

Adaptation : assess climat risks and reduce local vulnerabilities

Since 2003, Nantes Métropole has prioritized mitigation actions to reduce greenhouse gases emissions and contribute at the local level to the international effort. To balance mitigation part and adaptation part of the climate plan, Nantes Métropole assesses the metropolitan vulnerability.

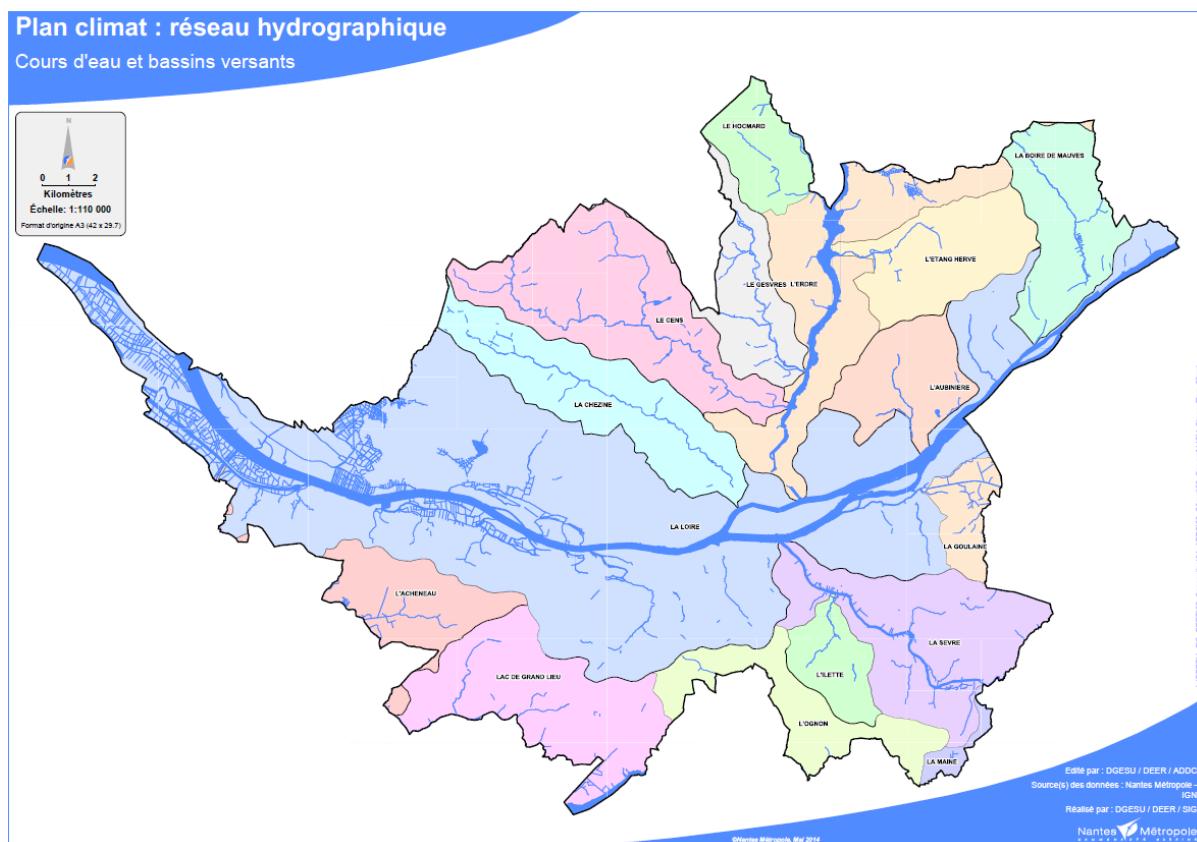
The metropolitan vulnerability study

Local characteristics

The vulnerability depends on geographical and socio-economic characteristics. The diversity of the natural areas and farmland across the conurbation, its expanses of wetland, rivers and bodies of water are the major's natural characteristics

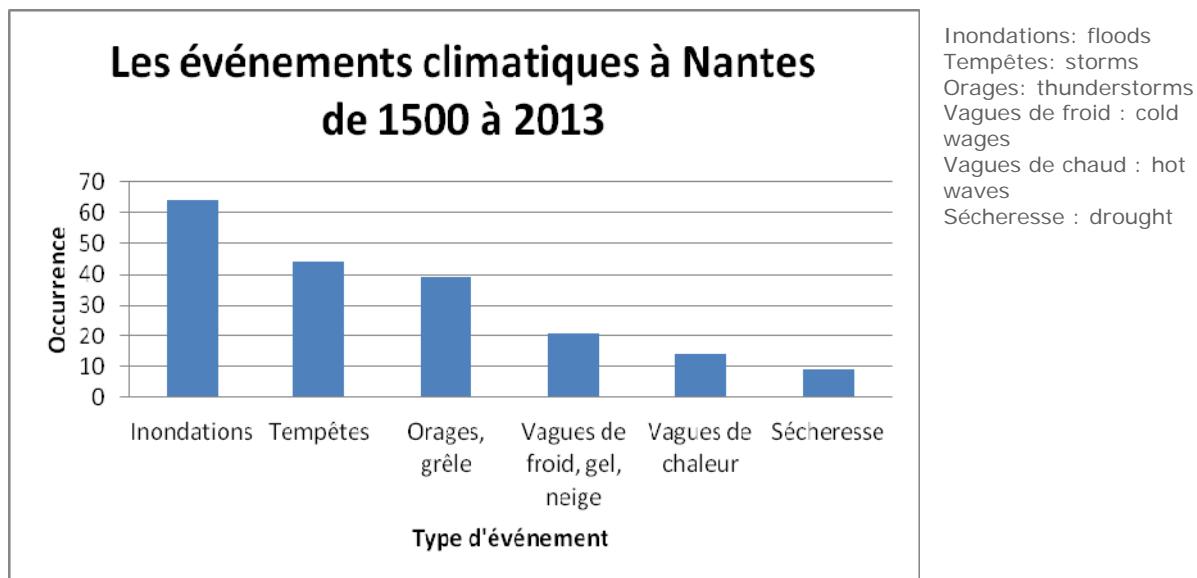
Geographical key figures :

- An important river system : Loire river and Sevre et Erdre tributaries
 - 15,500 hectares of natural areas including 9,500 hectares of wetlands
 - 15,000 hectares of farmland, including 3,700 hectares of new wasteland
 - 5 Natura 2000 zones protected at European level
 - 33 ZNIEFF Special Fauna and Flora Ecological Interest Zones (Zones naturelles d'intérêt écologique faunistique et floristique)



Climate related events from the past

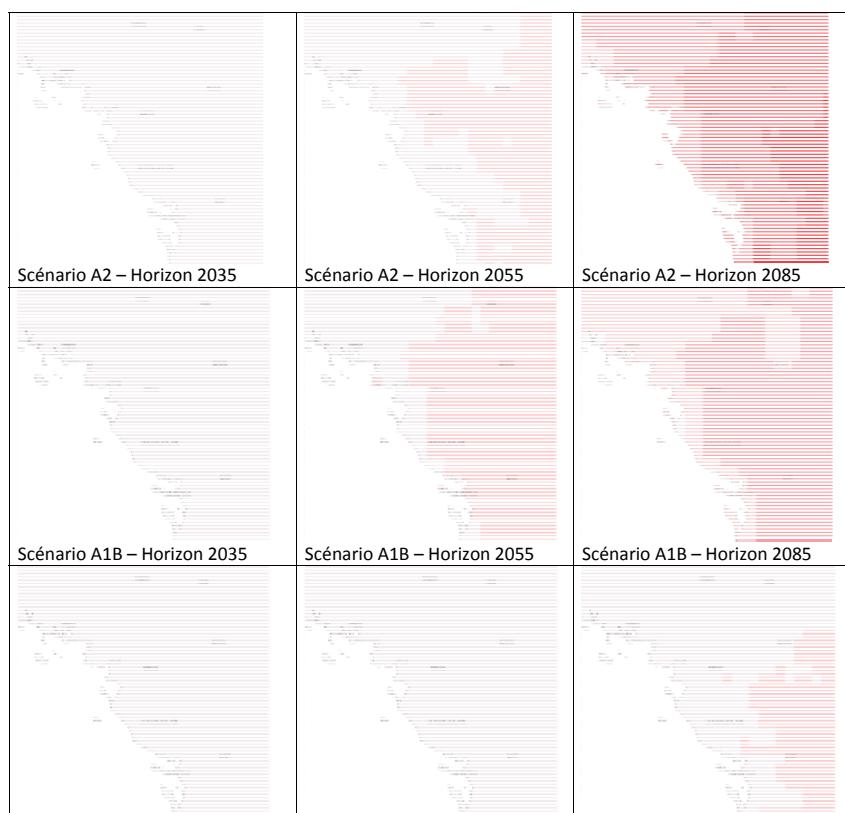
Nantes Métropole has analysed the climate related events form the past during a long term period from 1500 to 2013. Nantes Métropole studied different sources to well understand the past situation and identified the most important climate related events.



Future climate related events

To have a better overview of future climate related events, Nantes Métropole used the national data base DRIAS (Météofrance, CNRM-GAME, IPSL, CERFACS) based on IPCC scenarios and French calculation models. Nantes Métropole obtains views at regional scale in function of climate indicators.

Example of result: heat waves



Vulnerability assessment by domain

Due to the complexity of the adaption problems, Nantes Métropole assesses the metropolitan vulnerability in 7 seven domains:

- Biodiversity,
- Economic activities,
- Health,
- Energy and IT networks,
- Water cycle
- Buildings and transportation Infrastructures,
- Resilient city and organization

Some cross cutting analyse has been made to illustrate impacts:

1983 ICE STORM

1983 Ice storm ID

- In exceptional July for heat and thunderstorms: during 9 days, 14 thunderstorms on Bouguenais city
- Violent gusts of wind
- Hailstones of more than 5 cms in diameter
- Strong thunderstorm from 4:05 pm till 6:10 pm with strong shower (19.6 mm)
- Very high temperature in the airport meteorological station before the ice storm (maximum 30.1°C at 2:30 pm) and falls in 19.6°C during the thunderstorm (at 6 pm)

	Biodiversity	Economic activities	Health	Energy and IT networks,	Water cycle	Buildings and transportation Infrastructures,	Resilient city and organization
1983 Ice storm		Damages estimated at 22 millions of euros Impact on roofers employment : rise and fall of activities Not recognized state of natural disaster Fund of agricultural disaster used			Water and mud Streaming Floods of the ground	Damages on Roofs, windows and vehicles Damages estimated at 2 millions of euros on public buildings	