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ISSN 2773-5869



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HISTORIA MAGISTRA VITAE. SCELERATA INSANIA BELLI.

By

Piermauro Catarinella
Academy of Language Studies, UiTM Shah
Alam, Malaysia

piermauro@uitm.edu.my

EDITOR: NURSYAZNI ABDUL RAHIM

For those unfamiliar with Latin, the title of the article conveys the message that history should serve as a lesson, guiding us to avoid repeating past mistakes. Sadly, it appears that we have not heeded this wisdom, as we find ourselves entangled in yet another distressing and violent conflict involving Russia and Ukraine directly and the USA and all European countries indirectly. Moreover, the looming risk of a third World War is a constant concern.

When discussing wars, our focus often centers on the loss of lives among military personnel and civilians. However, we often overlook the broader impact of war on the environment. On 22nd February 2022, Russia launched an invasion of Ukraine, leading some countries within the North Atlantic Treaty Organization (NATO) and the European Union to make a controversial political decision. They chose to support Ukraine militarily, providing increasingly advanced and expensive weaponry, prolonging the conflict, and hindering its resolution.

As the war continues, its environmental consequences remain a concern that deserves attention and consideration. The duration of this war remains uncertain, whether it lasts for months or stretches into years.

Regrettably, we appear to have forgotten the devastating consequences of past conflicts in countries like Laos, Cambodia, Iraq, Libya, the Balkans, and Syria, as we are repeating the same mistakes once again. Hundreds of thousands of lives are being lost, and the planet's environment is facing annihilation due to the relentless nature of this cycle of violence.

In Ukraine, the situation is not just witnessing genocide but also one of the most horrifying forms of ecocide, where nonhuman beings and nature are being subjected to destruction and devastation.

The ecological destruction resulting from the war in Ukraine is unprecedented in history. The consequences of bombing and armed conflict on both flora and fauna are immensely severe, with far-reaching effects on agriculture and emissions. This dangerous situation not only represents a humanitarian tragedy but also an environmental crisis. Ukraine, despite occupying only 6% of Europe's territory, holds a significant 35% of European biodiversity. Its diverse landscapes, including forests, marshes, steppes, and saline habitats, support a rich array of over 70,000 animal and plant species, with nearly 1,400 of them being protected.

Since the onset of the war, Ukraine has experienced over two thousand instances of severe environmental damage. This includes the destruction of vast hectares of forests, contamination of land, pollution of aquifers, compromise of protected sites, the extinction of animal species, and a surge in greenhouse gas emissions. The Ukrainian territory has been grappling with these ecological challenges for a year now, significantly impacting both the environment and the people. The estimated cost of the damages caused by these environmental impacts stands at around 90 billion euros.



Figure 1: The impact of the conflict goes beyond human suffering and extends to the irreversible harm inflicted upon the environment and its inhabitants. (AI generated image).

The impact on flora and fauna

The impact of bombings on the Ukrainian countryside extends beyond the cities, destroying entire green areas that have been devoured by fires. The movement of troops with heavy armored vehicles has further exacerbated the situation, leading to the annihilation of vast woodlands, with trees often pulled down to facilitate the military advance. The persistent electricity blackouts have forced people to rely on wood for domestic heating and cooking, leading to further deforestation. Additionally, the erosion of forests has been a direct consequence of the raids conducted by soldiers. To compound the devastation, many of these territories have been mined, and craters now cover the landscape, further compromising the environment.

The use of ammunition has contaminated the soils with heavy metals, contributing to the degradation of the environment. To quantify the scale of this destruction, approximately one-third of Ukraine's forests have been damaged since the war began in February 2022. The situation is equally concerning for protected areas in Ukraine, with 20% of them at risk due to the ongoing conflict. Among those affected are ten nature parks, eight natural reserves, and two biosphere reserves, which are currently under occupation.

The war has put immense pressure on the country's biodiversity, with 750 species of plants now facing the threat of extinction. The destruction of habitats, pollution, and disruptions caused by military activities are all contributing factors to this alarming situation. Furthermore, animals are also bearing the brunt of this conflict. The destruction of their natural habitats and the direct impact of hostilities are causing significant harm to wildlife populations, leading to increased vulnerability and endangerment of various species.

The devastating impact of war on wildlife in Ukraine is evident through the dire situation faced by at least 600 animal species. Among the affected are dolphins, whose plight has been observed by marine biologist Ivan Rusev. He estimates that along the coasts of the Black Sea, an alarming fifty thousand cetaceans die every month. The noise from military ships and bombardments at sea and on the coast disorients these animals, leading to their untimely deaths in the short or long term. Seagulls, pelicans, and woodcocks had established thriving colonies numbering tens of thousands of individuals on the coasts of the Black Sea in recent years. This success was in part attributed to the environmental protection efforts undertaken by Ukrainian institutions. These protected areas provided safe and conducive habitats for these bird species, enabling them to flourish and contribute to the rich biodiversity of the region. However, the outbreak of war in Ukraine has significantly disrupted these ecosystems, leading to devastating consequences for these bird populations and the overall balance of the delicate coastal environment.

The war's repercussions extend beyond Ukraine's borders, with effects felt even at great distances. For instance, in Indian Kashmir, thousands of migratory birds that traditionally arrived in the region after their winter journey in Europe are now missing.



Figure 2: The onset of war in Ukraine has had a profound impact on ecosystems. (AI generated image).

Ornithologists believe that the war in Ukraine, which lies along their migration path, played a role in this tragic outcome. Some birds likely altered their course due to the conflict, while others sadly lost their lives along that particular flight route.

The destruction of forests in Ukraine is posing a severe threat to the survival of already rare species. Among these endangered animals are the Eurasian brown bear, with an estimated population of only 150–250 individuals, the Eurasian lynx, with approximately 500 specimens, and the European bison. The ongoing ecocide is causing direct harm to these animals through bombings and military activities. Additionally, deforestation and toxic contamination of the soil and groundwater further jeopardize their habitats, making it increasingly challenging for them to survive. The impact of the war extends to urban areas as well, where thousands of pets have been abandoned by the population fleeing the conflict, leading to a concerning increase in stray animals. Furthermore, Russian military raids have also destroyed zoos, such as the one in Mykolayiv, which is now completely abandoned and left in disarray.

The long-term ecological devastation in Ukraine will undoubtedly have far-reaching implications, not only for the country itself but for the entire planet.

The scale of damage caused by the ongoing conflict, including air, water, and soil pollution, destruction of dams, deforestation, widespread explosions, and the presence of minefields, will have significant consequences for the environment and biodiversity. Due to the dangers posed by the warfront, it is currently challenging for ecologists and scientists to assess the full extent of the damages accurately. The situation is highly complex, and the long-term effects are likely to unfold gradually, making it difficult to predict the full scope of the ecological impact. Indeed, the environmental consequences of the war between Russia and Ukraine extend beyond the direct destruction of flora and fauna.

The extensive use of military equipment is a significant contributor to pollution, particularly in terms of carbon dioxide (CO₂) emissions. Military vehicles, including tanks, are notorious for their high CO₂ emissions. It is estimated that the war has caused CO₂ emissions of approximately thirty-three million tons to date.

The combination of direct and indirect environmental damages, including CO₂ emissions, poses a severe threat to the planet's ecological balance and further emphasizes the urgent need to address and mitigate the environmental consequences of war. Sustainable and environmentally conscious measures will be crucial in the recovery and reconstruction efforts to minimize the long-term impact on the environment and support a more resilient future for Ukraine and the global community.

This brutal war and its devastating consequences could potentially have been avoided if European Union (EU) countries had chosen to adopt a neutral stance, similar to that of many other nations, in the conflict between Russia and Ukraine. Such neutrality could have allowed the EU to act as a mediator between the conflicting parties, potentially bringing about a swift end to the fighting within a few weeks and preventing the prolonged devastation and ecological destruction resulting from the war.