

## **ECOLOGICAL PROBLEMS OF THE DNIPRO RIVER**

***Daryna Golub***

*Faculty of Radio Engineering,*

*National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”*

Nowadays, the whole world is concerned about environmental pollution, global warming, climate change, and domestic biodiversity. Our planet is asking for help. And the beginning of solving these problematic issues is understanding and accepting the situation, the desire to change something. I want to demonstrate and examine the ecology of water in Ukraine using the example of the River Dnipro. After all, it is the largest river in my country and the main supplier of water, which provides about 50 large cities and industrial centers. Its length is 2,200 km, in Ukraine - 1,121 km. The river has about 15 thousand tributaries, 510 reservoirs have been built on it (Khilchevskyi, 2008). Based on it, we can clearly look at the environmental problems of water in Ukraine.

The Dnipro suffers from pollution. Firstly, because of wastewater from buildings, industrial waste from factories, fertilizers and phosphates from irrigation systems. Secondly, there are bottles of garbage bags left by people. (Osadcha & Barsukova, 2022). Thirdly, due to an excess of nutrients, eutrophication begins causing consumption of oxygen and consequently death of fish and other organisms.

In this way, the food chain is destroyed.

Two more problems of the Dnipro are siltation and shallowing. The first occurs through reservoirs that deprived the river of its own flow increase in the amount of garbage, chaotic development of the bank, deforestation and soil erosion. Due to siltation, reduced rain, global warming and climate change, there is shallowing. (SEEDS Ukraine, 2020).

The war brought a huge negative impact on the ecology of Ukraine. Active hostilities are taking place near the Ukraine's main waterway. Therefore, missile debris, downed planes, military debris and equipment, destroyed parts of the infrastructure falling into the river. I would like to mention the detonation of the Kakhovskaya HPP in 2023 as a separate example. This reservoir was the first in terms of water volume of 18.19 km<sup>3</sup> and the second in terms of area of 2155 km<sup>2</sup> (Ukrainian Nature Conservation Group, 2023). At least 43 species of fish lived there and there was a good catch. At the moment, almost the entire habitat of fish has been destroyed. It takes at least 7-10 years to restore. The nesting place of birds has disappeared, aquatic and coastal-aquatic plants will settle in their place. The consequences of such actions are the leakage of toxic substances, heavy metals and petroleum products, mine danger, death of flora and fauna.

All previous points contribute to the destruction of biodiversity. More and more living organisms are listed in the red book. In some areas of the main water artery of Ukraine, some species cease to exist altogether or migrate.

Despite all the negativity, there is a decision. We can still save the Dnipro. If we increase the number of treatment facilities, monitor water quality and supervise the implementation of legislation on limiting waste discharges. (Yatsenyo, 2021) Also, to improve the situation, we can increase the number of nature conservation areas, restore ecosystems, because everything in nature is interconnected. Ideally, end the war that will reduce the destruction of biodiversity and stop clogging with military garbage. Each of us can reduce the use of water at home to clean up garbage or even a stranger. We can raise children to be eco-conscious so that they take care of nature

So, on the basis of the Dnipro, it is possible to note that the ecological problems of water in Ukraine are large-scale. We have described the problems of one river, but they are huge and need solutions. In my opinion, Ukrainians should take care of ecology and minimize humans' detrimental effect. The situation is in our hands, if we unite, we can overcome existing problems.

### References:

3. Khilchevskyi, V. K. (2008). *Dnipro*. In *Encyclopedia of Modern Ukraine*. Institute of Encyclopedic Research of the National Academy of Sciences of Ukraine. Retrieved from: <https://esu.com.ua/article-22159>
4. Osadcha, Ya., & Barsukova, O. (2022, December 22). *How the Dnipro River suffers from the occupiers*. Retrieved from: <https://life.pravda.com.ua/society/2022/12/22/251956/>
5. SEEDS Ukraine. (2020, August 10). *The shallowing of the Dnipro may become a catastrophe not only for all of Ukraine*. Retrieved from: <https://www.seeds.org.ua/obmilinnya-dnipra-mozhe-stati-katastrofoyu-ne-tilki-dlya-vsiye%D1%97-ukra%D1%97ni/>
6. Ukrainian Nature Conservation Group. (2023, June 7). *What are the consequences of the Russian terrorist attack on the Kakhovka HPP for wildlife?* Retrieved from: <https://uncg.org.ua/iakymy-ie-naslidky-rosijskoho-teraktu-na-kakhovskij-hes-dlia-dykoi-pryrody/>
7. O. Yatsenyo. (October 8, 2021). *Ecologists identified the main problems of the Dnipro River and proposed their solutions*. *EcoPolitic*. Retrieved from: <https://ecopolitic.com.ua/ua/news/ekologi-nazvali-golovni-problemi-dnipra-ta-zaproponuvali-ih-rozv-yazannya/>