

Ecocide as a Weapon of War: How Russian Military Aggression in Ukraine Is Creating a Long-Lasting Ecological Crisis in Eastern Europe

Author: Alisa Chichvarina
 Supervisor: Eduardo Souza-Rodrigues

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Introduction

The Russian-Ukrainian War (2014-present), has caused extensive environmental damage in Ukraine. Beyond human and infrastructure losses, the conflict has resulted in ecocide (large-scale destruction of ecosystems affecting water, air, and soil), with potential long-term impacts on neighboring countries. Ukraine could become the first country to criminally address war-related environmental crimes.

Research question: What are the ecological and economic impacts of war-driven ecocide in Ukraine and beyond?

Methodology

Qualitative:

- Expert interviews
- Case studies
- Analysis of governmental and NGO reports

Quantitative:

- Publicly available data analysis
- Regression modeling
- Trend analysis of infrastructure and environmental damage

Number of damaged industrial or critical infrastructure facilities (July 2024-July 2025)

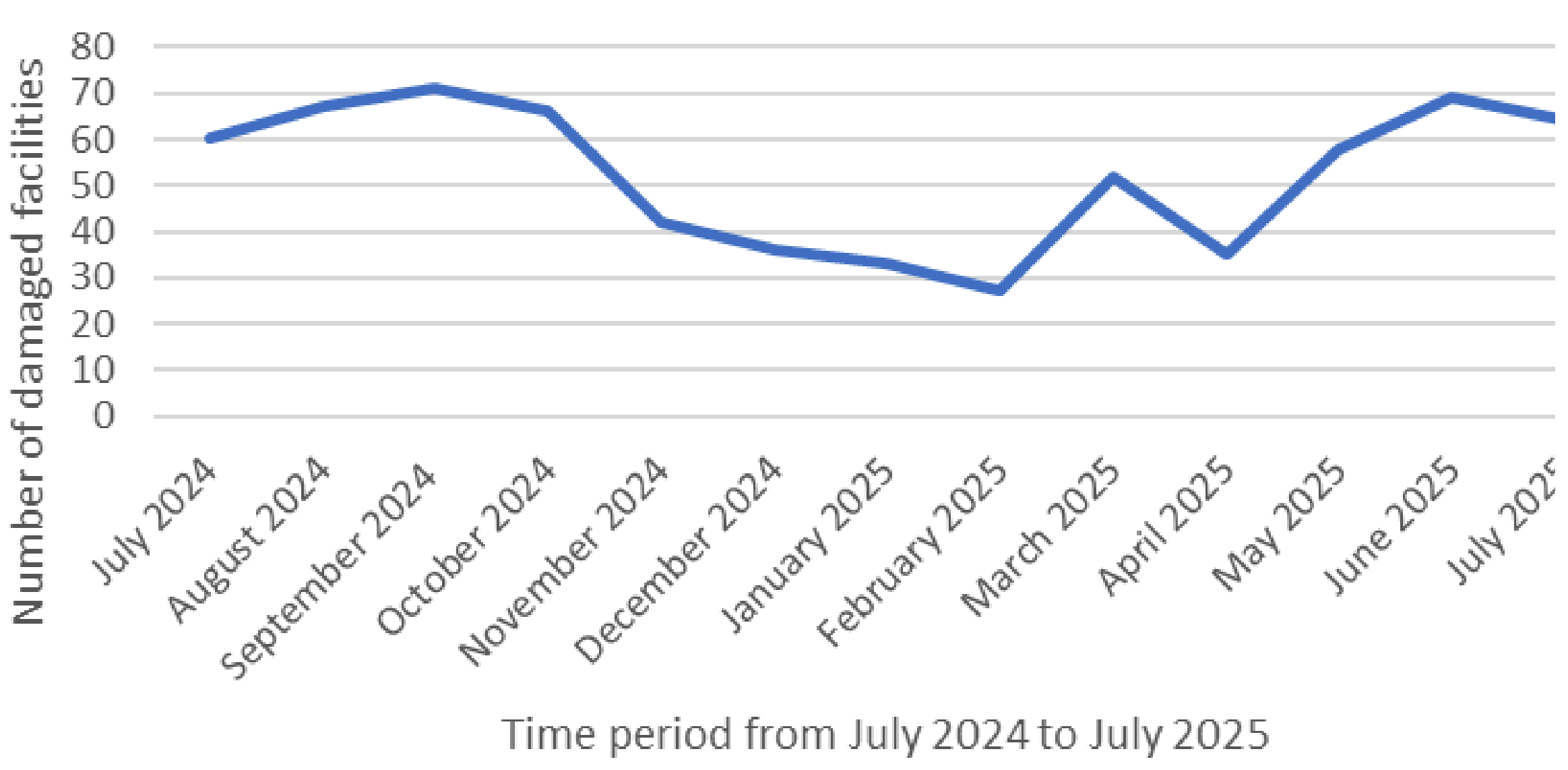
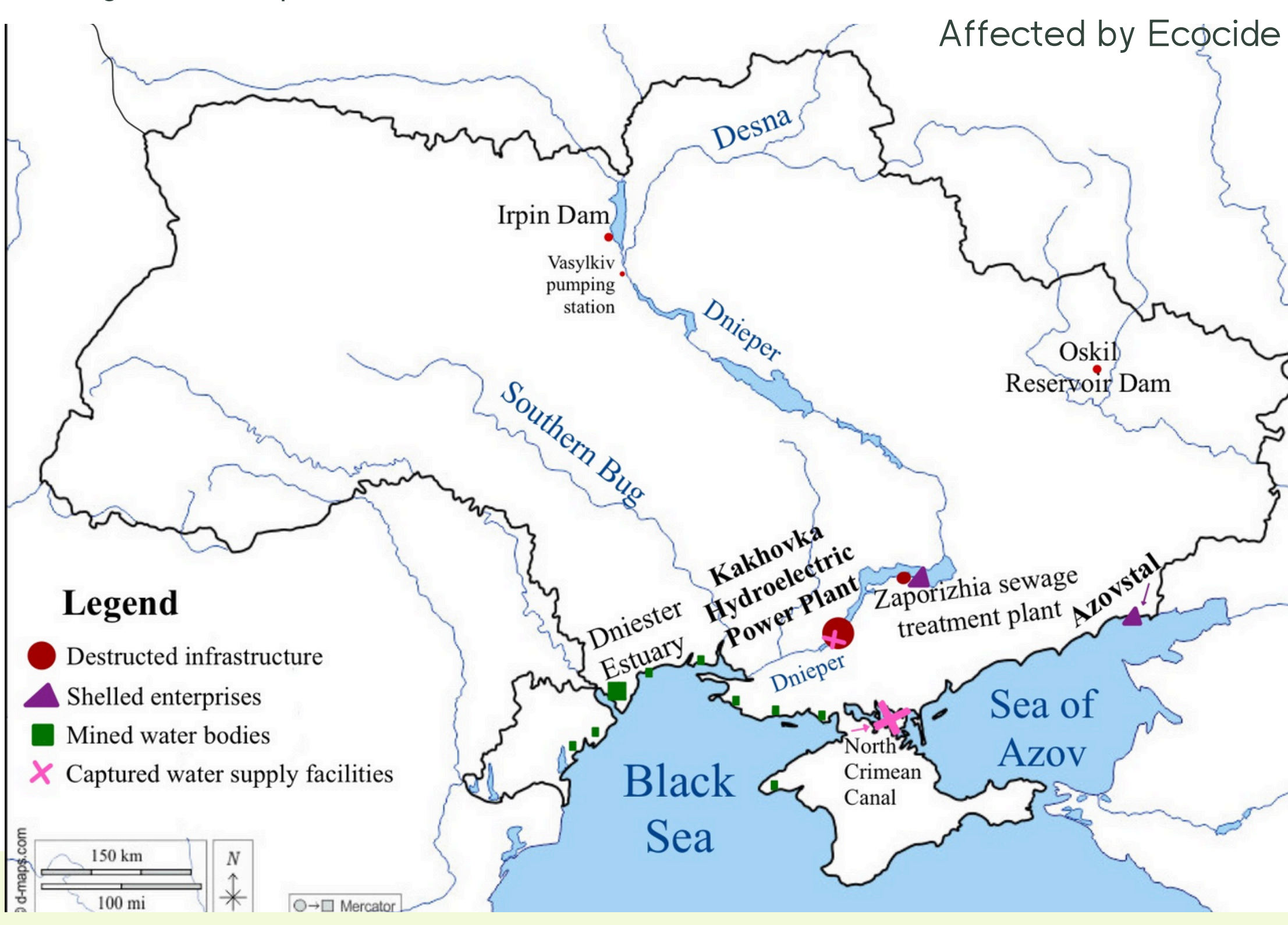


Figure 1: Monthly infrastructure disruptions in Ukraine (July 2024-July 2025)

Figure 2: Map of Ukrainian Water Resources and Selected Infrastructure Affected by Ecocide



Results

- Environmental destruction is systematic, with air, water, and soil all severely degraded.
- Regional hotspots: Donbas, Kharkiv, Kherson, Zaporizhzhia, Kyiv and Odesa show distinct patterns of damage linked to industrial, agricultural and military significance.
- Critical infrastructure collapse: on average 52 facilities damaged monthly; Kherson & Avdiivka most affected.
- Carbon footprint of war: 230 MtCO₂e emitted (2022–2025), equal to 4 EU countries' annual output; predicted to reach 285 MtCO₂e by 2026.
- Food & water security crisis: Kakhovka Dam destruction devastated ecosystems, agriculture, and Black Sea fisheries, with cross-border ramifications.