

MAIN SECTION

Atlas of Mediterranean Liquidity: Immerse - A Submerged Map to Reveal Hidden Connections Between Water and Anthropic Life in Genoa

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ABSTRACT

The focus of the research carried out by Zones Portuaires and Corpi Idirici for the digital map of Genoa in the Atlas of Mediterranean Liquidity - is water. The map is broken down into the theme of the "immersed" with a dual meaning of "invisible - underground or underwater" due to it being submerged or forced, and of "invisible - unknown or hidden" as a result of it being abandoned or unused. The map tells the stories of a select number of noteworthy places along fresh and saltwater routes, land and maritime passages, stories made invisible by anthropogenic hyper-infrastructure and immersed in physical conditions that lack knowledge and accessibility. The phenomenon has been studied from a point of view that moves from the sea to the hinterland and vice versa using a transdisciplinary approach method of investigation and restitution that makes use of the hybridization between artistic practice and scientific research.

KEYWORDS

Digital Map, Infrastructures, Landscapes, Genoa, Water.

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Introduction

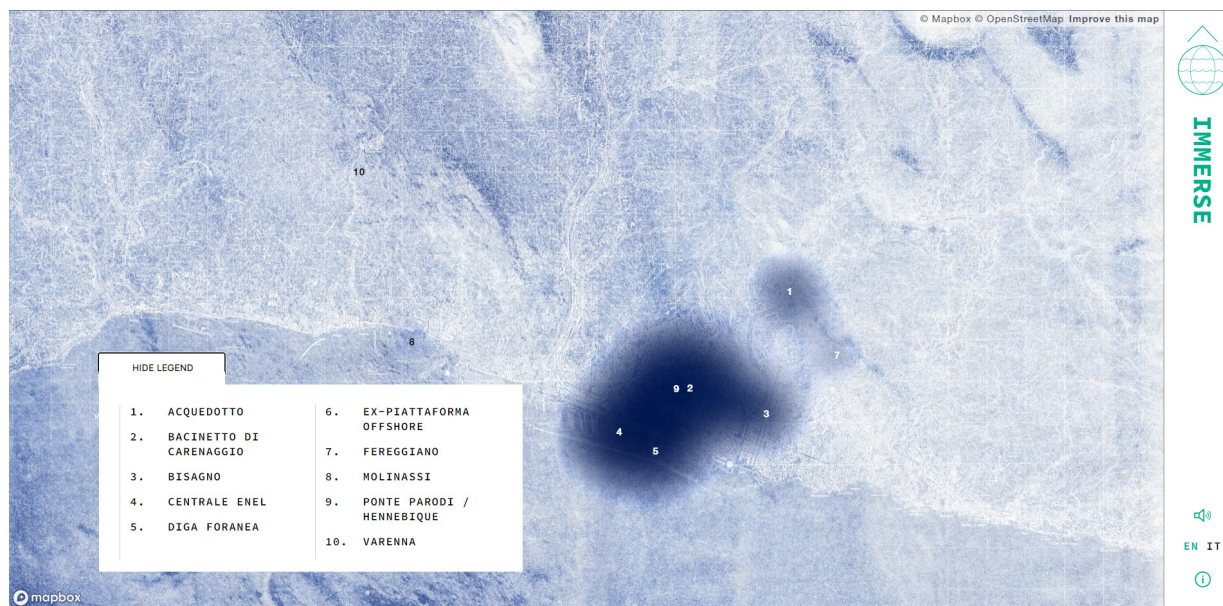


FIG. 1 Snapshot of *Immerse*. Overview of the 10 stories represented on the map. Source: Corpi Idrici and Zones Portuaires Genova

In recent years, the exponential rate of oceanic, atmospheric, and terrestrial transformations and the ever more intense and visible effects imprinted on the most vulnerable landscapes such as coasts and seas, has prompted policy reflections to place a greater attention on the need to develop research and strategies useful for reversing the course that has led our planet to suffer the heavy impacts of the Anthropocene. Since the mid-2000s much of this attention has focused specifically on the oceans, sensorium of the earth transformations in its complex dynamics.¹

In 2015, the United Nations dedicated an entire day of COP21 in Paris to the ocean, placing it at the center of an international debate at the United Nations Climate Change Conference; the same year the UN Agenda 2030 took up the theme of the management, protection and conservation of marine and coastal ecosystems, dedicating to it two points of Sustainable Development Goal 14 (14.2 and 14.5). In 2017, nearly fifty years after the establishment of the International Decade of Ocean Exploration by the United States, the United Nations proclaimed the Decade of Ocean Science for Sustainable Development 2021-2030, with the goal of mobilizing the scientific community, governments, and civil society around a common agenda of research and technological innovation for marine sustainability. The IPCC's latest report *Climate Change 2022: Impacts, Adaptation, and Vulnerability* again reiterated the specific vulnerability of coastal zones, emphasizing the need for less rigid design approaches. Despite the theoretical potential of these approaches, the implementa-

¹ Daniela Zyman, *Oceans Rising. A Companion To Territorial Agency: Oceans In Transformation* (London: Sternberg Press, 2021).

tion processes proved to be ineffective in addressing the problems for which they were created and disregarded expectations. While the main impediments are competing interests, conflicting goals, power imbalances, entrenched advantages, exclusion and antagonism, and prioritization of economic growth goals over environmental protection and social development goals, part of the ineffectiveness is due to processes of only symbolic participation, lack of communication, and knowledge transfer.²

At the same time, science alone has also shown limited effectiveness in both influencing policy change and disseminating shared knowledge,³ and this is also due to an increasing disillusionment in its capabilities on the part of the public.⁴ As Visser argues, one of the limitations of research is the lack of relationship between the natural sciences and the humanities, so while scientific knowledge and understanding of the ecological components and dynamics of the seascape and coastal landscape is growing, there is not an equally deep knowledge of the direct or indirect anthropogenic impacts related to the values and meanings that the sea and coast hold for communities, so science attempts to inform society, but by itself is unable to affect its behaviors, and thus transform them.⁵

To do this, it is necessary to develop contextually new modes of inquiry and new narratives, capable of capturing aspects that escape the observation of approaches aimed at defining unambiguous and definitive solutions, because, as has been amply demonstrated, persistent problems affecting contemporary transformations do not respond to rules that determine when the answer has been found and the problem can be considered solved.⁶ Radical thoughts need to be developed, and these can only develop if they are able to be free from sectional interests and instead approach reality with a holistic gaze, listen to multiple voices, transfer knowledge, and, at the same time, acquire knowledge.

In this sense, transdisciplinary research that promotes the observation of reality with a sea-based perspective through the hybridization of scientific and artistic research, community involvement, and cultural activism, can take shape as useful experimentations of new theoretical and method-

2 Anthony R. Marshak et al., 'International Perceptions of an Integrated, Multi-Sectoral, Ecosystem Approach to Management', ed. Raúl Pallezo, *ICES Journal of Marine Science* 74, no. 1 (February 2017): 414–20, <https://doi.org/10.1093/icesjms/fsw214>; Christina Kelly, Geraint Ellis, and Wesley Flannery, 'Unravelling Persistent Problems to Transformative Marine Governance', *Frontiers in Marine Science* 6 (24 April 2019), <https://doi.org/10.3389/fmars.2019.00213>.

3 Shona K. Paterson et al., 'Examining the Potential of Art-Science Collaborations in the Anthropocene: A Case Study of Catching a Wave', *Frontiers in Marine Science* 7 (19 May 2020), <https://doi.org/10.3389/fmars.2020.00340>.

4 Mika G. Tosca et al., 'Reimagining Futures', *Elementa: Science of the Anthropocene* 9, no. 1 (9 August 2021), <https://doi.org/10.1525/elementa.2021.00016>.

5 Leontine E. Visser, 'Reflections on Transdisciplinarity, Integrated Coastal Development, and Governance', in *Challenging Coasts*, ed. Leontine E. Visser (Amsterdam: Amsterdam University Press, 2004), 23–48, <https://doi.org/10.1017/9789048505319.003>.

6 Svein Jentoft and Ratana Chuenpagdee, 'Fisheries and Coastal Governance as a Wicked Problem', *Marine Policy* 33, no. 4 (July 2009): 553–60, <https://doi.org/10.1016/j.marpol.2008.12.002>.

ological approaches.

This is the case with a number of projects that have led to our collection of situations in the Genoese water territories. One of them is *Liquid Violence*,⁷ developed by a branch of the architectural practice Forensic Architecture. In *Liquid Violence*, Forensic oceanography depicts four stories, the reconstruction of different cases of migrant boats lost or shipwrecked in the mediterranean and the reconstruction of their relative savings or institutional abandonment. Dynamic maps and video reports are the final product of an investigation carried out by scholars in collaboration with museums or art institutions all around Europe. Also *Take Me to the River*,⁸ an online exhibition which has gathered 15 stories of community resistance or activism against resource extraction, environmental abuse, and the violation of Indigenous communities' rights, all of them linked by the liquid resource, has been an important model to the construction of the *Immerse* map.

Next to them, precious archives like the *Ocean Archive*⁹ or projects such as *Fluidcirculations*¹⁰ or *Murmuring Water*¹¹ have served to explore trans-disciplinary methodologies capable of producing knowledge deliverable to different kinds of public, even those less familiarized with scientific production and research.

It is in this context that the *Atlas of Mediterranean Liquidity* project fits, and, within it, the *Immerse* map.

Atlas of Mediterranean Liquidity

Atlas of Mediterranean Liquidity is an ongoing project of interactive maps concerning water issues around the Mediterranean. The project was initiated by the Goethe Institute Israel and CDA Holon and it strives to create new ways of learning, thinking, and understanding different problems and perspectives regarding water in and around the Mediterranean.¹²

The Atlas was launched in late 2020, and since then presented a growing collection of maps devoted to different questions about the Mediterranean Liquidity: water use, people and culture around water sources, historical events of disasters and damage to the sea, future speculations about

7 To know more about the *Forensic Oceanography* project, it is possible to visit the website at <https://forensic-architecture.org/subdomain/forensic-oceanography>.

8 "Take Me to the River." <https://takemetotheriver.net/>.

9 "Ocean Archive." <https://ocean-archive.org/>.

10 "Hydrofeminist Explorations." <https://fluidcirculations.xyz/>.

11 "Murmuring Matter - Jan van Eyck Academie." <https://www.janvaneyck.nl/calendar/urgency-intensive-2023-murmuring-matter>.

12 The *Atlas of Mediterranean Liquidity* is a project conceived by Carola Dürr (Goethe Institute Israel) and Udi Edelman (CDA Holon) and is developed by a multidisciplinary team consisting of: Avital Barak (research), Shual - Design Studio (digital product - design and research), Adam Kariv (web development), Shim Gil (production), Ruth Przybyla - Goethe Institute Israel (coordination).

changing sealines or drinking water shortages, the question of invasive species and various perspectives on the relationship of man and nature. The Atlas gathers stories of water from coastal regions and the entire geographical area of neighboring countries, including inland areas. The different maps were initiated and developed by artists and scientists from various countries around the Mediterranean. Some maps were created by artists or collectives of artists and designers; others are the outcome of invitations from the local Goethe Institute in those countries.

The concept behind the *Atlas of Mediterranean Liquidity* is to bring as many voices, perspectives, narratives, and agencies of people who live around the Mediterranean. Following the water streams, the Atlas reveals conflicts and collaborations in the region; the geography of water - crossing national borders, communities, and cultures, brings to the surface all the challenges and potentialities of the Mediterranean.

In doing so, the Atlas corresponds with a growing trend of alternative cartography manifested in different ways both in the critical geography departments in academia and in interdisciplinary projects of planning and design.¹³ This trend is the outcome of the critical perspective that uses cartography tools for conceptual change and as a political action.

Following the understanding that mapping is not a neutral practice, it reveals the agenda of those who created the map, usually those in power, and the act of mapping itself is a political act that constructs reality; the Atlas offers an alternative cartography that undermines the official politics of the region, the power relations, and the regional distribution of resources.

However, the alternative approach is not only on the subject of the different maps but also in how it invites different fields of knowledge to engage in this form of alternative cartography. The Atlas point of departure is an artistic point of view, and as one, it brings different perspectives, practices, and motivations into the various maps. The common hierarchy of knowledge of our time is questioned, and the relationship between data and its representation is being challenged and constantly re-examined. The

13 The thought of alternative cartography brings together spatial investigation, critical thinking on new technologies, and the rising presence of the camera (whether as surveillance or as a popular form of documentation). In her book *Close Up at a Distance - mapping, technology, and politics* (2013), Laura Kurgan brings together "claims and arguments about what the technologies of spatial representation have to do with the spaces they represent, beyond simply representing them." Laura Kurgan, *Close Up at a Distance: Mapping, Technology, and Politics* (Boston: MIT Press, 2013), 13, <https://doi.org/10.2307/j.ctt14bs159>.

Another interesting examples will be the research group *AntiAtlas* and its curatorial project *Out of the blue.map* and the alternative map they developed (<https://calypso3621.com/>). Or *Terra Forma. A Book of Speculative Maps*, written by Frédérique Ait-Touati, historian of modern science, designed by the architects Alexandra Arènes and Axelle Grégoire, and with a foreword by the philosopher Bruno Latour. The book proposes an exploration of our world as if it were unknown to us, through a series of maps that invite us to explore what we think we know through new ways of representing the connections "between the biological physiology of living inhabitants and the physiology of the land", through a form of representation deliberately distant from georeferenced geographical models and admittedly not definitive. Frédérique Ait-Touati, Alexandra Arenes, and Axelle Gregoire, *Terra Forma: A Book of Speculative Maps* (Boston: MIT Press, 2022).

critical approach and, as a continuation, the belief in multiple narratives and variations of living are at the heart of the invitation to contribute to the atlas and thus characterize the atlas as a whole and in it each map.

In Zygmunt Bauman's *Liquid Modernity*,¹⁴ the liquid metaphor is used to understand modern life as an unstable, fluid, and dynamic nexus of global power relations. In the Atlas, the liquidity also represents the precarious time we are living in, the rapid changes, and the global effect on the Mediterranean environment and people, but also the interconnection between the different sections of the Atlas, the way water as a substance infiltrate and escape restrictions and above all, the challenge of holding the in-between state of the liquid. To keep the multiplicity of narratives, opinions, disciplines, and manifestations of the Mediterranean co-exist together without determining between them.

There are several main trajectories in the Atlas that interlace in different forms. Each trajectory functions as a category, while each map brings a distinct perspective and offers a zoom-in on a specific manifestation of the general theme. A thought-provoking example of this unfolding of a subject is the invasive species category. The map *Flow of Invasion* created by the scientist Dr. Yara Dahdal, and the artist Samah Sultan focuses on the roots and origins of several notorious invasive species in Israel, Palestine, and Jordan. The map uses the transboundary paradigm to explain ecological phenomena, which also functions as a metaphor for the shared present and future of the people in this region. A different perspective on that subject gives the map *On Seas, Parrots and Intruders*, created by the Argentinian collective Colectiva Ecoestéticas (Ana Laura Cantera, Gabriela Munguía, Mariela Yeregui). The opening declaration of the map is: "A Global South contribution for decolonizing the invasion ecologies approach." The global south perspective is crucial in understanding some of our time's cultural, economic, and ecological conflicts and crises, which originated in the Mediterranean.

The digital platform invites the use of mixed media: photography, video, sound, and text. Some maps tell the story of water only through sound, asking the user to submit to her sense of hearing and the audio experience. Other maps in the Atlas create a multi-sensory experience when combining sound and moving images in an interactive map that invites the user to create her own narrative by choosing each time a different path. The multi-sensory experience follows the intention of many of the maps to bring several perspectives simultaneously. Those perspectives can be of people or institutions but also of a place, for example, the two sides of the port - from the sea inland and from the coastline to the water.

Thus, the category in the Atlas dealing with port cities is an excellent example of a series of maps characterized by their multi perspectives,

14 Zygmunt Bauman, *Liquid Modernity* (Cambridge, UK: Polity, 2000).

multi-sensory, and interactivity features. As a category, it holds some of the most common DNA of the Mediterranean, the economic challenges of many port cities, and the various ecosystems developed around the port.

As a paradigmatic example of the spirit of the Atlas and its transdisciplinary character, the following parts of this article will focus on a specific case study from this category. The map *Immerse* concentrates on the two sides of the Genoa water system: the sea and the port and the rivers that flow towards the coastline. It is the outcome of a collaboration between two groups of artists, scholars, and architects invited by the Genova office of the Goethe Institute to develop a mutual map.

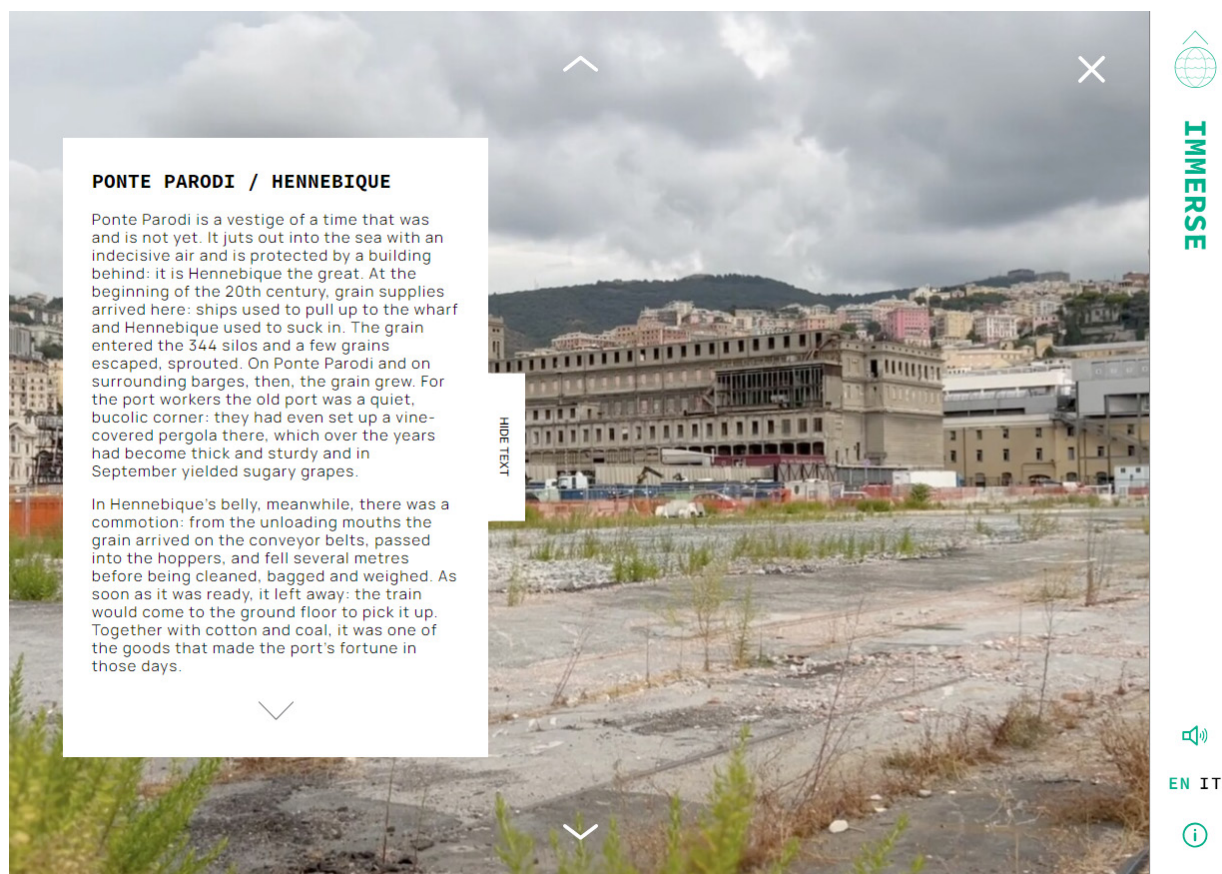
Immerse

Genoa is a coastal city. In the long and narrow morphologically compressed space that runs between the Ligurian Apennines and the sea, water has been, since Roman times, the element that connects its natural borders and every aspect within, be it urban, social, economic, cultural, architectural and infrastructural. Water is a maritime element that has shaped the development of the city to make it into a port; water is a fluvial element that has shaped the development of the city in the valleys that link to the hinterland. It is a strategic hub between the main navigation routes of the Mediterranean and Europe. In the name of development, rights linked to water have been denied over time in some form or another: the right of public use of the sea was taken away due to the need to operate port machinery, which is increasingly linked to global interests rather than local ones. Bodies of water are forced into rigid levees, canals, and underground spillways so as to favor rampant construction on the surface.

Today, the effects of climate change on the fragile coastal landscape, which has visibly worsened, reveal themselves through water. The rise in temperature affects biodiversity and the delicate balance of ecosystems. Gradually rising sea levels along the man-made coastline are juxtaposed with sudden and violent atmospheric phenomena that radically alter increasingly the course of flowing water via the flooding of buildings and its impact on the safety of communal life. If we carefully immerse ourselves in studying the territory beyond the rigid infrastructures that try to rule over it, we discover that water finds its own space to evolve as an element involved in social and ecological forces, both human and non-human, that escapes the control of unnatural forces. Therefore, the focus of the research for the digital map of Genoa developed for the *Atlas of Mediterranean Liquidity* is the element of water. It is broken down into the theme of the “immersed,” with a dual meaning of “invisible underground or underwater” due to it being submerged or forced, and of “invisible - unknown or hidden” as a result of it being abandoned or unused. The map tells the stories of a select number of noteworthy places along fresh and

saltwater routes, land and maritime passages, stories made invisible by anthropogenic hyper-infrastructure and immersed in physical conditions that lack knowledge and accessibility. The mapped places are waterways set within artificial embankments, harbor piers, maritime industrial buildings and residual spaces in the hinterland or along the coast that have unexpectedly become hospitable for small resistant communities, human and non-human, by virtue of their condition of invisibility.

The *Immerse* project started in Genoa following the meeting of two research projects from two different multidisciplinary collectives *Zones Portuaires* and *Corpi Idrici*.¹⁵ Both have investigated the phenomenon from a point of view that moves from the sea to the hinterland and vice versa using a transdisciplinary approach method of investigation and restitution that makes use of the hybridization between artistic practice and scientific research.



15 The *Immerse* project, funded and promoted by the Goethe-Institut Israel as part of the *Atlas of Mediterranean Liquidity*, and coordinated by Ines Richter for the Goethe-Institut Genua, was developed by a group of researchers composed by: Juan Lopez Cano and Maria Pina Usai (curatorship and development), Silvia Badalotti, Gaia Cambiaggi, Anna Positano, and Nuvola Ravera (photography, video, and visual research), FiloQ, Ale Bavo, Raffaele Rebaudengo / Stellare, and Matteo Manzitti (sound research), Maria Elena Buslacchi and Anna Daneri (archival ethnographic research and interviews), Matteo Casari and Annalisa Gatto (graphics and visual identity), Eli Krupitsky (design and web development).

Zone Portuaires

Born as a film festival in Marseille between 2008 and 2010, declined as an interdisciplinary festival in Genoa since 2015, *Zones Portuaires* has gradually evolved into an art based action-research device, a long-term project articulated in different actions, involving port and city communities in the process of co-creating new cultural and design scenarios for the reconnection between port and city.¹⁶ The project is developed annually in two phases: the first one is aimed at activating research projects developed through residencies, laboratories and workshops that bring together artists and researchers from different fields of discipline, and involve the port and urban communities; the second one opens up the port to the public with performances, installations, sea excursions and site visits led by port operators to discover its operational functioning, combined with conferences, exhibitions and informal encounters in the public spaces between city and port. Over the years, the Festival has progressively activated several connections with other port cities in the Mediterranean and Europe, involving public and private entities, research and cultural institutions. In 2019, *Zones Portuaires* received the patronage of the Association Internationale Villes et Ports (AIVP), which recognized how the objectives of the project were developed on the basis of the declination elaborated by the AIVP of the 2030 Agenda with respect to the specificity of port cities, and in particular with Goal 6, focused on culture and port identity, considered a strategic asset to establish a sustainable relationship between city and port. With the launch of the United Nations Decade of Marine Science for Sustainable Development 2021-2030, *Zones Portuaires* has reversed its research perspective and has begun to explore the specificity and complexity of the port city observing it from the sea. On the basis of this line of research in 2021 *Zones Portuaires* has created two artistic residencies aimed at developing processes of study and interpretation of marine and port sound geographies. The residencies, curated by Maria Pina Usai and realized together with the musicians/producers collective Stellare, involving several artists, take the title *Stellare in The Sea* and are realized in two places strongly evocative of the relationship between Genoa and the sea, the Galata Museo del Mare and the Acquario di Genova, open to interaction with museum visitors and passers-by. The musicians involved initially worked on a database of sounds recorded underwater and largely unknown to humans. Gradually the focus moves closer to the Genoese coastline, and the artists begin to record underwater sounds at some points that have long been the subject of investigation and intervention by *Zones Portuaires* actions. Among those points are the breakwater, the pier of the former ENEL power plant, the large pier awaiting new

16 "ZONES PORTUAIRES / Genova." <http://www.zonesportuaires-genova.net/>. See also Maria Elena Buslacchi and Maria Pina Usai, 'A Creative Approach to the Port-City Relationship: The Case of Zones Portuaires in Genoa', *European Journal of Creative Practices in Cities and Landscapes* 4, no. 2 (27 December 2021): 130–51, <https://doi.org/10.6092/ISSN.2612-0496/12129>.

functionalization Ponte Parodi, the Hennebique building, the dry dock of the Rimorchiatori Riuniti, and the former Porto Petroli offshore platform in front of the Multedo neighborhood. The act of studying these sounds and constructing sound mapping leads the musicians to create new pieces whose structure evokes, in the listener, the unknown geography of underwater space, and the possible connections between human communities and marine species. The sound research is juxtaposed with the visual research led by the photographer Silvia Badalotti, and the investigation is enriched with the data collection and archival materials carried out by the anthropologist Maria Elena Buslacchi. Most of the places mapped within the port are decommissioned, partially active or undergoing transformation and reuse, and this condition of suspended time of use allows for the discovery of new, existing or possible connections between human life and the unexpected colonies of marine and terrestrial biodiversity, which coexist in often unexpected ways within the dynamic coastal port landscape. The idea of the mapping is to return a hybrid narrative capable of attracting the interest of other researchers in the evolution of the project while simultaneously stimulating a shared design reflection on the value of port industrial archaeology, and the possibilities for functional reuse useful for the protection and implementation of coastal biodiversity. With this project *Zones Portuaires* initiates the experimentation of new ways to promote Ocean Literacy, with the aim of contributing to the dissemination of the direct interdependence between humans and the ocean, bringing to the attention of a wide audience, through the language of art, data, information and topics that are usually subject matters of scientific research. In 2022 the project's encounter with the *Corpi Idrici* collective led to evolving the narrative in the meeting of two observations of the coastline, from sea to land and from inland to sea, and the results merge together in the construction of the Immerse map.

Corpi Idrici

Corpi Idrici is a research conducted around the city of Genoa and its natural surroundings by a heterodox collective of artists, musicians, dancers, researchers¹⁷ and curated by Anna Daneri during the years 2020 and 2021. It started focusing on the organization of a performance commissioned by Fondazione Feltrinelli in Milan. Its main goal was doing a recognition of the Genoese body waters in collaboration with local collectives that fight to preserve them or to highlight the natural, animal, social or cultural heritage that gravitates around them.

"It investigates the identity of underground water and discusses the conflicts of its use with video, photography, interviews, and archival research. This process of research and documentation

17 "Corpi Idrici." <https://corpiidrici.it/>.

is an attempt to activate critical thinking on the identity of underground water and to address future planning. Moreover, this work aspires to build a possible collective imagery of underground explorations as well as to construct a resisting micro-geography of covered rivers, shedding light on the processes that have led to an increasingly serious environmental crisis.”¹⁸

For achieving the aims just enunciated above, the group has walked the line traced by the old aqueducts that fed the city since roman times till the beginnings of the 20th century; wandered through the galleries that cover the bed of seasonal streams till founding the wild life thresholds that connect them to the sea; introduced and explored the big infrastructures for the evacuation of rain waters during the big flood that periodically hit the city; or taken a swim with the migrant communities that gather themselves in the river that flows between former sand caves of the inner land.

During the period that the research laboratory has taken place, the group organized several encounters with practitioners. The series of lectures have involved scholars from diverse disciplines with a deep focus in the river, coastal and infrastructural setting of the city and in their possible future transformations. One of the initiatives tackled the issue of the most recent floods suffered by the overflowing of Feregiano, Sturla and Bisagno riverbeds in 2011 and 2014. Professor and engineer Marco E. Colombini has traversed the events by explaining the collateral risks of a city built not considering the extreme variations of rainfall events that periodically hit the Ligurian capital. But also, the deficiencies of a hydraulic plan for the city in which the lack of public resources, plans and policies endanger the life of thousands of people during the high rainy seasons. With the Professor Giovanni Besio on its side, the collective traversed the political, military and economic interests that have shaped the Genoese coastline during the last two centuries. And how the new ecological risks and requests can be agents for a better human-nature coexistence in the years to come.

The work of the informal collective has led to the declaration of a *Charter of rights of the water bodies*,¹⁹ a document written in collaboration with the lawyer Lucia Bergamaschi. The charter takes into account the juridical nature of the bodies of water and promotes their preservation, the restoration of their natural state - when and where possible - the liberation of the riverbed from illicit constructions and the access to them. The natural, cultural, ecological and global well-being value that could be achieved by preserving even the minor rivers could, according to the collective, con-

18 Description of the art and research collective reported on its website. Various articles have been written to deepen in the contents created during the two years research. For example, the one written by Anna Daneri and Nuvola Ravera for *Roots & Routes* (<https://www.roots-routes.org/corpi-idrici-a-cura-di-anna-daneri-e-nuvola-ravera/>), or the one that the photographers Anna Positano, Gaia Cambiaggi and Nuvola Ravera published in *Anima Loci* (<https://animaloci.org/water-bodies/>).

19 It is possible to take a further reading of the chart by browsing the section "About" of the online website of the Immerse map. "Immerse." <https://mediq.art/immerse/>.

trast the hostile impacts that the continuous colonization is provoking in the human, animal and vegetal ecosystems that surround them.

Regarding to the ecological instances investigated by *Corpi Idrici* there is an important story linked to the disappearance of one of the last mouths of a stream, the *rio* Molinassi. Covered by the umpteenth infrastructuralization maneuver of the Genoese coast - the construction of a platform for repairing big cruises boats - an ecosystem of water plants and animals, wild vegetation and migrating birds has been cancelled. And covered by tons of concrete. At the center of this wilder end spot, an ancient boat becomes the narrative element of an experiment which sees the local artist Niccolò Servi developing a creative project on the free movement through water channels and fantastic vehicles to travel them. If we are not interpreting wrong Nico's intuitions, the way to traverse rivers and secondary streams of an inhabited habitat is the construction of a floating device, an airship or a blimp invented 170 years ago. But his reflection goes beyond the simple navigation of the urban watercourses for leisure purposes. It embodies cultural and political aspects of a planetary freedom of movement, the one that could serve to recognize and dignify hidden or forbidden ecosystems and to allow people with lack of resources or will of change to access to the places where their desires have been placed.

On the crossroad of migrations, watercourses, free time and social interactions, the story of the Val Varenna lakes, highlights how the natural heritage can be reinterpreted by the different communities that inhabit the Genoese area. More than a decade ago, groups of Dominicans, Colombians, Ecuadorians, Philippines residents of the city began to move during the weekend to the natural lakes of the Varenna river to spend their free time. Nowadays this action has become a summer tradition in the life of communities that, with water, have a lot in common. The fact that communities, mainly those with a migrant background, manned this natural spot, created a popular and media dissent. We do not know, by the way, if there were political instances - different to those of systemic racism - to blame these social gatherings, because any illegal or illicit practice is at the base of this nowadays tradition. Nevertheless, by participating in these gatherings, we had the opportunity to enjoy several refreshing and funny weekends and, to give back images of what a leisure and non-extractive use of the natural territories can improve the mental and physical health of the citizens of a determined urban realm.

Beyond these explorations, *Corpi Idrici* has made, in the stories remaining, a recognition of the ancient and newer infrastructures for providing and evacuating water in the city. A radiography of Genoa has been taken through the ten stories - *Corpi Idrici's* and *Zones Portuaires'* ones - that illustrate the Immerse project.



FIG. 3

The "About" panel open and scrolled down to show the credits of the project.
 Source: Corpi Idrici and Zones Portuaires Genova

Conclusion

In recent decades, the advancement of the debate on the Anthropocene has coincided with the return of attention to the Ocean by the scientific world and political agendas: as Bruno Latour points out, the Oceans in fact represent a crucial interpretive key of the new climate regime.²⁰

In this context, the need to develop alternative modes of investigation, mapping, and communication to traditional tools is now very clear. We need research practices that derive from a holistic observation of context, that not only encompass human society but are capable of overcoming that forced dualism between humans and nature imposed by modern thinking mentioned by Latour,²¹ in order to address the complex interrelationships between human activities and ecosystem components.²² Modalities capable of accepting the uncertainty, complexity, and fluidity of contemporary transformations that are particularly legible in the oceans

20 Latour in Stefanie Hessler, *Prospecting Ocean* (Boston: MIT Press, 2019).

21 Bruno Latour, *Non siamo mai stati moderni*, trans. G. Lagomarsino and C. Milani (Milan: Elèuthera, 2018).

22 See Marshak et al., 'International Perceptions of an Integrated, Multi-Sectoral, Ecosystem Approach to Management'. And see Kelly, Ellis, and Flannery, 'Unravelling Persistent Problems to Transformative Marine Governance'.

and along the coasts, maps and atlases that are not rigid tools incapable of defining unstable landscapes, but rather rest on a flexible critical approach, capable of understanding transformational phenomena by evolving as reality evolves.

With the growing disillusionment on the part of the public with science and politics, reflection on the role of art precisely in relation to science and politics has accelerated, and contemporary art has assumed a preponderant role in the processes of investigation of global transformations, both for its contribution in understanding their dynamics and for its ability to convey knowledge and thus affect social behavior.

The simplest and most common mode of interaction between art and science is when artists support scientists in the dissemination and communication of research, in which case art facilitates public involvement by processing scientific data and results through its own language and serves as a vehicle for the dissemination of knowledge; in a second mode of collaboration, artists interact with scientists by using data and information as constituent elements of an artistic work, but without entering into the scientific specificity of the data or information.²³

Then there is a third mode of collaboration, which has proven to be particularly relevant in the context of the Atlas and especially in the construction of the Immerse map, namely the bidirectional mode between artists and scientists, a mode that recognizes the inherent similarities in the practices of art and science and focuses on realizing the full knowledge growth potential of the interactions between these two intellectual cultures.²⁴ This mode of collaboration can take different forms, in each of which the method adopted is not predetermined but is elaborated on the basis of the nature of the research object, is the outcome of the confrontation between artists and researchers, who do not renounce their respective professionalism, skills and knowledge, but rather put them at the service of each other, opening themselves to the possibility of developing new ways of observing reality, experimenting with new approaches and formulating new questions, outside the predetermined patterns of the traditional scientific method.

It is this third mode of collaboration between curators, artists, and researchers that has characterized the research methodology that the *Zones Portuaires* and *Corpi Idrici* collectives have pursued, and which has led to materializing its outcome in the form of a map. A map conceived as a hybrid, multimedia, implementable dissemination tool, navigating within which the user is invited not only to lose his or her sense of geographic

23 Julia Jung et al., 'Doubling Down on Wicked Problems: Ocean ArtScience Collaborations for a Sustainable Future', *Frontiers in Marine Science* 9 (11 May 2022), <https://doi.org/10.3389/fmars.2022.873990>.

24 See Paterson et al., 'Examining the Potential of Art-Science Collaborations in the Anthropocene'. And see Jung et al., 'Doubling Down on Wicked Problems'.

orientation, but also to overturn his or her perspective on the human-nature relationship, to question what the ways of mutual evolution between humans and non-humans might be, starting from the places where this relationship already exists.

In a recent research held at national level and where the university of Genoa was one of the participants, the forest has been a subject of analysis and measure of the recent urban order. Or disorder. The project, still ongoing, is stimulating a debate in which natural elements are taken as a model for future developments of the infrastructuring of the land, construction of new inhabiting territories, residential housing, public spaces, work habitats, educational facilities. One of the seminars organized, the environmental historian Marco Armiero, professor at the Royal Institute of Technology of Stockholm and director of the Environmental humanities lab, referred to map as an "exercise of power." Nevertheless, he affirmed that maps change depending on who produces them, traverses them or inhabits them.²⁵

To establish a collaborative way of mapping the Genoese territory, to traverse the stories that have shaped its urban and natural realms or to inhabit with the communities that everyday fight for finding a spatial definition of their daily needs has been an experience here we have tried to transmit. In 2018, on the occasion of the exhibition *The street. Where the world is made*,²⁶ Simone Ciglia has written that mapping, in the visual arts field, is expressed according to a prevalent interdisciplinary rationale. And moreover, that among the main strategies of the artistic approach to the universe of the street, walking is the simplest mapping tool.²⁷

Of course, the field work conducted to elaborate the Immerse map is connoted by sensations we cannot hold and represent in it. An approach - beyond the digital experience - to the reading of the map is recommended: the promenade in the places that both collectives have summed up. This is the way to encounter, to implement, or to differ on what this article tells.

25 Marco Armiero, *Wasteocene: Stories from the Global Dump* (Cambridge: Cambridge University Press, 2021), <https://doi.org/10.1017/9781108920322>.

26 The exhibition *The Street. Where The World Is Made* has been held in MAXXI Roma in 2018-19. Curated by Hou Hanru, the former artistic director, the show displayed more than 200 works of artists, architects and creatives where the street was represented as their sharing and innovation laboratory, just as a manifesto of the continuous mutations of daily life. See Hou Hanru, ed., *The Street. Where The World Is Made* (Macerata: Quodlibet, 2018).

27 Ibid.

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