

Barcelona & the Barcelona Metropolitan Area, Spain

Photos: Johannes Langemeyer

Barcelona is a city situated between the Mediterranean Sea and the Collserola mountain range located in the northeast of Spain, in Catalonia. Barcelona belongs to the Metropolitan Area of Barcelona (AMB), a region comprising 36 municipalities and about 3.2 million inhabitants.


The AMB has two main rivers, the Llobregat and Besòs. Despite their very close proximity to cities, these two rivers and the sea constitute valuable socio-ecological areas of the region. Covering 100 km², the Llobregat Delta (wetland) is of international importance for aquatic and wildlife ecosystems and as a fresh-water resource for the Barcelona area given its aquifer.


URBAN WATER MANAGEMENT


Barcelona's combined sewer system is connected to wastewater treatment plants and is enhanced with a number of large underground stormwater reservoirs. One of the main challenges of the Barcelona sewer system is the overflow into the coastal environment and rivers, as well as floodings caused by heavy rainfall events. The annual average of discharges for the city of Barcelona alone is currently around 19 Hm³ for a normal hydrological year.


The city has adopted decentralised, small-scale solutions to drainage such as Sustainable Urban Drainage Systems (SUDS) and it is currently developing an Integral Sanitation Master Plan (PDISBA) to push towards more sustainable solutions. This is a response to growing concerns of climate change induced extreme rainfall events. In parallel, the city has made great effort to promote urban green infrastructure through relevant policy documents such as the government measure "Program to boost urban green infrastructure"; The Nature Plan (2021–2030) and the Action plan for climate emergency (2030). At the AMB level, a Stormwater Master Plan (2005) exists, however, it is not until recently that policy frameworks have incorporated a nature-based solutions perspective to address the challenges of the urban water systems such as the Climate Change Adaptation Plan (2018–2030) and the Urban Master Plan of the AMB under development.


NICHES IN BARCELONA

 NICHES will conduct a diagnosis of the problems, constraints and opportunities of the management of stormwater events in the urban water system.

 NICHES will map existing social-ecological vulnerabilities to inland flooding risk and combined sewer overflows, considering technological, ecological and social aspects.

 NICHES will develop nature-based solution scenarios to understand overflow and flooding mitigation potentials.

 NICHES will examine enhanced ecosystem services through the creation of nature-based solutions and the related overflow mitigation at the receiving water bodies.

 NICHES will collaborate with multiple stakeholders to co-create transition pathways towards an integrated social-ecological technological urban water system.

OPPORTUNITIES TO GET INVOLVED IN NICHES

We will promote interactive multi-stakeholder arenas for developing, testing and monitoring most of the tasks that will be developed in NICHES. If you want to get involved, send an email to projecte.niches@uab.cat



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