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INTERREG CLANCY project Monitoring of the Chinese Mitten Crab (*Eriocheir sinensis*) in the rivers of the Hauts-de-France Region in 2025

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I. INTRODUCTION

Invasive alien species are recognised as one of the main causes of biodiversity loss globally (IPBES, 2019). Through their multiple impacts, they threaten native species, natural habitats, ecosystem services, and also economic activities and human health. France is no exception, with numerous examples of invasions, including water primrose, American crayfish, and the Asian hornet. It is therefore imperative to progress rapidly towards implementing monitoring programmes and measures to prevent future introductions, which remain the most effective (and cost-efficient) means of managing biological pressures.

Among these species, the Chinese mitten crab, *Eriocheir sinensis* (Figure 1), despite its apparently low (or poorly documented) impact in France, is listed as an invasive alien species of concern for the European Union, under Regulation No. 1143/2014. It is also listed among the 100 most harmful invasive species globally by the Invasive Species Specialist Group (ISSG) of the International Union for Conservation of Nature (IUCN). The species is further subject to national regulations.

The Chinese mitten crab was introduced to Europe in the early 20th century, likely in larval form within ship ballast water. In France, it was first reported near Boulogne in 1930, within the Artois-Picardie basin. An opportunistic omnivore, it consumes aquatic plants, algae, detritus, fish eggs, and a wide range of macroinvertebrates. When present in significant densities, it can impact local species, leading to declines in fish populations (e.g., migratory fish species already struggling in our rivers, as well as freshwater and brackish fish species) or competitors like crayfish. This species is also problematic as it can damage fishing nets and, at high densities, harm dykes and erode banks through burrowing.

Figure 1 : Female Chinese mitten crab (*Eriocheir sinensis*) captured in June 2022 off the Bay of Somme by Fabrice Montassine (fisherman from Le Hourdel)

On 13 April 2023, funding for the CLANCY project ("Improve habitat quality and climate-adaptivity of freshwater ecosystems through the management of alien invasive aquatic invertebrates") under the North Sea Interreg Programme was approved. Proposed by eight European partners from Belgium, Sweden, Germany, and France, the project aligns with the themes of "Climate Resilience, Biodiversity, and Pollution".

The project officially began on 2 May 2023 and will conclude in April 2028. The partners include:

- ✓ Belgium: Flemish Environment Agency (VMM – lead), University of Antwerp (UA), and East Flanders Province (POV)
- ✓ Germany: Alfred Wegener Institute (AWI) and University of Dresden (TUD)
- ✓ France: GEMEL (Estuarine and Coastal Environment Study Group) and CSLN (Normandy Coastal Monitoring Unit)
- ✓ Sweden: University of Skövde (HIS)

GEMEL benefits from the support of the Artois-Picardie and Seine-Normandie Water Agencies for this project. The European project aims to strengthen cross-border capacity, maintain biodiverse and climate-adaptive ecosystems through mitten crab management. Its objectives are to establish a comprehensive database on the spatial distribution of Chinese mitten crabs

(WP1), use traps to monitor and manage their populations, conduct genetic analyses (WP2), and facilitate the cross-border application of management strategies (WP3).

GEMEL is committed to monitoring the spatial and temporal distribution of Chinese mitten crabs between the Bresle and the Aa rivers over a four-year period, contributing to cross-border genetic analysis. Additionally, the project involves studying the use and implementation of traps for species management and leveraging studies on the commercial opportunities of captured specimens.

Two initial study reports were produced to report on the progress of GEMEL's work on the CLANCY project (monitoring activities, results and future actions) :

- ✓ **The first covered the period from May to December 2023 (Rolet *et al*., 2024)**
- ✓ **The second reported on monitoring campaigns from January 2024 to December 2024 (Becuwe *et al*., 2025)**

This report summarises the monitoring carried out and the actions taken from January to December 2025.

II. *ERIOCHEIR SINENSIS* : LITERATURE REVIEW

A. BIOLOGY AND ECOLOGY OF THE CHINESE MITTEN CRAB

The Chinese mitten crab measures up to 9 x 8 cm. The carapace is slightly wider than long, almost square, with convex lateral edges. It has four pointed anterolateral spines, four frontal teeth, and weak transverse ridges. The palms of adult male claws are densely covered with wool-like hairs (hence its name). The walking legs are long and finely fringed with setae. Its colour ranges from olive-brown to green-grey (Figure 2). Initially herbivorous, the crab later becomes predatory (Noel & Breton, 2016).

Figure 2 : The Chinese mitten crab (Eriocheir sinensis) (H. Milne-Edwards, 1853), dorsal view of a male (©Chouquet, 2022)

Sexual maturity is reached between 1-3 years in China (Jin et al., 2001) and between 3-5 years in Europe (Schubert, 1938). Mature adults migrate downstream between August and October or September to December, depending on location, to reproduce in the sea. This catadromous species' females, once fertilised, migrate to estuaries to release larvae in spring. Larval development occurs in marine and estuarine environments, progressing through a prezoea stage, five zoea stages (2-8 weeks), and a megalopa stage (3-6 weeks; Dittel & Epifanio, 2009).

Juvenile crabs migrate upstream to rivers, ponds, or lakes, sometimes up to 1,200 km inland (Figure 3; Bentley, 2011; Peters, 1933).

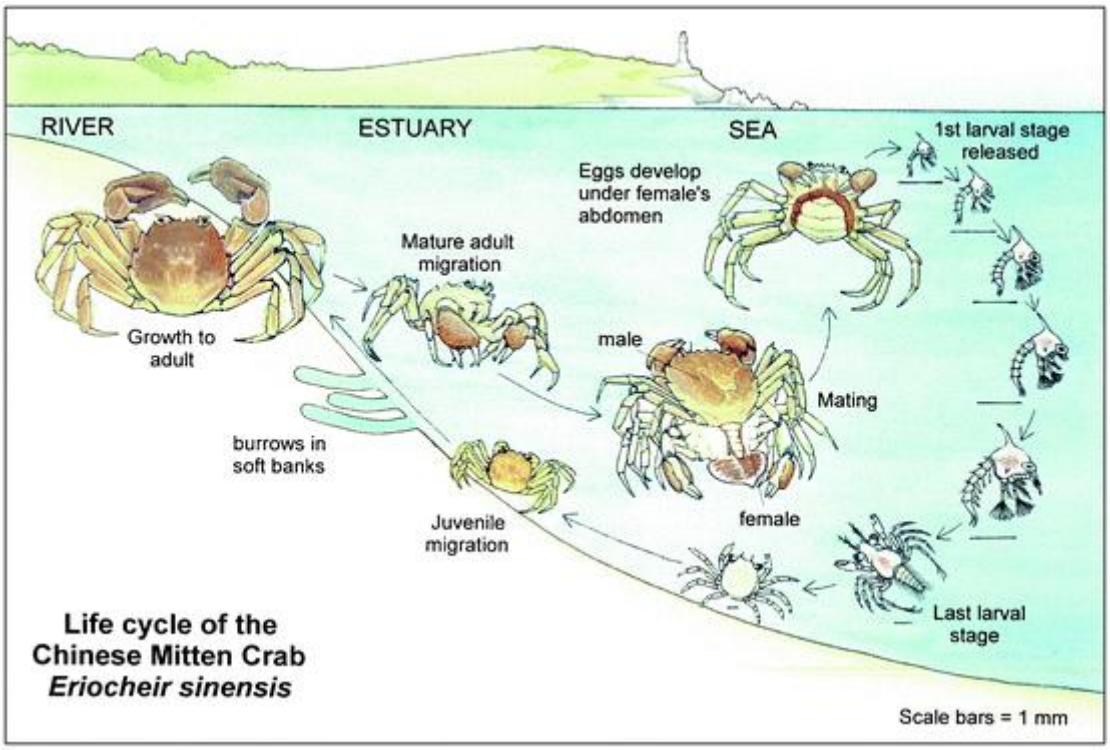


Figure 3 : Life cycle of Eriocheir sinensis (Bentley, 2011)

Growth occurs through moulting, with crabs growing rapidly: six to eight moults in the first year, four to five in the second, and two to three in the third year (Panning, 1938).

The Chinese mitten crab is a burrowing species, digging galleries along riverbanks. During its freshwater phase, it feeds predominantly on vegetation (two-thirds), including algae and aquatic plants, and on animals (one-third), such as crustaceans, insect larvae, and molluscs (Godin & Smigielski, 2013).

B. Geographical Distribution

Native to East Asia, where its range extends from Hong Kong to the North Korean border, the Chinese mitten crab (*Eriocheir sinensis*) has been present in Europe since 1912. Introduced via ballast waters in Germany (Panning, 1938), the species is listed among the 100 most invasive alien species globally (Lowe et al., 2007). Today, it spreads from Finland to southern France, including England (Herborg et al., 2003; Panov, 2006; Robbins et al., 2006).

Several observations of the Chinese mitten crab have been reported in the Hauts-de-France and Normandy regions, documented in the literature. The first French observation occurred in 1930 on Ningles Beach near Le Portel in Boulogne-sur-Mer (Hoestlandt, 1940). Subsequent sightings occurred six years later, spreading to the Somme River in 1942 and the Seine River a year later. By the following decade, the species had reached the Garonne (1953) and Loire (1954). Its range expanded further (Figure 4): Mediterranean (1960), Bayonne region (1967), Brittany coastline (1991), and the Rhône basin (1993).

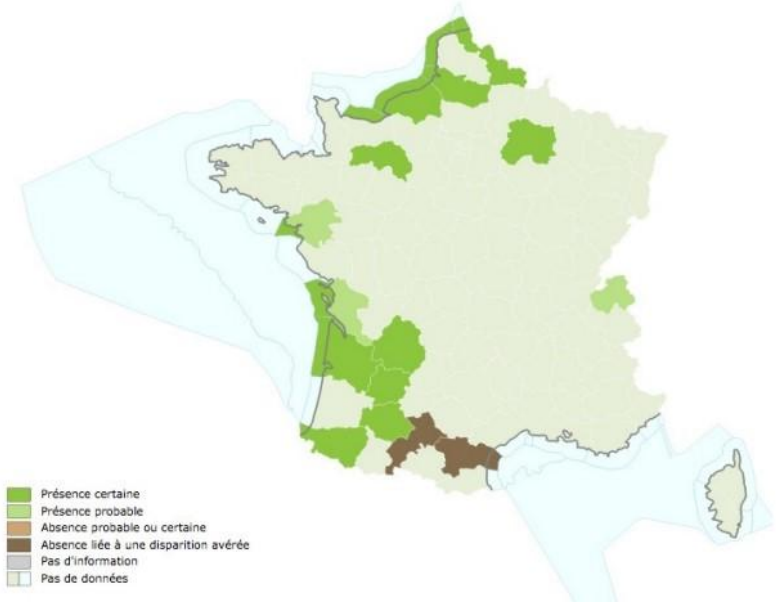


Figure 4 : Distribution of the Chinese mitten crab (Eriocheir sinensis) in metropolitan France (adapted from P. Noël INPN-MNHN 2016)

At the scale of the Pas-de-Calais department, which was the first French department to document the invasion of the Chinese mitten crab, its presence has been confirmed in the Audomarois region since the 1950s–1960s, with observations recorded in the Slack, Wimereux, Liane, and Canche rivers (Dewarumez et al., 2011; Amara, personal communication).

In the Nord department, the Chinese mitten crab first appeared in the Aa and Yser basins in 1937, followed by the Escaut basin in 1946. Unlike older records, recent observations are less well-documented. During the war years, German occupiers caused flooding in French Flanders with seawater, increasing brackish zones favourable to the reproduction of Chinese mitten crabs. After the war, variable precipitation and freshwater discharges into the sea gradually reduced these suitable areas, leading to a decrease in recorded observations.

In the Somme department, the first observation dates back to 1942 in Le Crotoy. A year later, the species was observed in Normandy. Although the Chinese mitten crab was very common there between 1950 and 1960, no individuals have been observed in the port of Le Havre since 1995 (Breton, 2014).

All locations and dates of observations found in the literature or from personal communications are listed in Table 1. This census will be integrated into the database created as part of the CLANCY project (WP1: capacity building).

Table 1 : Dates and Locations of Observations of the Chinese Mitten Crab (Eriocheir sinensis) (in Godin and Smigielski, 2013; Pezy et al., 2014; Breton, 2014; WFD ichthyofauna monitoring reports for the Artois-Picardie basin, 2021 and 2022; personal communications)

Locations	Departments	Locations of sightings	Years of sightings
BOULOGNE-SUR-MER	62	Plage de Ningles	1930
ARQUES	62	Ascenseur des Fontinettes	1937
BERGUES	59	Fossé des fortifications	1937
GRAVELINES	59	Ecluses entre l'Aa et les fossés des fortifications	1937
MARDYCK	59	Ancien canal : pont à roseaux	1937
SAINT OMER	62	Non précisé	1937
WYLDER	59	Yser	1937
BOURBOURG	59	Aa	1938
DUNKERQUE	59	Canal de l'Ile Jeanty	1938
GHYVELDE	59	Canal de Furnes	1938
HONDSCHOOTE	59	Canal de la "Basse Colme"	1938
HOULLE	62	Marais	1938
SAINT-FOLQUIN	62	"Grand Drack" relié à l'Aa	1938
STEENWOORDE	59	Ey Becque	1938
WATTEN	59	La "Bombe" (watergang relié à l'Aa)	1938
HERZEELE	59	Barrage sur l'Yser	1939
BAVINCHOVE	59	Peene Becque	1940
BOLLEZEELE	59	Yser	1941
BUYQQCHEURE	59	Yser	1941
ESQUELBECQ	59	Yser	1941
QUESTRECQUES	62	Liane	1941
CROTOY	80	Non précisé	1942
VILLERVILLE	14		1943
AMIENS	80	Non précisé	1945
ABBEVILLE	80	Non précisé	1945
BRIE	80	Non précisé	1945

Locations	Departments	Locations of sightings	Years of sightings
BOUCHAIN	59	Non précisé	1946
CONDE-SUR-L'ESCAUT	59	Etangs de Macou	1946
TRITH-SAINT-LEGER	59	Non précisé	1946
COUDEKERQUE-BRANCHE	59	Canal de Bergues	1946 à 1950
?		Entre la Touques et l'Orne	1950
MAYVILLE	76		1950
HARFLEUR	76		1950
HARFLEUR	76		1950
LE HAVRE	76	Brise-lames sud	1952
LE HAVRE	76	Brise-lames sud	1952
LE HAVRE	76	Brise-lames sud	1952
LE HAVRE	76	Entre les ponts VI et VII	1954
LE HAVRE	76	Pont aval VI	1954
SAINT VIGOR	27	Au sud du Canal de Tancarville	1954
CERLANGUE	76		1954
TANCARVILLE	76		1954
OUISTREHAM	14		1955
HOUDAN	78		1955
VILLEQUIER	76		1955
BERVILLE	76		1957
BERVILLE	76		1957
LE HAVRE	76	Plage "pouilleuse"	1957
OUISTREHAM	14		1965
ZUYDCOOTE	59	Canal de Furnes	1973
Non précisé		Baie de Seine	1977
Non précisé		Estuaire de la Seine	1987
LE HAVRE	76	Pont Rouge (Hydro Azote)	1989
LE HAVRE	76	Centrale EDF	1990

Locations	Departments	Locations of sightings	Years of sightings
Non précisé		Pont de Normandie	1995
Entre Honfleur et la Risle	14		1997
LE HAVRE	76	Banque Amfard	1998
ROUEN	76	Confluence avec le Cailly	2004
ROUEN	76	Bassin de St Gervais	2004
ROUEN	76	Bassin de St Gervais	2004
ARQUES	62	Aa	2006
AIZIER	27		2007
BLENDECQUES	62	Basse Meldyck d'Arques	2008
UXEM	59	Canal des Chats	2008
?	62	Canche	2009
LE PORTEL	62	Rade de Boulogne	2009
SAINT-OMER ou NIEURLET	62 or 59	Rivière de Nieurlet	2011
?	62	Canche	2011
WATTEN-EPERLECQUES	62	Rivière de la Vlotte	2011
ECLUSIER-VAUX	80	Amont du bassin versant	2011
CLERY SUR SOMME	80	Somme	2011
SAINT VALERY SUR SOMME	80	Somme	2013
VILLERS-SUR-MER	14		2013
THUN-SAINT-AMAND	59	A proximité de l'écluse	2014
MORTAGNE	59	Confluent de la Scarpe et de l'Escaut	2014
FLINES-LES-MORTAGNE	59	Ecluse de Rodignies	2014
VASOUY	14		2014

Locations	Departments	Locations of sightings	Years of sightings
AMBLETEUSE	62	Slack	2019
BOULOGNE-SUR-MER	62	Liane	2019
ETAPLES	62	Canche	2019
CONCHIL LE TEMPLE	62	Authie	2019
EU	76	Bresle	2019
HERRE-LES-RUE	80	Course du Quesnel	2020
BAIE DE SOMME	80	Somme	2021
BAIE D'AUTHIE	80	Authie	2021
BAIE DE CANCHE	62	Canche	2021
SAINT-VALERY-SUR-SOMME	80	Somme	2022
BAIE DE SOMME	80	Somme	2022
BAIE D'AUTHIE	80	Authie	2022
SAINT-VALERY-SUR-SOMME	80	Somme	2023
BAIE DE SOMME	80	Somme	2024
SAINT-VALERY-SUR-SOMME	80	Amboise (affluent Somme)	2024
BAIE DE SOMME	80	Somme	2025

III. STUDY SITES

To study the spatial distribution and population dynamics of Chinese mitten crabs in the Hauts-de-France region, **11 watercourses were selected**: **the Aa in the north, the Slack, the Wimereux, the Liane, the Canche, the Authie, the Canal du Marquenterre, the Maye, the Canal à Poissons, the Somme, and the Bresle in the south.**

To best prepare for the project's sampling campaigns, a prospecting phase was carried out using a cartographic analysis with aerial views (utilising QGIS and Géoportail). This analysis helped identify potential areas for trap placement along the selected watercourses. The planned locations, both upstream and downstream of each site, were then inspected on the ground by two GEMEL agents. Depending on site accessibility, they were either validated or relocated.

It was therefore determined that, in the Nord department, the **Aa** would be monitored (Figure 5).

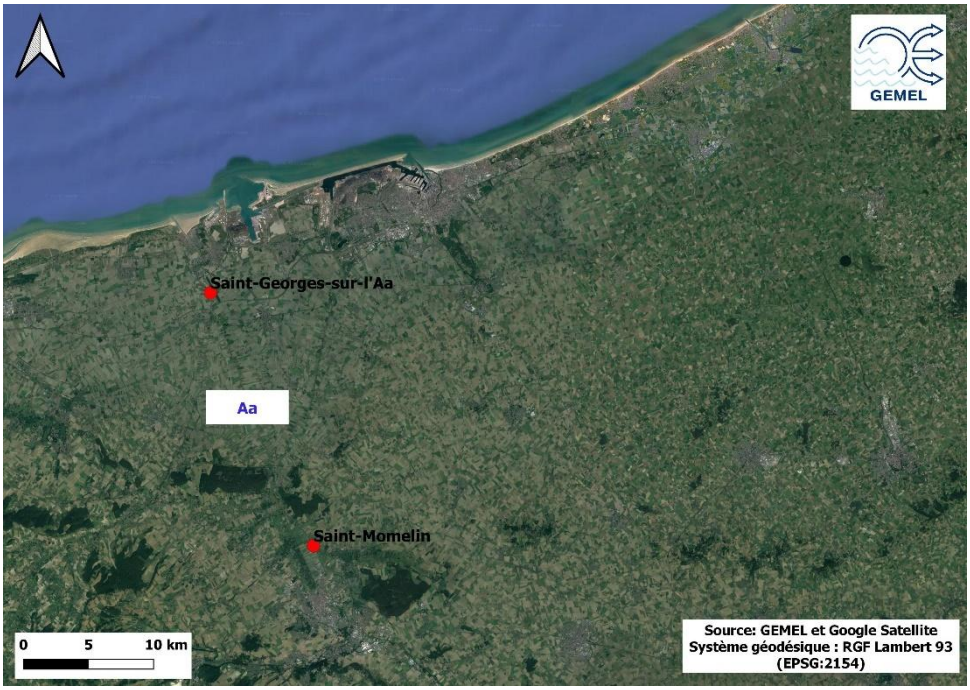


Figure 5 : Location of the two municipalities in the Nord department (59) for monitoring the Aa river

The traps will be set upstream of the river at Saint-Momelin (Figure 6 and Figure 7) and downstream at Saint-Georges-sur-l'Aa (Figure 8 and Figure 9).

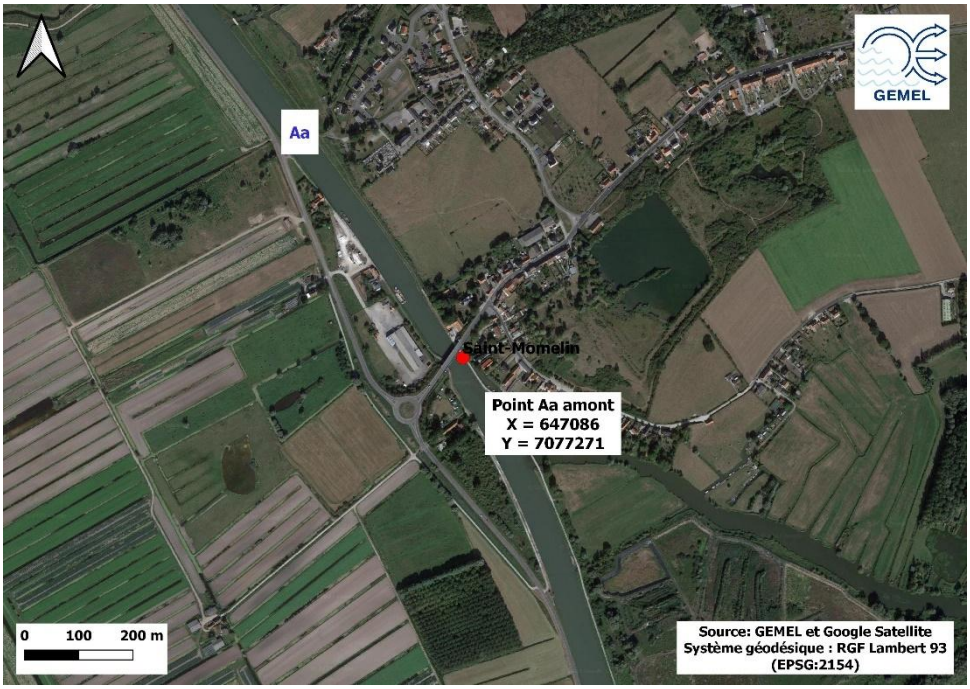


Figure 6 : Location of trap placement on the Aa at Saint-Momelin

Figure 7 : Upstream site of the Aa at Saint-Momelin

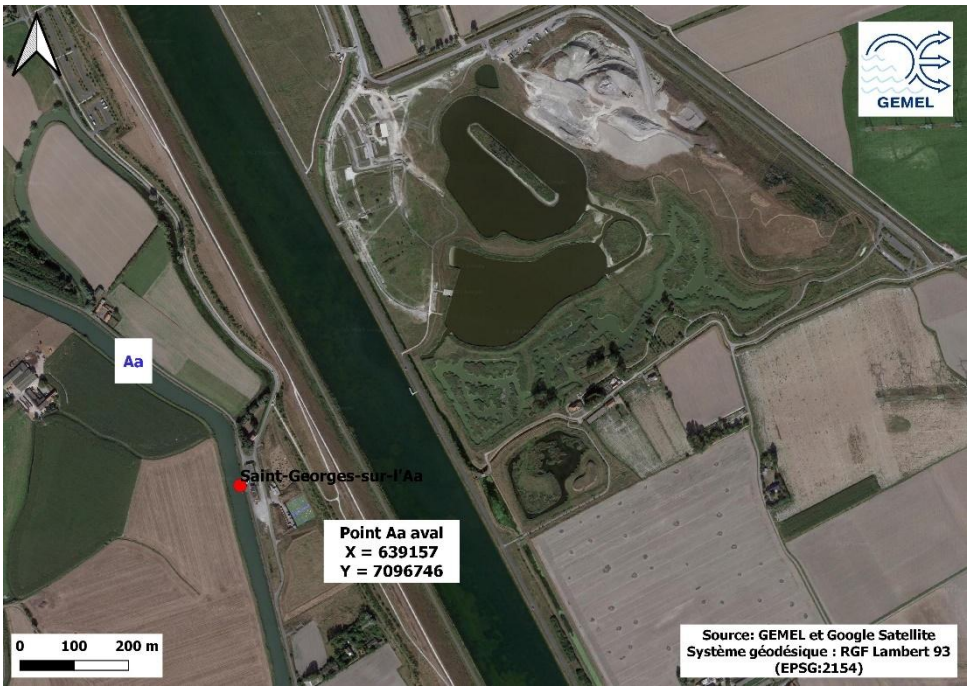


Figure 8 : Location of trap placement on the Aa at Saint-Georges-sur-l'Aa

Figure 9 : Downstream site of the Aa at Saint-Georges-sur-l'Aa

The rivers monitored in Pas-de-Calais are: **the Slack, the Wimereux, the Liane, and the Canche** (Figure 10).

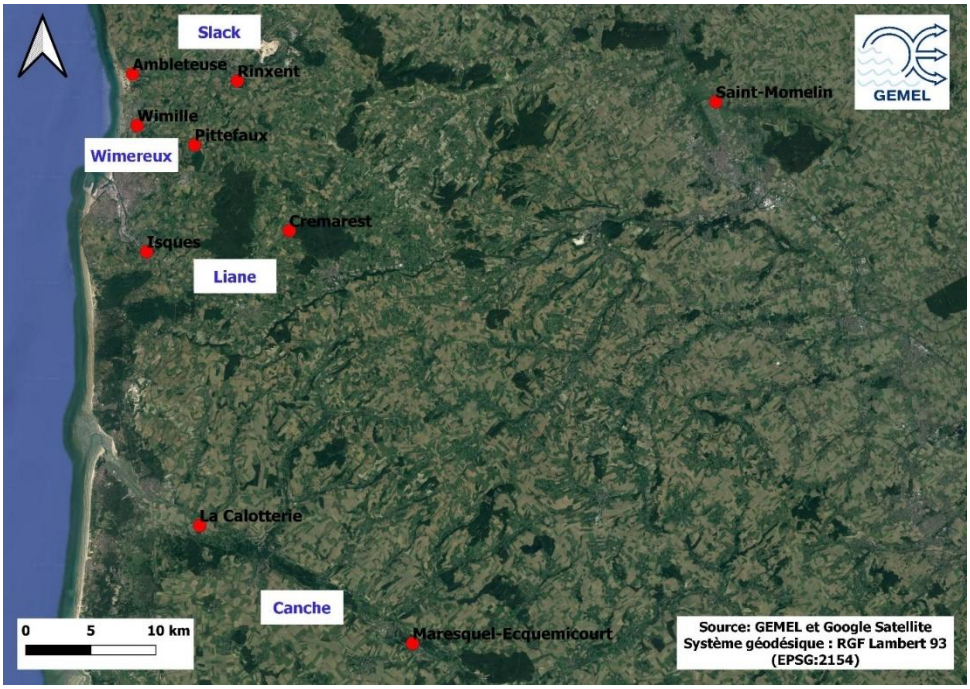


Figure 10 : Location of the eight municipalities associated with the rivers of the Slack, Wimereux, Liane, and Canche in the Pas-de-Calais department (62)

Two sites will be monitored on **the Slack**: Rinxent upstream (Figure 11 and Figure 12) and Ambleteuse (Figure 13 and Figure 14) downstream.

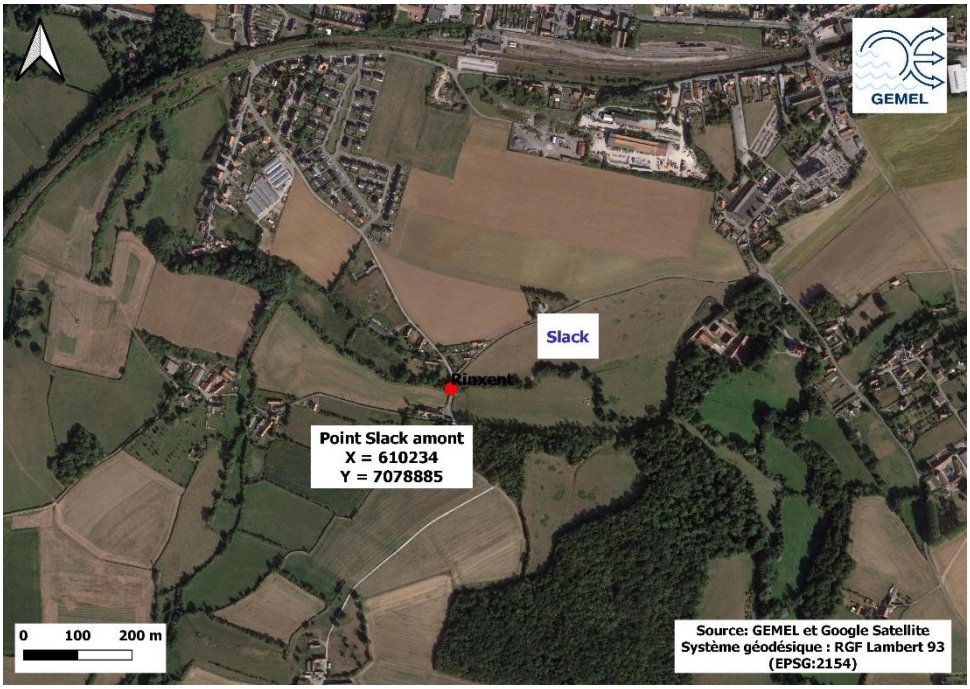


Figure 11 : Location of trap placement on the Slack at Rinxent

Figure 12 : Upstream site of the Slack at Rinxent

Figure 13 : Location of trap placement on the Slack at Ambleteuse

Figure 14 : Downstream site of the Slack at Ambleteuse

In order to monitor the invasion of the mitten crab on **the Wimereux**, traps will be placed at Pittefaux upstream (Figure 15 and Figure 16) and at Wimille downstream (Figure 17 and Figure 18).

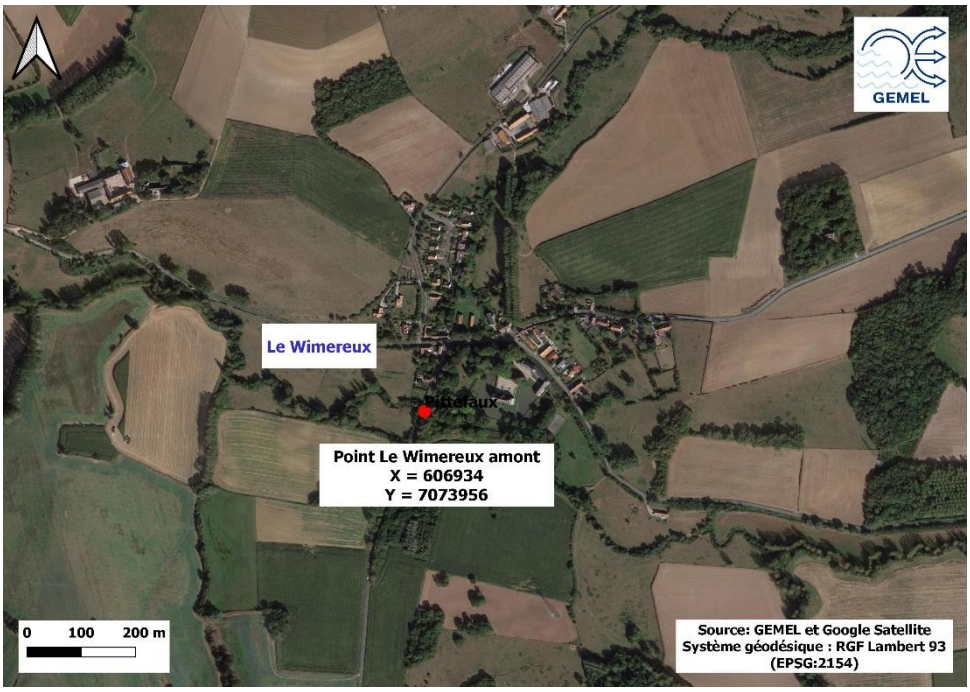


Figure 15 : Location of trap placement on the Wimereux at Pittefaux

Figure 16 : Upstream site of the Wimereux at Pittefaux

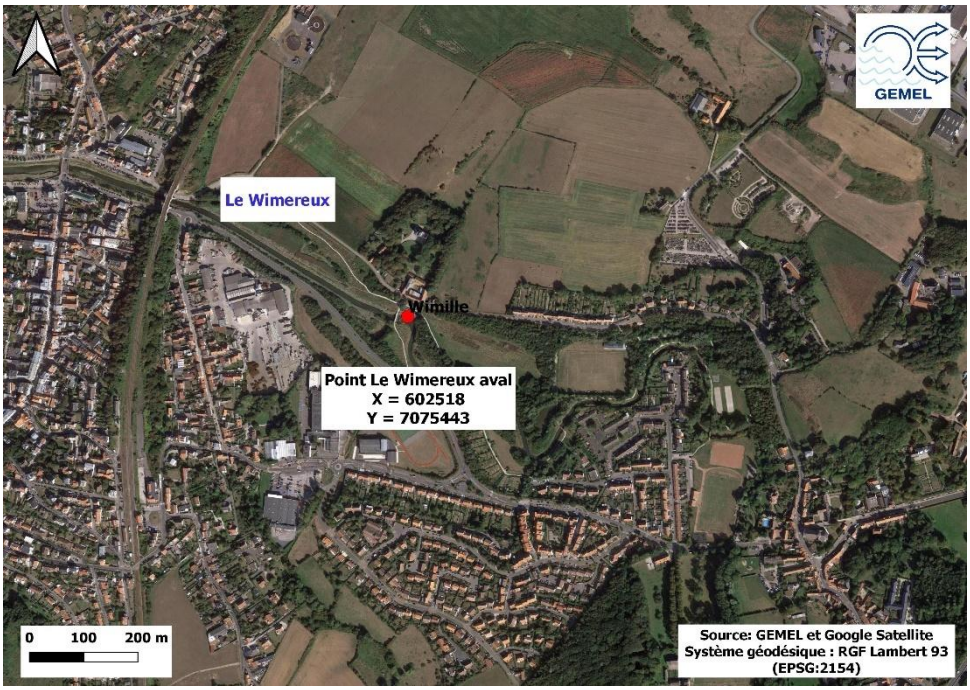


Figure 17 : Location of trap placement on the Wimereux at Wimille

Figure 18 : Downstream site of the Wimereux at Wimille

On **the Liane**, Crémarest, upstream (Figure 19 and Figure 20) and Isques, downstream (Figure 21 and Figure 22), have been selected for trap placement.

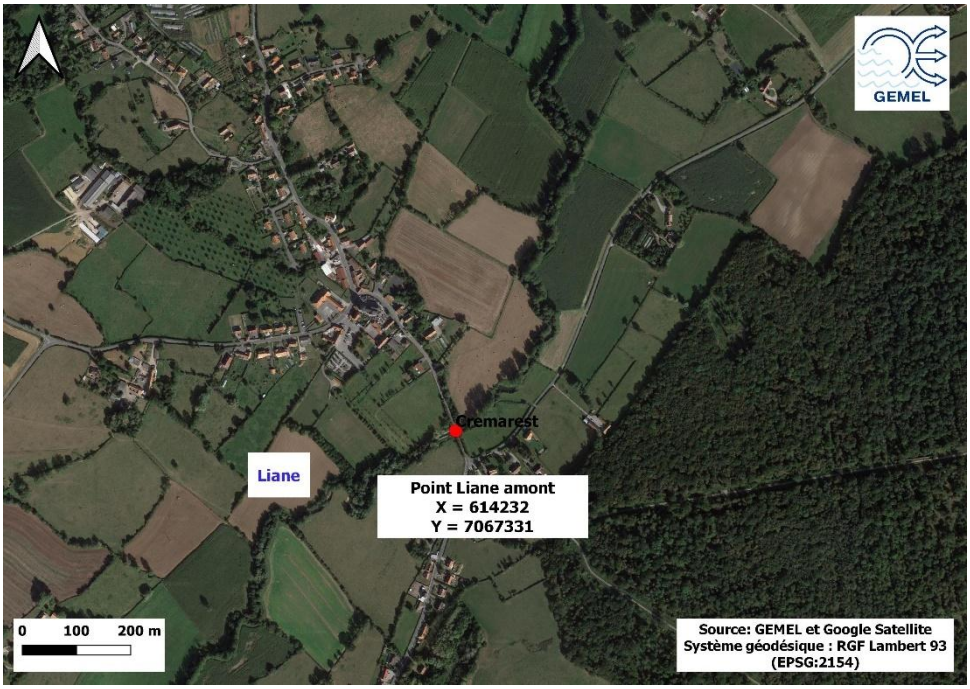


Figure 19 : Location of trap placement on the Liane at Crémarest

Figure 20 : Upstream site of the Liane at Crémarest

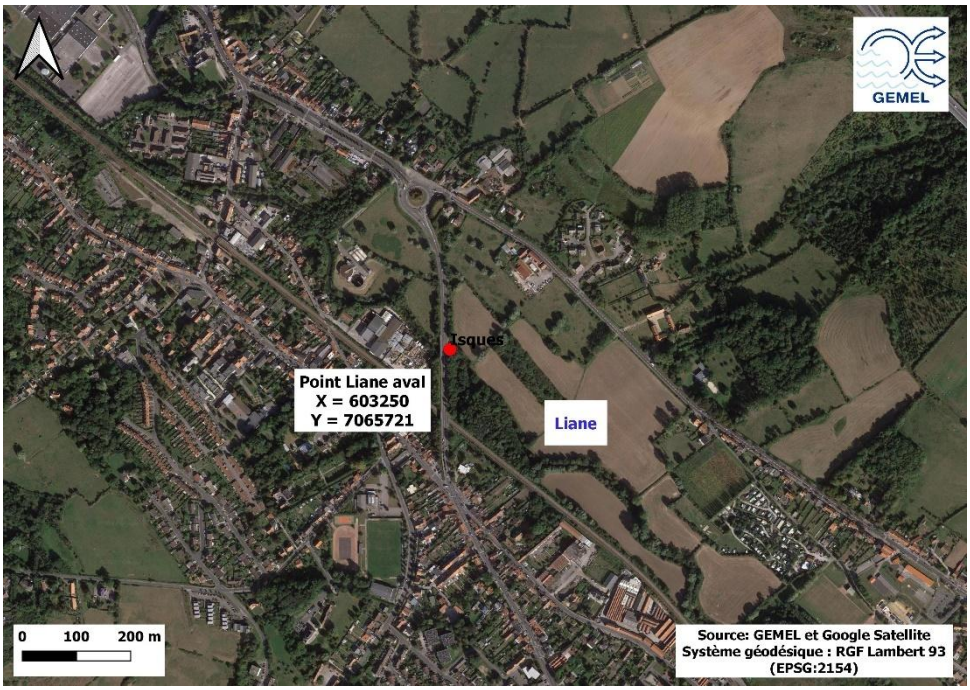


Figure 21 : Location of trap placement on the Liane at Isques

Figure 22 : Downstream site of the Liane at Isques

The traps will be set upstream of the **Canche** at Maresquel-Ecquemicourt (Figure 23 and Figure 24) and downstream at La Calotterie (Figure 25 and Figure 26).

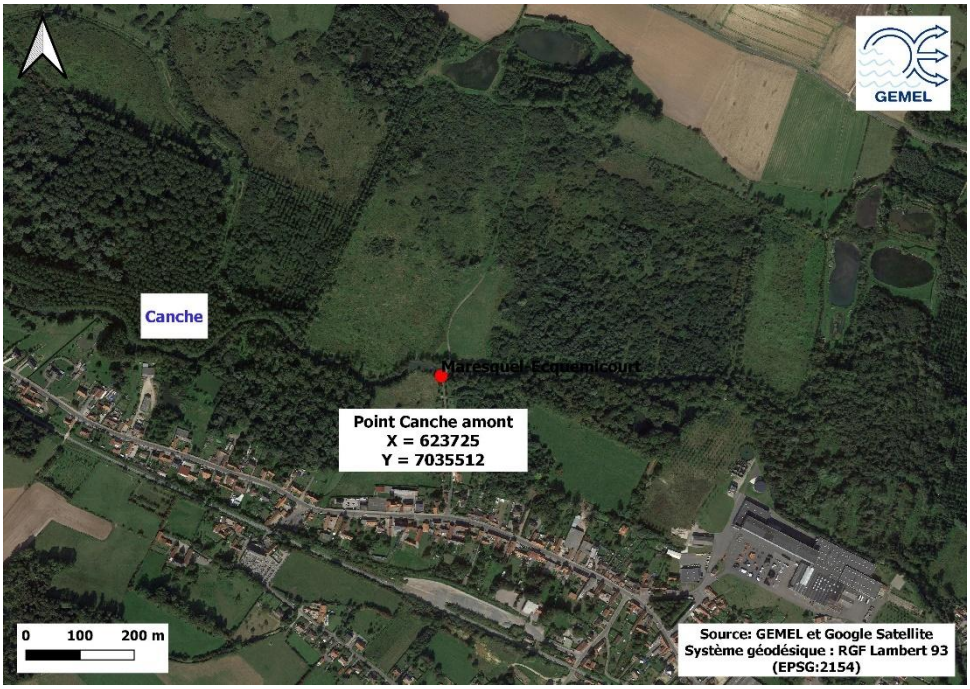


Figure 23 : Location of trap placement on the Canche at Maresquel-Ecquemicourt

Figure 24 : Upstream site of the Canche at Maresquel-Ecquemicourt

Figure 25 : Location of trap placement on the Canche at La Calotterie

Figure 26 : Downstream site of the Canche at La Calotterie

In the department of Somme, 5 rivers will be monitored as part of the CLANCY project: **the Authie, the Retz Canal, the Maye, the Somme, and the Canal à Poissons** (Figure 27).

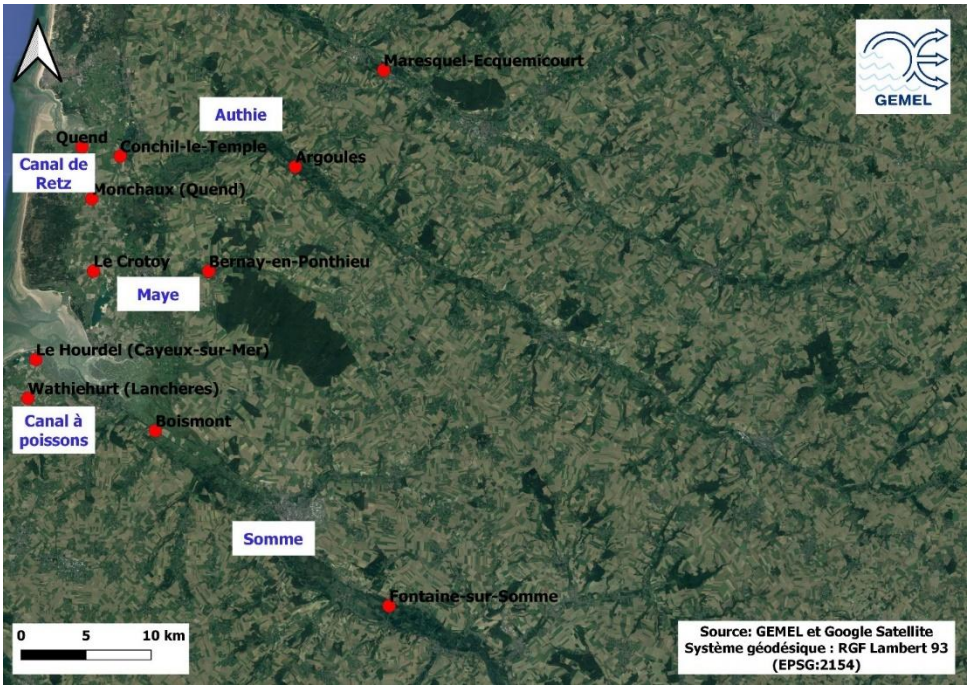


Figure 27 : Location of the ten municipalities in the Somme department (80) where monitoring will be carried out on the Authie, the Retz Canal, the Maye, the Somme, and the Canal à Poissons.

The municipality of Argoules, located upstream of the **Authie** (Figure 28 and Figure 29), and the municipality of Conchil-le-Temple, located downstream, will host traps (Figure 30 and Figure 31).

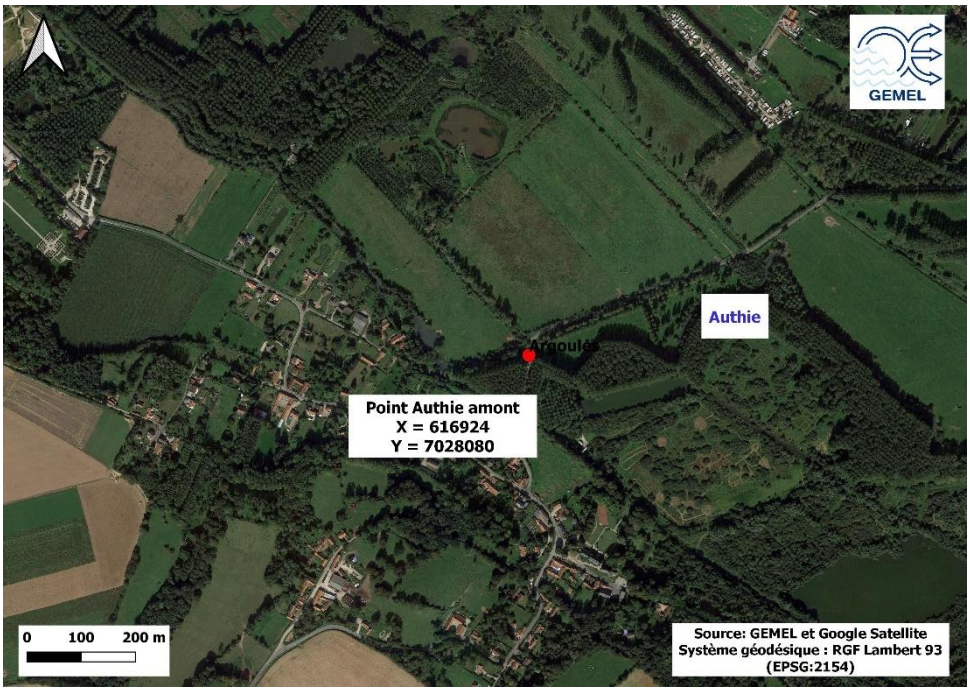


Figure 28 : Location of trap placement on the Authie at Argoules

Figure 29 : Upstream site of the Authie at Argoules

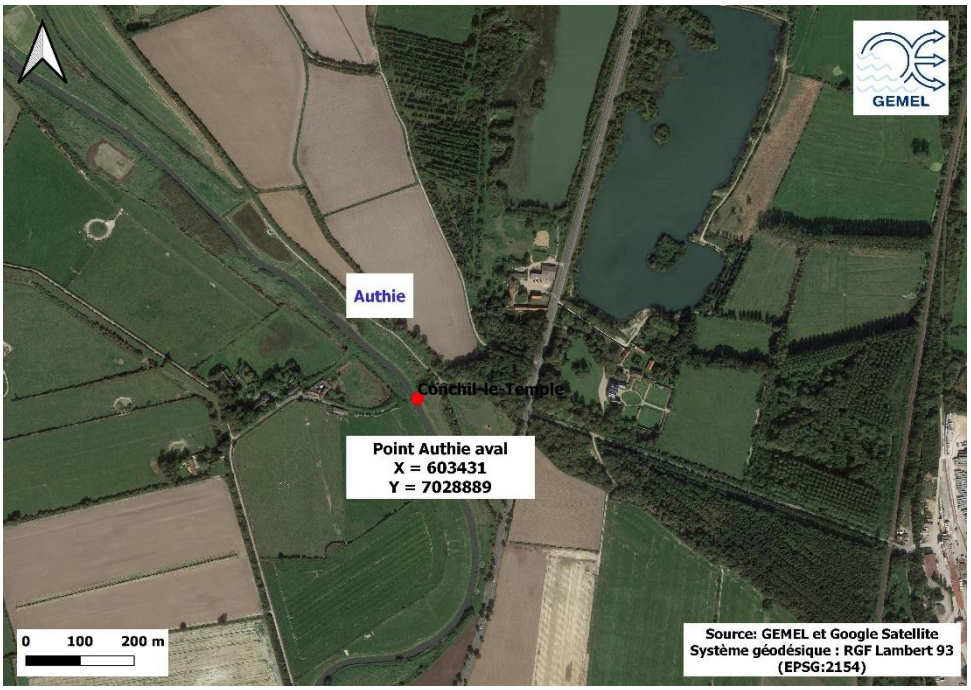


Figure 30 : Location of trap placement on the Authie at Conchil-le-Temple (stone bridge)

Figure 31 : Downstream site of the Authie at Conchil-le-Temple

On **the Retz Canal**, also known as the Canal du Marquenterre, traps will be placed at Monchaux (upstream; Figure 32 and Figure 33) and at Quend (downstream; Figure 34 and Figure 35).

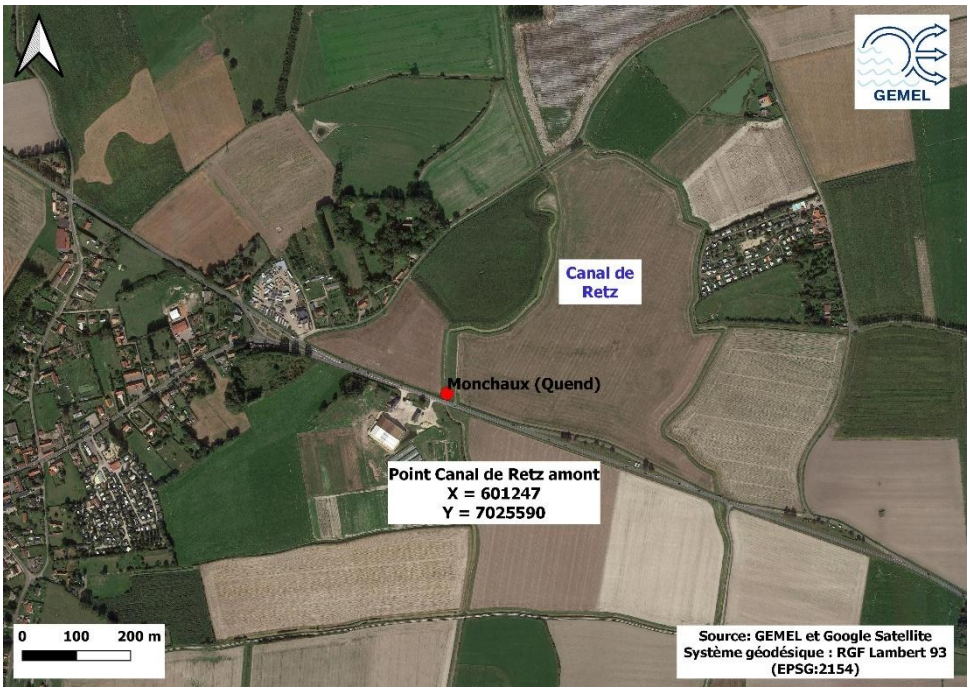


Figure 32 : Location of trap placement on the Retz Canal at Monchaux (Quend)

Figure 33 : Upstream site of the Retz Canal at Monchaux (Quend)

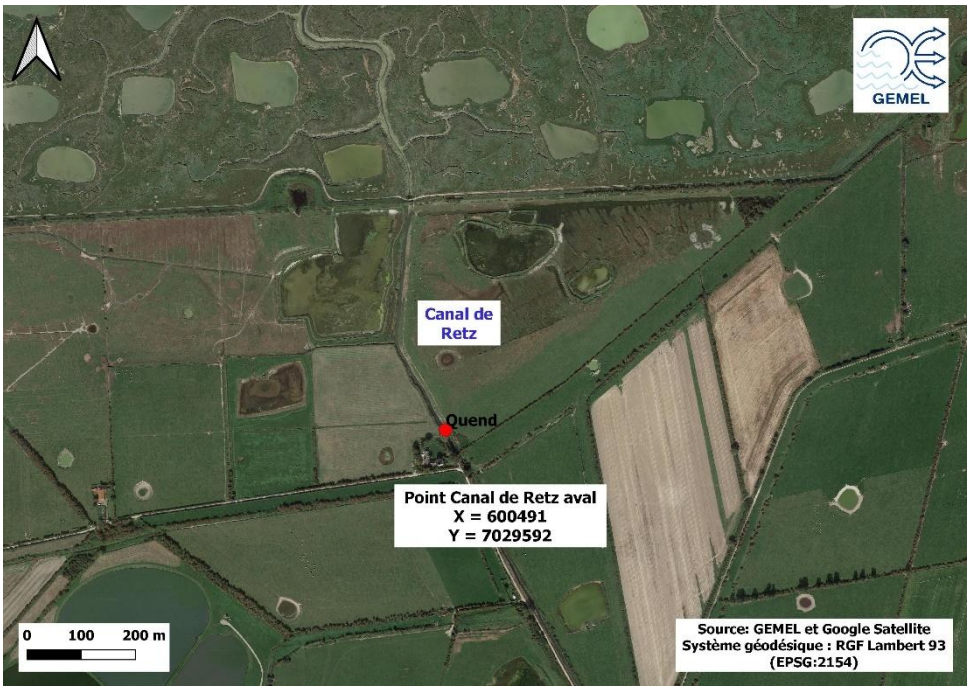


Figure 34 : Location of trap placement on the Retz Canal at Quend (Cœur de Baie guesthouse)

Figure 35 : Downstream site of the Retz Canal at Quend (Cœur de Baie guesthouse)

On **the Maye**, the municipalities of Bernay-en-Ponthieu (upstream ; Figure 36 and Figure 37) and Le Crotoy (downstream; Figure 38 and Figure 39) have been targeted for trap placement.

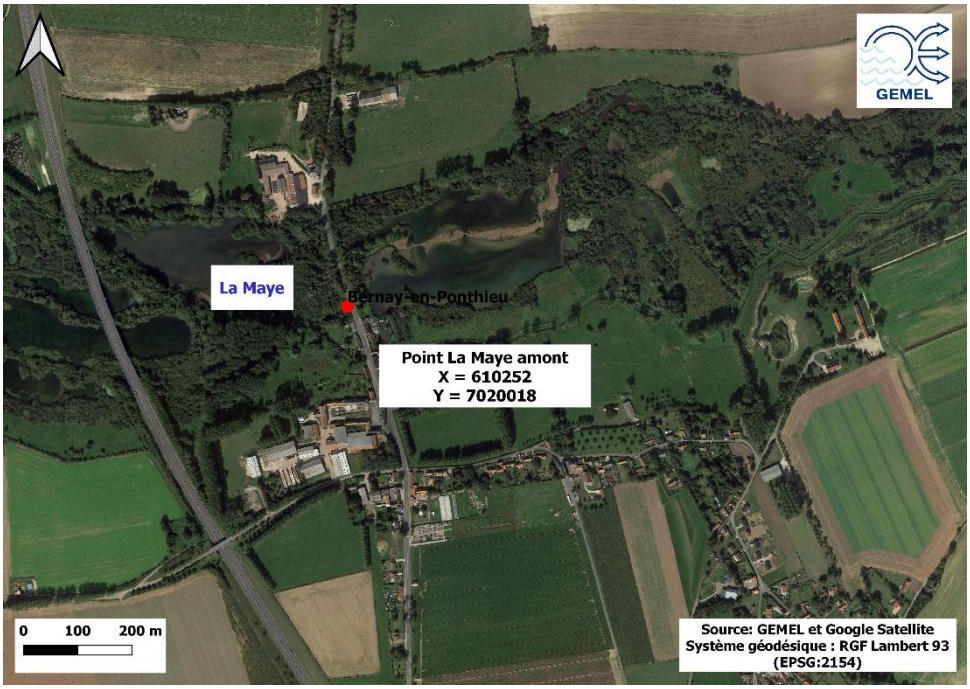


Figure 36 : Location of trap placement on the Maye at Bernay-en-Ponthieu

Figure 37 : Upstream site of the Maye at Bernay-en-Ponthieu

Figure 38 : Location of trap placement on the Maye at Le Crotoy

Figure 39 : Downstream site of the Maye at Le Crotoy

Two municipalities on **the Somme** will have traps placed: Fontaine-sur-Somme (Figure 40 and Figure 41) upstream and Boismont (Figure 42and Figure 43) downstream.

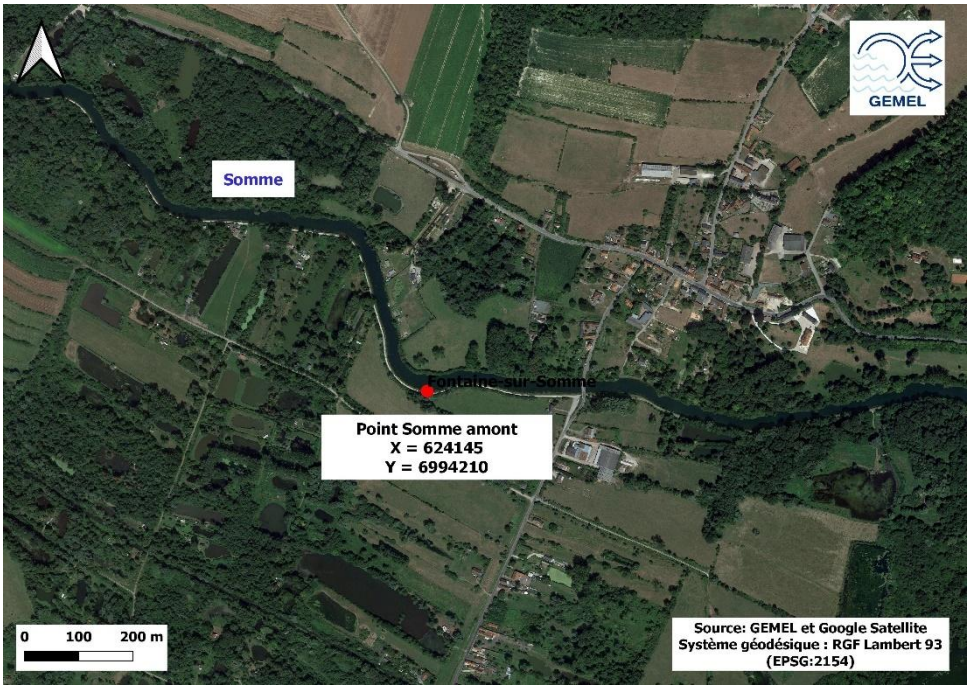


Figure 40 : Location of trap placement on the Somme at Fontaine-sur-Somme

Figure 41 : Upstream site of the Somme towards Fontaine-sur-Somme

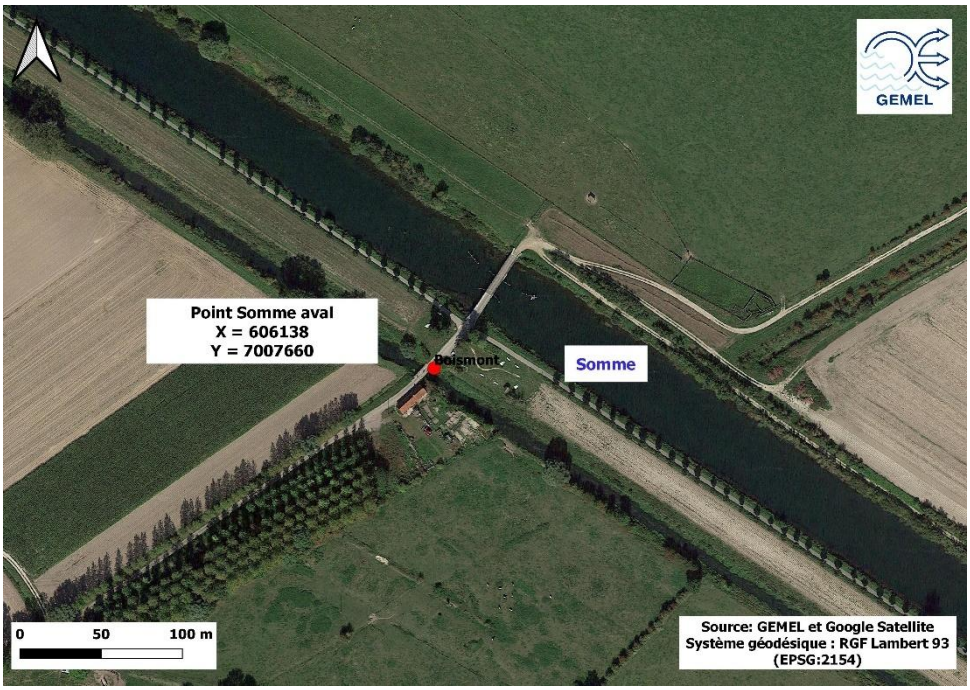


Figure 42 : Location of trap placement on the Somme at Boismont

Figure 43 : Downstream site of the Somme at Boismont

Traps will be placed upstream and downstream of **the Canal à Poissons**, at Wathiéhurt (Lanchères; Figure 44 and Figure 45) and at Le Hourdel (Figure 46 and Figure 47).

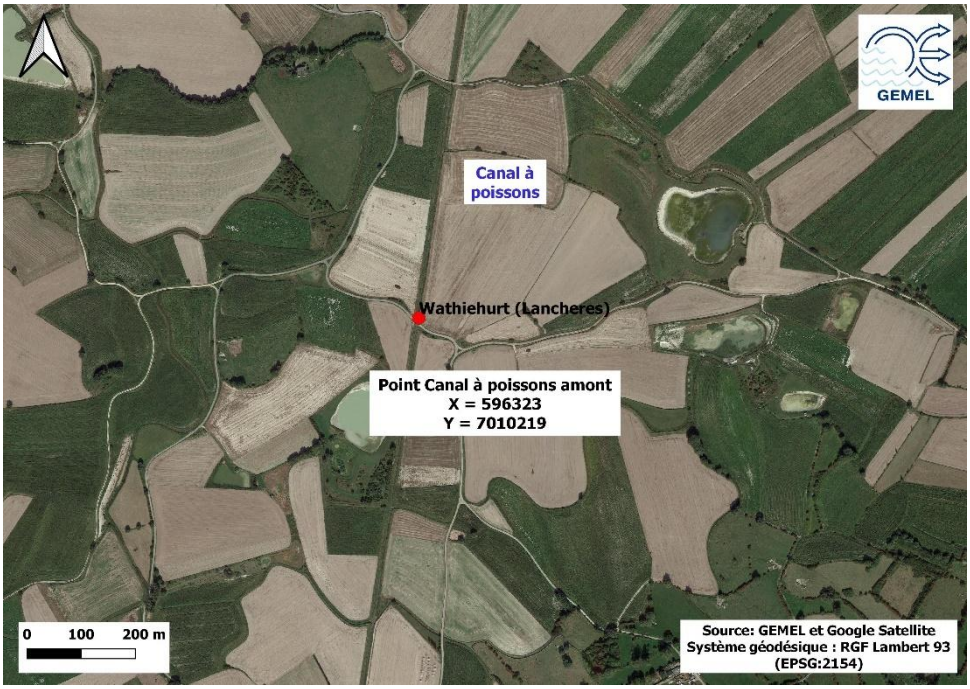


Figure 44 : Location of trap placement on the Canal à Poissons at Wathiéhurt (Lanchères)

Figure 45 : Upstream site of the Canal à Poissons at Wathiéhurt (Lanchères)

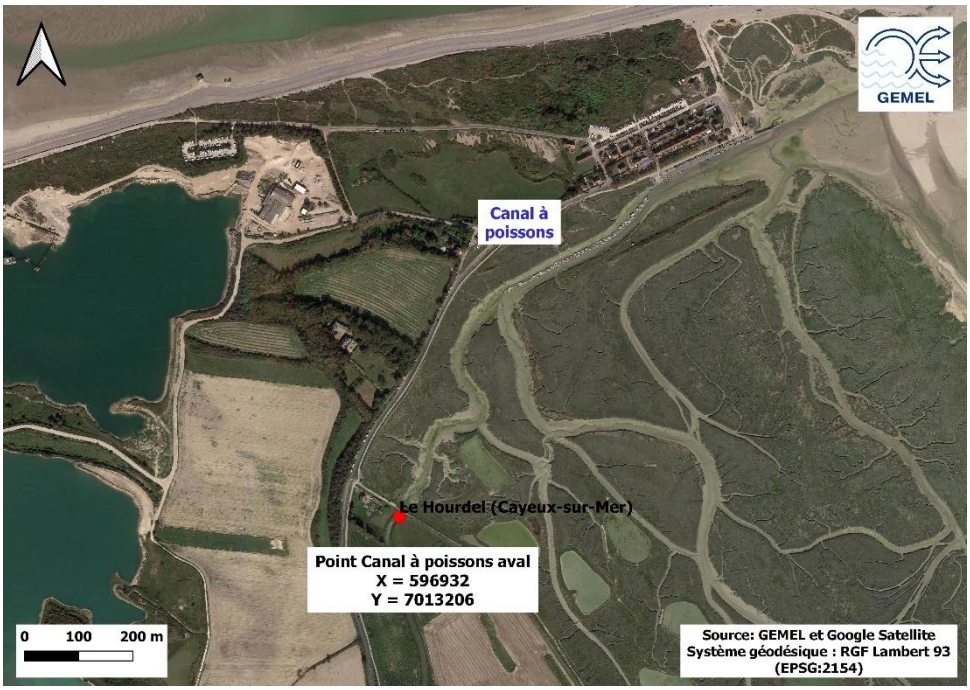


Figure 46 : Location of trap placement on the Canal à Poissons at Le Hourdel

Figure 47 : Downstream site of the Canal à Poissons at Le Hourdel

Finally, the last river monitored is located at the boundary between Somme and Seine-Maritime: **the Bresle** (Figure 48), marking the separation between the Hauts-de-France and Normandy regions and between the Artois-Picardie and Seine-Normandie basins.

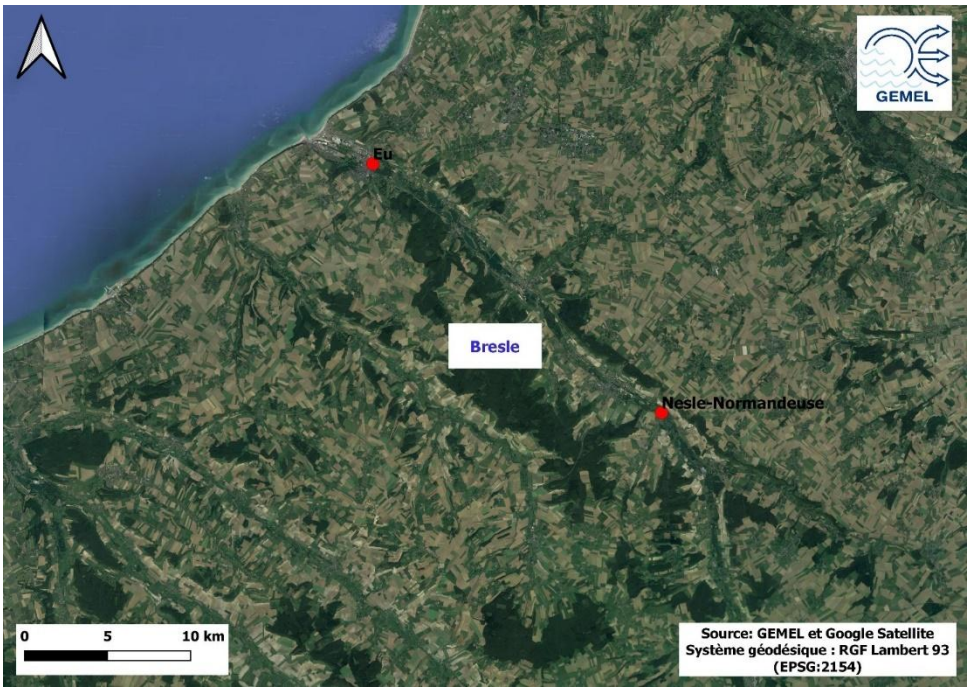


Figure 48 : Location of the two municipalities in the Seine-Maritime department (76) where monitoring will be carried out on the Bresle.

On this river, two traps will be set: one upstream at Nesle-Normandeuse (Figure 49 and Figure 50) and one downstream at Ponts-et-Marais (Figure 51 and Figure 52). A trap will also be set on the pond at Ponts-et-Marais in a private property (Figure 51).

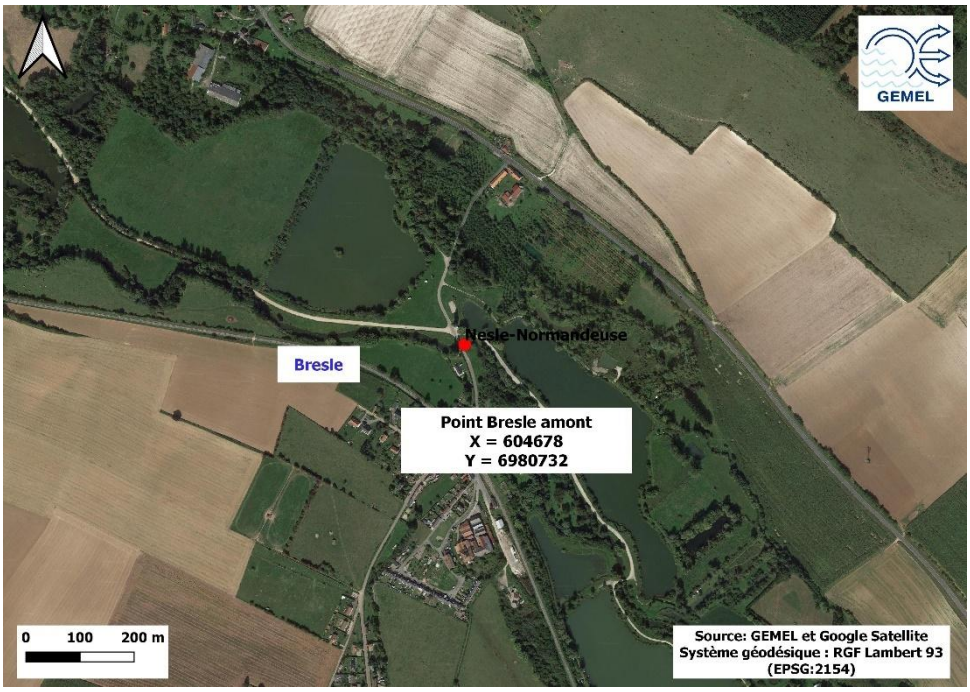


Figure 49 : Location of trap placement on the Bresle at Nesle-Normandeuse

Figure 50 : Upstream site of the Bresle at Nesle-Normandeuse

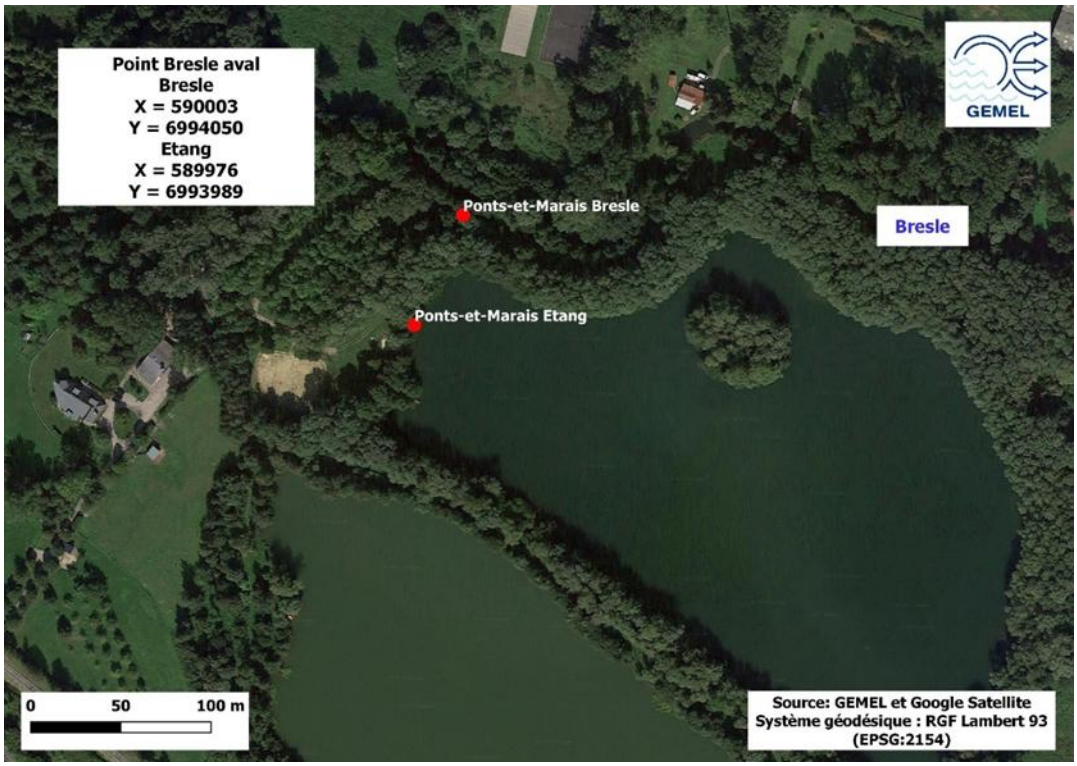


Figure 51 : Location of trap placement on the Bresle at Ponts-et-Marais

Figure 52 : Downstream site of the Bresle at Ponts-et-Marais

Following the **change in the type of fishing gear used from autumn 2025 onwards** (from crustacean traps to condo traps), we have added three new monitoring sites in the Somme department (see below in this report).

One site has been added on the **Somme river**, namely the Cap Hornu site (Somme Estuary entrance) in the municipality of Saint-Valery-sur-Somme (Figure 53 and Figure 54).

Figure 53 : Location of condo trap installation on the Somme River at Cap Hornu in Saint-Valery-sur-Somme

Figure 54 : Downstream site of the Somme at Cap Hornu in Saint-Valery-sur-Somme

Following the reporting and capture of two Chinese crabs on the **Amboise** (a tributary of the Somme) in 2024 by the Fédération de Pêche 80 and AMEVA, we decided to add this watercourse to our monitoring programme using condo traps.

On the Amboise, condo traps will be set upstream at Estrébœuf (Figure 55 and Figure 56) and downstream at Saint-Valery-sur-Somme near the wastewater treatment plant (Figure 57 and Figure 58).

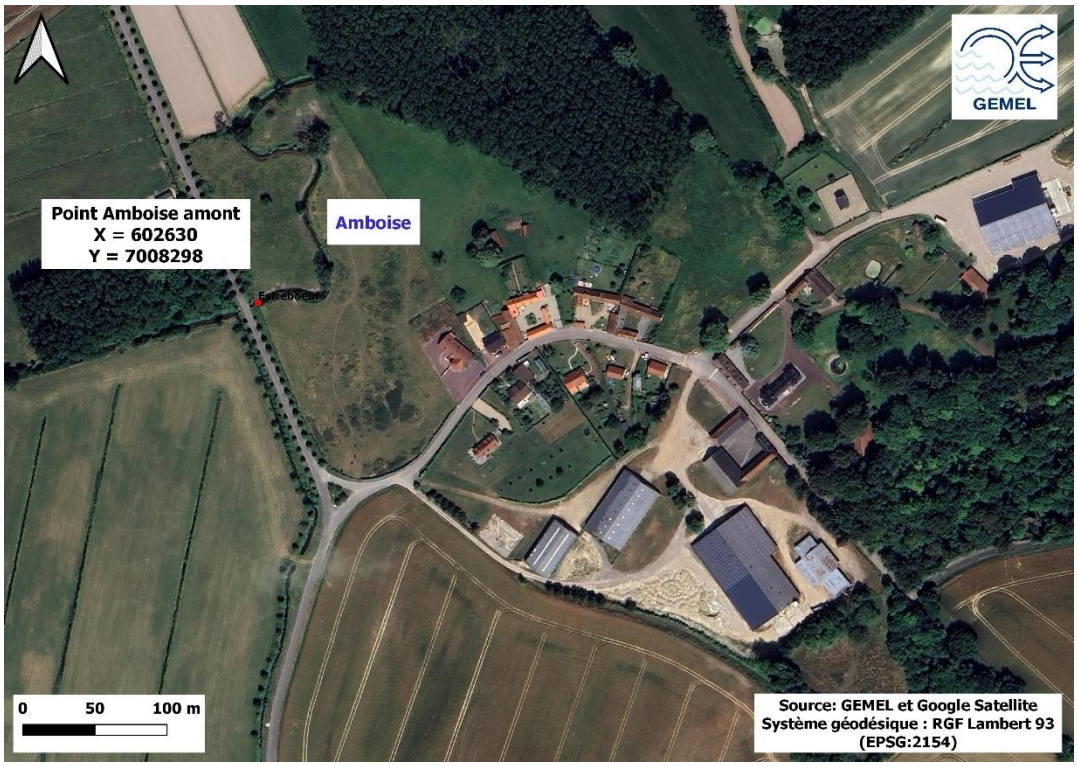


Figure 55 : Location of condo traps on the Amboise in Estrébœuf (Neuville)

Figure 56 : Upstream site of the Amboise in Estrébœuf (Neuville)

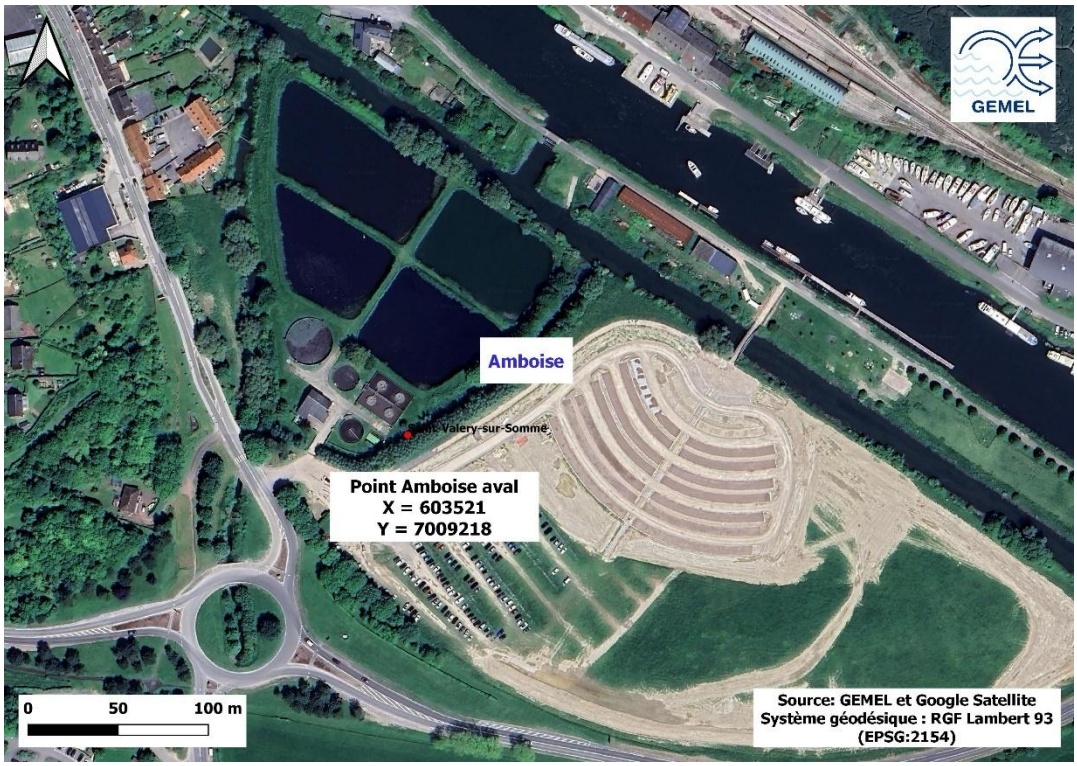


Figure 57 : Location of condo traps on the Amboise in Saint-Valery-sur-Somme

Figure 58 : Downstream site of the Amboise in Saint-Valery-sur-Somme

IV. SAMPLING CAMPAIGNS

A. FISHING GEAR AND METHODS

1. Crustacean traps

The fishing protocol involves the use of the following gear: modified bouquet traps made of black plastic on a metal frame, with a useful volume of 35 L, dimensions L 65 x Ø 31 cm, with two openings of 8 cm diameter and a mesh size of 5 mm (Figure 59).

Figure 59 : Modified bouquet trap used for the study

For each of the rivers, traps (or crustacean traps) are installed, one upstream and one downstream. These devices are positioned along the banks in the oligohaline or freshwater zone, using metal stakes and ropes. The traps are weighted with inert materials (such as "bricks" or "paving stones"). The traps are marked with the coordinates of GEMEL and the name and logos of the CLANCY project (Figure 60). The traps are set during the day and baited with pet food (such as "dog or cat kibble and pâté"). The traps are left in place for 7 days.

Figure 60 : Label placed on all crustacean traps

When the traps are checked, the captured individuals are sorted by species: invasive exotic species (*i.e.* Chinese crab and non-native crayfish) are placed in sealed containers; indigenous species are identified, counted, measured, and then immediately released at the capture site.

All equipment used for sampling (traps, boots, etc.) is disinfected by spraying with a fungicide-bactericide solution and then left to dry before being used on another site, to avoid contamination of healthy sites by pathogens (notably crayfish plague).

Thus, the traps were set in mid-January on the rivers in the Somme, Seine-Maritime, Pas-de-Calais and North departments by two GEMEL agents. The operation was repeated on these rivers in mid-April for the spring campaign, early July for the summer campaign (except on the Aa River for logistical and scheduling reasons).

During the trap setting and checks, environmental parameters were noted (weather, air temperature, water temperature, salinity, and conductivity).

During the checks, species were identified on-site for indigenous species and then returned to the water; non-native species, if any, were taken to the laboratory for euthanasia by freezing.

After several unsuccessful campaigns to capture Chinese mitten crabs using crustacean traps (7 campaigns in the Somme and Seine-Maritime departments, 6 in the Pas-de-Calais department and 4 in the Nord department), we decided, after discussions with our CLANCY

project partners at the annual meeting in Dresden (Germany, 15-16 May 2025) and at the request of the leadership (VMM), to test new types of traps : condo traps; traps used by our colleagues in Wales (Chester Bay, Aberystwyth University).

2. Condo traps

The new fishing protocol provides for the use of a **condo trap** (Figure 67).

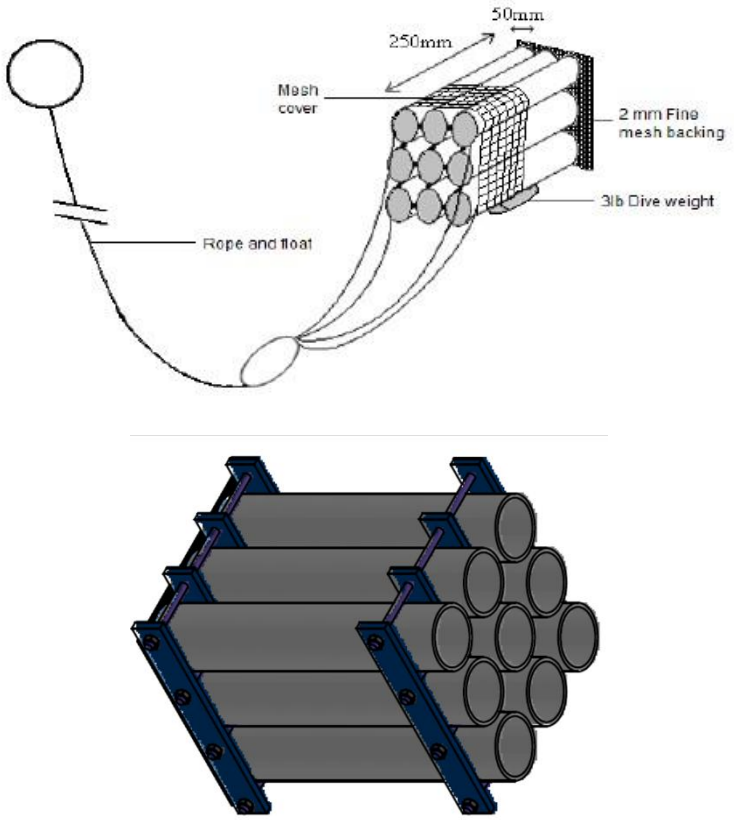


Figure 61 : Condo traps

These are selective traps made of PVC tubes that allow crabs and other crustaceans (probably crayfish; Pieter Boets, pers. com.) to nest in them (Figure 62). This trap was created to trap invasive crustaceans, particularly Chinese Mitten crabs in San Francisco Bay (Veldhuizen, 2000). It has been modified and tested in Australia (Hewitt & McDonald, 2013) and has been used successfully (555 individuals of 5 species caught).

The trap consists of :

- ✓ PVC tubes 25 cm long and 50 mm in diameter, arranged in a square of 3 tubes by 3.
- ✓ One end of the PVC matrix covered with fine mesh (2 mm) to prevent specimens from falling out during retrieval.

- ✓ A mesh cover (10 mm) also surrounds the trap to reinforce the structure and habitat.
- ✓ The open end of the matrix is attached to the surface by a rope and a float.
- ✓ The whole condo is weighted with a diving weight of either 1.3 kg or 2.7 kg, depending on environmental conditions.
- ✓ The weight is attached to one side to ensure that the condo deploys horizontally when it reaches the target substrate.

Figure 62 : Photographs of condo traps used in Wales (© Oscar Norton Jones)

Figure 63 : Condo traps in action in the fish pass at the dam on the Chester River in Wales and Chinese crabs lodged in the tubes (© Oscar Norton Jones)

Two condo traps are set up per site (one trap with a 5 cm diameter tube to catch juvenile crabs and one trap with a 10 cm diameter tube to catch adult crabs; the largest specimens reaching 8/9 cm). They are attached to stakes, trees or rigid structures with chains and padlocks to prevent theft (Figure 64).

This type of trap is selective (no fish are caught and if a fish enters, it can easily escape on its own) and does not require bait; crabs/crayfish come to it to find refuge/shelter.

A sign may be put up, depending on the owner's request. Similarly, the traps are identified with the GEMEL's contact details and the project name and logos (Figure 60). The traps will be set during the day.

Figure 64 : Condo traps built and deployed by GEMEL in 2025

The condo traps will be deployed **twice a year** for four consecutive weeks:

- ✓ **Between early April and late July** to target juveniles and adults returning from the sea to freshwater
- ✓ **Between early September and late November** to target adults leaving for the sea to reproduce.

The traps will be checked after 48 hours the first time, then weekly checks will be carried out thereafter.

Fishing with condo traps began in September 2025 (once the necessary authorisations had been obtained) and will end in November 2027.

We will therefore carry out monitoring as follows:

- Early September to late November 2025
- Early April to late July 2026
- Early September to late November 2026
- Early April to late July 2027
- Early September to late November 2027

When checking the condo traps, the individuals captured will be sorted by species: invasive alien species (i.e. Chinese mitten crabs and non-native crayfish) will be placed in watertight containers (Figure 65); native species will be identified, counted and measured, then immediately released at the site of capture.

Figure 65 : Watertight container for transporting non-native species from the capture site to GEMEL

All equipment used for sampling (traps, boots, etc.) will be disinfected by spraying with a fungicide-bactericide solution and then left to dry before being used again at another site, in order to prevent contamination of healthy sites by pathogens (particularly crayfish plague).

Initially, **the condo traps will be tested and set up on rivers in the Somme and Seine-Maritime departments** ; these are the same sites and rivers as in our previous monitoring programmes,

with the addition of three sites in the Somme department (Amboise upstream, Amboise downstream and Somme downstream – Cap Hornu ; Figure 66), **making a total of 7 rivers and 16 sites**.

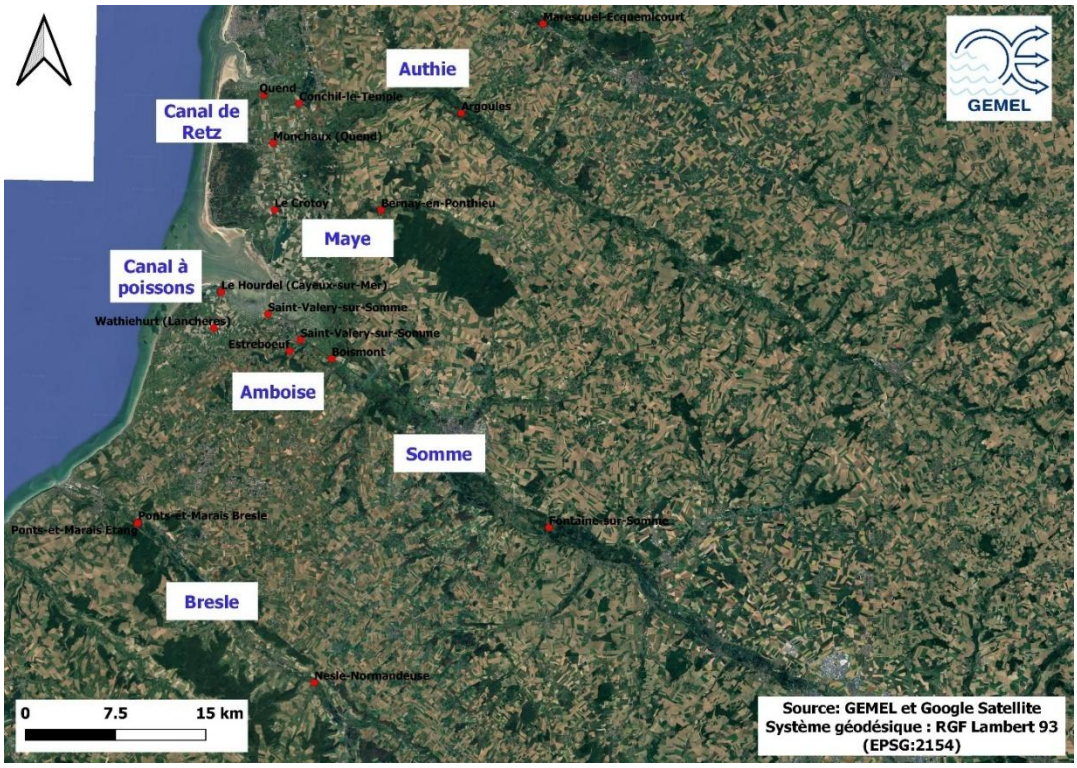


Figure 66 : Location of the 13 municipalities in the departments of Somme (80) and Seine-Maritime (76) where monitoring will be carried out on the following seven rivers: Authie, Canal de Retz, Maye, Somme, Canal à Poissons, Amboise and Bresle.

To this end, new fishing permits have been issued to us by DDTM 80 and DDTM 76 (Appendices) following analysis of our application (i.e. sending a file to each DDTM explaining our desire to change the protocol and type of fishing gear).

If the results prove conclusive with this new gear, new authorisation requests will be made to DDTM62 for deployment on the rivers of Pas-de-Calais in 2026 or 2027.

B. PROBLEMS ENCOUNTERED

Unlike in 2023 and 2024, when administrative delays in receiving our permits to catch Chinese crabs and other non-native species, as well as flooding and water levels and flows that were too high to set traps, caused problems with our monitoring, this year we were able to carry out our monitoring without any particular constraints.

However, some campaigns were once again compromised by acts of vandalism. A total of two pots were stolen (Figure 67):

- ✓ The first was stolen from the downstream site of La Liane in Isques during the summer campaign (July 2025). The tide gauge was bent and we found pieces of cut chain and the padlock.
- ✓ The second at the upstream site of the Maye in Bernay-en-Ponthieu, also during the summer campaign (July 2025). There was no trace of the trap, but we found a piece of the project label in the embankment below the bridge.

Figure 67 : Site of the lower Liane (Isques) and upper Maye (Bernay-en-Ponthieu); days on which thefts from crustacean traps were reported

We are also encountering difficulties in obtaining permission from private landowners to set up mobile traps (U-shaped traps used in Belgium). From March 2025, we will have to begin the administrative process for setting up these traps on the Amboise (upstream site at Estrébœuf). We have contacted the owners of the pastures through which we would need to pass to deploy this trap several times (by telephone, email and post), but we have not received any response... However, we have obtained the agreement of the watercourse manager (Communauté d'Agglomération la Baie de Somme (CABS), manager of the Amboise watercourse – Mr Nicolas Loquet, Director of the GEMAPI service) and the mayor of the municipality of Estrébœuf.

V. RESULTS

At each campaign, during both the trap setting and the check, the following environmental parameters were recorded:

- ✓ The tidal coefficient and the time of high tide at downstream sites (which affect the water height and the accessibility of the site for trap setting and checking)
- ✓ The weather conditions (rain, overcast, or sunny)
- ✓ The air temperature (°C)
- ✓ The water temperature (°C)
- ✓ The salinity
- ✓ The conductivity (µS/cm)

A. THE AA (NORD)

1. Environmental parameters

The environmental parameters recorded during the two seasonal campaigns on the Aa are presented in Table 2. The summer and autumn campaigns could not be carried out (1) due to scheduling conflicts for agents in July and (2) the discontinuation of crustacean traps and their replacement by condo traps, with initial tests on rivers in the Somme and Seine-Maritime departments. The winter campaign was therefore carried out on 20 January 2025, with a follow-up survey conducted a week later on 27 January. The spring campaign took place on 7 April and the follow-up survey on 14 April 2025.

In January, the outside temperature was 2°C during the installation and 15°C during the follow-up survey. The water temperature was around 7°C, the salinity averaged 0.25 and the conductivity was around 700 µS/cm during the reading at each site. The data at the time of installation could not be recorded, as the probe was being used in parallel by another team for the campaign in Pas-de-Calais (Table 2).

During the spring campaign, outside temperatures ranged between 11 and 13°C at the time of the readings. The water temperature was of the same order of magnitude (i.e. 13.6°C on average) at both sites, as were salinity and conductivity (Table 2).

Table 2 : Environmental parameters measured during the trap setting and check on the Aa River in the Nord department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	AA downstream	Saint-Georges-sur-l'Aa	P	20/01/2025	11h10	64	12h28	Cloudy	2	-	-	-
	AA upstream	Saint-Momelin	P	20/01/2025	12h15	64	12h28	Cloudy	2	-	-	-
	AA downstream	Saint-Georges-sur-l'Aa	R	27/01/2025	11h10	72	15h40	Sunny	15	6.7	0.3	691
	AA upstream	Saint-Momelin	R	27/01/2025	11h50	72	15h40	Sunny	15	6.9	0.2	660
Spring	AA downstream	Saint-Georges-sur-l'Aa	P	07/04/2025	11h00	37	9h47	Sunny	11	-	-	-
	AA upstream	Saint-Momelin	P	07/04/2025	11h30	37	9h47	Sunny	11	-	-	-
	AA downstream	Saint-Georges-sur-l'Aa	R	14/04/2025	11h15	85	14h41	Sunny	13	13.4	0.2	665
	AA upstream	Saint-Momelin	R	14/04/2025	11h50	85	14h41	Sunny	13	13.8	0.3	721
Summer	Campaign not carried out - problem with agent intervention schedule											
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments											

2. Captured fauna

The species captured on the Aa during the different campaigns are listed in Table 3. As a reminder, the summer and autumn campaigns could not be carried out.

In winter, two American crayfish (*Faxonius limosus*) were caught in the Aa, identified and then euthanized: one downstream measuring 8.4 cm and one upstream measuring 10.3 cm (Figure 68).

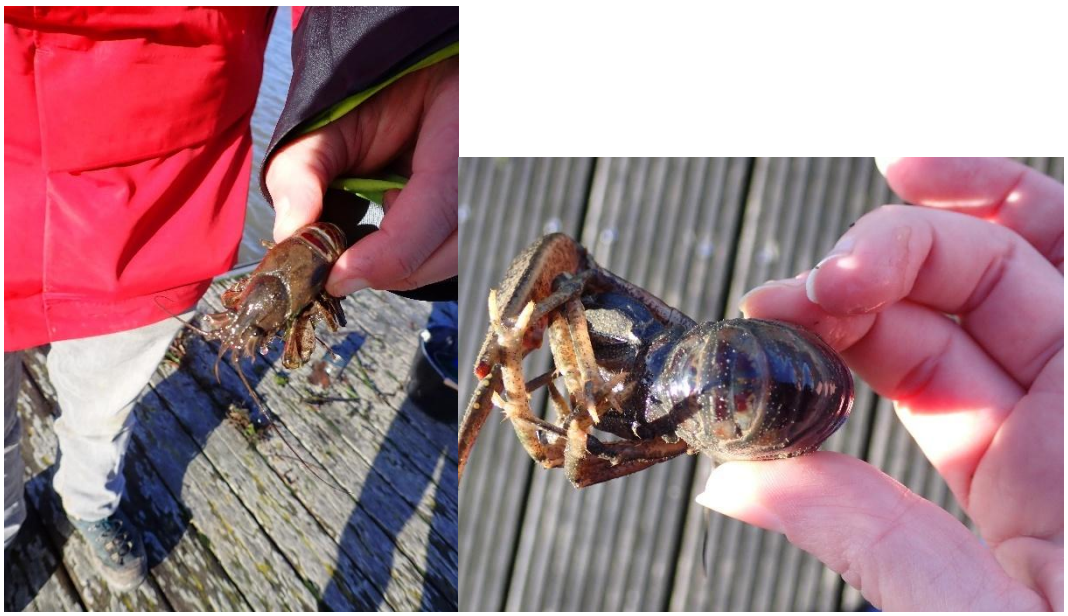


Figure 68 : Two American crayfish (*Faxonius limosus*) caught in traps on the Aa downstream (left) and upstream (right) during the winter campaign

In spring, an American crayfish was caught at the downstream site, identified and euthanized. It measured 8.2 cm. Two bullheads (*Cottus gobio*) were captured, identified and then released at the same site (Figure 69). Thirteen bullheads were also captured at the upstream site, identified and then released.

Figure 69 : American crayfish (*Faxonius limosus*) and bullhead (*Cottus gobio*) on the left, caught downstream of the Aa, and bullhead (on the right) caught upstream during the spring campaign.

No mitten crabs were captured during the monitoring of the Aa during the two campaigns (winter and spring) in 2025.

Table 3 : Species Recorded During the Sampling Campaigns on the Aa

Campaign	Site	Location	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**AA downstream**	Saint-Georges-sur-l'Aa	27/01/2025	11h10	American crayfish	*Faxonius limosus*	1	Euthanized
	AA upstream	Saint-Momelin	27/01/2025	11h50	American crayfish	*Faxonius limosus*	1	Euthanized
Spring	**AA downstream**	Saint-Georges-sur-l'Aa	14/04/2025	11h10	American crayfish	*Faxonius limosus*	1	Euthanized
	AA downstream	Saint-Georges-sur-l'Aa	14/04/2025	11h10	Bullhead	*Cottus gobio*	2	Released
	AA upstream	Saint-Momelin	14/04/2025	11h45	Bullhead	*Cottus gobio*	13	Released
Summer	Campaign not carried out - problem with agent intervention schedule							
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments							

B. The Slack (Pas-de-Calais)

1. Environmental parameters

The setting of traps on the Slack, located in Pas-de-Calais, began on 20 January 2025, during the winter season. At the request of the French Biodiversity Agency, the traps are checked every two days to ensure that there are no European eels (*Anguilla anguilla*) or, at least, to release them in the event of accidental capture. Our team checked the traps on 22 January and then retrieved them on 24 January. During the spring, the traps were set on 7 April and checked on 9 and 11 April. In the summer, the traps were set on the Slack, upstream and downstream, on 30 June, and checked and removed on 2 and 4 July. The autumn campaign did not take place following the discontinuation of crustacean trap setting and its replacement by condo traps, with initial tests on the rivers of the Somme and Seine-Maritime departments.

The environmental parameters measured on the Slack during the three monitoring campaigns (Figure 70) are shown in Table 4.

In winter, the sky was generally cloudy during the monitoring week. Outdoor temperatures ranged from 2 to 8°C at the time of the readings. Both upstream and downstream, the water temperature ranged from 5.5°C at the time of installation to 7.7°C at the time of the final reading. Salinity was 0.2 upstream and 0.3 downstream. Conductivity ranged from 600 to 660 µS/cm in Rinxent (upstream) and from 680 to 835 µS/cm in Ambleteuse downstream (a site slightly more subject to tidal influences depending on the time of day when the parameters were measured). The values measured for the various parameters are therefore similar between the two points monitored during the winter campaign.

In spring, the weather was sunny during the week of monitoring. Outdoor temperatures varied between 11 and 18°C at the time of the readings. The water temperature varied from 8.9°C downstream to 10.2°C upstream (9.4°C on average for the two sites over the three readings taken). Salinity was 0.2 upstream and 0.3 downstream. An average of 594 µS/cm was observed in Rinxent (upstream) and 692 µS/cm in Ambleteuse (downstream). The values measured for the various parameters were therefore similar between the two points monitored during the spring campaign.

During the summer campaign, the weather was once again sunny, with the exception of shift 1 in Rinxent. Outdoor temperatures ranged between 22 and 27°C at the time of the readings. The average water temperature upstream (Rinxent) was 19.1°C; it was slightly warmer downstream at Ambleteuse, with an average of 19.8°C during the week of monitoring. Salinity was once again 0.2 upstream and 0.3 downstream. An average of 625 µS/cm was observed in Rinxent (upstream) and 725 µS/cm in Ambleteuse (downstream). The values measured for the various parameters are therefore similar between the two points monitored during the summer campaign.

Figure 70 : Retrieval of environmental parameters using the probe on the Slack

Table 4 : Environmental Parameters Measured During the Deployment and Retrieval of the Traps on the Slack in the Pas-de-Calais Department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Slack upstream	Rinxent	P	20/01/2025	14h22	63	3h45	Cloudy	2	5.8	0.2	661
	Slack upstream	Rinxent	R1	22/01/2025	13h24	43	4h58	Cloudy	4	6	0.2	662
	Slack upstream	Rinxent	R2	24/01/2025	13h24	31	7h08	Windy	8	7.7	0.2	598
	Slack downstream	Ambleteuse	P	20/01/2025	12h36	63	3h45	Cloudy	2	5.4	0.3	834
	Slack downstream	Ambleteuse	R1	22/01/2025	11h45	43	4h58	Rainy	4	5.5	0.3	697
	Slack downstream	Ambleteuse	R2	24/01/2025	11h35	31	7h08	Windy	8	7.4	0.3	689
Spring	Slack upstream	Rinxent	P	07/04/2025	14h35	37	8h51	Sunny	16	10.2	0.2	591
	Slack upstream	Rinxent	R1	09/04/2025	13h30	59	11h07	Cloudy	11	9.2	0.2	596
	Slack upstream	Rinxent	R2	11/04/2025	14h00	78	12h21	Sunny	18	9.5	0.2	594
	Slack downstream	Ambleteuse	P	07/04/2025	12h20	37	8h51	Sunny	13	9.1	0.3	690
	Slack downstream	Ambleteuse	R1	09/04/2025	11h55	59	11h07	Cloudy	10	9.4	0.3	696
	Slack downstream	Ambleteuse	R2	11/04/2025	11h57	78	12h21	Sunny	11	8.9	0.3	691
Summer	Slack upstream	Rinxent	P	30/06/2025	13h18	67	4h50	Sunny	27	19.6	0.2	630
	Slack upstream	Rinxent	R1	02/07/2025	13h35	57	5h32	Rainy	22	20.2	0.2	625
	Slack upstream	Rinxent	R2	04/07/2025	14h27	42	7h11	Sunny	25	17.6	0.2	621
	Slack downstream	Ambleteuse	P	30/06/2025	11h50	67	4h50	Sunny	27	20	0.3	808
	Slack downstream	Ambleteuse	R1	02/07/2025	11h56	57	5h32	Cloudy	22	21.4	0.3	698
	Slack downstream	Ambleteuse	R2	04/07/2025	12h02	42	7h11	Sunny	23	18	0.3	668
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments											

2. Captured fauna

The species caught on the Slack during the various campaigns are listed in Table 5.

During the winter campaign, no species were caught in the traps on the lower Slack (Ambleteuse). However, one bullhead (*Cottus gobio*) and two minnows (*Phoxinus phoxinus*) were caught on the Slack upstream at Rinxent. They were identified, counted and released (Figure 71).

Figure 71 : Bullhead (*Cottus gobio*) and minnow (*Phoxinus phoxinus*) caught upstream of the Slack and released during the winter campaign.

In spring, a single common sculpin was sampled at the Slack upstream site in Rinxent. It was identified and then released (Figure 72).

Figure 72 : Bullhead (*Cottus gobio*) caught upstream of the Slack and released during the spring campaign

Ultimately, during the summer survey, no species were recorded at the downstream site. Two European bullheads were sampled upstream at Rinxent (one individual at each sampling

event). A total of 14 minnows (12 during the first sampling event and 2 during the second) were captured at this same site located upstream of the Slack (Figure 73).

Figure 73 : Minnows (*Phoxinus phoxinus*) captured upstream of the Slack and released during the summer survey

No Chinese mitten crabs were captured during the monitoring surveys on the Slack across the three survey campaigns conducted in 2025.

Table 5 : Species recorded During the Sampling Campaigns on the Slack

Campaign	Site	Location	Retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Slack downstream**	Ambleteuse	R1	22/01/2025	11h45	-	-	-	Empty
	Slack upstream	Rinxent	R1	22/01/2025	13h24	-	-	-	Empty
	Slack downstream	Ambleteuse	R2	24/01/2025	11h35	-	-	-	Empty
	Slack upstream	Rinxent	R2	24/01/2025	13h24	Bullhead	*Cottus gobio*	1	Released
	Slack upstream	Rinxent	R2	24/01/2025	13h24	Minnow	*Phoxinus phoxinus*	2	Released
Spring	**Slack downstream**	Ambleteuse	R1	09/04/2025	11h55	-	-	-	Empty
	Slack upstream	Rinxent	R1	09/04/2025	13h30	-	-	-	Empty
	Slack downstream	Ambleteuse	R2	11/04/2025	11h57	-	-	-	Empty
	Slack upstream	Rinxent	R2	11/04/2025	14h00	Bullhead	*Cottus gobio*	1	Released
Summer	**Slack downstream**	Ambleteuse	R1	02/07/2025	11h56	-	-	-	Empty
	Slack upstream	Rinxent	R1	02/07/2025	13h35	Bullhead	*Cottus gobio*	1	Released
	Slack upstream	Rinxent	R1	02/07/2025	13h35	Minnow	*Phoxinus phoxinus*	12	Released
	Slack downstream	Ambleteuse	R2	04/07/2025	12h02	-	-	-	Empty
	Slack upstream	Rinxent	R2	04/07/2025	14h27	Bullhead	*Cottus gobio*	1	Released
	Slack upstream	Rinxent	R2	04/07/2025	14h27	Minnow	*Phoxinus phoxinus*	2	Released
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments								

C. The Wimereux (Pas-de-Calais)

1. Environmental parameters

The deployment of traps on the Wimereux River, located in the Pas-de-Calais department, began on 20 January 2025 during the winter season. At the request of the French Office for Biodiversity (Office Français de la Biodiversité), the traps were checked every two days to ensure that no European eels (*Anguilla anguilla*) were present, or at least to release them in the event of accidental capture. As for the Slack site, our team therefore checked the traps on 22 January and retrieved them on 24 January.

During spring, traps were deployed on 7 April and checked on 9 and 11 April. In summer, the traps were set on the Wimereux on 30 June, both upstream and downstream, and were checked and removed on 2 and 4 July. The autumn survey did not take place following the discontinuation of crustacean trap deployment and their replacement with “condo” traps, with initial trials conducted on rivers in the Somme and Seine-Maritime departments.

The environmental parameters measured on the Wimereux during the three monitoring campaigns (Figure 74) are presented in Table 6.

In winter, weather conditions were generally rainy and overcast throughout the monitoring week. Air temperatures ranged between 2 and 8°C at the time of sampling. Both upstream and downstream, water temperature varied from 4.6°C at deployment to 7.7°C at the final retrieval. Salinity was 0.2 upstream and 0.3 downstream. Conductivity ranged between 598 and 654 µS/cm at Pittefaux (upstream) and between 647 and 722 µS/cm at Wimille downstream (a site slightly more influenced by tidal conditions depending on the timing of parameter measurements). Overall, the values recorded for the different parameters were similar between the two monitored sites during the winter survey.

In spring, weather conditions were sunny during the monitoring week. Air temperatures ranged between 10 and 13°C at the time of sampling. Water temperature varied from 8.8°C upstream to 10°C downstream (mean value of 9.6°C for both sites across the three sampling events). Salinity was 0.2 upstream and 0.3 downstream. Mean conductivity values of 597 µS/cm were recorded at Pittefaux (upstream) and 783 µS/cm at Wimille (downstream). The

values measured for the different parameters were therefore similar between the two monitored sites during the spring survey.

During the summer survey, weather conditions were once again sunny. Air temperatures ranged between 22 and 26°C at the time of sampling. The mean upstream water temperature at Pittefaux was 18.8°C, while it was slightly higher downstream at Wimille, with a weekly mean of 19.3°C. Salinity was 0.3 upstream and higher downstream, reaching a mean value of 4 at Wimille. Mean conductivity values of 668 µS/cm were recorded at Pittefaux (upstream) and 1032 µS/cm at Wimille (downstream). The values measured for the different parameters were therefore relatively similar between the two monitored sites during the summer survey, except for salinity and, consequently, conductivity, which were higher downstream at the Wimille site due to seawater intrusion.

Figure 74 : Recording of environmental parameters using the probe on the Wimereux.

Table 6 : Environmental parameters measured during the placement and retrieval of traps on the Wimereux in the Pas-de-Calais department.

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Wimereux upstream	Pittefaux	P	20/01/2025	11h36	63	3h45	Cloudy	2	4.8	0.2	643
	Wimereux upstream	Pittefaux	R1	22/01/2025	11h20	43	4h58	Rainy	4	4.6	0.2	654
	Wimereux upstream	Pittefaux	R2	24/01/2025	11h05	31	7h08	Rainy	8	6.9	0.2	598
	Wimereux downstream	Wimille	P	20/01/2025	11h55	63	3h45	Cloudy	2	5.5	0.3	722
	Wimereux downstream	Wimille	R1	22/01/2025	11h32	43	4h58	Rainy	4	6.2	0.3	681
	Wimereux downstream	Wimille	R2	24/01/2025	11h18	31	7h08	Windy	8	7.7	0.2	647
Spring	Wimereux upstream	Pittefaux	P	07/04/2025	11h35	37	8h51	Sunny	12	9.7	0.2	607
	Wimereux upstream	Pittefaux	R1	09/04/2025	11h20	59	11h07	Cloudy	10	9.6	0.2	596
	Wimereux upstream	Pittefaux	R2	11/04/2025	11h10	78	12h21	Sunny	11	8.8	0.2	587
	Wimereux downstream	Wimille	P	09/04/2025	11h38	59	11h07	Cloudy	10	9.8	0.3	757
	Wimereux downstream	Wimille	R1	11/04/2025	11h36	78	12h21	Sunny	11	9.8	0.3	804
	Wimereux downstream	Wimille	R2	07/04/2025	12h00	37	8h51	Sunny	13	10	0.3	789
Summer	Wimereux upstream	Pittefaux	P	30/06/2025	11h16	67	4h50	Sunny	26	18.5	0.3	673
	Wimereux upstream	Pittefaux	R1	02/07/2025	11h21	57	5h32	Sunny	25	20	0.3	669
	Wimereux upstream	Pittefaux	R2	04/07/2025	11h27	42	7h11	Sunny	23	17.8	0.2	663
	Wimereux downstream	Wimille	P	30/06/2025	11h32	67	4h50	Sunny	26	19.1	5.8	1084
	Wimereux downstream	Wimille	R1	02/07/2025	11h40	57	5h32	Cloudy	22	21.8	5.8	1035
	Wimereux downstream	Wimille	R2	04/07/2025	11h46	42	7h11	Sunny	23	16.9	0.5	976
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments											

2. Captured fauna

The species captured on the Wimereux during the different survey campaigns are listed in Table 7.

During the winter survey, only two bleaks (*Alburnus alburnus*) were captured downstream at Wimille during the second sampling event (Figure 75).

Figure 75 : Bleak (*Alburnus alburnus*) captured at the downstream site of the Wimereux during the winter survey

By contrast, one European eel (*Anguilla anguilla*) was captured at the downstream site on the Wimereux during the spring survey (Figure 76). The individual measured 15 cm and was released immediately after measurement.

Figure 76 : European eel (*Anguilla anguilla*) captured downstream of the Wimereux during the spring campaign

During the summer survey, again at the downstream site of the watercourse, a juvenile European flounder (*Platichthys flesus*) was recorded and subsequently released.

No Chinese mitten crabs were captured during the three monitoring surveys conducted on the Wimereux in 2025.

Table 7 : Species recorded during the sampling campaigns on the Wimereux.

Campaign	Site	Location	Retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Wimereux upstream**	Pittefaux	R1	22/01/2025	11h20	-	-	-	Empty
	Wimereux downstream	Wimille	R1	22/01/2025	11h32	-	-	-	Empty
	Wimereux upstream	Pittefaux	R2	24/01/2025	11h05	-	-	-	Empty
	Wimereux downstream	Wimille	R2	24/01/2025	11h18	Bleak	*Alburnus alburnus*	2	Released
Spring	**Wimereux upstream**	Pittefaux	R1	09/04/2025	11h20	-	-	-	Empty
	Wimereux downstream	Wimille	R1	09/04/2025	11h38	European eel	*Anguilla anguilla*	1	15 cm and released
	Wimereux upstream	Pittefaux	R2	11/04/2025	11h10	-	-	-	Empty
	Wimereux downstream	Wimille	R2	11/04/2025	11h36	-	-	-	Empty
Summer	**Wimereux upstream**	Pittefaux	R1	02/07/2025	11h21	-	-	-	Empty
	Wimereux downstream	Wimille	R1	02/07/2025	11h40	-	-	-	Empty
	Wimereux upstream	Pittefaux	R2	04/07/2025	11h27	-	-	-	Empty
	Wimereux downstream	Wimille	R2	04/07/2025	11h46	European flounder	*Platichthys flesus*	1	Juvenile, Released
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments								

D. THE LIANE (PAS-DE-CALAIS)

1. Environmental parameters

The deployment of traps on the Liane River, located in the Pas-de-Calais department, began on 20 January 2025 during the winter season. At the request of the French Office for Biodiversity (Office Français de la Biodiversité), the traps were checked every two days to ensure that no European eels (*Anguilla anguilla*) were present, or at least to release them in the event of accidental capture. As for the other sites in the Pas-de-Calais, our team therefore checked the traps on 22 January and retrieved them on 24 January.

During spring, traps were deployed on 7 April and checked on 9 and 11 April. In summer, the traps were set on the Liane on 30 June, both upstream and downstream, and were checked and removed on 2 and 4 July. The autumn survey did not take place following the discontinuation of crustacean trap deployment and their replacement with “condo” traps, with initial trials conducted on rivers in the Somme and Seine-Maritime departments.

The environmental parameters measured on the Liane during the three monitoring campaigns (Figure 77) are presented in Table 8.

In winter, weather conditions were generally rainy and overcast throughout the monitoring week. Air temperatures ranged between 2 and 8°C at the time of sampling. Both upstream and downstream, water temperature varied from 4.6°C at deployment to 7.5°C at the final retrieval. Salinity was 0.2 both upstream and downstream. Conductivity ranged between 502 and 855 µS/cm at Crémarest (upstream) and between 597 and 631 µS/cm at Isques downstream (a site slightly more influenced by tidal conditions depending on the timing of parameter measurements). Overall, the values recorded for the different parameters were similar between the two monitored sites during the winter survey.

In spring, weather conditions were sunny during the monitoring week. Air temperatures ranged between 8 and 12°C at the time of sampling. Water temperature varied from 9°C upstream to 10.4°C downstream (mean value of 9.6°C for both sites across the three sampling events). Salinity was 0.2 both upstream and downstream. Mean conductivity values of 575 µS/cm were recorded at Crémarest (upstream) and 613 µS/cm at Isques (downstream). The

values measured for the different parameters were therefore similar between the two monitored sites during the spring survey.

During the summer survey, weather conditions were once again sunny. Air temperatures ranged between 20 and 26°C at the time of sampling. The mean upstream water temperature at Crémarest was 19.6°C and was similar downstream at Isques (i.e. a mean of 19.6°C) over the monitoring week. Salinity ranged between 0.2 and 0.3 both upstream and downstream. Mean conductivity values of 655 µS/cm were recorded at Crémarest (upstream) and 690 µS/cm at Isques (downstream). The values measured for the different parameters were therefore similar between the two monitored sites during the summer survey.

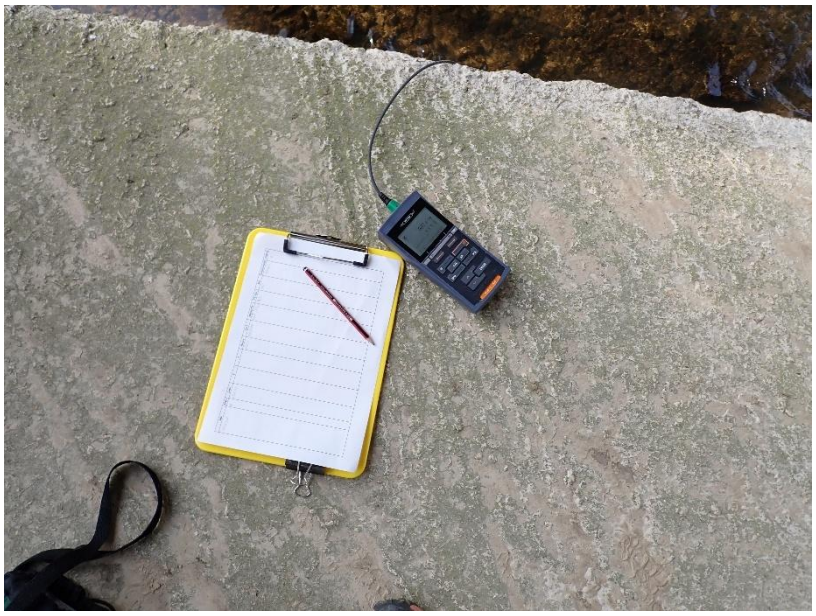


Figure 77 : Measurement of environmental parameters using the probe on the Liane River

Table 8 : Environmental parameters measured during the deployment and retrieval of traps on the Liane in the Pas-de-Calais department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	**Liane upstream**	Crémarest	P	20/01/2025	11h10	63	3h45	Cloudy	2	4.8	0.2	678
	Liane upstream	Crémarest	R1	22/01/2025	11h00	43	4h58	Cloudy	4	4.6	0.3	855
	Liane upstream	Crémarest	R2	24/01/2025	10h41	31	7h08	Rainy	8	7.5	0.2	502
	Liane downstream	Isques	P	20/01/2025	10h32	63	3h45	Cloudy	2	5.3	0.2	617
	Liane downstream	Isques	R1	22/01/2025	10h33	43	4h58	Rainy	4	5.2	0.2	631
	Liane downstream	Isques	R2	24/01/2025	10h14	31	7h08	Rainy	8	6.9	0.2	597
Spring	**Liane upstream**	Crémarest	P	07/04/2025	11h10	37	8h51	Sunny	12	9.6	0.2	587
	Liane upstream	Crémarest	R1	09/04/2025	10h55	59	11h07	Sunny	9	9.5	0.2	571
	Liane upstream	Crémarest	R2	11/04/2025	10h40	78	12h21	Sunny	8	9	0.2	568
	Liane downstream	Isques	P	07/04/2025	10h30	37	8h51	Sunny	12	10.4	0.2	594
	Liane downstream	Isques	R1	09/04/2025	10h30	59	11h07	Cloudy	9	9.6	0.2	626
	Liane downstream	Isques	R2	11/04/2025	10h00	78	12h21	Sunny	8	9.3	0.2	620
Summer	**Liane upstream**	Crémarest	P	30/06/2025	10h50	67	4h50	Sunny	26	19.2	0.2	647
	Liane upstream	Crémarest	R1	02/07/2025	10h52	57	5h32	Sunny	25	21.6	0.3	671
	Liane upstream	Crémarest	R2	04/07/2025	11h00	42	7h11	Sunny	22	18	0.2	646
	Liane downstream	Isques	P	30/06/2025	10h25	67	4h50	Sunny	24	19.2	0.2	660
	Liane downstream	Isques	R1	02/07/2025	10h20	57	5h32	Sunny	23	20.8	0.3	714
	Liane downstream	Isques	R2	04/07/2025	10h27	42	7h11	Sunny	20	18.6	0.3	697
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments											

2. Captured fauna

The species captured on the Liane during the different survey campaigns are listed in Table 9.

Few species were captured on the Liane. Indeed, the traps were empty during both the winter and summer surveys, both upstream at Crémarest and downstream at Isques.

It should be noted that during the second summer sampling event at the downstream site in Isques, the trap was stolen. It is therefore not possible to confirm the absence of captured species for this sampling event.

Only one European bullhead (*Cottus gobio*) was recorded at the downstream site during the first sampling event in spring (Figure 78). The individual was identified and immediately released.

Figure 78 : European bullhead (*Cottus gobio*) captured at the downstream site of the Liane during the first sampling event of the spring survey

No Chinese mitten crabs were captured during the three monitoring surveys conducted on the Liane in 2025.

Table 9 : Species recorded during the sampling campaigns on the Liane.

Campaign	Site	Location	Retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Liane downstream**	Isques	R1	22/01/2025	10h33	-	-	-	Empty
	Liane upstream	Cremarest	R1	22/01/2025	11h00	-	-	-	Empty
	Liane downstream	Isques	R2	24/01/2025	10h14	-	-	-	Empty
	Liane upstream	Cremarest	R2	24/01/2025	10h41	-	-	-	Empty
Spring	**Liane downstream**	Isques	R1	09/04/2025	10h30	Bullhead	*Cottus gobio*	1	Released
	Liane upstream	Cremarest	R1	09/04/2025	10h55	-	-	-	Empty
	Liane downstream	Isques	R2	11/04/2025	10h00	-	-	-	Empty
	Liane upstream	Cremarest	R2	11/04/2025	10h40	-	-	-	Empty
Summer	**Liane downstream**	Isques	R1	02/07/2025	10h20	-	-	-	Empty
	Liane upstream	Cremarest	R1	02/07/2025	10h52	-	-	-	Empty
	Liane downstream	Isques	R2	04/07/2025	10h27	-	-	-	**Stolen trap**
	Liane upstream	Cremarest	R2	04/07/2025	11h00	-	-	-	Empty
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments								

E. THE CANCHE (PAS-DE-CALAIS)

1. Environmental parameters

The deployment of traps on the Canche River, located in the Pas-de-Calais department, began on 20 January 2025 during the winter season. At the request of the French Office for Biodiversity (Office Français de la Biodiversité), the traps were checked every two days to ensure that no European eels (*Anguilla anguilla*) were present, or at least to release them in the event of accidental capture. As for the other sites in the Pas-de-Calais, our team therefore checked the traps on 22 January and retrieved them on 24 January.

During spring, traps were deployed on 7 April and checked on 9 and 11 April. In summer, the traps were set on the Canche on 30 June, both upstream and downstream, and were checked and removed on 2 and 4 July. The autumn survey did not take place following the discontinuation of crustacean trap deployment and their replacement with “condo” traps, with initial trials conducted on rivers in the Somme and Seine-Maritime departments.

The environmental parameters measured on the Canche during the three monitoring campaigns (Figure 79) are presented in Table 10.

In winter, weather conditions were generally rainy and overcast throughout the monitoring week. Air temperatures ranged between 3 and 8°C at the time of sampling. Both upstream and downstream, water temperature varied from 5.1°C at deployment to 9.1°C at the final retrieval. Salinity was 0.2 upstream and 0.3 downstream. Conductivity ranged between 644 and 671 µS/cm at Maresquel-Ecquemicourt (upstream) and between 658 and 804 µS/cm at La Calotterie downstream (a site more influenced by tidal conditions depending on the timing of parameter measurements). Overall, the values recorded for the different parameters were relatively similar between the two monitored sites during the winter survey.

In spring, weather conditions were sunny during the monitoring week. Air temperatures ranged between 11 and 18°C at the time of sampling. Water temperature varied from 11.3°C upstream to 14.4°C downstream (mean value of 12.2°C for both sites across the three sampling events). Salinity ranged between 0.2 and 0.3 both upstream and downstream. Mean conductivity values of 657 µS/cm were recorded at Maresquel-Ecquemicourt (upstream) and

665 µS/cm at La Calotterie (downstream). The values measured for the different parameters were therefore similar between the two monitored sites during the spring survey.

During the summer survey, weather conditions were sunny, except on the day of the first sampling event, when rainfall occurred. Air temperatures ranged between 20 and 30°C at the time of sampling. The mean upstream water temperature at Maresquel-Ecquemicourt was 14.8°C, while it was higher downstream at La Calotterie, with a mean of 19°C over the monitoring week. Salinity ranged between 0.2 upstream and 0.3 downstream. Mean conductivity values of 653 µS/cm were recorded at Maresquel-Ecquemicourt (upstream) and 663 µS/cm at La Calotterie (downstream). The values measured for the different parameters were therefore similar between the two monitored sites during the summer survey.

Figure 79 : Retrieval of environmental parameters using the probe on the Canche

Table 10 : Environmental parameters measured during the installation and retrieval of traps on the Canche in the Pas-de-Calais department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Canche upstream	Maresquel-Ecquemicourt	P	20/01/2025	14h50	63	3h45	Cloudy	3	-	-	-
	Canche upstream	Maresquel-Ecquemicourt	R1	22/01/2025	14h44	43	4h58	Rainy	4	8.2	0.2	671
	Canche upstream	Maresquel-Ecquemicourt	R2	24/01/2025	14h48	31	7h08	Rainy	8	9.1	0.2	644
	Canche downstream	La Calotterie	P	20/01/2025	15h07	63	3h45	Cloudy	5	7.1	0.2	658
	Canche downstream	La Calotterie	R1	22/01/2025	14h03	43	4h58	Cloudy	4	5.1	0.3	751
	Canche downstream	La Calotterie	R2	24/01/2025	14h08	31	7h08	Rainy	8	7.3	0.3	804
Spring	Canche upstream	Maresquel-Ecquemicourt	P	07/04/2025	15h30	37	8h51	Sunny	16	-	-	-
	Canche upstream	Maresquel-Ecquemicourt	R1	09/04/2025	15h55	59	11h07	Sunny	15	11.3	0.2	660
	Canche upstream	Maresquel-Ecquemicourt	R2	11/04/2025	15h35	78	12h21	Sunny	18	11.4	0.2	654
	Canche downstream	La Calotterie	P	07/04/2025	15h20	37	8h51	Sunny	16	14.4	0.3	692

	Canche downstream	La Calotterie	R1	09/04/2025	14h10	59	11h07	Sunny	11	12.3	0.3	674
	Canche downstream	La Calotterie	R2	11/04/2025	14h45	78	12h21	Sunny	18	11.6	0.2	630
Summer	**Canche upstream**	Maresquel-Ecquemicourt	P	30/06/2025	14h43	67	4h50	Sunny	30	15.1	0.2	654
	Canche upstream	Maresquel-Ecquemicourt	R1	02/07/2025	15h08	57	5h32	Rainy	20	15.2	0.2	653
	Canche upstream	Maresquel-Ecquemicourt	R2	04/07/2025	15h56	42	7h11	Sunny	24	14	0.2	652
	Canche downstream	La Calotterie	P	30/06/2025	14h10	67	4h50	Sunny	28	19.2	0.3	667
	Canche downstream	La Calotterie	R1	02/07/2025	14h30	57	5h32	Rainy	20	18.9	0.3	672
	Canche downstream	La Calotterie	R2	04/07/2025	15h14	42	7h11	Soleil	23	18.9	0.2	650
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments											

2. Captured fauna

The species captured on the Canche during the various survey campaigns are detailed in Table 11.

No species were captured during the winter monitoring, either at the upstream or downstream sites.

During the spring campaign, two bleaks (*Alburnus alburnus*) were recorded at the downstream site (La Calotterie) during the first lift, and two three-spined sticklebacks (*Gasterosteus aculeatus*) were also recorded at the downstream site during the second lift (Figure 80).

These were identified on-site and subsequently released. No captures were recorded at the upstream site in Maresquel-Ecquemicourt

Figure 80 : Three-spined stickleback (*Gasterosteus aculeatus*) captured downstream on the Canche during the spring campaign

During the summer campaign, however, two European eels (*Anguilla anguilla*), measuring 15 and 40 cm respectively, were recorded, measured, and then released at La Calotterie during the second lift (Figure 81)

Figure 81 : European eel (*Anguilla anguilla*) captured downstream of the Canche during the summer campaign

No mitten crabs were captured during the 3 monitoring campaigns conducted in 2025 on the Canche.

Table 11 : Species recorded during the sampling campaigns on the Canche

Campaign	Site	Location	Retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Canche downstream**	La Calotterie	R1	22/01/2025	14h03	-	-	-	Empty
	Canche upstream	Maresquel Equemicourt	R1	22/01/2025	14h44	-	-	-	Empty
	Canche downstream	La Calotterie	R2	24/01/2025	14h08	-	-	-	Empty
	Canche upstream	Maresquel Equemicourt	R2	24/01/2025	14h48	-	-	-	Empty
Spring	**Canche downstream**	La Calotterie	R1	09/04/2025	14h10	Bleak	*Alburnus alburnus*	2	Released
	Canche upstream	Maresquel Equemicourt	R1	09/04/2025	15h55	-	-	-	Empty
	Canche downstream	La Calotterie	R2	11/04/2025	14h45	Three-spined stickleback	*Gasterosteus aculeatus*	2	Released
	Canche upstream	Maresquel Equemicourt	R2	11/04/2025	15h35	-	-	-	Empty
Summer	**Canche downstream**	La Calotterie	R1	02/07/2025	14h30	-	-	-	Empty
	Canche upstream	Maresquel Equemicourt	R1	02/07/2025	15h08	-	-	-	Empty
	Canche downstream	La Calotterie	R2	04/07/2025	15h14	European eal	*Anguilla anguilla*	2	Released
	Canche upstream	Maresquel Equemicourt	R2	04/07/2025	15h56	-	-	-	Empty
Autumn	Campaign not carried out - stop for deployment of traps Condo in the Somme and Seine-Maritime departments								

F. The Authie (Somme)

1. Environmental parameters

Unlike in Pas-de-Calais, the crustacean traps set in the Somme department were left for seven consecutive days before being lifted during the winter, spring, and summer monitoring periods. The condo traps were deployed in autumn for four consecutive weeks (an initial check 48 hours after setting, R1, followed by weekly checks R2, R3, R4, and R5 during the lift). The environmental parameters measured on the Authie (Figure 82) during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 12, while those from the autumn campaign using condo traps are provided in Table 14.

In winter, the weather was mostly rainy and cloudy during the monitoring week, which took place from 23 January (setting) to 30 January 2025 (lift). Outdoor temperatures ranged between 4 and 6°C at the time of recording. Both upstream and downstream, water temperatures varied from 7.5°C at the time of setting to 9.2°C during the final lift. Salinity was 0.2 at both sites. As for conductivity, it fluctuated between 583 and 638 µS/cm at Argoules (upstream) and between 621 and 656 µS/cm at Conchil-le-Temple downstream (a site more subject to tidal influence depending on the time the parameters were recorded). The values measured for the various parameters are therefore relatively similar between the two monitored points during the winter campaign.

During the spring campaign, the weather was sunny during the monitoring week from 10 April (setting) to 17 April 2025 (lift). Outdoor temperatures ranged from 9 to 15°C during recordings. Water temperature varied from 10.8°C upstream to 12°C downstream (averaging 11.3°C across both sites and recordings). Salinity remained at 0.2 regardless of the site or date. An average of 634 µS/cm was observed at both Argoules and Conchil-le-Temple. Thus, the measured parameters were similar between the two sites during the spring campaign.

During the summer campaign, the weather was sunny during the monitoring week from 3 July (setting) to 10 July 2025 (lift). Outdoor temperatures ranged between 19 and 22°C. The average water temperature upstream (Argoules) was 14.5°C; it was higher downstream at Conchil-le-Temple, averaging 16.1°C over the week. Salinity was 0.2 at all times and locations.

Conductivity averaged 617 µS/cm at Argoules and 613 µS/cm at Conchil-le-Temple. Consequently, the values were similar between the two points during the summer campaign.

In autumn, during the campaign conducted between 1 October and 29 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 11 to 16°C. The water temperature remained relatively constant, varying from 11.4°C to 12.7°C, with an average of 11.9°C for the Authie river. Salinity remained at 0.2 at both sites, and conductivity varied between 540 and 670 µS/cm. The measured parameters were therefore similar between the two monitored points during the autumn campaign.

Figure 82 : Retrieval of environmental parameters using the probe on the Authie

Table 12 : Environmental parameters measured during the deployment and retrieval of the traps on the Authie in the Somme department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Authie upstream	Argoules	P	23/01/2025	10h33	35	5h39	Cloudy	4	8.3	0.2	638
	Authie upstream	Argoules	R	30/01/2025	10h20	89	12h33	Rainy	6	9.2	0.2	583
	Authie downstream	Conchil-le-Temple	P	23/01/2025	11h07	35	5h39	Cloudy	6	7.5	0.2	656
	Authie downstream	Conchil-le-Temple	R	30/01/2025	10h57	89	12h33	Rainy	6	8.7	0.2	621
Spring	Authie upstream	Argoules	P	10/04/2025	10h47	59	10h58	Sunny	9	10.8	0.2	636
	Authie upstream	Argoules	R	17/04/2025	10h45	69	15h03	Sunny	14	11.3	0.2	632
	Authie downstream	Conchil-le-Temple	P	10/04/2025	11h47	59	10h58	Sunny	10	11.2	0.2	632
	Authie downstream	Conchil-le-Temple	R	17/04/2025	11h20	69	15h03	Sunny	15	12	0.2	636
Summer	Authie upstream	Argoules	P	03/07/2025	10h27	49	6h11	Sunny	19	14.9	0.2	618
	Authie upstream	Argoules	R	10/07/2025	10h13	65	12h42	Sunny	22	14.2	0.2	616
	Authie downstream	Conchil-le-Temple	P	03/07/2025	11h05	49	6h11	Sunny	19	16.4	0.2	616
	Authie downstream	Conchil-le-Temple	R	10/07/2025	10h56	65	12h42	Sunny	22	15.8	0.2	611

Table 13 : Environmental parameters measured during the placement and retrieval of condo traps on the Authie (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Authie upstream**	Argoules	P	01/10/2025	11h42	25	06h29	Sunny	12	11.4	0.2	624
	Authie downstream	Conchil-le-Temple	P	01/10/2025	12h37	25	06h29	Sunny	16	11.6	0.2	633
	Authie upstream	Argoules	R1	03/10/2025	10h30	42	09h35	Cloudy	13	11.8	0.2	622
	Authie downstream	Conchil-le-Temple	R1	03/10/2025	11h05	42	09h35	Cloudy	13	12.1	0.2	632
	Authie upstream	Argoules	R2	08/10/2025	10h29	107	01h07	Sunny	11	11.6	0.2	541
	Authie downstream	Conchil-le-Temple	R2	08/10/2025	11h04	107	01h07	Sunny	13	12.2	0.3	670
	Authie upstream	Argoules	R3	15/10/2025	10h25	39	07h19	Sunny	13	12	0.2	624
	Authie downstream	Conchil-le-Temple	R3	15/10/2025	11h05	39	07h19	Sunny	14	12.7	0.2	636
	Authie upstream	Argoules	R4	22/10/2025	10h15	86	00h59	Rainy	13	12.3	0.2	583
	Authie downstream	Conchil-le-Temple	R4	22/10/2025	10h43	86	00h59	Cloudy	13	12.6	0.2	540
	Authie upstream	Argoules	R5	29/10/2025	11h25	38	03h51	Cloudy	14	11.4	0.2	565
	Authie downstream	Conchil-le-Temple	R5	29/10/2025	12h13	38	03h51	Cloudy	14	11.4	0.2	636

2. Captured fauna

The species captured on the Authie during the various campaigns are detailed in Table 14.

During this 2025 annual monitoring, no species were captured on the River Authie, either upstream or downstream, using either crustacean traps or condo traps, across the four seasonal campaigns (Figure 83).

Figure 83 : Empty crustacean traps and empty condo traps on the Authie

No mitten crabs were captured during the 4 surveys conducted in 2025 on the Authie.

Table 14 : Species recorded during the sampling campaigns on the Authie

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Authie upstream**	Argoules	R	30/01/2025	10h20	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R	30/01/2025	10h57	-	-	-	Empty
Spring	**Authie upstream**	Argoules	R	17/04/2025	10h45	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R	17/04/2025	11h20	-	-	-	Empty
Summer	**Authie upstream**	Argoules	R	10/07/2025	10h13	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R	10/07/2025	10h56	-	-	-	Empty
Autumn	**Authie upstream**	Argoules	R1	03/10/2025	10h30	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R1	03/10/2025	11h05	-	-	-	Empty
	Authie upstream	Argoules	R2	08/10/2025	10h30	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R2	08/10/2025	11h05	-	-	-	Empty
	Authie upstream	Argoules	R3	15/10/2025	10h25	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R3	15/10/2025	11h05	-	-	-	Empty
	Authie upstream	Argoules	R4	22/10/2025	10h15	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R4	22/10/2025	10h40	-	-	-	Empty
	Authie upstream	Argoules	R5	29/10/2025	11h25	-	-	-	Empty
	Authie downstream	Conchil-le-Temple	R5	29/10/2025	12h15	-	-	-	Empty

G. The Canal de Retz (Somme)

1. Environmental parameters

The environmental parameters measured on the Canal de Retz (Figure 84) during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 15, while those from the autumn campaign using condo traps are provided in Table 16.

In the winter campaign, the sky was cloudy during the monitoring week from 23 January (setting) to 30 January 2025 (lift). The outdoor temperature was 6°C at the time of recording. Both upstream and downstream, water temperatures ranged from 5.3°C at the time of setting to 7.2°C during the final lift. Salinity averaged 1.1 both upstream and downstream over the monitoring week. Conductivity fluctuated between 1722 and 3020 µS/cm at Monchaux (upstream) and between 1491 and 2790 µS/cm at Quend downstream (a site more subject to tidal influence depending on the time of recording). The measured values are therefore relatively similar between the two monitored points during the winter campaign.

During the spring campaign, the weather was sunny during the monitoring week from 10 April (setting) to 17 April 2025 (lift). Outdoor temperatures ranged between 10 and 17°C at the time of recording. Water temperature varied from 10.6°C downstream at setting to 15°C upstream at the time of the lift (averaging 12.4°C for both sites over the two recordings). Salinity was similar for both sites, averaging 1.5 upstream and 1.6 downstream. An average conductivity of 2925 µS/cm was observed at Monchaux (upstream), with a higher average of 3285 µS/cm at Quend downstream. The measured values are thus similar between the two points during the spring campaign.

During the summer campaign, the weather was sunny during the monitoring week from 3 July (setting) to 10 July 2025 (lift). Outdoor temperatures ranged between 19 and 23°C. The average water temperature upstream (Monchaux), at 21.5°C, was higher than downstream at Quend, which averaged 19.8°C. Salinity was 0.3 upstream regardless of the date; however, it was much higher downstream, with an average salinity of 11.6. Conductivity averaged 711 µS/cm at Monchaux and 1955 µS/cm at Quend. The measured parameters differ between the

two sites during the summer campaign, particularly regarding salinity and, consequently, conductivity.

In autumn, during the campaign conducted between 1 October and 29 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 14 to 20°C. Water temperature remained relatively constant, varying from 12.1°C to 18°C, with an average of 14.2°C for the Canal de Retz. Salinity and conductivity values were significantly lower upstream than downstream. The measured parameters differ between the two monitored points during the autumn campaign, notably for salinity and conductivity.

Figure 84 : Recording environmental parameters using probe on the Canal de Retz

Table 15 : Environmental parameters measured during the setting and recovery of traps on the Canal de Retz in the Somme department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Retz upstream	Quend (Monchaux)	P	23/01/2025	12h00	35	5h39	Cloudy	6	5.3	1.5	3020
	Retz upstream	Quend (Monchaux)	R	30/01/2025	11h37	89	12h33	Cloudy	6	7.2	0.8	1722
	Retz downstream	Quend (baie)	P	23/01/2025	11h25	35	5h39	Cloudy	6	5.4	1.4	2790
	Retz downstream	Quend (baie)	R	30/01/2025	11h14	89	12h33	Cloudy	6	7.1	0.7	1491
Spring	Retz upstream	Quend (Monchaux)	P	10/04/2025	11h58	59	10h58	Sunny	10	11.2	1.8	3440
	Retz upstream	Quend (Monchaux)	R	17/04/2025	12h15	69	15h03	Sunny	17	15	1.2	2410
	Retz downstream	Quend (baie)	P	10/04/2025	11h34	59	10h58	Sunny	10	10.6	1.9	3720
	Retz downstream	Quend (baie)	R	17/04/2025	11h45	69	15h03	Sunny	17	13	1.4	2850
Summer	Retz upstream	Quend (Monchaux)	P	03/07/2025	12h08	49	6h11	Sunny	19	21.7	0.3	716
	Retz upstream	Quend (Monchaux)	R	10/07/2025	12h00	65	12h42	Sunny	23	21.2	0.3	706
	Retz downstream	Quend (baie)	P	03/07/2025	11h34	49	6h11	Sunny	19	19.6	12.8	2140
	Retz downstream	Quend (baie)	R	10/07/2025	11h25	65	12h42	Sunny	22	20	10.3	1769

Table 16 : Environmental parameters measured during the placement and retrieval of condo traps on the Canal of Retz (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Retz upstream**	Quend (Monchaux)	P	01/10/2025	14h10	25	06h29	Sunny	20	18	0.7	1494
	Retz downstream	Quend (baie)	P	01/10/2025	13h35	25	06h29	Sunny	20	15.8	15.2	2540
	Retz upstream	Quend (Monchaux)	R1	03/10/2025	12h05	42	09h35	Cloudy	14	12.9	0.7	1453
	Retz downstream	Quend (baie)	R1	03/10/2025	11h35	42	09h35	Cloudy	13	14.7	14.3	2360
	Retz downstream	Quend (Monchaux)	R2	08/10/2025	11h42	107	01h07	Sunny	14	13.5	0.7	1583
	Retz aval	Quend (baie)	R2	08/10/2025	11h23	107	01h07	Sunny	14	14.7	26.3	4150
	Retz downstream	Quend (Monchaux)	R3	15/10/2025	11h55	39	07h19	Cloudy	15	14.9	0.5	1169
	Retz aval	Quend (baie)	R3	15/10/2025	11h30	39	07h19	Cloudy	15	14.2	19.6	3210
	Retz downstream	Quend (Monchaux)	R4	22/10/2025	11h26	86	00h59	Cloudy	13	13.4	0.7	1461
	Retz aval	Quend (baie)	R4	22/10/2025	11h03	86	00h59	Cloudy	13	13.3	3.2	5830
	Retz downstream	Quend (baie)	R5	29/10/2025	13h20	38	03h51	Cloudy	14	12.1	0.9	1796
	Retz aval	Quend (Monchaux)	R5	29/10/2025	13h55	38	03h51	Cloudy	14	12.9	0.7	1528

2. Captured fauna

The species captured on the Canal de Retz during the various campaigns are detailed in Table 17.

During the winter campaign, no species were captured, either upstream or downstream.

In spring, no species were captured upstream at Monchaux. However, two Atlantic Ditch shrimps (*Palaemonetes varians*) and one sand goby (*Pomatoschistus minutus*; Figure 85) were recorded, identified, and released at the downstream site in Quend.

Figure 85 : Sand goby (*Pomatoschistus minutus*) captured downstream on the Canal de Retz during the spring campaign

Summer fishing on the Canal de Retz led to the recording of 14 green crabs (*Carcinus maenas*), 8 juvenile European seabass (*Dicentrarchus labrax*), and one Atlantic Ditch shrimp (*Palaemonetes varians*) downstream, all of which were released (Figure 86). No species were captured at the upstream site.

Figure 86 : Green crabs, juvenile European seabass, and marsh prawn captured and released downstream on the Canal de Retz during the summer campaign

Finally, during the autumn campaign, no species were recorded in the condo traps at the upstream site in Monchaux. However, at the downstream site, some species were found nesting within the condo trap tubes, such as shore crabs and marsh prawns.

No Chinese mitten crabs were captured during the four monitoring sessions conducted on the Canal de Retz in 2025.

Table 17 : Species recorded during the sampling campaigns on the Canal de Retz

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Retz downstream**	Quend (baie)	R	30/01/2025	11h14	-	-	-	Empty
	Retz upstream	Quend (Monchaux)	R	30/01/2025	11h37	-	-	-	Empty
Spring	**Retz downstream**	Quend (baie)	R	17/04/2025	11h45	Sand goby	*Pomatoschistus minutus*	1	Released
	Retz downstream	Quend (baie)	R	17/04/2025	11h45	Atlantic Ditch Shrimp	*Palaemonetes varians*	2	Released
	Retz upstream	Quend (Monchaux)	R	17/04/2025	12h15	-	-	-	Empty
Summer	**Retz downstream**	Quend (baie)	R	10/07/2025	11h25	European green crab	*Carcinus maenas*	14	Released
	Retz downstream	Quend (baie)	R	10/07/2025	11h25	Sea Bass	*Dicentrarchus labrax*	8	Juveniles - Released
	Retz downstream	Quend (baie)	R	10/07/2025	11h25	Atlantic Ditch Shrimp	*Palaemonetes varians*	1	Released
	Retz upstream	Quend (Monchaux)	R	10/07/2025	12h00	-	-	-	Empty
Autumn	**Retz downstream**	Quend (baie)	R1	03/10/2025	11h35	European green crab	*Carcinus maenas*	1	Released
	Retz upstream	Quend (Monchaux)	R1	03/10/2025	12h05	-	-	-	Empty
	Retz downstream	Quend (baie)	R2	08/10/2025	11h20	-	-	-	Empty
	Retz upstream	Quend (Monchaux)	R2	08/10/2025	11h40	-	-	-	Empty
	Retz downstream	Quend (baie)	R3	15/10/2025	11h30	European green crab	*Carcinus maenas*	2	Released
	Retz downstream	Quend (baie)	R3	15/10/2025	11h30	Atlantic Ditch Shrimp	*Palaemonetes varians*	1	Released

	Retz upstream	Quend (Monchaux)	R3	15/10/2025	11h55	-	-	-	Empty
	Retz downstream	Quend (baie)	R4	22/10/2025	11h05	European green crab	*Carcinus maenas*	2	Released
	Retz downstream	Quend (baie)	R4	22/10/2025	11h05	Atlantic Ditch Shrimp	*Palaemonetes varians*	13	Released
	Retz upstream	Quend (Monchaux)	R4	22/10/2025	11h25	-	-	-	Empty
	Retz downstream	Quend (baie)	R5	29/10/2025	13h20	Atlantic Ditch Shrimp	*Palaemonetes varians*	4	Released
	Retz upstream	Quend (Monchaux)	R5	29/10/2025	13h55	-	-	-	Empty

H. THE MAYE (SOMME)

1. Environmental parameters

The environmental parameters measured on the Maye during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 18 : Environmental parameters measured during the setting and retrieval of traps on the Maye in the Somme Department, while those from the autumn campaign using condo traps are provided in Table 20.

In the winter campaign, the weather was unsettled during the monitoring week from 23 January (setting) to 30 January 2025 (lift). Outdoor temperatures ranged between 4°C and 7°C at the time of recording. Both upstream and downstream, water temperatures varied from 5.8°C at the time of setting to 8.9°C during the final lift. Salinity was 0.2 both upstream and downstream over the monitoring week. As for conductivity, it fluctuated between 602 and 664 µS/cm at Bernay-en-Ponthieu (upstream) and between 661 and 819 µS/cm at Le Crotoy downstream (a site more subject to tidal influence depending on the time of recording). The measured values are therefore relatively similar between the two monitored points during the winter campaign.

In spring, the weather was sunny during the monitoring week from 10 April (setting) to 17 April 2025 (lift). Outdoor temperatures ranged between 9 and 17°C at the time of recording. Water temperature varied from 10.5°C upstream at setting to 15.1°C downstream at the time of the lift (averaging 12.5°C for both sites over the two recordings). Salinity was similar for both sites (i.e., 0.2). An average conductivity of 650 µS/cm was observed at Bernay-en-Ponthieu (upstream), with a similar average of 673 µS/cm at Le Crotoy. The measured parameters are thus similar between the two sites during the spring campaign.

During the summer campaign, the weather was sunny during the monitoring week from 3 July (setting) to 10 July 2025 (lift). Outdoor temperatures ranged between 17 and 23°C. The average water temperature upstream (Bernay-en-Ponthieu), at 17.8°C, was lower than downstream at Le Crotoy, which averaged 20.9°C. Salinity remained at 0.2 regardless of the site or date. Average conductivity was 583 µS/cm at Bernay-en-Ponthieu and 542 µS/cm at Le

Crotoy. The measured parameters are similar between the two points during the summer campaign.

In autumn, during the campaign conducted between 1 October and 29 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 8 to 20°C. Water temperature remained relatively constant, varying from 11.1°C to 17.1°C, with an average of 13.1°C for the Maye. Salinity was constant at 0.2. Conductivity averaged 639 µS/cm for both sites. The measured parameters are therefore similar between the two monitored points during the autumn campaign.

Table 18 : Environmental parameters measured during the setting and retrieval of traps on the Maye in the Somme Department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Maye upstream	Bernay en Ponthieu	P	23/01/2025	10h05	35	5h39	Sunny	4	7.5	0.2	664
	Maye upstream	Bernay en Ponthieu	R	30/01/2025	9h58	89	12h33	Rainy	6	8.9	0.2	603
	Maye downstream	Le Crotoy	P	23/01/2025	12h22	35	5h39	Cloudy	7	5.8	0.3	819
	Maye downstream	Le Crotoy	R	30/01/2025	11h54	89	12h33	Cloudy	6	7.2	0.2	661
Spring	Maye upstream	Bernay en Ponthieu	P	10/04/2025	10h25	59	10h58	Sunny	9	10.5	0.2	652
	Maye upstream	Bernay en Ponthieu	R	17/04/2025	10h20	69	15h03	Sunny	13	11.9	0.2	647
	Maye downstream	Le Crotoy	P	10/04/2025	12h20	59	10h58	Sunny	10	12.5	0.2	637
	Maye downstream	Le Crotoy	R	17/04/2025	12h40	69	15h03	Sunny	17	15.1	0.3	709
Summer	Maye upstream	Bernay en Ponthieu	P	03/07/2025	10h00	49	6h11	Sunny	17	17.6	0.2	594
	Maye upstream	Bernay en Ponthieu	R	10/07/2025	09h43	65	12h42	Sunny	21	18	0.2	572
	Maye downstream	Le Crotoy	P	03/07/2025	12h39	49	6h11	Sunny	20	21.5	0.2	551
	Maye downstream	Le Crotoy	R	10/07/2025	12h25	65	12h42	Sunny	23	20.3	0.2	533

Table 19 : Environmental parameters measured during the placement and retrieval of condo traps on the Maye (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	Maye upstream	Bernay en Ponthieu	P	01/10/2025	10h47	25	06h13	Sunny	8	11.1	0.2	638
	Maye downstream	Le Crotoy	P	01/10/2025	15h00	25	06h13	Sunny	20	17.1	0.2	574
	Maye upstream	Bernay en Ponthieu	R1	03/10/2025	10h05	42	09h35	Cloudy	13	12.6	0.2	635
	Maye downstream	Le Crotoy	R1	03/10/2025	12h45	42	09h35	Cloudy	14	13.7	0.2	598
	Maye upstream	Bernay en Ponthieu	R2	08/10/2025	10h10	107	01h01	Sunny	11	11.4	0.2	660
	Maye downstream	Le Crotoy	R2	08/10/2025	12h07	107	01h01	Sunny	14	13.3	0.2	623
	Maye upstream	Bernay en Ponthieu	R3	15/10/2025	10h00	39	07h09	Sunny	13	12.6	0.2	661
	Maye downstream	Le Crotoy	R3	15/10/2025	12h35	39	07h09	Cloudy	15	14.8	0.2	634
	Maye upstream	Bernay en Ponthieu	R4	22/10/2025	9h56	86	00h59	Rainy	13	12.6	0.2	633
	Maye downstream	Le Crotoy	R4	22/10/2025	11h54	86	00h52	Cloudy	13	13.6	0.2	605
	Maye upstream	Bernay en Ponthieu	R5	29/10/2025	10h15	38	03h40	Cloudy	14	11.6	0.2	654
	Maye downstream	Le Crotoy	R5	29/10/2025	14h20	38	03h40	Cloudy	14	12.7	0.3	750

2. Captured fauna

The species captured on the Maye during the various campaigns are detailed in Table 20.

The first sampling campaign upstream on the Maye led to the capture of one stone loach (*Barbatula barbatula*; Figure 87). No species were recorded at the downstream site in Le Crotoy.

Figure 87 : Stone loach (*Barbatula barbatula*) captured upstream on the Maye during the winter campaign

No species were captured during the spring campaign.

During the summer campaign, the crustacean trap located upstream at Bernay-en-Ponthieu was stolen. We cannot, therefore, confirm the absence of captured species. Downstream, seven three-spined sticklebacks (*Gasterosteus aculeatus*) and two juvenile European flounders (*Platichthys flesus*) were recorded, identified, and then released on-site (Figure 88).

Figure 88 : European flounder (*Platichthys flesus*) (left) and three-spined sticklebacks (*Gasterosteus aculeatus*) (right) captured downstream on the Maye during the summer campaign

The autumn campaign led to the capture of two American crayfish (*Faxonius limosus*) (6.5 cm and 7.5 cm; Figure 89) within the condo trap tubes at the downstream site on the Maye. These were identified, measured, and euthanized in accordance with current protocols. Three stone loach (*Barbatula barbatula*) were also recorded, identified, and released at the downstream site.

Figure 89 : American crayfish (*Faxonius limosus*) (left) and stone loach (*Barbatula barbatula*) (right) captured downstream on the Maye during the autumn campaign.

No Chinese mitten crabs were captured during the four monitoring sessions conducted on the Maye in 2025.

Table 20 : Species recorded during the sampling campaigns on the Maye.

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	Maye upstream	Bernay-en-Ponthieu	R	30/01/2025	9h58	Stone loach	*Barbatula barbatula*	1	Released
	Maye downstream	Le Crotoy	R	30/01/2025	11h54	-	-	-	Empty
Spring	Maye upstream	Bernay-en-Ponthieu	R	17/04/2025	10h20	-	-	-	Empty
	Maye downstream	Le Crotoy	R	17/04/2025	12h40	-	-	-	Empty
Summer	Maye upstream	Bernay-en-Ponthieu	R	10/07/2025	09h43	-	-	-	Stolen trap
	Maye downstream	Le Crotoy	R	10/07/2025	12h25	Three-spined stickleback	*Gasterosteus aculeatus*	7	Released
	Maye downstream	Le Crotoy	R	10/07/2025	12h25	European flounder	*Platichthys flesus*	2	Juveniles - released
Autumn	Maye upstream	Bernay-en-Ponthieu	R1	03/10/2025	10h05	-	-	-	Empty
	Maye downstream	Le Crotoy	R1	03/10/2025	12h45	American crayfish	*Faxonius limosus*	1	Euthanized
	Maye upstream	Bernay-en-Ponthieu	R2	08/10/2025	10h10	-	-	-	Empty
	Maye downstream	Le Crotoy	R2	08/10/2025	12h10	American crayfish	*Faxonius limosus*	1	Euthanized
	Maye upstream	Bernay-en-Ponthieu	R3	15/10/2025	10h00	-	-	-	Empty
	Maye downstream	Le Crotoy	R3	15/10/2025	12h35	-	-	-	Empty
	Maye upstream	Bernay-en-Ponthieu	R4	22/10/2025	09h55	-	-	-	Empty
	Maye downstream	Le Crotoy	R4	22/10/2025	11h55	Stone loach	*Barbatula barbatula*	3	Released
	Maye upstream	Bernay-en-Ponthieu	R5	29/10/2025	10h15	-	-	-	Empty
	Maye downstream	Le Crotoy	R5	29/10/2025	14h20	-	-	-	Empty

I. THE SOMME (SOMME)

1. Environmental parameters

The environmental parameters measured on the Somme (Figure 90) during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 21, while those from the autumn campaign using condo traps are provided in Table 22. It should be noted that a third site was added on the Somme during the autumn period with the deployment of condo traps: Somme Cap Hornu, the furthest downstream site on the river.

In winter, the weather was cloudy during the monitoring week from 21 January (setting) to 28 January 2025 (lift). Outdoor temperatures ranged between -1°C and 7°C at the time of recording. Both upstream and downstream, water temperatures varied from 2.7°C at the time of setting to 7.1°C during the final lift. Salinity was 0.2 both upstream and downstream over the monitoring week. As for conductivity, it fluctuated between 515 and 520 µS/cm at Fontaine-sur-Somme upstream and between 673 and 683 µS/cm at Boismont downstream. The measured values are therefore relatively similar between the two monitored points during the winter campaign.

During the spring campaign, the weather was sunny during the monitoring week from 8 April (setting) to 15 April 2025 (lift), except during the downstream lift. Outdoor temperatures ranged between 10 and 14°C at the time of recording. Water temperature varied from 10.2°C downstream at setting to 15.8°C upstream at the time of the lift (averaging 13.2°C for both sites over the two recordings). Salinity was similar for both sites (i.e., 0.2). An average conductivity of 498 µS/cm was observed at Fontaine-sur-Somme (upstream), with a slightly higher average of 648 µS/cm at Boismont downstream. The measured parameters are thus similar between the two sites during the spring campaign.

During the summer campaign, the weather ranged from cloudy to sunny during the monitoring week from 1 July (setting) to 8 July 2025 (lift). Outdoor temperatures ranged between 16 and 30°C. The average water temperature upstream (Fontaine-sur-Somme), at 23.4°C, was higher than downstream at Boismont, which averaged 17.9°C. Salinity was 0.1 upstream and 0.2 downstream. Conductivity averaged 312 µS/cm at Fontaine-sur-Somme and

612 µS/cm at Boismont. The measured parameters are slightly different between the two points: the temperature was higher, while the salinity and consequently the conductivity were lower upstream at Fontaine-sur-Somme.

In autumn, during the campaign conducted from 30 September to 29 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 8 to 16°C. Water temperature remained relatively constant, varying from 11.5°C to 14.8°C, with an average of 13°C for the Somme. Salinity varied by site : it was lowest upstream at Fontaine-sur-Somme (i.e., 0.1) and reached its maximum further downstream at Cap Hornu (Saint-Valery-sur-Somme), hitting 4.2 on 8 October 2025 during a spring tide (coefficient of 107). Regarding conductivity, the observed values followed the same trend as salinity: lower upstream and significantly higher downstream at Cap Hornu. The measured parameters differ between the three monitoring points, particularly between the furthest upstream and downstream sites.

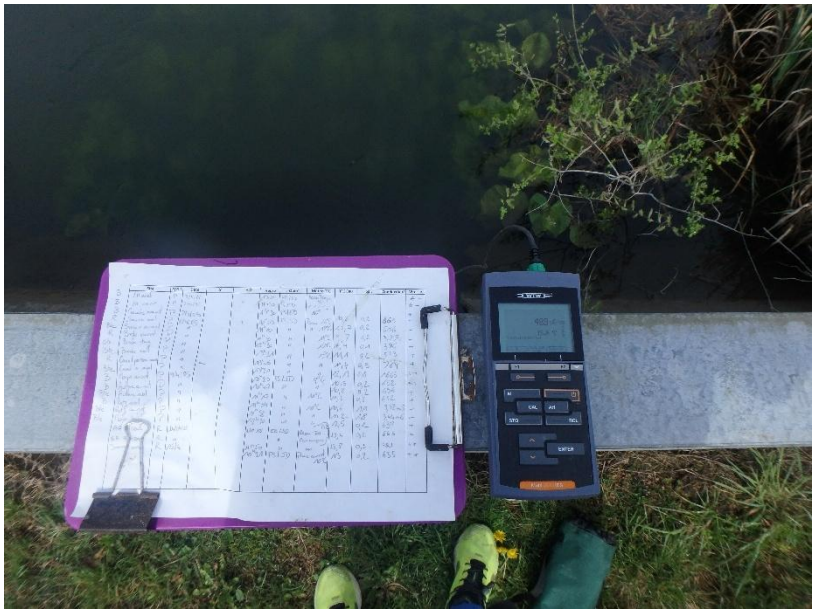


Figure 90 : Retrieval of environmental parameters using the sensor on the Somme

Table 21 : Environmental parameters measured during the placement and retrieval of traps on the Somme in the Somme department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	**Somme upstream**	Fontaine sur Somme	P	21/01/2025	11h55	53	4h01	Cloudy	-1	2.7	0.2	520
	Somme upstream	Fontaine sur Somme	R	28/01/2025	10h16	67	10h59	Sunny	7	5.3	0.2	515
	Somme downstream	Boismont	P	21/01/2025	10h13	53	4h01	Cloudy	-1	5.3	0.2	673
	Somme downstream	Boismont	R	28/01/2025	9h25	67	10h59	Cloudy	7	7.1	0.3	683
Spring	**Somme upstream**	Fontaine sur Somme	P	08/04/2025	11h00	47	10h04	Sunny	12	13.7	0.2	506
	Somme upstream	Fontaine sur Somme	R	15/04/2025	10h57	82	14h14	Sunny	14	15.8	0.2	489
	Somme downstream	Boismont	P	08/04/2025	10h05	47	10h04	Sunny	10	10.2	0.2	660
	Somme downstream	Boismont	R	15/04/2025	10h21	82	14h14	Rainy	10	13	0.2	635
Summer	**Somme upstream**	Fontaine sur Somme	P	01/07/2025	10h50	67	4h35	Sunny	30	26.4	0.1	316
	Somme upstream	Fontaine sur Somme	R	08/07/2025	10h45	50	11h01	Cloudy	17	20.3	0.1	309
	Somme downstream	Boismont	P	01/07/2025	10h08	67	4h35	Sunny	27	20.7	0.2	610
	Somme downstream	Boismont	R	08/07/2025	09h45	50	11h01	Cloudy	16	15	0.2	613

Table 22 : Environmental parameters measured during the placement and retrieval of condo traps on the Somme (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Somme upstream**	Fontaine sur Somme	P	30/09/2025	10h49	33	04h59	Sunny	13	14,4	0,1	436
	Somme downstream	Boismont	P	30/09/2025	10h44	33	04h59	Sunny	10	11,9	0,3	677
	Somme Cap Hornu	Saint-Valery-sur-Somme	P	01/10/2025	9h36	25	06h13	Sunny	8	12,8	0,4	986
	Somme upstream	Fontaine sur Somme	R1	02/10/2025	11h10	28	08h17	Sunny	13	14,8	0,1	442
	Somme downstream	Boismont	R1	02/10/2025	10h20	28	08h17	Sunny	13	11,7	0,3	676
	Somme Cap Hornu	Saint-Valery-sur-Somme	R1	03/10/2025	14h20	42	09h35	Rainy	15	14	0,4	951
	Somme upstream	Fontaine sur Somme	R2	07/10/2025	11h50	98	00h19	Cloudy	15	14,4	0,1	447
	Somme downstream	Boismont	R2	07/10/2025	10h55	98	00h19	Cloudy	14	12,7	0,2	647
	Somme Cap Hornu	Saint-Valery-sur-Somme	R2	08/10/2025	9h36	107	01h01	Sunny	10	12,9	4,2	7810
	Somme upstream	Fontaine sur Somme	R3	14/10/2025	10h47	47	05h37	Cloudy	13	13,9	0,1	469
	Somme downstream	Boismont	R3	14/10/2025	10h05	47	05h37	Cloudy	13	12,2	0,2	657
	Somme Cap Hornu	Saint-Valery-sur-Somme	R3	15/10/2025	14h10	39	07h09	Sunny	16	13,5	0,6	1359
	Somme upstream	Fontaine sur Somme	R4	21/10/2025	11h15	84	00h21	Cloudy	12	13,5	0,1	472
	Somme downstream	Boismont	R4	21/10/2025	10h32	84	00h21	Cloudy	12	12,6	0,2	642
	Somme Cap Hornu	Saint-Valery-sur-Somme	R4	22/10/2025	9h21	86	00h52	Cloudy	13	13,1	1,3	2600

	Somme upstream	Fontaine sur Somme	R5	28/10/2025	12h15	48	02h54	Cloudy	13	11,8	0,1	473
	Somme downstream	Boismont	R5	28/10/2025	11h15	48	02h54	Cloudy	13	11,7	0,2	954
	Somme Cap Hornu	Saint-Valery-sur-Somme	R5	29/10/2025	9h36	38	03h40	Cloudy	14	11,5	0,6	1317

2. Captured fauna

The species captured on the Somme during the various campaigns are detailed in Table 23.

During the winter campaign, no species were captured downstream. However, American crayfish (*Faxonius limosus*), both measuring 7.8 cm, were captured and identified at the upstream site in Fontaine-sur-Somme (Figure 91). They were euthanized in accordance with current protocols.

Figure 91 : American crayfish (*Faxonius limosus*) captured upstream on the Somme during the winter campaign

In spring, no species were captured downstream, and one American crayfish measuring 4 cm was recorded upstream (Figure 92). It was subsequently euthanized in accordance with current protocols.

Figure 92 : Young American crayfish (*Faxonius limosus*) captured upstream on the Somme during the spring campaign

During the summer campaign, the crustacean trap was again empty at the downstream site on the Somme. Conversely, two Invasive Alien Species (IAS) were captured upstream: three American crayfish (*Faxonius limosus*) and one pumpkinseed (*Lepomis gibbosus*) (Figure 93). Both species were euthanized in accordance with current protocols. One European bullhead (*Cottus gobio*) was also recorded and immediately released on-site.

Figure 93 : American crayfish (*Faxonius limosus*) and pumpkinseed (*Lepomis gibbosus*) captured upstream on the Somme during the summer campaign

The autumn campaign led to the capture of green crabs (*Carcinus maenas*) and one brush-clawed shore crab (*Hemigrapsus takanoi*) within the condo trap tubes at the furthest downstream site (Cap Hornu); this species was recorded for the first time in the Somme Bay (Figure 94). At the Boismont downstream site, two eels were recorded in the tubes; they were returned to the water immediately after the trap was lifted, as was a European bullhead. At the Fontaine-sur-Somme upstream site, only one European perch (*Perca fluviatilis*) was sampled and returned to the water (Figure 95).

Figure 94 : Green crab (*Carcinus maenas*) and brush-clawed shore crab (*Hemigrapsus takanoi*) captured downstream on the Somme at Cap Hornu during the autumn campaign

Figure 95 : European perch (*Perca fluviatilis*) captured upstream on the Somme during the autumn campaign

No Chinese mitten crabs were captured during the four monitoring sessions conducted on the Somme in 2025.

Table 23 : Species recorded during the sampling campaigns on the Somme.

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Somme downstream**	Boismont	R	30/01/2025	9h25	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R	30/01/2025	10h16	American crayfish	*Faxonius limosus*	2	Euthanized
Spring	**Somme downstream**	Boismont	R	15/04/2025	10h21	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R	15/04/2025	10h57	American crayfish	*Faxonius limosus*	1	Euthanized
Summer	**Somme downstream**	Boismont	R	08/07/2025	10h21	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R	08/07/2025	10h45	American crayfish	*Faxonius limosus*	3	Euthanized
	Somme upstream	Fontaine-sur-Somme	R	08/07/2025	10h45	Pumpkinseed	*Lepomis gibbosus*	1	Euthanized
	Somme upstream	Fontaine-sur-Somme	R	08/07/2025	10h45	Bullhead	*Cottus gobio*	2	Released
Autumn	**Somme downstream**	Boismont	R1	02/10/2025	10h20	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R1	02/10/2025	11h10	-	-	-	Empty
	Somme Cap Hornu	Saint-Valery-sur-Somme	R1	03/10/2025	14h20	European green crab	*Carcinus maenas*	1	Released
	Somme downstream	Boismont	R2	07/10/2025	10h55	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R2	07/10/2025	11h50	-	-	-	Empty
	Somme Cap Hornu	Saint-Valery-sur-Somme	R2	08/10/2025	09h35	European green crab	*Carcinus maenas*	6	Released
	Somme downstream	Boismont	R3	14/10/2025	10h05	Bullhead	*Cottus gobio*	1	Released
	Somme downstream	Boismont	R3	14/10/2025	10h05	European eal	*Anguilla anguilla*	1	Released

	Somme upstream	Fontaine-sur-Somme	R3	14/10/2025	10h45	-	-	-	Empty
	Somme Cap Hornu	Saint-Valery-sur-Somme	R3	15/10/2025	14h10	European green crab	*Carcinus maenas*	10	Released
	Somme downstream	Boismont	R4	21/10/2025	10h30	European eal	*Anguilla anguilla*	1	Released
	Somme upstream	Fontaine-sur-Somme	R4	21/10/2025	11h15	European perch	*Perca fluviatilis*	1	Released
	Somme Cap Hornu	Saint-Valery-sur-Somme	R4	22/10/2025	09h20	Brush-clawed shore crab	*Hemigrapsus takanoi*	1	Euthanized
	Somme downstream	Boismont	R5	28/10/2025	11h15	-	-	-	Empty
	Somme upstream	Fontaine-sur-Somme	R5	28/10/2025	12h15	-	-	-	Empty
	Somme Cap Hornu	Saint-Valery-sur-Somme	R5	29/10/2025	09h35	European green crab	*Carcinus maenas*	2	Released

J. THE CANAL A POISSONS (SOMME)

1. Environmental parameters

The environmental parameters measured on the Canal à Poissons (Figure 96) during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 24, while those from the autumn campaign using condo traps are provided in Table 25.

In the winter campaign, the weather was cloudy during the monitoring week from 21 January (setting) to 28 January 2025 (lift). Outdoor temperatures ranged between -1°C and 9°C at the time of recording. Water temperature varied from 3.6°C at the downstream setting to 7.7°C during the upstream lift. Salinity was 0.3 upstream and averaged 0.75 downstream over the monitoring week. As for conductivity, it was approximately 850 µS/cm at Wathiéhurt (upstream) and fluctuated between 1420 and 1956 µS/cm at Le Hourdel (downstream). The measured values are therefore relatively similar between the two monitored points during the winter campaign, although salinity and conductivity were slightly higher downstream.

In spring, the weather was sunny during the monitoring week from 8 April (setting) to 15 April 2025 (lift). Outdoor temperatures ranged between 15 and 22°C at the time of recording. Water temperature varied from 11.4°C upstream at setting to 17.3°C downstream at the time of the lift (averaging 14.4°C for both sites over the two recordings). Salinity was 0.3 upstream and averaged 1.0 downstream. An average conductivity of 752 µS/cm was observed at Wathiéhurt (upstream), while a much higher average of 2,033 µS/cm was recorded downstream at Le Hourdel. The measured parameters are relatively similar between the two points during the spring campaign, with notably higher salinity and conductivity downstream.

During the summer campaign, the weather was sunny during the monitoring week from 1 July (setting) to 8 July 2025 (lift). Outdoor temperatures ranged between 18 and 27°C. The average water temperature upstream (Wathiéhurt), at 23.5°C, was similar to downstream at Le Hourdel, which averaged 23.2°C. Salinity was 0.25 upstream and 2.2 downstream. Conductivity averaged 662 µS/cm at Wathiéhurt and 4,960 µS/cm at Le Hourdel. The measured values differ slightly between the two points: salinity and, consequently, conductivity were lower upstream at Wathiéhurt.

In autumn, during the campaign conducted from 30 September to 28 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 11 to 19°C. Water temperature remained relatively constant, varying from 12°C to 17.4°C, with an average of 14.3°C for the Canal à Poissons. Salinity varied by site: it was lower and constant upstream at Wathiéhurt (i.e., 0.3), whereas it was higher downstream at Le Hourdel, fluctuating according to the tide (seawater penetration into the watercourse). Regarding conductivity, the observed values followed the same trend as salinity: lower upstream and significantly higher downstream at Le Hourdel. The measured parameters differ between the two monitoring points, particularly for salinity and conductivity.

Figure 96 : Recording environmental parameters using the probe on the Canal à Poissons

Table 24 : Environmental parameters measured during the deployment and retrieval of traps on the Canal à Poissons in the Somme department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	Canal à Poissons upstream	Wathiéhurt	P	21/01/2025	9h51	53	4h01	Cloudy	-1	4,5	0,3	847
	Canal à Poissons upstream	Wathiéhurt	R	28/01/2025	12h31	67	10h59	Cloudy	9	7,7	0,3	844
	Canal à Poissons downstream	Hourdel	P	21/01/2025	9h34	53	4h01	Cloudy	-1	3,6	0,9	1956
	Canal à Poissons downstream	Hourdel	R	28/01/2025	15h15	67	10h59	Sunny	9	7,3	0,6	1420
Spring	Canal à Poissons upstream	Wathiéhurt	P	08/04/2025	13h05	47	10h04	Sunny	15	11,4	0,3	764
	Canal à Poissons upstream	Wathiéhurt	R	15/04/2025	13h44	82	14h14	Sunny	16	16,6	0,3	739
	Canal à Poissons downstream	Hourdel	P	08/04/2025	13h21	47	10h04	Sunny	15	12,1	0,8	1665
	Canal à Poissons downstream	Hourdel	R	15/04/2025	13h59	82	14h14	Sunny	22	17,3	1,2	2400
Summer	Canal à Poissons upstream	Wathiéhurt	P	01/07/2025	13h29	67	4h35	Sunny	27	27,1	0,2	643
	Canal à Poissons upstream	Wathiéhurt	R	08/07/2025	13h20	50	11h01	Sunny	18	19,9	0,3	680
	Canal à Poissons downstream	Hourdel	P	01/07/2025	13h41	67	4h35	Sunny	27	27,3	2,1	3740
	Canal à Poissons downstream	Hourdel	R	08/07/2025	13h35	50	11h01	Sunny	18	19,1	2,3	6180

Table 25 : Environmental parameters measured during the placement and retrieval of condo traps on the Canal à Poissons (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Canal à Poissons upstream**	Wathiéhurt	P	30/09/2025	15h08	33	04h59	Sunny	17	16,8	0,3	741
	Canal à Poissons downstream	Hourdel	P	30/09/2025	15h33	33	04h59	Sunny	19	17,4	1,6	3610
	Canal à Poissons upstream	Wathiéhurt	R1	02/10/2025	13h46	28	08h17	Sunny	17	14,3	0,3	756
	Canal à Poissons downstream	Hourdel	R1	02/10/2025	14h07	28	08h17	Sunny	17	14,4	1,7	3240
	Canal à Poissons upstream	Wathiéhurt	R2	07/10/2025	14h50	98	00h19	Cloudy	17	15	0,3	758
	Canal à Poissons downstream	Hourdel	R2	07/10/2025	9h50	98	00h19	Cloudy	14	13,6	2	3790
	Canal à Poissons upstream	Wathiéhurt	R3	14/10/2025	13h25	47	05h37	Cloudy	14	13,6	0,3	780
	Canal à Poissons downstream	Hourdel	R3	14/10/2025	13h40	47	05h37	Cloudy	14	13,9	2,3	4330
	Canal à Poissons upstream	Wathiéhurt	R4	21/10/2025	13h55	84	00h21	Cloudy	16	14,3	0,3	737
	Canal à Poissons downstream	Hourdel	R4	21/10/2025	9h40	84	00h21	Rainy	12	1301	1,6	3120
	Canal à Poissons upstream	Wathiéhurt	R5	28/10/2025	15h55	48	02h54	Cloudy	11	13,6	0,3	832
	Canal à Poissons downstream	Hourdel	R5	28/10/2025	9h55	48	02h54	Cloudy	13	12	0,9	1807

2. Captured fauna

The species captured on the Canal à Poissons during the various campaigns are detailed in Table 26.

In winter, no species were found in the crustacean trap set at the upstream site of the Canal à Poissons. However, one three-spined stickleback (*Gasterosteus aculeatus*) was recorded and then released downstream at Le Hourdel (Figure 97).

Figure 97 : Three-spined stickleback (*Gasterosteus aculeatus*) (top) and bleak (*Alburnus alburnus*) (bottom) captured downstream of the Fishing Channel during the winter campaign

During the spring campaign, the crustacean trap set downstream had trapped 17 Atlantic Ditch shrimps (*Palaemonetes varians*) and one three-spined stickleback. The crustacean trap set upstream was empty.

During the summer campaign, 82 green crabs (*Carcinus maenas*) were recorded and released at the downstream site on the Canal à Poissons (Figure 98). Once again, no species were captured at the upstream site.

Figure 98 : Green crabs (*Carcinus maenas*) captured downstream on the Canal à Poissons during the summer campaign

During the final campaign in autumn, a few green crabs (*Carcinus maenas*) were captured downstream on the Canal à Poissons. No species were caught at the upstream site.

No Chinese mitten crabs were captured during the four monitoring sessions conducted on the Canal à Poissons in 2025.

Table 26 : Species recorded during the sampling campaigns on the Canal à Poissons

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	**Canal à Poissons downstream**	Le Hourdel	R	30/01/2025	15h15	Three-spined stickleback	*Gasterosteus aculeatus*	1	Released
	Canal à Poissons upstream	Wathiéhurt	R	30/01/2025	12h31	-	-	-	Empty
Spring	**Canal à Poissons downstream**	Le Hourdel	R	15/04/2025	13h59	Atlantic Ditch Shrimp	*Palaemonetes varians*	17	Released
	Canal à Poissons downstream	Le Hourdel	R	15/04/2025	13h59	Three-spined stickleback	*Gasterosteus aculeatus*	1	Released
	Canal à Poissons upstream	Wathiéhurt	R	15/04/2025	13h44	-	-	-	Empty
Summer	**Canal à Poissons downstream**	Le Hourdel	R	08/07/2025	13H35	European green crab	*Carcinus maenas*	82	Released
	Canal à Poissons upstream	Wathiéhurt	R	08/07/2025	13h44	-	-	-	Empty
Autumn	**Canal à Poissons downstream**	Le Hourdel	R1	02/10/2025	14h07	-	-	-	Empty
	Canal à Poissons upstream	Wathiéhurt	R1	02/10/2025	13h46	-	-	-	Empty
	Canal à Poissons downstream	Le Hourdel	R2	07/10/2025	09h50	European green crab	*Carcinus maenas*	3	Released
	Canal à Poissons upstream	Wathiéhurt	R2	07/10/2025	14h50	-	-	-	Empty
	Canal à Poissons downstream	Le Hourdel	R3	14/10/2025	13h40	-	-	-	Empty
	Canal à Poissons upstream	Wathiéhurt	R3	14/10/2025	13h25	-	-	-	Empty
	Canal à Poissons downstream	Le Hourdel	R4	21/10/2025	09h40	European green crab	*Carcinus maenas*	1	Released
	Canal à Poissons upstream	Wathiéhurt	R4	21/10/2025	13h55	-	-	-	Empty
	Canal à Poissons downstream	Le Hourdel	R5	28/10/2025	09h55	European green crab	*Carcinus maenas*	1	Released
	Canal à Poissons upstream	Wathiéhurt	R5	28/10/2025	15h55	-	-	-	Empty

K. The Amboise (Somme)

1. Environmental parameters

As a reminder, the Amboise site was added to our monitoring program starting in autumn 2025. The environmental parameters measured in this watercourse during the autumn campaign using condo traps are detailed in Table 27.

In autumn, during the campaign conducted between 30 September and 28 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 8°C to 14°C at the time of recording. Water temperature remained relatively constant, varying from 11.7°C to 13.2°C, with an average of 12.4°C for the Amboise. Salinity was low and relatively constant between the two sites, ranging from 0.2 to 0.3. Regarding conductivity, the observed values varied between 613 and 775 µS/cm, with an average of 665 µS/cm across the entire monitoring period for all sites combined. The measured parameters were similar between the two monitoring points during the autumn period.

Table 27 : Environmental parameters measured during the placement and retrieval of condo traps on the Amboise (Somme department) during the 2025 autumn campaign.

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Amboise upstream**	Estréboeuf	P	30/09/2025	9h43	33	04h59	Sunny	8	11,8	0,2	623
	Amboise downstream	Saint-Valery-sur-Somme	P	30/09/2025	10h18	33	04h59	Sunny	8	11,7	0,2	663
	Amboise upstream	Estréboeuf	R1	02/10/2025	9h53	28	08h17	Sunny	12	11,9	0,2	626
	Amboise downstream	Saint-Valery-sur-Somme	R1	02/10/2025	10h05	28	08h17	Sunny	13	11,8	0,3	721
	Amboise upstream	Estréboeuf	R2	07/10/2025	10h20	98	00h19	Cloudy	14	13,1	0,3	687
	Amboise downstream	Saint-Valery-sur-Somme	R2	07/10/2025	10h40	98	00h19	Cloudy	14	13,2	0,2	634
	Amboise upstream	Estréboeuf	R3	14/10/2025	9h45	47	05h37	Cloudy	13	12,6	0,2	652
	Amboise downstream	Saint-Valery-sur-Somme	R3	14/10/2025	9h31	47	05h37	Cloudy	12	12,4	0,3	775
	Amboise upstream	Estréboeuf	R4	21/10/2025	10h00	84	00h21	Rainy	12	12,9	0,2	635
	Amboise downstream	Saint-Valery-sur-Somme	R4	21/10/2025	10h18	84	00h21	Cloudy	12	12,8	0,2	661
	Amboise upstream	Estréboeuf	R5	28/10/2025	10h25	48	02h54	Cloudy	13	12	0,2	613

	Amboise downstream	Saint-Valery-sur-Somme	R5	28/10/2025	10h50	48	02h54	Cloudy	13	12	0,3	690

2. Captured fauna

The species captured on the Amboise during the single autumn campaign are detailed in Table 28.

No species were found in the condo traps set at the downstream site of the Amboise during the autumn campaign. However, one European bullhead (*Cottus gobio*) was recorded and released at the upstream site, along with one American crayfish (*Faxonius limosus*) measuring 9 cm, which was euthanized in accordance with current protocols (**Erreur ! Source du renvoi introuvable.**).

Figure 99 : European bullhead (*Cottus gobio*) and American crayfish (*Faxonius limosus*) captured upstream on the Amboise during the autumn campaign

No Chinese mitten crabs were captured during the 2025 autumn monitoring using condo traps on the Amboise (a tributary of the Somme).

Table 28 : Species recorded during the sampling campaigns on the Amboise

Campaign	Site	Location	Deployment or retrieval	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Autumn	**Amboise upstream**	Estréboeuf	R1	02/10/2025	9h53	-	-	-	Empty
	Amboise downstream	Saint-Valery-sur-Somme	R1	02/10/2025	10h05	-	-	-	Empty
	Amboise upstream	Estréboeuf	R2	07/10/2025	10h20	-	-	-	Empty
	Amboise downstream	Saint-Valery-sur-Somme	R2	07/10/2025	10h40	-	-	-	Empty
	Amboise upstream	Estréboeuf	R3	14/10/2025	09h45	-	-	-	Empty
	Amboise downstream	Saint-Valery-sur-Somme	R3	14/10/2025	09h30	-	-	-	Empty
	Amboise upstream	Estréboeuf	R4	21/10/2025	10h00	American crayfish	*Faxonius limosus*	1	Euthanized
	Amboise upstream	Estréboeuf	R4	21/10/2025	10h00	Bullhead	*Cottus gobio*	1	Released
	Amboise downstream	Saint-Valery-sur-Somme	R4	21/10/2025	10h20	-	-	-	Empty
	Amboise upstream	Estréboeuf	R5	28/10/2025	10h25	-	-	-	Empty
	Amboise downstream	Saint-Valery-sur-Somme	R5	28/10/2025	10h50	-	-	-	Empty

L. The Bresle (Seine-Maritime)

1. Environmental parameters

Three sites are monitored on the Bresle : one upstream site at Nesle-Normandeuse and two downstream at Ponts-et-Marais (located on private property). One of these is on the watercourse itself, while the other is in a pond situated right next to it.

The environmental parameters measured on the Bresle and the pond during the first three monitoring campaigns (i.e., winter, spring, and summer) using crustacean traps are detailed in Table 29, while those from the autumn campaign using condo traps are provided in Table 30.

In winter, the weather was cloudy to sunny during the monitoring week from 21 January (setting) to 28 January 2025 (lift). Outdoor temperatures ranged between 1°C and 9°C at the time of recording. The water temperature was cooler in the pond, varying between 4.5°C and 6.3°C, compared to an average of 7.1°C downstream and 7.4°C upstream at Nesle-Normandeuse. Salinity was 0.2 on the Bresle (both upstream and downstream) and 0.1 in the pond over the monitoring week. As for conductivity, it averaged 607 µS/cm downstream at Ponts-et-Marais and 564 µS/cm upstream, while it was lower in the pond (i.e., 380 µS/cm). The measured values are therefore relatively similar between the two monitored points on the Bresle during the winter campaign, with some differences noted for the pond (softer water).

During the spring monitoring, the weather was sunny during the monitoring week from 8 April (setting) to 15 April 2025 (lift). Outdoor temperatures ranged from 14°C to 17°C at the time of recording. This time, the water temperature was higher in the pond, averaging 15.1°C compared to 12.3°C downstream and 11.2°C upstream. Salinity was 0.2 on the Bresle and 0.1 in the pond. Conductivity averaged 558 µS/cm downstream at Ponts-et-Marais and 574 µS/cm upstream, remaining lower in the pond (i.e., 376 µS/cm). The measured parameters are thus relatively similar between the two points during the spring campaign, with some differences for the pond.

In summer, the weather was sunny during the monitoring week from 1 July (setting) to 8 July 2025 (lift). Outdoor temperatures ranged between 18°C and 33°C. The water temperature was

still higher in the pond, averaging 23.7°C compared to 18.2°C downstream and 16.1°C upstream. Salinity was 0.2 on the Bresle and 0.1 in the pond. Conductivity averaged 529 µS/cm downstream and 546 µS/cm upstream, while it was lower in the pond (i.e., 365 µS/cm). The measured values are relatively similar between the two points on the river during the summer campaign, with some differences for the pond.

In autumn, during the campaign conducted from 30 September to 28 October 2025 (four consecutive weeks using condo traps), the weather was a mix of cloud and sunshine. Outdoor temperatures ranged from 12°C to 17°C. Water temperature varied significantly from 11.7°C to 18.2°C, with an average of 13.5°C for the Bresle and the pond. Salinity was 0.2 on the Bresle and 0.1 in the pond. Conductivity fluctuated between 500 and 600 µS/cm on the Bresle and around 350 µS/cm in the pond. The measured parameters are therefore relatively similar between the two monitored points on the river, with some differences for the pond.

Table 29 : Environmental parameters measured during the deployment and retrieval of traps on the Bresle in the Seine-Maritime Department

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Winter	**Bresle downstream**	Ponts-et-Marais (Bresle)	P	21/01/2025	12h48	53	3h58	Sunny	1	6.2	0.2	610
	Bresle downstream	Ponts-et-Marais (Bresle)	R	28/01/2025	11h43	89	12h26	Cloudy	8	8	0.2	603
	Bresle downstream	Ponts-et-Marais (Pool)	P	21/01/2025	12h43	53	3h58	Sunny	1	4.5	0.1	380
	Bresle downstream	Ponts-et-Marais (Pool)	R	28/01/2025	11h49	89	12h26	Cloudy	9	5.3	0.1	379
	Bresle upstream	Nesle-Normandeuse	P	21/01/2025	11h42	53	3h58	Sunny	1	6.5	0.2	535
	Bresle upstream	Nesle-Normandeuse	R	28/01/2025	11h05	89	12h26	Cloudy	8	8.2	0.2	593
Spring	**Bresle downstream**	Ponts-et-Marais (Bresle)	P	08/04/2025	12h31	47	9h50	Sunny	15	11.1	0.2	543
	Bresle downstream	Ponts-et-Marais (Bresle)	R	15/04/2025	13h07	82	14h06	Sunny	17	13.5	0.2	572
	Bresle downstream	Ponts-et-Marais (Pool)	P	08/04/2025	12h30	47	9h50	Sunny	15	14.4	0.1	376
	Bresle downstream	Ponts-et-Marais (Pool)	R	15/04/2025	13h05	82	14h06	Sunny	17	15.7	0.1	375
	Bresle upstream	Nesle-Normandeuse	P	08/04/2025	11h30	47	9h50	Sunny	14	9.7	0.2	577

	Bresle upstream	Nesle-Normandeuse	R	15/04/2025	11h45	82	14h06	Sunny	15	12.6	0.2	570
Summer	**Bresle downstream**	Ponts-et-Marais (Bresle)	P	01/07/2025	12h53	67	4h33	Sunny	33	20.5	0.2	527
	Bresle downstream	Ponts-et-Marais (Bresle)	R	08/07/2025	12h30	50	10h57	Sunny	18	15.9	0.2	530
	Bresle downstream	Ponts-et-Marais (Pool)	P	01/07/2025	12h47	67	4h33	Sunny	33	25.4	0.1	366
	Bresle downstream	Ponts-et-Marais (Pool)	R	08/07/2025	12h25	50	10h57	Sunny	18	22	0.1	364
	Bresle upstream	Nesle-Normandeuse	P	01/07/2025	11h35	67	4h33	Sunny	31	17.8	0.2	552
	Bresle upstream	Nesle-Normandeuse	R	08/07/2025	11h40	50	10h57	Sunny	17	14.3	0.2	540

Table 30 : Environmental parameters measured during the placement and retrieval of condo traps on the Canal à Poissons (Somme department) during the 2025 autumn campaign

Campaign	Site	Municipality	Deployment or retrieval	Date	Hour	Tide coefficient	High tide time	Weather	Outdoor temperature (°C)	Water temperature (°C)	Salinity	Conductivity (µS/cm)
Autumn	**Bresle upstream**	Nesle-Normandeuse	P	30/09/2025	12h39	33	04h55	Sunny	16	11.7	0.2	564
	Bresle downstream	Ponts-et-Marais (Bresle)	P	30/09/2025	14h10	33	04h55	Sunny	17	12.8	0.2	563
	Bresle downstream	Ponts-et-Marais (Pool)	P	30/09/2025	13h45	33	04h55	Sunny	17	18.2	0.1	365
	Bresle upstream	Nesle-Normandeuse	R1	02/10/2025	11h51	28	08h12	Sunny	15	12	0.2	558
	Bresle downstream	Ponts-et-Marais (Bresle)	R1	02/10/2025	13h08	28	08h12	Sunny	15	12.5	0.2	563
	Bresle downstream	Ponts-et-Marais (Pool)	R1	02/10/2025	13h00	28	08h12	Sunny	15	16.9	0.1	366
	Bresle upstream	Nesle-Normandeuse	R2	07/10/2025	12h35	98	00h18	Cloudy	16	12.4	0.2	575
	Bresle downstream	Ponts-et-Marais (Pool)	R2	07/10/2025	13h45	98	00h18	Cloudy	17	15.9	0.1	366
	Bresle downstream	Ponts-et-Marais (Bresle)	R2	07/10/2025	13h55	98	00h18	Cloudy	17	13	0.2	570
	Bresle upstream	Nesle-Normandeuse	R3	14/10/2025	11h25	47	05h34	Cloudy	13	12.2	0.2	572
	Bresle downstream	Ponts-et-Marais (Bresle)	R3	14/10/2025	12h44	47	05h34	Cloudy	13	12.5	0.2	573
	Bresle downstream	Ponts-et-Marais (Pool)	R3	14/10/2025	12h41	47	05h34	Cloudy	13	15	0.1	371

	Bresle upstream	Nesle-Normandeuse	R4	21/10/2025	11h49	84	00h20	Cloudy	12	12.4	0.2	542
	Bresle downstream	Ponts-et-Marais (Bresle)	R4	21/10/2025	13h17	84	00h20	Cloudy	16	13.1	0.2	558
	Bresle downstream	Ponts-et-Marais (Pool)	R4	21/10/2025	12h47	84	00h20	Cloudy	16	15.1	0.1	370
	Bresle upstream	Nesle-Normandeuse	R5	28/10/2025	13h15	48	02h51	Cloudy	13	11.8	0.2	570
	Bresle downstream	Ponts-et-Marais (Bresle)	R5	28/10/2025	14h45	48	02h51	Rainy	13	13.3	0.1	368
	Bresle downstream	Ponts-et-Marais (Pool)	R5	28/10/2025	14h50	48	02h51	Rainy	13	12	0.2	565

2. Captured fauna

The species captured on the Bresle and in the pond during the various campaigns are detailed in Table 31.

No species were captured at the upstream site of the Bresle (Nesle-Normandeuse) or at the downstream site (Ponts-et-Marais) during the winter monitoring. However, three species were recorded in the pond, including two Invasive Alien Species (IAS): one American crayfish (*Faxonius limosus*) measuring 9.2 cm, which was parasitised by a zebra mussel (*Dreissena polymorpha*) measuring 1.8 cm (Figure 100). Both were euthanized in accordance with current protocols. The third species was a common roach (*Rutilus rutilus*), which was immediately returned to the water.

Figure 100 : American crayfish (*Faxonius limosus*) with a zebra mussel (*Dreissena polymorpha*) captured in the pond near the downstream Bresle during the winter monitoring

In spring, no species were captured at the upstream site of the Bresle (Nesle-Normandeuse) or at the downstream site (Ponts-et-Marais). Once again, an American crayfish (*Faxonius limosus*) measuring 6.5 cm was trapped in the pond. It was euthanised in accordance with current protocols.

During the summer monitoring, no species were captured in the crustacean traps, whether upstream, downstream, or in the pond.

During the autumn monitoring using condo traps, no species were recorded at the upstream and downstream sites of the Bresle. However, once again, an American crayfish (*Faxonius limosus*) measuring 8 cm was trapped in the pond. It was euthanised in accordance with current protocols. Two European perches (*Perca fluviatilis*) were also recorded, identified, and immediately returned to the water.

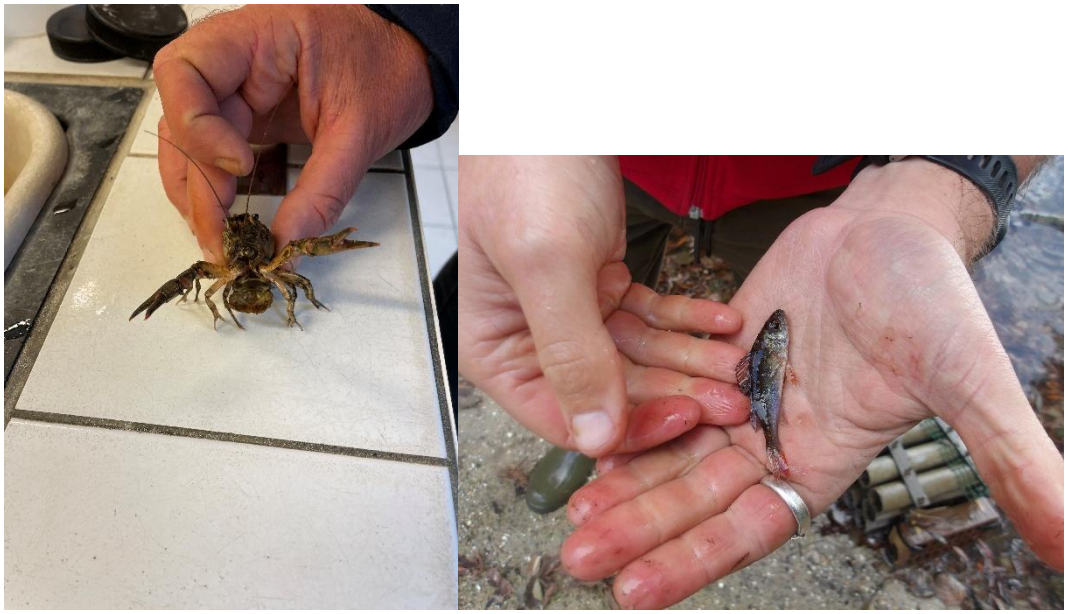


Figure 101 : American crayfish (*Faxonius limosus*) and European perch (*Perca fluviatilis*) captured in the Ponts-et-Marais pond during the autumn campaign

No Chinese mitten crabs were captured during the four monitoring sessions conducted in 2025 on the Bresle or in the pond near the river.

Table 31 : Species recorded during the sampling campaigns on the Bresle.

Campaign	Site	Location	Date	Hour	Common name	Scientific name	No. Of individuals	Comment
Winter	Bresle downstream	Ponts-et-Marais (Bresle)	28/01/2025	11h43	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	28/01/2025	11h49	American crayfish	*Faxonius limosus*	1	Euthanized
	Bresle downstream	Ponts-et-Marais (Pond)	28/01/2025	11h50	Zebra mussel	*Dreissena polymorpha*	1	Euthanized
	Bresle downstream	Ponts-et-Marais (Pond)	28/01/2025	11h49	Common roach	*Rutilus rutilus*	1	Released
	Bresle upstream	Nesle-Normandeuse	28/01/2025	11h05	-	-	-	Empty
Spring	Bresle downstream	Ponts-et-Marais (Bresle)	15/04/2025	13h07	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	15/04/2025	13h05	American crayfish	*Faxonius limosus*	1	Euthanized
	Bresle upstream	Nesle-Normandeuse	15/04/2025	11h45	-	-	-	Empty
Summer	Bresle downstream	Ponts-et-Marais (Bresle)	08/07/2025	12h25	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	08/07/2025	12h30	-	-	-	Empty
	Bresle upstream	Nesle-Normandeuse	08/07/2025	11h40	-	-	-	Empty
Autumn	Bresle downstream	Ponts-et-Marais (Bresle)	02/10/2025	13h10	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	02/10/2025	13h00	-	-	-	Empty
	Bresle upstream	Nesle-Normandeuse	02/10/2025	11h50	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Bresle)	07/10/2025	13h55	-	-	-	Empty

	Bresle downstream	Ponts-et-Marais (Pond)	07/10/2025	13h45	American crayfish	*Faxonius limosus*	1	Euthanized
	Bresle upstream	Nesle-Normandeuse	07/10/2025	12h35	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Bresle)	14/10/2025	12h45	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	14/10/2025	12h40	European perch	*Perca fluviatilis*	1	Released
	Bresle upstream	Nesle-Normandeuse	14/10/2025	11h25	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Bresle)	21/10/2025	13h15	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	21/10/2025	12h45	European perch	*Perca fluviatilis*	1	Released
	Bresle upstream	Nesle-Normandeuse	21/10/2025	11h50	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Bresle)	28/10/2025	14h45	-	-	-	Empty
	Bresle downstream	Ponts-et-Marais (Pond)	28/10/2025	14h50	-	-	-	Empty
	Bresle upstream	Nesle-Normandeuse	28/10/2025	13h15	-	-	-	Empty

VI. CONCLUSIONS ON THE MONITORING IN 2025

A. SUMMARY OF MONITORING RESULTS USING CRUSTACEAN TRAPS AND CONDO TRAPS

During the monitoring sessions conducted in 2025, no Chinese mitten crabs were recorded across the 22 monitored sites of the 11 rivers studied in the Hauts-de-France region using crustacean traps. The change in protocol and trapping system—introducing **condo traps** during the autumn campaign across 16 sites in the Somme and Seine-Maritime departments—similarly did not result in any mitten crab captures.

However, other **Invasive Alien Species (IAS)** were captured during our monitoring as part of the CLANCY project, notably American crayfish (*Faxonius limosus*; the most represented species), zebra mussels (*Dreissena polymorpha*), pumpkinseed (*Lepomis gibbosus*), and the brush-clawed shore crab (*Hemigrapsus takanoi*). As in 2024, the American crayfish was recorded in the Aa, Maye, Somme, and Bresle rivers, demonstrating that this species is well-established in these watercourses. The zebra mussel was identified in the pond near the Bresle at Ponts-et-Marais. The deployment of a coconut fibre rope in the pond allowed us to collect zebra mussel spat, further confirming that this species is established in this water body (Figure 102).

Regarding vertebrates, the pumpkinseed (*Lepomis gibbosus*) was recorded on the Somme (previously recorded on the Canche in 2024). The brush-clawed shore crab, present along the Hauts-de-France coastline in port areas—specifically Boulogne-sur-Mer and Dunkerque (Rolet *et al.*, 2025)—was sampled for the first time in the Somme Bay, at the Cap Hornu sheet piling, using a condo trap. The muskrat (*Ondatra zibethicus*), which was captured in the rivers of the Somme department (Canal de Retz, Authie, and Somme) in 2024, was not recorded in our traps this year.

Species diversity during 2025 ranged from zero species recorded on the Authie and the Bresle to seven species recorded on the Somme (Table 32). Smaller rivers showed higher sampled abundances (Canal de Retz and Canal à Poissons) than larger rivers such as the Aa, Canche,

Authie, and Bresle. The specific assemblages at the downstream sites of small rivers, such as the Canal à Poissons (flowing into the Somme Bay) and the Canal de Retz (flowing into the Authie Bay), are very similar. They are primarily characterised by marsh prawns, three-spined sticklebacks, and shore crabs.

The presence of the European eel was noted this year in three of the monitored rivers: the Wimereux, Canche, and Somme. During our monitoring, abundances were higher in the Canche and Somme, with two individuals recorded each, compared to one in the Wimereux. In all instances, they were released back into their natural environment after being measured.

The condo traps, consisting of tubes and introduced in autumn 2025, proved effective for capturing decapod crustaceans, particularly crabs and prawns. Indeed, shore crabs, a brush-clawed shore crab, and marsh prawns sought refuge within them. This type of trap is also effective for crayfish, as spiny-cheek crayfish were captured. We noted that fish seeking shelter in the tubes (such as bullheads, perch, and eels) could exit easily without injury.

Figure 102 : Zebra mussels (*Dreissena polymorpha*) collected on a coconut fibre rope in the pond at Ponts-et-Marais, Seine-Maritime department

Table 32 : Species recorded in 2025 across the 12 rivers and the pond near the Bresle, and the total number of species identified

Vernacular name	Latin name	Aa	Slack	Wimereux	Liane	Canche	Authie	Canal de Retz	Maye	Somme	Canal à Poissons	Amboise	Bresle	Bresle étang
Bleak	*Alburnus alburnus*			x		x								
European eal	*Anguilla anguilla*			x		x				x				
Sea Bass	*Dicentrarchus labrax*							x						
Bullhead	*Cottus gobio*	x	x		x					x		x		
Brush-clawed shore crab	*Hemigrapsus takanoi*									x				
Green crab	*Carcinus maenas*							x		x	x			
Atlantic Ditch Shrimp	*Palaemonetes varians*							x			x			
American crayfish	*Faxonius limosus*	x							x	x		x		x
Three-spined stickleback	*Gasterosteus aculeatus*					x			x		x			
European flounder	*Platichthys flesus*			x					x					
Common roach	*Rutilus rutilus*													x
Sand goby	*Pomatoschistus minutus*							x						
Stone loach	*Barbatula barbatula*								x					
Zebra mussel	*Dreissena polymorpha*													x
European perch	*Perca fluviatilis*									x				x
Pumpkinseed	*Lepomis gibbosus*									x				
Minnow	*Phoxinus phoxinus*		x											
	Specific richness	**2**	**2**	**3**	**1**	**3**	**0**	**4**	**4**	**7**	**3**	**2**	**0**	**4**

Environmental parameters were recorded, as far as possible, at each site and during every season. Water temperatures and conductivity levels show very little variation between the 'upstream' and 'downstream' sites of the same river within a given season. In contrast, salinity levels are frequently zero at 'upstream' sites, confirming their freshwater location. Higher values (though still low) are observed at 'downstream' sites, indicating a location within the oligohaline zone. It should be noted that conductivity levels are higher in small coastal rivers, such as the Canal à Poissons and the Canal de Retz.

B. TRAWL CAPTURES OF CHINESE MITTEN CRABS BY COMMERCIAL FISHERS

In November 2025, a boat-based fisher from Le Hourdel (Fabrice Montassine) captured Chinese mitten crabs using a shrimp trawl near the submerged dyke at Cap Hornu in the Baie de Somme. As a dedicated fisher and a voluntary partner of the CLANCY project, he notified us immediately to hand over the crabs for analysis and euthanasia (Figure 103). Indeed, since 2024, he has provided us with every specimen of Chinese mitten crab captured in the Baie de Somme.

Figure 103 : Gérard Montassine (fisher) and Céline Rolet (GEMEL) during the landing of Chinese mitten crabs at Le Hourdel in November 2025.

These specimens were measured and sexed, then frozen for euthanasia (**Erreur ! Source du renvoi introuvable.** and **Erreur ! Source du renvoi introuvable.**). Each individual was previously photographed and placed in a freezer bag with the necessary metadata for dispatch to our European partners for genetic analysis. In total, between 9 and 25 November 2025, 20 males and 3 females (of which two were ovigerous) were captured in shrimp trawls by this fisher in the Baie de Somme. The mean size of the males was 66.6±8.1 mm, and that of the females was 60.7 ± 4.0 mm.

Figure 104 : Specimen of Chinese mitten crab with CLANCY project staff at the GEMEL laboratory (Emma Becuwe, Jean-Denis Talleux and Florent Stien) and measurement of a Chinese mitten crab using electronic callipers.

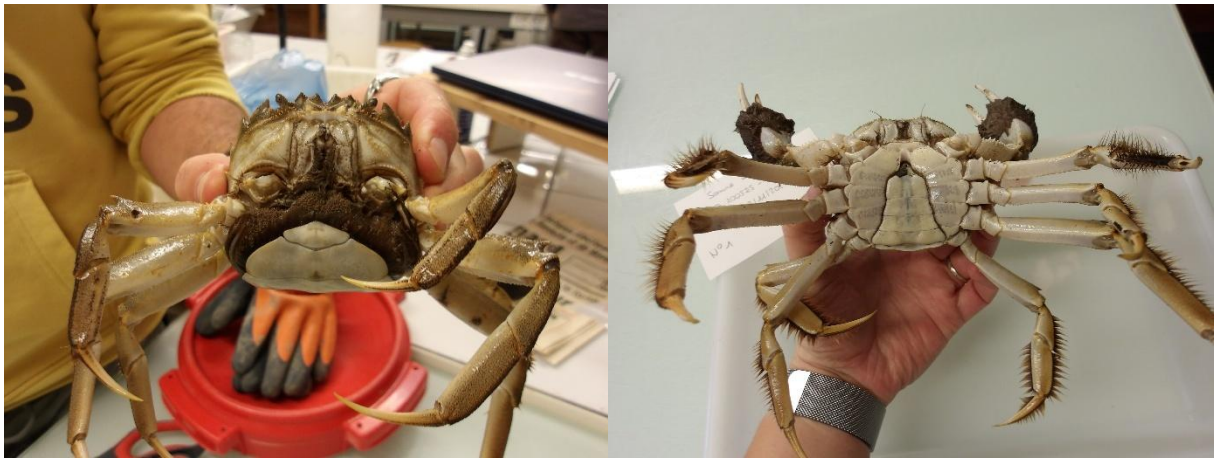


Figure 105 : Ovigerous female Chinese mitten crab (left) and male Chinese mitten crab (right)

Following these captures by fishers, Condo traps were redeployed for one week, from 20 to 28 November, on the Amboise (upstream and downstream) and on the Somme (Cap Hornu and downstream). These were monitored daily (excluding weekends), and no specimens were captured at any site.

During the WFD fish monitoring surveys conducted in the Baie de Somme by the *Cellule du Suivi du Littoral Normand*, eight Chinese mitten crabs were sampled using beam trawls in the inner bay in mid-September (Duhamel *et al.*, 2025).

C. MONITORING THE CHINESE MITTEN CRAB USING ENVIRONMENTAL DNA

In November 2024, all CLANCY project partners initiated environmental DNA (eDNA) monitoring at sites where the presence of the Chinese mitten crab had been confirmed. Consequently, GEMEL carried out water sampling at Le Hourdel, at the confluence of the Canal à Poissons and the Somme (Figure 106), following a protocol established by Brys *et al.* (2024). This specific area was chosen because fishers had captured specimens there in May 2024, which were subsequently provided for genetic analysis. The collected sample was then frozen. A further round of sampling was conducted in the spring, on 19 May 2025, by GEMEL staff at the same location. Both samples were then sent to VMM scientists to determine whether Chinese mitten crab DNA is detectable in the water at Le Hourdel (Baie de Somme). If detected, the presence of the species can be confirmed, even in the absence of physical captures.

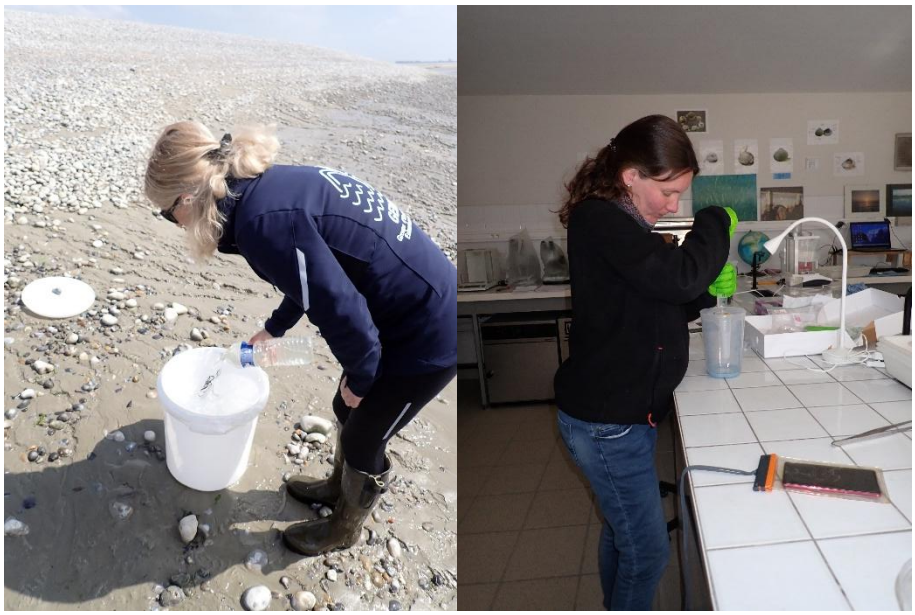


Figure 106 : Water sampling at Le Hourdel (left) and water filtration at the GEMEL laboratory (right)

D. PARTNER EXCHANGES AND COMMUNICATION

Once again this year, Mr Arnaud Abadie, Marine Environment Project Officer at the Artois-Picardie Water Agency (a co-funding body of the CLANCY project), joined us on two occasions for mitten crab monitoring. During the spring campaign, he assisted with the final retrieval of the crustacean traps on the rivers of the Pas-de-Calais (Slack, Wimereux, Canche, and Liane; Figure 107).

Figure 107 : Retrieval of traps during the spring campaign with Mr Arnaud Abadie from the Artois-Picardie Water Agency on the rivers of the Pas-de-Calais (Canche top left, Liane top right, Wimereux bottom left, and Slack bottom right)

In July, during the summer monitoring, he and his intern Mathieu Dubois lent us a hand with the retrieval of traps on the rivers in the north of the Somme department (Authie, Maye, and Canal de Retz; Figure 108). As in 2024, he witnessed some of the issues we face; notably the theft of traps that we have suffered since the start of the CLANCY project, despite the precautions put in place to avoid such problems (trap labelling, as well as chains and padlocks that can only be cut with bolt croppers). Indeed, the trap set at Bernay-en-Ponthieu (upstream Maye) had disappeared.

Figure 108 : Retrieval of traps during the summer campaign with Mr Arnaud Abadie and Mr Mathieu Dubois (intern) from the Artois-Picardie Water Agency on the rivers in the north of the Somme department (Authie top left, Canal de Retz top right, and Maye at the bottom)

In addition to the monthly meetings and online working groups between project partners, two GEMEL staff members participated in the CLANCY project annual meeting, organised by the University of Dresden (Germany) via videoconference from 13 to 15 May 2025. Each partner provided a progress report on their work.

On 23 June 2025, during a coastal expert working group at the Wimereux Marine Station (University of Lille), Céline Rolet presented a progress update on the CLANCY project to the Artois-Picardie Water Agency, the DREAL, the French Biodiversity Agency (OFB), and researchers from the University of Lille (Figure 109).

Figure 109 : First slide of the presentation given to the Coastal Working Group on 23 June 2025

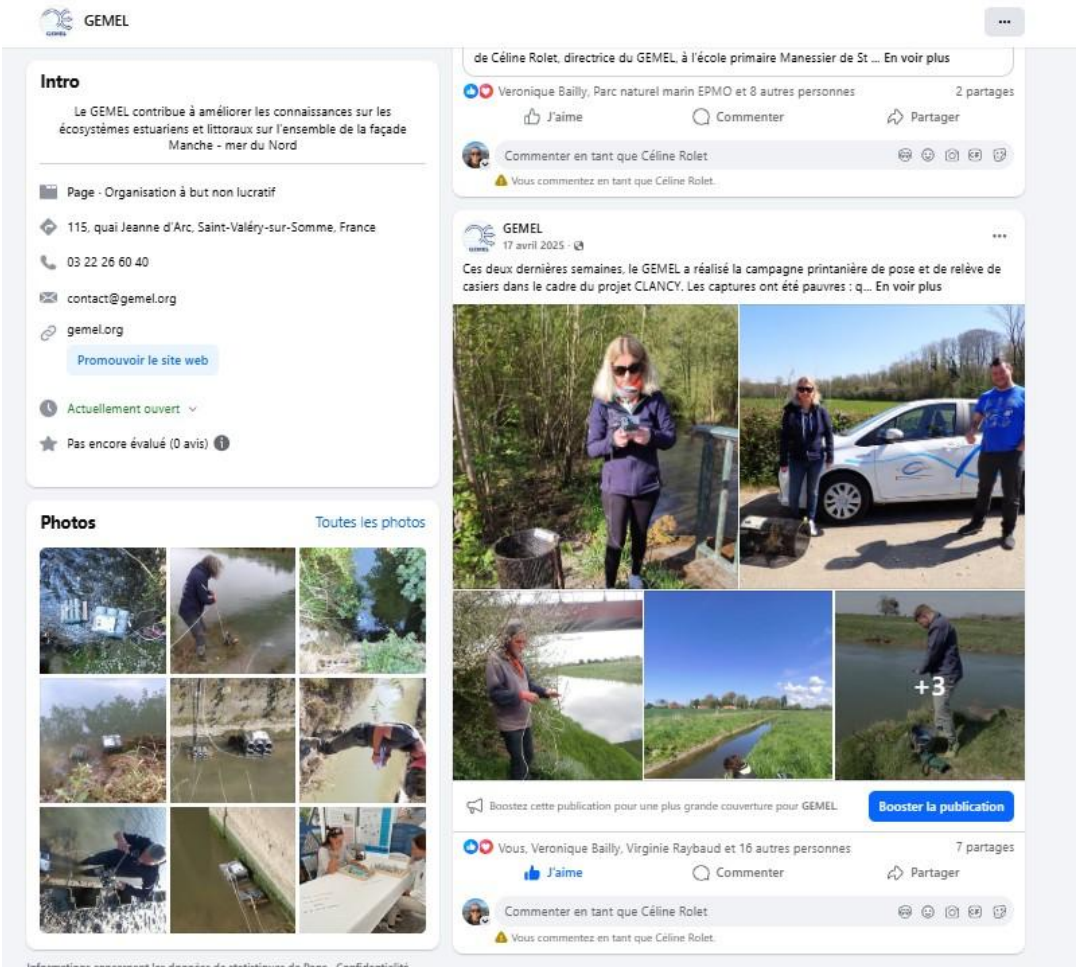
We have also established contact with the regional aquariums: Maréis (Étaples-sur-Mer) and Nausicaá (Boulogne-sur-Mer). Maréis possesses a collection of historical and local literature on the Chinese mitten crab, which has been made available to us for consultation. Both aquariums will pass on any sightings of Chinese mitten crabs reported to them and will donate any specimens entrusted to their care to the project.

In 2025, GEMEL also **raised awareness for the CLANCY project** through posts on its **website** and on **social media**, notably via its Facebook account (Figure 110 and Figure 111):

- ✓ https://www.gemel.org/projet-gemel/clancy
- ✓ https://www.facebook.com/profile.php?id=100067518893476

An article about condo traps was also produced and published on the Interreg North Sea website (on the CLANCY project news page; Figure 112):

- ✓ https://www.interregnorthsea.eu/clancy/news/condo-traps-innovative-monitoring-of-chinese-mitten-crabs-in-northern-france?fbclid=IwY2xjawPVxmpleHRuA2FlbQIxMQBzcnRjBmFwcF9pZBAyMjIwMzkxNzg4MjAwODkyAAEewMta_vcquCX-OEqdPW_EjacdCNpd0mDhBJlzt71JzHvoDB9fgeNPPz9UWHc_aem_6S6cU9tlUepimkxTLFcS7g


GEMEL
Intro
Le GEMEL contribue à améliorer les connaissances sur les écosystèmes estuariens et littoraux sur l'ensemble de la façade Manche - mer du Nord
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Photos
Toutes les photos
de Céline Rolet, directrice du GEMEL, à l'école primaire Manessier de St ... En voir plus
Veronique Bailly, Parc naturel marin EPMO et 8 autres personnes
2 partages
J'aime
Commenter
Partager
Commenter en tant que Céline Rolet
Vous commentez en tant que Céline Rolet.
GEMEL
17 avril 2025 ·
Ces deux dernières semaines, le GEMEL a réalisé la campagne printanière de pose et de relève de casiers dans le cadre du projet CLANCY. Les captures ont été pauvres : q... En voir plus
+3
Boostez cette publication pour une plus grande couverture pour GEMEL
Booster la publication
Vous, Veronique Bailly, Virginie Raybaud et 16 autres personnes
7 partages
J'aime
Commenter
Partager
Commenter en tant que Céline Rolet
Vous commentez en tant que Céline Rolet.

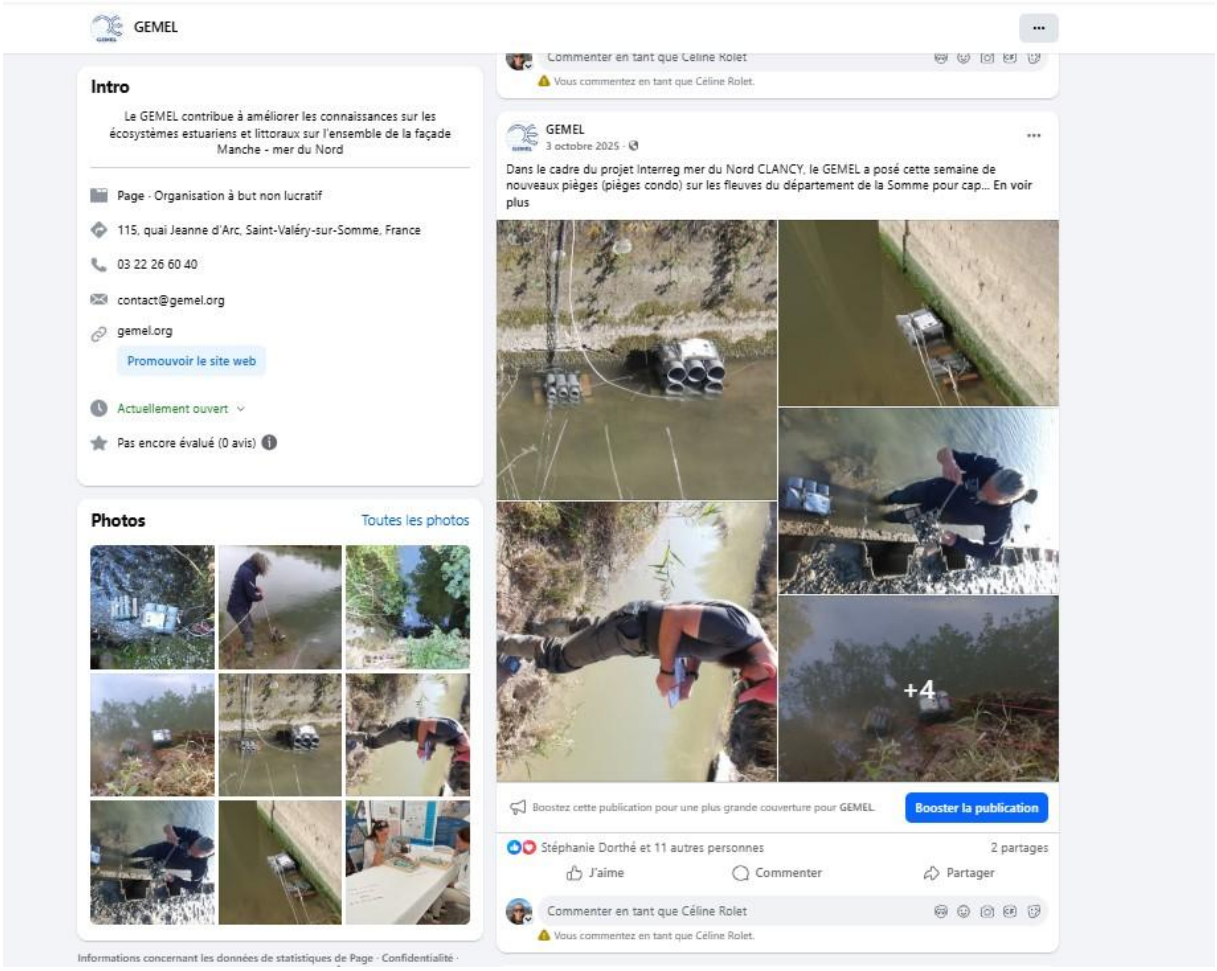

Figure 110 : CLANCY project communications on the GEMEL Facebook page

Figure 111 : CLANCY project news on the GEMEL website

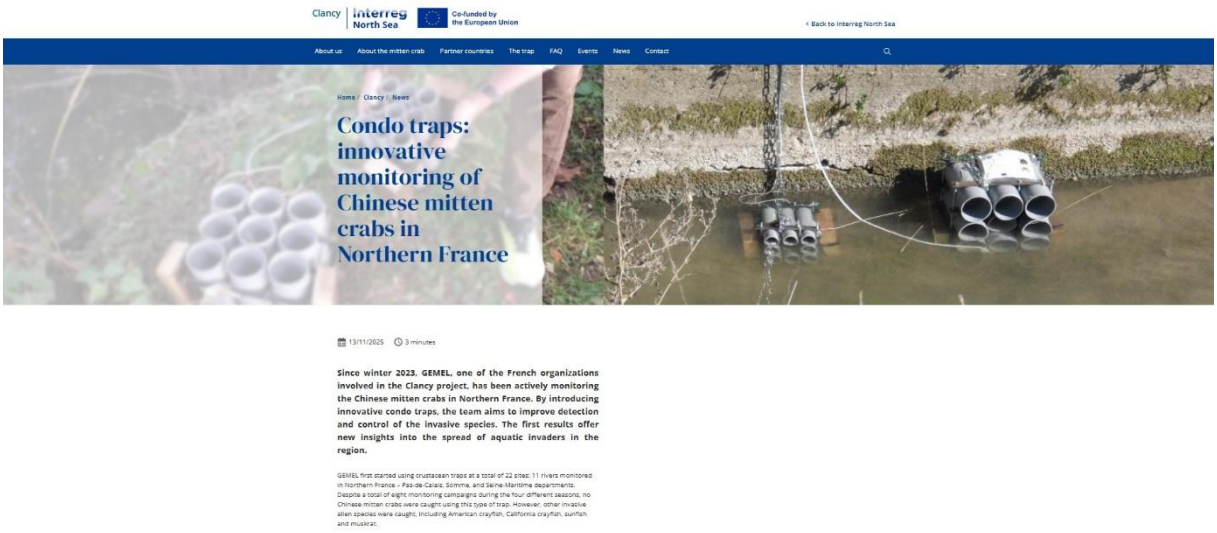

Figure 112 : CLANCY project update on the Interreg CLANCY website

VII. FUTURE ACTIONS

A **new monitoring campaign using condo traps** is planned for the next mitten crab migration period, between April and the end of June 2026. As in autumn 2025, they will be deployed across rivers in the Somme and Seine-Maritime departments: Authie, Canal de Retz, Maye, Somme, Amboise, Canal à Poissons, and Bresle. These will cover a total of 16 sites during a period synchronised with our European partners; the goal is to deploy these traps using the same protocol and timeframe across the partnership to provide data for a British PhD student's thesis (Oscar Norton Jones – Aberystwyth University). If the monitoring proves successful in terms of Chinese mitten crab captures on the rivers currently being surveyed, we will submit a request to the state authorities for authorisation to deploy Condo traps on the rivers of the Pas-de-Calais.

As noted in the 'Problems Encountered' section, it remains difficult to obtain responses and agreements from private landowners regarding the installation of the mobile trap (the U-trap used in Belgium). Starting in March 2025, we initiated the administrative procedures to install this trap on the Amboise (upstream site at Estrébœuf). Despite repeated attempts to contact the owners of the pastures we would need to cross to deploy this trap (via telephone, email, and post), we have received no reply. However, we have obtained the agreement of the watercourse manager (the *Communauté d'Agglomération de la Baie de Somme* (CABS), represented by Mr Nicolas Loquet, Director of the GEMAPI service) and the Mayor of Estrébœuf.

We will therefore soon be prospecting the banks of the Amboise and consulting the land registry (*cadastre*) to find a new location, in the hope of securing agreement from private owners this time. As a reminder, unlike the fixed trap initially proposed by our Belgian partners, this mobile U-trap is less expensive and more adaptable to our watercourses. Indeed, this installation requires no trenching or permanent structures (Figure 113 and Figure 114).

Figure 113 : Construction of the trap during the partner exchange in February 2024

Figure 114 : Planned model of the fixed trap (Image credit: VMM)

A **further meeting** is scheduled to take place in **Skövde, Sweden**, from 19 to 21 May 2025. Two GEMEL staff members will attend for an annual progress update between partners and to visit the trap installations set up by our Swedish partner at the University of Skövde (Dr Sonja Leidenberger).

In spring 2027, GEMEL will host the annual meeting in the Baie de Somme

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ARRÊTÉ

Modifiant l'autorisation du Groupe d'Etude des Milieux Estuariens et Littoraux à capturer et à transporter des crabes chinois (*Eriocher sinensis*) à des fins scientifiques dans le cadre du projet CLANCY

LE PRÉFET DE LA SOMME
CHEVALIER DE LA LÉGION D'HONNEUR
OFFICIER DE L'ORDRE NATIONAL DU MÉRITE

Vu le code de l'environnement et notamment ses articles L411-6, L411-8, L436-9 et R432-5 à 432-10 ;

Vu le décret du 13 juillet 2023 nommant Monsieur Rollon MOUCHEL-BLAISOT, Préfet de la Somme ;

Vu l'arrêté ministériel du 14 février 2018 relatif à la prévention de l'introduction et de la propagation des espèces animales exotiques envahissantes sur le territoire métropolitain ;

Vu l'arrêté préfectoral portant délégation de signature au directeur départemental des territoires et de la mer de la Somme en date du 5 février 2025 ;

Vu l'arrêté préfectoral de subdélégation du directeur départemental des territoires et de la mer de la Somme en date du 27 février 2025 ;

Vu l'arrêté préfectoral du 20 octobre 2023 autorisant le Groupe d'Etude des Milieux Estuariens et Littoraux à capturer et à transporter des crabes chinois (Eriocher sinensis) à des fins scientifiques dans le cadre du projet CLANCY ;

Vu la demande reçue le 20 juin 2025 présentée par le Groupe d'Etude des Milieux Estuariens et Littoraux (GEMEL) ;

Vu l'avis favorable de la fédération de la Somme pour la Pêche et la Protection du Milieu Aquatique consultée le 1er juillet 2025 ;

Vu l'avis favorable du service départementale de l'office français de la biodiversité consulté le 1er juillet 2025;

Considérant que l'utilisation de nasses à crustacés comme système de capture n'a pas permis la capture de crabe chinois ;

Considérant que les pièges à condo ont fait leurs preuves dans d'autres pays ;

Sur proposition du directeur départemental des territoires et de la mer de la Somme ;

ARRÊTE

Article 1er. – L'article 5 relatif aux lieux de capture de l'arrêté préfectoral du 20 octobre 2023 autorisant le Groupe d'Etude des Milieux Estuariens et Littoraux à capturer et à transporter des crabes chinois (Eriocher sinensis) à des fins scientifiques dans le cadre du projet CLANCY, est modifié comme suit :

Dans le département de la Somme, l'opération de capture est réalisée sur 6 fleuves :

✓ l'Authie Amont et Aval ;
✓ le canal à poissons Amont et Aval ;
✓ le Canal de Retz Amont et Aval ;
✓ la Maye ;
✓ La Somme (Cap Hornu en aval);
✓ l'Amboise ;

Les lieux de capture sont détaillés en annexe 1.

Article 2. - L'article 6 relatif aux moyens de capture autorisés et protocole de prélèvement de l'arrêté préfectoral sus-visé est modifié comme suit :

1 - Moyens et méthode de pêche

Le nouveau protocole de pêche prévoit l'utilisation d'un piège à condo.
Celui-ci se compose de :
- tubes en PVC de 25 cm de long de 50 mm ou 100 mm de diamètre, disposés dans un carré de 3 tubes par 3.
- Une extrémité de la matrice en PVC recouverte d'une fine maille (2 mm) afin d'éviter que les spécimens ne tombent lors de la récupération.
- Une couverture en maille (10 mm) entoure également le piège afin de renforcer la structure et l'habitat.
- L'extrémité ouverte de la matrice est attachée à la surface par une corde et un flotteur ou simplement rattachée par une chaine à un support sur la berge.
- L'ensemble du condo est lesté d'un poids de quelques kilos (briques ou pavés) en fonction des conditions environnementales
Le poids est fixé à l'un des côtés pour s'assurer que le condo se déploie horizontalement lorsqu'il atteint le substrat cible.

2 - Captures

Deux pièges à condo seront mis en place par site (un piège avec du tube de diamètre 5 cm pour accueillir les crabes juvéniles et un piège avec du tube de 10 cm de diamètre pour accueillir les crabes adultes).
Ce type de piège est sélectif (pas de captures de poissons. L'entrée du poisson, lui permet de ressortir facilement) et ne nécessite pas d'appât ; les crabes/écrevisses y viennent pour trouver un refuge/abri.

Article 3. - L'article 10 relatif aux périodes de pêche de l'arrêté préfectoral sus-visé est modifié comme suit :

Les pièges à condo seront déployés à deux périodes de l'année durant 4 semaines consécutives :
- entre début avril et fin juillet pour cibler la capture des juvéniles et des adultes qui reviennent de la mer vers les eaux douces
- entre début septembre et fin novembre pour cibler les adultes qui partent en mer pour se reproduire.

Les pièges seront vérifiés au bout de 48h la première fois, puis un contrôle hebdomadaire sera réalisé ensuite.

Les pêches avec les pièges à condo débuteront en septembre 2025 et se termineront en novembre 2027.

Article 4. – L'article 14 relatif au rapport des opérations réalisées de l'arrêté préfectoral sus-visé est modifié comme suit :

Avant le 1er juin 2028, le bénéficiaire adresse à la DDTM, à l'OFB et à la FDPPMA, un rapport sur les opérations réalisées dans le cadre du programme du projet européen CLANCY, indiquant les lieux, dates, objets, indiquant résultats et conclusions.

Article 5. – L'article 17 relatif à la validité de l'arrêté préfectoral sus-visé est modifié comme suit :

La présente autorisation est accordée à compter de la signature du présent arrêté jusqu'au 31 décembre 2027.

Article 6. - Les autres articles de l'arrêté préfectoral du 20 octobre 2023 restent inchangés.

Article 7. - L'arrêté préfectoral modificatif du 19 décembre 2023 est abrogé.

Article 8. – **Voies et délais de recours**

La présente décision est susceptible de faire l'objet d'un recours contentieux devant le tribunal administratif d'Amiens – 14, rue Lemerchier – 80011 Amiens cedex 1 – dans un délai de deux mois à compter de sa publication au recueil des actes administratifs de la Somme. Le tribunal administratif peut également être saisi, dans le même délai, par l'intermédiaire de l'application « télérecours citoyen » accessible sur le site www.telerecours.fr.

Article 9. – Le directeur départemental des territoires et de la mer, le commandant du groupement de gendarmerie, ainsi que le chef du service départemental de l'office français de la biodiversité sont chargés, chacun en ce qui les concerne, de l'exécution du présent arrêté qui sera publié au recueil des actes administratifs de la préfecture.

Amiens, le 10 JUIL. 2025

Le Préfet et par délégation,
Pour le directeur départemental
des territoires et de la mer de la Somme,
La responsable du bureau nature,

Suzanne Guyard

Annexe 1 : Lieux de capture

Fleuve	Commune	Site	X (L93)	Y (L93)	Gestionnaire/propriétaire
Authie (Amont)	Argoules	D175 (Pont)	616924	7028080	Mairie d'Argoules
Authie (Aval)	Conchil-le-Temple	Pont à cailloux	603431	7028889	Mairie de Conchil-le-Temple
Canal à poissons (Amont)	Wathiéhurt (Lanchères)	Rue des champs	596323	7010219	Privé
Canal à poissons (Aval)	Le Hourdel (Cayeux-sur-Mer)	D102/Ferme de la Caroline	596932	7013206	Privé
Canal de Retz (Amont)	Monchaux (Quend)	D32/Ferme de Monchaux	601247	7025590	Privé
Canal de Retz (Aval)	Quend	Proche gîte Cœur de baie (pâture)	600491	7029592	Privé
Maye (Amont)	Bernay-en-Ponthieu	D1001 (Pont)	610252	7020018	Mairie de Bernay-en-Ponthieu
Maye (Aval)	Le Crotoy	D204 (Pont)	601330	7019970	Privé

Fleuve	Commune	Site	X (L93)	Y (L93)	Gestionnaire/propriétaire
Somme (Amont)	Fontaine-sur-Somme	Rue Clabaut	624225	6993627	Privé
Somme (Aval)	Boismont	Contre canal Somme (Les Pâtures)	606138	7007660	CD80
Somme (Aval)	Saint-Valery-sur-Somme	Cap Hornu	600820	7011360	DIRM (DPM)
Amboise (aval)	Saint-Valery-sur-Somme	Station d'épuration	603521	7009218	Mairie de Saint-Valery-sur-Somme
Amboise (Amont)	Estrébœuf	Rue de Saint-Valéry (pont)	602630	7008298	Mairie d'Estrébœuf

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Fraternité

Direction départementale des territoires et de la mer

ARRÊTÉ MODIFICATIF DU 16 JUIL. 2025 PORTANT AUTORISATION DES ASSOCIATIONS CSLN ET GEMEL À CAPTURER ET À TRANSPORTER DES CRABES CHINOIS ET DES ÉCREVISSES ALLOCHTONES À DES FINS SCIENTIFIQUES EN SEINE-MARITIME

Service Transitions, Ressources et Milieux

Affaire suivie par : Bureau de la Nature, de la Biodiversité et de la Stratégie Foncière
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Le préfet de la région Normandie, préfet de la Seine-Maritime,
Chevalier de la légion d'Honneur
Officier de l'ordre national du Mérite

Vu le Code de l'environnement et notamment les articles L 436-9, R. 432- 5 à R. 432-11 ;
Vu le décret n° 97-787 du 31 juillet 1997 modifiant les dispositions relatives au contrôle des peuplements piscicoles ;
Vu l'arrêté du 2 février 1989 portant dérogation aux prescriptions des articles 11 et 16 du décret du 14 novembre 1998 pour l'utilisation des installations de pêche à l'électricité ;
Vu le décret du Président de la République en date du 11 janvier 2023 nommant M. Jean-Benoît ALBERTINI, préfet de la région Normandie, préfet de la Seine-Maritime ;
Vu l'arrêté préfectoral n° 25-023 du 31 mars 2025 portant délégation de signature à M. Laurent TESSIER, directeur départemental des territoires et de la mer de la Seine-Maritime, en matière d'activités ;
Vu l'arrêté préfectoral permanent du 24 décembre 2024 portant réglementation de la pêche en eau douce dans le département de la Seine-Maritime ;
Vu la décision n° 25-043 du 27 juin 2025 portant subdélégation de signature en matière d'activités ;
Vu la demande présentée par l'association GEMEL ;
Vu l'arrêté préfectoral du 10 octobre 2023 portant autorisation des associations CSLN et GEMEL à capturer et à transporter des crabes chinois et des écrevisses allochtones à des fins scientifiques en Seine-Maritime jusqu'en octobre 2026 ;
Vu l'arrêté préfectoral du 12 janvier 2024 portant autorisation des associations CSLN et GEMEL à capturer et à transporter des crabes chinois et des écrevisses allochtones à des fins scientifiques en Seine-Maritime jusqu'en octobre 2026 ;

ARRÊTE

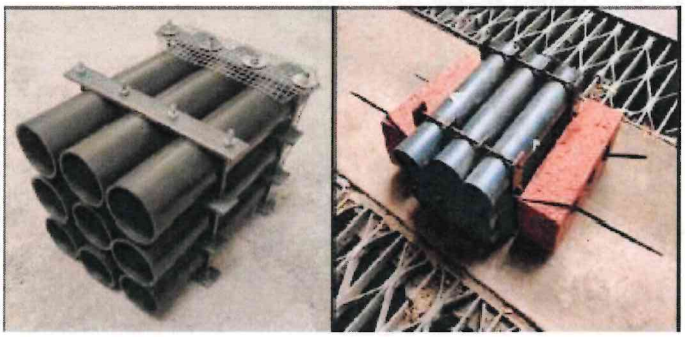
Article 1 : L'article 5 relatif à la période de validité de l'autorisation de l'arrêté préfectoral du 10 octobre 2023 précité est modifié ainsi qu'il suit :

L'autorisation est valable du 1er septembre 2025 au 15 décembre 2027. Les suivis seront réalisés de la façon suivante :

- début septembre à fin novembre 2025
- début avril à fin juillet 2026
- début septembre à fin novembre 2026
- début avril à fin juillet 2027
- début septembre à fin novembre 2027

Article 2 : L'article 6 relatif aux moyens et mode de capture de l'arrêté préfectoral sus-visé est modifié comme suit :

le nouveau protocole de pêche prévoit l'utilisation d'un piège à condo. Celui-ci se compose de :



- Tubes en PVC de 25 cm de long de 50 mm ou 100 mm de diamètre, disposés dans un carré de 3 tubes par 3.
- Une extrémité de la matrice en PVC recouverte d'une fine maille (2 mm) afin d'éviter que les spécimens ne tombent lors de la récupération.
- Une couverture en maille (10 mm) entoure également le piège afin de renforcer la structure et l'habitat.
- L'extrémité ouverte de la matrice est attachée à la surface par une corde et un flotteur ou simplement rattachée par une chaîne à un support sur la berge.
- L'ensemble du condo est lesté d'un poids de quelques kilos (briques ou pavés), en fonction des conditions environnementales.

Le poids est fixé à l'un des côtés pour s'assurer que le condo se déploie horizontalement lorsqu'il atteint le substrat cible.

Deux pièges à condo seront mis en place par site (un piège avec du tube de diamètre 50 mm pour accueillir les crabes juvéniles et un piège avec du tube de 100 mm de diamètre pour accueillir les crabes adultes ; les plus gros spécimens atteignant 8/9 cm).

Les pièges seront attachés à des piquets, arbres ou structures rigides grâce à des chaînes et cadenas pour éviter le vol.

Ce type de piège est sélectif (pas de captures de poissons et si un poisson rentre, il en ressort seul et facilement) et ne nécessite pas d'appât ; les crabes/écrevisses y viennent pour trouver un refuge/abri.

Un affichage pourra, en fonction de la demande du propriétaire, être mis en place. De même, les pièges seront identifiés avec les coordonnées du GEMEL et le nom et logos du projet. Les pièges seront posés en journée.

Article 3 :
Les droits des tiers sont expressément réservés.

Article 4 :
Le secrétaire général de la préfecture de la Seine-Maritime, le directeur départemental des territoires et de la mer, le commandant du groupement de gendarmerie, le responsable départemental de l'office français de la biodiversité, le président de la fédération départementale des associations agréées pour la pêche et la protection des milieux aquatiques et tous les agents ayant compétence en matière de police de la pêche, sont chargés, chacun en ce qui le concerne, de l'exécution du présent arrêté qui est publié au recueil des actes administratifs.

Pour le préfet et par subdélégation,

Le Responsable du Service
Transitions, Ressources et Milieux

Alexandre HERMENT

Voies et délais de recours - Conformément aux dispositions des articles R 421-1 à R 421-5 du code de justice administrative, le présent arrêté peut faire l'objet d'un recours contentieux devant le tribunal administratif de Rouen dans le délai de deux mois à compter de sa notification ou de sa publication.Le tribunal administratif peut être saisi par l'application « Télérecours citoyens » accessible par le site www.telerecours.fr.