

Biodiversity Restoration After the Blast of Kakhovka Dam on Dnipro River in Ukraine

Authors: Oleksii Vasyliuk^{1,2}, Eugene Simonov², Valeriia Kolodezhna^{1,2}
Photos by O. Khodosovtsev unless otherwise noted

1 — Ukrainian Nature Conservation Group (UNCG)
2 — Ukraine War Environmental Consequences Work Group (UWEC)

Environmental consequences of blasting the dam

On 6 June 2023, Russian forces destroyed the Kakhovka Dam, draining 14 km³ of water from the 2115 km² reservoir.



Summer 2023

Summer 2024

This act of ecocide caused severe damage to local communities, ecosystems, and species.

Blast Consequences

Floodplain Recovery

Restoration Brief



By summer 2024, 50% of the reservoir bottom was covered by young floodplain forests: native willows & poplars.

Floodplain forests



Summer 2025

Within 10 years, the floodplain forest may store up to 120 million tons of CO₂ equivalent.



The First Expedition

1

All benthic organisms in the reservoir were killed, and floodwaters carried downstream toxic reservoir-bottom sediments.

2

Flooding affected 600 km² of protected areas downstream, threatening narrow-range endemic species with extinction.

3

Freshwater fauna perished once flushed into the Black Sea, where 32,000 km² of water was affected by desalinisation, turbidity, and eutrophication.



Promises and Challenges to River Revival

Abundant spring floods in 2024 filled all historic floodplain lakes, but there is no agreement yet on environmental flow releases from the Dnipro hydropower reservoir cascade controlling the flow upstream.

Critically endangered *Danube sturgeon* (*Acipenser gueldenstaedtii*) resumed migrations from the sea to old spawning sites near Zaporizhzhya.

Energy crops harvesting



UkrHydroEnergo Co. plans to rebuild the Kakhovka Hydropower Plant with increased peaking capacity — threatening both upstream and downstream ecosystems.

Proposals for a 60-km dyke aim to drain the floodplain for agriculture and energy crops uses— risking further loss of biodiversity.



Revival Options

What Needs to Be Done

Monitoring programs: Vegetation (3 expeditions undertaken), fauna (birds, fish); tagging could help amid security constraints.

Policy engagement: Work with UkrHydroEnergo and banks financing recovery to ensure flood release and climate-aligned ecosystem restoration.

Community support: Help locals shift from reservoir-dependent livelihoods to sustainable alternatives.

Assess ecosystem services: Biodiversity values, river connectivity and carbon sequestration included in restoration planning.

Scenario development: Design and promote nature-based post-war recovery options as national policy goals.

Revival of Lower Dnipro has the potential to become Ukraine's decisive contribution to meeting EU commitments to restore rivers to their natural state by 2030.

Participants of the first expedition to the bottom of the former reservoir, 30 June 2023

Further reading on Lower Dnieper Revival on our web-pages:

