

Revealing the administrative history of Milan through historical GIS technologies

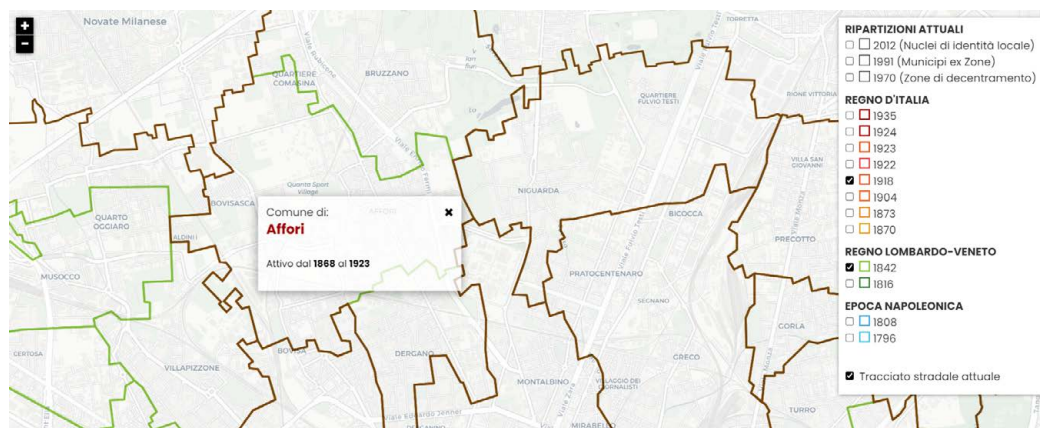
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Abstract

This paper deepens the potential of Historical Geographic Information Systems (GISs), emphasising their capacity to represent qualitative data. Indeed, GIS technologies offer a lens through which to explore qualitative heritage aspects, enabling dynamic visualisations and narrative reconstructions of local historical contexts. In particular, the study deepens their use in mapping the intangible heritage and traces that barely leave a physical presence on the landscape. Focusing on Milan as a case study, the research investigates the evolution of administrative boundaries between 1796 and the current submunicipal divisions, its history and its correlation with urban expansion. Starting from the contribution of Mocarelli et al. [2018], who reconstructed the evolution of the territorial organisation of the Milanese territory through archive research, the research suggests a step further by visualising the historical boundaries. Thanks to the historical maps of 1863 and 1910 and their further geolocalisation, the limits of the former municipalities were redrawn, offering a series of vector layers of the administrative situation during the Napoleonic years, the Kingdom of Lombardy-Venetia and the Kingdom of Italy. Besides the GIS elaborations, the result is an interactive map that allows users to learn about the local history of Milan's peripheries through historical thresholds.

Keywords

historical GIS, qualitative GIS, administrative history, territorial organisation, public history



Introduction

Considering Geographical Information Systems (GISs) as tools for representing quantitative information can limit their potential. They can also represent qualitative information and improve the knowledge of places by analysing intangible features. GISs are valuable platforms to gather quantitative and qualitative information on heritage, with which users – experts and non-experts – can learn about heritage [Knowles 2008; Cope et al. 2009]. Besides representing geographical aspects, built environments or quantitative data (i.e., economic, demographic and social figures), GIS technologies offer the opportunity to visualise, narrate, and even reconstruct history [DeBats et al. 2011]. These technologies also allow learning about lost and overwritten traces on landscapes. They offer a dynamic visualisation of the historical context, allowing spatial analysis and a more comprehensive understanding of the historical narrative.

In the last two decades, institutions from different sectors have developed interactive maps to narrate tangible and intangible heritage and historical events. Bottom-up and top-down initiatives have developed web GISs and maps to enhance the local heritage and share information about it [Vedoà 2021]. A few examples are official catalogues of the regional government, such as the cultural heritage web GISs of Emilia Romagna and Catalonia, and the digitisation processes developed by local associations, such as ecomuseums, historical societies and tourism promotion websites. Considering the indissoluble link between heritage and landscape, GIS technologies are valuable tools to learn about cultural landscapes and their historical evolution. In addition, they offer to analyse local conditions and find correlations between them and heritage. Mapping the natural, tangible, and intangible heritage allows for spatialising their quantitative and qualitative information and comparing them with current – or historical, if available – social, demographic, environmental, and economic data. From this perspective, Historical GISs are powerful tools for investigating intangible features, especially the lost ones whose traces on the land have disappeared and are rarely remembered.

The historical administration divisions are an interesting case study in this sense. In *Paesaggi Fragili* [Tarpino 2006], the author identifies borders as drivers that fragilise landscapes, especially when they abruptly change. Tarpino recalls the novel *Storia di Tönle* of Rigoni Stern [Rigoni 1979], which narrates the changes in the life of the protagonist and the disorientation he experiences after the disappearance of the national boundary in Altopiano di Asiago between Austria-Hungary and Italy after WWI. Although invisible, boundaries are human traces that shape habits, economies and landscapes. Municipal limits shape local identity on a smaller scale, too, and their changes between the beginning of the XIX and the first half of the XX century are a significant case study. The abrupt political changes before and industrialisation afterwards have drawn and redrawn the administrative boundaries of cities.

Milan and its territorial organisation between 1796 and 1935

As one of the most relevant centres in Northern Italy, the Municipality of Milan experienced several changes in its borders until 1935, when the current borders were definitively set. Indeed, municipal borders were limited to its town walls for over three centuries. Outside *Mura Spagnole* (Spanish Walls), at least 70 rural villages existed, which are today inglobated into the urban continuum and becoming peripheral neighbourhoods of Milan [Skena 2017]. They were villages with an identity, the place of traditional events and associations still active. Examples are *Processione di San Michele Arcangelo* in Precotto and some historical associations founded when the respective municipalities were independent, such as the Musical Bands of Affori, Crescenzago, and Croce Verde of Musocco. However, built heritage is almost lost or forgotten. For example, the former municipal buildings have been converted into schools or residential buildings, and local communities ignore the existence of these ancient municipalities. Moreover, the Municipality of Milan celebrated last year two relevant events concerning its administrative history: the 100th anniversary (1923) of the last aggregation of the former belt municipalities of Lambrate, Chiaravalle, Vigentino, Baggio,

Trenno, Musocco, Affori, Niguarda, Gorla-Precotto and Crescenzago, and the 150th anniversary (1873) of the aggregation of Corpi Santi di Milano (1873), the belt municipality around the historical centre.

Mocarelli analysed in depth the evolution of Milan and its surrounding municipalities' borders from 1796 to the current configuration [Mocarelli et al. 2021]. Through archive research on Lombardia Beni Culturali [1], the authors reconstructed the changes in the administrative divisions, which were the result of aggregations and separation of entire municipalities or significant parts of their territories. In particular, this research reveals two periods. The first was during the first half of the XIX century when boundaries changed constantly depending on the ruling national authorities: the Napoleonic Republics and Kingdoms (1796-1814), the Kingdom of Lombardy-Venetia under the Austrian Empire (1814-1861) and the Kingdom of Italy (1861-1946). The second was right after WWI and the twenties when Milan absorbed the territory of the belt municipalities and took the current shape.

To narrate the administrative history, the authors provide detailed tables that organise the chronological evolution, the aggregations and the separations happened. In addition, they proposed a video that reconstructs the hypothetical shapes the Municipality of Milan took to narrate the evolution of the urban periphery. However, the authors limit their study at the documentation level and the reconstruction of the most recent maps without precise geolocalisation. From this perspective, redrawing the former boundaries by combining GIS technologies and research on historical maps can valorise the information gathered and build an interactive map to disseminate the results.

Indeed, the study started with archive research of the historical maps of Milan and its surrounding areas of the first half of the XIX Century. It focused on the map of Giovanni Brenna of 1865, which represents the geographical features – the natural and built environment – and identifies some of the administrative boundaries of its period. In addition, the map is an update of the first cartography the author produced in 1833, which shows the administrative situation during the Kingdom of Lombardy-Venetia.

Furthermore, the study analysed the map of Milan of 1910, which shows the administrative situation one decade before the last aggregation. It represents the boundaries of the eleven municipalities surrounding Milan, then separated by an agricultural belt. This map is also interesting for understanding, after the comparison with the most recent ones, the evolution of urbanisation. Indeed, the eleven municipalities kept their identity until the Fifties when urban expansion – pushed by industrialisation and the national immigration wave – filled the last agricultural areas between them and the centre of Milan.

After this visual analysis, the research geolocalised these two raster maps with GIS software to overlay them with the current Open Street Map base. This process allowed for vectorising over the current cartographic details. Actually, the redrawing was an interpretation of the historical cartography, which sometimes did not exactly overlay with the current map, or former boundaries were barely visible. It was performed by considering differences and mismatches between the two representations (fig. 1). In parallel, the research developed a database to organise boundaries according to the periods during which the administrative entities were active, thanks to information gathered by Mocarelli [Mocarelli et al. 2021]. The result was a series of GIS files (.geojson) that geolocalised the boundaries according to most representative historical thresholds when changes were radical: during the Napoleonic period (1796 and 1808), the Kingdom of Lombardy-Venetia (1816 and 1846), and the Kingdom of Italy (1870, 1873, 1904, 1918, 1922, 1923, 1924, 1935).

The final result of the research is an interactive web map that allows expert and non-expert users to learn about the evolution of the administrative history of the city (<https://urban-genoma.it/2023/04/28/webmap-quartieri-storici-milano/>). The dissemination tool organises layers according to the historical thresholds seen above and allows for learning about the periods in which the municipal administrations were active. It also offers the opportunity to compare boundaries by overlaying the situations of different historical periods and the most recent and current submunicipal divisions: the 20 Zone di Decentramento (from the seventies until 1991), the 9 Municipi (from 1991) and the 88 Nuclei di Identità Locali (NIL) identified for the urban plan of 2016.

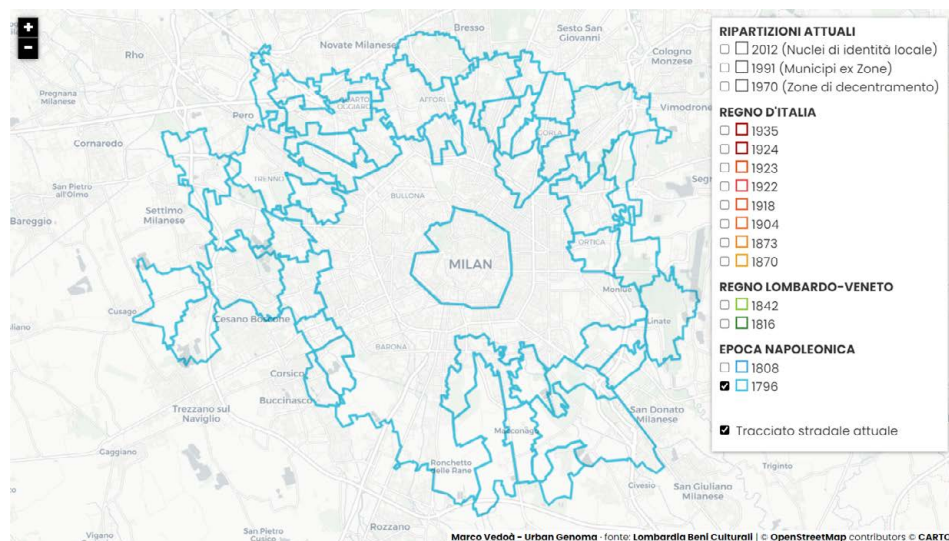


Fig. 2. The administrative borders in 1796 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

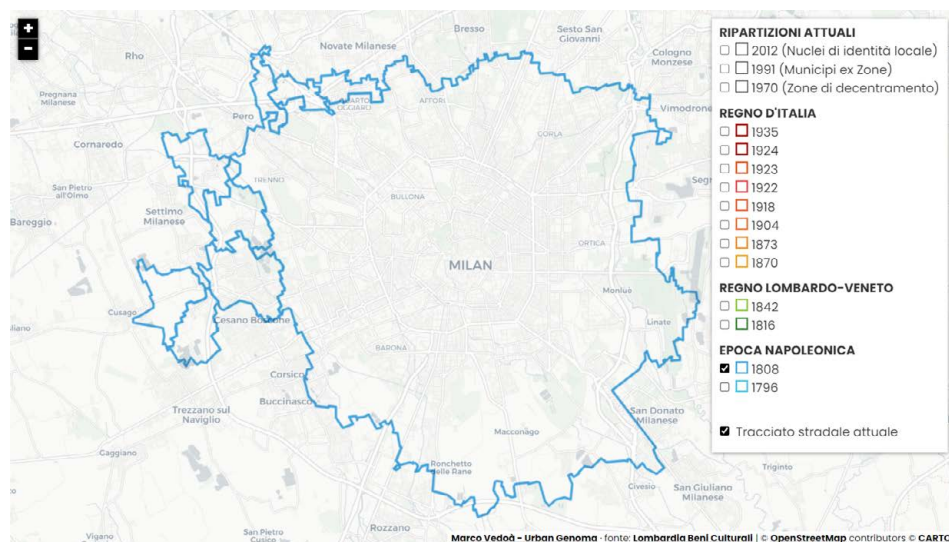


Fig. 3. The administrative borders in 1808 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

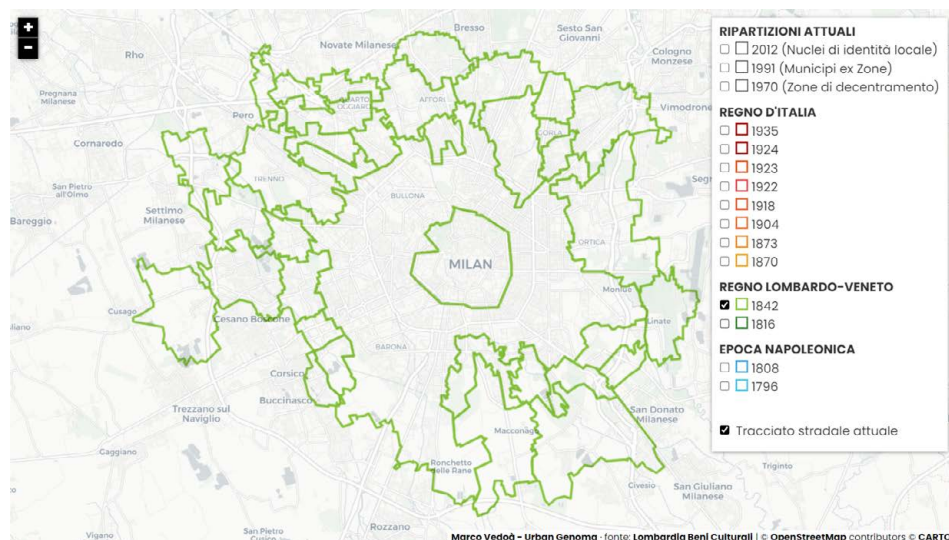


Fig. 4. The administrative borders in 1842 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

Fig. 5. The administrative borders in 1870 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

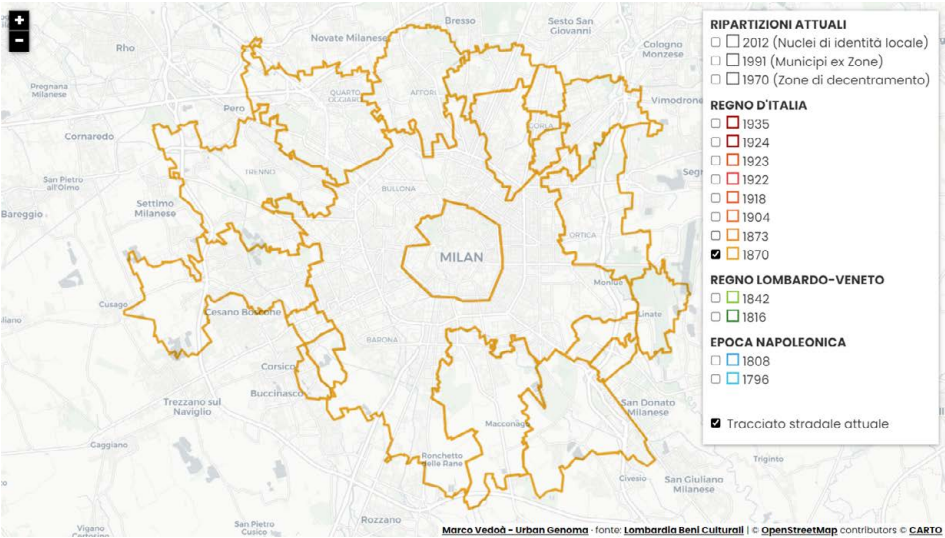


Fig. 6. The administrative borders in 1873 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

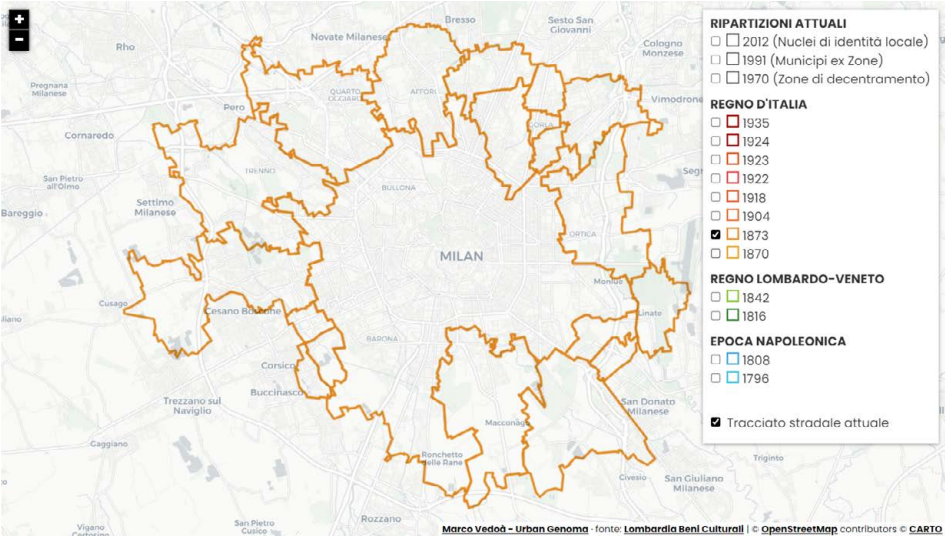


Fig. 7. The administrative borders in 1922 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

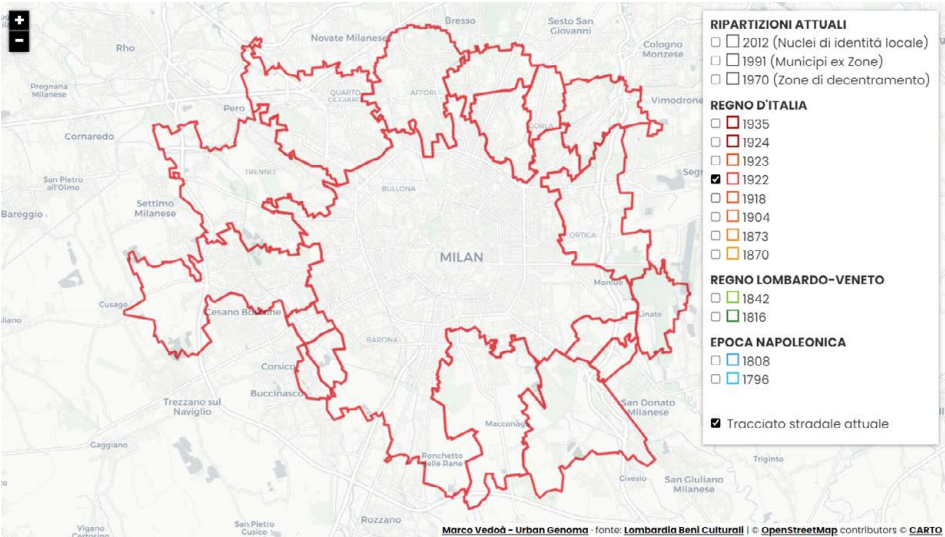


Fig. 8. The administrative borders in 1935 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.

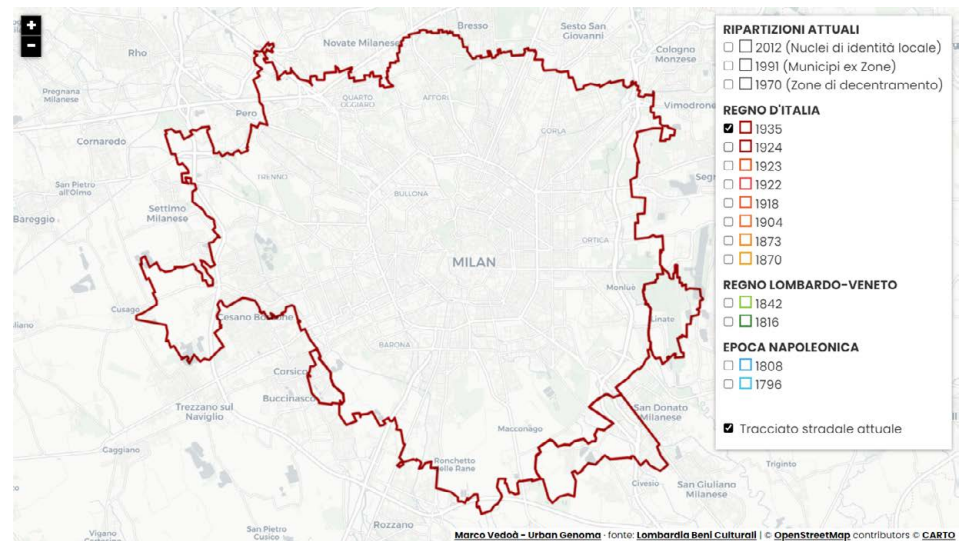
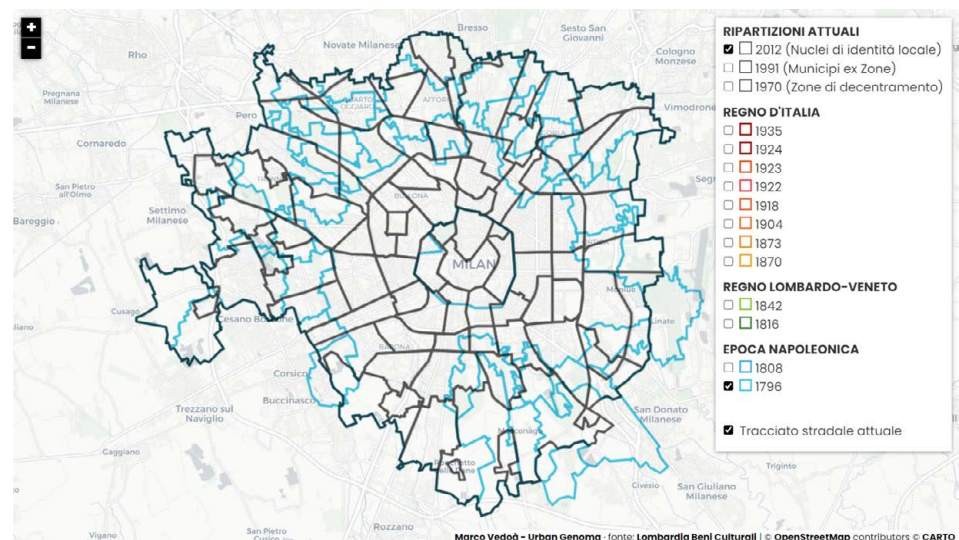


Fig. 9. The comparison between the current division in Nuclei di Identità Locale and the administrative borders of 1796 [Urban Genoma, Lombardia Beni Culturali, OpenStreet-Map]. Elaboration by the author.



Although their traces remain in the toponymy and, in some cases, in the urban fabric, their memory is barely remembered. Also the tangible and intangible traces of the last municipalities are barely recognisable in the landscape, as the abrupt urban expansion between the thirties and the sixties absorbed the traces, making them peripheral neighbourhoods. Rediscovering their history, features and identity through dissemination events and devices (digital and physical) may offer a new perspective on the everyday urban landscapes. Narrating the tangible and intangible heritage of the former municipalities may improve the landscape experience of urban peripheries, which are commonly considered places without recognisable historical, social and aesthetic values.

Conclusions

Mapping historical boundaries allowed learning about the evolution of landscape and how it accompanied the urban expansion of Milan during the last 200 years. The Historical GIS offered a powerful tool for discovering a part of the local history that was almost lost and rarely left traces on the landscape. It visualised the complex evolution of the administrative divisions, which are intangible features difficult to reconstruct and represent for their very nature.

The digital representation – in this case, the reinterpretation of historical cartographies – is an essential device that enables the comparison between different periods and visualises the relevant changes in the territorial organisation. It offers a visual narration that allows for deeper analysis by adding spatial information and enabling comparison with other quantitative and qualitative data. Furthermore, the web map aims to be a public history device to share an improved narration of urban peripheries. It aims to be a dissemination device that, together with the events organised by the Municipality of Milan in 2023, aims to rediscover the identity and history of a recent past barely remembered. The web map offers an innovative approach, a lens through which reading and learning about local history and discovering its social and aesthetic values.

Notes

[1] Lombardia Beni Culturali (<https://www.lombardiabeniculturali.it/>) is the regional cultural heritage database and, in which are digitalised historical administrative documents.

References

- Cope M., Elwood S. (Eds.). (2009). *Qualitative GIS: A mixed methods approach*. London: Sage.
- DeBats D.A., Gregory I.N. (2011). *Introduction to Historical GIS and the Study of Urban History*. *Social Science History*, 35(4), pp. 455-463. Cambridge: Cambridge University Press. doi:10.1215/01455532-1381814
- Knowles A.K. (2008). *Placing history: How maps, spatial data, and GIS are changing historical scholarship*. New York: ESRI Press.
- Mocarelli L., Ronza R., Maranzana C. (2018). Centro e periferie a Milano: per una geostoria economico-sociale. In A.M. Locatelli, C. Besana, N. Martinelli (Eds.). *Periferie Europee, Istituzioni sociali, politiche, luoghi*, pp. 44-58. Milano: Franco Angeli.
- Rigoni Stern M. (1979). *Storia di Tönle. L'anno della vittoria*. Torino: Einaudi.
- Schena R. (2017). *Milano: città dei 70 borghi*. Milano: Magenes.
- Tarpino A. (2016). *Paesaggi Fragili*. Torino: Einaudi.
- Vedoa M. (2022). Comparing Top-Down And Bottom-Up Approaches. Maps Of Cultural Landscape Digitisation Processes. In *DIALOGHI/DIALOGUES, visioni e visibilità/visions and visibility: Testimoniare Comunicare Sperimentare/Witnessing Communicating Experimenting*, pp. 2953-2963. Milano: Franco Angeli.

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To cite this chapter: Marco Vedoà (2024). Revealing the administrative history of Milan through historical GIS technologies In Bergamo F., Calandriello A., Ciammaichella M., Friso I., Gay F., Liva G., Monteleone C. (Eds.). *Misura / Dismisura. Atti del 45° Convegno Internazionale dei Docenti delle Discipline della Rappresentazione/Measure / Out of Measure. Transitions. Proceedings of the 45th International Conference of Representation Disciplines Teachers*. Milano: FrancoAngeli, pp. 3831-3838.