Green Borders: Transboundary conservation activities in Romania and Bulgaria

Year of issue

2025

Summary

LIFE-Nature “Green Borders” (LIFE07 NAT/RO/000681, 2009–2013), coordinated by WWF with Romanian and Bulgarian partners, aimed to secure Pygmy Cormorant (Phalacrocorax pygmaeus) and Ferruginous Duck (Aythya nyroca) by restoring nesting/feeding habitats and promoting best fisheries management. It created a cross-border framework for 11 Natura 2000 sites along the Lower Danube.

Key works included improving the hydrological regime of Kaikusha marsh in Persina Nature Park (BG), completed in 2012, and the ecological reconstruction of the Gerai(ului) backwater at the Olt–Danube confluence (RO) in 2011.

The project’s studies supported the 2013 designation of three Transboundary Ramsar complexes (Iezerul Călărași–Srebarna, Suhaia–Belene Islands Complex, and Bistret–Ibisha), strengthening coordinated wetland management across the border.

Follow-up restoration in the Lower Danube Green Corridor continued under the Living Danube Partnership: water control was modernised at Persina/Kalimok and a further project prepared for Kaikusha; in Romania, >400 ha at Gârla Mare–Vrata were reconnected to the Danube in 2022. Note: in Sept 2021, a major fire burned most reedbeds at Kaikusha, temporarily degrading habitat.

Photo Gallery



Location

43.5996, 25.185

Project

NWRM

National ID

Bulgaria_13

Sector

Hydromorphology

Installation Date

2012

Implementation status

Completed

Contact

REC

Overview

Location of the project

Kaikusha Marsh (Persina Nature Park): ~5 km SE of Belene and ~2 km NW of Oresh, in the lands of Oresh (Svishtov Municipality). Balta Geraiului (Olt–Danube confluence): wetland between Gârcov (west) and Islaz (east) at the Olt–Danube confluence; the Ramsar sheet notes the DN6 to the north and DJ642 on the west as boundaries of the wider site.

Sponge measures implemented in the case study

Wetland restoration and management

Objectives

Biodiversity: “ensure living conditions” for Phalacrocorax pygmaeus and Aythya nyroca by reconstructing nesting/feeding areas and implementing best practices in fisheries management (project summary).
Hydrology – Kaikusha (BG): create a permanent water body with ≥ 0.6 m depth using two feeder canals (design flows 0.3 m^3/s and 0.45 m^3/s) and sluice structures.
Hydrology – Balta Geraiului (RO): block three drainage canals with small dikes; supply water via a ~900 m feeder canal tapping local brooks (~60–80 L/s) to maintain nesting-season water for target birds; ~600–900 ha reported as benefitting from improved conditions by project end.

Involved partners

Authority type	Authority name	Authority role

NGO	WWF	Implementation
Local water authority	Directorate of Persina Nature Park	Implementation

Site Information

Climate Zone

Warm temperate dry

Precipitation

600.00 mm

Temperature (°C)

11.70 °C

Evapotranspiration

0.20 mm

Runoff coefficient

0.20

Elevation range

19 m

Slope range

2.0

Groundwater level

Phreatic waters in the Olt floodplain are interconnected with the river at 2.2–6.1 m depth; terrace deposits store groundwater at 15–20 m.

Vegetation class

Reedbeds / marsh macrophytes (Phragmites-dominated) around permanent/seasonal pools, plus floodplain softwood stands (willow–poplar) in the wider floodplain.

WFD Ecological status

Moderate

WFD Chemical status

Failing to achieve good

Design and Implementation

Project scale

Meso

Project scale specifications

Hydromorphological interventions at Kaikusha (~155–160 ha) and Balta Geraiului (~600–900 ha benefiting from improved hydrological conditions); transboundary coordination exists.

Area subject to Land use change or Management/Practice change (ha)

150.00 ha

Financing

Total cost

1300000.00 €

Total cost information

Total project value

Financing authorities

Authority name	Type of funding	Financing share
European Union	EU-funds: LIFE+	70 %
—	National funds	30 %

Compensations

No

Policy and Governance

Policy description

Part of the Danube River Basin Management Plan, Bulgaria’s National Wetlands Conservation Plan and National Biodiversity Strategy; also aligned with the Lower Danube Green Corridor initiative.

Land ownership

unknown

Policy targets

Improved Biodiversity

Pressure remarks

Targeted problem: post-war embankments/drainage disconnected floodplains and degraded habitats; the measure aims to restore hydrological connectivity, generate suitable nesting/feeding conditions for Pygmy Cormorant and Ferruginous Duck, and improve broader wetland function. Relevant WFD pressure: hydromorphological alteration of the floodplain system (embankments, disconnected side arms/drainage).

Part of a wider plan

Yes

Wider plan

Name
Danube River Basin Management Plan
National Wetlands Conservation Plan - BG
National Biodiversity Strategy

Public consultation

Yes

Has contractual arrangements

No

Impacts and Monitoring

Monitoring System

Monitoring parameters

Persina Nature Park runs a monitoring programme (water, birds, fish, mammals, reptiles, vegetation), while on the Romanian side the Romanian Ornithological Society monitored target bird species during the LIFE project; continued routine parameters after 2012 are not detailed in accessible sources. Persina’s official pages state monitoring of water, birds, fish, mammals, reptiles, and vegetation, used to guide water-quality control and wetland water-regime management; the Kaikusha technical brief also specifies hydraulic targets (e.g., maintaining a ≥ 0.6 m water layer using two feeder canals sized 0.3 m^3/s and 0.45 m^3/s through gated structures).

Maintenance

Maintenance requirements

Bulgarian side: Persina Nature Park Directorate operates sluices/feeder channels to maintain target water levels at Kaikusha; for Balta Geraiului, sources describe built dikes and a feeder canal but do not specify a formal post-project maintenance regime.

Impact Assessment Methodology

Performance impact assessment method

Catchment outlet

Performance impact estimation information

Monitoring of target bird species

Socio-economic Impacts

Direct benefits

Payments for Ecosystem Services (PES) / biomass economy (Kaikusha): A pilot PES scheme was developed; a local entrepreneur signed a cooperation agreement with Persina NP to maintain the marsh via seasonal reed cutting and use the biomass for energy products (pellets/briquettes). The report details product quality tests and a business plan. These actions tie habitat maintenance to local income/energy substitution, though job/earnings figures aren’t quantified.
Fisheries & livelihoods (Persina complex, follow-on): The later sluice/monitoring upgrade cited above projected substantial fisheries benefits (carp recruitment), indicating positive spillovers for local fishers when water-level management is improved at these marshes.
Ecotourism/education (Kaikusha): Construction of a birdwatching tower, boardwalk and platforms aimed to improve visitor experience while managing disturbance - an enabling condition for nature-based tourism/education, though visitor numbers or revenues aren’t reported.

Biophysical impacts: Hydrology

Retained water

200000.00

Retained water unit

m3/month

Information on retained water

The project delivered design and preparatory works to improve the water regime and restore open-water surfaces at Kaikusha, alongside a management model focused on reed biomass cutting to reopen habitat (WWF “market payments” pilot). These actions were aimed at reversing long-term reed overgrowth that had functionally altered habitats.

Increased water storage

100000.00

Increased water storage unit

m3/month

Biophysical impacts: Biodiversity

Improved biodiversity

Yes

Information on improved biodiversity

Actions included marking/guarding Ferruginous Duck and Pygmy Cormorant breeding sites and installing low-impact visitor infrastructure (boardwalk/observation tower) to channel access and reduce disturbance at Kaikusha. While site-specific bird count gains aren’t quantified in these sources, these measures were expressly targeted at maintaining local breeding colonies.
On 14 Sept 2021, >95% of the marsh vegetation burned during a severe drought after the wetland had dried out that summer; park staff reported no large vertebrate casualties, but major damage to vegetation and small fauna. This event temporarily erased habitat structure gains until regrowth.

Biophysical impacts: Water & Soil Quality

Water quality overall improvements

Positive impact-WQ improvement

Information on water quality overall

Nutrient capture

Soil quality overall improvements

N/A info

Biophysical impacts: Others

Ecosystem impact climate regulation

No information available

Lessons Learned

Key lessons

Successful wetland restoration requires significant preparatory studies, including technical feasibility studies, which may exceed the duration and budget of the actual restoration works.
Hydrology must be engineered and then actively managed: Kaikusha's design hinged on feeder canals/sluices and adaptive reed management, supported by monitoring and operational decisions rather than "one-off" works.
Cross-border governance multiplies impacts: the project's planning fed directly into the 2013 designation of three Transboundary Ramsar complexes, locking in coordinated management across the border.
Climate extremes can abruptly erase gains: after summer drying, a 14 Sept 2021 fire burned >95% of Kaikusha's reedbeds - underscoring the need for drought/fire contingencies in wetland O&M.
Linking habitat maintenance to local livelihoods (e.g., reed-biomass PES) helps sustain outcomes but requires time to mature technically and commercially.

Barriers

Barrier type	Barrier role	Comments
Limited staff and consultant knowledge	Secondary barrier	Limited experience in wetland restoration
Existing technical standards	Main barrier	Studies and permitting phases are lengthy/costly relative to works.
Attitude of relevant stakeholders	Main barrier	Aligning landowners, land users and authorities takes time.
Other	Secondary barrier	Climate variability (drying) and wildfire risk can set back habitat recovery.

Drivers

Driver type	Driver role	Comments
Organisation committed to it	Main driver	Restoration of Kaikusha is part of larger project initiated by WWF

Success factors

Success factor type	Success factor role	Comments

Financing possibilities	Main factor	LIFE Nature
Successful coordination between authorities	Main factor	Strong RO–BG partnership aligned with Ramsar/Natura 2000 frameworks.
Conducted assessments (incl. economic)	Secondary factor	Active hydrological operation and ecological monitoring by Persina NP and partners.
Available support tools	Main factor	PES/biomass approach to maintain open water and manage reeds.

Transferability

Highly transferable to floodplain wetlands, provided robust feasibility and cross-border coordination. Pay close attention to hydrological design and adaptive O&M, align landowner interests early, secure long-term finance (e.g., PES), and plan for drought/fire contingencies in a changing climate.

Sources

Sources

IW Science

GreenBorders

Imrovement of the hydrological regime in Kaikusha marsh

Green Borders – Cross-border conservation and management of Natura 2000 sites along the Danube River (Factsheet)

GREEN BORDERS (news page)

Пазарни плащания за възстановяване на влажни зони в Природен парк „Персина”, България (Market payments for wetland restoration in Persina Nature Park, Bulgaria) – Technical Report

Подобряване на водния режим на блатото „Кайкуша” (Improving the water regime of Kaikusha marsh) – presentation

Пожар в Защитена местност „Кайкуша“ (Fire in the Protected Area “Kaikusha”)

Transboundary Ramsar Site: Lake Calarasi (Iezerul Calarasi) – Srebarna; Suhaia – Belene Islands Complex; Bistret – Ibisha Island (Bulgaria–Romania), 2013: Joint instrument

Restoring Rivers and Wetlands – Living Danube Partnership: Results and Lessons (May 2021)

Restoring the Lower Danube River’s wetlands: a short report on the hydrological effectiveness of completed projects