

## Agreed definition of a mobility area for the Adour

### The operation

Category	Preservation and management
Type of operation	Definition of a free space for the river
Type of environment	Intermediate zone watercourse
Issues at stake (water, biodiversity, climate)	River continuity, good status of habitats
Start of operation	2008
End of operation	2018
Length of watercourse affected by the works	44 km

### Watercourse in the restored section

Name	The Adour
Distance to source (upstream point)	72 km
Mean width	20 m
Mean gradient	2 ‰
Mean flow rate	35 m <sup>3</sup> /s

### Aims of the project owner

- Delimit a "permitted" free space for the river to move within, in the spirit of restoring natural regulation phenomena specific to the intrinsic dynamics of the watercourse.
- Define appropriate management principles for this area.
- No increase to the risk of flooding.

### Environment and pressures

The Adour is a major river due to its catchment size and flow rates in a basin covering 17,000 km<sup>2</sup> and flows into the Atlantic Ocean at the Gulf of Gascony after a journey of 309 kilometres. This highly mobile, braided piedmont watercourse constitutes one of the primary resources for alluvial materials in the Adour-Garonne basin. Agriculture is of key importance in the catchment with approximately 50% of the utilised agricultural area (UAA) used for irrigated farming – corn in particular. The emblematic species of the site are the European pond turtle, European otter, sea lamprey and the orange-spotted emerald dragonfly.

### Location

Country	France
River basin	Adour - Garonne
Region(s)	Midi-Pyrénées
Département(s)	Hautes-Pyrénées et Gers
Commune(s)	17 communes Lafitole, Maubourguet, Estirac, Caussade-Rivière, Labatut-Rivière, Tieste-Uagnoux, Jû-Belloc, Hères, Castelnau-Rivière-Basse, Préchac-sur-Adour, Goux, Galiac, Cahuzac-sur-Adour, Izotges, Termes-d'Armagnac, Sarragachies, Riscle.



Regulatory context: *Not applicable*

#### References in relation to European Directives

Water body ref.	FRFR237A and FRFR327C
Natura 2000 site ref.	FR 7300889

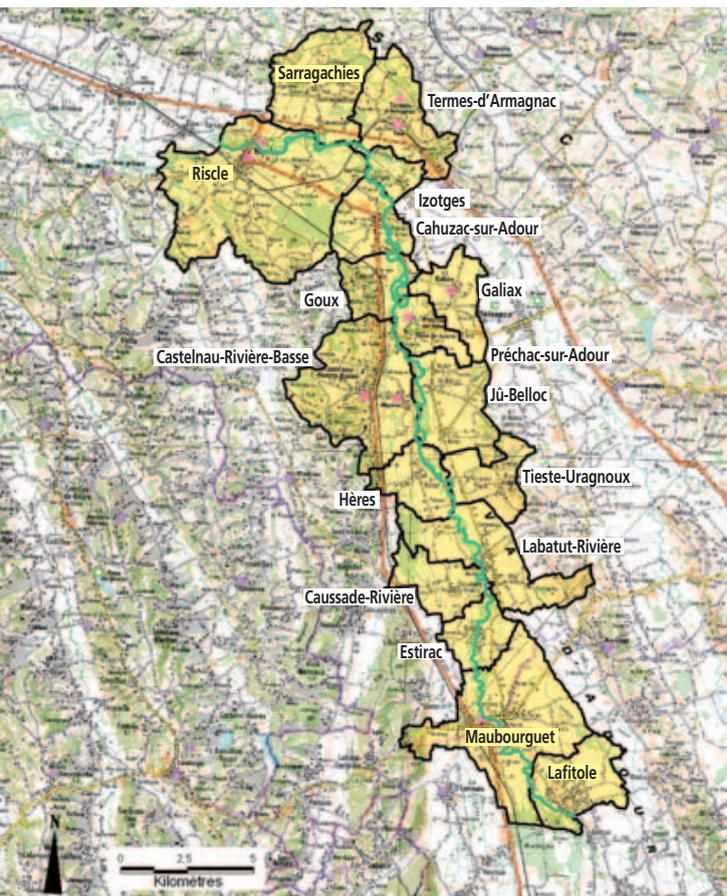
From the 1960s, large amounts of aggregates were extracted from both its main channel and associated floodplain. These activities caused a significant incision of the main channel, thus reducing the frequency of flooding into the floodplain, reducing the occurrence of river meandering, lowering the ground water table and cutting off ancient meanders, etc. In seeking to establish its new profile of equilibrium,

erosion of the banks occurred, which prompted the managing authorities to stabilise its cross-sectional and longitudinal profile. Major embankments, weirs and protective structures for banks (covering 26% of banks) were subsequently constructed on the Adour. The dynamics of the watercourse have obliged the managing authorities to regularly reinforce the bank protections.



The Adour at Izotges (Gers).

Google Earth



The communes concerned.

Scan100 - IGN

### ■ Opportunities to act

The flood protection associations in both départements lacked the financial resources to continue their policy of systematically combating erosion and flooding by creating bound or loose riprap structures. At the same time, due to changes in the regulations, protective measures, other than those designed to protect people, were no longer funded by the State. The limitations of the policy of systematic riverbank protection using traditional methods thus became apparent, on the grounds of both efficiency and cost.

In order to put a stop to isolated responses to demands for riverbank consolidation without the implementation of a global approach, the Institution Adour and the two local associations conducted a joint study of how to design an integrated, acceptable and sustainable management programme for the Adour's mobility area. This joint project involved local elected representatives, institutional partners and local residents, i.e. the 17 communes (towns and villages) in the area, both départements, the region, ONEMA (French National Agency for Water and Aquatic Environments), State departments, departmental fishing federations, the Société d'aménagement foncier et d'établissement rural locale (SAFER - Local Land Development and Rural Establishment Company) and the Chamber of Agriculture.

### ■ Works and developments

The consultation with stakeholders in the area led to the definition of a permissible mobility area covering 1,744 hectares. This area takes account of the key issues that the elected representatives wanted to protect from the mobility of the watercourse, including:

- Protection of homes from flooding and uses such as gravel extraction, where their presence could result in negative consequences for the general public as a whole.
- Protection of drinking water abstractions
- Protection of bridges and other civil engineering structures.

Operations have been scheduled for the 2008-2018 period and consist of:

- Acquiring and exchanging plots of land contained within the defined area.
- Managing riparian forest and carrying out planting with the aim of re-establishing the former ecological corridor.
- Moving back embankments and rebuilding them as close as possible to the protected areas at risk of flooding.



Restoration of the three hectares of flood plain by moving back flood protection banks, representing an additional storage area for 50,000 m<sup>3</sup> of floodwater.

- Protecting the banks with civil engineering structures if there are issues relating to public safety and/or the public interest and if the risk to safety cannot be eliminated.

The mobility area thus includes sectors in which the risks to the public are protected from the dynamics of the river for reasons of public safety and/or public interest, and sectors in which the river's dynamics can take place without hindrance.

The cost of the local consultation amounted to approximately €55,000 excl. VAT.

### ■ Regulatory approach

- (DIG - Public Interest Declaration).
- (DUP - Public Utility Declaration).
- Authorisation dossier in accordance with the French Water Act:

3.1.4.0: Consolidation or protection of banks

3.1.2.0: Modification of the longitudinal profile or planform of the low-water channel of a watercourse or diversion of a watercourse

3.1.5.0: Destruction of a spawning ground

3.2.2.0: Installations, structures or fill material in the high-water channel of a watercourse

3.2.6.0: Embankments

### ■ Post-restoration management

Within the permissible mobility area, the first principle is non-intervention.

Targeted interventions are envisaged (especially bank protection) when the Adour threatens to reach the limit of the permissible mobility area and according to the issues at stake. Other types of interventions are possible:

- Reopening of branches
- Management of alluvial structures

- Restoration of riparian forest, etc.

The second principle is the management of key sites:

- Limiting the establishment of new risk areas
- Modifying or moving existing sites at risk (embankments, pumping stations, roads, canals, etc.).

### ■ Monitoring

A pre-works monitoring of the hydrogeomorphological processes of the Adour was carried out by a research consultancy. An analysis of aerial photographs and a field survey allowed for the accurate mapping of the functional mobility area of the watercourse. The monitoring and assessment of the works are currently being defined and will focus on the evolution of the erosion of banks, the stabilisation of the river bed and the habitats of the main channel and floodplain. A study to obtain feedback from local residents and elected representatives of the proposed mobility area will be conducted at the same time.

The Adour at Jû-Belloc (Gers): watercourse with a mobile bed.



## ■ Projected costs for the 2005-2018 period

In euros excl. VAT

Cost of studies	<b>€130,000</b>
Cost of acquisitions	<b>€737,515</b>
Cost of operations and developments	<b>€2,580,300</b>
	<i>i.e. per linear metre / year</i> <b>€6</b>
<i>The cost of the operations includes the relocation of key issues (€236,000), flood protection banks (€960,000), civil engineering works for bank protection (€463,800) and the reconstitution of the riparian zone (€920,500).</i>	
Cost of enhancement and monitoring	<b>€130,000</b>
<b>Total cost of the actions over 13 years</b>	<b>€3,732,814</b>

### Financial partners:

*Over the 2005-2007 period: Agence de l'eau (Water Agency) (80%), Institution Adour (20%).  
Over the 2008-2018 period: Agence de l'eau (56%), Conseil Régional (Regional Council) (17%), French State (7%), Institution Adour (20%).*

### Technical partners of the project:

*Agence de l'eau, Conseil Régional and the French State.*

## ■ Outcome of the project and outlook

The measures to delimit a mobility area that is considered to be permissible by the managing authorities have been achieved and the initial aims have been met. The mobility area thus concerns 100% of the waterbody. This action will allow for the restoration of the river dynamics and will facilitate the rejuvenation/renewal capacity of the aquatic environments associated with the river and consequently, the richness and diversity of the ecological patchwork. It will be several years before the first results are known.

The Public Utility Declaration (DUP) established throughout the entire permissible mobility area has proven to be essential in giving a legal existence to the space defined by the management area. The DUP is only valid for five years, so the permissible mobility area must still be integrated into the urban planning documents.

The elected representatives' eagerness to take ownership of the project can be attributed to the fact that they personally decided on the solutions to be adopted. The analysis was carried out in the form of an active consultation involving the elected representatives and the local stakeholders both in sharing the diagnosis and defining and choosing the management strategies. The users and local residents also had the opportunity to express their opinions during discussions in the field or at town hall meetings.



GEODIAG (2007). *Action test « reconquête de l'espace de mobilité de l'Adour ». Engagement de la phase de concertation. Approche technico-socio-économique. Acceptabilité de l'action-test et de sa mise en œuvre*, Institution Adour: 48 + annexes.

[http://www.institution-adour.fr/institut-adour/upload/PDF/Rapport\\_definitif\\_action\\_test.pdf](http://www.institution-adour.fr/institut-adour/upload/PDF/Rapport_definitif_action_test.pdf)

Educational presentations for the elected representatives, "open days" and exhibitions explaining the hydro-geomorphological processes of the Adour were also organised in advance of the decision-making.

From an economic perspective, a comparison of the 1997-2007 programme and the future programme reveals that financial savings will be made over time. These are partly explained by the limited life span of certain developments (e.g. loose riprap which is swept away by the river dynamics in four to five years).

An assessment of the economic savings will need to be performed with regard to the actions that were envisaged, actually carried out and not implemented, after the programme has been running for ten years.

## ■ Promotion of the project

The project has been promoted locally by the river technicians of the Adour-Garonne basin and also by the elected representatives



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