Interreg NEXT Black Sea Basin

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IASON+

NEWSLETTER No 6

Invasive Alien Plants in Black Sea Wetlands: What IASON+ Found

Key findings

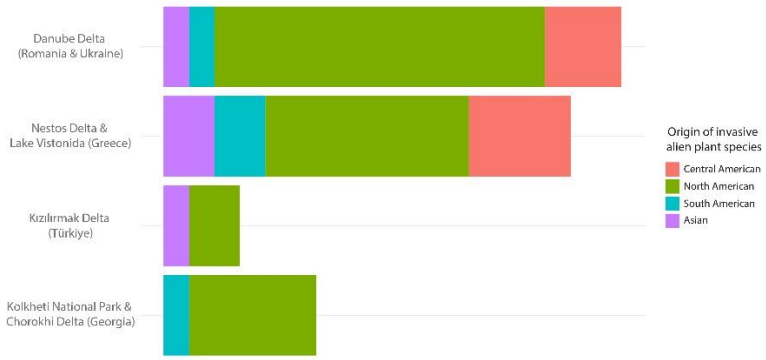
- 17 invasive alien plant species were recorded across the Black Sea delta study areas.
- The Danube Delta had the highest number of species, followed by the Nestos Delta and Lake Vistonida.
- Most recorded invasive plants originated from North America.
- Woody riparian invaders and disturbance-adapted weeds were particularly important.
- Several species spread through both seeds and vegetative regeneration, making them difficult to control.
- Management should combine prevention, early detection, sustained control and habitat restoration.

A new scientific paper published in Diversity presents important findings from coordinated work carried out within the IASON/IASON+ initiatives. The study focuses on invasive alien plant species in protected delta and wetland areas around the Black Sea Basin. These ecosystems are among the most valuable, but also among the most vulnerable, natural areas in the region.

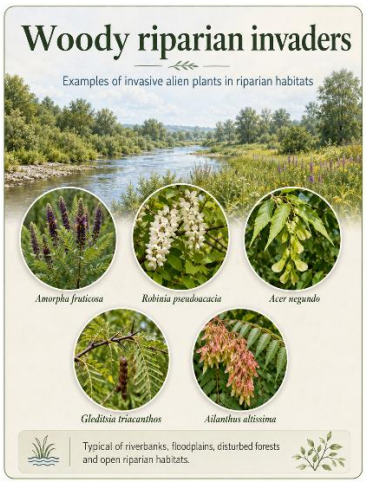
The study covered four major deltaic and riparian systems across five countries: the Danube Delta in Romania and Ukraine, the Nestos Delta and Lake Vistonida in Greece, the Kızılırmak Delta in Türkiye, and the Chorokhi Delta–Kolkheti National Park area in Georgia. These areas differ in geography and local conditions, but they share important ecological features: strong hydrological connectivity, high habitat diversity, intense

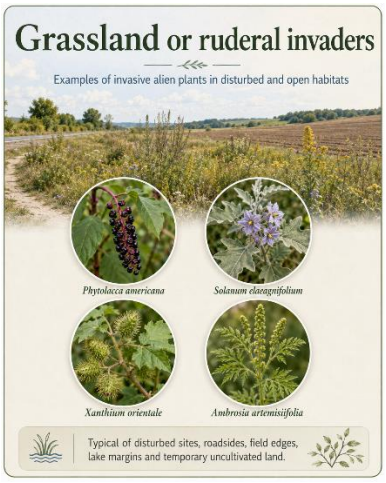
human use, and frequent natural or human-driven disturbance. All these factors can make wetlands and river deltas especially open to biological invasions.

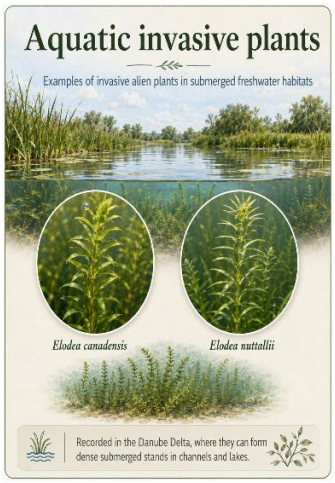
Across the study areas, the researchers documented 17 invasive alien plant species. The highest number was recorded in the Danube Delta, with 14 species, followed by the Greek study area, Nestos Delta and Lake Vistonida, with 11 species. Six species were recorded in the Georgian study area and three in the Kızılırmak Delta in Türkiye. Most of the recorded invasive plants originated from North America, while others came from Central and South America or Asia. This pattern shows how strongly global transport, trade, cultivation and landscape modification have contributed to the movement of species beyond their natural ranges.



The recorded species do not all invade ecosystems in the same way. Some are woody riparian invaders, such as *Amorpha fruticosa, Robinia pseudoacacia, Acer negundo, Gleditsia triacanthos* and *Ailanthus altissima*. These species can take advantage of nutrient-rich floodplain soils, riverbanks, disturbed forests and open riparian habitats. Others are grassland or ruderal invaders, such as *Phytolacca americana, Solanum elaeagnifolium*, Xanthium orientale and *Ambrosia artemisiifolia*, which are often associated with disturbed sites, agricultural edges, roadsides, lake margins or temporary uncultivated fields. Aquatic invasive plants, such as *Elodea canadensis* and *Elodea nuttallii*, were recorded only in the Danube Delta, where they can form dense submerged stands.



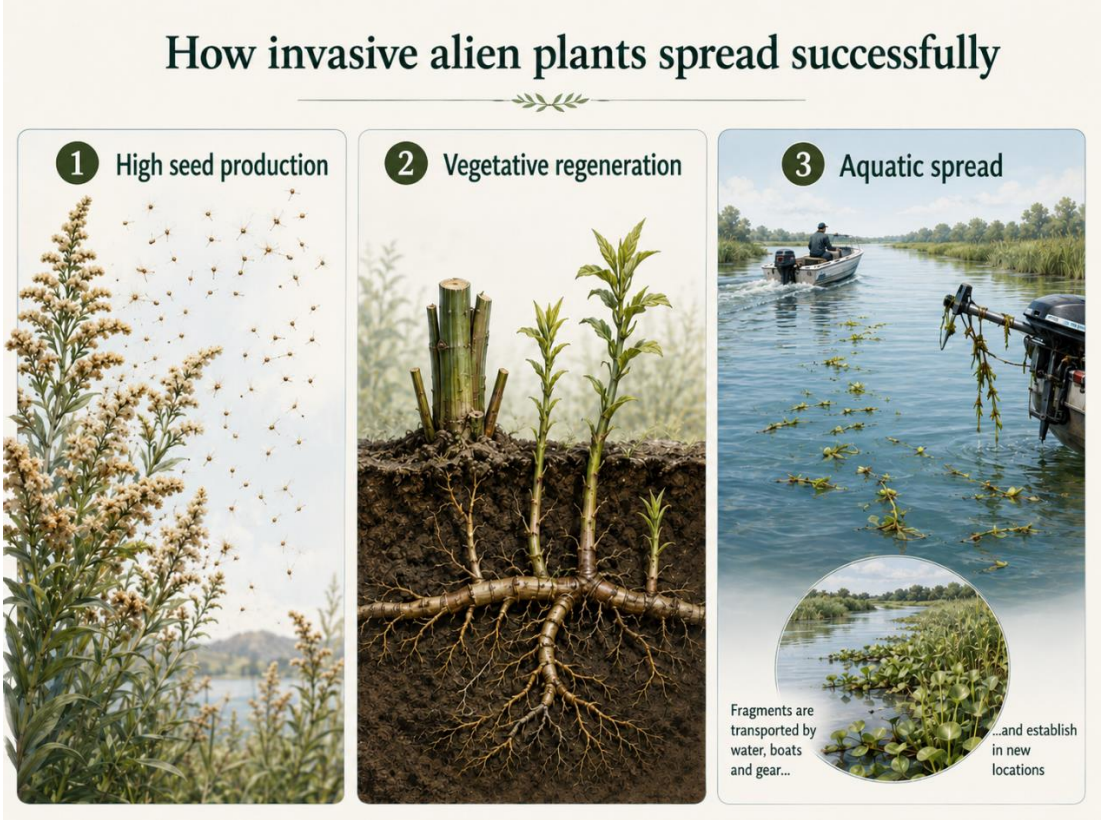




A key finding of the study is that many invasive alien plants share traits that allow them to establish and spread successfully. Several species produce large numbers of seeds, while others can also regenerate vegetatively through root suckers, rhizomes, resprouting or plant fragments. This means that even when above-ground parts are removed, some species may recover if roots, underground organs or fragments remain. In aquatic systems, plant fragments can be transported by water currents, boats or fishing equipment, allowing rapid colonisation of new channels and lakes.

The study also classified the species according to their invasion dynamics. Some species were considered slowly spreading, occurring as isolated individuals or localised populations. Others were moderately spreading, with established populations expanding across suitable habitats. The most concerning category includes rapidly

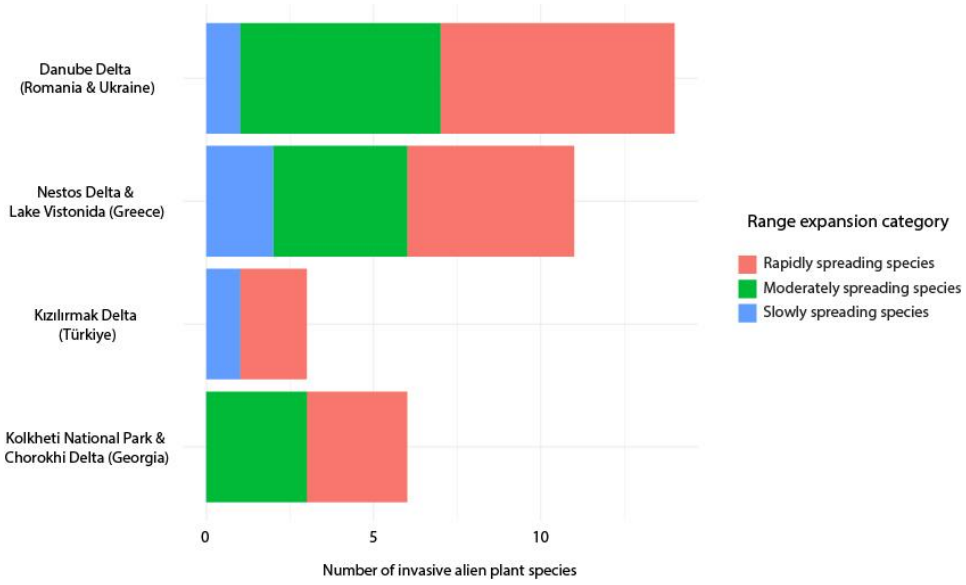
spreading species, which form dense or extensive populations and show clear evidence of ongoing spread. Species such as *Amorpha fruticosa, Robinia pseudoacacia, Elodea nuttallii, Ambrosia artemisiifolia, Sicyos angulatus* and *Solanum elaeagnifolium* were highlighted as species with strong expansion dynamics.



Some species already show strong ecological concern. *Amorpha fruticosa* was the only species recorded in all four delta and riparian systems, and in many places it forms dense thickets along riverbanks, flood channels and wet grasslands. Such dense stands can suppress native vegetation and alter habitat structure. *Robinia pseudoacacia*, originally introduced in many places for erosion control, timber or other uses, can spread into grasslands and woodlands, changing habitat conditions and reducing space for native species. Around Lake Vistonida, *Solanum elaeagnifolium* was recorded mainly in dry grasslands, where it can form dense populations.

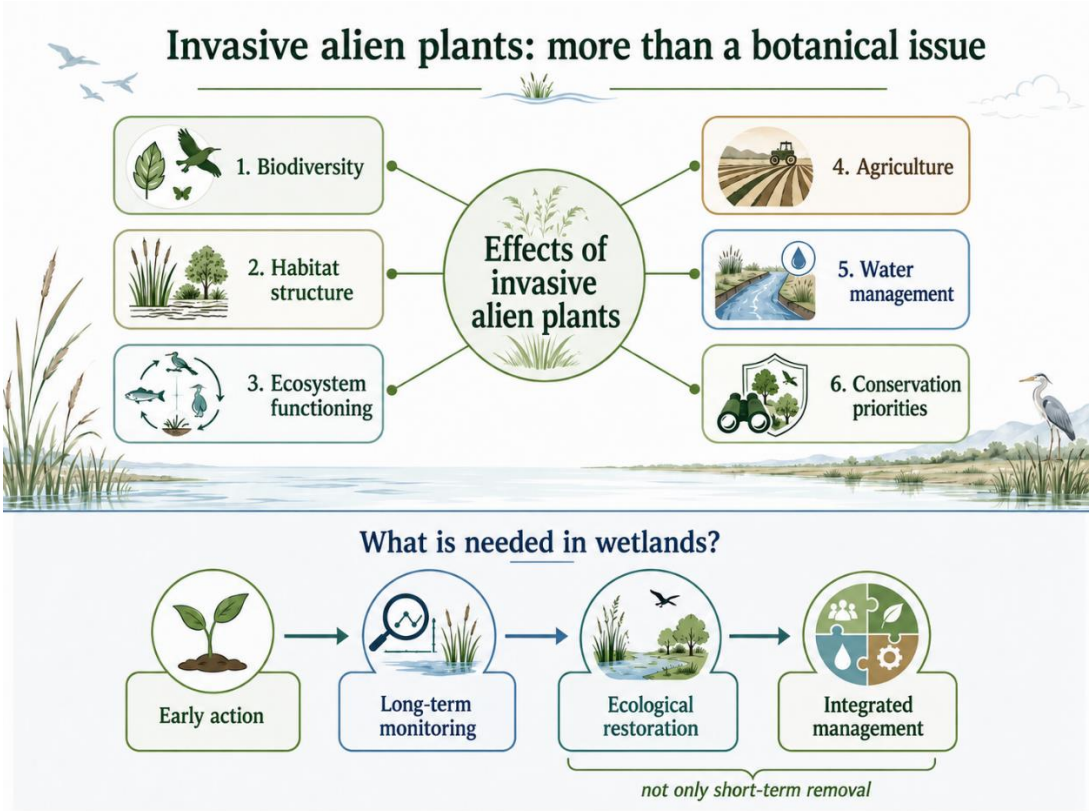
The study also shows that management cannot be the same for all species. Localised species need early detection and rapid response before they become widespread. Established and rapidly spreading species require sustained control, repeated

monitoring and, where possible, restoration of native vegetation. In riparian and wetland systems, simply removing invasive plants is rarely enough. Management must also reduce disturbance, prevent reinvasion and restore more resilient native plant communities.



For IASON+, this publication demonstrates the importance of cross-border cooperation in addressing invasive alien species. Deltas and wetlands around the Black Sea are connected not only by water and migratory pathways, but also by similar pressures: land-use change, transport routes, agriculture, forestry, tourism and climate-related changes. No single country can fully understand or manage these pressures alone. Shared monitoring, comparable field protocols and exchange of scientific knowledge are essential.

The broader message of the paper is clear: invasive alien plants are not only a botanical issue. They affect biodiversity, habitat structure, ecosystem functioning, agriculture, water management and conservation priorities. Protecting wetlands such as the Nestos Delta and Lake Vistonida requires early action, long-term monitoring and management strategies based on ecological restoration, not only short-term removal.



Through this publication, IASON+ contributes new scientific evidence for understanding invasion patterns across Black Sea delta ecosystems and supports more targeted, coordinated and realistic management responses.

Reference

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