



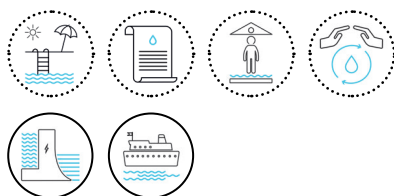
Azudes along the Serpis River: Cultural Heritage, Obstacles and Contested Authority

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Preserving cultural heritage and achieving the Sustainable Development Goal of protecting life below water do not always go hand in hand. The case of the Serpis River sheds light on the political, cultural and legal tensions that may arise when pursuing these two policy goals. To better understand these tensions, we propose acknowledging that rivers are complex natural-cultural systems imagined and shaped through various actors' values, interests, practices and infrastructures (Boelens et al. 2016). River restoration initiatives generate divisions between actors and institutions with different ways of defining and valuing natural and cultural heritage.



KEY THEMES



< Fig. 1 An azud on the Serpis River (Source: Ana María Arbelaéz-Trujillo, 2022).

Introduction

In 2007 the Serpis River was declared a “Protected Landscape” due to its landscape and ecological and cultural values. The river runs 74.5 kilometers, and along its course, one can find clues to how the interaction between water, people, riparian fauna and vegetation and water infrastructures has shaped a unique cultural landscape (fig. 2). Which among these elements are the most important and worthy of protection? The answer varies depending on whom you ask. Some people believe that what makes the Serpis unique is its industrial archaeology, namely the *azudes* (small weirs) and small hydroelectric plants that remain following the heyday of the region’s industrial era. Other actors, including ecologists and river restoration

advocates, believe that the river’s richness results from its ecosystems and natural values. For them, the *azudes* should be removed or modified due to their impact on the flow of the river.

What type of heritage deserves more protection: cultural or natural? Who is entitled to decide that? There are no straightforward answers to those queries. Still, reflecting on them could provide valuable insights into how to align the current needs of sustainable development and cultural preservation.

The Serpis: Natural-Cultural Heritage

The Serpis is a Mediterranean river flowing in Spain’s Valencia region, from Alcoy (Alcoi) to Gan-



^ Fig. 2 The Serpis River cultural landscape in Alcoy (Source: Ana María Arbelaez-Trujillo, 2022).



^ Fig. 3 A hiker contemplates an *azud* along the Serpis Greenway (Source: Ana María Arbelaez-Trujillo, 2022).

dia. During the Spanish Industrial Revolution, by the end of the nineteenth century, many paper and textile mills and small hydroelectric plants flourished in the area thanks to the river's water. Alcoy became known as an industrial center connected to the sea via the Alcoy-Gandia railway, which ran parallel to the Serpis.

Although the train does not run anymore, the old railway, now called the "Serpis Greenway," reminds visitors of the legacy of this industrial era. Walking along the railway, a visitor can enjoy the Serpis cultural landscape and the coexistence of nature and architectonic elements such as *azudes* and small hydroelectric plants (fig. 3). The river's industrial archaeology reveals a rich ecosystem that has been a key driver of the local culture and economy (Sapena 2021b).

Recognizing the interaction between natural,

cultural and social values, on April 13, 2007, the Generalitat Valenciana issued Decree 39/2007, which declared the Serpis a protected landscape. This declaration indicates that governance of the Serpis should protect both natural and cultural heritage in an integrated way. For this purpose, the Serpis Greenway should be accessible to the public and play an important educational role. The decree sought to promote a balanced relationship between nature and culture.

Despite its status as a protected area, currently, the Serpis suffers from water pollution, the presence of invasive species (fig. 4), alteration of the river course, and morphological alteration of the channel (Garófano-Gómez 2019). Aiming to combat such problems, citizens, scholars, activists and ecologists have joined the Plataforma Ciudadana per a la Defensa del Riu Serpis (Citizen Platform for the Defense of the River



^ Fig. 4 This reed (*Arundo donax*) is the most notable invasive species along the Serpis River (Source: Ana María Arbelaez-Trujillo, 2022).

Serpis). The Platform seeks to promote spaces for citizen participation in the decision-making processes affecting the Serpis.

However, collective river restoration efforts have been challenging due to disagreements about issues such as whether the *azudes*, whose water concessions (legal entitlements granted by an official authority to use water for economic activities) have expired, should be removed or modified to allow the free flow of the river, or whether they should be preserved as cultur-

al heritage. In such a context, debates about dam removal and cultural heritage become a contested arena influenced by other ideological debates, such as those concerning what nature is and which of its aspects are worth protecting (Hommes 2022).

Different Positions in the Debate

In the discussion about whether to remove the *azudes*, a central actor is the Jucar Hydrograph-

ic Confederation (CHJ, its acronym in Spanish), the entity in charge of managing the Serpis. Seeking to restore the free flow of the river and the migration paths of fish, the CHJ has requested the councils of Villalonga and L'Orxa to remove three *azudes* located in their municipalities. These water infrastructures belonged to old industries that have ceased operating. Their water concessions have expired and the *azudes* are no longer used, raising the question of whether it is necessary and good for the river's natural flow to maintain them.

The CHJ's petition is underpinned by the Water Framework Directive's goals regarding river restoration and it has received support from local environmental scientists and associations. For example, Virginia Garófano-Gómez (2019) argues that weirs significantly impact the river's connectivity and fluvial processes. For her, restoration efforts should include the removal of all obstacles: transversal, lateral and vertical. Many of these are highly harmful to the riverine ecosystem because they modify the flow of the river, impact sediment transportation, and fragment habitats. Therefore, Garófano-Gómez suggests that a starting point to improving the river's continuity is to consider demolishing obsolete infrastructures, such as abandoned small hydroelectric plants.

However, the focus on the ecological dimension of river restoration has triggered dissent in the region. Counter-arguing the petition of removing the *azudes*, the mayors of Villalonga and L'Orxa have brought forward cultural, environmental and social reasons to defend them.

In cultural terms, the mayors claim that the *azudes* are part of the industrial archaeology of the province of Valencia and, as such, form an integral part of the cultural landscape. Moreover, they argue that although the formal water

concessions have expired, many local inhabitants use the *azudes* as roads to access rural areas (fig. 5). For them, far from being obsolete, these water infrastructures provide an essential service and are embedded in their daily practices (Sapena 2021a). Finally, they believe that the *azudes* contribute to nature and the river's biodiversity because new life has emerged from their backwater (Sapena 2021b).

After the requests made by the town councils, the CHJ is assessing ways to maintain the *azudes*, and is especially interested in reducing the costs of demolishing them. However, the CHJ and environmental organizations insist on modifying these infrastructures and ensuring their maintenance to allow the Serpis to flow freely. The debate remains open.

The discussion of the *azudes* centers on discrepancies between environmental and cultural values. It also involves considering who has the legitimate right to decide about the river and its water infrastructures: the CHJ, local councils, the users of the infrastructures or the environmental organizations. These clashes reveal the contradictions, facets and dynamics of river restoration policy processes. Therefore, it is necessary to outline the tensions engendered at the local, national and international levels to understand the conflicts that can emerge from the different positions of power.

The Serpis Case, Global and Regional Trends in River Restoration

The request to remove the *azudes* from the Serpis River aligns with global, regional and national policy efforts to foster river restoration strategies to combat climate change. From a global perspective, governments worldwide have adopted the SDGs seeking to halt and re-



^ Fig. 5 A car crosses an *azud* in Potries (Source: Ana María Arbeláez-Trujillo, 2022).

verse the decline of water quality and the destruction of freshwater ecosystems. They have set ambitious goals to protect and restore water-related ecosystems, including wetlands, rivers, aquifers and lakes.

From a regional perspective, the EU Water Framework Directive and the EU Biodiversity Strategy seek to remove barriers from freshwater ecosystems to restore their connectivity and enable the migration of endangered species. At the national level, the Spanish Ministry of the Ecological Transition Environment adopted a set of strategies to “re-naturalize” Spanish rivers, which includes removing or adapting *azudes* along the rivers (fig. 5). These policies and normative repertoires prioritize natural conservation over cultural uses. This prioritization clashes with social norms related to cultural heritage and daily practices, as explained above.

Acknowledging the different layers of norms involved in the discussion enriches our understanding of power dynamics and scale, namely, the interaction between global, national, regional and local processes. Consequently, controversies concerning heritage conservation and the restoration of the Serpis River can help to approach the river as a hydrosocial territory to negotiate and redefine social relations, and as an arena to mobilize global, European, Spanish and local norms. By understanding the Serpis River “as a territory,” as proposed by Boelens and colleagues (2022), it is possible to identify and analyze how diverse actors imagine the river and the various norms, policies and legal repertoires they mobilize to materialize their visions and ideas about the river.

Conclusion: Integrating River Restoration and Heritage Conservation

The Serpis River case reveals tensions and conflicts that may arise between the protection of natural and cultural heritage. Moreover, this case challenges the assumption of a direct relationship between heritage protection and achieving SDGs, which sometimes can clash. Developing river restoration strategies beyond managerial notions requires understanding history as dynamic and acknowledging the diverse values, practices and normative repertoires of the actors involved. Along those lines, future restoration efforts could be strengthened by recognizing the different socio-legal systems that coexist in the river. For example, restoration strategies could incorporate a definition of water rights that recognizes the environmental, social, cultural and political orders involved in the efforts to protect biodiversity and infrastructure (Boelens 2011; Boelens and Zwarteveen 2005).

Finally, a central lesson from this case study is that there is no straightforward solution to achieve the SDG of protecting life below water in harmony with other policy goals, such as preserving cultural heritage. It is challenging to anticipate the consequences of prioritizing one over the other: power dynamics and unintended consequences will play a significant role in the outcome.

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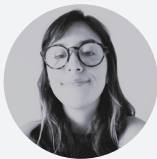


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