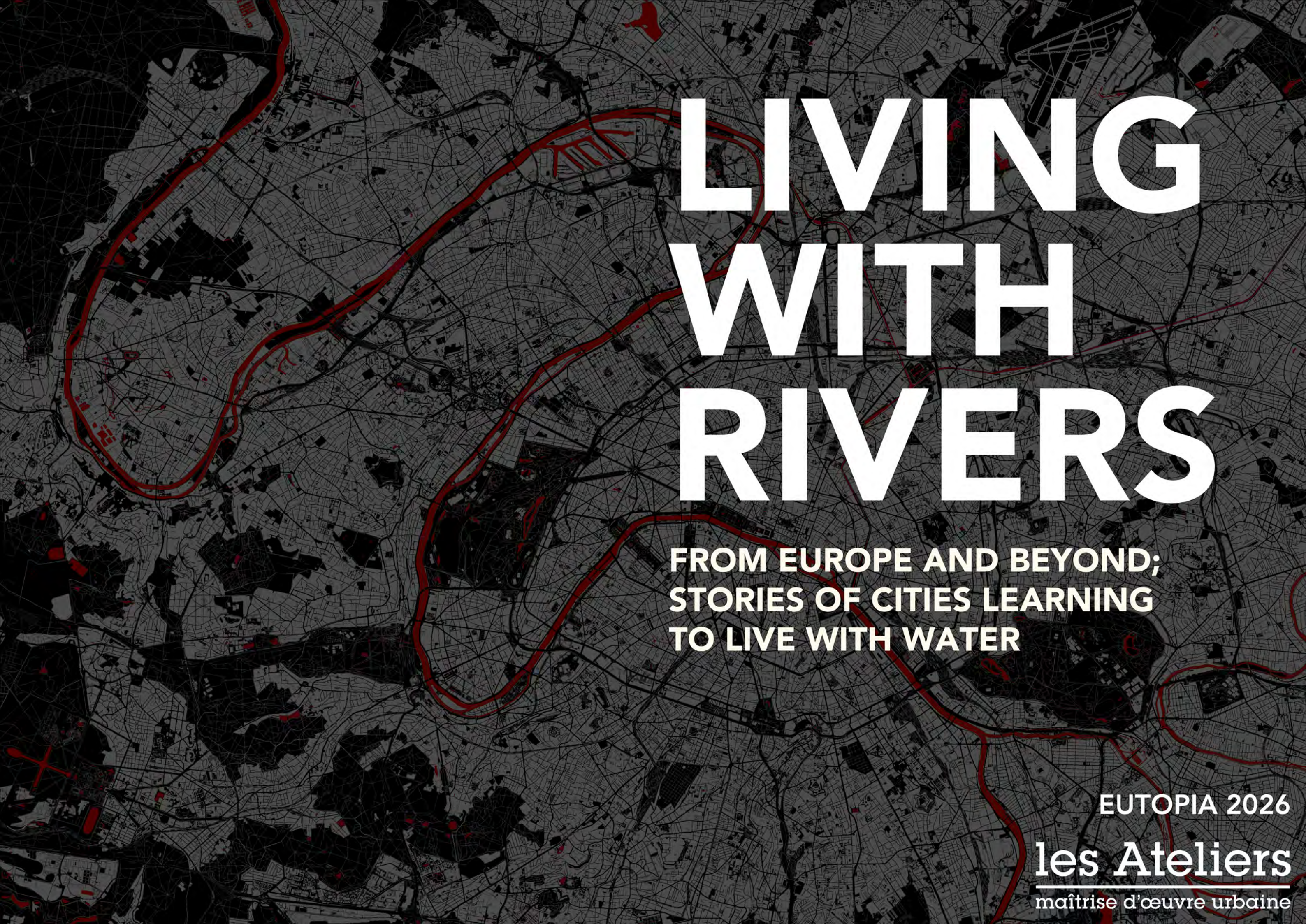


The background is a dark, high-contrast map of a city, likely Paris, with a river (the Seine) highlighted in a vibrant red. The map shows a dense network of streets and urban blocks. The title text is overlaid on the right side of the map.

LIVING WITH RIVERS

FROM EUROPE AND BEYOND;
STORIES OF CITIES LEARNING
TO LIVE WITH WATER

EUTOPIA 2026

les Ateliers
maîtrise d'œuvre urbaine

CONTENTS

LIVING WITH THE RIVER ELBE

Sreelakshmi Ambalapadan Rajan

This section explores Dresden's relationship with the Elbe River, focusing on how the city has learned to live with flood risks. It traces the historical significance of floods, particularly the turning point of the 2002 event, and examines how it reshaped urban planning and awareness. Through strategies such as flood prevention, protection, and management, as well as initiatives like the Dresden Flood Trail, the city demonstrates a shift from controlling water to understanding it.



Ljubljana. The River of Seven Names

Gaja Frece

The Ljubljana drifts through history, a river of many names and quiet legends. It has sustained ancient lives and shaped the heart of Ljubljana. Once a path of trade, it now reflects a delicate connection between people and nature—enduring, enigmatic, and calling for harmony, respect, and thoughtful care.



Sabarmati: The Engineered River

Aashmi Haria

The Sabarmati River has been a lifeline for the city of Ahmedabad for centuries. The river has influenced the city's architecture, movements and public life. The project explores how a river shapes the identity of the city, and how over time the city shapes the identity of the river itself.



The Shannon River

Aarzo Subedi

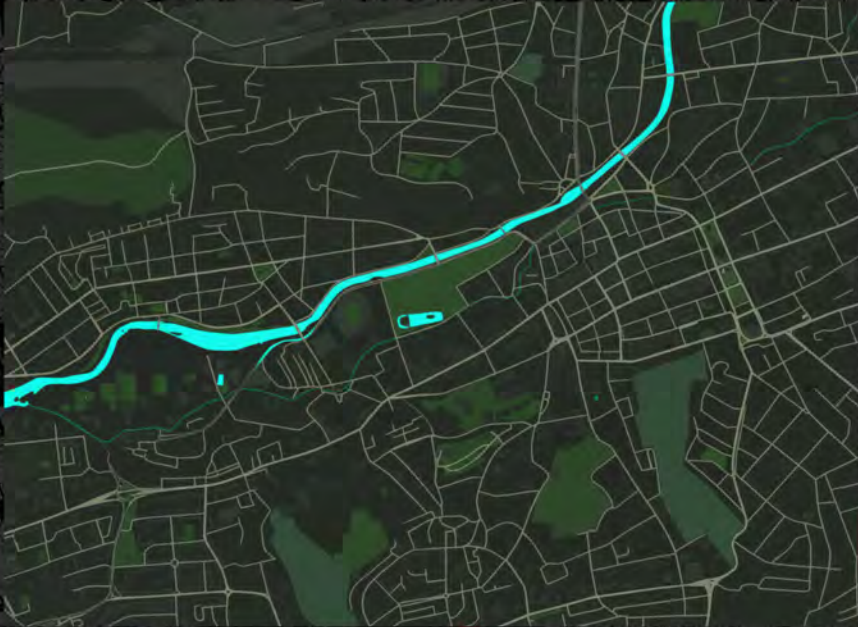
Ireland's longest river and once Europe's greatest salmon fishery, the Shannon now stands at a crossroads between ecological collapse and restoration. This section explores the devastation caused by the Ardnacrusha dam and the growing fight to revive its salmon population.



Living with Someșul Mic River

Md Naimur Rahman

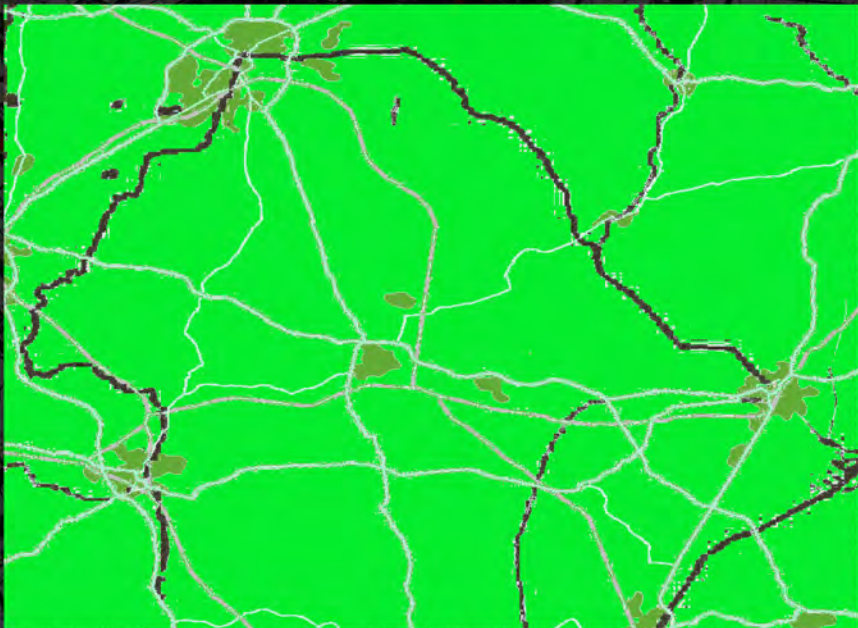
This project explores how the Someșul Mic River has shaped the development of Cluj-Napoca over time. It examines the river's historical importance, its present role as a social and urban space, and the environmental challenges it faces. Using field observations, the study highlights the relationship between human activity and the river, focusing on issues such as pollution and sustainability.



The River Witham

Michael Dick

The River Witham flows almost entirely through Lincolnshire, passing through the town of Grantham, then the City of Lincoln and through Boston to the North Sea. In this project, I explored how the river has changed Lincolnshire through history and how in the future conflict between human and environmental needs will change the river.



An aerial map of Dresden, Germany, with the Elbe River winding through the city. The map is overlaid with a semi-transparent blue filter. The title text is prominently displayed in white, bold, sans-serif font across the upper half of the image.

LIVING WITH THE RIVER ELBE

FLOOD, MEMORY AND RESILIENCE IN DRESDEN

AUTHOR: Sreelakshmi Ambalapadan Rajan
EUTOPIA 2026

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RIVER ELBE SHAPING DRESDEN AND ITS STORY



Calm Elbe River in the heart of Dresden city



Catchment area of River Elbe

(City of Dresden – Environmental Office 2023)

The Elbe River flows through Dresden as both a defining landscape and a constant reminder of nature's power.

Known as the "Florence on the Elbe," the city has always lived closely with its river, benefiting from it, shaping around it. But this relationship is not only about beauty but is also about risk.

The river gives life to Dresden, but at times it takes it back. Floods have always been part of Dresden's story, once turning it into the "Venice on the Elbe". For a long time, they felt like distant events, until the extreme flood event of 2002.

Flowing over 1,094 km from the Czech Republic through Germany, the Elbe is a transboundary river system, with about 30 km running through Dresden.

This means that floods in the city are not just local events, but are influenced by processes across the entire basin. While the river normally carries around 333 m³/s average discharge in Dresden, extreme events like the 2002 flood can increase this to nearly 4,500 m³/s, highlighting the dynamic nature of the river.

A flood may pass, but the need to prepare for the next never does!

References:

City of Dresden – Environmental Office. *FLOODMASTER Excursion: Flood Risk Management in Dresden*. Dresden: Environmental Office, 2022–2023.

THE TURNING POINT, FLOOD IN AUGUST 2002



Catastrophic Flooding in Dresden, Friedrichstraße (1890)
(German History in Documents and Images. Accessed on March 2026)

8.3 m



August 2002, Historic centre of Dresden flooded by Elbe River
(City of Dresden – Environmental Office 2023)

9.4 m

Flood protection strategies in 2004

7.5 m



June 6th, 2013 flood event, there is no inundation in the Dresden city centre
(City of Dresden – Environmental Office 2023)

8.7 m

Flood protection + Awareness

1890

Historical records show that floods have occurred repeatedly in Dresden, but the event of August 2002 marked a turning point in the city's relationship with Elbe. Triggered by extreme rainfall with a return period of over 100 years, multiple water systems rose simultaneously.

The Elbe, the Weißeritz - its tributary, which experienced a 500-year flood, along with urban creeks and a significant rise in groundwater levels, combined to create a rapidly spreading flood across the city.

References:
"Catastrophic Flooding in Dresden (1890)." German History in Documents and Images. Accessed March 18, 2026.
<https://germanhistorydocs.org/en/forging-an-empire-bismarckian-germany-1866->

2002

Reaching a historic level of 9.4 m, the Elbe flooded large parts of Dresden, affecting thousands and causing severe damage. The event exposed a key vulnerability, the city was not adequately prepared for such extremes, and development in high-risk areas had amplified the consequences.

2006

When the waters of the 2002 flood finally receded, Dresden was left not only with visible damage, but with a deeper question: *How do you live with something you cannot fully control?*

Floods could not be prevented. This realization marked a shift from controlling the river to living with it and led to the development of a comprehensive flood prevention plan in 2004, integrating planning, engineering, and public awareness.

2013

Today

19 flood events of river Elbe with a flood crest of more than 750 cm at Dresden gauge are observed within 500 years, but 3 of them in the last 24 years!

LEARNING FROM THE PAST

In the summer of 2004, the City Council of Dresden authorized the development of a city-wide flood prevention plan. The fields of action defined in this plan closely align with those later outlined in the EU Floods Directive on flood risk management (2007).

What are the fields of action in the Dresden Flood Prevention Plan?

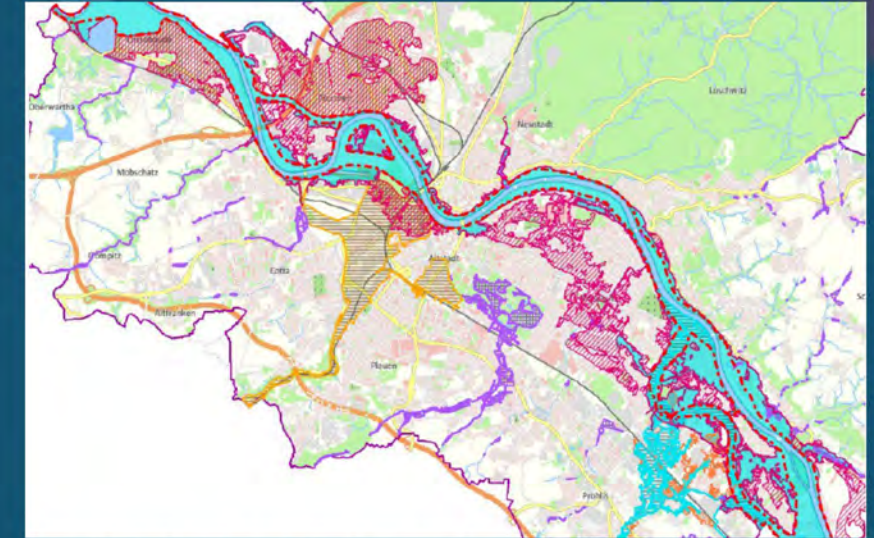
Flood Prevention Flood Protection Flood Management

Flood Prevention:

- **Planning and Land Use:** Keeping flood-prone areas free from new development and reducing risks in existing urban areas through planning tools.
- **Awareness and Information:** Providing information to help citizens prepare and respond to flood risks.

Flood protection in Dresden is not based on a single solution, but on a combination of planning, infrastructure, and preparedness!

Planning and Land Use



Flood plains fixed by law with restrictions regarding land use and urban development
(City of Dresden – Environmental Office, 2023)

Improvement of retention conditions

Designing of public parks, as a retention basin in response to flood hazards of urban creeks



Elbe meadows providing room for the river
(Grünwald and Weber 2010)

Improvement of runoff conditions



Enlargement of riverbed cross section in response to flood hazards of Weisseritz river
(City of Dresden – Environmental Office 2023)

References:

Karsten Grünwald, and Christiana Weber. "Hochwasserlehrpfad in Dresden." gewässer-info – Magazin zur Gewässerunterhaltung und Gewässerentwicklung, no. 47 (January 2010). Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall (DWA).

LEARNING FROM THE PAST

Technical Protection



Flood protection gate as a part of the protection line for the inner city as response to flood hazards of Elbe River
(City of Dresden – Environmental Office 2023)

A 3.5 km long flood protection system was constructed along the Elbe to protect the historic city centre. It combines permanent structures with mobile barriers and integrates existing urban elements to preserve the city's appearance.

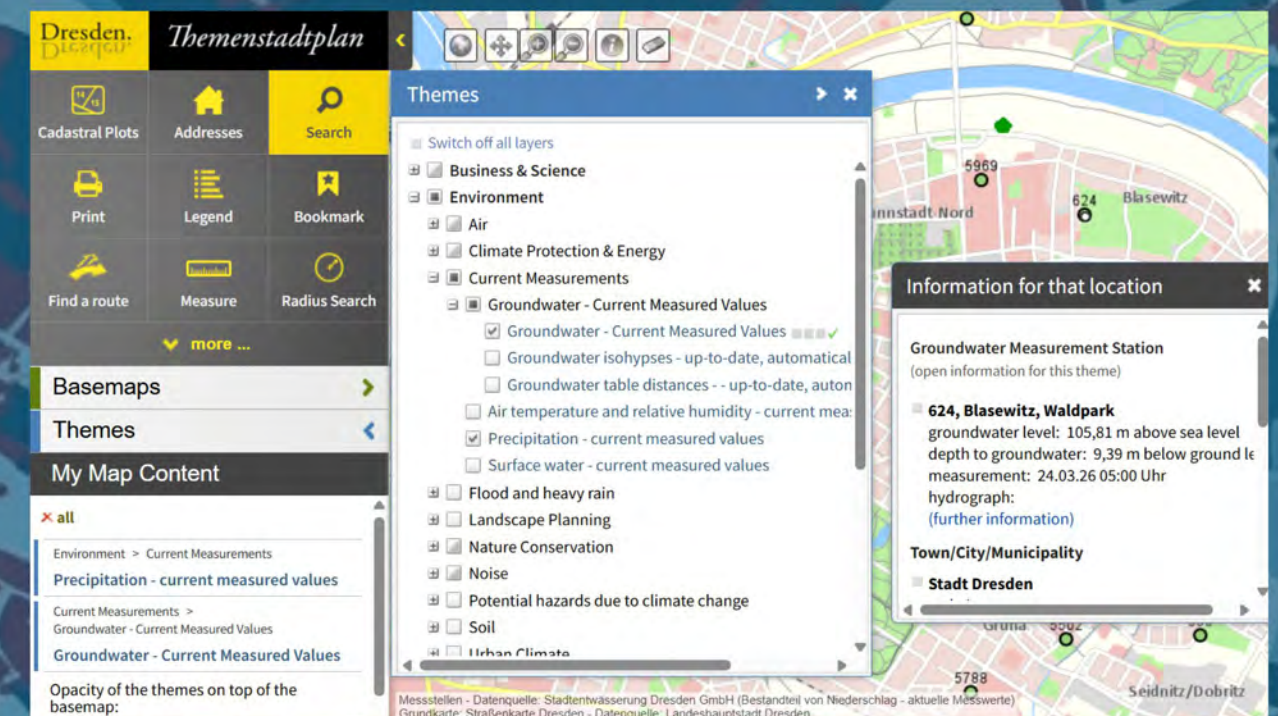
Flood Protection:

- **Retention and Runoff:** Improving how water flows and is stored by creating space for the river and enhancing natural retention areas.
- **Technical Protection:** Building flood protection systems such as levees, walls, and mobile barriers to protect vulnerable areas.

Flood Management:

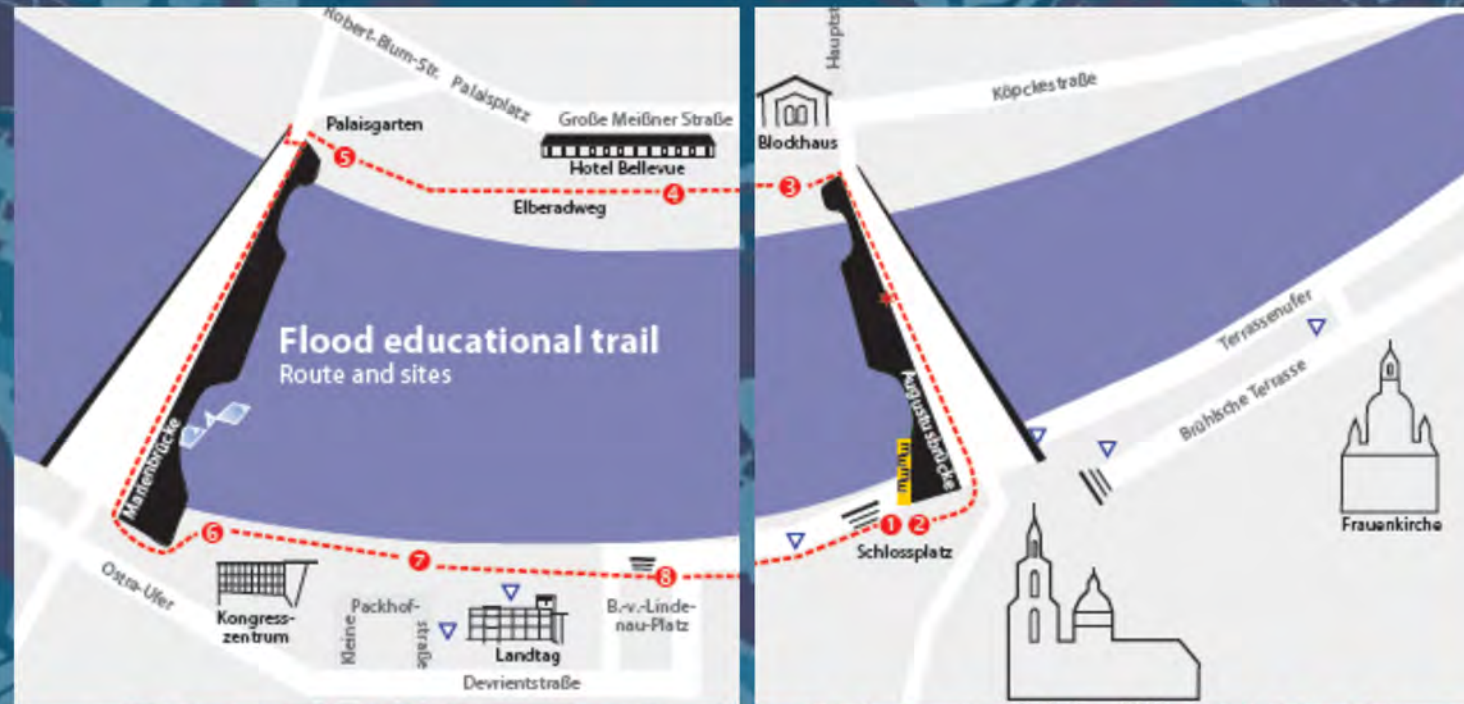
- **Monitoring and Forecasting:** Tracking water levels, weather conditions, and groundwater, including cooperation with upstream regions.
- **Emergency Management:** Preparing response actions such as evacuations, sandbag placement, and coordination with emergency services of the municipal Fire Service and Civil Emergencies Office.
- **Regional and Transboundary Cooperation:** Cooperation with Czech institutions, case of upcoming flood of Elbe River, exchange of knowledge on flood prevention and management of water resources (implementation of EU directives).

Monitoring of weather conditions and all water bodies including groundwater



More than 60 automatic gauging stations for groundwater levels provide data available on the internet to strengthen the individual prevention
City of Dresden. Thematic City Map (Themenstadtplan Dresden). Accessed March 24, 2026.
(<https://stadtplan.dresden.de/>)

THE DRESDEN FLOOD TRAIL (2008)



Dresden flood trail with 8 stations established in 2008, Saxon Flood Centre and the City of Dresden. (City of Dresden & LFZ Dresden 2019)

The Dresden flood trail guides visitors through key locations along the Elbe, where each stop reveals a different aspect of how the city understands and lives with floods.

The flood trail unfolds across eight stations, each revealing a layer of the river's story, from understanding how the river behaves and how floods develop, to living with the river and adapting to flood risks. It highlights the role of floodplains in making space for water, along with measures to reduce and manage flood risks.

The trail also raises awareness of where risks emerge, explores the role of the Weißeritz River as a critical tributary, and concludes with high-water marks that serve as lasting reminders of past floods.

Walking along the flood trail, the city tells its story, showing that living with water is not about avoiding risk, but about recognizing it, preparing for it, and accepting uncertainty as part of urban life.

Dresden's journey with the Elbe reminds us that resilience is not built by resisting water, but by learning to live with it, an insight that connects rivers across Europe, from the Elbe to the Seine.

References:

Hochwasserlehrpfad Dresden, Learning from the Flood – Educational Trail Dresden. Accessed March 18, 2026.
<https://hochwasserlehrpfad-dresden.de/>

Landscape Research Centre Dresden, and City of Dresden. Dresden Flood Trail – Learning from the Flood.
Dresden: Environmental Office of the City of Dresden, 2019.

The days we went through in August 2002, is the memory fading?



The sculpture "Die Woge", inspired by Hokusai's famous wave, located on Dresden's Augustus Bridge, is a memorial to the 2002 Elbe flood.

"After the flood is before the flood"

An aerial photograph of Ljubljana, Slovenia, with a red line tracing the path of the Ljubljanica River through the city. The river starts in the top left, flows through the center, and ends in the bottom left. The city's layout, including buildings and parks, is visible in shades of blue and green.

LJUBLJANICA

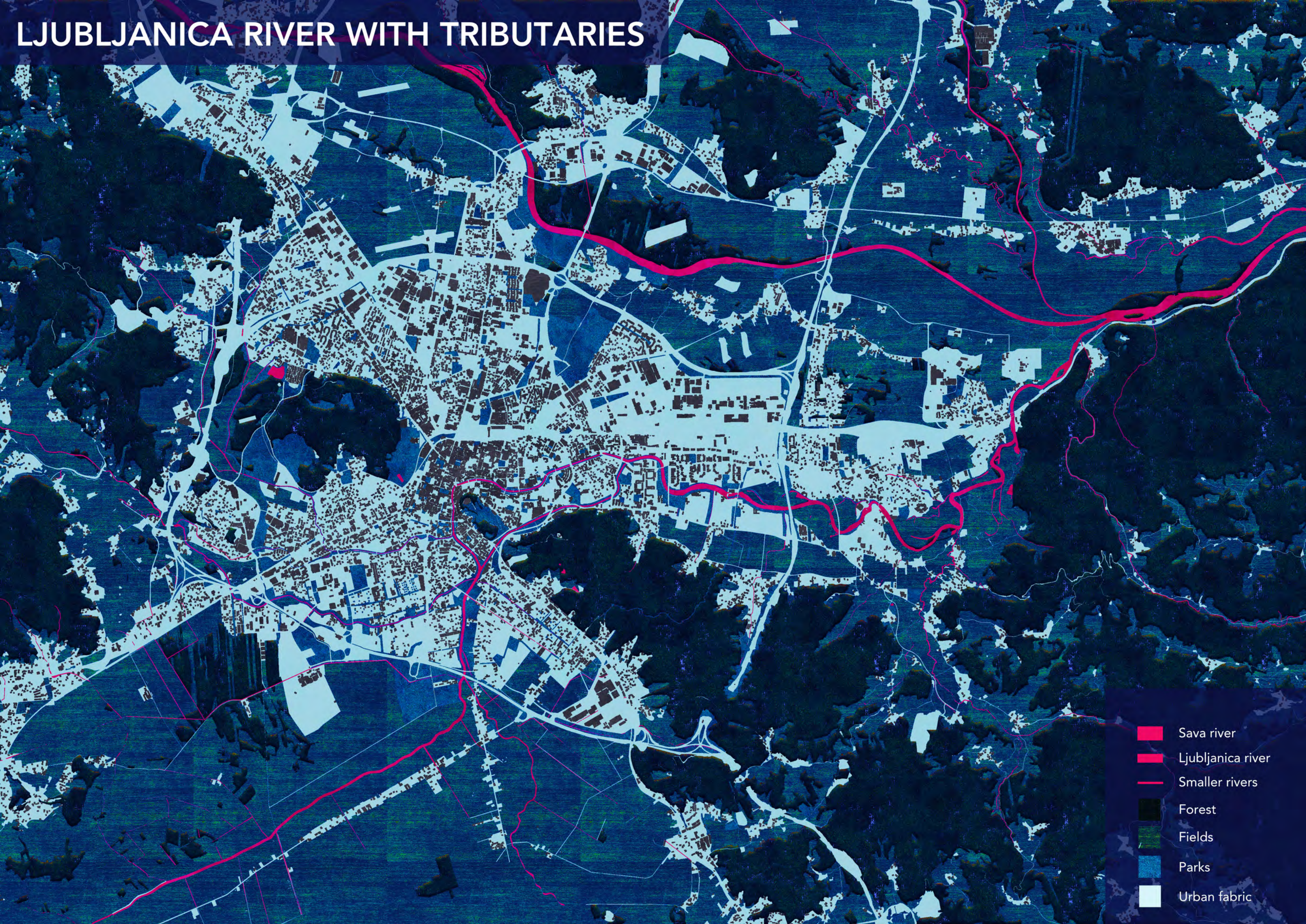
THE RIVER OF SEVEN NAMES

AUTHOR: Gaja Frece
EUTOPIA 2026

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LJUBLJANICA RIVER WITH TRIBUTARIES



- Sava river
- Ljubljanica river
- Smaller rivers
- Forest
- Fields
- Parks
- Urban fabric

LJUBLJANICA THROUGHOUT HISTORY

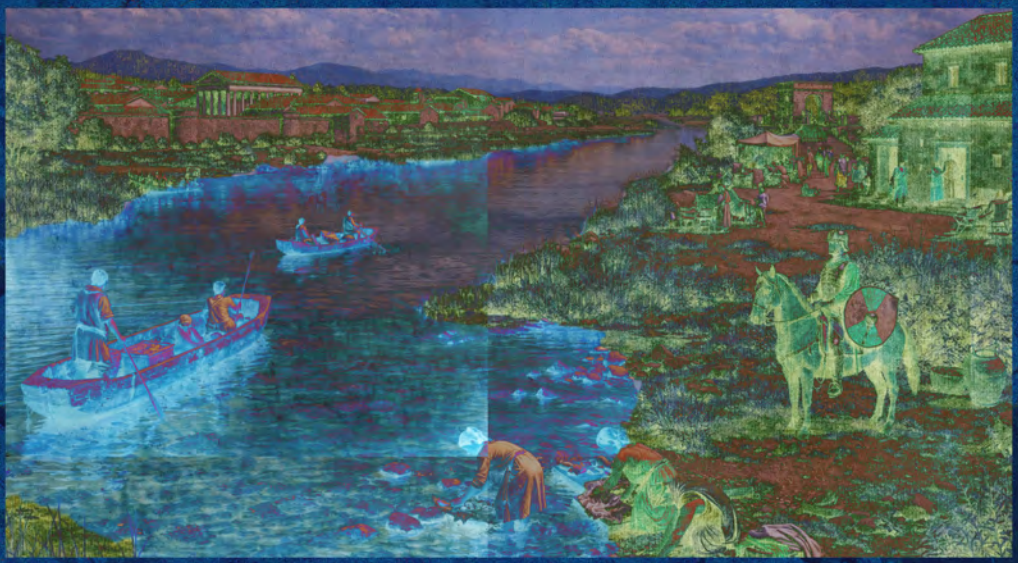
4000 BCE



KOLIŠČARJI

First inhabitants lived in stilt houses, wooden settlements built on poles driven into the bottom of the Ljubljana swamp. They used boats made of hollowed out of tree trunks, called drevaki, and they subsisted on hunting, fishing, animal husbandry, and primitive agriculture. Ljubljana provided all of those necessities in abundance.

100 BCE



ROMAN EMONA

Emona a strategic outpost that played an important role in many wars was, among other things, an important center with a flourishing trade path on the Ljubljana river. The city also had its own deity, the goddess of water Equrna, who was worshipped in the Marshes. Ljubljana was an important water source as well as the place of fishing, hunting and trade.

1300 CE



LAIBACH

In the middle ages Ljubljana flourished as merchants and artisans filled the city. Ljubljana was the main trade route, the source of fresh water and fish.

LIFE
HUNTING
WATER
TRANSPORT
FISH
HABITAT
FOOD

LJUBLJANICA THROUGHOUT HISTORY

1700 CE



LAIBACH

A port is built in Ljubljana as Ljubljana is the main route for all goods coming into the city. Ljubljana is still the main fresh water source but its level of pollution is gradually growing. Due to this its fish become viewed 2nd tier food, suitable only for the poor, this is the beginning of Ljubljana as a purely commercial river.

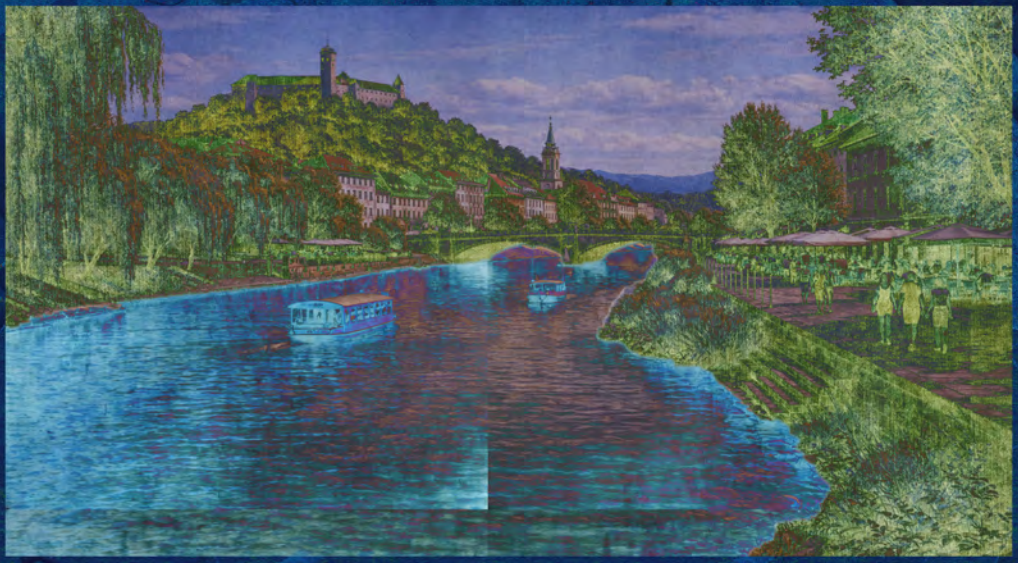
1800 CE



LJUBLJANA

After the earthquake Ljubljana and Ljubljana get a new image. The transport route moves on land, the street level of Ljubljana is lifted above the river, breaking the contact with its inhabitants it once had. Locks are built, effecting the flora and fauna around the river. Ljubljana begins losing its commercial importance but remains an important spatial node.

1900 CE

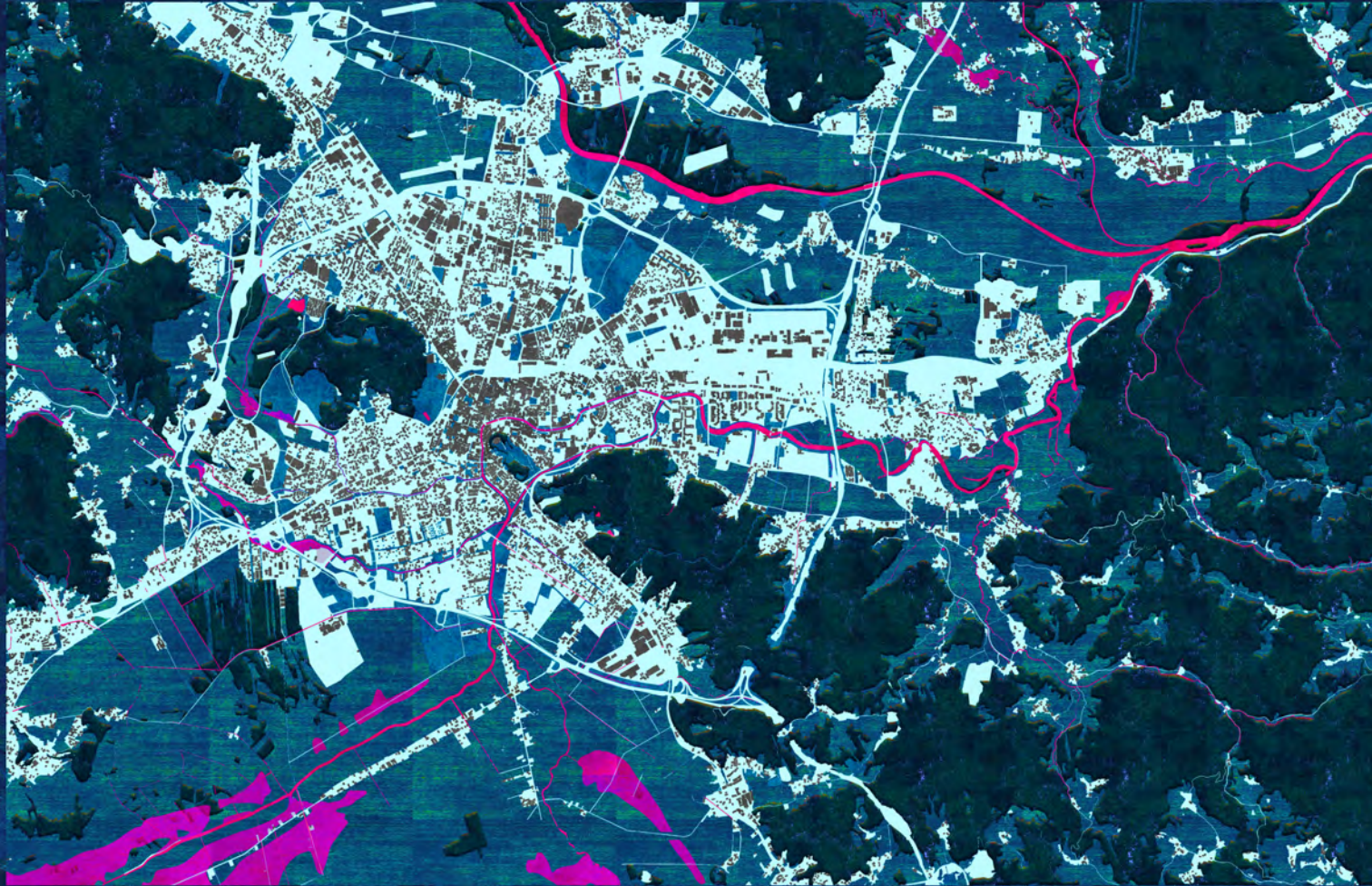


LJUBLJANA

Ljubljana is a popular tourist destination as well as an important educational hub. Ljubljana is now an important node where busy city life slows down, it is a place of contemplation, rest and community.

WATER TRANSPORT ATTRACTION

THE FLOODPLANE



Common flooding



Rare flooding

The Ljubljana River plays a central role in Ljubljana's flood risk, particularly during periods of heavy rainfall or rapid snowmelt. Ecological factors such as reduced wetlands, altered riverbanks, and the loss of natural floodplains limit the river's ability to absorb excess water, increasing the likelihood of flooding. The southern parts of the city, where tributaries like the Gradaščica and Glinščica converge with the Ljubljana, are especially vulnerable, as the water from these streams flows rapidly into the main river channel. The eastern areas along the river also face heightened risk, as urbanization and impermeable surfaces prevent natural infiltration and slow drainage. In the northern and western sections, narrow or regulated river channels, combined with dense infrastructure, can cause localized overflows. Climate change is intensifying these risks, bringing more frequent and severe storms, unpredictable rainfall patterns, and faster snowmelt in the surrounding hills, all of which increase peak river flows and pressure on urban flood defenses. Maintaining and restoring natural habitats along the Ljubljana, such as wetlands and riparian zones, is essential for mitigating floods and preserving the ecological balance that helps regulate water flow through the city.

FLOODS
WATER
POLLUTION
CLIMATE CHANGE
IMBALANCE

TWO FACES OF LJUBLJANA MARSHES



LJUBLJANA MARSHES- a natural habitat

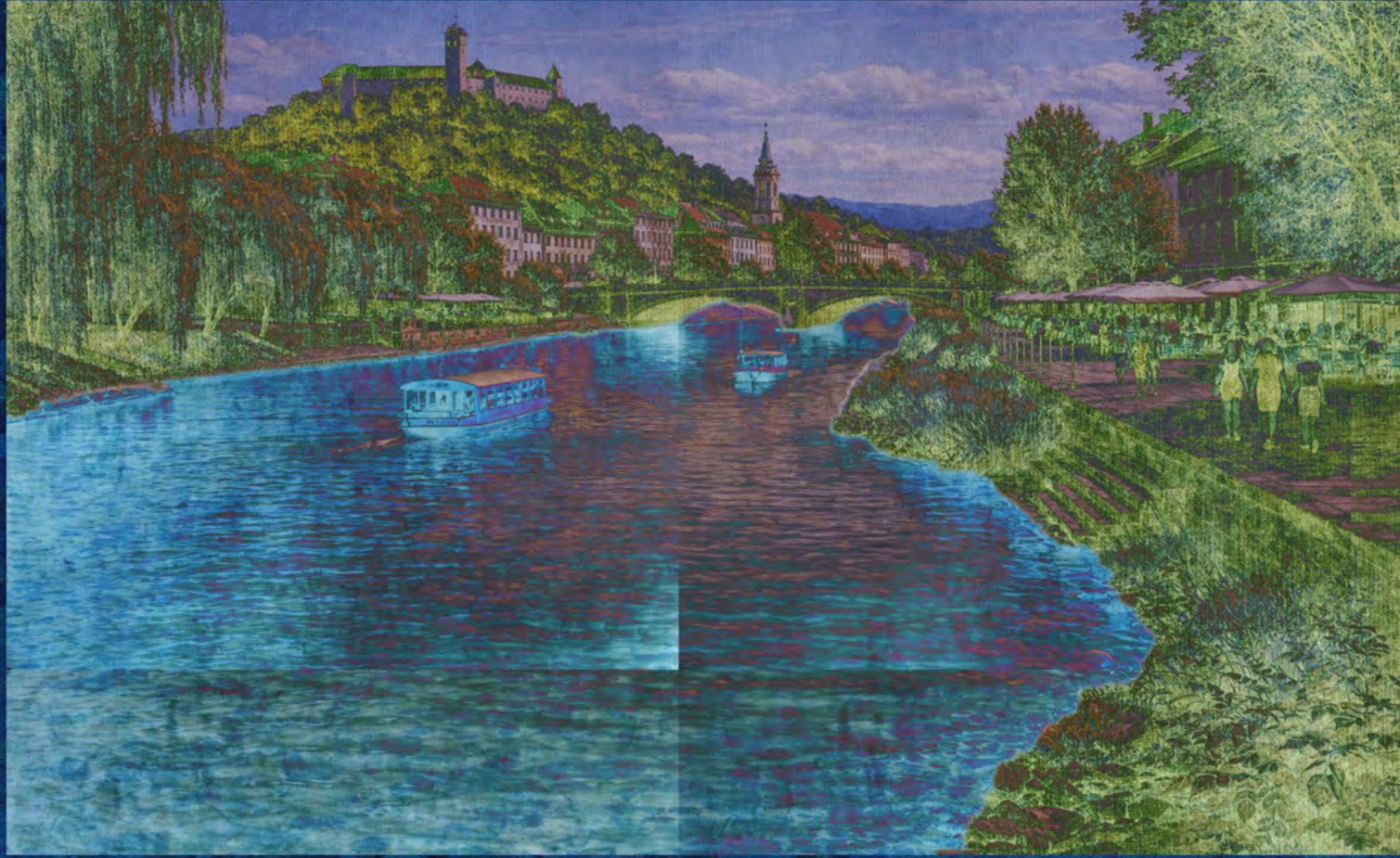


LJUBLJANA MARSHES- human influence

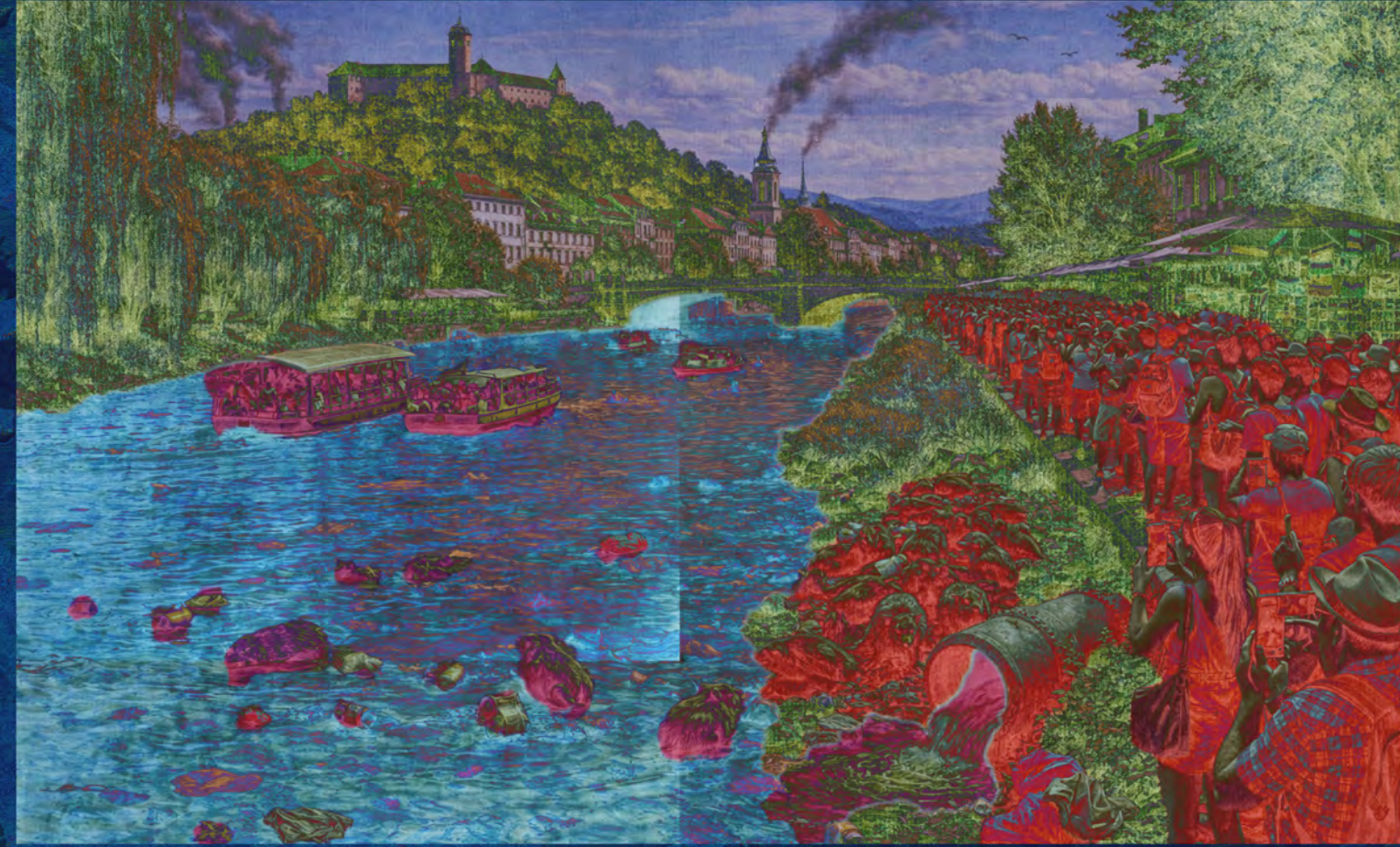
The Ljubljana Marshes are one of Slovenia's most important wetland ecosystems, covering a vast area of rivers, ponds, and peatlands. This unique habitat supports a remarkable diversity of wildlife, providing nesting and feeding grounds for numerous bird species such as storks and herons, shelter for amphibians and fish, and rich flora including rare wetland plants. Beyond its ecological value, the marshes play a crucial role in regulating water levels, filtering pollutants, and acting as a natural buffer that mitigates flood risks in surrounding areas.

Despite their importance, the Ljubljana Marshes face significant environmental challenges. Human activities such as drainage, peat extraction, urban development, and intensive agriculture have reduced their size and altered natural hydrology. Pollution from rivers and surrounding settlements, the introduction of invasive species like coypu, and the pressures of tourism further threaten the delicate balance of this ecosystem. Conserving the marshes is therefore essential, not only to protect the rich biodiversity they sustain but also to maintain the natural processes that benefit the wider landscape and human communities.

TWO FACES OF LJUBLJANA



Ljubljana in light



Ljubljana in shadow

The Ljubljanica River remains a defining feature of modern Ljubljana, shaping the city's urban life, culture, and recreational opportunities. Flowing through the city center, it provides scenic promenades, waterfront cafés, and spaces for boat tours, festivals, and social gatherings, drawing both residents and a growing number of tourists. While tourism boosts the local economy and connects people with the river, the heavy flow of boats, crowds along riverbanks, and increased litter contribute to ecological stress. Urban runoff from streets, roads, and industrial areas carries pollutants such as oils, heavy metals, and nutrients that affect water quality and aquatic organisms. Combined sewage overflows during heavy rainfall can further increase nutrient loads, triggering algal blooms that reduce oxygen levels and threaten fish populations. Riverbank modifications, embankments, and sluice gates have altered natural habitats, impacting wetland birds, amphibians, and native plants. Invasive species such as coypu, signal crayfish, and non native plants have established themselves along the river, eroding banks and competing with native wildlife. Despite these challenges, conservation efforts by the city and environmental organizations including habitat restoration, riverbank protection, water quality monitoring, and management of invasive species aim to mitigate human impacts and preserve biodiversity. The Ljubljanica today illustrates the delicate balance between urban development, tourism, and ecological integrity, highlighting the ongoing responsibility of maintaining the river as both a vibrant cultural landmark and a healthy, living ecosystem.

TOURISM
INVASIVE SPECIES
POLLUTION
HABITAT LOSS



LIVING WITH THE SABARMATI

THE ENGINEERED RIVER

AUTHOR: Aashmi Haria
EUTOPIA 2026

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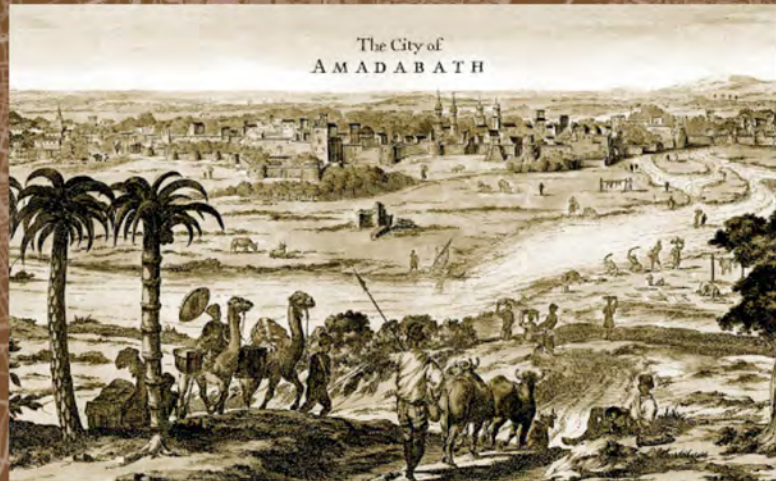
A BRIEF HISTORY

1407



The Gujarat Sultanate was established in 1407, after which the foundation for a new capital was laid on the eastern bank of the Sabarmati river. Over the years, the city flourished across both banks of the river.

1855



Gujarat Sultanate ruled the city until 1573, followed by the Mughals until 1753. After that, the Marathas ruled the city until the British took control of it in 1817.

1930



Sabarmati Ashram was established along the banks of the river in 1917, linking it to the wider cultural and geographic identity of the city. Over time, the river has come to symbolize reflection, discipline and aspiration for a self-sufficient society.

The Sabarmati River has been the quiet spine of Ahmedabad since the city's founding in 1411, when its eastern bank offered a natural defensive edge, fertile land, and a steady access to water.

Over centuries, this monsoon-fed river shaped the way the city grew, first as a compact fortified settlement, then as a textile-industrial hub spreading outward from its banks.

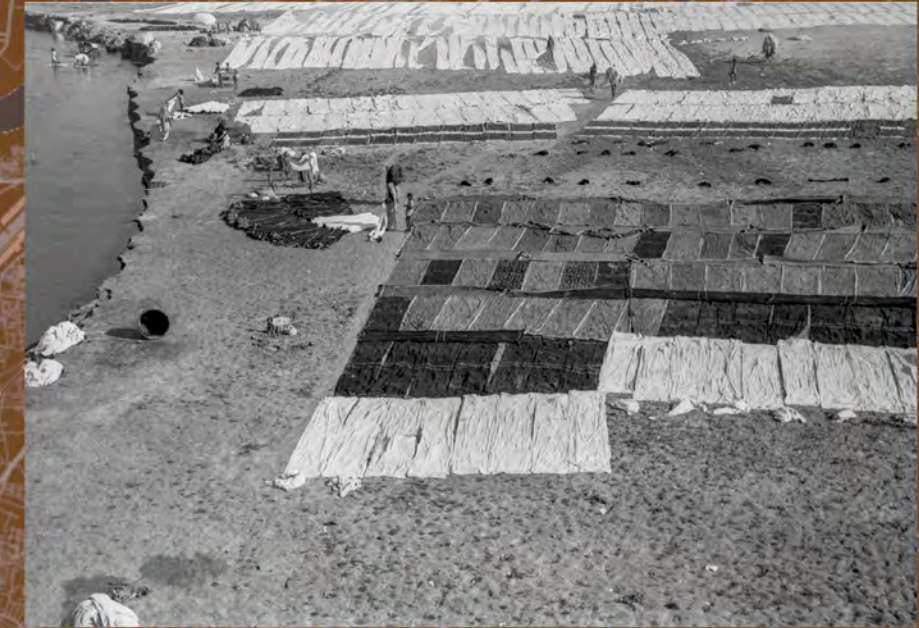
TEXTILE BOOM



Treating and washing printed textiles in the Sabarmati river, 1995



Local Artisans treating hand painted clothes in the river, Circa 1960



Dry riverbed of Sabarmati used for drying clothes, Circa 1970

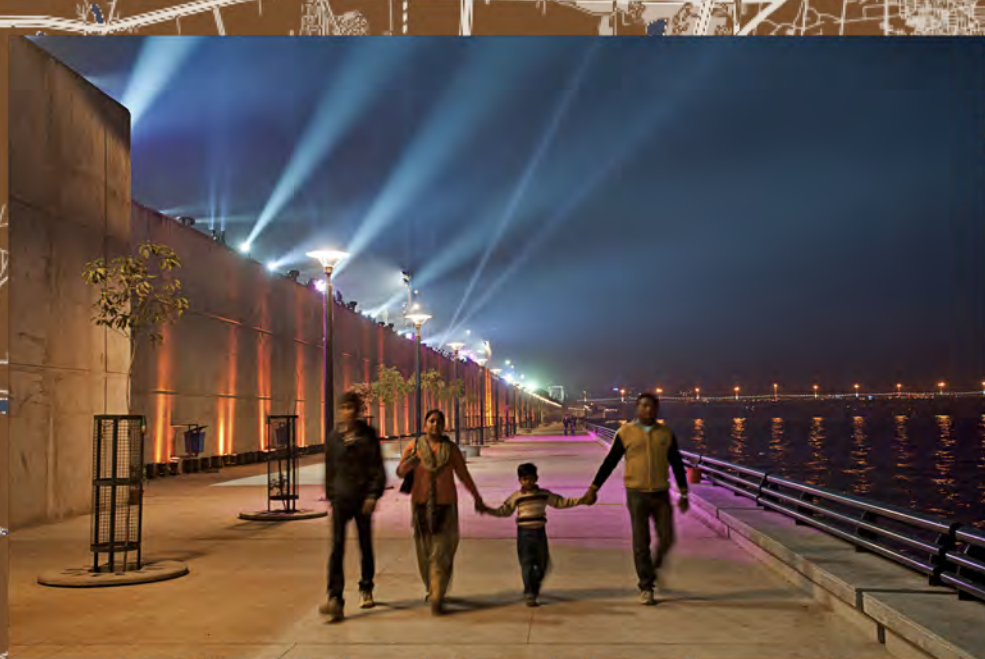


Women washing clothes along the banks of the Sabarmati, Circa 1903

Ahmedabad's rise as the "Manchester of the East" repositioned the Sabarmati as an industrial resource. Mills extracted water for processing and discharged waste back into the river. While the city expanded rapidly, the architecture of production—mill compounds, chimneys, worker housing—developed near the river but rarely towards it. The river edge shifted from being a public cultural space to a back-of-house industrial corridor. The river's seasonality produced a particular kind of architecture and public life: informal ghats, shifting edges, and a rhythm of civic routines built around monsoon flow and summer retreat.

This phase altered both the city's and river's identities. The river became utilitarian: a carrier of waste, a boundary for factories, a backdrop to infrastructural expansion. At the same time, informal settlements grew along the riverbanks, making the edge an urban hybrid of labour, livelihood, and vulnerability. The textile boom amplified the spatial disconnect between river and public life, setting the stage for later interventions to "reclaim" the river as a civic front.

THE RIVERFRONT PROJECT



With the establishment of the Sabarmati Riverfront Development Corporation (SRFDCL) in 1997, the city attempted to turn back toward the river. Beginning in 2005, the Sabarmati was channelled into a constant width (~263 m), stabilised with diaphragm walls, and supported by interceptor sewers to divert sewage from 38 outfalls into treatment plants. Over 200 hectares of riverbed land were reclaimed.

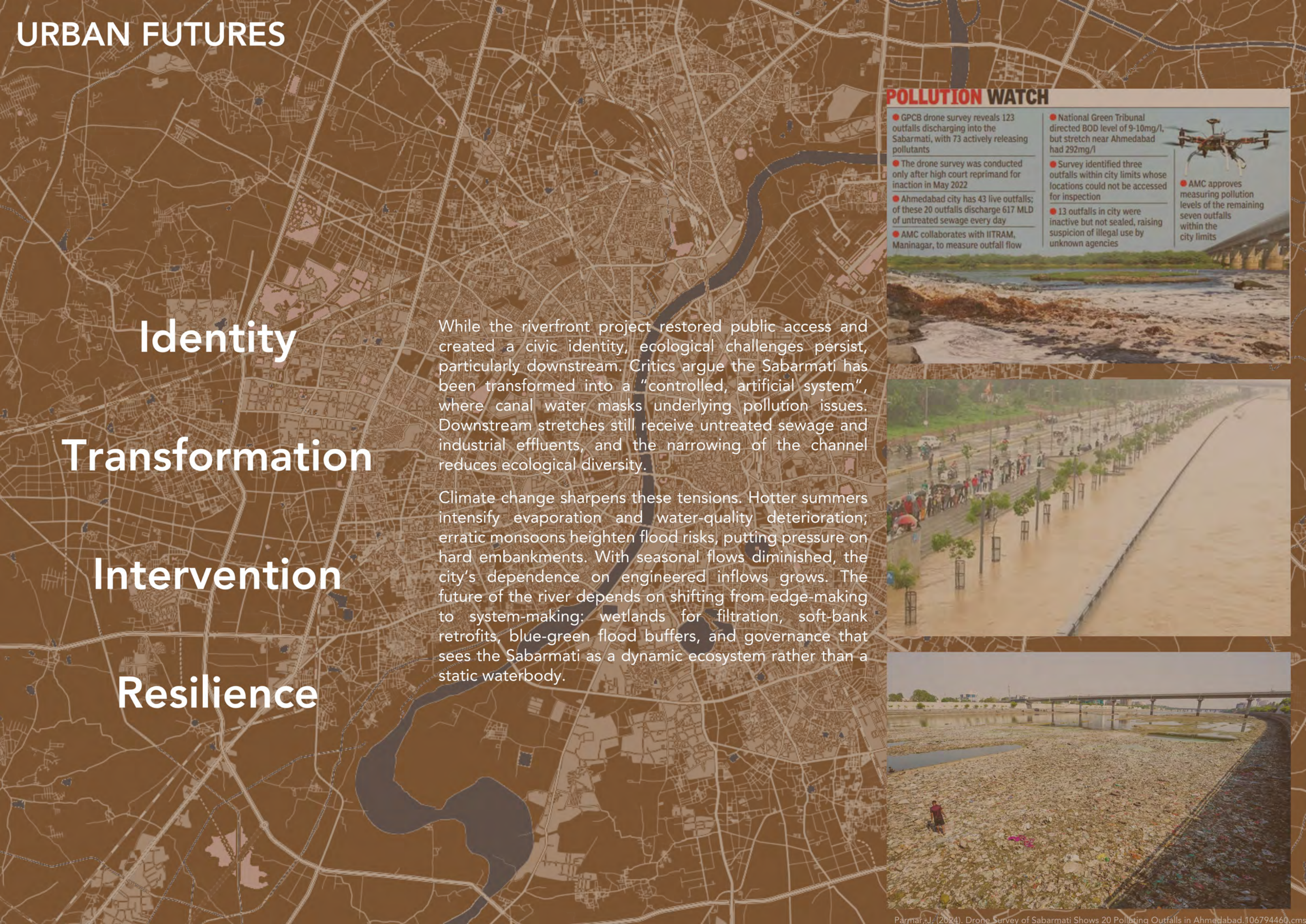
The most defining move was architectural: a two-level promenade system stretching 11.25 km, where the lower level hugs the waterline and the upper level becomes a civic terrace holding parks, markets, cultural venues and event spaces. This intervention effectively reframed the river as a designed urban object—an infrastructural spine and leisure landscape. But it also changed the river's ecology. To create a perennial water surface, the Sabarmati now relies heavily on Narmada Canal inflows retained by the Vasna Barrage. In other words, the city reshaped the river into something consistent, controlled, and always present.

Identity

Transformation

Intervention

Resilience



Identity

Transformation

Intervention

Resilience

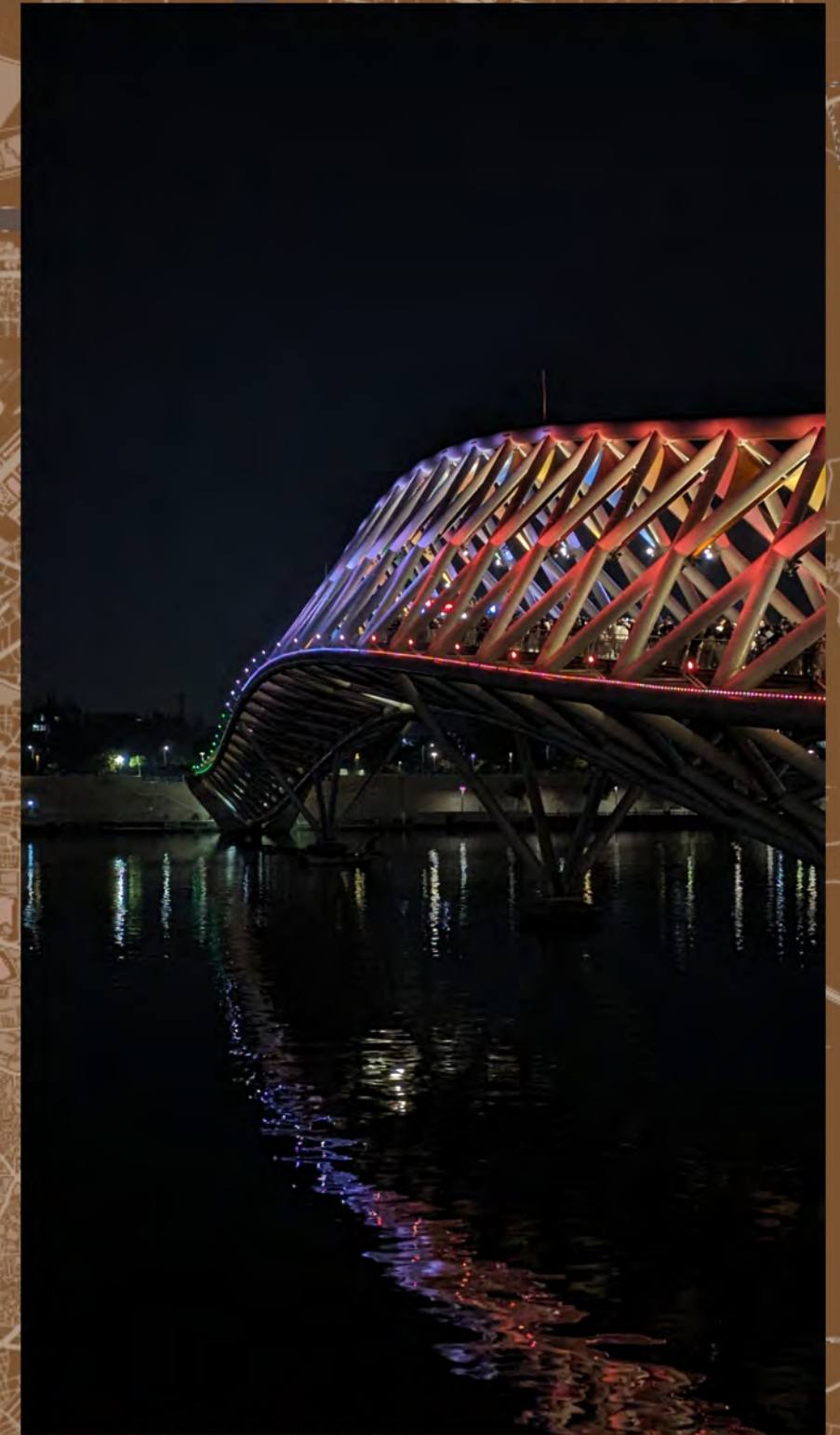
While the riverfront project restored public access and created a civic identity, ecological challenges persist, particularly downstream. Critics argue the Sabarmati has been transformed into a “controlled, artificial system”, where canal water masks underlying pollution issues. Downstream stretches still receive untreated sewage and industrial effluents, and the narrowing of the channel reduces ecological diversity.

Climate change sharpens these tensions. Hotter summers intensify evaporation and water-quality deterioration; erratic monsoons heighten flood risks, putting pressure on hard embankments. With seasonal flows diminished, the city’s dependence on engineered inflows grows. The future of the river depends on shifting from edge-making to system-making: wetlands for filtration, soft-bank retrofits, blue-green flood buffers, and governance that sees the Sabarmati as a dynamic ecosystem rather than a static waterbody.

POLLUTION WATCH

- GPCB drone survey reveals 123 outfalls discharging into the Sabarmati, with 73 actively releasing pollutants
- The drone survey was conducted only after high court reprimand for inaction in May 2022
- Ahmedabad city has 43 live outfalls; of these 20 outfalls discharge 617 MLD of untreated sewage every day
- AMC collaborates with IITRAM, Maninagar, to measure outfall flow
- National Green Tribunal directed BOD level of 9-10mg/l, but stretch near Ahmedabad had 292mg/l
- Survey identified three outfalls within city limits whose locations could not be accessed for inspection
- 13 outfalls in city were inactive but not sealed, raising suspicion of illegal use by unknown agencies
- AMC approves measuring pollution levels of the remaining seven outfalls within the city limits





The Sabarmati has been many things to Ahmedabad: a natural defence, a cultural anchor, an industrial backbone, a neglected channel, and now a designed civic promenade. Each era has reshaped how the city relates to the river—sometimes intimately, sometimes indifferently, now architecturally.

Today, the Sabarmati is both a restored public space and a highly engineered artefact, carrying the weight of future climate pressures and ecological responsibilities. Its story is not linear but dialogic: the river shaped Ahmedabad's identity for centuries, and in recent decades Ahmedabad has increasingly shaped the river's identity in return. What comes next depends on whether the river can evolve from a constructed spectacle into a resilient ecological system that holds memory, movement, and possibility for the city it has sustained.



LIVING WITH SHANNON

THE SALMON STORY

AUTHOR: Aarzoo Subedi
EUTOPIA 2026

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FACTS OF RIVER SHANNON

Geologists identify the river's source as the Shannon Pot, a small pool on the slopes of Cuilcagh Mountain in County Cavan. Water from the mountain percolates through limestone caves and resurfaces at this pool, which is approximately 16 metres wide and has been dived to a depth of 14.6 metres.

The Shannon is known as Ireland's 'Mother River'. It physically divides the island, separating the rugged west from the gentler east and south with fewer than 35 crossing points between the north and south.

At 360 kilometres (224 miles) in length, the Shannon is the longest river in Ireland and the British Isles. Its river basin drains approximately 16,900 square kilometres, which is roughly one-fifth of the total area of Ireland.

The river flows through three significant lakes along its course: Lough Allen, Lough Ree and Lough Derg.

The Shannon is a hub for boating, fishing and lakeside holidays. Anglers fish for salmon, trout, and pike, while houseboats and cruisers navigate the river's navigable stretches between Killaloe and Belleek.

John Gunn, "Source of the River Shannon, Ireland," *Environmental Geology* 27, no. 2 (1996): 110–112.

"River Shannon," *Encyclopædia Britannica*; Ordnance Survey of Ireland, *Rivers and Their Catchment Basins*.



River Shannon flowing into Lough Allen - John Flynn Facebook

TIMELINE OF RIVER SHANNON



Edward Gwynn, ed., *The Metrical Dindsenchas*, Todd Lecture Series, vol. 10 (Dublin: Hodges, Figgis & Co., 1913), 4:286–291.



Ruth Delany, *Ireland's Inland Waterways*, 2nd ed. (Belfast: Appletree Press, 1986), 45–62.



Michael O'Connell, 'The Shannon Hydroelectric Scheme: A Century of Ecological Impact,' *Journal of Irish Environmental History* 18

Dan Minchin, 'Zebra Mussels in the Shannon: Invasion and Impact,' *Biology and Environment: Proceedings of the Royal Irish Academy*



Tipperary County Council, 'Observations on the Water Supply Project: Eastern and Midlands Region' (submission to An Bord Pleanála, March 2025); Environmental Justice Network Ireland, 'Rights of Nature Campaign: The River Shannon'

1200s

The story of Sinann, granddaughter of the sea god Manannan mac Lir.

She travels to Connla's Well seeking wisdom, when she disturbs the sacred waters, they rise up and carry her out to sea, carving the River Shannon.

1800s

The river becomes the country's main transport route, carrying turf, butter, grain, and people between Limerick and Athlone towns.

Barges, flyboats and canal systems turn the Shannon into a vital artery for trade and communication.

1900s

Ardnacrusha power station generates electricity to most of Ireland.

Zebra mussels in Lough Derg, altering water chemistry and outcompeting native species.

The ecosystem in decline as biodiversity faces new pressures from introduced invaders.

Now

The Dublin pipeline threatens to extract 330 million litres of water daily from Lough Derg.

Warnings of algae blooms + salmon collapse + breaches of EU environmental directives.

Meanwhile, restoration projects and the Rights of Nature movement offer an alternative vision.

COLLAPSE OF SHANNON SALMON



Limerick City Citizens, Facebook - Will O'Connor

River Shannon was one of Europe's greatest salmon fisheries. The estimated annual salmon run was between 350,000 to 500,000 fish. In 1927 alone, 414,000lb of salmon were caught on the river,.

The Ardnacrusha dam in 1929 diverted approximately 90% of the river's flow away from the old river channel down a headrace canal to the power station. A mere flow of just 10 m³/s was left in the old river, a statutory requirement based on the Shannon Electricity Act 1925. The impact on salmon, trout, eels, lamprey and coarse fish was immediate and catastrophic.

The old river became too shallow for fish to migrate upstream and spawning beds became exposed to birds and frost. Migrating salmon instinctively swam toward fast water, leading them up the tailrace where they encountered a literal concrete wall at Ardnacrusha. Salmon and smolts coming downstream entered the headrace and were either trapped or mangled by the four turbines. Confused and exhausted, fish died in huge numbers.

Anthony Leddin, 'River Shannon at a Crossroads: €10 Billion Water Pipeline to Dublin or Salmon Restoration in Limerick?', Limerick Leader, February 19, 2026

Ecofact (@EcofactEcology), 'Ardnacrusha Hydroelectric Station Yesterday Evening,' X (formerly Twitter), November 20, 2025

Despite the establishment of the River Shannon Salmon Management Programme in 1990, the number of fish ascending the lift has fallen from 12,000 in 1964 to a minuscule 123 in 2024. Fishermen on the old river are now essentially non-existent.

The combination of low summer flows and poor water quality is devastating fish populations. Climate change is making it even harder for the remaining fish to survive, with warming waters and altered flow patterns adding pressure to an already collapsed population.

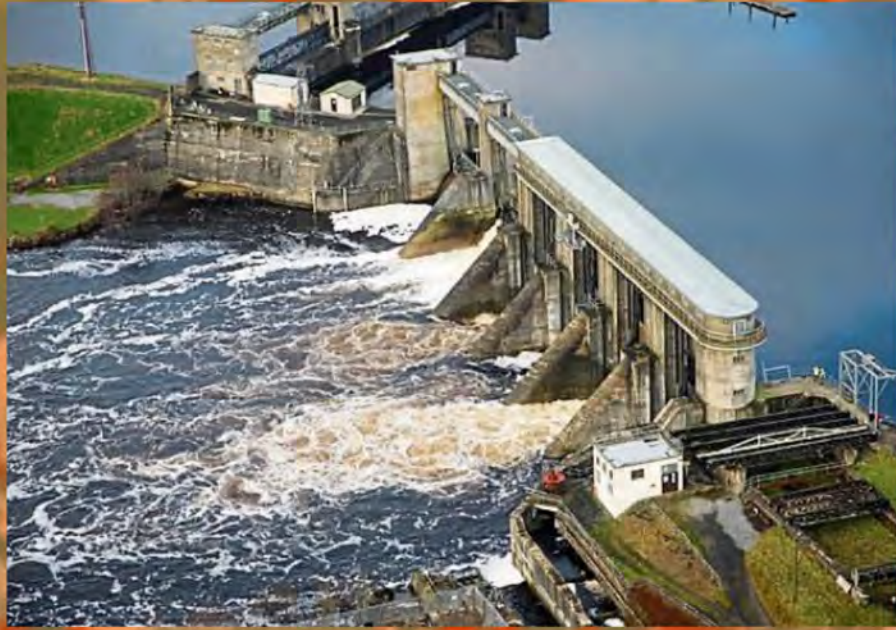
Patsy Peril, an 80-year-old netsman from the Limerick fishing community, has dedicated his life to saving the Shannon's wild salmon. He warns that 'Time is rapidly running out. If we continue along our current path, it will not be long before it is gone, and with it, a profound link between us, the natural environment around us and our most remote human ancestors.'

Patsy Peril and Deirdre Nuttall, *Swimming Upstream: One Man's Fight to Save the Atlantic Wild Salmon* (Dublin: O'Brien Press, 2024), quoted in *Ireland on the Fly: Patsy Peril – A Limerick Netsman's Fight to Save the Salmon*



Limerick City Citizens, Facebook - Will O'Connor

FIGHT TO RESTORE THE SHANNON SALMON



River Shannon at a crossroads - Limerick Leader

Advocates call for sustainable water management that prioritises ecology alongside power and water supply:

- The closure of the counter-productive hatchery.
- Increasing compensation flow down the old river to restore habitat. This would restore the famous salmon pools at Castleconnell, recreate the diverse riverbanks and allow salmon to migrate and spawn naturally again.
- Modern fish guidance systems to divert fish away from turbines.
- Full Appropriate Assessment of all operations.

Between 2009 and 2014, the €1.75 million MulkearLIFE project demonstrated successful restoration techniques in the Mulkear catchment, part of the Lower Shannon Special Area of Conservation. It focused on the conservation and enhancement of habitat for Atlantic salmon, sea lamprey and European otter.

Sea lamprey redds increased from 85 in 2012 to 296 in 2014. Juvenile salmon were found colonising newly created habitats. The project engaged over 1,700 schoolchildren through classroom engagements and river-based field trips, building community awareness for conservation.

Local angling groups and scientists continue to actively monitor fish populations. Their data is being used to formally object to projects like the proposed Dublin pipeline, providing the evidence needed to fight for the river's protection.

What is needed now is a formal SAC management plan that balances electricity

MulkearLife Project

Increased Biodiversity
Increase River Flow
Ecological Projects
Sustainability

The background is a dark, textured map of a city. A bright cyan river flows from the top right towards the bottom left. A small, rectangular cyan building is located in the center of the map, near the river. The map shows a grid of streets and various green spaces.

Living With Somesul Mic

Between Attraction and
Pollution

AUTHOR: Md Naimur Rahman
EUTOPIA 2026

les Ateliers
maîtrise d'œuvre urbaine

How the River Shaped the City And History



Collected from the Government website

The river has also shaped the spatial development of the city. Urban growth has historically followed its course, with infrastructure, housing, and public spaces developing along its banks. As a result, the river is not only a natural feature but also a structural element that organizes the city's layout and connects different urban areas.

This study explores how the Someșul Mic has influenced the city both historically and spatially, focusing on its role in shaping urban form and human interaction. It also considers how the river continues to impact the city today and how its connection to wider river systems highlights its importance beyond the local scale.

Sources; Cluj AM. (2023). *Amenajarea râului Someșul Mic în municipiul Cluj-Napoca*

<https://cluj-am.ro/2023/06/13/amenajarea-raului-somesul-mic-in-municipiul-cluj-napoca-judetul-cluj/>

The Someșul Mic River flows through Cluj-Napoca and has played a fundamental role in shaping the city's physical structure, historical development, and human activity over time. The river originates in the Apuseni Mountains and is formed by the confluence of the Someșul Cald and Someșul Rece near Gilău. From this point, it continues through the city before joining the larger Someș River system, which ultimately connects to the Tisza and then the Danube, linking it indirectly to one of Europe's major river networks.

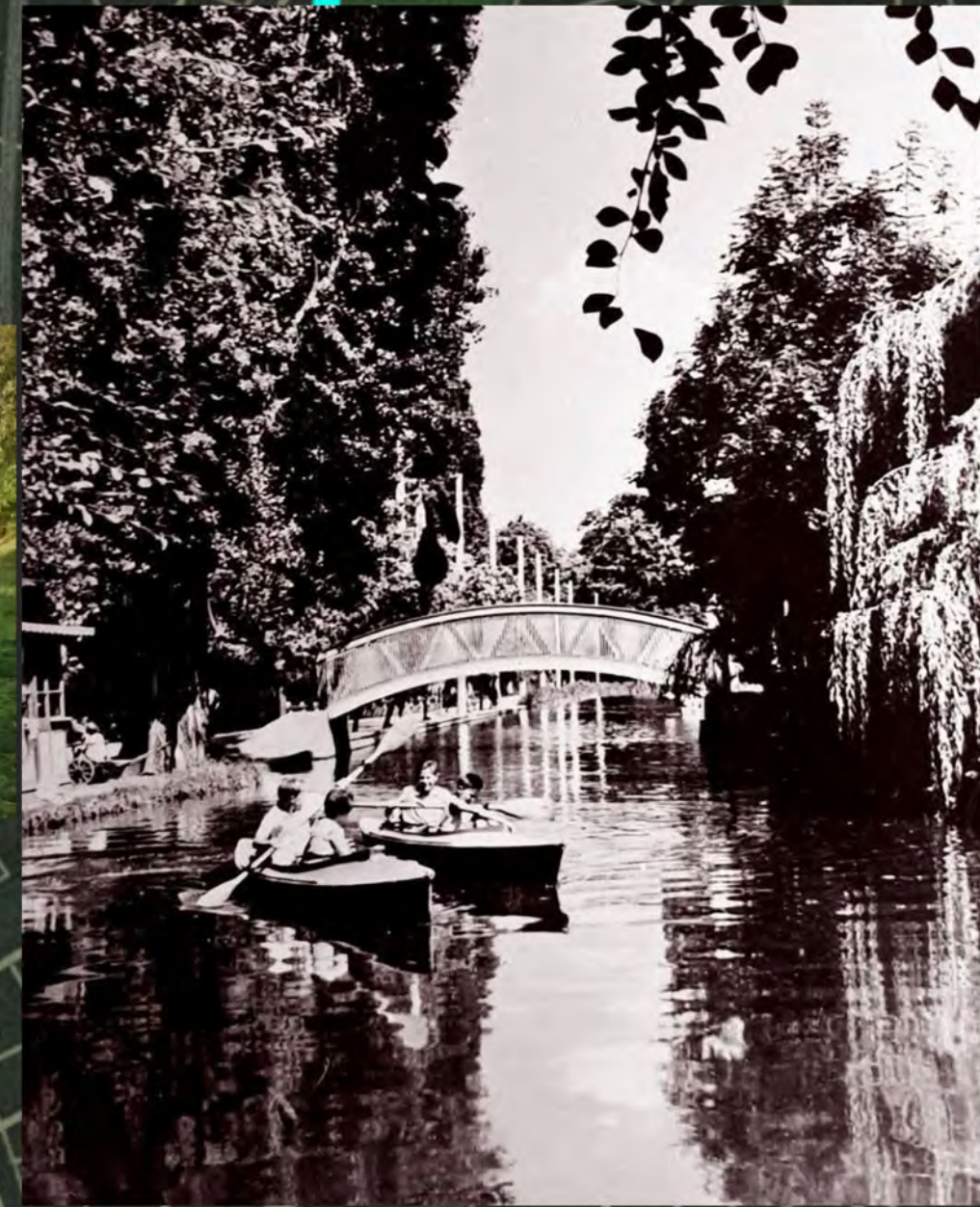
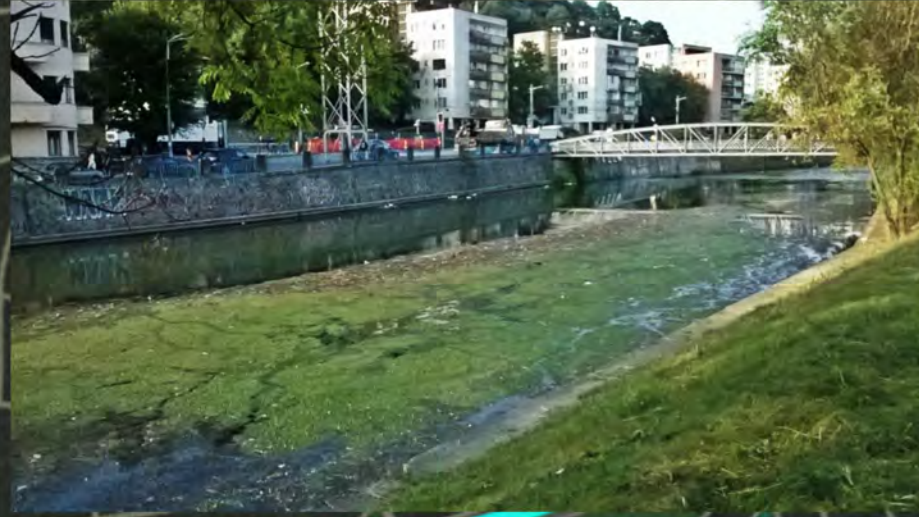


Collected from the Government website

The River in the Past: Foundation and Development



Collected from the Government website



Collected from the Government website

Historically, the Someșul Mic has been central to the development of Cluj-Napoca, with evidence of settlements in the area dating back to the Roman period, when the city was known as Napoca (2nd century AD). The river provided essential resources such as fresh water, fertile floodplain soils, and a natural corridor through the region.

During the medieval period (approximately 12th–15th centuries), the river continued to support agriculture and local trade. While it was not a major navigable river like those used for large-scale transport in Western Europe, it played a key role in sustaining local economies and communities. The presence of the river influenced the spatial growth of the city, with urban expansion occurring along its banks. As a result, the Someșul Mic acted as both a resource and a structural element shaping the early urban landscape of Cluj-Napoca.

Radio România Internațional. (2021). Amenajarea malurilor râului Someșul Mic din Cluj-Napoca

Transformation of the River: From Natural System to Urban Infrastructure



Collected from Ucluj page



Taken by the author

From the 19th century onwards, particularly during the Austro-Hungarian period, urban expansion and industrialization led to significant changes in the river's structure. To reduce flood risks and support development, sections of the river were regulated through channelization and the construction of embankments.

in the 20th century, especially during the communist period (1947–1989), further engineering works transformed the river into a more controlled system, with concrete banks and modified channels becoming common. While these interventions improved flood control and enabled urban growth, they also reduced the natural dynamics of the river. Natural processes such as sediment transport, seasonal flooding, and habitat diversity were limited, leading to a decline in ecological quality.

Sources; <https://www.ri.ro/euranetplus/local-regional-european/amenajarea-complexa-a-malurilor-raului-somesul-mic-din-mun-cluj-napoca-id375696.html>

The River in the Present: Social and Urban Function



Taken by me



Collected from Ucluj page



Taken by me



Collected from online

The Someșul Mic serves primarily as a social and recreational space within Cluj-Napoca, reflecting a shift in how the river is valued within the urban environment. Rather than being used for economic or industrial purposes, it has become an important public space that supports everyday life in the city. Recent urban redevelopment projects, particularly after 2010, have focused on improving accessibility and integrating the river more effectively into public life. This includes the development of pedestrian pathways, cycling routes, and open spaces along the riverbanks, making the area more attractive and easier to use for residents.

During field observation, it was evident that the riverbanks are actively used by a wide range of people. Individuals were seen walking, jogging, cycling, and spending time relaxing near the water. This demonstrates that the river functions as an important social space where people can escape the intensity of the urban environment.

The presence of the river also enhances the environmental quality of the city by providing open space, visual relief, and a connection to nature within a densely built-up area. As a result, the Someșul Mic contributes significantly to the well-being and quality of life of residents, reinforcing its role as a key feature of the urban landscape.

;Cluj AM. (2023). Amenajarea râului Someșul Mic în municipiul Cluj-Napoca

Human–River Interaction: A Relationship of Benefit and Pressure



Collected from the Government website.



Collected from online

Despite its positive role, the interaction between people and the river is not entirely sustainable. The river is widely used and appreciated as part of everyday urban life, yet this use is not always matched by responsible behavior.

During field observation, visible pollution was identified, including plastic waste and litter along the riverbanks and within the water. This suggests that while the river is valued as a public space, it is not consistently protected or respected by those who use it.

The presence of this waste indicates ongoing human impact, where everyday activities contribute to environmental degradation. It reflects a pattern in which the river is seen as a space for use rather than one that requires care and maintenance. This creates a relationship in which humans benefit from the river, but also place pressure on it through neglect and pollution.

Sources; <https://www.rri.ro/euranetplus/local-regional-european/amenajarea-complexa-a-malurilor-raului-somesul-mic-din-mun-cluj-napoca-id375696.html>



Taken by me

Between Attraction and Neglect



Field observation



Collected from online

A clear contradiction exists in how the river is treated. On one hand, it is developed as an attractive public space that enhances urban life. On the other hand, pollution and environmental degradation are still present. This contrast was clearly visible during fieldwork, where well-maintained recreational areas existed alongside polluted sections of the river.

This highlights a gap between environmental awareness and actual behavior, demonstrating the complexity of human interaction with urban natural systems.

Source; Encyclopaedia Britannica. (n.d.). *Someș River*

Environmental and Future Challenges



Collected from online

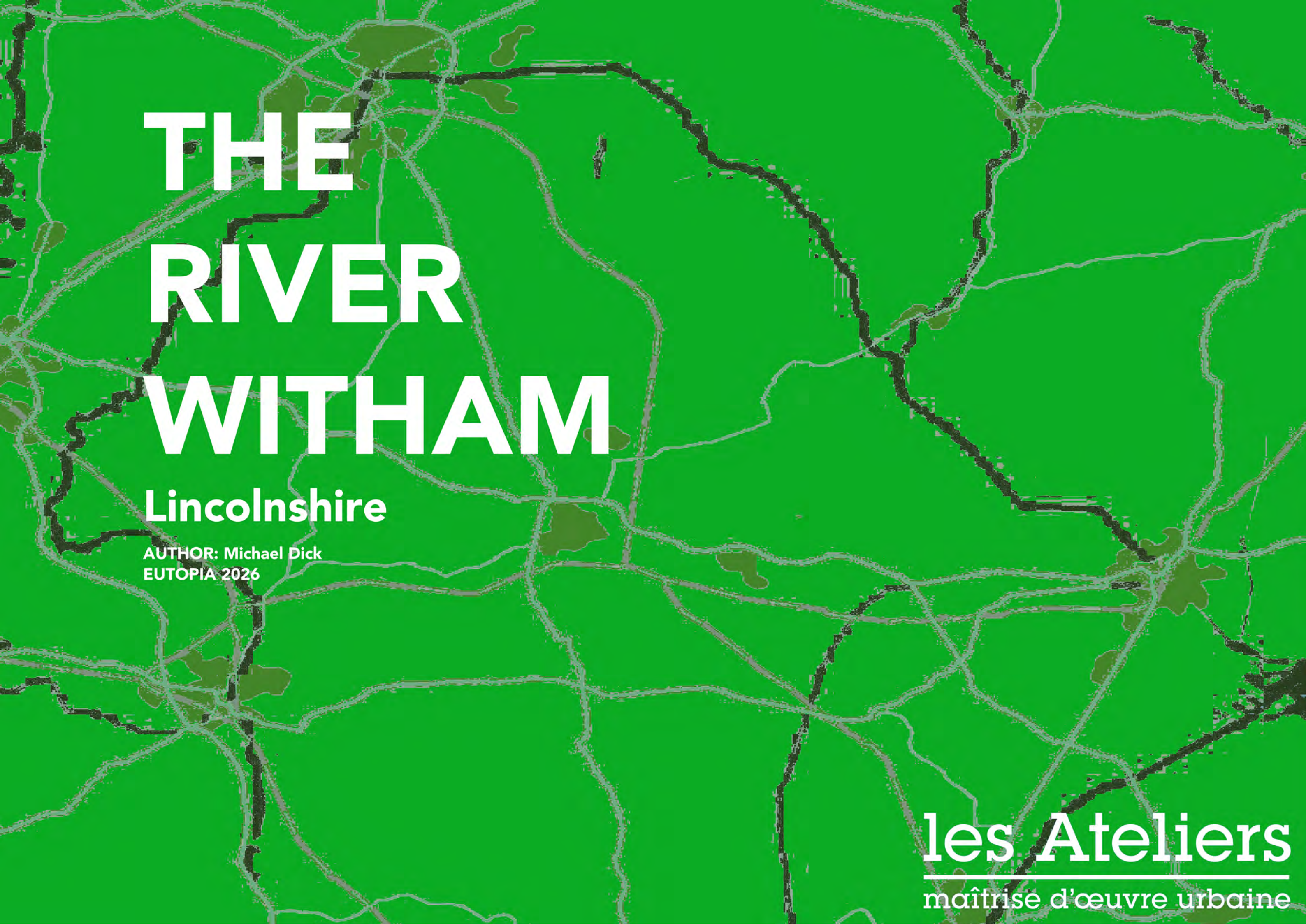


Taken by me

The Someșul Mic faces several environmental challenges. River regulation and urban development have reduced biodiversity by limiting natural habitats. Pollution from urban waste and surface runoff continues to affect water quality. In addition, climate change presents further risks. Increased rainfall may lead to higher flood risks, while prolonged dry periods may reduce water levels and concentrate pollutants.

Looking forward, the river will face increasing pressure from urban expansion, recreational use, and environmental demands. Climate change is expected to intensify these pressures, making river management more complex and increasing the conflict between human use and ecological needs.

Sources; <https://www.rri.ro/euranetplus/local-regional-european/amenajarea-complexa-a-malurilor-raului-somesul-mic-din-mun-cluj-napoca-id375696.html>



THE RIVER WITHAM

Lincolnshire

AUTHOR: Michael Dick
EUTOPIA 2026

les Ateliers

maîtrise d'œuvre urbaine

THE RIVER WITHAM IN THE PAST



Shuttleworth Company Building on the banks of the River Witham

Historically, the River Witham has formed part of the UK's interconnected transport network, allowing for trade with the wider UK. For this purpose, the river has been modified throughout the centuries, for example connected with the River Trent via the Fossdyke navigation and as such the wider UK river and canal network. Furthermore, to facilitate this, locks have been constructed along the course of the river (an example in the top right image).

The top left image shows a historic industrial building for Shuttleworth Company, positioned on the banks of the river for easy access facilitating the transport of raw materials and finished goods along the river.

However, the need for river transportation has declined as other forms of transport have arisen to supplant the historic river and canal network and as such sailing along the Witham is primarily Canal Boats and leisure.

Despite this decline, the River Witham has also historically served to irrigate the historic agricultural industry of Lincolnshire. This role has not declined through the passage of history.

Therefore, uses of the river historically have changed Lincoln, enabling development and connection with the wider UK.



Stamp End Lock on the River Witham

Connection
Transport
Trade
Modification

THE RIVER WITHAM IN THE PRESENT



Image of the River Witham



The Brayford, with the Brayford Belle alongside

Canal
Tourism
Agriculture
Historic

Canal Boats (top image) are a common site on the River Witham through Lincoln. These are individuals who choose to make their home on the river, and would not exist without the river. Thus, there continues to exist a connection between the river and those using it.

A popular sightseeing tour that operates on the river is the Brayford Belle (lower image). This also highlights the present day connection, where the river showcases Lincoln and its historic features.

In the current day, the River Witham retains its historic role of providing irrigation for arable agriculture within the county. This has historic importance, generating much of the wealth of the city during the Medieval Period allowing for the construction of famous Lincoln landmarks such as the Cathedral illustrating how the river has shaped Lincoln.

As there is continued exploitation of the natural resources of the river in the present day for agriculture this creates a potential sustainability issue because there is a conflict between the human and environmental uses of the Witham.

FUTURE CHALLENGES FOR THE RIVER WITHAM



The Aftermath of the OMEX incident



Human use of the River Witham

There is a risk of pollution incidents, such as in 2018 where the company OMEX released Ammonia into the river through neglecting to maintain a faulty pipe harming the local wildlife. This resulted in a huge drop in water quality and large environmental damage to the river.

The incident spread 46 km downstream and caused devastation to local fish populations as well as damaging local woodland in downstream woodland reserves.

The UK Environment Agency was forced to intervene to address fish population decline, creating additional fish breeding grounds and restocking 1.5 million fish larvae to compensate for the loss.

Whilst this incident was responded to with a record fine (OMEX paid £510,190), in the future it is important that incidents such as these be preemptively mitigated against and avoided.

Policies to achieve this are focused mainly on improved monitoring (which in this incident would have allowed for the identification of and repairing of the faulty pipeline) to anticipate potential pollution incidents.

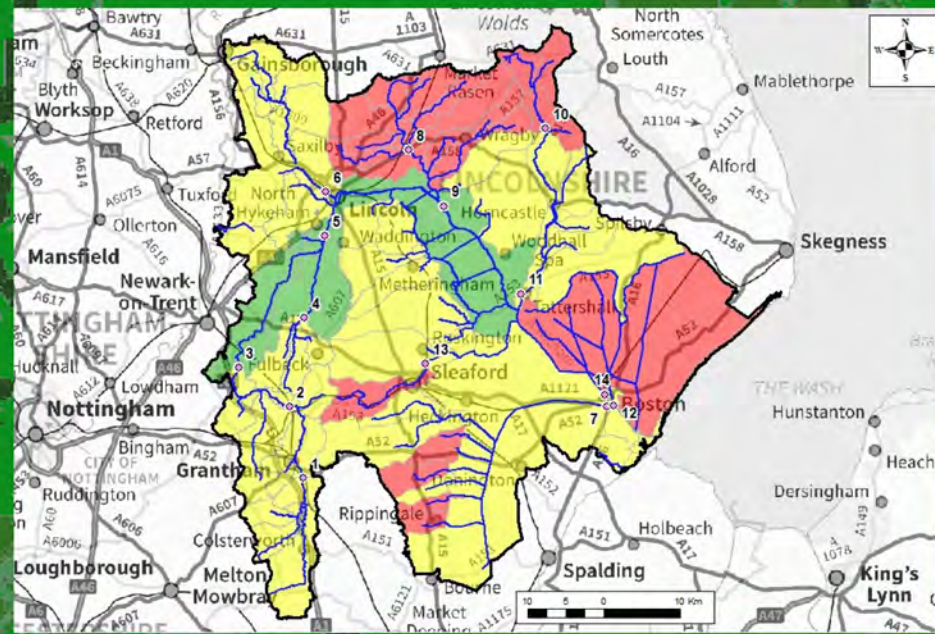
There is also a focus on improving biodiversity, which should enable the river system to better cope with pollution improving water quality and ecosystem health.

Therefore, the interaction from human pressure on the river will shape biodiversity in Lincolnshire

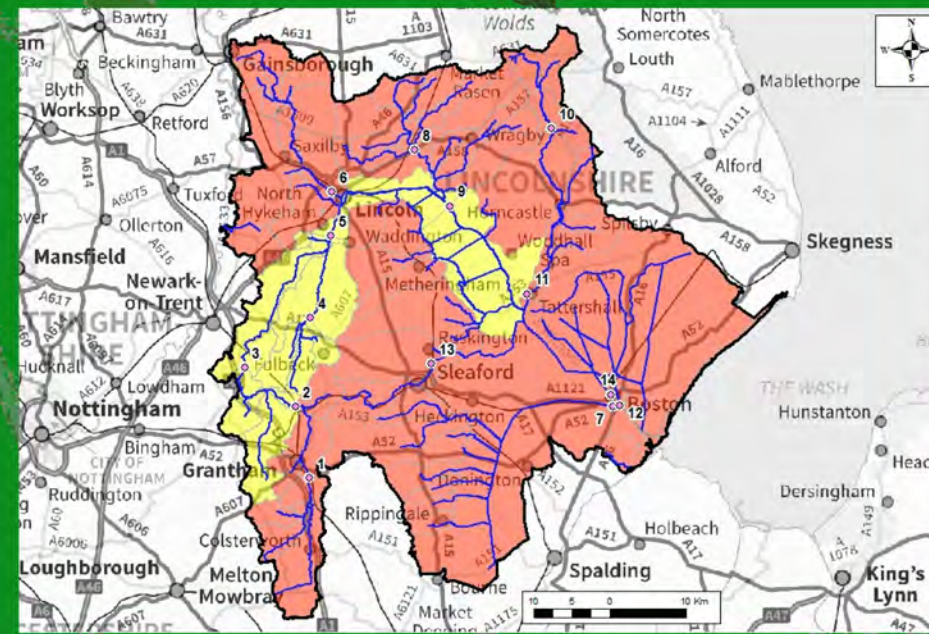
"OMEX Agriculture Ltd to Pay £510,190 for Wiping out over 135,000 Fish." n.d. GOV.UK. <https://www.gov.uk/government/news/omex-agriculture-ltd-to-pay-510-190-for-wiping-out-over-135-000-fish>.

Conflict
Pollution
Accident
Monitoring

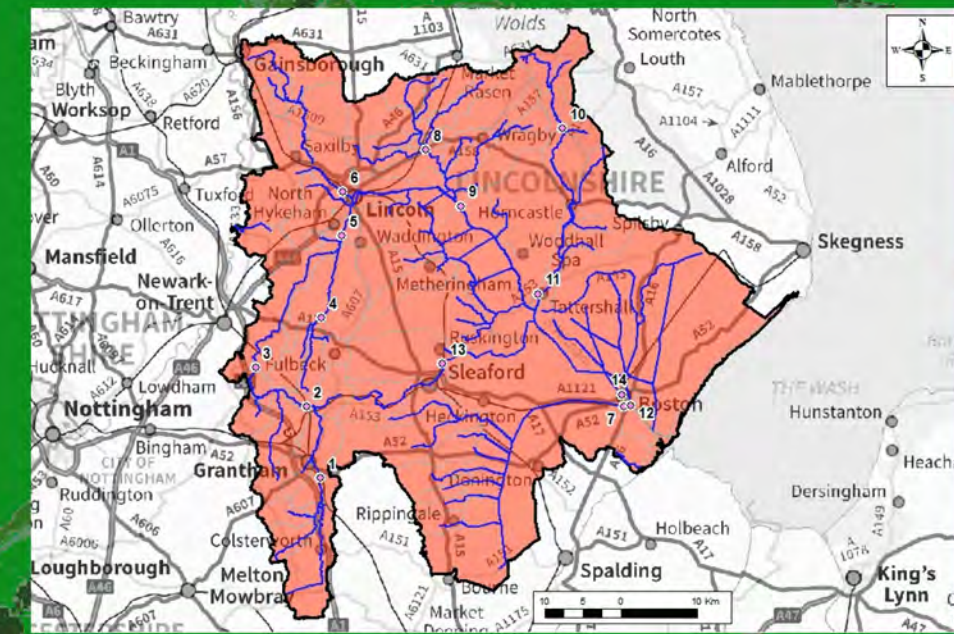
FUTURE CHALLENGES FOR THE RIVER WITHAM



Water quality at flow exceeded 50% of the year.
Source: UK Government



Water quality at flow exceeded 70% of the year.
Source: UK Government



Water Quality at flow exceeded 95% of the year.
Source UK Government

Agriculture also puts pressure on the River Witham through abstraction demands, which supplants the ecological demands that are placed on the river system

Abstraction pressures on the River Witham for arable agriculture (which occupies 75% of the Witham catchment area and makes use of a fifth of the abstracted water) displaces environmental needs. Depending on the level of flow for the river this impacts on the water quality (this is represented in the three images above, where: green is good quality, amber is moderate quality and red is bad quality). As such, under current abstraction there is not enough water for the environment to maintain good quality water through the year.

This issue is only expected to worsen with increasing Climate Change. This is because Climate Change is expected to change river inputs and as such river flows. River flows are expected to become more extreme, and as such slow river flow periods will become more common, leading to longer periods of poor water quality through the year.

The Environment Agency aims to address this in the future through increased monitoring of surface water flow. This will enable the Environment Agency to make changes to abstraction licences which will enable a better balance between human and environmental needs.

As a result, human forces will shift how the river can be used and the river's influence on Lincolnshire.

Environment Agency. 2020. "Witham Abstraction Licensing Strategy." GOV.UK. GOV.UK. December 17, 2020. <https://www.gov.uk/government/publications/witham-abstraction-licensing-strategy/witham-abstraction-licensing-strategy>.

Conflict
Abstraction
Climate Change
Monitoring

