Violated Waters: A Spatial Biography of Barada

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Rivers between climate, control, and conflict

Throughout the twentieth century, rivers were expected to provide stability in an increasingly volatile world by accommodating urban expansion and functioning largely unremarked in daily life. Planning rarely named this expectation explicitly, yet it shaped how rivers were imagined. Variability was no longer understood as ecology but as failure that should be disciplined through infrastructure and regulation rather than negotiated as an inherent quality of living systems (Scott, 1998; De Cauter, 2004).

Recent studies exploring the interrelationship of environment, climate stress, and conflict (Le Quesne et al., 2010; Nixon, 2011) have started to challenge this assumption. Rather than locating breakdowns in singular events such as wars or infrastructural collapse, harm is increasingly understood as the outcome of longer sequences of ordinary decisions. Accordingly, climate change acts not only as the proximate trigger for producing violence but also as a multiplier of vulnerabilities and an accelerator of processes of inequality. Urban rivers are central to this shift in perspective. They are increasingly seen not as simply water flows, but socio-technical systems through which cities organize security. Research on urban political ecology has revealed that while water infrastructures often produce conditions of sustainability for certain landscapes, they displace uncertainty onto less politically visible ones (Ostrom, 1990; Scott, 1998). Hygiene, reliability, and control become acts of agency, redistributing environmental costs while obscuring their provenance. Climate change intensifies these dynamics without fundamentally redefining their structure. In arid and semi-arid regions, longer dry seasons and greater variability expose the fragility of rivers already optimized for control rather than resilience. As minimum flows decline, degradation becomes a background condition rather than a crisis (Le Quesne et al., 2010; Bakir, 2014).

Rob Nixon's concept of *slow violence* (Nixon, 2011) offers a critical language for this condition. It names harm that accumulates incrementally, dispersed across space and time, and therefore difficult to recognize. Slow violence is not only understood in temporal terms, but also spatially. It is embedded in urban infrastructures that disrupt ecological systems, as well as in policies that normalize downstream sacrifice. Environmental harm, therefore, is shaped by design and planning frameworks that emphasize control over continuity.
This article frames these debates by investigating the spatial history of Barada—a river whose transformations reflect shifting concepts of livability and survival. By tracing the Barada river through the city of Damascus, the article focuses on water not simply as a passive victim of conflict or climate change, but as an active mediator of vulnerability across time.

Barada and the New Fear

Damascus emerged as an oasis city at the edge of aridity, where urban life was never guaranteed by climate alone but was continually negotiated through water. The Barada river marks the point where ecology becomes infrastructure. Arriving as mountain water and fed by springs, it is progressively taught to behave: to divide into channels, to remain within concrete boundaries, and eventually to disappear into pipes. In this transformation, fear and hope are constructed together. Fear hardens the river into a controllable system while hope lies in sustaining water as a visible and shared ecology.

The decline of the Barada river can be read, following Nixon (2011), through harm produced not through spectacular rupture, but through routine acts of modernization and management.

Rather than treating degradation as a direct outcome of war, this article follows damage as cumulative urban form. This biography unfolds through four spatial conditions—*Life, Amenity, Burden,* and *Sacrifice*—successive arrangements of water in space, from commons to service, from service to exposure, and from exposure to downstream loss. In De Cauter's terms, this trajectory reflects the making of a protective interior: a capsular logic in which reliability is achieved by disciplining uncertainty (De Cauter, 2004). Yet every capsule depends on an outside. As water is secured for the urban center, vulnerability is displaced and pushed into less visible landscapes.

Life — where water is visible, valued, and cared for

The Barada river begins at Barada Springs Lake in the Anti-Lebanon Mountains, fed by mountain runoff and springs. As it flows through the Barada valley and into Damascus, it quickly shifts from a natural stream into a managed urban resource. This transformation was not passive. Communities transformed Barada from a natural phenomenon into a living system that sustained agriculture and urban life by redirecting and dividing its course. As an ecological corridor, it threads three landscapes: the valley, Damascus, and the Ghouta orchards that once cupped the city in green.

By the sixth century, the geographer Yaqut al-Hamawi could hardly contain his astonishment as he described Damascus in Mu'jam al-Buldan *(*Kurd ʿAli, 1944):

> *"Rarely do you pass a wall without seeing water emerging from it through a pipe… I have not seen a mosque or a school without water flowing in a fountain in its courtyard".*

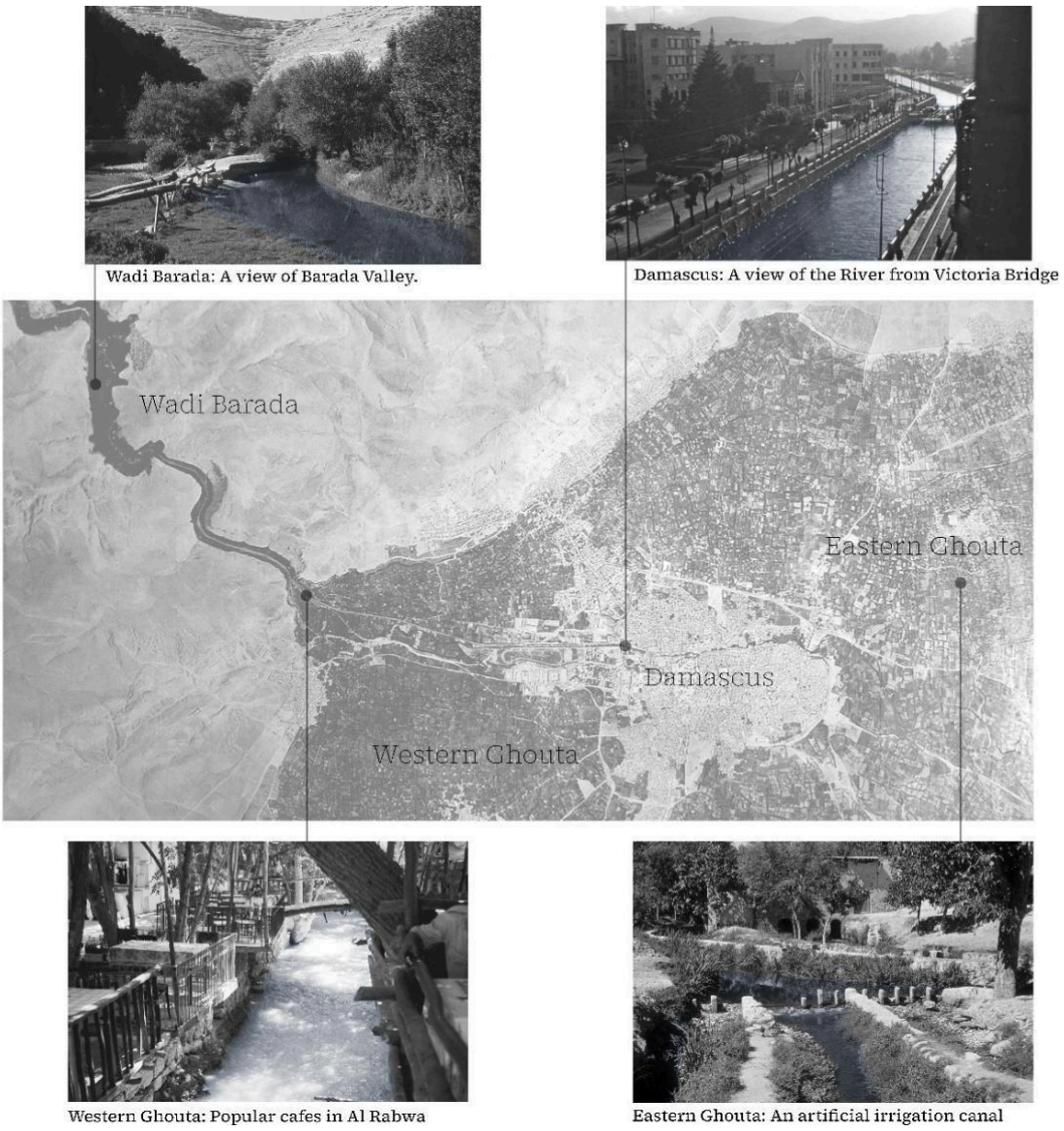
This abundance was no coincidence. Barada, which was called the "River of Gold" in the Roman period, bursts from the eastern slopes of the Lebanese mountains, carves its bed through stone, and is then tamed by canals that carry water into the city and outward toward the Ghouta (Sack, 1989). With human intervention, water was lifted and guided through gravity-fed channels, multiplying cultivation along both banks. Orchards spread across the Mazzeh hills and the slopes of Mount Qasioun, granting Damascus room to grow and expand (Gunaym, 2008).

As Barada leaves the mountains, it splits into seven branches, distributing water across distinct zones: some channels fed northern quarters and newer neighborhoods; others penetrated the Old City to deliver drinking water; others continued toward Eastern Ghouta and the lower plains. This distribution followed measured shares. Each canal received its portion until only a slender remainder continued in the original riverbed (Khair, 1969). The system is striking not only for its engineering, but for what it reveals about social imagination: water was allocated according to necessity and right (Sack, 1989). According to De Cauter (2004), this belongs to a time before the capsule: when security was rooted in shared flow and continuity.

Yet the relationship between Damascus and Barada was not only about irrigation and drinking water. The river was also the city's refuge for relief. At Rabweh, a culture of recreation took root, shaped by shade, seating, and the public pleasure of water as presence. Even within the Old City walls, al-Nawfara Café emerged beside a Barada branch (Sack, 1989). As the Banias branch flowed nearby, it offered a rhythmic backdrop to the storyteller's voice. Barada also entered the private realm of domestic architecture. The central courtyard fountain was not mere ornament but the destination of an invisible network of pipes allowing the river to be present within the house.

Downstream, the Ghouta's life was equally bound to Barada's flow. The same channels that sustained Damascus also fed fields and village economies (Khair, 1969). What made the

river fundamental to Damascus's identity was not only its canals, but the sensory memory it inscribed in collective consciousness. The river inhabited daily routines, creating what might be called environmental security — the feeling that water was stable and dependable.



Aerial view captured by the French Army in 1935, showing Damascus with the course of the Barada River from Valley "Wadi Barada" through the Ghouta region (© Michel Écochard Archive, Aga Khan Documentation Center at MIT – AKDC@MIT), alongside various historical photos of the river from the 1930s (© Syrian Heritage Archive).

However, beneath this abundance, a quiet transformation was unfolding. The river that once carried life began, cumulatively, to carry something else: the weight of a question that would shape everything downstream—what happens to a city when the artery that gave it birth is allowed to fade?

Amenity — Where gradual degradation begins through consumption and misuse

Fragility, as Nixon (2011) suggests, often emerges through the sedimentation of everyday decisions: what is repaired, what is allowed to deteriorate, and what levels of damage are normalized as "acceptable loss." This assembly of fragility can be read through the modern planning imagination under the French Mandate in the 1930s, which shaped Damascus's expansion. Following Tabbarah's (2025) insight into reading the planning of Damascus

through the lens of environmental Orientalism, the river's treatment was embedded in a particular way of governing nature. In the 1936 master plan by Michel Écochard and Cabinet Danger, Damascus was framed through an agenda of "security, hygiene, and order," and Barada was associated with mosquitoes and unsanitary conditions thus requiring correction through sanitation and spatial reorganization. Within this framing, water's variability appeared not as ecology but as disorder. The river became an object of modernization: cleaned and contained.

As Tabbarah (2025) argues, this disposition persists in later plans, including Écochard's 1968 work, which flattened the environmental complexity of the Barada Valley–Old City–Ghouta continuum by treating interdependent landscapes as separable zones of intervention. The result is a spatial politics in which urban growth and representational order are prioritized while ecological continuity is treated as secondary. Upstream tourism proposals in the Barada Valley, for example, proceed with little attention to their impact on the cultivated Ghouta that depends on the same water. Amenity thus emerges as a longer historical logic that makes it easier to suppress ecological function upstream while deferring consequence downstream. In De Cauter's terms, this is how protection begins—not through walls, but through hygienic control that records ecological variability as a threat to be managed.

By the mid–twentieth century, signs of decline were already visible, and the danger was named early by figures within Damascus itself. Among them was Sheikh Muhammad Saʿid al-Hamzawi, whose testament framed the river's weakening as the outcome of human action rather than natural scarcity. He pointed to the burial of springs and the proliferation of unregulated wells that steadily drained the aquifers sustaining the river. What began as modest cafés and recreational uses expanded into extensive landfilling of spring basins. Presented as improvements and public amenities, these practices concealed their hydrological consequences. Active springs were buried, and water was forced to reroute invisibly rather than appear as a shared common (Ali, 2025). Nature, in this intervention, was neutralized as an inconvenience. Implementation measures functioned as a conventional modern planning strategy to stabilize the surface while fundamentally reshaping the system beneath**.** Accordingly, upstream landscapes were increasingly imagined as functional reserves, ignoring their ecological continuities. Ain al-Fijah town offers a spatial instance of how such interventions were implemented in practice. Located in Wadi Barada, the town's springs had historically been part of the Barada's spring-fed system. As Damascus expanded and urban demand intensified, these springs were progressively reframed as metropolitan infrastructure. Beginning in the early twentieth century, under the Ottoman administration, water from Ain al-Fijah was piped toward Damascus, a process further institutionalized under the French Mandate through municipal tunneling projects that granted the capital extensive drinking-water rights (Arab Land Initiative, 2022). Water that had once sustained local agriculture and livelihoods was progressively abstracted into a centralized supply system.

By the late twentieth century, amenity had transformed Barada into a network of managed passages. Planning strategies repeatedly deconstructed the historical continuum of valley, Damascus, and Ghouta into objects of policy and investment. Accordingly, amenity is understood as the spatial and political precondition of burden when harm is embedded in governance and infrastructure before it is recognized as a crisis.

Burden — Where environmental harm becomes lived and normalized

Burden emerges when the consequences of upstream amenity accumulate into lived conditions downstream. If the city-regulated supply is the protected interior, Burden is the geography of its outside: where risk becomes the price of upstream security (Nixon, 2011).

As the Barada flows from the Valley “Wadi Barada” through Damascus into Ghouta, each landscape faces distinct yet interconnected pressures. In Wadi Barada, population growth and urban expansion, combined with regulatory absence and corrupt governance enabled private estates and businesses to discharge wastewater without accountability, alongside expanding residential areas such as al-Hama, Dummar, and Jummraya (Bilal, 2023). The upstream landscape that once staged the river as “nature” and leisure began to treat it as a sink. In Damascus, the burden intensifies through technocratic “improvements” that reorganize the river as a managed corridor. Paving and sealing sections along Shukri al-Quwatli Street and channelizing branches in Tura, al-Maliki, al-Rawda, and Yazid were justified as maintenance and control, yet these measures accelerated flow and reduced infiltration (Arraf, 2019).

Cleaning here becomes political: it organizes surfaces while dismantling the ecological life of the river. Downstream in Ghouta, Burden is lived as a double bind—“less water and worse water”—where water depletion normalizes scarcity. Unregulated industries and intensified agriculture introduced chemical pollutants and fertilizers into the river’s canals. Moreover, river flow decline led to higher pollutant concentrations, effectively transferring the environmental burdens of the city to Ghouta, which should function as the outside of the system. By 2005, biochemical oxygen demand exceeded safe limits, ammonium and nitrate concentrations were dangerously high, and roughly 95 tons of pollutants entered the river daily (Haddad, 2008).

This shifting landscape reflects a systemic transformation in how commons were politically governed and spatially imagined. Since 1970, under the political control of the Assad regime centralized control has systemically deteriorated the collective stewardship of shared resources, which gradually eroded the communal rights and responsibilities of the commons (Ostrom, 1990; Scott, 1998). The consequence is not only “mismanagement”, but a redistribution of environmental rights: who is protected, who is exposed, and whose losses remain unseen. This is illustrated by the diversion of Barada waters toward the Adra wastewater treatment facility, which contributed to this downstream burden. A reduced water supply to Ghouta accelerated ecological decline and desertification processes (Ali, 2025).

By the time the Syrian uprising began in 2011, these burdens were also firmly political. Water infrastructure became strategic terrain. Between 2015 and 2017, severe damage to Al-Fijeh Spring and the Barada supply system disrupted the city’s primary lifeline and left the Damascus water authority struggling to operate an already dilapidated network. Areas in Wadi Barada such as Basimeh and Ayn al-Fijeh, widely associated with opposition presence, became sites where control over water intersected with military pressure; by 2017, residents were forcibly displaced to northern Syria (PAX & The Syria Institute, 2017). The outcome was not only a shortage, but a shift in how the river was governed and experienced: water moved from an unevenly distributed public service to an instrument of siege, bargaining, and survival.

Legal and planning frameworks compounded these pressures. The Ain al-Fijeh Law 10 (1989) was amended in 2018 to enable expropriation of private lands close to the springs. The legal amendment prevented any construction or renovation within the immediate buffer zone of the springs. This affected the displaced community in 2017 from returning to their homes and rebuilding conflict-affected infrastructure (Arab Land Initiative, 2022; STJ, 2022, *Khalifa, 2021*).

In Ghouta, the towns were on the frontline in opposition to the Assad regime, and violence was therefore intense. Barada’s branches flowed through landscapes of siege and destruction. Damage to infrastructure and the accumulation of rubble further affected water circulation and maintenance, intensifying burdens caused by scarcity and contamination. Over seven years of armed violence orchestrated by the Assad regime and supported by

Russian forces, agricultural systems collapsed and the reliance on groundwater was amplified. Furthermore, bombing and residents' survival strategies including repurposing polluted water reflected the lived experience of environmental harm (Mamshai, 2025). Consequently, water scarcity and contamination became indivisible from the violence itself, intensifying Ghouta's position as the "outside" absorbing the city's transferred harm.

Burden also appears through planned erasure. The destruction of the Darani channel (*al-Dīrānī*), a Barada tributary that historically irrigated Darayya and supported orchards in Mazzeh and Kafr Sousa, demonstrates how waterways can be treated as obstacles rather than living infrastructure. Under Decree 66 (2012) and the start of work on Marota City (2016), branches could be removed from planning representation, turning ecological loss into an administrative fact. In the case of Darani, the river is a manifestation of Burden. The river was removed from official plans, transforming environmental and social damage into institutional and bureaucratic processes.

Sacrifice — where pollution and risk are absorbed downstream

Sacrifice begins where the river is no longer expected to live, only to carry. Downstream of Damascus, the Barada becomes a corridor of abandonment. What flows here is no longer primarily mountain water for most of the year. It is runoff from asphalt, untreated sewage, industrial discharge, and the residue of urban expansion. Here, slow violence accumulates through routine discharge until harm becomes background.

This normalization is not only hydrological but perceptual. During a visit to Syria in December 2025, I followed Barada from the valley (Wadi Barada) toward the Ghouta, tracing the river's course across landscapes it once sustained. The river still carries the same name, yet what appeared on the ground was a continuous corridor of violated water. This dissonance between representation and material condition marks the architectural traces of sacrifice: degradation has been spatially managed and perceptually absorbed to the point that it no longer registers as loss. In maintaining Barada as a named and nominally living river, the city preserves an image of spatial and civic continuity, even as the ecological systems that once supported that continuity have been dismantled.

The sacrifice corridor is prepared upstream, where contamination becomes ordinary long before it becomes politically visible. In neighborhoods along the river's urban edge, such as al-Hama and Dummar, exposure is domestic: odor in summer heat, mosquitoes, and polluted water. Yet residents are not only exposed; they are also entangled in the river's degradation. In the absence of adequate sewage and enforcement, household wastewater is fed into Barada directly, making communities part of the pollution pathway, even as they live with its consequences.

Across much of the lower course, the spring-fed flow has been drastically reduced, and Barada increasingly survives on wastewater and storm runoff rather than sustained ecological discharge. In dry periods it runs as an exposed and contaminated channel carrying what the city cannot (or will not) contain. Downstream in Ghouta, agricultural lands suffer from polluted canals, transforming the river into a disposal corridor rather than a shared landscape. Costs of sacrifice extend beyond farming. As surface water becomes unusable, ecological stress has been transferred underground. Households and farmers rely on groundwater, accelerating aquifer depletion. Sacrifice is therefore horizontal and vertical: harm is transmitted downstream and simultaneously absorbed by the soil, which incorporates pollution and resource shortages. Under such conditions, what appears as security for the city is achieved through displacement.

In De Cauter's terms, this is the necessary outside of the protective interior—the "cocoon" holds by exporting uncertainty to downstream landscapes. The river thus functions as an

infrastructural exterior, an unprotected zone tasked with carrying what the urban interior cannot or will not contain.

Nevertheless, the harm to the infrastructural exterior is not only produced by political, maintenance, and planning measures, it is further compounded by climate change, which amplifies the environmental pressures imposed by extraction, channelization, and urban expansion. A watercourse already weakened by urban interventions becomes more fragile when precipitation shifts and dry seasons extend, adding extra stress to the river's flow. This fragility becomes more visible in the temporal patterns of the river flow over time. Historical records reveal the magnitude of this transformation: flows have declined from roughly 22 m^3/s in 1931 to about 11 m^3/s by 2006 (Bilal, 2023). The story, then, is one of disappearing water that sustained both urban and agricultural life along the river's course.

Photographs along the course of the Barada river, from Wadi Barada through Damascus to the Ghouta region, illustrating environmental harm and the river's current condition (Author, December 2025)

From sacrifice to care: Interrupting accumulation

Barada's biography indicates how fear is built and embedded in logics that prioritize central security through externalizing risk and simultaneously neglecting the impact of short-term decisions on the river's ecological continuity over time. This illustrates a form of slow violence, in hydraulic form, in which incremental "improvements" gradually weaken buffering capacity until toxicity and degradation become ordinary. An architecture of care begins by refusing this reality. Care seeks not only maintenance and repair, but also spatial and political practices that prioritize vulnerability, interdependence, and continuity over time (Puig de la Bellacasa, 2017). Accordingly, Barada's realities are not simply environmental failures, but the spatial outcome of planning and architecture imaginaries that systematically prioritize efficiency and relational maintenance.

Barada's biography also shows how care is selectively allocated- the river has been transformed into a controlled corridor through its buried branches, diverted flows, and displaced downstream landscapes. An architecture of care challenges this logic by focusing on rivers as living infrastructures. Care involves acknowledging dependence and accepting responsibility for its effects (Tronto, 1993). This entails transforming the relationships that have allowed harm to accumulate in unnoticed landscapes. Furthermore, repair extends beyond isolated actions to encompass practices that make environmental vulnerability observable and collectively experienced. Therefore, this is not a call for an aesthetic restoration of the river surface but rather for a reframing of its boundaries, as the river's banks and channels have been planned and imagined as margins to be secured. Architecture of care reframes thresholds where urban activity, ecological dynamics, and infrastructural networks remain in ongoing contact. In this sense, care is not a soft solution to fear and control, but a site where responsibility can be redistributed across space. Urban survival can be nurtured by sustaining the connections that structured planning has repeatedly disrupted. Reclaiming Barada's spatial agency through architecture of care therefore reorients the question from how the city can control environmental instability to how it can live with its challenges collectively.

Although Barada emerges within certain political and ecological frameworks in the Syrian context, the spatial transformation exemplified by its case is not geographically exceptional. Throughout Serbia and the wider Balkan region, water infrastructures have similarly been shaped through prolonged histories of regulation and planning cultures in which control and resource efficiency are privileged over ecological continuity. Research studies related to Balkan rivers illustrate the ecological displacement of contemporary infrastructures, particularly hydropower development and river policies toward peripheral landscapes. Consequently, sacrifice corridors along Europe's "Blue Heart" are produced (EuroNatur & RiverWatch, 2019; Mihajlović et al., 2021). In Serbia, cumulative degradation is allowed through institutional fragmentation in water governance while downstream pollution and scarcity are emerging as managed background conditions (Savić & Popov, 2018; Stojanović et al., 2020). These dynamics reflect Barada's transformation into a system that achieves security through harm transfer rather than repair.

Furthermore, such evidence is reinforced by urban riverfront redevelopment projects. Rivers in Belgrade according to Petrović (2015), have been transformed into amenities while their role as living infrastructures is flattened. This resembles Barada's shift from shared flow to managed passage, where ecological life is reorganized into representational order. Under climate change, these tendencies intensify rather than transform. Barada thus offers a cautionary spatial case: resilience built through enclosure that accumulates fragility elsewhere. What appears as protection in the urban core is sustained by landscapes asked, quietly, to absorb loss. An architecture of care therefore offers a transferable spatial ethic: one that resists enclosure, reclaims continuity, and treats rivers not as problems to be solved, but as shared conditions of urban survival.

This essay asserts that pursuing an ecology of hope is not nostalgia. It seeks to shift the current reconstruction debate toward deconstructing inherited planning logics and restoring continuity across the Valley, Damascus, and Ghouta. Fear builds capsules; conversely, hope helps establish thresholds through shared infrastructures, where uncertainty is collectively negotiated rather than exported out of sight. The fact that Damascenes still seek Wadi Barada to chase traces of the rivers demonstrates a refusal of its disappearance. The conclusion, therefore, does not advocate for aesthetic restoration, but instead calls for a reconsideration of the notion of urban survival beyond displacement. Resilience is cultivated by reorganizing the relations the cocoon was intended to detach.

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