Riparian forests along the Maritsa river, Bulgaria

Year of issue

2025

Summary

Restoration and conservation of riparian forests along the Maritsa in the protected area “Reka Maritsa” (Natura 2000 BG0000578). Led by the Municipality of Dimitrovgrad; reported as completed in 2012, with administrative closure in 2015. Actions combined habitat recovery with risk-aware design: a hydro-hydraulic assessment of flood conveyance; riverbank clean-up (~24 daa) and maintenance of habitat fragments (~809 daa); collection and production of native planting material (willow, poplar, oak, elm, ash, alder); installation of fish shelters targeting Aspius aspius; nest boxes and awareness activities. Subsequent programmes extended the effort along the Maritsa. Under LIFE13 NAT/BG/000801 (2014–2019), 48.1 ha of riparian forest were restored nationally, including 160 daa on the Maritsa, using local species. Planting at “Merich Orman” in 2016 (47,960 seedlings, seven native species) and later community initiatives kept momentum on riverbank restoration. In 2024, a public consultation to adopt the national order for site BG0000578 clarified and strengthened the legal framework for future management and long-term conservation of these riparian habitats.

Photo Gallery





Location

42.06527, 25.63861

Project

NWRM

National ID

Bulgaria_08

Sector

Forest

Installation Date

2012-02

Contact

REC

Overview

Location of the project

Along the Maritsa River within Dimitrovgrad Municipality (Haskovo Province), inside Natura 2000 site “Reka Maritsa” (BG0000578).

Country

Bulgaria

NUTS2 Code

Южен централен (Yuzhen tsentralen)

Sponge measures implemented in the case study

Forest riparian buffers

Objectives

Prepare a hydro-hydraulic assessment to check flood-conveyance compatibility of actions along ~10 km of river reach and to inform the design of fish shelters.
Clean up ~24 decares (daa) of scattered construction/household waste to free areas for restoration.
Tend/rehabilitate existing habitat fragments over 809.63 daa (pruning, mowing, weeding, removing diseased/dry material; >2 daa vegetation or >1,600 trees, mostly willows).
Reintroduce five conservation-significant plant species (Euphorbia lucida, Leucojum aestivum, Typha schuttleworthii, Lemna gibba, Utricularia vulgaris) via 550 bundles.
Protect restored areas from grazing with ~3,150 m of electric fencing.
Run 15 field actions with youth; deliver ≥ 50 school talks; produce materials (leaflet 5,000; flyer 10,000; poster 1,000; desk calendar 1,000; stickers 5,000); make a 5-min video; mount a 10-panel portable exhibition; install 5 information boards; set up an interactive touchscreen at the municipality; create a biotope aquarium for target fish species; hold 4 press conferences; and maintain web updates.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility
Local water authority	Dimitrovgrad municipality	Initiation of the measure	Administrative unit	Responsible
National water authority	OP Environment 2007-2013	Financing	Ministry of environmental and water - Bulgaria	Supporting

Site Information

Climate Zone

Warm temperate dry

Precipitation

525.00 mm

Temperature (°C)

12.60 °C

Evapotranspiration

669.00 mm

Elevation range

90 m

Slope range

7.3

Vegetation class

Predominantly riparian forests/gallery forests: habitat types 92A0 (Salix alba & Populus alba galleries) and 91F0 (riparian mixed forests of Quercus/Ulmus/Fraxinus)

WFD Ecological status

Moderate

WFD Chemical status

Failing to achieve good

Water quality status

Significant pressures from industrial discharges in the Maritsa basin

Design and Implementation

Project scale

Meso

Project scale specifications

The Dimitrovgrad municipal project restores riparian forests along a river reach of the Maritsa inside Natura 2000 site “Reka Maritsa” (BG0000578). The approved work program explicitly covers an ~10 km target section of the river (hydro-hydraulic assessment scope) with multiple intervention plots (habitat tending on ~809 daa; clean-ups on ~24 daa), i.e., broader than a single site but limited to a segment of the river corridor, not a whole basin or country.

Financing

Total cost

851000.00 €

Financing authorities

Authority name	Type of funding	Comments
European Union	EU-funds: Cohesion and regional development funds	Operative program: Environment 2007-2013
European Union	EU-funds: LIFE+	LIFE project LIFE13 NAT/BG/000801 – “Riparian Forests” (2014–2019) had a total budget of €537,056, co-financed by the EU LIFE Programme

Compensations

Non

Policy and Governance

Policy description

Along the Maritsa in Dimitrovgrad (within Natura 2000 SAC BG0000578 “Reka Maritsa”), the riparian corridor is heavily altered: parts of the reach are entirely diked, banks are largely deforested (≈95%), and there are multiple sand-/gravel-extraction ponds. These changes degrade Annex I riparian habitats (92A0, 91F0, 91E0*) and fish habitats. The municipal project therefore set out to restore riparian forests and river-margin structure, remove dumped waste (~24 daa), tend degraded habitat fragments (~809.63 daa), and install fish refuges, with a hydro-hydraulic study to ensure actions would not impair flood conveyance.

Land ownership

Municipality of Dimitrovgrad

Policy targets

Improved Biodiversity

Pollutants Removal

Oher Societal Benefits

Target remarks

Restore and ensure the long-term conservation of habitats and species in Natura 2000 site “Reka Maritsa” within Dimitrovgrad municipality.

Pressure remarks

Hydromorphological alteration

Part of a wider plan

Non

Public consultation

Oui

Consultation activities

Activity stage	Comments
Implementation phase	15 youth field actions (tree planting, nest-box installation), ≥50 school talks, and large outreach outputs: leaflet 5,000, flyer 10,000, poster 1,000, desk calendar 1,000, stickers 5,000; plus 4 press conferences, 5 on-site information boards, an interactive touchscreen in the municipal hall, and a biotope aquarium in the Raynovo information centre.

Has contractual arrangements

Non

Impacts and Monitoring

Impact Assessment Methodology

Performance impact assessment method

Unknown

Socio-economic Impacts

Direct benefits

Public engagement & education

Local amenity & sanitation co-benefit

Biophysical impacts: Biodiversity

Improved biodiversity

Oui

Information on improved biodiversity

14.2 ha of 91E0 alluvial forests were restored (12.8 ha at Merich orman and 1.4 ha at Gushterova odaya). An adapted Saarland method to thin invasives/improve stand structure was applied on 1.8 ha within BG0000578 (plus 22.3 ha on the Danube site). These actions increase habitat coverage within the SCI from a mapped baseline of 0.43 ha (mapping project) and could raise the share to ~0.1% of the SCI if stands persist. Current official conservation status remains “unfavourable–unsatisfactory.”

Planting totals include 47,960 saplings at Merich orman and ~7,000 at Gushterova odaya (species mix: Quercus robur, Ulmus spp., Fraxinus angustifolia, Alnus spp., Populus nigra, Salix alba, etc.). Monitoring in autumn 2018 recorded ~59% survival at Merich orman and ~27% at Gushterova odaya (vs ~80% in the Danube site), with drought and drainage cited as causes; strategies were adapted (autumn re-planting, more resilient species).

The Saarland method and follow-up tending targeted invasive removal and structure improvement on ≥24.1 ha across both project sites.

Biophysical impacts: Water & Soil Quality

Information on water quality overall

The municipal project included clean-up of ~24 daa (2.4 ha) of scattered construction/household waste to free space for habitat restoration (a direct pressure reduction)

The reach has suffered episodic nitrogen pollution incidents (e.g., July 2020 exceedances for nitrite ~358×, nitrate ~10×, ammonium ~2× at the Neochim discharge; water supply to settlements was temporarily halted), showing persistent external water-quality pressures unrelated to the planting itself.

Biophysical impacts: Others

Ecosystem impact climate regulation

No information available

Lessons Learned

Key lessons

Planning of measures in places with existing infrastructure (bridges, roads, sand pits) need coordination with respective institutions in early phase and following strrictly the approval procedures in order to avoid risks for implementation. Detailed geodesic surveys are necessary during the technical design phase.
Rigorous screening up front reduces implementation risk. The Dimitrovgrad project built in a hydrological–hydraulic assessment over ~10 km to ensure plantings and planned fish shelters would not impair flood conveyance - an approach that should be standard wherever levees and extraction ponds constrain the river corridor.
Adaptive management matters. Post-planting monitoring found low survival at one Maritsa plot (≈27%) due to drought and a lowered riverbed/groundwater; managers changed species mixes and planting season, and increased replenishment and watering.
Embed responsibilities for aftercare and monitoring. Long-term tending (watering, sprout removal, replanting) and annual stand inventories by the forestry authorities, framed by Natura 2000 obligations and LIFE follow-up, were crucial to keep the restoration on track.
External pressures can wipe out gains. Hydromorphological alteration (dikes, gravel pits) and episodic industrial pollution on the Maritsa show that riparian restoration must be paired with basin-scale controls and enforcement under the RBMP.

Barriers

Barrier type	Barrier role	Comments
Other	Main barrier	Strong hydromorphological constraints: levees, extraction ponds, deforested banks along the reach.
Expected maintenance needs	Secondary barrier	Drought and lowered riverbed/groundwater causing poor seedling survival in places.
Expected maintenance needs	Secondary barrier	Episodic industrial water-quality incidents in the area (e.g., 2020 nitrogen exceedances) beyond the project’s control.
Expected maintenance needs	Secondary barrier	Ongoing need to control grazing/illegal activities, requiring protection and repeated tending.

Success factors

Success factor type	Success factor role	Comments
Conducted assessments (incl. economic)	Main factor	Up-front hydro-hydraulic study and detailed surveying to de-risk works in a heavily engineered reach.
Successful coordination between authorities	Main factor	Clear policy frame and funding continuity (Natura 2000 + LIFE), enabling after-LIFE actions on the same site.

Success factor type	Success factor role	Comments
Other	Secondary factor	Adaptive silviculture using local riparian species and structured methods (e.g., Saarland method) to improve stand condition.
Public participation	Main factor	Community/outreach components that improve site stewardship and reduce anthropogenic pressures.

Sources

Sources

Case study:Restoration and conservation of riparian forests

Riparian and lowland mixed woodlands and longozes

Кратко представяне на ПУРБ в Източнобеломорски район (2016–2021) – Резюме

Обществено обсъждане на проект на заповед за обявяване на защитена зона BG0000578 „Река Марица“, публикувано на 17.06.2024 г.

„Възстановяване и опазване на крайречни гори… община Димитровград“ (Project ID BG161PO005-3.0.07-0017-C0001) – UMIS public fiche

Project – “EVN for Bulgaria in support of WWF Bulgaria 2022–24”

LIFE+ Крайречни гори / Life+ Riparian Forests (LIFE13 NAT/BG/000801)

WWF-Bulgaria Plants a New Forest along the Maritza River