Restoration on Comana wetlands, Romania

Year of issue

2025

Summary

The main objective of the project is to conserve the biodiversity, the natural habitats, the wild species of flora and fauna and to assure an efficient management of protected natural areas, in particular, management of the ecological network Natura 2000 through reconstruction of Comana Wetland within Giurgiu County.

Comana Wetland restoration (2009–2011) in Comana Natural Park (Giurgiu County) built a small dam with sluice on the Neajlov and a fish pass, raised and stabilised water levels (~490 ha), set up ecological monitoring and visitor infrastructure, and supported Natura 2000 management and biodiversity gains. Since then, management has been updated: the park's management plan was approved by ministerial order in May 2022. Navigation on Balta Comana/"Neajlov Delta" is now regulated (county regulation in 2022 and a national order in Feb 2024). The county also initiated a concept for a second restoration phase ("REBACO 2", 2021) and launched feasibility/design steps. Recent monitoring and studies include a 2021 water-quality survey and analyses of ichthyofauna dynamics. In 2024, an exceptional drought led to near-complete drying of Balta Comana with short-term ecological and tourism impacts reported; local environmental press noted a return of water after autumn–winter rains in January 2025. These developments underline the need for continued maintenance of hydraulic works and adaptive, drought-resilient management.

Photo Gallery





Location

44.138207, 26.158891

Project

NWRM

National ID

Romania_11

Sector

Hydromorphology

Installation Date

2011

Implementation status

Completed

Contact

Imola Koszta, REC

Overview

Location of the project

Comana commune, Giurgiu County, within Comana Natural Park.

Country

Romania

NUTS2 Code

Sud - Muntenia

Sponge measures implemented in the case study

Removal of dams and other longitudinal barriers

Floodplain restoration and management

Wetland restoration and management

Objectives

Build a low-head dam with sluice on the Neajlov to increase water depth by >1.50 m
Achieve a permanent retention level of 43.60 mMB at Comana Pond;
Extend open-water surface to ~490 ha and keep shallow-water areas <0.5 m;
Install a fish pass to avoid habitat fragmentation.
Ecological reconstruction of ≥30% of the pond’s initial area;
Increase protected species by ≥5% (target/estimate at completion).
Wetland traps sediments and retains nutrients/other pollutants, improving water quality (no quantified load figures).
Birds (quantified). Habitat available to birds increased by ≥30%; number of birds increased by ≥5%; inventories report 157 spp. pre-project rising to 212 spp. after works (78 protected). New feeding sites for ducks/herons established.
Fish & invertebrates. Project documents state improved habitat and species richness; ichthyofauna studies (2011–2017) describe recovery of the aquatic ecosystem following impoundment and emphasise the need to continue monitoring.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility
Regional / sub-national water authority	the Giurgiu County Council	Implementation	County Authority / The project developer Owner of Balta Comana and the dike-dam (public domain); adopts and enforces the navigation regulation.	Responsible
Local water authority	Comana Local Council	Initiation of the measure	—	Supporting
Nature park	Administration of Comana Natural Park	Implementation	Initiation of the measure; Determination of design details of the measure; Implementation; Monitoring	Responsible
Private property owners	Business people who have invested in the area	Financing	—	Supporting

Authority type	Authority name	Authority role	Comments	Authority responsibility
Regional / sub-national water authority	Local Environmental Protection Agency	Monitoring	—	Supporting
Farmers	Land users from the area of Comana wetland restoration area	Other	—	Supporting

Site Information

Climate Zone

Warm temperate moist

Precipitation

560.00 mm

Temperature (°C)

11.00 °C

Runoff

122.00 mm

Runoff coefficient

0.14

Elevation range

88

Slope range

1-2%

Vegetation class

Transition between the steppe and sylvo-steppe. Within the wetland, descriptions emphasize marsh/reedbed vegetation (Balta Comana).

WFD Ecological status

Poor

WFD Chemical status

Good

Water quality status

Diffuse agricultural pollution is a significant pressure in the basin.

Design and Implementation

Project scale

Micro

Project scale specifications

This is a site-specific restoration of the Balta Comana/Comana Pond and its immediate floodplain on the lower Neajlov, inside Comana Natural Park (Giurgiu County). The works focus on one wetland complex with local hydraulic interventions (low-head dam with sluice and fish pass) that extend/maintain open water (~490 ha) within a project area reported at ~1,180 ha—i.e., not a basin-wide or regional programme.

Project area

1180 ha

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

1180.00 ha

Financing

Total cost

1807319.17 €

Total cost information

The funded measures were the following:
- Ecological restoration of habitats and reinforcement of species population, through 1) construction of a dam with sluice on Neajlov River, downstream of Comana Lake2) construction of a fish scale downstream of the dam;
- Setting up monitoring systems for the Natura 2000 sites and protected areas,
- Construction and improvement of the infrastructure of the national protected areas and Natura 2000 sites (building of visitors and information centres and of information panels, risk management / fire prevention and control etc.).
- Preparation of information and publicity materials to contribute to awareness raising on the issues of protected areas and Natura 2000

Financing authorities

Authority name	Type of funding	Comments	Financing share
European Union	EU-funds: LIFE+	—	67%
European Union	EU-funds: Cohesion and regional development funds	European Regional Development Fund, Sectorial Operational Programme Environment 2007-2013	67%
Romanian State	National funds	State budget	33 %
County Councy Giurgiu	Local funds	€ 27,579	33%

Compensations

Non

Policy and Governance

Policy description

Prior to 1990, three fourths of the wetlands were drained to be used for agriculture. This had a significant negative impact on biodiversity.Comana wetlands were restored between 2009 and 2011, to improve biodiversity and ensure the conservation of natural habitats and wild species of flora and fauna. The area covered by the restoration project was 1800 hectares.

Land ownership

Balta is in the public domain of Giurgiu County . The regulation also notes private properties on the banks.

Policy targets

Improved Biodiversity

Increase Water Storage

Part of a wider plan

Oui

Wider plan

Wider plan type	Wider plan focus	Name
Local	Environment & Biodiversity	Management Plan of the protected area
Local	Environment & Biodiversity	Visit Strategy of the protected area
Regional	Environment & Biodiversity	Giurgiu County Development Strategy
Local	Environment & Biodiversity	Region Development Strategy.

Public consultation

Oui

Consultation activities

Activity stage	Activity type	Comments
Implementation phase	Caravans for promoting biodiversity conservation presenting information about nature and its protection, about Comana Natural Park (flora and fauna);	The project had the support of local public authorities and business people who have invested in the area.
Implementation phase	Dissemination of materials with key messages;	—
Screening phase	Round table for capacity building and improvement of cooperation with local authorities and stakeholders from the Comana Natural Park area	—
Screening phase	Thematic seminars with key messages: ";protecting nature - protecting life"; and "to teach both young people and local community, how important is the conservation of environment"	—

Has contractual arrangements

Non

Impacts and Monitoring

Monitoring System

Monitoring requirements

As part of Natura 2000 management, the project installed monitoring systems for bird species and environmental parameters, with data gathered from observatories and stored centrally for research and management use.

Monitoring parameters

Monitoring system of bird species and environmental factors that will allow instantaneous observations and the opportunity to explore areas of avifauna interest without the presence of an operator; - Databases for monitoring environmental parameters characteristic for wetland habitats: precipitation, temperature and humidity in two areas of the pool and the monitoring of bird species, which constitute a source of information for those interested; - Storage all information received from the observatories within a Dispatcher and use the data in research activities.

Maintenance

Maintenance requirements

Water-level control relies on a low-head dam with sluice, bottom outlet and spillway at Balta Comana—this structure is in the public domain of Giurgiu County, with navigation and safety around it governed and enforced by the county’s regulation.

Impact Assessment Methodology

Performance impact assessment method

Catchment outlet

Performance impact estimation information

monitoring systems for the Natura 2000 sites and protected areas, including infrastructure and equipment for monitoring the natural habitats and the conservation status of flora and fauna species (monitoring system of environmental parameters and bird species)

Socio-economic Impacts

Direct benefits information

The restoration of the Comana wetlands greatly improved biodiversity in the area. The construction of the dam on the Neajlov River, downstream of Comana Lake, increased the level of water in the floodplain area and has maintained it at a constant level, which has had positive effects on avi-fauna. New feeding sites for duck and heron species in the area previously occupied by reeds were established. It is estimated that the land available as habitat for bird species was increased by at least 30% and the number of birds increased by at least 5%. Moreover, the improved ecological conditions increased the quality of habitats and hence species richness for fish and invertebrates.

Ancillary benefits information

20 temporary jobs were created during dam construction; the project also reports business investment coming to the area and permanent economic benefits from an ecological research area & cooperation with nearby institutions.
~10,000 visitors/year to protected sites and ~5,000 users/year for camping, walking, jogging, water sports and cycling. The park also organises guided visits for groups.
~500 educational excursions/year as a project benefit; guided school visits, seminars and workshops are part of ongoing activities.

Biophysical impacts: Hydrology

Information on retained water

Raised & stabilized water level. The project built a low-head dam with sluice and spillway; target permanent retention 43.60 m a.s.l. and >1.5 m depth increase, extending open water to ~490 ha within the Comana pond complex.
Hydraulic annexes (as built). Earthen dike with a ~525 m overflow spillway (0.80 m high); dam crest 45.00 mMB; fish pass downstream.
Recent adverse event. In Aug 2024, the “Neajlov Delta” (Balta Comana) dried almost completely due to severe drought; media and photo reports show near-total drawdown. Water presence was reported again after winter rains in Jan 2025.

Biophysical impacts: Biodiversity

Improved biodiversity

Oui

Information on improved biodiversity

The construction of the dam on the Neajlov River, downstream of Comana Lake, increased the level of water in the floodplain area and has maintained it at a constant level, which has had positive effects on avifauna. New feeding sites for duck and heron species in the area previously occupied by reeds were established. It is estimated that the land available as habitat for bird species was increased by at least 30% and the number of birds increased by at least 5%. Initially there were 157 species, and after project implementation were inventoried 212 species, of which 78 species protected at national and European level.Moreover, for fish populations and their invertebrate prey, the new conditions such as oxygen concentrations, changing water levels and their daily fluctuations have improved the quality of habitats and species richness.

Biophysical impacts: Water & Soil Quality

Water quality overall improvements

Positive impact-WQ improvement

Information on water quality overall

Traps sediments and retains excess nutrients and other pollutants such as heavy metals. This is important as the Comana wetland is connected to groundwater sources used by local communities for drinking, and surface water sources (rivers and lakes) used for swimming, fishing, or other activities. These same functions are also critical for the fish and other wildlife that inhabit these waters.

Biophysical impacts: Others

Ecosystem impact climate regulation

No information available

Lessons Learned

Key lessons

The project set a precedent locally: it is cited as the first wetland restoration and first green-infrastructure example in the region, which helped normalise nature-based solutions for protected-area management.
Delivery was slowed by public-procurement appeals. Future projects should plan timetable buffers and contract flexibility for addenda to avoid cascading delays.
Sustained awareness-raising and stakeholder engagement were critical. The team ran caravans, seminars and roundtables, building the social licence that underpinned implementation and later park uses.
Clear governance and operating rules matter once water returns. After the works, Giurgiu County formalised navigation rules and confirmed that Balta Comana and the dike–dam are in the county public domain; the 2024 national order approves a unified navigation regulation requiring the Park Administration's prior consent. This helps balance recreation with conservation and infrastructure safety.
Monitoring must be embedded and used. The project installed stations and a central dispatcher for birds and environmental parameters; later, an independent 2021 survey documented water-quality indicators, and the basin authority classed Comana Lake's ecological status as "moderate" in 2023 (three monitoring sections). That combination shows why regular measurement is needed to adaptively manage outcomes.
Climate variability is a stress test. In summer 2024, the "Neajlov Delta" dried almost completely, disrupting biodiversity and tourism; local environmental press then reported water returning after autumn–winter rains in January 2025. Designs and O&M regimes should anticipate prolonged low-flow years and safeguard minimum levels where feasible.

Barriers

Barrier type	Barrier role	Comments
Other	Main barrier	Barriers for the implementation of the measures were due to the process of public procurement for contracts regarding the supply / works / services, which consisted in appeals and had as a consequence procedures which led to delays in the project implementation. Addendum were necessary in order to extend the implementation period. This resulted from the inflexibility to redistribute savings and so required using beneficiaries own funds.

Drivers

Driver type	Driver role	Comments
Availability of subsidies	Main driver	available EU funds

Success factors

Success factor type	Success factor role	Comments

Financing possibilities	Main factor	The funding was sufficient for project implementation and the financial framework conditions support the financing of the nature conservation activities. Without the EU funding, the project would not have been possible.
Attitude of relevant stakeholders	Secondary factor	Strong actors / The project has the support of local public authorities and business people who have invested in the area. Also the County Council Giurgiu has a good collaboration with Local Environmental Protection Agency and land users from the area of Comana wetland restoration area. They are supported by Administration of Natural Park Comana who is also one of the partner within the project.

Transferability

Highly transferable to lowland river–floodplain wetlands where modest impoundment can expand shallow-water habitats. Success depends on clear governance and procurement planning, strong local buy-in, and embedded monitoring. Look carefully at hydrological reliability under drought, sedimentation and O&M needs of the dam/sluice and fish pass, baseline ecological status and water quality, and rules for recreation/navigation to avoid conflicts.

Sources

Sources

The Guide to Multi-Benefit Cohesion Ploicy Investments in Nature and Green Infrastructure

Integrated Management Plan of The Natural Park Comana

Ecological Restoration of Comana Wetlands - Giurgiu County, Cod SMIS - CSNR 6725

ORDIN nr. 887 din 14 aprilie 2022 privind aprobarea Planului de management al Parcului Natural Comana

Hotărârea Consiliului Județean Giurgiu nr. 210 din 20.09.2022 privind aprobarea Regulamentului de navigație pe Balta Comana, județul Giurgiu

Efectul schimbărilor climatice. Lacul Comana a secat din cauza arșiței

A PRELIMINARY EVALUATION OF WATER QUALITY RELATED TO AQUATIC ORGANISMS IN COMANA POND

Apa a revenit în Balta Comana

PROBLEME IMPORTANTE DE GOSPODĂRIRE A APELOR ÎN SPAȚIUL HIDROGRAFIC ARGEȘ-VEDEA – 2019

ANALIZA PROIECTULUI – Reconstrucția Ecologică a Bălții Comana

RECONSTRUCȚIA ECOLOGICĂ A BĂLȚII COMANA – JUDEȚUL GIURGIU, COD SMIS – CSNR 6725 (slide deck)