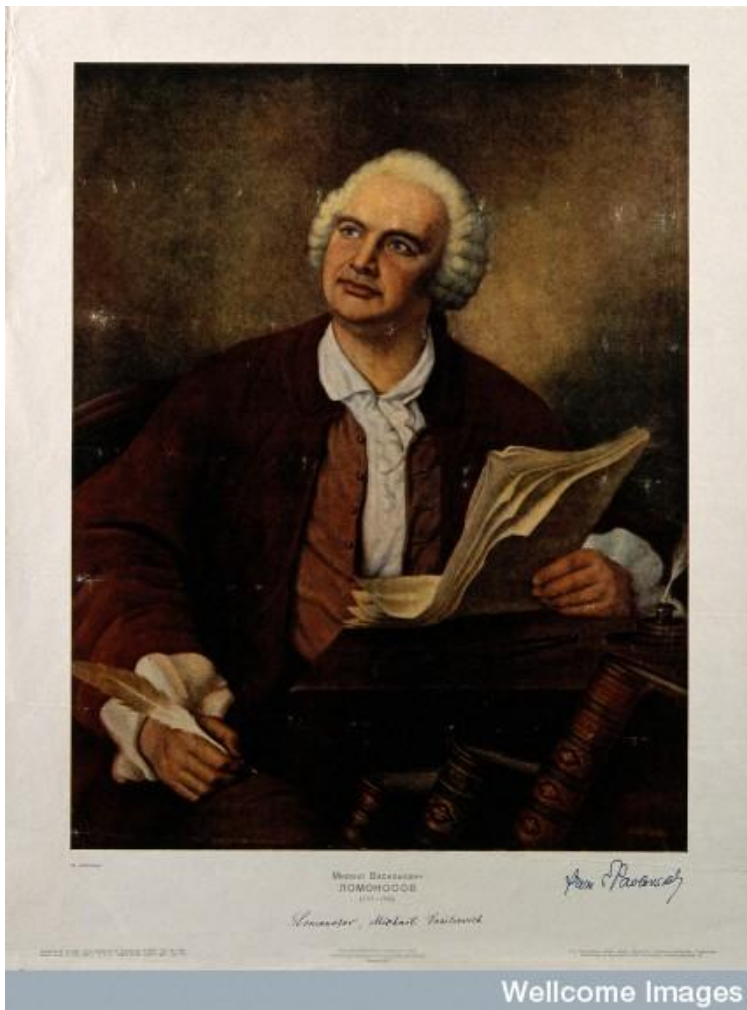
Zolotitsa: How Diamond Mining Threatens the Ecological Conditions of a River Region

Ekaterina Kalemeneva

Summary

The river Zolotitsa is located in what is now Arkhangelsk province and flows into the White Sea. In 1980, geologists discovered a diamond deposit 100 kilometers north of Arkhangelsk, at a bend in the Zolotitsa river. Open-pit mining began in 2005. This led to a severe transformation of the landscape and is threatening to destroy the ecosystem of the upper Zolotitsa region.

The river Zolotitsa is located in what is now Arkhangelsk province, and flows into the White Sea. From time immemorial, the river has been the site of traditional salmon, grayling, and cisco fishing among local inhabitants—indigenous and settler—and this is a pervasive presence in the local folklore. Hunting and fishing remained key industries even throughout the twentieth century.



The diamond deposit was named after Russian geographer Mikhail Lomonosov

Mikhail Vasilievich Lomonosov. Colour reproduction of painting, 1953, after Steiner.

Courtesy of Wellcome Library, London.

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However, in 1980, geologists discovered a diamond deposit 100 kilometers north of Arkhangelsk, at a bend in the Zolotitsa river. The deposit, which was subsequently named after the Russian natural scientist Mikhail Lomonosov (1711–1765), was a major one, consisting of six kimberlite pipes. Mining began on the site in 2005, but, due to the complex geological conditions, reaching the diamonds turned out to be a very difficult task. Borehole and hydraulic mining proved unsuccessful, as did constructing cylindrical chambers. The kimberlite could not be accessed, and the walls of the borehole began to crumble. As a result, traditional open-pit mining began in 2006, following the example of diamond mining in Yakutsk. However, a serious difference between the two regions was not taken into account: Yakutsk has permafrost, while the soil of Arkhangelsk is swampy. In these conditions, a vast pit had to be dug, and, even with this in place, the moist soil poses a constant threat of subsidence and landslide.

Such a shift in the resource use of the region has led to serious ecological consequences. Geological exploration and diamond mining threaten to strip the upper Zolotitsa region of its natural resources, which are the basis of traditional local industry. During mineral sluicing at the beneficiation plant, impurities are drained into the river and from there into the White Sea. This negatively affects the size and diversity of the fish population.

The Lomonosov mine with the Zolotitsa River running to its north

Moreover, the groundwater level is declining as a result of the excavations, and so, in turn, is the water supply to the river. This kind of disruption to the water balance could result in the nearby Soyansky nature reserve drying up entirely. Open-pit mining of the Lomonosov diamond deposit has made it consistently impossible to monitor the river's ecosystem. However, despite many protests by ecologists and local and indigenous representatives, the mining continues to this day.

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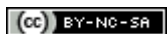
- "Ekologiya: Arkhangel'skaia Oblast' Rasplatisia za Almazy Belym Morem." *Rubezh* 5 (2006).
- Markov, Aleksei. "Bylinnaia traditsiia na Zimnem beregu Belogo moria." In *Belomorskie stariny i dukhovnye stikhi: Sbornik A. V. Markova*, edited by Aleksei Markov et al., 996–1011. St. Petersburg: Dmitriy Bulanin, 2002.
- Osadchii, A. "Iz istorii razrabotki kimberlitovykh trubok v Arkhangel'skoi oblasti." *Nauka i zhizn'* 1 (2000).

Related links:

- Photo documentation of mining at Lomonosov mine
<http://englishrussia.com/2012/07/24/how-diamonds-are-mined-in-russia/>

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- <http://wellcomeimages.org/indexplus/image/V0006550.html>

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