

- Debates -

INTERIOR AQUAPELAGOS

A proposal for comprehending and conceptualising
nature, society and culture in interior waterscapes and a
consideration of Udine and the broader Friuli-Venezia
Giulia region as a test case

[Received September 9th 2024; accepted October 28th 2024 – DOI: 10.21463/shima.243]

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ABSTRACT: The authors of this article were involved in the conceptualisation and organisation of the first international conference on Inland Waterscapes, subtitled 'Nature, Society and Culture in Hydrography,' held at the University of Udine between 22nd-25th May 2024. The following essay draws on an extended dialogue between us prior to, during and after the conference about how to comprehend and characterise the relationship between water, landscape and human society in interior locations. In the following sections we consider the waterscapes of Udine and the broader Friuli-Venezia Giulia region (and discourses about these) in the light of aquapelago theory (formulated within Island Studies to refer to terrestrial and marine environments closely integrated by human livelihood activities). Informed by our focus on the specific locale, we propose and evaluate the usefulness of the concept of *interior aquapelagality* to comprehend the assemblage of liquid and material elements in the region and their changing social function and character over an extended duration. Our conclusion suggests the potential usefulness of the concept and invites other researchers to evaluate its application to other contexts.

KEYWORDS: Interior waterscapes, Udine, heritage, interior aquapelagality

Introduction

The decision to hold the first international conference on Inland Waterscapes in Udine, a small city in the centre of the Friuli-Venezia Giulia region¹ of north-eastern Italy (Figure 1), was a strategic one. Unlike the heritage mecca of Venice, 120 kilometres to the south-west, with its celebrated canals, Udine is a less well-known location with aquatic elements that

¹ The administrative region of Friuli Venezia Giulia was established after World War Two combining Friuli (which comprises the provinces of Pordenone, Udine and Gorizia, which share cultural elements such as use of Friulian language) and Trieste, a culturally distinct area to its south-east.

have neither been valourised as heritage assets nor subject to extensive interpretation.² In this regard, the history of the region's waterways, their construction, use and (in some cases) functional decline and subsequent obscurity, provide a fitting context in which to elaborate and discuss the value of aquapelago theory in interior locations.



Figure 1 – Map of Udine's position and the boundary of the Friuli-Venezia Giulia region (indicated to the west by its dotted regional border with Veneto and to the north and east by the hard line of Italy's borders with Austria and Slovenia - Google Maps, 2024).

Despite the above, we should acknowledge that we erred with regard to the aforementioned conference by failing to draw attendees' attention to elements of urban waterways located close to its venue (the University's Palazzo Antonini). While Udine's waterway features lack the charisma of Treviso's canals or the picturesque nature of Trieste's Canal Grande, they form features of neighbourhoods that offer alternative spaces and sensory experiences for city-dwellers. Within a short walk of the conference venue, for instance, the Roggia di Palma and adjacent walkway provide the opportunity for a short blue-green corridor (Figure 2) and a nearby stretch provides an attraction for a well-frequented bar. Elsewhere in the city, stretches of the Palma and the Roggia di Udine canals that still run above ground provide pleasant features within neighborhoods. In their fragmentary (and now archaic) forms, some (e.g. Figure 3) even evoke the enigmatic situational creativity of landscape artists such as Mary Miss.³ These waterways no longer serve the irrigation, water supply and mill power functions that they once did but they still provide passages within the built environment that enhance the areas in different ways.

² Studies on the topic to date include Zenarola Pastore, Stefanelli & Colle (1995), Bonan (2019) and De Cillia (2000, pp. 207-220).

³ See Ryan (2007) for a discussion with Miss about her work.



Figure 2 – Stretch of the Roggia di Palma near the Piazza San Cristoforo (photograph by Philip Hayward, May 2024).



Figure 3 – Isolated wedge-shaped structure in a stretch of the Roggia di Palma north of the Piazza I Maggio (photograph by Philip Hayward, May 2024).

If we take the contemporary form of Udine's canals and the densely urban neighbourhoods they run through as one point on a spectrum of waterscape features and functions, the Tagliamento river, running 20 kms to the west of the city – often characterised as Europe's 'last wild river' – represents an alternative type of water body.⁴ Rising around the Mauria Pass in the Alps and rapidly widening (Figures 4 & 5), it goes on to flow down into the Adriatic, exemplifying the features that originally characterised many mountain rivers: braiding, in the form of an extensive gravel bed with multiple channels, large amounts of deadwood and island formations in all stages of development (Figure 5), and a massive alluvial groundwater body (VV.AA, 2006; Surian & Fontana, 2017). This creates a complex and dynamic mosaic of biotopes with an extraordinary diversity of aquatic, amphibious and terrestrial organisms as well as all typical floodplain habitats and communities. With these features, the Tagliamento is an outstanding point of reference for research and teaching and numerous universities and institutions have addressed the Tagliamento's basin as a "model region" that illustrates "the importance of large-scale river landscapes as corridors and groundwater reservoirs as well as retention, living and cultural areas" (Müller, Surian & Tockner, 2023, p. 8). At a local level, the river Tagliamento represents not only a daily landscape that riverine communities are used to identifying with and to using as a common space (especially during summer) but is also a cultural and linguistic symbol able to cut across its concrete dimension⁵ (De Cillia 2000; Valerani, 2004; VV. 2004; AA. VV., 2006).

As Chiara and Anna Scaini ably demonstrate elsewhere in this issue of *Shima*, these aspects of the river have also created a highly dynamic aquapelagic environment where humans have needed to have been nimble in their settlement patterns, as villages have been moved from one side of the Tagliamento's central stream to the other when the latter decisively shifts course while other villages have been islanded and de-islanded by the same phenomenon.⁶ Hazard, volatility and precarity are so central to human experience of this this area and so predictable in the *longue durée* of human inhabitation of the basin that they might – paradoxically – be considered one of its most stable features. As Scaini & Scaini (2025) also identify, knowledge of this history provides a resource for local communities, hydrologists and other river specialists to draw on to plan for the increased volatility that is arising from global warming. But paradoxes abound with the Tagliamento. At the same time that it is often characterised as a majestic river flowing freely from the Alps through Friuli, this 'freedom' is offset by hydraulic operations in its upper course that effect its entire rhythms and flow.⁷ The principal features of these are the Caprizzi Dam in Ampezzo and the long and complex system of redirection and canalisation manifest in two major works: the impressive pipeline that transfers the Tagliamento's water into the Cavazzo Lake and the Somplago hydroelectric plant (Figure 6) and the system of the Tagliamento-Ledra Consortium located in Ospedaletto di Gemona (Barrage ex Consorzio Ledra Tagliamento) (Figure 7).

⁴ The Isonzo/Soča river, running 30 kms to the east of Udine also merits attention and discussion but it is beyond the scope of this essay, which uses Udine's urban waterways and the 'wild' Tagliamento as contrasting case studies.

⁵ As well summarised by the local Friulan language adage *Di ca e di là da l'aghe* ('on this side or that side of the water')

⁶ This tendency is even more marked in the Livenza river, which runs to the west of the Tagliamento and enters the sea close to the Venetian town of Santo Stino di Livenza.

⁷ As well represented in a map from the 1950s that identifies each tributary of the Tagliamento and establishes "how to intubate it and bring it to a complex system of use" (Cozzarini, 2024, p. 15).



Figure 4 – The upper stretch of the Tagliamento flowing through the village of Fornid di Sopra (photograph by Francesco Visentin, May 2024).



Figure 5 – The mid stretch of the Tagliamento around Peonis (photograph by Francesco Visentin, May 2024).



Figure 6 – The Tagliamento diversion pipe (photograph by Philip Hayward, June 2024).



Figure 7 – The Ledra Canal barrage, Ospedaletto di Gemona (photograph by Francesco Visentin, June 2024).

The task for a reconfigured waterway studies is to produce models that can account for the broad spectrum of aquatic phenomena ranging from post-industrial canals in urban areas, agricultural irrigation and drainage channels and the river systems of more open regions. Exploring Udine's remnant canal network in alternation with the Tagliamento (from its tiny, trickling source through to its wide, mature reaches), helped us to centre our conceptual discussions in the wet reality of the scapes we negotiated and the wetness of mists, drizzle and full-on rain we encountered in the foothills of the Alps with our colleague Andrea Guaran in June 2024.

II. In Dialogue

PH: We talked online in the months before the conference about what might be variously considered to be the *need* or *opportunity* to develop new conceptual models of how inland waterscapes operate in practical, conceptual and imaginative ways. One point of reference was the concept of the *aquapelago*,⁸ originated within Island Studies to refer to the close integration of terrestrial and marine environments in particular regions at particular times created by human livelihood activities.⁹ As someone involved in the development of this concept, you asked me why attempts hadn't been made to expand it into the consideration of (what we will call for now) 'inland waterscapes'. As with many simple sounding questions, the answer is complex. One reason is the continuing disconnect between inland waterscape researchers and oceanic island researchers and, in many ways, the lack of concepts shared between them. This journal - i.e., *Shima* - has attempted foster dialogue between the two groups by, first, running a special issue on Venice in 2021 (v15 n1) that identified the city's existence within overlapping island, lagoon and river systems that could be considered as aquapelagic; and then by expanding the journal's focus to include waterway studies from 2022 on. But despite this, researchers from the two strands have not, as yet, engaged in significant dialogue with each other. Another factor has been the fundamental difference between the deep, open water contexts in which what might now be termed 'classic' aquapelagos (such as Haida Gwaii, the Torres Strait Islands or Newfoundland/Grand Banks) exist and the shallower, more narrow channels that carry water through inland spaces. Deep marine contexts offer locations in which humans can variously submerge themselves to gather shellfish, fish or sea-plants or operate fishing gear to access them. Human experience and imagination of these depths and of living between two realms (the terrestrial and aquatic) are key elements of what has been proposed as an aquapelagic sensibility. While I have also applied the concept of the aquapelago to metropolitan estuarine contexts, with particular regard to Manhattan and the lower Hudson River (Hayward, 2017), this transitional riverine/maritime context does not require the same degree of conceptual modification as its application to inland waterways such as the Torre or Tagliamento rivers, let alone Udine's fragmented canals.

FV: When we started this debate, I was just thinking about a concept that could encapsulate, blend and overcome the two strong dimensions that have characterised the study of inland waterscapes: the land and the water. At that time, I was reading *The Invention of Rivers: Alexander's Eye and Ganga's Descent* (2019) by Dilip da Cunha and his work with Anuradha Mathur (2014, 2020) about the concept of wetness. It's interesting to underline how with the word "wetness" they consider water no longer in opposition to land, but rather as a holistic concept that recalls the hydrological cycle. The anthropologist Franz Krause (2019, 2023)

⁸ See Hayward and Joseph (Eds.) (2025) for detailed discussion.

⁹ See the *Shima* online Aquapelagos anthology (2024).

similarly noted how the adoption of a hydro-perspective could be the point from which to try to overturn the model we are familiar with using when thinking about water, and, therefore, also about the Earth (and, indirectly, about us as a species), ushering in a multi-naturalistic mode of analysis. The “watery turn” that I have proposed elsewhere (Visentin, 2018) focuses on inland waters: rivers, canals, lakes, estuaries, reservoirs and wetlands. It centres on water's dynamism as a crucial nexus in the interplay among water, humans and place, discussing water's role in placemaking (Visentin & Kaaristo, 2024). While the notion of dynamic and fluid places is not new, the inland-water-centric approach introduces fresh insights for understanding, conceptualising and engaging with watery places. Embracing Stefan Helmreich's idea of water as an influential “theory machine” (2011, p. 132), I think the power of the aquapelago lies precisely in having underlined the active role of water and not the passive one; that is, not the dynamic of division but that of union. Land might be considered as knowable, dependable and secure, while water may be considered as unpredictable and volatile, but there are other ways of thinking this. And this is the key point that led me to think about trying to expand, or, better, *start from* the concept of aquapelago. We are always focused on the terrestrial aspects of our activities while the truth is that we model, change, adapt the Earth in relation to water, and not the other way around. Water is the engine of our activities, not land, and we need to acknowledge the power and agency of water as an affordance even when seemingly absent. We are not working to deconstruct the studies of water that underline its cultural, economic, social or political power but rather to identify new conditions and purposes that could help us redress our approach to human livelihood activities in relation to water-spheres and, in some ways, to investigate the relational entanglements and the assemblage effects apparent in the transformation of land in favour of water.

PH: These are very persuasive arguments, and I now understand more precisely why and how you thought that the aquapelago concept could be extended. You have moved to the notion of (inland) waters as generative of fluid theory, which obviously poses questions on a different level. As I see it, the paradigm is of wetness *softening* (rather than entirely *dissolving*) conceptual solidities – such as terracentric thinking – and inviting us to be fluid in how we can reconceive relationships and the “machinic” nature and energy of integrated terrestrial and aquatic systems in.... [Ah, but here language fails us...]. I am struggling. The default term that we have been using so is *inland* – *in-land* – contexts. But obviously that is precisely what we *don't* mean. If we are concerned to displace the primacy of land in ways of thinking about water and land, one approach might be to use the term ‘interior,’ as it doesn't have that solid aspect... ‘Interior waterways’? ‘Interior aquapelagos’? ‘Interior aquapelagality’? If we feel this approach is a potentially productive one, our next step should be to test-drive it; and our co-location in Udine this summer, the sites and historical resources available to us and the discussions we have had about these provide ample opportunity.

FV: The term and concept of ‘interiority’ is interesting to explore, especially because it leaves space for the multi- and inter-dimensionality of water through transformation/evolution in space and time. Water is not just what we clearly see, it's more related to the combination of its peculiar transformative actions (due to its chemical and physical features) and the long-term adaptive changes imposed by humans. Water moves continually both through the natural water cycle and through the complex infrastructures by which we have colonised it. In practice, water moves due to natural and artificial factors, and these factors do not necessarily coincide, indeed they often occur in opposition, or in combination, to build mitigation effects. The continuous changing of the hydrological regime of all water bodies (rivers, streams, lakes, lagoons, groundwater, glaciers) modifies their natural rhythms (their

flow and climatic dynamics), from low-water (or even drought) to flooded stages (Wantzen, 2023). These enact the notion of the natural and cultural dimension of water pushing our thinking framework towards concepts like assemblage (De Landa, 2006), hybridity (Haraway, 1991; Swyngedouw, 1999, 2015) and wetness (Da Cunha, 2018; Mathur & Da Cunha, 2020).

PH: I agree that the nature/culture relation and the rejection of the separation of the two typographically represented in the condensed word *natureculture*,¹⁰ merits consideration. I lean towards Helmreich (2011), who has discussed water's oscillation between natural and cultural realms and functions:

Water oscillates between natural and cultural substance, its putative materiality masking the fact that fluidity is a rhetorical effect of how we think about 'nature' and 'culture' in the first place. (2011, p. 132).

It seems to me that interior waterscapes are prime sites to investigate and seek to understand such oscillations.

FV: I agree, but it is important – for our discussions, at least – that the term ‘interior’ is not seen as an alternative *to* something. For example, ‘interior’ is not opposed to marine spaces, and not in opposition to something else, e.g., the land. With the ‘interior aquapelago’, I think, we can push forward our investigation of freshwater realms from an ontological point of view and trigger a deeper comprehension of our relationship with the water-world. In other words, the concept allows us to project ourselves beyond the opposing dimensions of land and water into an amphibious landscape in which the *longue durée* of geomorphological models, the evolution of societies and everyday actions coexist (in acts of precarious balance). These three components are the result of recurrent adaptations rather than planning and, in this, water plays a preponderant role because if you can plan the land, you have to adapt to water. In these, the concept of interior aquapelagos is historically and geographically situated. They arise from human livelihood activities and then subside/dissolve when either these stop (through ‘fishing out,’ pollution etc.) or as global climate situations change and affect ocean temperatures, winds, rainfall patterns, and/or the navigability of waters.

III. Entering the Region / Entering History

Immediately after the conference we encountered an arresting representation of the region in the form of a mural painted by Afro Basaldella in 1938 (Figure 8). The mural combines a *pianta prospettica* (elevated representation) of Friuli with symbolic and representational figures and a cartographic insert. While the formal elements of the mural were striking, the apparent aridity of the area around Udine and central Friuli were even more notable. In engaging with this visual artefact we were guided by the work of geographer Tania Rosetto who has researched and theorised object-oriented cartography (Rossetto, 2019) and, of particular regional relevance for our study, the use, function and effect of what she terms “mappy” representations (Rossetto, 2021). Building on Schulz (1997), she identifies that:

¹⁰ This concept is explicated with clarity by Malone & Ovenden (2016) in the context of the “tightly interwoven” aspect of Human-primate-environmental-economic spheres in Bali.

the map is not always a map: in past times, the map was often a vehicle for nongeographical ideas. Even today, maps are ideas, they are ways of knowing, thinking and acting, they hold cultural meaning and political messages, but also hopeful imaginings. (2021, p. 46)

While we have discovered far fewer mappy representations of Friuli than Rossetto did of Venice in her 2021 case study, those we have found have been insightful for understanding changing historical perceptions of Friule as humans have increasingly modified its environment.

Afro Basaldella, or 'Afro,' as he is commonly known, was born in Udine in 1912 and grew up in an artistic family in the city. In 1930 he received a scholarship to study art in Rome and became involved with the Scuola Romana whose artists mixed elements of classicism (influenced by the anti-avant garde *Retour à l'ordre* movement¹¹) and Expressionism.¹² His growing reputation resulted in a commission to paint murals at the Udine Opera House in 1936 and a second in 1938 for a mural in an inner-city Udine house owned by the local merchant Dante Cavazzini.¹³ The latter commission resulted in a sweeping tableau of Udine within Friuli and the broader northern Adriatic region. The work became accessible to a general public in 2012 when the house became part of the city's Museo d'Arte Moderna e Contemporanea (henceforth MAMC), housed in what is now known as the Cassa Cavazzini. That said, the work is hardly highlighted within the museum. Arguably neither modern, in the usual sense of that term, nor contemporary, in a 21st century context, it simply sits within the house, lacking the clear signage afforded to the canvases and sculptural works that fill other rooms. In many ways, while its presence preceded the establishment of the MAMC, it is now both out-of-place and immobile within it. Indeed, it exists in more obvious dialogue with the collection of historical paintings in the city's civic museum than those works closer to it.

Like many similar 16th and 17th century works – which it is arguably a pastiche of – Afro's mural is complex with regard to its representation of geographical and imaginative-associative space and its dual 'mappiness'. The image comprises three horizontal bands representing sky, land and sea, as if viewed from an elevated position above the northern Adriatic, due south of Grado. The sky forms the narrowest band, running above the Carnic and Julian Alps. Udine and its surrounds are painted with relative pictorial accuracy but non-naturalistic proportions (Figure 9) – the city being represented as over-large within an abbreviated landscape between mountains and the coast. The mural represents the centrality of Udine and, at the same time, the geographical limits of Friuli: the Alps to the north and east; the sea with the Marano and Grado lagoons to the south; and to the west, the Tagliamento river. Udine is thereby represented as the centre/heart of Friuli. The pictorial representation of the city is complemented by an additional cartographical element in the upper left corner, a map of the old walled city and more recent extensions (Figure 10) that show no trace of the canals that run through and around the old city. While parts of them had been built over in the late 19th and early 20th centuries, substantial fragments still existed in the 1930s (and, as discussed above, still exist) but were clearly marginal to the artist's perception and representation of space.

¹¹ See Farquet (2021).

¹² See the official Afro Basaldella website for more details on and representations of his work.

¹³ Cavazzini acquired the house in 1937 and extensively redecorated it with murals and artwork.



Figure 8 – Afro's Friuli mural (1938), MAMC (photograph by Philip Hayward, June 2024).



Figure 9 – Detail of Udine from Afro's Friuli mural (1938), MAMC (photograph by Philip Hayward, June 2024).



Figure 10 – Map of Udine, detail from Afro's Friuli mural (1938), MAMC (photograph by Philip Hayward, June 2024).

It is notable that regional waterways are barely apparent in the rear and mid sections of the mural, although Cividale del Friuli, its distinctive Ponte del Diavolo bridge and a short section of the Natisone river (a tributary of the Torre river and, in turn, of the Isonzo-Soča), is represented just above the left corner of the right-side doorway (immediately above two figures involved in processing grapes to make wine). The Tagliamento is prominent in the left-hand side of the lower coastal section, where a proportionately gigantic figure is filling a pitcher. To the right of the river, two men are represented net fishing in the waters of the Marano Grado lagoons. The sea is represented with blue and white textures and forms the background to the mural's proportionately largest feature, a young nude male clasping the neck of a hippocampus (a mythological/heraldic figure with the head and torso of a horse, webbed lower front limbs and a fish's tail) as if riding it though the waves. While not commonly seen in Venetian civic or sacred statuary, the hippocampus is frequently present as an ornamental motif on Venetian gondolas. The image of the male and hippocampus also has some resemblance to a feature within Jacopo de' Barbari's famous elevated perspective of Venice (1500), showing Neptune astride a stylised dolphin in a central Venetian waterway, although the male in the Udine mural carries no trident and the connection is thereby more tenuous. The image of Neptune in Venice represents him as exercising dominion over the seas and, implicitly, in a Venetian context, the city-state's similar dominion (Hayward, 2021). The Udine mural might be interpreted to convey a similar message but somewhat less obviously so and in manner that is primarily historical in that Udine is now more implicated with the modern regional capital of Friuli Venezia Giulia, Trieste, to the south-east.

Considering the overall composition of the mural, and its ostensible purpose of representing the city of Udine, Friuli and adjacent areas, what is notable is that the maritime aspect, most obviously represented by the hippocampus and its rider, is over-emphasised. While Udine is doubly represented in the work (pictorially and cartographically), the size and dramatic appearance of the figures represented in the Adriatic's waters detracts attention from the city, rendering the landscape as a hinterland and, more pointedly, as a backdrop to the

aquatic couple. This may reflect the mythology and symbolism of Venice as a marine power¹⁴ but it has less relevance and resonance for Udine itself. Indeed, it might be interpreted as exemplifying the manner in which interior waterways are often barely acknowledged (and certainly under-valourised) as elements of landscapes. Undramatic waterways do not so obviously lend themselves to mythical embellishment and the folklore that surrounds them is 'quieter' and not so easily amplified into heroic sea gods and the fabulous beasts they encounter. This focus on the aquatic is all the more notable given that Afro was a son of the city he painted and that his perceptions of Udine and its surrounds were grounded in long association with it. In this way, the absences in his work underline the obscurity of the city's and region's waterways to an early- mid-20th century sensibility and a resultant amnesia over their historical significance.

Dropping back historically we can find very different representations of Friuli and Udine and their liquid elements painted in periods when these were regarded as core to regional livelihood activities. While human settlement in Friuli appears to date back to the Neolithic period, Udine grew into a major regional trade centre during the late Middle Ages (Pàssola Guida, 2010). The earliest representation we uncovered (courtesy of Francesco Vallerani) was Paolo Forlani's 16th century map of the region (Figure 11), which is notable for its emphasis on the region's riveriness and for its identification of its town and village sites as heavily clustered along waterways. There is also a surprising aspect in that its town and smaller settlements are represented by red symbols of various sizes that resemble ship's hulls sitting across river courses and canals. Interpreted in this manner, the settlements (and the livelihood activities that occur in them) appear defined by their connection to interior waterways and buoyed by them amidst a terrestrial 'sea of land'. While not necessarily incorrect, this a fanciful contemporary interpretation, as the red symbols are a more general symbol of settlement in the Italian Renaissance period and would have been unlikely to have been interpreted as anything else by contemporary viewers.

Udine was acquired by Venice in 1420, as part of the city-state's broader annexation of its hinterland, and by the mid-17th Century was well-established within encircling walls (Lucchese, 2005), as Joseph Heintz the Younger's elevated representation (Figure 12) illustrates. Unlike many towns and cities in north-eastern Italy, it was not established on the banks of a river but built on raised land that gave it strategic advantage in its surrounding landscape. In the absence of a central river, a network of narrow canals was developed between the 11th and 12th centuries to serve the city and its adjacent agricultural areas. These canals were fed by the Torre River, located three kilometres to the east of the old city centre, and were not navigable as a result of their narrow and shallow form and the small weirs necessary to manage changes in elevation from north to south. Two of the canals – the Palma and the Roggia di Udine – flowed through the central city area, providing water for household purposes and powering mills before they joined up south of the city. These are clearly discernible in Heintz's painting as a blue moat-like ring around the inner-city, inside its walled perimeter. A series of smaller canals known as *roielli* were added in the inner city in the 14th and 15th centuries. Udine remained part of Venice until 1797, when it fell under French control, and then became part of the Austrian Empire until 1866 when it became incorporated into the newly established Italian state.

¹⁴ It is notable that while the Lion of St Marks is prominent in Udine's Piazza Liberta, it does not appear anywhere in the mural, not even as a detail.



Figure 11 - Paolo Forlani's 1563 map of Friuli.¹⁵

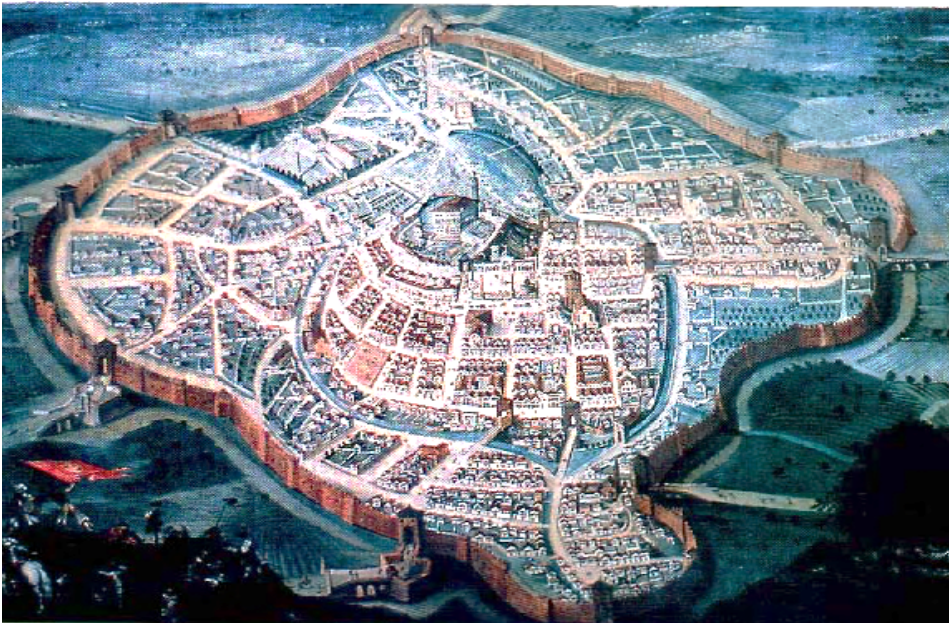


Figure 12 - Elevated perspective map of Udine attributed to Joseph Heintz the Younger (c1650) (Wikimedia Commons).

¹⁵ Image sourced from: <https://www.libreriaaperini.com/it/cartografia-antica-/italia/friuli-venezia-giulia/nova-descrittione-del-friuli-anno-m-d-lxiv/8192/dcm>

Heintz provided an accurate representation of the city's material substance and main waterways that remains a useful historical artefact, along with other paintings from the period on display at the Civici Musei di Udine. It captures the city at its most aquapelagic before canals fell into decline and were largely covered over and left neglected before some were rehabilitated in the late 20th and early 21st centuries as cityscape features whose utility was aesthetic rather than practical, a story shared by many other cities in Italy (e.g., Milan, Padua and Bologna) and in Europe more broadly (e.g., Manchester and Bruges).¹⁶

PH: The aridity of the interior landscape represented by Afro served to reinforce contentions that you made in your introduction to the conference (Visentin, 2024b). After acknowledging Steinberg and Peters' 2015 call for a "wet ontology" that could "reinvigorate, redirect, and reshape debates often constrained by terrestrial limits," you identified that the majority of human geography is primarily land-based and tends to overlook the interconnected waterscapes integral to modern individuals' daily experiences. Similarly, influential work on wet ontologies and fluid spaces – such as elaborations of the concept of the aquapelago – predominantly analyse oceanic and maritime contexts, ignoring inland waters and waterscapes entirely. The representation of the oversized and overly dramatic human male and hippocampus – and the apparently waterless city that lies behind them in Afro's mural – echo this tendency.

FV: This is a very significant point, and in this specific case, the representation of Udine in the mural visually reinforces certain perceptions of the roles of land and maritime water. It's true, there is the Tagliamento River, to the bottom left (west) but if one scrutinises the territory, it is represented as a compact mass of (dry) land rather than an area continuously crossed by rivers, streams, canals and small drains. This suggests that Afro was aware of the drainage works undertaken by the Consortium of the Lower Friuli in 1930s and was reflecting this intervention into a formerly wetter delta region.¹⁷ The city of Udine itself is located between two rivers, like two brackets: the Cormor to the west and the Torre to the east. These watercourses are not even sketched on Afro's map, which provides a clearly terra-centric vision whose cornerstones are the linearity, stability, solidity and the territorialisation effects of water control. It is, in some way, and maybe unconsciously, the concrete-cartographic representation of the growing capacity of humans to manipulate and control water in favour of land.

¹⁶ While Heintz the Younger's elevated cityscape captured a newly built and ascendant aquapelagic city, another, far quieter and unheralded event occurred around the same time. Beavers lived in north-eastern Italy up until the end of the 16th century. They have a particular relevance to the lines of thought we have advanced in this essay. With their instinctive damming of streams to create safe, deep water ponds to inhabit, they operated as eco-system engineers (Brazier, Puttock, Graham et al., 2020), intervening in natural landscapes and creating conducive surroundings for themselves and other creatures. As non-humans, they are clearly part of nature but their agency merits them being accorded a place in the historical *naturecultural* perspectives we discussed earlier, usefully reminding us that we are not the only disruptors/eco-engineers on the planet. Given that beavers were present and active during the period when human residents were beginning to create the region's interior aquapelago by establishing water-fed fields and plantations, it is likely that settlers and beavers were in contact and in some degree of conflict with each other. History is written and remembered by the victors and there are no eulogies for nor artistic representations of the region's departed semiaquatic rodents, but they are, nevertheless, part of its history and poignant casualties of the 'march of progress' across the region.

¹⁷ See Ermacora & Brisighelli (1937) for a contemporary account of the drainage works and the influence of Fascist ideology in their implementation (our thanks to Francesco Vallerani for this reference).

The geography of water is a field of research that is increasingly expanding and that embraces cultural, material and representational analyses of hydraulic landscapes, from more markedly ecological-political works, as we have seen, to non-human analyses that integrate social, cultural and more-than-human approaches. Moving along this line pushes us to sift through all the stimuli and possibilities involved in thinking of water as an element complementary to our actions rather than separate or external to us (Krause & Strang, 2016). And just like other springs and rivulets that join the watercourse, the hydro-centric perspective has increasingly expanded. To this I would return to Anuradha Mathur and Dilip da Cunha, who have noted that “wetness is everywhere,” and in a world where water has often been contained in favour of the earth, it is perhaps time for a new hydrologic imagination “that says we do not inhabit a surface but rather a ubiquitous wetness” (2020, p. 139). As the living environments of both humans and non-humans are rapidly changing, we urgently need to respond to the challenges of the Anthropocene, one of which is reconsidering varied human relationships with watery places. The concept of the Aquacene (Daniels, 2018) is therefore a step towards welcoming the previously identified “watery turn” (Visentin, 2018, p. 246) that shifts the emphasis from maritime to interior waters and wetlands. That helps us to address this gap: an essential step for a more holistic understanding of water's role in our contemporary world.

III. Flowing On

FV: The discussions we have advanced above illustrate that the modern city of Udine was initially constituted as an urban aquapelago within the water-crossed plains that run from the Alps to the Marano and Grado lagoons. The latter can also be understood to constitute an extensive interior aquapelago through the dependency of the area's human population on its extensive river systems and the construction of canals that channeled water to cultivation areas, the towns, the mills and wherever water was necessary for livelihood activities. So, we immediately have a fruitful complexity. Here, and in our earlier discussions, we understand aquapelagos as temporal and processual entities. To make the processual and temporal dimensions of this water-assemblage even clearer, when the water from the Roggia di Palma and Udine (derived from the Torre River) was no longer sufficient for the city in the 19th century, the water from the Tagliamento was brought to Udine through a canal, the Ledra, which originates in Ospedaletto (Gemona del Friuli), enters the Friulian plain and runs along it until reaching Udine, where it flows into the Eastern Collector canal, which conveys the water into the Torre torrent. This comprises an intricate system that goes beyond the natural courses of regional waterways and moves the water between hydrographic basins, hybridising them in the process.

Indeed, by broadening the width of lines delineating the various waterways referred to above, Friuli Venezia Giulia can be represented in a way that complements Joseph Heintz the Younger's 17th century representation of Udine (which also features similarly thickened lines). Such a representation shows how the region's waterways delimit/ build/ constitute/ form islands within the interior-water-land (Figure 13). In your work with Christian Fleury on the Lower Richmond River in Australia you discuss this aspect with regard to what you identify as “socio-spatial perceptions”, many of which derive from modifications of water-/land-scapes arising from livelihood practices relating to water (Fleury & Hayward, 2021). Isn't that essentially what an interior aquapelago is?

PH: In all but name, yes. That was what was most interesting about the Australian locale we were exploring, although we did not articulate it in those terms at that time. We framed our analyses within representations and discussions of islandness and almost-islandness in the lower reaches of the river but the model of interior aquapelagality provides a more insightful lens and we could usefully revisit our Australian study by following through the routes, purposes and perceptions of micro- and macro waterways.

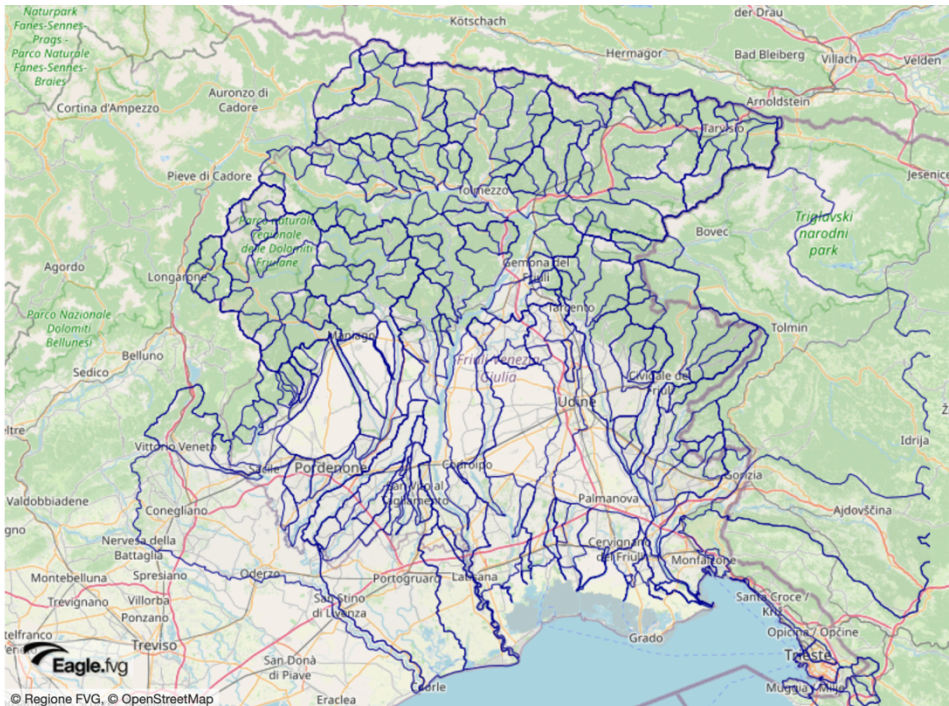


Figure 13 – Map of the waterways of the Friuli-Venezia Giulia region (Eagle Maps, modified by the authors, 2024).

FV: If we take that approach for Friuli, we can go beyond what we might term ‘interior islandness’ and identify an ‘interior *archipelago*’ as a key element of the aquapelagic assemblage. Using the thickened blue line technique in Figure 13, the fragmented land spaces appear as an archipelago or, rather, borrowing from Edgeworth and Benjamin (2017), what might be termed a *hyper-archipelago*. The latter characterisation takes inspiration from their definition of hyper-objects as “so large and multifaceted and spread out through time that they cannot be apprehended in one go and they have aspects to them that may be hidden and inaccessible, phasing in and out of human awareness” (2017, p. 162). When we overturn a terrestrial focus and reason through water rather than land, we can recognise natureculture operations and the human manipulation of the liquid and solid realms that create aquapelagos in time and space from archipelagic systems, questioning our knowledge of what water-land-scape *is*.

PH: Indeed, and we can take that further. The exercise of conceiving/imagining Udine and its surrounding region as an interior aquapelago brought the issue of its wateriness and wetness to the fore. Understanding the area as a three-dimensional space in which liquid

and solid elements were combined in various ways by various types of human livelihood activities, we retained a strong sense of the wetness coursing through multiple physical and socio-economic layers of the environment as we traversed the region. Clambering around the Tagliamento diversion pipeline, for instance, we engaged with it not so much as an out-of-place, industrially fabricated artefact in an otherwise pastoral environment but, rather, as a vibrant vein in the body of a *natureculture* scape. The pipe is a point at which the river (and the riveriness of its water) is temporarily transmuted into a pipestream before it re-emerges and reconstitutes itself. This breaking of rigid delineations between natural waters and engineered ones is a fruitful one for further reflection. In many ways, I think we have been working to deliver what our colleague Francesco Vallerani described as “flowing consciousness and the becoming of waterways” in the title of his introduction to the anthology you co-edited with him (2018). You are far more familiar with and more well-travelled in Friuli-Venezia Giulia than I am, how useful does the concept appear to you, both locally and as a general figure, now that we have worked it through?

FV: Yes, I have travelled extensively through Friuli Venezia Giulia, often by foot, always cognisant of how water has permeated the landscape. Rivers, canals, basins, lakes, streams are everywhere and if you take your time and try to walk or follow a waterway or even more casually, if you drew a line and trying to follow it, you will be amazed at how many times you stumble across water. With the concept of the interior aquapelago we can conceive of human engagements with water producing *hybridscares*, both in terms of material signs that define geographies of water, but also of identity and of symbolic values perceptible from both individual and collective multisensory viewpoints (Visentin, 2024a). Our concept of the interior aquapelago is of a *hybridscape* with particular attributes discernible via a combination of water-centric observation and an awareness of the history of livelihood patterns. It has to be understood spatially, to comprehend its mobile dimensions, and also imaginatively, to grasp how such units of anthropised space embody the great visions and transformation of the world’s interior waterscapes.

PH: In concluding, we should return to the limitations of our study and the concepts we have spun in it. The first – made explicit in our subtitle and introduction – is that we have ‘test driven’ the concept of the interior aquapelago with regard to an area with distinct geo-cultural features and attributes. The application and development of the concept with regard to other areas will no doubt allow for substantial inflection and development of the concept. The second issue is that we have primarily addressed surface waters rather than subsurface features and flows and hydrologic cycles more generally. We acknowledge that one of the next steps in conceptualising interior aquapelagos involves the consideration of their subsurface elements and the manner in which these form an assemblage/*hybridscape* with above-ground components, including a variety of biological ones. In this regard, further work on the concept could usefully engage with Tashima Thomas’s ecocritical study of the Flint River in Michigan and its toxicity (2022). Indeed, her framing of the Flint water crisis as manifesting a “black aquapelago” informed by the trope of the poisoned well within an Afro-Gothic tradition is a deep and insightful discussion of interior aquapelagality in all but name. The very different nature of her study and ours suggests the variety of interior aquapelagos that might be identified across the planet and the types of engagement with them that might produce new, holistic ways of considering human-environmental interactions with water in interior contexts.

Acknowledgement:

Thanks to University of Udine for hosting Philip Hayward as a visiting researcher in May-June 2024 to work with Francesco Visentin on regional waterway research. Also, thanks to our colleagues Lindsay Bremner, Ana De Francesco, Andrea Guaran and – especially – Francesco Vallerani for their various inputs into and support for the research we present in this Debates paper.

REFERENCES:

- Afro Basaldella website (2024). <https://afrobasaldella.org>
- Benjamin, J. & Edgeworth, M. (2017). What is a river? The Chicago River as hyperobject. In Kelly, J.M. (Ed.) *Rivers of the Anthropocene* (pp. 162-176). University of California Press.
- Bertolino, S., Bartolommei, P., Ferri, M. et al. (2023). The strange case of beaver return in Italy: origins and management. *Hystrix: The Italian Journal of Mammalogy* 34. <http://www.italian-journal-of-mammalogy.it/The-strange-case-of-beaver-return-in-Italy-origins-and-management,177953,0,2.html>
- Bianco F, Bondesan A, Paronuzzi P, et al. (Eds.) (2006). *Tagliamento*. Cierre Edizioni.
- Bonan, M. (2019). *Le operose rogge di Udine*. Kappa Vu Edizioni.
- Brazier, R.E., Puttock, A. Graham, H.A. et al. (2020). Beaver: Nature's ecosystem engineers. *WIREs Water* (8)1, e1494. <https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wat2.1494>
- Cosgrove, D. (2006). Modernity, community and the landscape idea. *Journal of Material Culture* 11, 49-66.
- Da Cunha, D. (2019). *The invention of rivers. Alexander's Eye and Ganga's descent*. University of Pennsylvania Press.
- Daniels, S. (2018). On the waterfront. In Vallerani, F. & Visentin, F. (Eds.) *Waterways and the cultural landscapes* (pp 19-28). Routledge.
- De Cillia, A. (2000) *I fiumi del Friuli Venezia Giulia: Dalla livenza al timavo, dalla carnia alle lagune*. Paolo Gaspari Editore.
- De Landa, M. (2006). *A new philosophy of society*. Bloomsbury.
- Ermacora, C. & Brisighelli, A. (1937). La trasformazione fondiaria della bassa friulana: un'opera senza precedent. *La Panarie: rivista friulana d'arte e di coltura*, 77, 361-370.
- Farquet, C. (2021). Un retour à l'ordre dans les règles de l'art. *Paradigme pour l'histoire culturelle des années 20*. <https://hal.science/hal-03151776/>
- Fleury, C. & Hayward, P. (2021) Riverine complexity: Islandness, socio-spatial perceptions and modification—a case study of the lower Richmond River (Eastern Australia). *Island Studies Journal* 16(2), 156-177.
- Haraway, D. (1991). *Simians, Cyborgs and women: The reinvention of nature*. Routledge.
- Hayward, P. (2015). The aquapelago and the estuarine city: Reflections on Manhattan. *Urban Island Studies* 1(1), 1-14.
- Hayward, P. (2021). *Domini da mar*: Manifestations of the aquapelagic imaginary in Venetian symbolism and folklore. *Shima* 15(1), 19-45.
- Hayward, P. & Joseph, M. (Eds.) (2025). *Aquapelagos: Integrated marine and terrestrial assemblages*. Routledge.
- Helmreich, S. (2011). Nature/Culture/Seawater. *American Anthropologist* 113 (1), 132-144.
- Krause, F. (2019) Hydro-perspectivism: Terrestrial life from a watery angle, *Anthropological Notebooks*, 25 (2), 93-101
- Krause, F. (2023) *Thinking like a River: An anthropology of water and its uses along the Kemi River, Northern Finland*. Transcript Verlag.

- Krause, F. & Strang, S. (2016). Thinking relationships through water, *Society & Natural Resources*, 29 (6), 633-638.
- Lucchese E. (2005) Joseph Heintz il giovane autore della *Pianta della città di Udine*. Con un aggiornamento su alcuni dipinti della Galleria d'Arte Antica e in regione. *Bollettino delle civiche istituzioni culturali*, 9, 43-58.
- Malone, N. & Ovenden, K. (2017). Natureculture. *The International Encyclopedia of Primatology*.
<https://onlinelibrary.wiley.com/doi/epdf/10.1002/9781119179313.wbprim0135>
- Mathur, A. & da Cunha, D. (Eds.). (2020). *Design in the terrain of water*. University of Pennsylvania School of Design.
- Mathur, A. & da Cunha, D. (2020). Wetness is everywhere: Why do we see water somewhere? *Journal of Architectural Education*, 74 (1), 139-140.
- Müller, N. Surian, N. & Tockner, K. (2023). Policy paper: Let the Tagliamento flow freely! The king of the Alpine rivers is in danger due to construction measures. *Jahrgang* 8, 3-12
- Pàssola Guida, P. (2010). The 14c contribution to the protohistory of Friuli (north-eastern Italy). In Montagnari Kokelj, M., Budnich, M. & Tuniz, C. (Eds.). *Science for Cultural Heritage* (pp.211-225). World Scientific.
- Rossetto, T. (2019). *Object-oriented cartography: maps as things*. Routledge.
- Rossetto, T. (2021). 'Mappy' imageries of the watery city: The cartographic figure of the Venice Lagoon across epochs and media. *Shima*, 15(1), 46-58.
- Rossetto T. & Lo Presti L. (2024). Why cartographic humanities? In T. Rossetto & L. Lo Presti (Eds.). *The Routledge Handbook of Cartographic Humanities* (pp. 1-12). Routledge.
- Ryan, Z. (2007). A conversation with Mary Miss. *Log* 9.
<https://static1.squarespace.com/static/53e29b74e4b0d1dab65f7762/t/5592e21ce4b0c7742cac842a/1435689500955/20150616144127.pdf>
- Scaini, C. & Scaini, A. (2025). Unravelling the potential of context-based storylines: Towards ecosystem-based land use planning for the Tagliamento River, northeastern Italy. *Shima* 19(1), xx-xx
- Shima* (2024) Aquapelagos anthology.
<https://www.shimajournal.org/anthologies/aquapelago.php>
- Sbisà, C. (2013, June 12). Affreschi a confronto: l'amicizia d'arte tra Afro e. *Messaggero Veneto*.
<https://messengeroveneto.gelocal.it/udine/cronaca/2013/06/12/news/affreschi-a-confronto-l-amicizia-d-arte-tra-afro-e-carlo-sbisa-1.7245397>
- Schulz, J. (1990). La veduta di Venezia di Jacopo de'Barbari: cartografia, vedute di città e geografia moralizzata nel Medioevo e nel Rinascimento. In J. Schulz (Ed.) *La cartografia tra scienza e arte: carte e cartografi nel Rinascimento Italiano* (pp. 13-64). Panini.
- Surian, N., Fontana, A. (2017). The Tagliamento River: The fluvial landscape and long-term evolution of a large Alpine river. In Soldati, M. & Marchetti, M. (Eds.) *Landscapes and Landforms of Italy* (pp.157-167). Springer.
- Swyngedouw, E. (1999). Modernity and hybridity: Nature, Regeneracionismo, and the production of the Spanish waterscape, 1890-1930. *Annals of the Association of American Geographers* 3, 443-465.
- Swyngedouw, E. (2015). Urbanization and environmental futures: Politicizing urban political ecologies. In Perreault, T., Bridge, G. & McCarthy, J. (Eds.) *The handbook of political ecology* (pp. 609-619).
- Thomas, T. (2020). An ecocritical look at Flint's water crisis and Afro-Gothic liquidity. *Liquid Blackness: Journal of Aesthetics and Black Studies* 6(2).
<https://read.dukeupress.edu/liquid-blackness/article/6/2/38/319810/An-Ecocritical-Look-at-Flint-s-Water-Crisis-and>

- Tockner, K., Ward, J.V., Arscott, D.B. et al. (2003) The Tagliamento River: A model ecosystem of European importance. *Aquatic Science* 65, 239–253.
- Vallerani, F. (2004). *Acque a Nordest. Da paesaggio moderno ai luoghi del tempo libero*. Cierre.
- Vallerani, F. (2018). Introduction: Flowing consciousness and the becoming of waterscapes. In Vallerani, F. & Visentin, S. (Eds.) *Waterways and the cultural landscape* (pp. 1-16). Routledge.
- Visentin, F. (2018). Conclusions: Toward a humanistic hydrology. In Vallerani, F. & Visentin, F. (Eds.) *Waterways and the cultural landscapes*, (pp. 244-256). Routledge.
- Visentin, F. (2024a). *Geografie d'acqua: paesaggi ibridi*. Marsilio
- Visentin, F. (2024b) Conference introduction. Unpublished presentation to the conference 'Inland Waterscapes: Nature, Society and Culture in Hydrography,' held at Udine University, 22nd-25th May.
- Visentin, F. & Kaaristo, M. (2024) Geographies of inland waterscapes: Thinking with watery places. *The Geographical Journal*, 190 (2) Special Session, 1-7.
- VV.AA (2006). *Tagliamento*. Cierre Edizioni.
- Wantzen, K.M. (2023) (Ed.) *River Culture – Life as a dance to the rhythm of the waters*. UNESCO Publishing.
- Zenarola Pastore, I. Stefanelli, L. & Colle, S. (1995) *Storia d'acque. Le rogge di Udine, patrimonio nascosto*. Kappa Vu.