Restoration of a natural floodplain meadow in the Quintarets at Isle-Jourdain

Year of issue

2025

Summary

Upstream of L’Isle-Jourdain (Gers), the Save’s active floodplain hosts a complex of wet meadows. To safeguard the downstream drinking-water abstraction, restore wetland habitats and slow floods, the Gascogne Toulousaine community acquired a 13-ha riparian parcel (“Quintarets”), leased it under an agri-environmental contract, converted it to permanent natural grassland using late-cut “hay-flower” transfer, and dug shallow detention basins to retain floodwater and favour wetland plants. Since 2013 the municipality has embedded this action within a wider priority wetland area (~468 ha) and a Departmental Sensitive Natural Area (≈456 ha), with ongoing land purchases and site management led by the SYGESave river syndicate. Technical follow-up (2013–2017) reports rapid grassland naturalisation after hay transfer and longer water residence in the excavated basins. A major update is the June 2022 biotope protection order (APPB) for Bellevalia romana, which secures >22 ha within the L’Isle-Jourdain wetland. Overall, the Quintarets restoration is now part of multi-year catchment management that couples biodiversity protection, drinking-water safety, flood attenuation and public awareness.

Photo Gallery



Location

43.596914, 1.057169

Project

NWRM

National ID

France_14

Sector

Agriculture

Installation Date

2013

Implementation status

Completed

Overview

Location of the project

The parcel is located in the major bed of the Save River, upstream of Isle-Jourdain. It is located in a floodplain area, 500m upstream of a drinking water catchment area in the Save supplying a population of 10,000 inhabitants. The particularity of the site is that it is located between a vast wetland complex with floodplain natural grasslands alternating with wood and crops, and a growing activity zone (artisanal zone).

Country

France

NUTS2 Code

Midi-Pyrénées

Sponge measures implemented in the case study

Buffer strips and hedges

Basins

Meadows and pastures

Floodplain restoration and management

Objectives

Protect the drinking-water intake serving ~10,000 people ~500 m downstream; increase floodplain storage via basins; restore wet grassland biodiversity; maintain landscape quality; secure zero-input management via lease.

Involved partners

Authority name	Authority role	Authority responsibility
Communauté de Communes de la Gascogne Toulousaine (CCGT) (federation of municipalities of the Gascogne Toulousaine)	Initiation of the measure	Responsible
Association de Développement, d'Aménagement et de Services en Environnement et en Agriculture (ADASEA) du Gers (association for development, planning and services in environment and agriculture)	Implementation	Supporting

Documents

mnre_rex03_prairie_quintarets.pdf (844.73 Ko)

Site Information

Climate Zone

Warm temperate dry

Temperature (°C)

14.20 °C

Elevation range

142 m

Vegetation class

Floodplain wet meadows (lowland hay meadows), tall sedge/carex stands (e.g., Carex riparia), riparian alder–ash woods; mosaic with ditches and patches of riparian scrub.

WFD Ecological status

Moderate

WFD Chemical status

Good

Water quality status

Diffuse agri-inputs to the downstream intake; wetland ploughing; habitat closure; trampling/disturbance; invasive crayfish recorded in the Save incl. at L’Isle-Jourdain wetland.

Design and Implementation

Project scale

Micro

Project scale specifications

A single 13-ha riparian field was converted to permanent wet meadow with three shallow flood-storage basins and managed by one farm lease—localised hydromorphological intervention.

Project area

13 ha

Principles

Multifunctionality (drinking-water protection, flood attenuation, habitat restoration); nature-based sowing via late-cut “hay-flower” transfer; 3 basins up to ~0.8 m deep; transverse hedgerows; no inputs via lease clauses.

Favourable preconditions

The wet grasslands in the surrounding provide a reservoir for recolonization of wetland fauna and flora when new wetland is created. The conversion to hay meadow allowed the restoration of semi-open wet habitats, in direct proximity to functional habitats of this type, with a direct interest in the associated biodiversity. In addition, the change in land use made it possible to reduce polluting pressures (no use of inputs), thus helping to protect the catchment downstream from diffuse pollution. Finally, the excavation of detention basins made it possible to increase the volume of water stored in the floodplain.

Financing

Total cost

139000.00 €

Total cost information

land €86,000; works/studies/monitoring €53,000

Financing authorities

Authority name	Type of funding	Comments	Financing share

Adour-Garonne Water Agency	Sub-national funds	€69,500	50 %
European Union	EU-funds: Cohesion and regional development funds	€41,700	30%
ADASEA Gers	Other	€27,800	20%

Compensations

Non

Policy and Governance

Policy description

The field was initially cultivated with a rotation of cereals in conventional agriculture, involving in particular the use of pesticides.
The area is flooded regularly, and is totally submerged every 5 years on average.

Land ownership

Communauté de Communes de la Gascogne Toulousaine (CCGT), which purchased the 13-ha parcel in 2012 and leases it under an environmental farm lease.

Target remarks

Protect the downstream drinking water abstraction well.
Increase the storage capacity of a flood expansion area.
Promote the typical biodiversity of wet grasslands.
Preserve the quality of the living environment and landscape.

Part of a wider plan

Non

Public consultation

Non

Has contractual arrangements

Non

Impacts and Monitoring

Monitoring System

Monitoring parameters

Flood monitoring

the ADASEA du Gers monitors flood episodes by establishing a register of floods and recording area submersed, noting the duration of the flood, submersion extension and nature of the submerged areas with the associated water levels.

Floral monitoring.

Floral monitoring is carried out each year by the national botanical conservatory of Midi-Pyrénées to watch the meadow's evolution.

Impact Assessment Methodology

Biophysical impact assessment method

Flood monitoring

Floral monitoring

Biophysical impacts: Hydrology

Hydrological effects

Longer water residence in excavated basins vs meadow; added floodplain storage and runoff slowing; local roughness via hedgerows; morphological change limited to shallow basins.

Information on retained water

Less than expected. The river rarely overflows in the basins as it is flanked by leaves, and the basins dry out too quickly through a ditch.

Biophysical impacts: Biodiversity

Improved biodiversity

Oui

Information on improved biodiversity

In the absence of flooding in the 2 years after establishment of the meadow, it is mostly mesophilic grassland which developed. Even in detention ponds that were somewhat flooded in winter, there was no vegetation associated with wetlands.
Monitoring shows the evolution of plant communities towards natural grassland species. Ryegrass dominated regrowth in 2014, before declining sharply the following year to make way for natural grassland species. As at Spring 2018, the floristic composition is thus close to a natural meadow.
The flora that has developed is mesophilic, even in the detention ponds. This may be due to relatively dry years after planting, particularly 2016 and 2017.
As of 2024, the vegetation dynamics are gradually evolving towards a wetland habitat.

Lessons Learned

Key lessons

Looking back, ADASEA regrets that piezometers have not been installed to quantify the hydrological effects of the measurement.
As of 2024, The natural water retention measures are still functional, but they are less effective than expected due to the site's configuration and the layout of the retention basins. The basins mainly fill up when water flows in from the upstream watershed, rather than from river flooding, as the river is flanked by levees that limit overflow. They also dry out too quickly, as the water drains away through a ditch that was unfortunately left in place during the works, at the request of the project owner. New adjustments are currently being considered. On a more positive note, the vegetation dynamics within the basins and the plot, which are being monitored regularly, are promising and are gradually evolving toward a wetland habitat.

Barriers

Barrier type	Barrier role	Comments
Other	Main barrier	The land aquisition took longer than expected end flooding events lead to delays in the work. Work could not be started as planned, the meadow had to be sown with ryegrass for one year, the flower hay could not be used as planned immediately after harvesting but 3 month later (less favourable to keep the entire seed bank) and a flooding event just after the spreading lead to lose part of the hay.

Drivers

Driver type	Driver role	Comments
Availability of subsidies	Secondary driver	The water agency and FEDER subsidies allowed mobilise all actors necessary for the project.

Driver type	Driver role	Comments
Past flooding events	Main driver	A wetland already recognised in the surrounding, an abstraction well sensitive to diffuse pollution, and the risk associated with the downstream urban area sensitive to flooding (floodable)

Success factors

Success factor type	Success factor role	Comments
Existing regulations	Main factor	Biotope protection order (APPB) for Bellevalia romana

Transferability

Highly transferable to lowland floodplains where land control is possible. Mind timing of hay-transfer (delays reduce seed bank) and early floods can wash seed; install piezometers to quantify effects; embed in long-term governance (lease + catchment programme).

Sources

Sources

Retours d’expérience sur la restauration de prairies humides

Créer une prairie multi-espèce en zone inondable. Fiche technique n°05

La Jacinthe de Rome