Landscape, Heritage and Water: The Posta Fibreno Lake in the Comino Valley

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Abstract

Strategically located in the Lazio region, between Rome and Naples, the Comino Valley area provides relevant examples of water landscapes. The presence of several protected areas, including the regional natural reserve of Lake of Posta Fibreno, recognises the high quality of its natural environment. This case allows for studying different types of relationships between water and landscape. The reinterpretation of this water-related place as landscape, symbol, ritual, and energy helps to highlight local values and vocations. The protected area covers about 400 ha, almost half of the municipal territory. Its perimeter includes the lake and its surroundings, the countryside, part of the inhabited area, and the natural landscape. 3D reconstructions help to understand the altimetric extension of the reserve and show the historical centre nestled against the mountains of the Abruzzo, Lazio and Molise National Park. Schematic territorial sections highlight the elements that characterise this landscape, emphasising the visual relationship between the historical centre and the environment and thus their mutual perception. Despite the acknowledged beauty, few paths and structures exist, and the areas are not equipped to enjoy this place. A SWOT analysis provides a framework for understanding the current situation and potential future development. In an attempt to capture the capacity of water to connect living heritage sites, hypothetical itineraries are proposed to highlight cultural, natural, spiritual and landscape connections, demonstrating how water can establish material and immaterial relationships with the environment in which it is involved. This new interpretation revitalises the historical centre of the reserve, enhancing the community's quality of life and initiating an effective process of valorisation and management of the area.

Keywords

Cultural landscape · Water heritage · Protected areas · Historical centre · Conservation · Enhancement

1 Introduction

This article is focussed on an area called Valle di Comino, which offers many examples of aquatic landscapes. Located in a strategic position, between Rome and Naples, this valley contains numerous small historic centres that are set in a natural landscape. For historical reasons, primarily for defence, their heart is located in the higher part of the territory, often closer to water sources, while the more recently built villages are on the valley floor, along the new main communication routes (Lucarelli 2023). The high quality of the natural environment is recognised by the presence of several protected areas such as the Abruzzo, Lazio and Molise National Park, Mount Cairo, the mountains of Meta, the gorges of the Melfa River, the regional nature reserve of Lake of Posta Fibreno, and the natural monument of Montecassino Abbey (Fig. 1). A dense hydrographic network characterises the Valley's landscape, with the main watercourses being the Melfa river and the Fibreno river. The Melfa River originates in the Canneto Valley, in the municipality of Settefrati. It traverses the Valley, shaping its morphological profile with the main lake of Posta Fibreno, recognised as a natural reserve. These places are also identified as sites of community importance (SIC) and special protection areas (ZPS). Usually, when discussing small ancient towns, we focus on their historic architecture and urban layout. However, the challenge is interpreting these historic centres as water-related places, using terms and definitions such as territorial markers, landscape, symbols, traditions, rituals, and energy sources.

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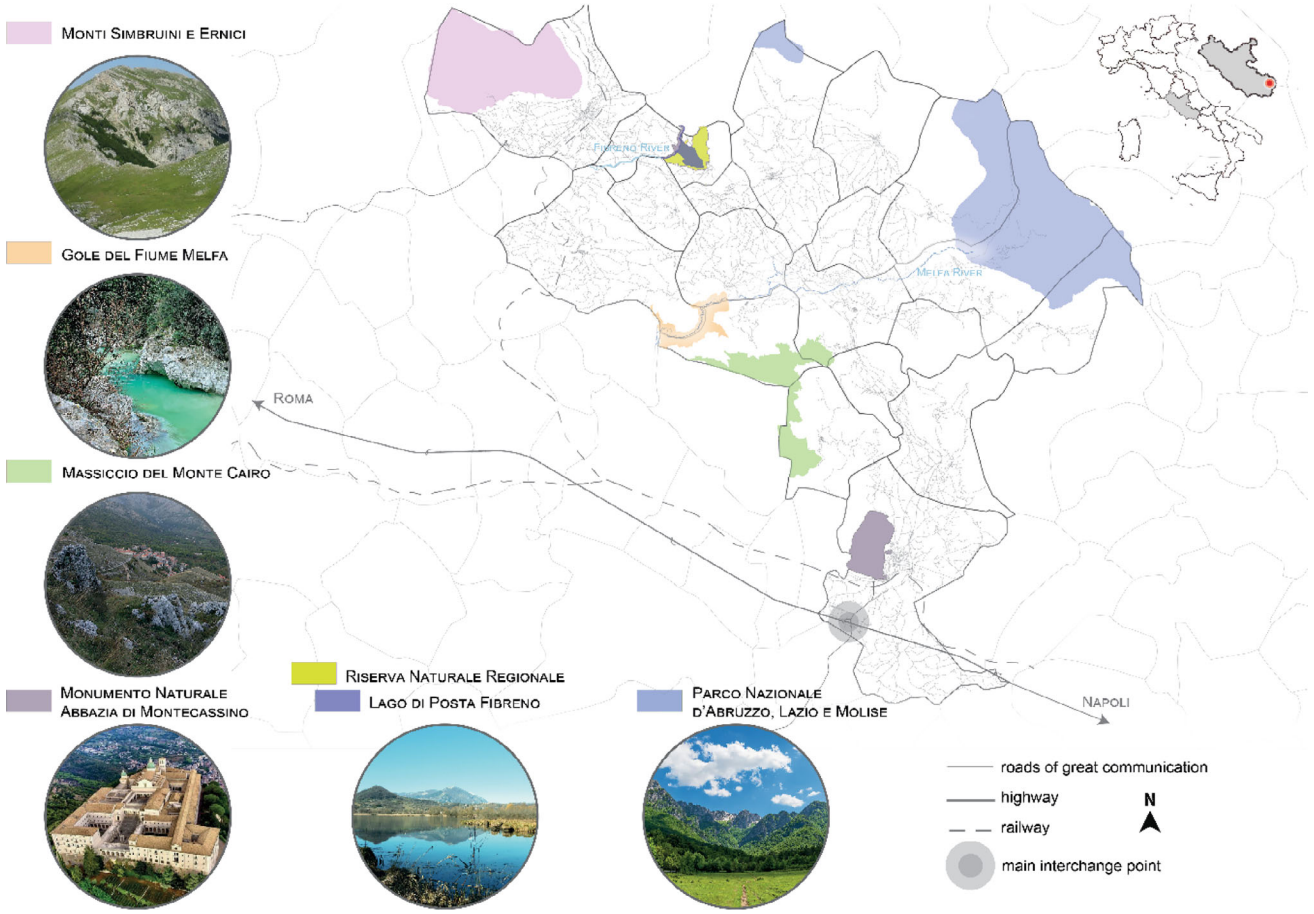


Fig. 1 Protected areas in the Comino Valley. *Source* figure created by Laura Lucarelli

1.1 The Posta Fribreno Lake

The lake of Posta Fibreno is undoubtedly a strong sign in the territory of the Valle di Comino (altitude: 289 m.a.s.l.; perimeter: 5163 m; area: 0287 km^2) (Cipriani 2020). As an integral part of the landscape of this territory, it offers panoramic views and evocative scenes. The lake has a floating island called "la rota" for its shape, which moves with the wind and currents (Casella et al. 2010). This was also described by Pliny the Elder in his "Naturalis Historia" as a fascinating phenomenon. Additionally, the lake is surrounded by a recently built wooden boardwalk that fills with people, especially on Sunday afternoon. But this lake can also be seen as a place of traditions and rituals. There is a crucifix in its deepest part, about 15 m down. The local people deeply feel this symbol. Every year, divers bring it back to the surface, becoming a moment of great spirituality. It attracts the residents and curious tourists to this unique tradition. Thanks to the presence of an ex-water mill for grains, the lake can be interpreted as a source of energy too (Fig. 2). At the end, this place allows for the exploration of various types of relationships and meanings between water and landscape, highlighting its local values and vocation. It helps reflect on how history and heritage matter when we look at and design relationships with water (Hein 2020).

1.2 The Natural Reserve of Posta Fibreno Lake

In January 1983, the Lazio Region, with Regional Law n. 10, established the Natural Reserve of Lake Posta Fibreno, to be designated "…for the conservation, enhancement, and rational use of the natural environment, for the economic development of the local communities involved, and for the proper enjoyment by the entire population" (Comune di Posta Fibreno 2024). The protected area, extending over 400 ha, represents almost half of the municipal territory (Fig. 3). The Fibreno River is the only outflow of the lake basin and originates from the confluence of the lake's waters with those of the Carpello stream. After about 11 km, it flows into the Liri River. At the meeting point of the Carpello stream, Lake Fibreno, and the Fibreno River, on the left bank, there is an

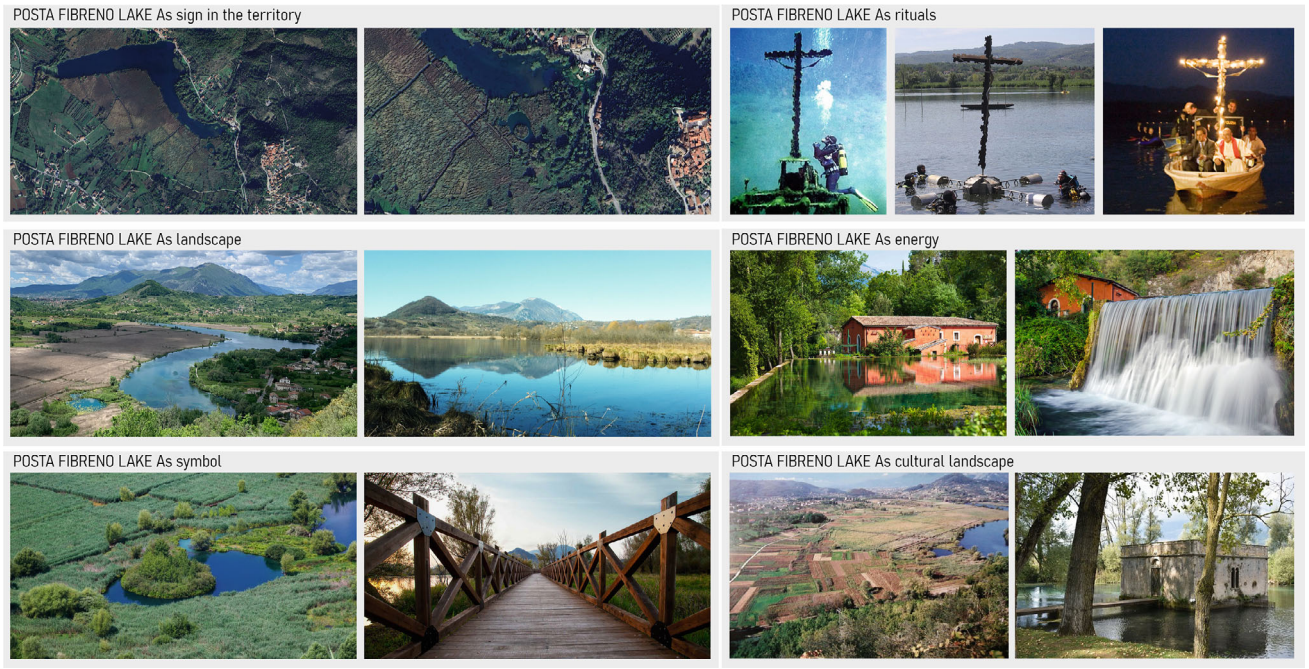


Fig. 2 Various interpretations of Posta Fibreno lake. *Source* figure created by Laura Lucarelli

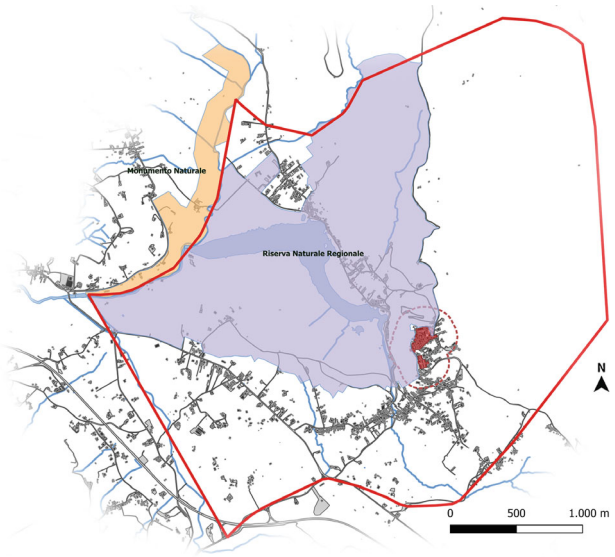


Fig. 3 The natural reserve area about the municipal territory. *Source* figure created by Laura Lucarelli

ancient building called "peschera", which in the past was used for preserving the catch.

A 3D reconstruction helps to understand the altimetric extent of the reserve and shows the historical centre nestled against the nearby mountains of the Abruzzo, Lazio and Molise National Park (Fig. 4). While a schematic territorial section highlights the main elements that describe this landscape (Fig. 5). This approach helps emphasise the visual relationship between the historical centre and the environment, and so their mutual perception.

2 Water Potential to Connect Sites

Currently, just a few paths allow access to the entire protected and equipped area. Thus, it was decided to conduct a quick SWOT analysis to identify the study area's strengths, weaknesses, opportunities and threats (Table 3.1). This analysis provides a framework for understanding the current situation and potential future developments.

From here, the proposal begins. Three hypothetical itineraries are proposed to capture the potential of water to connect sites of living heritage: the red one by land, the blue one by water, and the green one as a panoramic and more mountainous route (Fig. 6).

Starting from the historical centre, the red route leads to the museum dedicated to reconstructing the lake's ecosystem, where tourists are introduced to this reality theoretically. Next, the reserve's headquarters (the former mill) and the floating island within the lake are reached. Immersing in the natural agricultural landscape that borders the lake, visitors can encounter educational workshops and observation points for birdwatching. Following agricultural roads around the fields, with stops for contemplating the ancient cultivated spaces and recalling lost techniques and traditions, they arrive at the fishpond ("la peschera"), a unique structure once used for preserving the catch. The itinerary winds through wooden walkways between canals and lands, reaching the fish

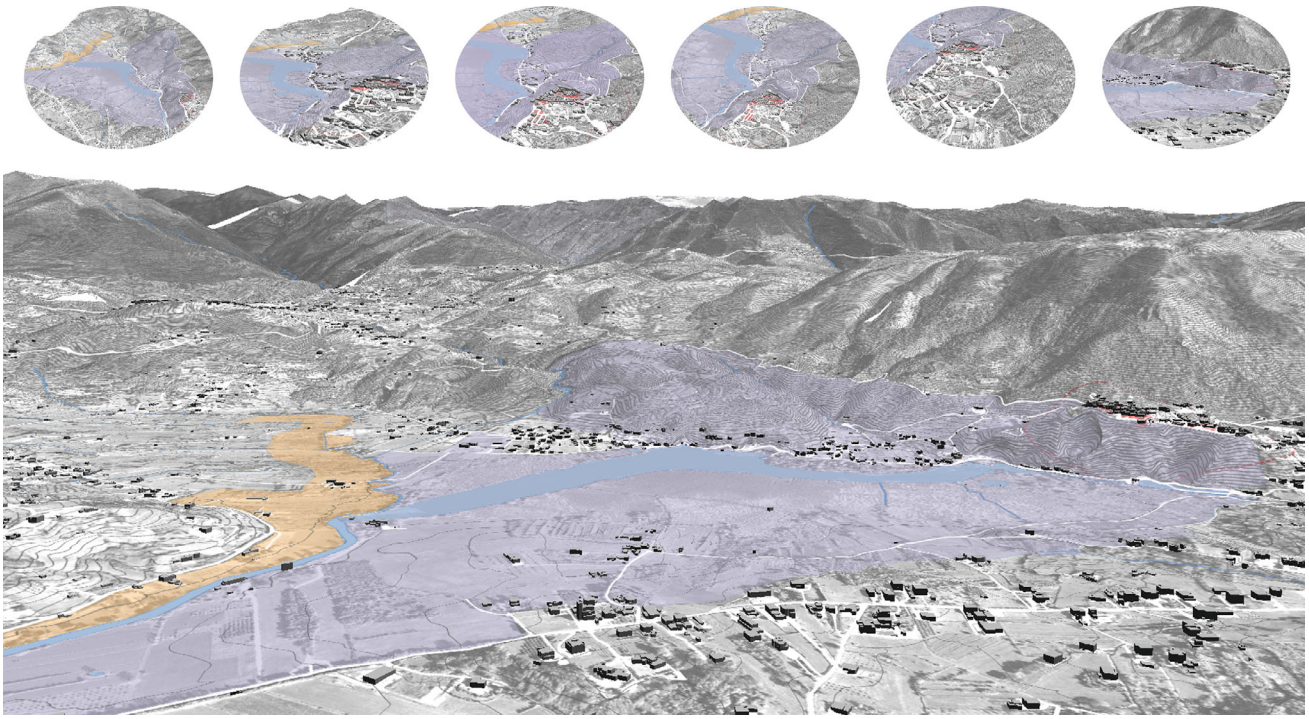


Fig. 4 3D reconstruction of the natural reserve area. *Source* figure created by Laura Lucarelli

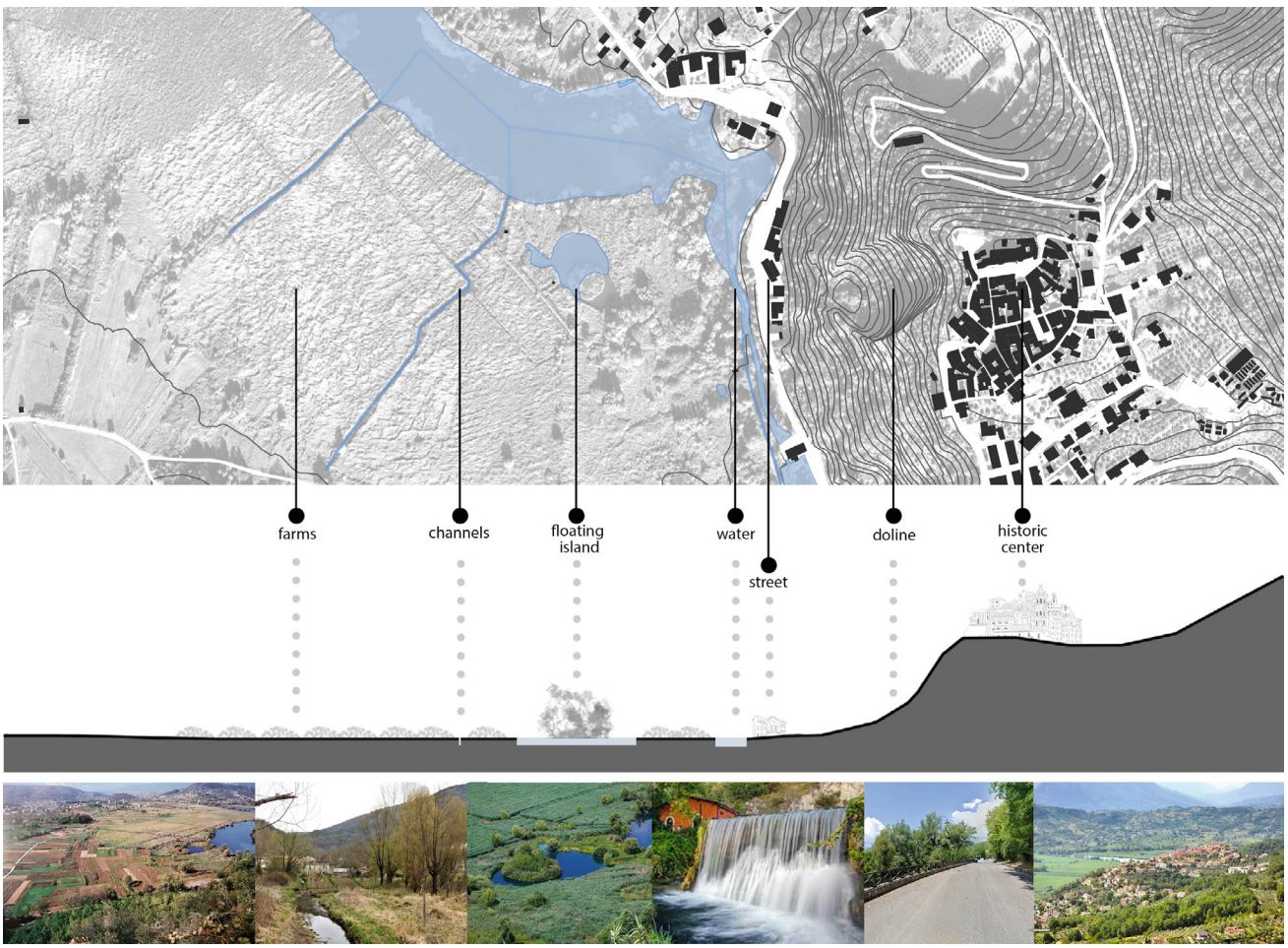


Fig. 5 Schematic territorial section. *Source* figure created by Laura Lucarelli

Table 3.1 Swot analysis

Strengths	Opportunities
Culture of environmental protection and biodiversity	Reconstruction of the network of local values, of cultural and tourist routes
Presence of the Regional Natural Reserve	Low-density urban fabrics where services and facilities for enjoyment can be increased
Agricultural landscape with scenic value	Spread of events related to the enhancement of local identity
Privileged viewpoints	Tourism promotion: utilisation of privileged viewpoints to attract tourists interested in landscapes, photography, birdwatching, and nature enthusiasts
High-value historical centre	The historical centre is a main attraction for discovering history, art, and architecture. Promoting guided tours, museums, and thematic routes
Weaknesses	Risks
Lack of a structured network to enhance the widespread human and material resources in the territory	Social and economic impoverishment
Low tourist accommodation rate	Environmental degradation due to the abandonment of agricultural lands
Scarcity of equipment and services	Failure to enhance cultural heritage with a progressive erosion of natural values
Isolation of the historical centre	Loss of human capital and young resources capable of initiating and sustaining development processes

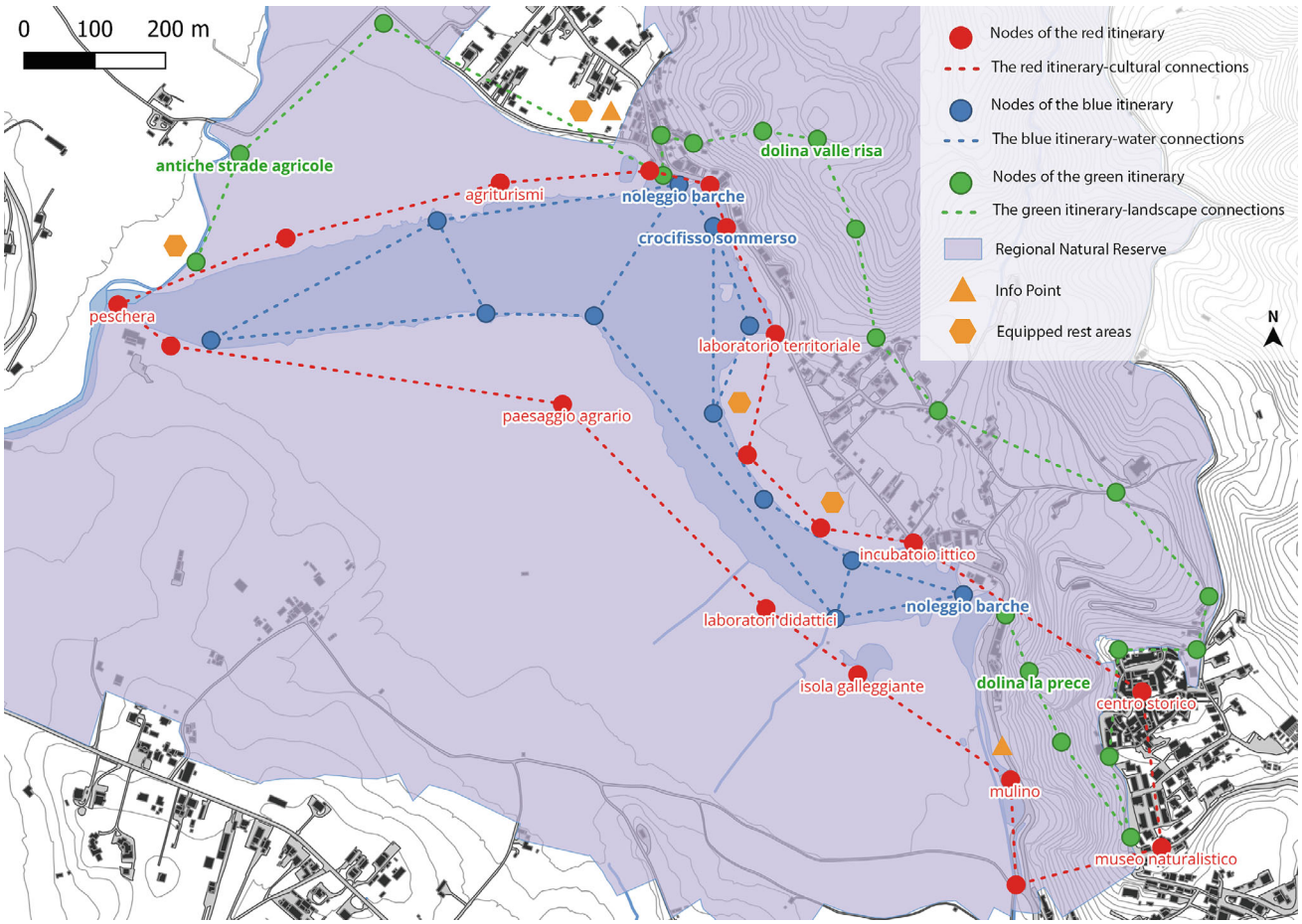


Fig. 6 Hypothetical red, blue and green itineraries. *Source* figure created by Laura Lucarelli

hatchery before returning to the centre to learn about ancient artisanal practices. Starting and ending points are where the heritage community is involved. Visitors enter the homes of residents to revive past culinary and costume habits.

They proposed a red itinerary emphasising the cultural and natural connections within the Posta Fibreno area.

Thanks to the blue itinerary, people can observe the lakeside vegetation and the agricultural area that once occupied the protected area by renting boats or pedal boats. These gardens were characterised by land adjacent to the lake, bordered on both the right and left by more or less wide flooded ditches. These channels allowed the passage of the typical local boat, unique in central and southern Italy, the "nàue", with millennia-old origins. On the ship, which is agile enough to enter even the narrowest channels, algae were collected to fertilise the surrounding fields (recent studies have evaluated the doubling of production in those fields fertilised with this system). In many cases, the cultivated fields and gardens still reach the shores of the lake today. The route also offers the opportunity to dive, thanks to the already active diving school that conducts seasonal dives to the deepest point of the lake, where the submerged crucifix is located.

The proposed blue itinerary emphasises the natural and spiritual connections within the area.

The green route follows the paths that climb the hills around the historical centre. Trekking or mountain biking itineraries connect the historical centre with the Rio Carpello and the Fibreno River sources. In this same place on the opposite shore, it is possible to see the historic fishpond, built entirely on the water, linked to the architectural complex of the nearby Villa Gallio, an eighteenth-century palace rich in valuable works of art. The panoramic route climbs halfway up the hill overlooking the lake. The first section crosses a series of gardens and old and new rural houses, ascending without significant altitude changes until reaching the sinkholes, where explanatory panels illustrate the main karst phenomena of the area, the main ecosystems and botanical information. Passing through the historical centre to enjoy the panoramic views of the lake, the route returns to the coast.

The proposed green itinerary emphasises the landscape connections within the area.

3 Conclusions

This new interpretation would revitalise the historic centre of the reserve. It can serve as the starting point for these itineraries, as a welcoming area, and of course as a panoramic viewpoint. Indeed, some nodes of these networks will be in common, because water can establish material and immaterial connections with the environment in which it is involved. These connections not only enhance the territory but also strengthen the bond between the community and its natural heritage, fostering a sense of belonging and collective identity.

Another element of great significance is the mill, which can also be seen as a central point among these itineraries. Now it is the base for the Reserve office. Still, it should be reused or adapted to be more open to people, contributing to the quality of life of heritage communities and their sense of place and self-identification. It would be a challenge to study how this structure can be more creatively reused. As for the peschera, which is also a really fascinating structure totally on water. Its unique location and history make it an ideal place to develop new forms of interpretation and use. It can integrate with the proposed itineraries and offer visitors an authentic and immersive experience. All these points and concepts should be further explored and expanded. Their study aims to create an integrated system for enhancing the territory that respects and promotes the natural and cultural heritage of the Comino Valley, while also contributing to the well-being and development of local communities.

To further strengthen the vision, the enhancement of the territory should not only focus on promoting its assets but also prioritise their protection and sustainable use. The balance between valorisation, conservation, and enjoyment is essential in ensuring that these natural and cultural treasures are preserved for future generations while allowing present communities and visitors to appreciate and benefit from them fully.

By fostering responsible tourism and educational opportunities, the area can be promoted as a model of sustainable development, where the rich historical, cultural, and ecological resources are respected. Active involvement of local stakeholders in the planning and decision-making processes can ensure that the community's needs and values are reflected, strengthening their connection to the land and encouraging a shared commitment to its protection. Moreover, accessibility should be a key consideration, ensuring all visitors can experience the territory's beauty. Creating interpretive tools and technologies, such as augmented reality or digital guides, could further enhance visitors' understanding of the region's unique characteristics, deepening their appreciation of its heritage.

In this way, the proposed system of itineraries and reimagined uses for the historic structures will support the local economy and tourism and contribute to the long-term stewardship of the Comino Valley's natural and cultural heritage.

Heritage is not simply tied to physical objects or places but is a cultural process shaped by communities. In the context of water, heritage can involve both material and immaterial connections to natural elements, such as rivers or lakes, that are integral to the identity of a region. Water can serve as a symbol of continuity and as a central element in the practices and memories that define how communities engage with their environment and heritage (Smith 2006).

References

Casella, L., Agrillo, E., & Spada, F. (2010). The floating island of Posta Fibreno: An example of a relic mire in Central Italy. Annali di Botanica. https://doi.org/10.4462/annbotrm-9108

Cipriani, A. (2020). Il Lago di Posta Fibreno (FR). Memorie descrittive della carta geologica d'italia 106, 165-176.)

Comune di Posta Fibreno. (2024, 15 febbraio). Approvazione del Piano della Riserva Naturale Regionale Lago di Posta Fibreno [Comunicato stampa]. Comune di Posta Fibreno. Recuperato da https://www.parchilazio.it/postafibreno-schede-32023-il_piano_della_riserva_naturale_e_realta

Hein, C. (2020). Adaptive Strategies for Water Heritage: Past, Present and Future (1st ed.). Springer Open.

Lucarelli, L. (2023). Knowledge and exploitation of local resources: the historical centers of the Comino Valley. Tafter Journal n. 122. https://www.tafterjournal.it/2023/06/16/knowledge-and-exploitation-of-local-resources-the-historical-centers-of-the-comino-valley/

Smith, L. (2006). Uses Of Heritage. Routledge, Taylor & Francis e-Library.