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Returning Life to the City: Renaturalising the Manzanares River

The Madrid Río complex is today a verdant riverside park that spans 7.5 km. It sits atop the Spanish capital's former main ring road, the M-30, a six-lane thoroughfare which cuts off locals' access to the Manzanares River. This article bears witness to the remarkable transformation that the Madrid City Council undertook to return life to the heart of the city.

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Madrid Río Park.
Image: Madrid City Council





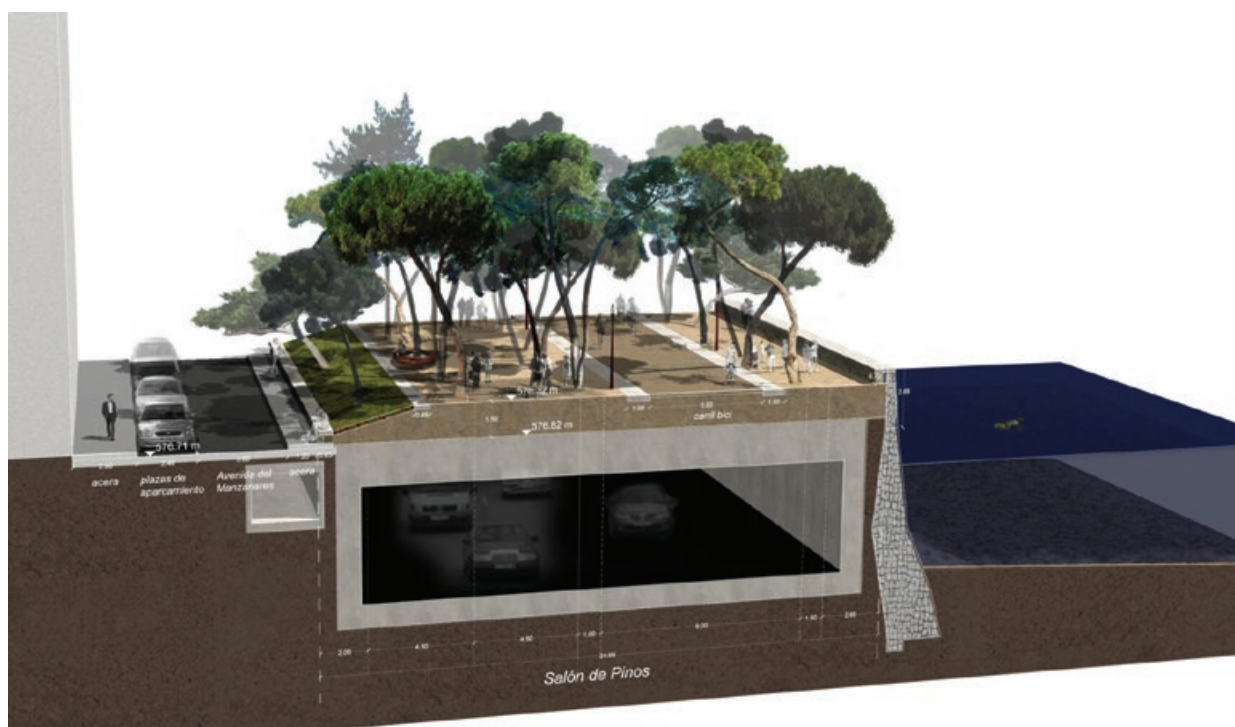
The renaturalisation of the urban section of the Manzanares River is part of Spain's municipal environmental strategy, alongside the Green Infrastructure and Biodiversity Plan and the Climate Change Adaptation Programme.

This initiative seeks to increase green infrastructure in the city of Madrid, bringing about environmental, social, and economic benefits. Examples of these infrastructural changes include improved connectivity between urban parks, the increased landscape quality of the urban section of the river, and the positive experience of applying nature-based solutions to increase Madrid's resilience to the effects of climate change.

The Manzanares is a humble river, with a small flow, but it plays an essential role in life, and its course is a vital ecological corridor for the conservation of biodiversity in its surroundings.

In the first half of the 20th century, the Manzanares was channelled along its 8-km urban stretch. Riparian vegetation was removed, high granite side walls were built, and the waters were dammed through nine dams, transforming the river into a succession of lifeless pools. In 1970, the M-30 urban ring road was built, occupying both banks of the river and isolating it from the city. As a result, the urban Manzanares, for decades, lost its ecological function.

This changed in 2004, when the Madrid City Council led the charge to move the M-30 underground, as part of a project called the Calle 30. Calle 30 began with a focus on reclaiming the Manzanares Riverbanks for citizens' use and enjoyment. In 2009, the addition of the Madrid Río Park followed, infilling the recovered spaces along the banks with greenery to enhance both biodiversity and liveability.



Cross-section of Madrid Río Park. With the M-30 shifted underground, surface streets are freed up for citizens' use and enjoyment.

Image: West 8



Avenida de Portugal, once a road, is today a park characterised by curved, landscaped areas with stone benches and decorative mosaics.
Image: Madrid City Council



Aerial view of the Madrid Río Park.
Image: Madrid City Council



The Perrault footbridge is an iconic landmark of the Madrid Río, linking the districts of Arganzuela and Carabanchel. It was inaugurated in March 2011.
Image: Madrid City Council

A central feature of the Madrid Río Park is the “Salón de Pinos”, a green corridor that runs along the right bank of the river. It is a linear park comprising of more than 9,000 pine trees of different species, sizes, and shapes, that transform the former concrete banks into a forest-like setting. The transplanted pine trees, which have been specially chosen for their natural morphologies, enable the corridor to function as an extension of the pine forests in the mountains to the north of Madrid, providing ecological connectivity for biodiversity to thrive. At ground level, the corridor provides many landscaped areas for rest and public use, as well as pedestrian and cycling routes that weave through the pine trees.

To facilitate permeability between the districts located on both banks of the river, there are 33 crossings. These include newly built bridges that have become urban icons as well as the historic bridges of Rey, Segovia and Toledo, among others.



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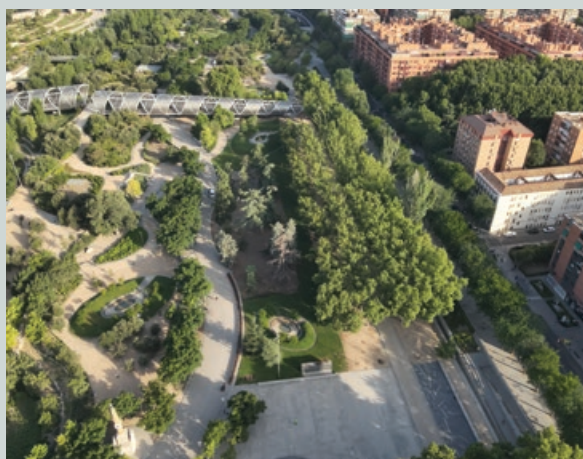
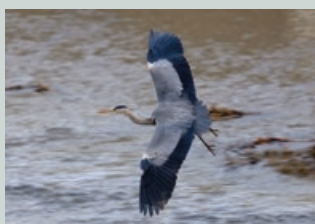
Even so, its waters remained stagnant and lifeless. In 2016, the Madrid City Council launched a plan to renaturalise the urban stretch of the Manzanares River. The aim of the Manzanares Renaturalisation Plan was to restore the natural flow of the river, revitalising the river's ecosystem and ecological function as a green corridor for biodiversity. The restoration also sought to allow the river to serve as a connector between the city of Madrid and surrounding natural areas of high ecological value.

In May 2016, the dam floodgates were opened, allowing the water to flow freely, thus promoting natural processes of sedimentation and the spontaneous growth of marsh vegetation and riparian trees. It took only a few months for the once-shallow river to sediment the materials it carried, recover its banks, and form small islands in its course. Carried by the water, seeds found ideal places in the sand and silt banks to

germinate, and river banks were soon covered with reeds, bulrushes, and rushes. Willows, white poplars, cottonwoods, and elms also grew spontaneously, transforming the 8-km channelled urban section of the Manzanares into a veritable green corridor, thus completing the transformation that Madrid Río represented.

Less than a year later, in the spring of 2017, mallards (*Asnas platyrhynchos*) and common moorhens (*Gallinula chloropus*) had islands of vegetation to nest and raise their broods, right in the heart of the city of Madrid. To date, seven dams have been rehabilitated.

The clearing of marsh vegetation and pruning of riverside trees remain an ongoing work till today. These initiatives persist to ensure compliance with the Tagus River's management requirements for the riverbed, which help to mitigate floods that can potentially arise from



Return of wild animals into the urban section of the Manzanares.
Image: Madrid City Council

Arganzuela garden.
Image: Madrid City Council



The Madrid Río Park provides cool spaces that help the city adapt to higher temperatures in summer.
Image: Madrid City Council

extraordinary episodes of torrential rain. At the same time, these measures also promote greater habitat diversity and increased biodiversity.

The influx of life that has emerged in the urban stretch of the Manzanares has exceeded all expectations. The diversity of habitats has enabled the presence of new bird species and the increase in the populations of existing ones. To date, more than 50 bird species have been counted in the urban stretch of the Manzanares.

The renaturalisation of the river allows Madrid residents to enjoy contact with nature in the city and has become a valuable tool for fostering environmental awareness. Collaboration with a non-governmental organisation, the Spanish

Ornithological Society (SEO), also known as BirdLife, has unleashed opportunities for citizen-led bird monitoring. This is enabled by environmental volunteering initiatives, and online bird-sighting recording platforms such as eBird.

The undergrounding of the M-30 urban motorway and the subsequent recovery of the city's most important park, Madrid Río, has been the greatest urban transformation to take place in Madrid since the dawn of the 21st century. The success of the project qualified by the enjoyment of the residents, and thriving biodiversity are testament to Madrid City Council's commitment towards urban restoration, conservation, and maintenance to the benefit of its people and ecological systems. 🌱