



The mouth of the Arbitrone and San Remedio rivers where they meet the sea in the town's Cannes district.



Past floods and today's regions in the Mediterranean Arc



Ajaccio
2008 / 2020



The Arbitrone River enters a channel on the edge of Cannes.



The Cannes and Les Salines districts (left and right respectively).



Catchment basin map for the Arbitrone, San Remedio and Madonuccia rivers. (source DDT2A).

From the Sanguinaire Islands to Les Salines

Situation : Ajaccio (pop. 70,817 in 2018), main town of the **Greater Ajaccio Council Association (CAPA)**, which covers some 15 kilometres of the entire north coast of Gulf of Ajaccio, the Sanguinaires islands to the west and up to the plain and Gravona River estuary in the east.

West of the town centre, the Route des Sanguinaires is bordered by a range of hills (Monte Salario, 434 m), where short dry gullies drop down to the coast and can suddenly flood during heavy Mediterranean rainfall events (or “episodes”). These gullies cross a series of tourist developments, including many hotels, “pailotes” (beach huts) and holiday homes built on this narrow coastal corridor next to the hills.

Further north, at the foot of the highest peaks is the source of two rivers. These are the Arbitrone River which comes from the slopes of the Punta di Lisa (787 m) and the San Remedio River which flows down the Punta Pozzo di Borgo (782 m). They then turn east towards the city’s Cannes district and flow into the sea just beyond. Cannes lies east of the city centre and has high-rise apartment buildings that, together with the roads, cover both rivers and their tributaries. Next to Cannes, further east, is another similar but more recent neighbourhood called Les Salines. Les Salines is also crossed by a series of watercourses and small valleys (the Madonuccia river catchment) which run down from the hills above the ring road to the north (Punta San Simeone 240 m).

The Arbitrone, San Remedio and the Madonuccia river basins are also cut through by the La Gravona Canal, which was dug in the 19th century but is now disused. When they arrive in the Cannes and Les Salines districts, the rivers are virtually all covered over.

Damage to the Route des Sanguinaires coastal road.
(Photo credit: Ajaccio City Council).



Eyewitness accounts

Residents on the Route des Sanguinaires coastal road tell their stories:

"I was awoken around 3 am by the noise of water flowing and I thought a tap had been left running.

When I went into the kitchen, there was already 50 cm of water. The water rose quickly and then a wall at the back of the house collapsed. Everything was washed away right in front of our eyes. Thankfully, we had time to escape. My husband and I were taken to hospital. We lost absolutely everything."

A resident in Scudo

"We were woken at 2.30 am by a thud and in just a few minutes our feet were underwater. We opened the metal blind and the water escaped. Very soon after we heard people shouting. Some tourists were petrified and crying out to warn people. Others were dumbstruck by the extent of the downpour and stuck in their rooms."

A couple of hotel guests

Ajaccio, swamped on 29 May 2008!

In the morning of **Thursday 29 May 2008**, a storm cell dumped heavy rain on the Greater Ajaccio area. The rain returned in the evening and night, further accentuating the subsequent flooding. **189 mm of rain in 24-hours was recorded** at Milelli, in the upper **Arbitrone River** basin. This is the **biggest accumulated rainfall** ever recorded in the local area **since 1921**.

The entire city was affected but it was primarily the Route des **Sanguinaires** and **Cannes** where things became critical. Several hotels on the Sanguinaires coastal road were suddenly hit by torrents of water and mud. **180 people**, guests and staff at two hotels had to be **rescued** in challenging conditions. Two beach hut installations were destroyed while further north the road to **Capo di Fenu** was severely damaged and **a bridge washed away**.

Cannes flooded

In the Cannes district, the situation was different but it would be the second-worst affected area in the city. In fact, while the high-rise housing provided residents with some safety, the damage was extensive. The Arbitrone River and its tributaries subsequently flooded certain streets, such as Rue Bonardi (basin outlet) to a depth of 1.5 m.

Rue Bonardi from upstream on 30 May



A firefighting vehicle in difficulty amid the floodwaters blocked by the railway line wall on Boulevard Jean Nicoli
(Photo credit: DDT2A)



and today.

(Photo credit: DDT2A)



Rue Bonardi from Boulevard Jean Nicoli



and the same scene today.

(Photo credit: DDT2A)

The height of the floodwaters was due to **numerous obstacles** encountered by the **overflowing water and runoff**, namely:

- **log jams** in Cannes where the rivers entered manmade channels,
- some **buildings built on low-flow** channels such as the "Mancini apartments"
- the railway line **embankment** and wall along the coast and the Boulevard Jean Nicoli, with only a small outflow point

completely unfit to evacuate so much water.

Numerous, **basements, garages**, ground floor **retail units and vehicles (300 throughout the city)** were **damaged**. Some business premises and the **Padule Secondary School** were also extensively **damaged**. 500 homes lost power. This flood deeply affected the people of Ajaccio but fortunately, **no lives were lost** in the entire city.



Historic floods

Given **recent** urban development in the districts flooded in 2008, there are **few historic records** about past flooding. Nevertheless, the Cannes district had already been flooded in **November 1990**. Also, **The Arbitrone River flood of 2008**, with an estimated flow of **40-45 m³/s**, was considered to correspond to a **25-year flood return period** according to the PPRi criteria at the time. Clearly, the flood was due to much more than the storm event itself. Actually, the undersized storm drain network was to blame. Aware of this situation, the city council undertook extensive works in those areas badly affected by the 2008 flood. This far-reaching programme continues today with huge financial investment.



The Alzo di Leva I basin on the Moulins Blancs River, (a tributary of the San Remedio River) as it enters Les Cannes. It will soon be redeveloped with an increased capacity of 10 000 m³.

Some of this work, such as enlarging basin outlets, has been undertaken jointly with European Union funding but also with the French Urban Renewal Agency (ANRU). This allowed for a gap to be made in the centre of the **"Mancini"** apartment building (not covered by the PAPI). This means the Arbitrone River, which it once blocked, can now flow unchecked at double its capacity until the outlet to the sea, modelled on a one hundred-year flood return period.

2 Improvements to the flood warning and crisis management system:

In addition to the city's local emergency action plan (**PCS**) and data provided by Météo France (Corsica has had a second Météo France radar since 2018), Ajaccio also has had an external decision-making service since 2020 to assist it in managing hydro-meteorological hazards.

3 Fostering a risk culture:

In addition to the dissemination in 2021 of the city's recently revised municipal information document on major risks (**DICRIM**), the council is also running an extensive information campaign on flood risks



Stakeholders and post-flooding management measures:

In **2011**, the **French government** approved a flood risk prevention plan (**PPRi**) for the city of Ajaccio. It covers the **Arbitrone, San Remedio and Madonuccia rivers basins**, as well as the **Valle Maggiore and St Joseph valleys** that run through the Pietralba district, east of Les Salines.

The PPRi helped **define** benchmarks for **ten-year** and **one hundred-year** flood events for these river basins. The State also jointly funds a flood action programme, or PAPI (BOP 180).

The **current PAPI**, which is administered by the **city council** with specific aspects allocated to the Greater Ajaccio Council Association (**CAPA**) as part of the **GEMAPI**, sets out actions to be undertaken between 2012 and the end of 2023.

Among these actions, **the most important in financial terms** is:

1 upgrading the storm drain and sewer network:

There are plans to build 24 flood retention basins and flood storage areas, including 9 in the Cannes and Les Salines districts.

The plan is based, in part, on several existing yet undersized basins choked with vegetation or rubble. These basins, ranging in capacity from **1,000 m³** (Suartello mixed development zone basin) to **19,000 m³** (the Peraldi Basin on the ring-road), will all be recalibrated to the PPRi 25-year flood return period. The outlets and drainage systems downstream of the basins will also be re-sized for **50 to 100-year flood return periods** (based on the 2011 PPRi), as required.

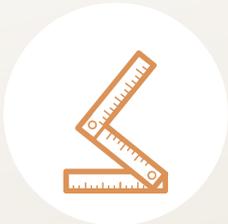


The gap made in the "Mancini" apartments that blocked the path of the Arbitrone River.

with councillors, council staff, schoolchildren (classroom presentations, drafting a "young persons" DICRIM, introduction of special school safety plans (PPMS) and the general public (meetings, presentations, introduction of family safety plans (**PFMS**)).

Finally, in addition to the PAPI, CAPA is delivering a Local Flood Risk Management Strategy (**SLGRi**) with neighbouring towns and villages.





2020, Les Salines!

On 11 June 2020, brief but very heavy downpours (150 mm in 3 hours), fell on the city during the day.

This time, the Cannes district, was virtually untouched. The storm circled the area briefly but the newly enlarged basins and outlets did their job. By contrast, Les Salines was hit by a surge of water that gushed along Avenue Noël Franchini which runs parallel to the Madonuccia River. It swept away vehicles and bins, flooded many ground floors, shops and businesses, basements, garages and a high school. Here, again, no lives were lost.



Avenue Noël Franchini at the junction with Rue des Cigales, on 11 June 2020.

Photo credit top: Philippe Casanova.



"The exceptional floods on 29 May 2008 and 11 June 2020 in Ajaccio are etched in the minds of the local population. In response to these events and in my capacity as Mayor of Ajaccio and Chair of the Greater Ajaccio Council Association, I want to introduce an overarching flood risk prevention scheme with other public and private partners. Although this goal seems ambitious, it is vital to maintain the city's appeal and the quality of life, as it will help reduce the extent of flood-related damage.

From now on, we must consider city planning using new, more resilient forms of urban development and homes better adapted to our environment. Our fellow citizens must have a say in this public safety policy and to do this this city council is also holding workshops for young people, information and awareness-raising campaigns, that will better help people deal with major events and to foster a proper risk and safety culture."

Laurent Marcangeli, Mayor of Ajaccio, Chair of CAPA

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