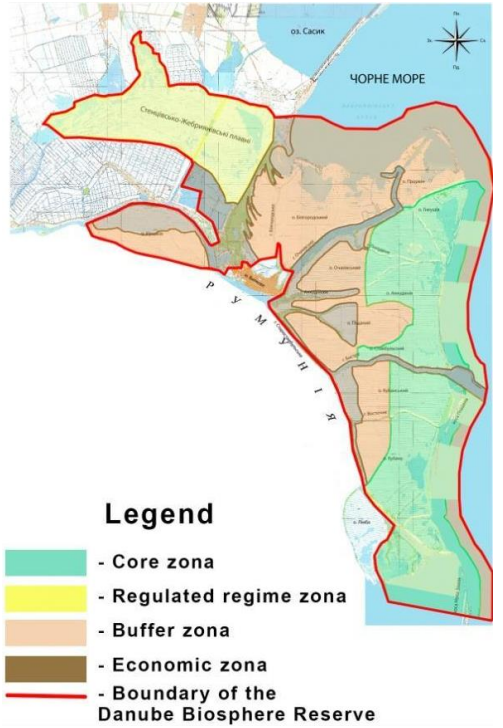
Ukrainian Danube delta

(Danube Biosphere Reserve)



The Black Sea region faces several common challenges in maintaining its ES. These challenges include eutrophication, pollution, and poor fishing management. These issues have resulted in a decline in biological resources, species diversity, and landscapes, as well as a decrease in the Black Sea's aesthetic and recreational value. Climate change poses another significant challenge to the region, with effects such as rising sea levels, erosion, changes to ecosystems, natural weather events, and increased temperatures.

To address these challenges at the regional level, the Common Maritime Agenda for the Black Sea was established to protect the environment and ensure the sustainable exploitation of coastal and marine resources. This agenda is based on cooperation and joint efforts to improve the protection of shared natural heritage.

The study of the aforementioned elements in the five delta areas included in the project — the Danube Delta (Romania and Ukraine), the Nestos Delta and Lake Vistonida (Greece), the Kızılırmak Delta (Türkiye), and the Chorokhi and Kolkheti Deltas (Georgia) — Cross-border collaboration will provide data that will improve our understanding of the evolutionary trends of ecosystems in the Black Sea bioregion. This information can inform regional decisions and policies regarding IAS and ES in the context of climate change.

PARTNERS

Romania: Danube Delta National institute for Research and Development - coordinator
Romania: Danube Delta Biosphere Reserve
Ukraine: Institute of Marine Biology of the NAS of Ukraine
Greece: Democritus University of Thrace
Georgia: International Business and Economic Development Center

The monitoring scheme of the IASON+ project includes five spatially distanced deltaic study areas, sharing common characteristics, but with different environmental management backgrounds:

- Danube Delta (Ukraine & Romania)
- Nestos Delta and Lake Vistonida (Greece)
- Kızılırmak Delta (Türkiye)
- Chorokhi and Kolkheti deltas (Georgia)

Cover photos

Upper: O km of the Danube River (Danube Delta, Ukraine)
Left: Oriental river prawns (*Macrobrachium nipponense*)
Right: Transcaucasian mantis (*Hierodula transcaucasica*)

Invasive Alien Species Observatory and Network Development for the Assessment of Climate Change Impacts and Contextual Ecosystem Services Evaluation in Black Sea Deltaic Protected Areas (IASON+)
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IASON+

Invasive Alien Species Observatory and Network Development for the Assessment of Climate Change Impacts and Contextual Ecosystem Services Evaluation in Black Sea Deltaic Protected Areas (IASON+) BSB00174

Invasive Alien Species Observatory and Network Development for the Assessment of Climate Change Impacts and Contextual Ecosystem Services Evaluation in Black Sea Deltaic Protected Areas

Project overall objective

The project main objective is to continue activities involving the establishment and implementation of joint monitoring actions for Invasive Alien Species (IAS) and the evaluation of their influence on ecosystem services (ES) in the Black Sea deltaic ecosystems from five countries: Romania, Ukraine, Greece, Türkiye, and Georgia. The project will also assess resilience under current and predicted climatic conditions to create and promote climate change adaptation measures.

Common territorial challenges addressed by the project

Invasive Alien Species (IAS) have become a significant driver of biodiversity change, exerting severe pressure on natural ecosystems. There has been a substantial increase in the development of modelling approaches to assess and predict their distributions and impacts and evaluate management options. Most of the studies reported negative impacts at the species/population level, while negative and positive impacts were similarly represented at the multispecies/ecosystem level. Developing models to assess the different impacts of IAS populations is important to highlight the need to advance their capabilities to predict future impacts in the Black Sea bioregion.

On the other hand, ES are the benefits that people obtain from ecosystems. These include provisioning services, such as food and water; regulating services, such as flood and disease control; cultural services, such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, which maintain equilibrium in the studied ecosystems. However, the Black Sea Bioregion natural ecosystems are being degraded and destroyed on an unprecedented scale, which threatens the provision of these essential services.

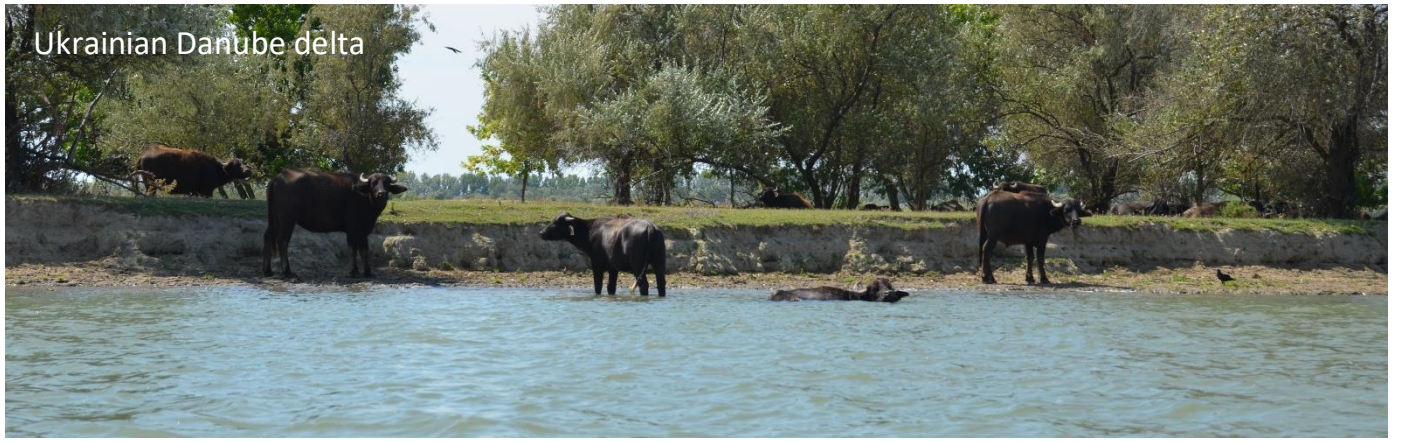
One common challenge in maintaining ecosystem services (ES) is effectively managing and conserving natural resources. This requires an integrated approach that considers the complex interactions between different ecosystems and their multiple benefits. At the decision-making level, high-level science-policy platforms have been established to provide policymakers with integrated, agreed-upon information on the extent of biodiversity and ecosystem loss, as well as projections for the future. This information can be used to develop effective conservation and restoration strategies.

Another challenge is balancing competing demands for natural resources. For instance, changes in land use, such as deforestation for agriculture or urbanization, can negatively impact ecosystem services (ES) such as water regulation and carbon sequestration.

Effective land use planning and management can minimize these impacts and ensure the sustainable provision of ES.

Climate change also poses a significant challenge to maintaining ES. Changes in temperature and precipitation patterns can impact ecosystems and the services they provide. For instance, changes in water availability can affect agricultural productivity and food security. Adaptation strategies, such as developing drought-resistant crops or implementing sustainable water management practices, can reduce these impacts.

Maintaining ES in the face of territorial challenges requires an integrated approach that considers the complex interactions between ecosystems and their multiple benefits. Essential components of this approach include effective management and conservation of natural resources, balancing competing demands for natural resources, and adapting to climate change.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