War, Soil, and Freshwater Systems: 2026

Conference Abstract

Armed conflicts represent one of the most profound and understudied drivers of long-term environmental degradation. Military activities generate complex and persistent contamination of soils and freshwater systems through explosive residues, heavy metals, fuel combustion products, and large-scale physical disturbance. Despite the growing recognition of these impacts, systematic, comparative, and methodologically coherent research remains limited.

The international conference ***War, Soil, and Freshwater Systems: 2026*** aims to bring together researchers from soil science, environmental sciences, geosciences, toxicology, ecology, infectious ecology, and public health to examine the environmental and health consequences of war-related contamination. The conference emphasizes interdisciplinary approaches, integration of field-based evidence, and the development of robust theoretical and methodological frameworks for studying military-induced environmental change.

Special attention will be given to comparative case studies, including long-term consequences of the Vietnam War and ongoing environmental impacts of the war in Ukraine, with a particular focus on soil degradation, freshwater contamination, and associated risks to ecosystems and human health. The conference will also address the use of highly impacted territories and aquatic systems as scientific “polygons” for detailed geochemical, ecological, and toxicological investigation.

A central thematic focus will be the comprehensive study of Snake Island in the Black Sea and its surrounding marine area as a unique natural laboratory for assessing war-induced environmental pollution. The existence of extensive pre-war baseline data allows for rare before-and-after comparisons and provides an exceptional opportunity to advance understanding of military contamination processes and their long-term implications.

In addition to scientific presentations, the conference will facilitate structured roundtable discussions and strategic sessions dedicated to the development of international expeditionary research programs and collaborative funding initiatives. All accepted contributions will be published in the journal ***Pollution and Diseases***.

General Information

Venue: Prague or Vienna (to be confirmed)
Dates: October 2026 (to be confirmed)
Working language: English

Conference Format

- **Day 1** — Plenary and thematic scientific sessions.
- **Day 2** — Thematic roundtable discussions. Topics will be defined in advance, and participants will receive prepared analytical materials.
- **Day 3** — Strategic discussions on the development of joint expedition-based research and collaborative funding initiatives focused on military-related contamination of soils and freshwater systems.

Organizers

1. ***Pollution and Diseases*** (scientific journal)
   https://pollution-diseases.org
2. **New Euro Vision: exhibitions, marketing, research s.r.o.** — organizational coordination and logistical support.
3. Partner organizations (in formation).

Conference Co-Chairs

- **Kenneth R. Olson, PhD**, Professor Emeritus of Soil Science, Department of Natural Resources and Environmental Sciences (NRES), College of Agricultural, Consumer and Environmental Sciences (ACES), University of Illinois at Urbana–Champaign, Illinois, USA — *scientific program*.
- **Dmitry Nikolaenko, PhD, Doctor Habilitatus**, New Euro Vision Group, Independent Expert in Environmental and Health Sciences, Prague, Czech Republic — *organizational and coordination matters.*

Conference Rationale

The armed conflict in Ukraine has persisted for more than eleven years, with the full-scale war ongoing for over three years. One of its most severe consequences has been the **large-scale degradation of the natural environment**, particularly soil and freshwater systems, driven by sustained military activity.

Accumulated scientific evidence demonstrates that the consequences of military-induced environmental contamination are **long-term and cumulative**. Historical cases, notably the Vietnam War, which ended decades ago, show that chemical and technogenic contamination continues to affect ecosystems and human health many years after hostilities cease.

Contemporary military conflicts pose fundamentally new challenges for environmental and health sciences. Addressing these challenges requires **interdisciplinary, methodologically rigorous, and internationally coordinated research approaches** to understand war-driven transformations of soil and freshwater systems.

Aims and Objectives of the Conference

- To stimulate fundamental and applied research on military-related contamination of soils and freshwater systems.
- To facilitate the formation of international expert teams capable of conducting high-level scientific investigations in regions affected by military activity.
- To promote discussion and dissemination of advanced methodological and technological approaches for studying war-induced environmental contamination.
- To establish a scientific foundation for future expedition-based and long-term monitoring programs.

Main Scientific Themes

1. **Morphology of military-related contamination of soils and freshwater systems**
   Military impacts should be understood not as isolated contamination events, but as systemic drivers capable of triggering large-scale, multi-level transformations in vulnerable natural environments, particularly soils and aquatic ecosystems.
2. **Ecocide and its manifestations in soil and freshwater systems**
   Systematic analysis of ecosystem destruction resulting from military activities, including the destruction of reservoirs and the associated cascading ecological and socio-environmental consequences.
3. **The Vietnam War: chemical contamination and its long-term consequences**
   Examination of historical experience and contemporary research addressing delayed ecological and medico-biological effects of military chemical contamination.
4. **The war in Ukraine: soils and freshwater systems under military impact**
   Investigation of war-related contamination effects, including degradation of unique soil resources—most notably Ukrainian chernozems—and transformation of freshwater systems.
5. **The polygon approach**
   Detailed investigation of the most heavily impacted terrestrial and aquatic areas as scientific "polygons": selection criteria, research methodologies, data interpretation, and long-term monitoring potential.
6. **Snake Island in the Black Sea as a model site**
   Comprehensive study of the island and its surrounding marine area as one of the natural complexes most affected by military activity. Assessment of its potential for geoecological and ecotoxicological monitoring.
7. **Theoretical aspects of military contamination research**
   Evaluation of the adequacy of existing theoretical models for describing processes driven by military impacts, and the need for their refinement or expansion.
8. **Methodological challenges**
   Critical analysis of currently applied methodologies, limitations of conventional approaches, and strategies for minimizing information loss when studying complex and dynamic processes of military-related contamination.

Publication of Conference Materials

All conference materials are planned for publication in the journal ***Pollution and Diseases***.
https://pollution-diseases.org