

Project Title

Preserving Dual Heritage: An Assessment of War Damage to the Kurgan Mounds of the Mykolaiv Region (Ingulets and Visun River Basins) as Valuable Reserves of Steppe Biodiversity and Cultural Heritage’.

Project Data

Duration	Funding	Project location/ Region
01.02.2026 – 31.01.2027	AZ-30025/129	Mykolaiv Region, Ukraine

Project Partners

Who are the project partners?

- Victoria Trotner**
 Botanist. Senior Lecturer.
 Kryvyi Rih Vocational Mining and Metallurgy Lyceum
 Kryvyi Rih, Ukraine
- Leonid Smyrnov**
 Archaeologist. Director,
 V. Stanko Laboratory of Archaeology and Ethnology, P. Mohyla Black Sea National University. Mykolaiv, Ukraine

What does each partner specifically contribute to the project?

Botanical expert: Systematization of the botanical collection gathered in the study area. Participation in the development of a roadmap for flora restoration on damaged kurgan sites.

Archaeological expert: Coordination with the military administration, participation in the development of a roadmap for the restoration of archaeological sites — kurgans in damaged areas.

About the Project

What is the problem – and what do you want to change about it?

What are you doing specifically to achieve this goal?

Ukraine's cultural identity faces a severe threat amid the ongoing war. Archaeological sites are particularly vulnerable, especially kurgans (burial mounds), which serve a dual protective function: they are both unique testaments to human history and ecological refugia for endemic and rare plant species within an otherwise heavily cultivated steppe landscape.

As a result of the military actions that began in 2022, these monuments are at grave risk. Their strategically advantageous elevated locations lead to military usage: constructing positions, trenches, and bunkers irrevocably destroys the archaeological context and valuable vegetation. Looting excavations using heavy machinery cause additional damage. A systematic assessment of the scale of these destructions from both cultural-historical and environmental perspectives is currently lacking.

As a result of our project, we intend to develop methodological guidelines (a "roadmap") for restoring damaged archaeological sites and the unique ecosystems incorporated within them. Field investigations of archaeological sites—specifically kurgans—yielded a collection of endemic plant species gathered from the mound surfaces. This collection includes strictly protected plant species listed in the Red Data Book of Ukraine.

Furthermore, our observations identified a previously unrecorded trend: areas of surface damage on the kurgans are being rapidly colonized by aggressive invasive flora, notably *Hyoscyamus niger* L., which spreads across the disturbed terrain.

Field investigations covered burial mounds damaged by looting and military operations. These sites have suffered catastrophic destruction; for instance, the mound of a Royal Scythian kurgan was nearly 70% destroyed, while military actions have reduced other kurgan mounds by 20–30%. Immediate rescue measures are urgently required to save these monuments.

	Each studied kurgan has been recorded with precise GPS coordinates, which will subsequently serve as the foundation for an official registry of cultural heritage sites (kurgans). The data obtained from the field research is being systematized and will subsequently serve as the foundation for methodological guidelines on restoring destroyed cultural heritage sites.
What is special or new about your approach?	For the first time in Ukraine, we are employing an interdisciplinary scientific approach to the study of cultural heritage sites by integrating the expertise of archaeologists and ecologists (botanists). We treat these objects as a unified complex—one that combines a cultural heritage site with a natural refuge for rare plant species that have survived on the kurgans as a protected ecosystem.
The figure: What does the project actually do?	Six kurgan groups along the banks of the Visun River were investigated. Data on endemic flora species discovered on the mounds was collected. Previously unknown hotspots of floral biodiversity were identified, and the data was entered into the scientific database (https://ukrbin.com/show_user.php?uid=991). A previously unknown 2-hectare area hosting rare plant species was discovered, which qualifies for designation as a specially protected natural area.
What remains? What concrete results are achieved, and who can use them in the future?	Our objectives are: To study the microrelief of kurgans and surrounding areas using LiDAR scanning to identify new archaeological sites and examine how microrelief influences the distribution of specific plant species. To consolidate the botanical collection and create detailed descriptions for future publication in specialized peer-reviewed scientific journals. To document each damaged kurgan in detail and provide comprehensive recommendations for its restoration.



To analyze satellite imagery of inaccessible regions to assess military damage to cultural heritage sites and develop future restoration strategies.

To create methodological guidelines (a "roadmap") for restoring cultural heritage sites based on an interdisciplinary approach combining archaeology and ecology (botany), sharing this experience across Ukraine and other post-conflict territories.

To establish a new scientific term: "Bioarchaeological Complex." This definition is essential for shifting public perception, framing cultural heritage sites not merely as isolated archaeological monuments, but as foundational pillars for local biocenoses—a unified platform for preserving both natural and cultural heritage.

See the project images
on the following pages



Project images

Image 1 of 5



The destruction of the mound of the Royal Scythian kurgan.

Project images

Image 2 of 5



Military dugouts constructed within the kurgan mound.

Project images

Image 3 of 5



The mound of the Royal Scythian kurgan, which has been 70% destroyed.

Project images

Image 4 of 5



Botanist Viktoria Trottner details rare flora species recorded on the kurgan mound.

Project images

Image 5 of 5



Project leader Eugene Karnaukh while documenting the kurgan mound.