

## Landscape, race, and environmental justice in Macapá (AP): discussions on the water system and socio-racial fabric of an Amazonian city

### Paisagem, raça e justiça ambiental em Macapá (AP): reflexões sobre a trama hídrica e sociorracial de uma cidade amazônica

### Paisaje, raza y justicia ambiental en Macapá (AP): reflexiones sobre la trama del agua y el tejido socio-racial de una ciudad amazónica

*Thales Barroso Miranda, Master's Degree in architecture and urbanism (UFPA). PhD student in architecture and urbanism at the Federal University of Pará (UFPA).*

*E-mail: thalesbmiranda@gmail.com  <https://orcid.org/0000-0002-0262-8075>*

*Louise Barbalho Pontes, PhD in urbanism (UFRJ). Professor at the Federal University of Amapá (UNIFAP).*

*E-mail: louise.pontes@unifap.br  <https://orcid.org/0000-0001-5597-2956>*

*Matheus Cleber Melo Garcia, Architect and Urban Planner graduated from the Federal University of Amapá (UNIFAP)*

*E-mail: matheusclebermg@gmail.com  <https://orcid.org/0009-0009-7798-5796>*

**How to cite this paper:** MIRANDA, T.; PONTES, L.; GARCIA, M. Landscape, race, and environmental justice in Macapá (AP): discussions on the water system and socio-racial fabric of an Amazonian city. *Cadernos de Pós-Graduação em Arquitetura e Urbanismo*, São Paulo, v. 23, n. 2, p. 142-161, 2023.

DOI <https://doi.org/10.5935/cadernospos.v23n2p142-161>



**Submitted:** 2023-03-12**Accepted:** 2023-06-26

## Abstract

In the cities of the Amazon, the urbanization process maintains similarities with the cities of the country's center-south. Still, there is an intense interweaving between the social processes and the environmental systems (water, vegetation, and relief), which confer the peculiarity of these landscapes while articulating processes of environmental degradation with racial segregation. Despite advances in predatory processes in this context, this article seeks to understand urbanization processes in the city of Macapá, identifying overlaps between the transformation of its water network and the exclusion of the black population. For this, it adopts a qualitative approach combined with documentary analysis and cartography, which includes spatial clippings of the central part and the expansion area of the city. The research is based on the concepts of landscape planning and environmental justice. It reveals that the advance of urbanization has altered the territory through changes in biophysical characteristics to generate environmental injustice for certain historically marginalized social groups.

**Keywords:** Amazon; Environmental justice; Landscape planning; Macapá.

## Resumo

Nas cidades da Amazônia, o processo de urbanização mantém similaridades com as cidades do centro-sul do país, mas há um intenso entrelaçamento entre os processos sociais e os sistemas ambientais (água, vegetação e relevo), que conferem a idiossincrasia destas paisagens, ao mesmo tempo em que articula processos de degradação ambiental com segregação racial. Em que pesem os avanços dos processos predatórios neste contexto, este artigo busca compreender os processos de urbanização na cidade de Macapá, identificando sobreposições entre a transformação da sua trama hídrica e a exclusão da população negra. Para isso, adota uma abordagem qualitativa, combinada com análise documental e elaboração de cartografia, a qual engloba recortes espaciais da parte central e da área de expansão da cidade. A pesquisa tem como base os conceitos de planejamento da paisagem e de justiça ambiental e revela que o avanço da urbanização alterou o território por meio das mudanças das características biofísicas, de modo a gerar injustiça ambiental para determinados grupos sociais historicamente marginalizados.

**Palavras-chave:** Amazônia; Justiça ambiental; Planejamento da paisagem; Macapá.

## Resumen

En las ciudades amazónicas, el proceso de urbanización mantiene similitudes con las ciudades del centro-sur del país, pero existe un intenso entrecruzamiento entre



los procesos sociales y los sistemas ambientales (agua, vegetación y relieve), que le confieren la idiosincrasia de estos paisajes, al mismo tiempo que articula procesos de degradación ambiental con segregación racial. A pesar de los avances en los procesos de deprecación en este contexto, este artículo busca comprender los procesos de urbanización en la ciudad de Macapá, identificando superposiciones entre la transformación de su red de agua y la exclusión de la población negra. Para ello, adopta un enfoque cualitativo, combinado con análisis documental y cartográfico, que incluye recortes espaciales de la parte central y la zona de expansión de la ciudad. La investigación se basa en los conceptos de ordenamiento del paisaje y justicia ambiental y revela que el avance de la urbanización ha alterado el territorio a través de cambios en las características biofísicas, con el fin de generar injusticia ambiental para ciertos grupos sociales históricamente marginados.

**Palabras clave:** Amazonía; Justicia ambiental; Planificación del paisaje; Macapá.

## INTRODUCTION

Structuring the city based on landscape planning is not something recent. Since the 19th century, there have been guidelines on planning the territory through a combination of spatial analysis from the field of geography and an intrinsic relationship with functional studies from the field of biology (Metzger, 2001). With the deepening of landscape architecture studies at the urban scale, starting from Mcharg (1969) and evolving through authors who expanded their theories and methods, such as Spirn (1995) and Hough (1995), or more contemporarily Corner (2006), alongside the growing advancement of global ecological thinking and the systematization of concepts derived from landscape ecology (such as green infrastructure and nature-based solutions), the framework of science has expanded in the pursuit of addressing urban environmental problems. Therefore, landscape planning has become essential for urban planning.

On the other hand, and in a complementary way, another concept that has been widely debated is that of environmental justice, which advocates for fair and participatory treatment of people in the formulation and implementation of public policies, laws, and environmental regulations, including landscape planning, regardless of color, race, gender, or any other characteristic (Bullard, 1990). In this sense, environmental injustice can be understood as a mechanism used by unequal societies to direct the main impacts of environmental damage toward the poorer population, social groups of workers, and marginalized communities (Herculano, 2002).

The structuring of urban space guided by socio-environmental solutions, without creating another environmental (or hydrological) regime in cities, while ensuring



equal environmental protection without socio-territorial segregation and disproportionate environmental inequality for any social class, race, or gender, is a premise of landscape planning associated with the principles of environmental justice. Although few studies in the field of landscape planning seek to understand racial distinctions and interconnections, especially in the Amazon context, there are possibilities for the field to contribute to the fight against various inequalities through reflective action on ways of inhabiting, moving, and living in the territory, thereby reducing environmental degradation, one of the principles of environmental justice.

The integration between environmental justice and landscape planning is recent in Brazil. The term was briefly introduced in Article 225 of the Federal Constitution of 1988 and during the UN Conference 1992, which sought alternatives to the economic development model that negatively impacted the lives of certain disadvantaged groups. Only in the 21st century did the term gain notoriety when it was used to uncover the negative impacts of toxic industrial waste in Rio de Janeiro and large infrastructure projects (e.g., the Belo Monte Dam construction in Pará).

The association of both concepts is used in this article, which seeks to understand the urbanization processes in the city of Macapá, identifying overlaps between the transformation of its water network and the exclusion of the black population (Figure 1). Macapá is a territory intersected by waters, which had slow growth until the discovery of manganese in the mid-20th century. Since then, modernization processes have begun, leading to the expansion of the urban area through deforestation and the filling of floodable areas, as well as the sanitization of central areas and the displacement of black communities to more distant zones. Environmental degradation processes have been present throughout the various urban planning proposals throughout history and continue to expand towards environmental protection areas and traditional communities.



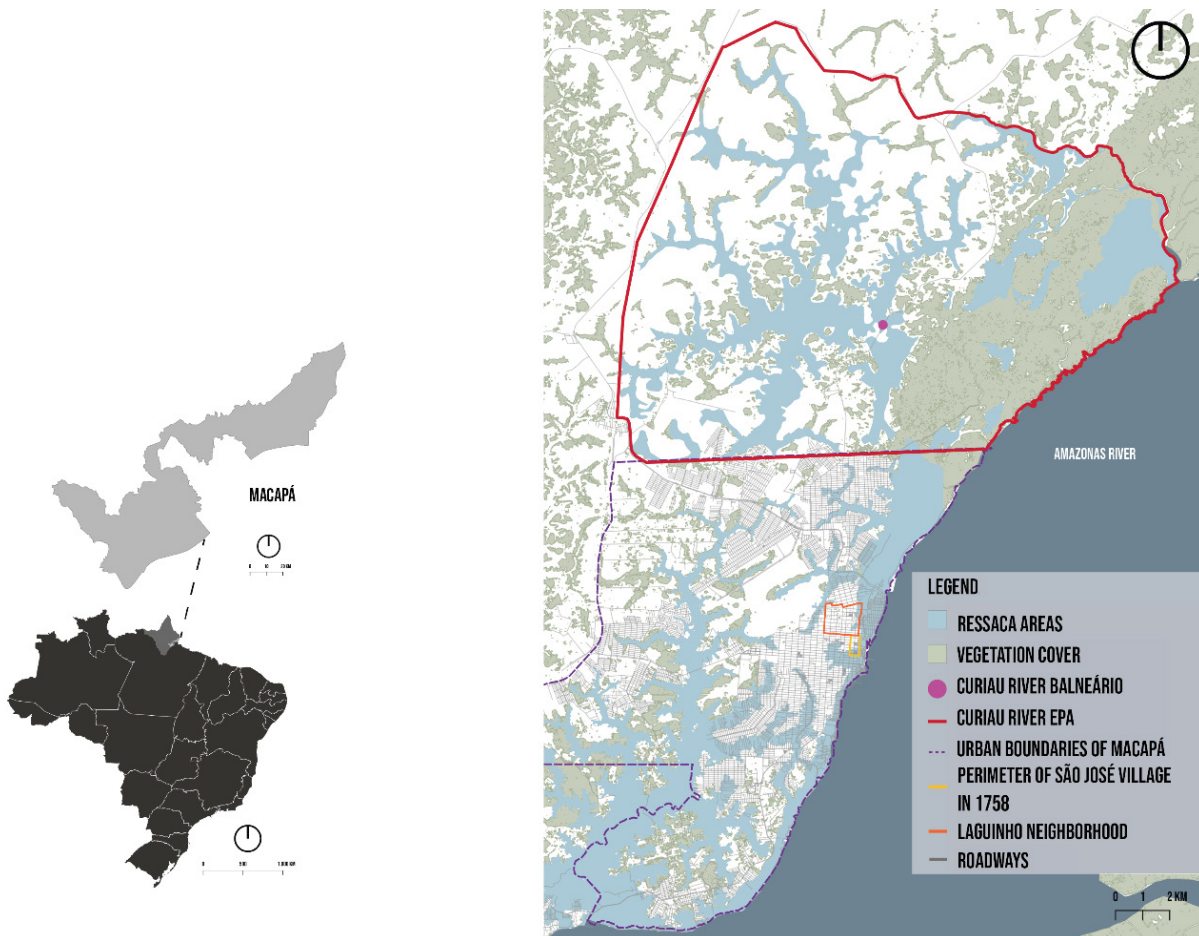


Figure 1: Macapá City. Source: Elaborated by the authors based on IBGE (2010), PMM (2004), and MMA (2020).

The argumentation of the research presuppositions begins with the historical contextualization and analyses of three different periods based on available documents, cartography, and images. The first analysis investigates the urban design in the Pombaline context proposed by Gronsfeld in 1758, analyzed from the perspective of Araújo (1998). Next, the period starting with the transformation of Amapá into a Federal Territory in 1943, with Macapá as the capital, was studied primarily based on the João Pinheiro Foundation Plan (JPF) in 1973. The last period analyzed corresponds to the elevation of Amapá to the status of a State in 1988 until the 2004 establishment of the Urban and Environmental Development Plan (UEDP), which is still in effect as the Master Plan (PMM, 2004).

In addition to the historical argumentation, the research discusses the current socio-territorial conflicts in the city's urban fringe, specifically the Quilombola Area and the Environmental Protection Area of Curiaú (Curiaú EPA). This protected area is inhabited by traditional populations that face pressure for changes in land use and uncontrolled urbanization without appropriate territorial planning. Analyzing the three periods related to the plans and current examples of urban processes contributes to reflecting on how land use and water usage changes

occur in Macapá. It sheds light on the socio-environmental conflicts and the main biophysical alterations.

The discussions in this article expand the debate on urban planning in Macapá and can guide changes in state measures for the protection of preservation areas, as well as draw particular attention to the issue of real estate speculation that encroaches upon open spaces in the city. At the same time, some social groups are relocated or face pressure for displacement. These are the challenges of a medium-sized Amazonian city with 1.8% of São Paulo's GDP, which follows similar patterns of urban occupation, even though its biophysical, social, and racial reality differs from cities in southeast Brazil.

### **Macapá city: a historical context of overlapping water bodies and traditional communities**

The territory that encompasses the city of Macapá had its urbanization process linked to pre-existing biophysical conditions. The adoption of a strategic location, chosen by Portuguese colonizers, stemmed from the desire to occupy the mouth of the Amazon River to protect against invaders from other European countries (ARAÚJO, 1998). Intersected by various water bodies such as lakes and "igarapés" (small rivers), the city historically developed a unique relationship with water during its urbanization process (Pontes, 2021).

Founded during the Pombaline period (18th century) and in a slave-holding Brazil, the Village of São José was planned to be a strategic point at the mouth of the Amazon River and an ideal model for a city in the region. The urban design developed by Gaspar Gronsfeld in 1758 considered biophysical aspects such as hydrography, topography, and the local climate. Therefore, the layout and orientation of the lots are favorable to wind and sunlight, which is beneficial in an equatorial climate (hot and humid).

Furthermore, the proposal was based solely on occupying the higher levels without interfering with the cycle of the lower and floodable levels (Araújo, 1998), including the demarcation and description of an intermittent and seasonal lake (to the south). As a result, there is a significant transition zone between the land division and the banks of the Amazon River (to the east) in the flood areas, which allowed the movement of waters and surrounded the new Village (Figure 2).



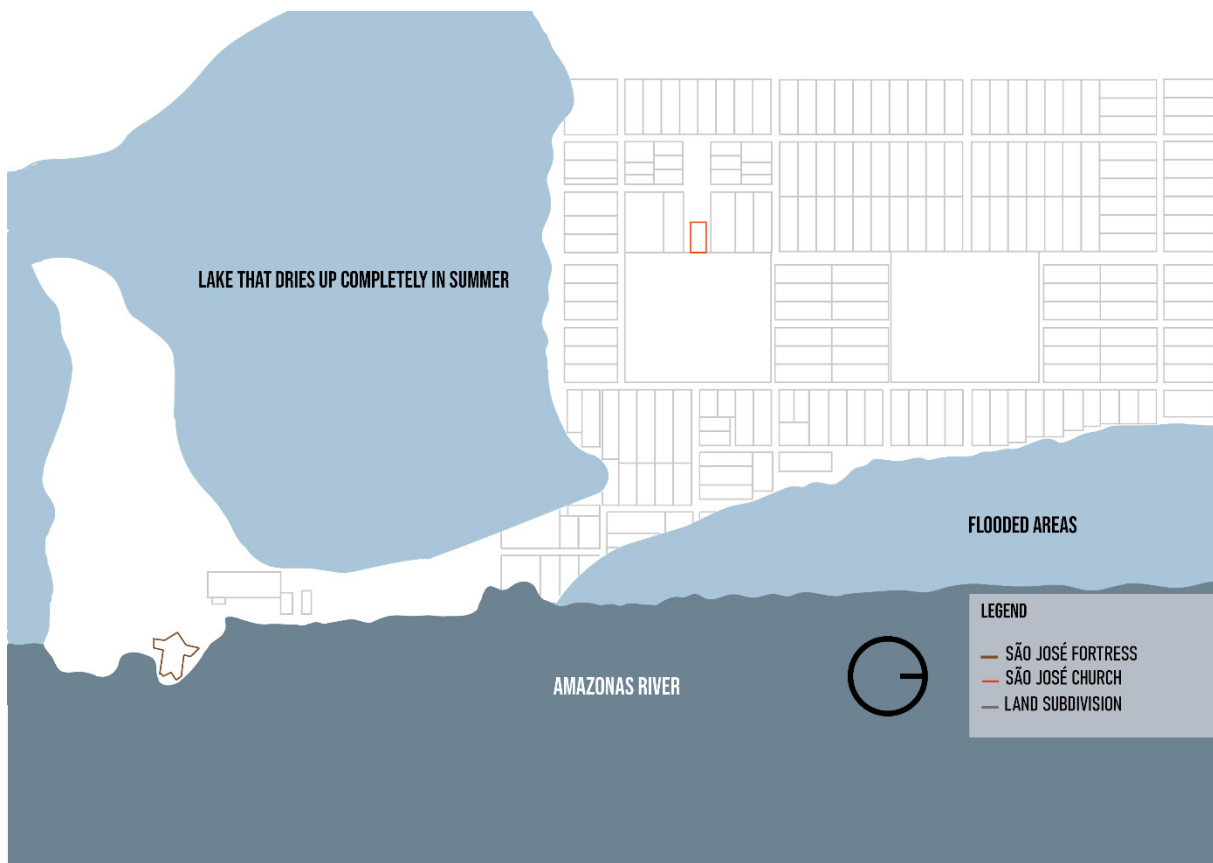


Figure 2: Plan of the Village of São José de Macapá by Gronsfeld. Elaborated by authors based on Araújo (1998).

It is emphasized that the trade of enslaved individuals to supply labor for economic booms in the Province of Grão-Pará was prevalent during this period. Just like in any other city of the same era in Brazil, enslaved individuals had no rights, and the allocation of lots or dwellings suitable for the physical site of the newly established Macapá did not belong to them, even though they constituted 20% of the population (Bezerra Neto, 2001).

In photographs found in the Augusto Montenegro Report (1908), it was observed that the waters were not merely geographical boundaries, as the local population appropriated the rivers and lakes, especially along the banks of the Amazon River, for spontaneous activities, which demonstrates the historical relationship between the residents and the waters (Pontes, 2021). These records also reveal issues of gender, class, and race (Macedo, 2020). While white bodies appear more frequently in the new modernized spaces (such as clubs and pools), black bodies are depicted on the water's edges and in the vicinity of these new typologies of the city associated with an ideology of progress. Figure 3 shows black women washerwomen by the banks of the Amazon River in Macapá in the year 1908 (20 years after the end of slavery).

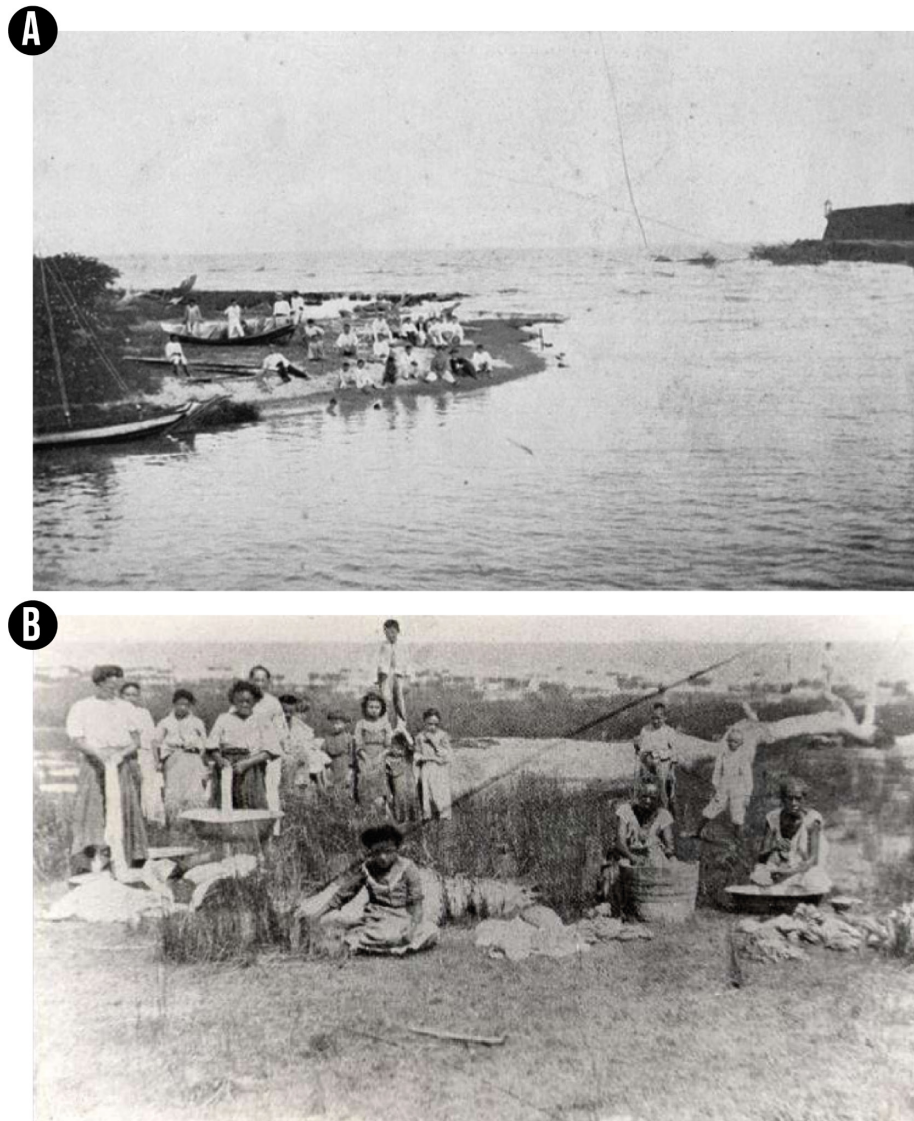


Figure 3: (A) Washerwomen and fishermen on the banks of the Amazon River in Macapá; (B) Washerwomen on Igarapé das Mulheres, a space on the city's edge. Source: Images from the 1908 Augusto Montenegro Report; SECULT/PA collection. Adapted by the authors.

For almost two centuries, the landscape underwent few changes, and the next period of urban growth only began with the creation of the Federal Territory of Amapá (from 1943 to 1988), which aimed to modernize the city of Macapá to become a capital. However, these modernization strategies not only led to the homogenization of the landscape and ways of life but also resulted in processes of environmental injustice.

In the 1940s, the governor of the Federal Territory, Janary Nunes, ordered the removal of residents from the black community of Vila Santa Engrácia and relocated them to a flood area, which would later become the neighborhood with the highest affiliation to black culture in Macapá, now known as the Laguinho neighborhood (Pessoa; Venera, 2015).



The Laguinho neighborhood was initially named Julião Ramos (in honor of the leader of the black community in question). Still, it became known by the more generic name of “Laguinho” due to a well built near a lake where women from the community used to wash clothes (Pessoa; Venera, 2015). Currently, the lake has been filled, and the neighborhood is experiencing processes of formal and informal densification, with the provision of infrastructure without mechanisms to protect the poorer population and resulting in an increase in land prices, which in turn leads to the expulsion of this vulnerable population to more distant areas of the city, exacerbating socio-environmental tensions (Figure 4).

**LAGUINHO NEIGHBORHOOD LAKE - 1970'S**



**LAGUINHO NEIGHBORHOOD LAKE - 2022**



LEGEND

BOUNDARIES OF THE OLD LAGUINHO NEIGHBORHOOD LAKE

Figure 4: Lake in the Laguinho neighborhood in the 1970s and 2022. Source: PMM (1977), Google Earth (2022). Adapted by the authors.

During the four decades of the Federal Territory, several plans were developed for Macapá, among which the João Pinheiro Foundation Plan (JPF) of 1973 had the most significant adherence (Tostes, 2006). This plan was developed in the last decades and guided the city's urban growth through zoning, road system expansion, and provision of expansion areas.

The analysis of the Plan revealed that the lake south of the colonial village no longer existed (as seen in Figure 2). The former boundary of the village was surpassed due to drainage canals and the filling of floodable areas. The ideology of modernization was linked to the National Sanitation Plan (NSP), whose intervention paradigm used the discourse of combating waterborne diseases and precarious occupation in flood areas. However, the effort focused on using sanitation as a driver of urban growth through filling flood areas and creating land for the real estate market.

The Plan recognized the biophysical characteristics of the city in formulating guidelines and defining specific spaces for leisure and recreation, especially in less urbanized, distant, and lower areas of the city (floodable areas) indicated by the Plan as “spontaneous recreation.” However, the Plan maintained a certain homogenization of the landscape, following the patterns applied in other regions of the country and moving away from an Amazonian city where the movement of waters indicates territorial planning (Pontes, 2021).



During the period that began with the elevation of Amapá to the status of a State in 1988, more instrumentalized uses of water, especially in Macapá, were observed. Due to population growth, urban expansion continued to overlap with floodable areas, which started to be occupied or filled. In this context, the consolidation of the process of occupation of the so-called “ressaca areas” took place (Carvalho, 2020).

The Ressacas remain flood areas throughout the year and constitute physical river systems drained by fresh water and connected to a main watercourse influenced by rainfall. Many of these areas are seriously compromised in their natural functions due to the advance of informal occupations. The densification of these areas interrupts the natural process of water flow and drainage, generating environmental and social degradation, flooding, and silting (Carvalho, 2020).

Part of the urbanization advance in Macapá occurred due to the transformation of a walt belt of ressacas areas, composed to the east by the Amazon River, to the north by the Jandiá River and the Pacoval ressaca area, and to the southwest by the Lagoa dos Índios and its interconnected ressacas areas. These watercourses delimited the city (Figure 5) (Pontes, 2021). This process did not occur without leaving a trail of environmental degradation and social and racial segregation.

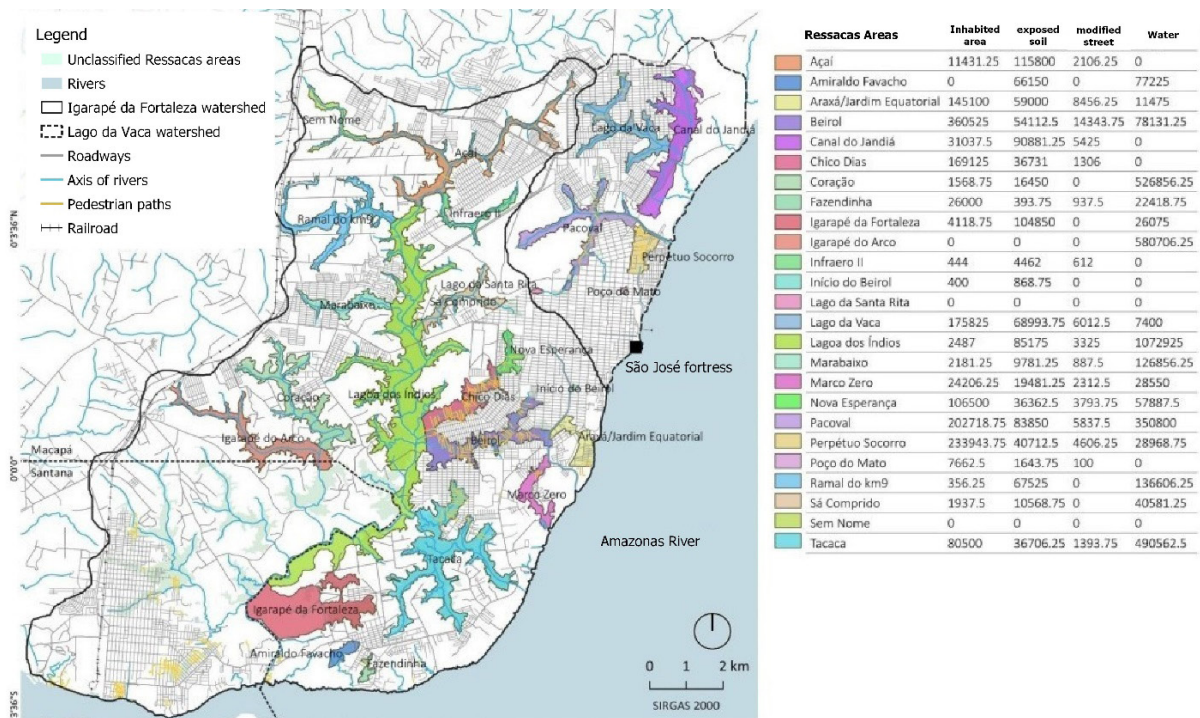


Figure 5: Ressacas areas of Macapá. Source: Matsunaga (2021).

The Master Plan of Macapá was defined in 2004, presenting significant differences from previous plans despite only a few decades between them. In this plan, it is noticeable that there were occupations in the Pacoval (north) and Beírol (south)



ressacas areas, as well as the transformation of the city's waterfront along the banks of the Amazon River (east). Through various landfills and retaining walls, the Macapá Waterfront was constructed in an area that was previously at lower levels and had a configuration of beaches and cliffs (which also faced informal occupation) (Pontes, 2021).

Although it presents proposals for the recognition and restoration of degraded water bodies, the current plan has not provided a broader, detailed approach to how these measures would be implemented. The complexities of urban relationships with water persist and are becoming increasingly exacerbated. As a result, there has been a historical increase in environmental risks for specific individuals, and according to official data, 39.3% of the black population earning up to two minimum wages resides in flood areas (IBGE, 2010; CPRM, 2015).

Based on the analysis of these three historical periods, it is evident that Macapá's relationship with its water bodies has been increasingly neglected over the decades. The imposition of a standard of citizenship and a hegemonic model of urbanization gradually erased the waters, experiences, and specific knowledge of the city. Particularly for black and poor individuals, removal, state negligence, and the allocation of flood areas for informal housing without adequate infrastructure perpetuated environmental injustice and became the norm in planning. However, for traditional communities and environmental protection areas in the urban fringe of the city (protected by specific laws), there are indications of urbanization overlapping and pressure for changes in land use, as seen in the following section.

### **The Curiaú and the black experience between the Waters**

Changes in land use and the advance of the urban sprawl in areas essential for maintaining life and local biodiversity occur with increasing frequency, mainly in the expansion towards the north of the municipality, where there is a quilombola community called Curiaú. The community is about 15 km from the center of Macapá and is predominantly made up of black people descended from enslaved people. It encompasses two small population centers (Curiaú de Dentro and Curiaú de Fora) with a distance of about 1 km between the two.

The origin of Curiaú is uncertain, but it is associated with the construction of the São José Fortress in the second half of the 18th century, a period in which the first enslaved people were brought to the city for the fortification works. The community is related to the culture of Amapá and is known throughout the region, especially for its tourist attractions and festivities.

The cultural manifestations held in Curiaú are Afro-Brazilian cultural heritage and related to religiosity, which includes ladainhas, batuques (typical embodiment of the black communities of Amapá), novenas, and marabaixa dances (typical dance of Amapá). The local economy is mainly based on family farming by cultivating



rice, sugar cane, and pineapple. In addition, there is also cattle raising and fishing in the region (Brito; Bastos; Farias, 2017).

The community's territory has upland and floodplain fields, with vegetation characteristic of the cerrado and floodplain forest (Figure 6). Another essential feature of the area is the landscape of natural elements, including the Curiaú River. With approximately 584.47 km<sup>2</sup>, the Curiaú River basin includes temporary lakes (with periods of drought) and permanent lakes (with Bonito and Tapera being the main ones) that represent the drainage system of the territory (Brito; Bastos; Farias, 2017).

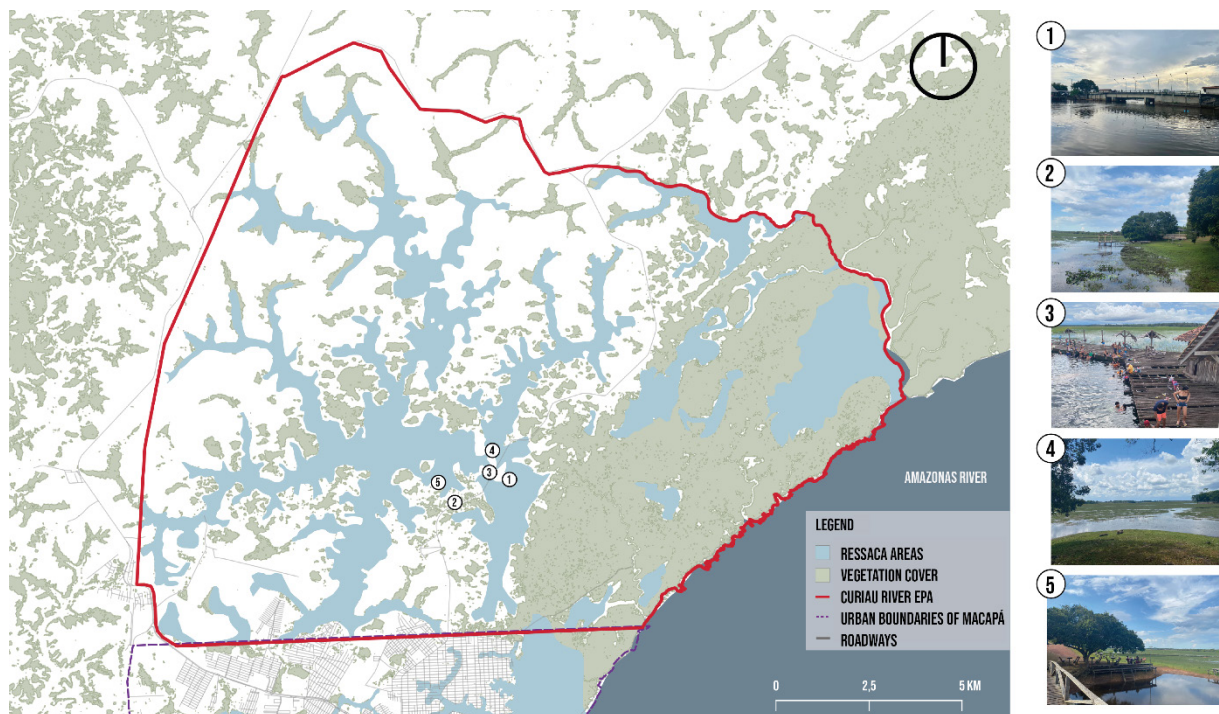


Figure 6: Curiaú River EPA. Source: Elaborated by the authors based on IBGE (2010), PMM (2004), MMA (2020), Authors' archive (2022).

The river also features one of the main tourist attractions in Macapá: the Balneário do Curiaú is one of the only two spaces open to collective bathing in river water that was planned in the city (Garcia; Vasconcelos; Pontes, 2022). The balneário contains a wooden public space surrounding a small river area, with tables and kiosks for visitors (Figure 7). Despite being frequented by residents from all parts of the city and tourists, most of the resort's public lives in the urban boundary closest to the site (North Zone of Macapá), which lacks other spaces for bathing similar to this one.





*Figure 7: Aerial view of Balneário do Curiaú. Source: Authors' archive (2022).*

The constant advance of the urban area towards the North Zone of Macapá resulted in the creation of the Curiaú River Environmental Protection Area (Curiaú River EPA) in 1998. The EPA covers around 22,000 hectares and includes Curiaú de Dentro and Curiaú de Fora villages and the Mocambo, Pirativa, Pescada, Curralinho, Casa Grande, and Extrema communities (Figure 8). At that time, there were three neighborhoods in its surroundings, Novo Horizonte, Jardim Felicidade 1, and Jardim Felicidade 2, which emerged from informal subdivisions during the 1980s.

Due to the advancement and recognition of territorial rights and the organization of communities, in 1999, the villages of Curiaú de Dentro and Curiaú de Fora were defined as Remaining Territories of Quilombola Communities (RTQC), and in 2003, the Extrema community was included (Brito; Bastos; Farias, 2017). Brito, Bastos, and Farias (2017) explain that the definition of quilombo for the three communities was part of the State's strategy to contain the advancement of urban occupation since the RTQC has restrictive legislation and guidelines. However, at least five communities with similar characteristics were not included, which caused internal conflicts in the APA and external ones with the pressure for urban expansion.

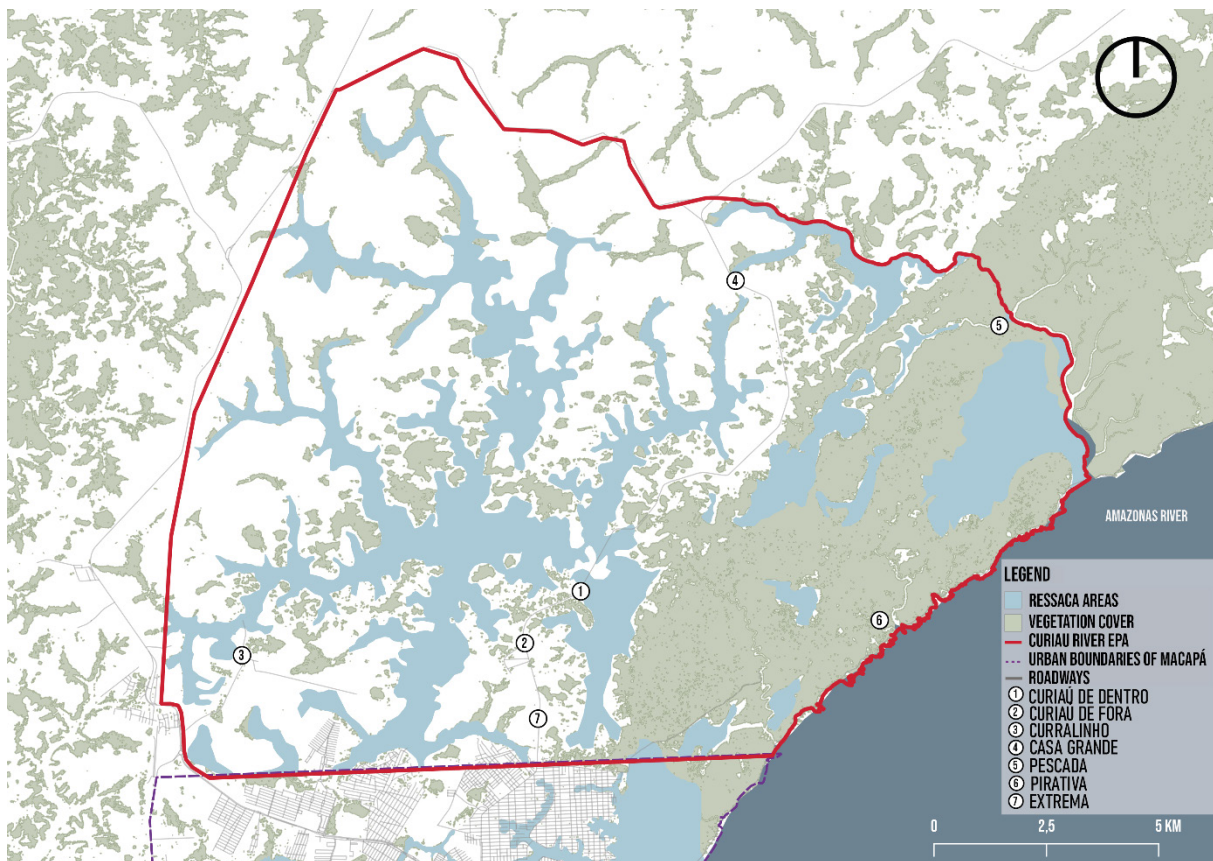


Figure 8: Curiaú River EPA with the communities. Source: Elaborated by the authors based on IBGE (2010), PMM (2004), MMA (2020).

The urban limits and municipal environmental protection of the Master Plan 2004 coincided with the delimitation of the EPA and the RTQC. The adjacent neighborhoods were designated as a priority zone for urban infrastructure. However, little attention was given to how the biophysical elements could be addressed and treated in this precarious area. As seen in the previous section, the Master Plan was generic in its propositions. It relied solely on zoning without providing details on how the relief, vegetation, microclimate, and water could contribute to the territorial planning.

The absence of landscape planning was not the only exacerbating factor. Due to the lack of supervision by environmental and urban planning agencies, the effectiveness of municipal and territorial planning, and the increase in real estate speculation in the central areas of Macapá, part of the Curiaú River EPA was occupied through informal settlements and clandestine land subdivisions, predominantly by low-income individuals without access to urbanized land. Introducing these new agents in the EPA led to environmental degradation through watercourse pollution (due to the absence of basic sanitation) and deforestation, which intensified conflicts with traditional communities living there and relying on fishing and agriculture for survival (Queiroz, 2007).

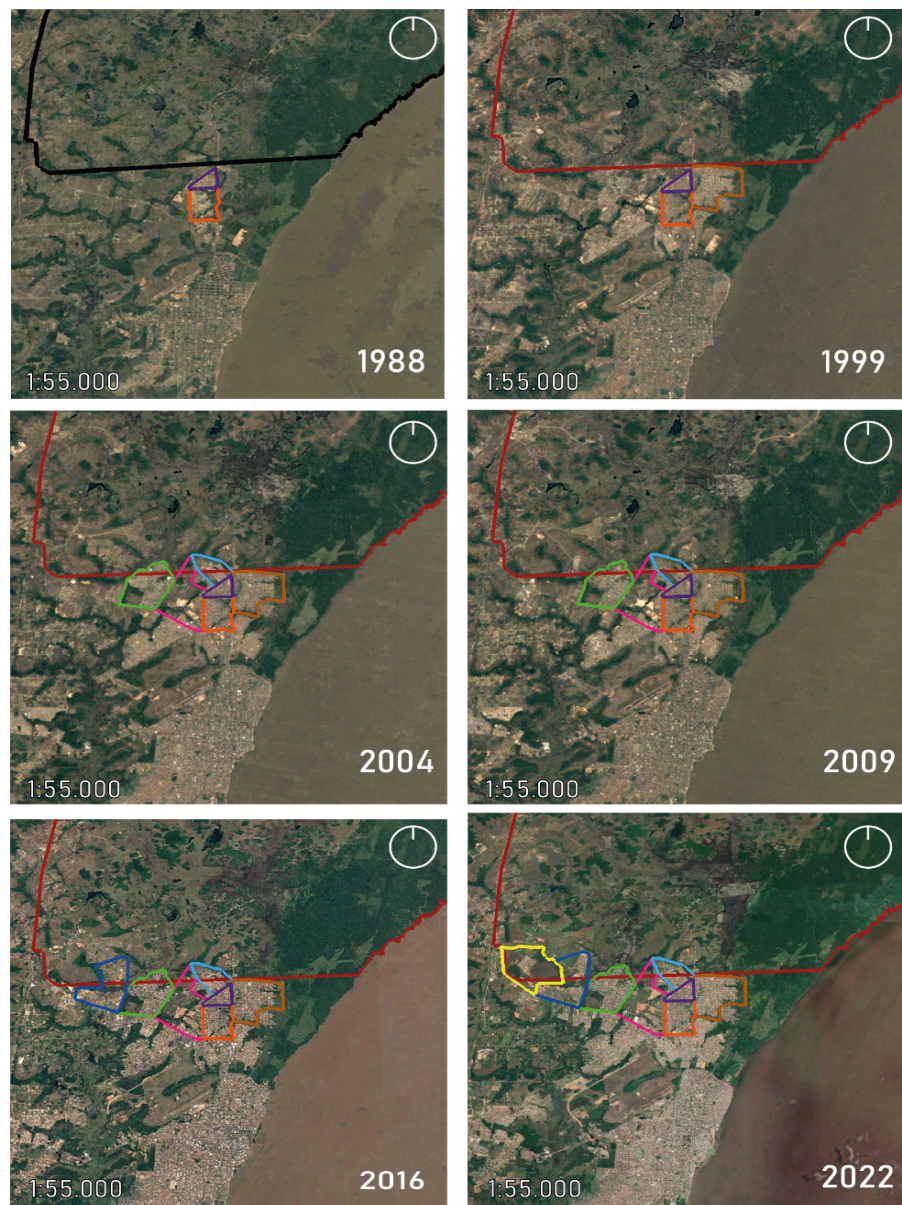


In addition to informal settlements, since the 2010s, gated communities have been incorporated in the EPA in easily accessible areas, such as along roads, on flat terrain, and away from flood areas. The most recent case is the Palácios das Águas condominium, which is under construction and follows the paradigms of structure through land leveling, removal of vegetation cover to incorporate exotic species, fences and walls around the land, and creation of artificial lakes (even bordered by *ressaca* areas). These strategies aim to attract high-income populations and thus change the profile of the North Zone of Macapá and the Curiaú APA.

The absence of urban planning control is compounded by the lack of a current management plan for the EPA, which had a study developed in 2007 with parameters that could mitigate the predatory effects threatening the region, such as a height limit of 8.5 meters, environmental licensing from the Amapá State Department of the Environment (ASDE) and the Brazilian Institute of the Environment and Renewable Natural Resources (BIERNR) for constructions larger than 150 square meters; prohibition of waste discharge into watercourses, and other rules for biodiversity control and safeguarding, including the maintenance of *quilombos* (traditional communities of African descent). However, without publication in the Official Gazette of the Union, the study - which could become a Management Plan - has no legal value, leaving the Curiaú River EPA vulnerable to changes in land use, population profile, and environmental degradation.

Over time, the advance of the urban area within the Curiaú River EPA can be observed (Figure 9), including the official delimitation of neighborhoods and gated communities. The Ipê, Boné Azul, and Brasil Novo neighborhoods move towards the territory of the Extrema community. At the same time, Novo Horizonte goes towards the Curiaú River, which, if there is no restrictive action, will possibly have part of its area of precarious settlements. The gated communities Jardim das Acácias and Palácio, das Águas target different population profiles but follow the same standard of work, different from the Amazonian reality. The dynamics presented are historical and continuous processes of environmental injustice for the residents of the villages and communities of the Curiaú River EPA and those who do not have access to the city and tend to form large portions of poverty and environmental degradation on the periphery of Macapá.





**LEGEND**

- Curiaú River EPA (future delimitation)
- Curiaú River EPA
- Jardim Felicidade I Neighborhood
- Jardim Felicidade II Neighborhood
- Novo Horizonte Neighborhood
- Brasil Novo Neighborhood
- Boné Azul Neighborhood
- Ipê Neighborhood
- Jardim das Acácias Condominium
- Palácio das Águas Condominium

Figure 9: Chronology of the progress of urbanization towards the Curiaú River EPA. Source: Elaborated by the authors based on IBGE (2010), PMM (2004), MMA (2020), and Google Earth (1988, 1999, 2004, 2009, 2016 e 2022).

Besides the communities, the Balneário do Curiaú depicts the lack of supervision and maintenance of public spaces in environmental protection areas in Macapá. During a field visit in August 2022, the pier, huts, and the rest of the wooden





structure were found to be in a state of degradation, preventing the use of bathing in the river or access to contemplation in a location that symbolizes recreation in the city (Figure 10). It is understood that the lack of maintenance can be seen as a political marketing strategy, considering that the site is usually revitalized by the government close to the school vacation months (June/July) when there is a higher number of visitors.



Figure 10: Photograph of Balneário do Curiaú in 2019 and 2022. Source: Authors' archive.

In this sense, it is observed that the advance of the urban sprawl towards the northern portion of the municipality has characteristics similar to the guidelines of the old plans and how urbanization is carried out, which is based on changes in biophysical characteristics from the suppression of vegetation, grounding of areas subject to flooding, earthmoving to create large, dense masses that have little connection with their habitat, something familiar in Brazilian urbanization. Furthermore, the neglect of public spaces by the State along the river, which are not used by the dominant class of the city and can favor the market, is evident, as seen in the constant maintenance of the downtown waterfront at the expense of the Balneário Curiaú<sup>1</sup>.

Changes in land use and expulsion of populations to favor some social classes and increase land for the real estate market is a consolidated subject in urban studies in Brazil (Maricato, 2000; Villaça, 1998); it is the mode of operation of Brazilian urbanization. However, Macapá, which is a typical Amazonian city with large areas of floodable land, flat relief, and low slopes intersected by numerous rivers and is part of the state with the third lowest GDP in the country (IBGE, 2021), urbanization based on the homogenization of space with the absence of landscape planning and environmental justice can burden infrastructure services, increase the cost of living, aggravate environmental and social problems, cause irreversible ecological degradation and disproportionately direct adverse effects of urbanization to the environment – poorest portion of the region (primarily black people).

<sup>1</sup> The maintenance work at Balneário Curiaú was published in the Official Gazette of the Municipality of Macapá on August 9, 2022, with a value of R\$ 1,893,731.31. The deadline is 3 months and until the beginning of June 2023 the work had not been inaugurated.



Neglecting practical actions in an environmentally sensitive area historically occupied by traditional populations that maintain an intrinsic relationship with the region can have irreversible and immeasurable adverse effects. After all, in the context of climate change and sea level rise, removing vegetation, filling up flooded areas, waterproofing the soil, and using technologies from central countries without their economic potential are not the solutions for Amazonian cities, especially in Macapá.

## CONCLUSIONS

The association of landscape planning with concrete guidelines of environmental justice is fundamental for the preservation of both biodiversity and the culture found in the territory of the Curiaú River EPA, whose typical diversity of an Amazonian city is under threat from precarious urban expansion, repeating patterns of urbanization that have generated significant socio-environmental tensions that have already occurred in the past in the same context. Landscape planning alone does not guarantee this long-term preservation, as the territory is constantly changing and needs to be associated with economic and social issues to avoid being out of sync with urban planning.

The analysis of the plans developed for Macapá exposes that, despite being originally designed as a model of an Amazonian city, the abandonment for almost two centuries, combined with political transformations and the use of urban planning strategies applied in regions where socio-environmental issues present a different context, led to the loss of this ideal in the urbanization process. Although the current plan mentions some measures for the maintenance and recovery of floodable areas, no practical actions were presented to achieve these goals, and almost two decades later, it is evident that these problems have only worsened.

Regarding traditional communities, based on historical transformations that have occurred in recent decades in the urban design of Macapá, it is evident that they are still at risk of being overlapped by urbanization. In the case of Curiaú, despite being located in an Environmental Protection Area and being recognized as a Remaining Territories of Quilombola Communities, its preservation of spaces is not assured, as they still lack specific parameters, guidelines, management plans, and adequate supervision to prevent the previously observed overlaps in the region (as seen in the case of the Laginho neighborhood). Although there has been a long history of plans, projects, and urban practices that reinforced environmental injustice in Macapá, Curiaú represents a potential that can be explored to envision landscape planning toward environmental justice in urban fringes. By harnessing the water potential, the traditional populations' way of life, and the tertiary sector of the economy, it can create a system of open spaces throughout the city, with areas for tourism, environmental protection, contemplation, flood mitigation, agriculture, scientific research, and innovation in a region characterized by the uniqueness of having two biomes. After all, planning the landscape in such a diverse and



complex ecosystem with populations deeply connected to this habitat is one of the significant challenges for urbanists and urban planners in the Amazon.

## REFERENCES

ARAÚJO, R. *As cidades da Amazônia no século XVIII*: Belém, Macapá e Mazagão. Porto: Faup, 1998.

BEZERRA NETO, J. *Escravidão negra no Grão Pará*. Belém: Paka-Tatu, 2001.

BRITO, D.; BASTOS, C.; FARIAS, R. Ambiente, cultura e territorialidade na Área de Proteção Ambiental do Rio Curiaú - AP. *Ciência Geográfica*, v. 21, n. 2, 2017.

BULLARD, R. *Dumping in Dixie: race, class, and environmental quality*, New York: Routledge, 1990.

CANTUÁRIA, E. *APA do Rio Curiaú e a cidade de Macapá: relações sociais, jurídicas e ambientais*. Master's Dissertation in Environmental Law and Public Policy. Federal University of Amapá, 2011.

CARVALHO, B. *Habitação popular na Amazônia: o caso das ressacas na cidade de Macapá*. Curitiba: Appris, 2020.

CORNER, J. *Terra Fluxus in Waldheim*. Princeton: The Landscape Urbanism, 2006.

FUNDAÇÃO JOÃO PINHEIRO (FJP). *Plano Diretor de Desenvolvimento Urbano (PDU)*. Macapá: Ministério do Interior. 1973.

GARCIA, M.; VASCONCELOS, A.; PONTES, L. A cidade no estuário do Rio Amazonas: mapeando apagamentos e sobrevivências na convivência com as águas na cidade de Macapá-AP. In: *ENCONTRO NACIONAL DE ENSINO DE PAISAGISMO NAS ESCOLAS DE ARQUITETURA DO BRASIL, 16, 2022, Cuiabá. Anais [...]*. Cuiabá: Enepea, 2022.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). *Censo demográfico 2010*. Resultados do universo. Available at: <http://www.ibge.gov.br>. Accessed on: 7 January 2023.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). *Contas regionais Amapá PIB 2019*. Macapá: Seplan, 2021. Available at: [https://editor.amapa.gov.br/arquivos\\_portais/publicacoes/SEPLAN\\_d186d52e74e6c70dc12e7a5a62a8c380.pdf](https://editor.amapa.gov.br/arquivos_portais/publicacoes/SEPLAN_d186d52e74e6c70dc12e7a5a62a8c380.pdf). Accessed on: 7 January 2023.

HERCULANO, S. *Riscos e desigualdade social: a temática da justiça ambiental e sua construção no Brasil*. Indaiatuba: Encontro da ANPPAS, 2002.

HOUGH, M. *Cities and natural process*. Londres: Routledge. 1995.



- MACEDO, L. *Janarismo em foco: a representação fotográfica da cidade de Macapá durante a formação do Território do Amapá (1944-1956)* – PhD Thesis in Urbanism. Federal University of Rio de Janeiro, 2020.
- MARICATO, E. Urbanismo na periferia do mundo globalizado. *Metrópoles brasileiras. São Paulo em Perspectiva*, 14 (4), 2000.
- MATSUNAGA, M. *Quando a água vira cidade: urbanização e moradia em Macapá, AP*. Doctoral Thesis in Urbanism. Federal University of Rio de Janeiro, 2021.
- McHARG, I. *Design with nature*. New York: American Museum of Natural History, 1969.
- METZGER, J. O que é ecologia de paisagens? *Biota Neotropica*. Campinas, v. 1, n. 1, 2001.
- MINERAL RESOURCES RESEARCH COMPANY (CPRM). *Cartas de Suscetibilidade a Movimentos Gravitacionais de Massa e Inundações*. Belém: CPRM, 2015. [Digital cartography, shapefile format].
- PESSOA, M.; VENERA, R. (Re)pensando o passado e presente dos afrodescendentes a partir da Fortaleza de São José de Macapá. *Revista do Desenvolvimento Regional*. v. 12, n. 2, 2015.
- PONTES, L. *Espaço (em) aberto: brechas à reinvenção do projeto e da paisagem, um estudo sobre a cidade de Macapá*. Doctoral Thesis in Urbanism. Federal University of Rio de Janeiro, 2021.
- PREFEITURA DO MUNICÍPIO DE MACAPÁ (PMM). Lei n. 26, de 4 de fevereiro de 2004. Institui o Plano Diretor de Desenvolvimento Urbano e Ambiental de Macapá e dá outras providências. Macapá: Prefeitura Municipal, 4 Feb. 2004. Available at: <https://leismunicipais.com.br/plano-diretor-macapa-ap>. Accessed on: 20 set. 2023.
- QUEIROZ, S. *Território quilombola do Curiaú e área de proteção ambiental do Rio Curiaú: interpretações dos conflitos socioambientais pela economia ecológica*. Master's Dissertation in Development Planning – Federal University of Pará, 2007.
- SECRETARIA DE ESTADO DE CULTURA DO PARÁ (SECULT). *O Pará por Augusto Montenegro*. Paris, Imprimerie Chaponet (Jean Cussac), 1908.
- SPIRN, A. *O jardim de granito*. São Paulo: Edusp, 1995.
- TOSTES, J. *Planos Diretores no estado do Amapá: uma contribuição para o desenvolvimento regional*. Macapá: Tostes Editora, 2006. 192 p.
- VILLAÇA, F. *Espaço intra-urbano no Brasil*. São Paulo: Studio Nobel: Fapesp: Lincoln Institute, 1998.

