

The management of Marine Lands and the use of space: discussions on historical context and public participation in current proposals

Arthur Alves Costa Lignani de Miranda

Master's student, UFJF, Brazil.
arthur.lignani@estudante.ufjf.br
<https://orcid.org/0009-0001-8995-6070>

Paula Navarro Nunes

Master's student, UFJF, Brazil.
paulanavarronunes@gmail.com
<https://orcid.org/0009-0002-6626-1054>

Cézar Henrique Barra Rocha

PhD, UFJF, Brazil.
cezar.barra@ufjf.br
<https://orcid.org/0000-0003-1321-158X>

Ercilia de Stefano

PhD, UFJF, Brazil.
ercilia.stefano@ufjf.br
<https://orcid.org/0000-0002-5955-1048>

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A gestão dos Terrenos de Marinha e a utilização do espaço: discussões acerca do histórico e da participação popular nas propostas atuais

RESUMO

Objetivo – Analisar e discorrer acerca da importância dos Terrenos de Marinha na gestão territorial no Brasil, considerando-se a importância de tais espaços para todas as dimensões da sustentabilidade, promovendo discussões sobre as propostas que tentam impactar na propriedade de tais terrenos e regulamentações. Para tanto, busca-se compreender a participação da população para fortalecer as análises.

Metodologia – O artigo possui caráter qualitativo, com natureza exploratória e sendo considerado uma pesquisa bibliográfica/documental, baseada em materiais já publicados, bem como legislações, projetos de lei e dados governamentais. Ademais, o aspecto quantitativo é reforçado ao utilizar a ferramenta *Wayback Machine* para verificar a adesão popular na discussão do assunto, corroborando a ideia da adesão da população na discussão.

Originalidade/relevância – Tratando-se de uma pauta que está em discussão em projeto de Lei na atualidade, com um tema que veio à tona de forma muito intensa nos últimos anos, trazendo polêmicas e reportagens nas grandes mídias, mas que ainda não é alvo de amplas discussões em artigos científicos. O presente estudo possui relevância acadêmica ao promover a discussão sobre tal assunto e possíveis consequências, que tem potencial de afetar fortemente a sociedade e a sustentabilidade em geral.

Resultados – Os resultados apontaram o intenso predomínio da participação popular de forma contrária à Proposta de Emenda à Constituição (PEC) nº 3, de 2022, com os votos “não” prevalecendo de forma intensa, tanto numericamente quanto em porcentagem.

Contribuições teóricas/metodológicas – Os achados do estudo alcançaram o objetivo principal de discorrer sobre o assunto, a partir da fundamentação teórica que dá embasamento à discussão dos Terrenos de Marinha, e ressaltando a importância de que o assunto seja debatido em pesquisas científicas.

Contribuições sociais e ambientais – Ao reforçar a importância dos terrenos supracitados, a análise cuidadosa da participação popular e dos referenciais teóricos e documentais apontam a relevância do assunto para a gestão ambiental e sustentável, com os achados indicando os impactos sociais, ambientais e econômicos, verificando-se o panorama geral sobre o assunto.

PALAVRAS-CHAVE: Faixa costeira. Terrenos da União. Preservação.

The management of Marine Lands and the use of space: discussions on historical context and public participation in current proposals

ABSTRACT

Objective – This study aims to analyze and discuss the importance of Marine Land in territorial management in Brazil, considering their significance for all dimensions of sustainability. It promotes discussions about proposals that seek to impact the ownership and regulations of these lands, emphasizing public participation as a means to strengthen the analysis.

Methodology – The article adopts a qualitative and quantitative approach, with an exploratory nature. It is based on bibliographic/documentary research, including previously published materials, legislation and government data. Moreover, the quantitative aspect is reinforced by utilizing the *Wayback Machine* tool to examine public engagement in discussions on the topic, supporting the idea of active public participation in the debate.

Originality/Relevance – Addressing a topic currently under discussion in a legislative bill, the study explores an issue that has gained significant attention in recent years, generating controversies and media coverage but remaining underexplored in scientific literature. The study holds academic relevance by fostering discussions about the topic and its potential consequences, which could profoundly impact society and sustainability as a whole.

Results – The findings revealed a strong prevalence of public opposition to Constitutional Amendment Proposal (PEC) No. 3, of 2022, with “no” votes predominating significantly in both absolute numbers and percentages.

Theoretical/Methodological Contributions – The study achieved its primary objective of addressing the topic through a theoretical foundation that supports the discussion of Marine Lands, highlighting the importance of further scientific inquiry into this matter.

Social and Environmental Contributions – By emphasizing the importance of the aforementioned lands, the careful analysis of public participation alongside theoretical and documentary references underscores the relevance of this topic for environmental and sustainable management. The findings point to the social, environmental, and economic impacts of the issue, providing an overarching view of the subject.

KEYWORDS: Coastal zone. Federal lands. Preservation.

La gestión de los Terrenos de Marina y el uso del espacio: discusiones sobre el contexto histórico y la participación popular en las propuestas actuales

RESUMEN

Objetivo – Este estudio tiene como objetivo analizar y discutir la importancia de los Terrenos de Marina en la gestión territorial en Brasil, considerando su relevancia para todas las dimensiones de la sostenibilidad. Promueve debates sobre las propuestas que buscan impactar la propiedad y regulación de estos terrenos, destacando la participación popular como un medio para fortalecer el análisis.

Metodología – El artículo adopta un enfoque cualitativo y cuantitativo, de carácter exploratorio. Se basa en una investigación bibliográfica/documental, incluyendo materiales previamente publicados, legislaciones, proyectos de ley y datos gubernamentales. Además, el aspecto cuantitativo se refuerza mediante el uso de la herramienta Wayback Machine para examinar la participación popular en las discusiones sobre el tema, apoyando la idea de una activa participación ciudadana en el debate.

Originalidad/Relevancia – Al abordar un tema que actualmente está en discusión en un proyecto de ley, el estudio explora una cuestión que ha ganado atención significativa en los últimos años, generando controversias y cobertura mediática, pero que sigue siendo poco discutida en la literatura científica. Este estudio tiene relevancia académica al fomentar debates sobre el tema y sus posibles consecuencias, que podrían impactar profundamente en la sociedad y la sostenibilidad en general.

Resultados – Los resultados revelaron una fuerte prevalencia de la oposición popular a la Propuesta de Enmienda Constitucional (PEC) n.º 3, de 2022, con los votos “no” predominando significativamente tanto en números absolutos como en porcentajes.

Contribuciones Teóricas/Metodológicas – El estudio alcanzó su objetivo principal de abordar el tema a través de una base teórica que respalda la discusión sobre los Terrenos de Marina, destacando la importancia de que el tema sea objeto de investigaciones científicas.

Contribuciones Sociales y Ambientales – Al destacar la importancia de los terrenos mencionados, el análisis cuidadoso de la participación popular junto con los referentes teóricos y documentales subraya la relevancia de este tema para la gestión ambiental y sostenible. Los hallazgos apuntan a los impactos sociales, ambientales y económicos de la cuestión, ofreciendo una visión general del tema.

PALABRAS CLAVE: Zona costera. Terrenos federales. Preservación.

1 INTRODUCTION

The Marine Lands in Brazil are areas of relevance in the spatial configuration and delimitation of the country's coastal zones, whose definition is historical and established through Decree-Law No. 9,760, of September 5, 1946, which addresses Union property and related provisions (Brazil, 1946). Articles 2 and 3 define:

Marine lands are defined as a depth of 33 (thirty-three) meters, measured horizontally inland, from the position of the 1831 mean high-tide line:

- a) those located on the continent, along the maritime coast and the banks of rivers and lagoons, up to where the influence of the tides is felt;
- b) those surrounding islands located in areas influenced by tides. [...];

[...] Marine land accretions are those formed, naturally or artificially, towards the sea or rivers and lagoons, following marine land. (Brazil, 1946, n. p., translated by the authors).

The definition of such lands, in that context, inherently demonstrates the relevance of these areas nationally over time. It remains a contemporary issue, considering that "the concept of Marine Land defines a physical dimension, which can be demarcated on a map or topographic chart and located in concrete, geometric space" (Schmitz; Nicolodi; Gruber, 2023, p. 1, translated by the authors).

Regarding the topic, recent debates have arisen, sparking controversy and extensive discussions about Marine Areas and their respective regulations, particularly with the Proposed Amendment to the Constitution No. 3, of 2022, in the Chamber of Deputies. This proposal aims to modify such areas and their accretions, along with their respective properties (Brazil, 2022), thereby influencing environmental management strategies. The proposal would lead to significant impacts on spatial demarcation across the country and on society, which would also strongly experience the effects of such modifications.

Guided by the question: "how does the ownership and management of Marine Areas by the Union relate to the right to appropriate spaces and to socio-environmentally adequate measures?" This article seeks to substantiate the importance of the Union and Public Power's role in these spaces, conducting critical analyses of current proposals that may interfere with the democratic use of these areas.

1.1 Objectives

Given the relevance of discussing the topic and its interrelation with social, environmental, and ecological dynamics, among others, the primary objective of this article is to analyze and address the importance of Marine Areas and the respect for their specificities, correlating this with the significance of perpetuating the careful management of these lands. It emphasizes the importance of such action by promoting discussions on measures that alter and impact property rights and corresponding regulations.

Thus, aiming to achieve the aforementioned objective, this work seeks to conceptualize and deepen understanding of these lands and, subsequently, to address their

sustainability-related aspects and importance. It fosters discussions on the debated and controversial topic in contemporary times, alongside the population aspect.

2 THEORETICAL FRAMEWORK

Marine Land, along with its accretions and coastal beaches, corresponds to Union-owned lands, as explained in the text. Aiming to better understand the concept and its management, as well as the transformation of the landscape, it is necessary to analyze how these areas were demarcated, how their management is conducted, and other relevant aspects, which will be addressed below.

2.1 The delimitation of Marine Areas

As Union properties, Marine Lands are defined by a 33-meter measure from the mean high-tide line of 1831, as described by current legislation. Rocha *et al.* (2015) corroborate this description, emphasizing that the measurement took into account that year and, more specifically, the city of Rio de Janeiro, which poses a challenge in identifying this mean high-tide line.

Thus, it becomes evident that delimitation and action in these areas involve complexity and require care, considering both regional differences and changes over time. Regarding these challenges, it is worth noting that technological and technical innovations in geodetic and topographic surveys emerge as optimizers, being “[...] used to investigate changes in the shoreline position for the purpose of Marine Land demarcation” (Rocha *et al.*, 2015, p. 1724, translated by the authors).

In summary, regarding the mean high-tide line, as highlighted by Schmitz, Nicolodi, and Gruber (2023), it is a concept closely related to beaches and whose definition dates back to Colonial Brazil and territorial issues. Similarly, Figure 1 (below) succinctly illustrates and demonstrates, using a specific urban area, the practical configuration of the local distribution of beach areas, Marine Land, its respective accretions, and also lands that do not belong to the Union, here referred to as allodial (SPU, 2021; Schmitz; Nicolodi; Gruber, 2023).

Figure 1 – Delimitation of different Marine Land areas in a city



Source: Adapted from Rodrigues (2016).

Drawing a parallel with the international context to highlight the relevance of delimiting these areas, one can compare the situation in Portugal, where there is also “[...] the safeguarding of a strip of marginal land under public domain ownership, in harmony with Brazilian legislation” (Romiti, 2012, p. 29, translated by the authors). However, in Portugal, the difference lies in the measured area, which is delimited at 50 meters, as well as in management rules, as elucidated by Romiti (2012).

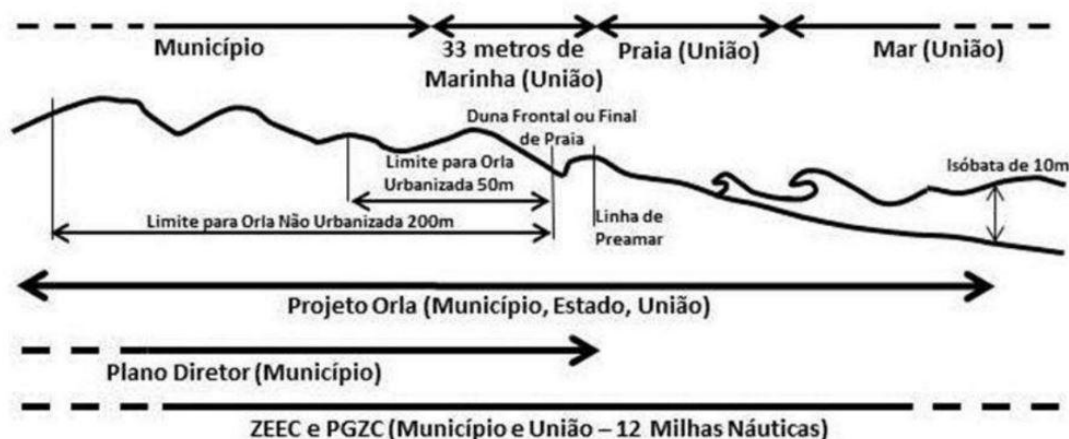
Analyzing this topic briefly on a global scale, a general overview shows that “the right to access and enjoy the coastal zone, and especially the beach, is a centuries-old legal tenet in many countries and a key part of Integrated Coastal Zone Management” (Alterman; Pellach, 2022, p. 1), demonstrating the historical and territorial aspects intrinsic to the issue.

2.2 The management of Marine Areas in Brazil

From a governmental perspective, the management of Marine Land is linked to the Secretariat for the Coordination and Governance of Union Assets (in Portuguese: Secretaria de Coordenação e Governança do Patrimônio da União - SPU), which holds this responsibility. However, as noted by Brazil (2018), in certain instances, the responsibility for management and oversight may be associated with municipal authorities.

This statement allows us to infer the multidisciplinary nature of this activity, similar to the management of other areas. However, in some contexts, “this overlap of responsibility among different agencies may generate conflicts” (Brazil, 2018, p. 30, translated by the authors), given the possibility of divergent interests among the involved stakeholders. Figure 2, in addition to revisiting intrinsic characteristics of area delimitation, also illustrates these relationships observed in the management of different areas.

Figure 2 – Areas related to the management of coastal lands in Brazil



Nota: ZEEC = Zoneamento Ecológico Econômico Costeiro; PGZC = Plano de Gestão da Zona Costeira.

Source: Scherer (2013 *apud* Brasil, 2018, p. 30).

Regarding aspects inherent to the management conducted by SPU, Dantas (2019) mentions the three dimensions related to sustainability—social, environmental, and economic—that can be observed in Marine Lands. Based on this, it is evident that the Secretariat's actions play an essential role in ensuring that the addressed environments have their characteristics respected and considered during integrated management. This strengthens the idea of the socio-environmental function of Union-owned spaces, including Marine Lands (Dantas, 2019).

Considering the historical background of the topic, the importance of “analyzing the materiality produced due to the bicentennial existence of Marine Lands” is reinforced (Dantas, 2019, p. 392, translated by the authors). This observation, brought into the current context, supports the importance of addressing debates that have emerged, particularly in recent years, which will be analyzed in more detail throughout this work.

2.3 The quantitative aspects of Marine Lands in Brazil

According to data provided by the Secretariat for Union Assets (in Portuguese: Secretaria de Patrimônio da União) (SPU, 2024 *apud* Croquer, 2024), there are approximately 584.7 thousand Marine Land plots in Brazil. These areas, as briefly mentioned earlier, belong to the Union, and the government allows individuals and companies to occupy these spaces through the payment of fees and taxes, such as Laudêmio and Foro, which generated approximately R\$ 1.1 billion in revenue for the government in 2023, as also noted by Croquer (2024). In total, these Marine Lands cover an area of approximately 24.5 thousand km², with their distribution quantitatively presented in Figures 3a and 3b. It is worth noting that, due to the presence of Marine Lands in areas surrounding rivers and lagoons, the state of Amazonas has the largest extension of such areas.

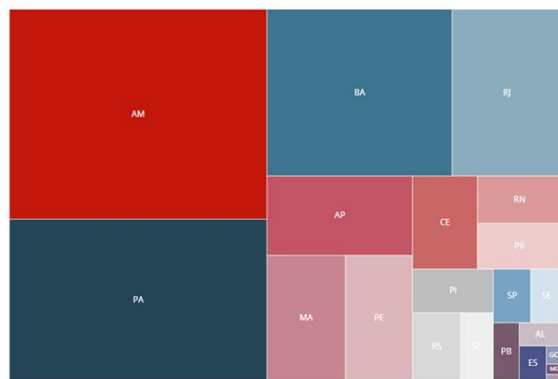
It is also important to highlight another legal instrument, the Brazilian Forest Code (Brazil, 2012a; Brazil, 2012b), which establishes Permanent Preservation Areas (APPs). In this context, the Hydric APPs are particularly relevant, as they are defined by a strip of 50 meters

around springs, ranging from 30 to 500 meters around rivers and from 30 to 100 meters around water bodies such as lagoons and reservoirs. In some cases, these areas overlap with Marine Land. These sensitive zones play a critical role in water protection, acting as physical barriers to pollutants from surface runoff and the air, while also preventing the silting of these water bodies (Rocha *et al.*, 2019).

Figures 3a and 3b – Marine Land plots and their distribution across Brazil, respectively

Os terrenos de marinha no Brasil

Escala (em km²): ● 100 ● 1.000



g1

Fonte: Secretaria do Patrimônio da União

Estados com maiores áreas de Terrenos de Marinha

AM: 6.793.565 m², PA: 5.225.131 m², BA: 3.876.455 m², RJ: 2.294.002 m², AP: 1.453.803 m², MA: 1.230.944 m², PE: 1.056.927 m², CE: 758.666 m², RN: 502.168 m², PR: 482.625 m², PI: 443.309 m², RS: 408.444 m², SC: 277.884 m², SP: 252.463 m², SE: 208.262 m², PB: 188.910 m², ES: 118.059 m², AL: 123.186 m², GO: 35.147 m², MG: 19.417 m², RO: 11.287 m², MT: 331 m², DF: 153 m², AC: 12 m², TO: 1 m²

Source: Adapted from SPU (2024 *apud* G1, 2024).

3 METHODOLOGY

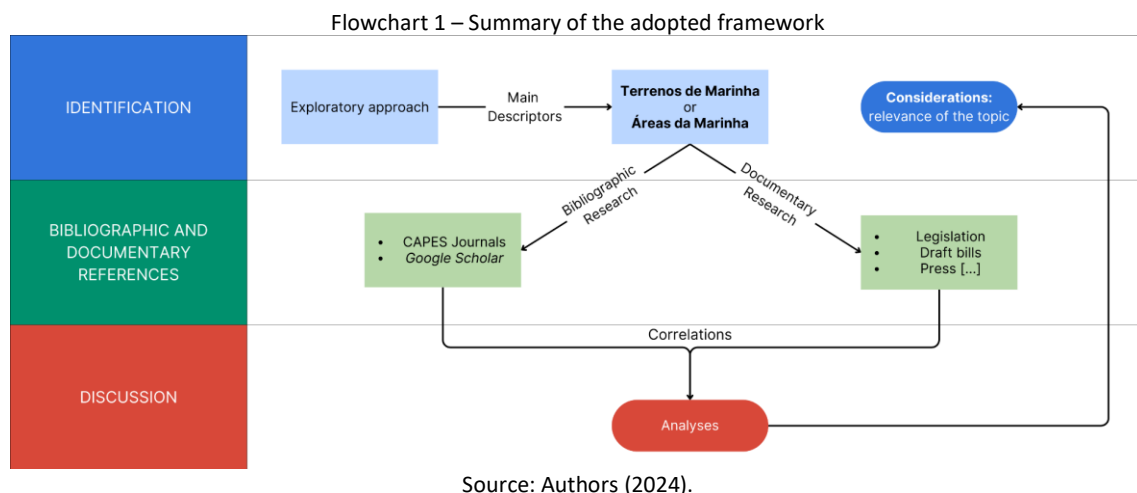
The present article adopts a qualitative-quantitative approach, which will be detailed further. It follows the procedures proposed by Gil (2022), with an exploratory nature in terms of objectives and the delimitation of studies and information consistent with the topic. Based on the same author's perspective, this is primarily a bibliographic/documentary research, predominantly relying on already published materials, including studies on legislation and government documents.

To clarify the interpretation of the consulted sources, the research is also guided by the perspective of Marconi and Lakatos (2021), emphasizing the use of secondary sources, such as scientific articles and other materials. However, given the contemporary relevance of the topic, primary sources are also consulted. These "[...] are firsthand materials originating from the institutions that conducted the observations" (Marconi; Lakatos, 2021, p. 45, translated by the authors), as a comprehensive understanding necessitates familiarity with the legislation and proposals debated in governmental bodies.

The bibliographic stage of the research, essential for theoretical grounding and understanding the evolution of studies on this topic over time, relied on databases such as the CAPES Periodicals Portal and Google Scholar. Searches were conducted using the main descriptors "Terrenos de Marinha" and "Áreas da Marinha" ("Marine Lands" and "Marine Areas"

in Portuguese), initially employing the Boolean operator “OR” due to the different terms used to refer to the same subject. To expand the sources, related terms and new combinations were also explored. Regarding journal articles, preference was initially given to those published in the last 10 years, although this temporal criterion was not strictly enforced, as the topic spans many years. This historical perspective is particularly valuable given the long-standing presence of the concept in Brazil, which has been the subject of proposed changes. This stage aligns with Gil’s (2022) methodology. Simultaneously, the documentary research stage encompasses “[...] official documents, public archives, press, and other records [...]” (Gil, 2022, p. 75, translated by the authors), accessed digitally.

To optimize understanding of the procedures adopted in this study, Flowchart 1 below summarizes the process, from the initial identification stages, where the topic is delimited, to subsequent steps that provide a theoretical foundation, expand comprehension, and correlate the current state of these lands with ongoing discussions. These analyses culminate in critical assessments and discussions that underscore the importance of these areas.



Additionally, to achieve the proposed objectives and integrate a more quantitative perspective, the methodological approach includes interpreting and critically analyzing public participation in votes and the development of the topic. This includes examining the public consultation on Proposed Constitutional Amendment No. 3, 2022, conducted digitally via the Federal Senate's online portal (Brazil, 2022).

For this stage, the Wayback Machine—a digital archive of numerous webpages over time—was used. This platform stores snapshots of their respective contents, along with numerical data that reveal contextual insights about the topic. “The Internet Archive’s Wayback Machine holds over 424 billion webpages, making it the largest publicly accessible archive in the world” (Bowyer, 2021, p. 43). This strategy strengthens the discussion framework and supports the preliminary results and considerations.

On this website, the link to the Federal Senate's page hosting the Proposed Constitutional Amendment No. 3, 2022 (Brazil, 2022) was entered, allowing for historical analysis of the dissemination and public engagement with the consultation. Subsequently, specific dates were selected to contextualize the results, gathering numerical data at given

moments to enhance correlations with ongoing discussions.

4 RESULTS AND DISCUSSIONS

Considering the role of Marine Lands in Brazilian territory and the theoretical and methodological foundation presented thus far, this section seeks to analyze the Proposed Constitutional Amendments (in Portuguese: *Propostas da Emenda à Constituição - PEC*) that have been the subject of extensive contemporary debate, followed by a broader discussion of the topic.

4.1 The issue of Marine Lands in recent decades

Sell and Baruffi (2015) discussed the use of public assets owned by the Union, in accordance with the relevant legislation and its subsequent amendments. These laws emphasize that occupants must comply with regulations and pay an annual occupancy fee. The Union, with certain exceptions, charges fees such as *foro*, *laudêmio*, and the occupancy fee, as provided for by applicable decrees and laws (Sell; Baruffi, 2015). Regarding *laudêmio*, which has been the subject of extensive debate and disagreement over time, it is a fee levied on the value of the property and improvements, payable upon onerous transfer of ownership, as stipulated by Decree-Law No. 2,398/87 (Brazil, 1987) and its amendments.

The issue of "marine lands" is complex, as also described by Sell and Baruffi (2015), who, in addition to addressing these dynamics, highlighted discussions about the relationships present in this context, revealing the perpetuation of conflicts of interest over time. Disputes among stakeholders over these areas are diverse, and over time, various attempts have been made to amend laws and even the Federal Constitution (Brazil, 1988), emerging in different places and with varying interpretations. Given the complexity of the issue, Proposed Constitutional Amendments (PECs) began to surface, a topic further explored below, along with perspectives from the various stakeholders involved.

4.2 Brief overview of Proposed Constitutional Amendment (PEC) No. 3 of 2022

PEC 03/2022 (Brazil, 2022) has been presented and under discussion for several years; however, it was in 2024 that debates gained significant momentum in the press, on the internet, across social media, and through other channels. Analyzing this PEC over time, it is noted that it originated in the Chamber of Deputies, where it was debated in the previous decade under the designation PEC 39/2011 (Brazil, 2011). Therefore, the most recent proposal can be regarded as a continuation of its predecessor, given that its main provision "revokes item VII of Article 20 of the Federal Constitution and paragraph 3 of Article 49 of the Transitional Constitutional Provisions Act [...]" (Brazil, 2022, p. 2, translated by the authors).

Providing a brief summary of the PEC, it is highlighted that the respective articles propose the establishment of new forms of ownership for marine lands. Beyond the Union's control over certain areas, it would also allow property transfers to states, municipalities, and

even occupants and leaseholders of such spaces, as well as land concessions (Brazil, 2022). The document further addresses the modalities of these property transfers, which could, in essence, be either free or onerous, depending on the context and specific conditions, while also prohibiting “[...] the collection of foro, occupancy fees [...], as well as laudêmio on ownership transfers, from the date of publication of this Constitutional Amendment” (Brazil, 2022, p. 3, translated by the authors). In summary, the key aspects of this proposal involve significant changes to the treatment of these lands, enabling property exchanges and addressing financial elements that have become the focus of controversies and debates. The resulting impacts have sparked a nationwide mobilization, which will be discussed in the next section.

4.3 Current discussions regarding the Proposed Constitutional Amendment

The PEC 3/2022 and its progression, due to the proposed changes that extinguish the federal government’s control over maritime lands in general, have sparked diverse debates among various stakeholders. This can be observed through reports, research studies, and widespread dissemination on social media and in the press.

Considering that the content of the proposed amendment involves the partial privatization of federal public assets, a significant portion of society has reacted strongly to the topic. The general perception understood that, if approved, these measures could interfere with the use of these spaces and could also benefit some groups at the expense of others. This raised concerns about potential impacts, even on public access to beaches, as highlighted by Sudré (2023).

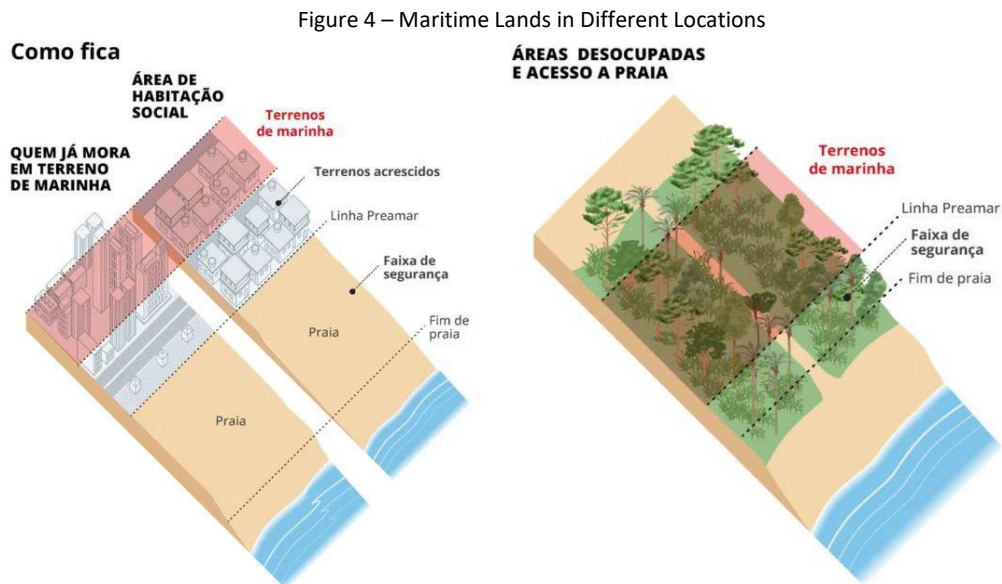
Revisiting Sudré's perspective (2023), it was observed that, in this context, the amendment’s progression already spurred concerns and debates about democratizing access to spaces. The author emphasized that "in recent days, the mobilization in defense of free access to beaches and marine areas has grown" (Sudré, 2023, n.p., translated by the authors). This perception is corroborated by the fact that the amendment process is still ongoing, with public consultation on the proposal still open, as observed in Brazil (2022), and with the majority of the population opposing it, as will be further discussed below.

Moreover, concerning the public hearing, it was possible to discern, in addition to the general population’s perspective, the stance of the Ministry of Management and Innovation in Public Services (in Portuguese: Ministério da Gestão e da Inovação em Serviços Públicos) (MGI). In summary, the ministry's opposition aligned with the majority of society’s viewpoint, as:

[...]the MGI, through the Secretariat of Federal Assets (SPU), positioned itself against the approval of PEC 3/2022, because, if approved, only areas allocated for federal public service would remain under federal control. Other areas could be transferred to the full ownership of states, municipalities, or even private individuals, depending on their prior use and occupation (Brazil, 2024, n.p., translated by the authors).

Beyond the property aspects, the SPU’s analyses, which, as noted, currently manage maritime land areas, also encompass intersections with sustainability dimensions. These analyses indicate that safety zones and these lands play a role in addressing current climate changes, which constitute another significant concern (Brazil, 2024). Additionally, issues related to real estate speculation and various correlated factors could have broad implications for the

PEC. Illustrating these debates, Figure 4, based on Altino (2024) and considering the territorial aspects described in the theoretical framework stage, presents maritime lands in different locations. The change in ownership raises uncertainties in society, particularly concerning democratic access to coastal areas.



Source: Altino (2024, n. p.).

In light of this, it is possible to discuss the indispensable need to promote further debates on the matter, not only because these areas serve as transitional zones between inland and beach spaces, as concluded by Schmitz, Nicolodi, and Gruber (2023), but also due to their multidimensional role. Furthermore, the importance of the public sector's integrated role in management is reaffirmed from the perspective of Costa *et al.* (2023, p. 319, translated by the authors), as "[...] without its involvement, real estate speculation could reach proportions that will be difficult to control in the future," in addition to disputes already observed over these territories and the potential effects on ecosystems, environmental quality, and democratic access to these spaces.

The issue of disputes is also addressed by Reis and Ataíde (2015), who highlight the competition among different sectors over these types of spaces, using coastal areas as an example. These areas, moreover, present "[...] diverse ecosystems and physiographic formations that are environmentally fragile" (Reis; Ataíde, 2015, p. 72, translated by the authors), underscoring the importance of preserving these structures.

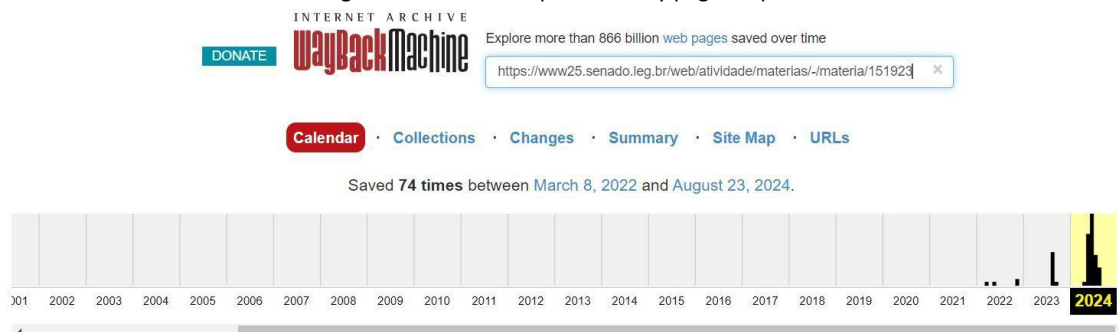
Expanding on these studies, Romiti (2024) suggests that management should involve, beyond access rights and environmental conservation, proper monitoring and control measures, as well as the implementation of zoning regulations and master plans to protect these areas.

4.4 The evolution of popular participation and its current stage

After understanding the concepts and qualitative aspects inherent to the topic, it is also pertinent to conduct a quantitative analysis to support and validate the insights presented

thus far. This involves examining a public survey conducted since 2022. To achieve this, as outlined in the Methodology section, the "Wayback Machine" website (Internet Archive) is utilized. This platform provides a series of snapshots and records of various web pages, including the PEC (Brazil, 2022) page in the archive, as illustrated in Figure 5.

Figure 5 – Timeline of public survey page snapshots



Source: Wayback Machine (2024).

This timeline enables an overview of how the topic has spread across the press and social media. Despite being under consideration since 2022, it was particularly in 2024 that the PEC moved beyond "silent" deliberation and gained significant public attention. This observation aligns with the increased number of reports on the topic. On the Wayback Machine, this trend is reflected in the significant rise in the number of saved snapshots documenting the survey's progression, demonstrating growing general interest in this context. According to Bowyer (2021), the Wayback Machine's archive, which cannot store every webpage in existence, is influenced by human decisions and actions, which shape the frequency of page recordings and the level of interest in such records.

Considering that the page has been saved 74 times, this study selected specific dates (sometimes closely spaced, sometimes more distant) to provide a statistical perspective on the voting process, given the availability of snapshots on the website. It should be noted that there are records for different days, months, and times distributed unevenly. Therefore, these analyses partially cover the subject but effectively illustrate the related statistics. Table 1 documents the stage of the public survey on selected dates, showing the number of "yes" votes (in favor of the PEC) and "no" votes (against the PEC), thereby offering insights into the evolving perspectives on the issue.

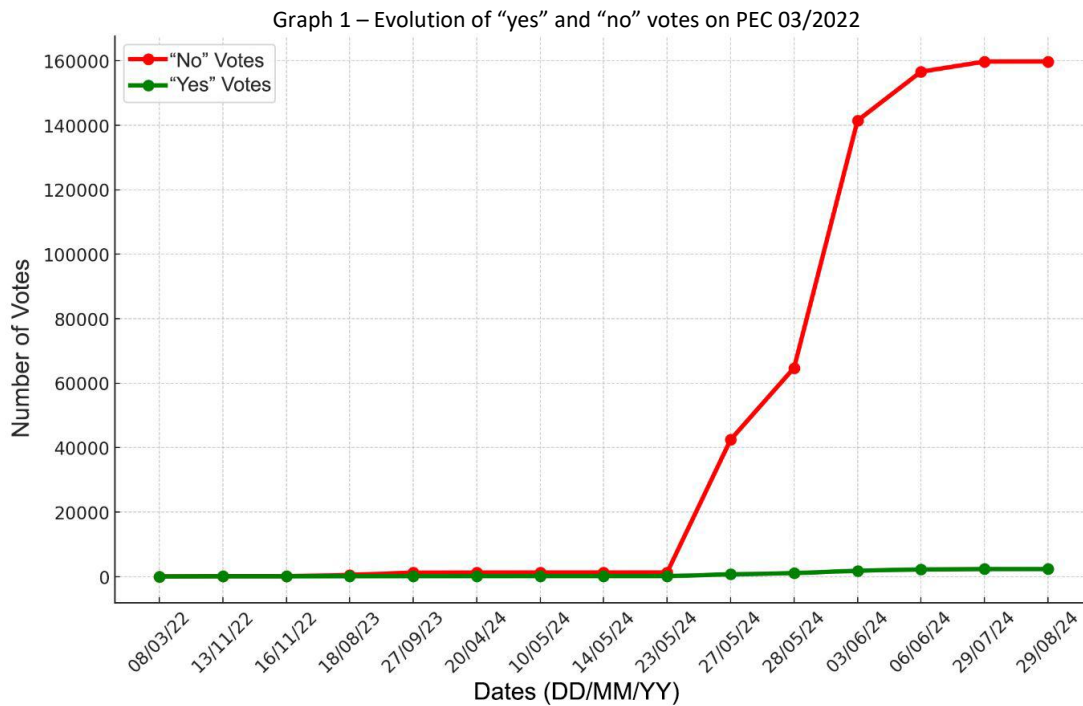
Table 1 - Partial historical tracking of votes in favor and against the PEC

Date	"YES" Votes	"NO" Votes	Total Votes
March 08, 2022	1	3	4
November 13, 2022	36	64	100
November 16, 2022	37	64	101
August 18, 2023	72	486	558
September 27, 2023	88	1.179	1.267
April 20, 2024	101	1.228	1.329
May 10, 2024	104	1.244	1.348
May 14, 2024	104	1.244	1.348
May 23, 2024	108	1.248	1.356
May 27, 2024	678	42.436	43.114
May 28, 2024	1.033	64.729	65.762
June 03, 2024	1.790	141.441	143.231
June 06, 2024	2.195	156.604	158.799
July 29, 2024	2.302	159.733	162.035
August 29, 2024	2.307	159.769	162.076

Source: Adapted from Brazil (2022), with the support of Wayback Machine (2024).

The numerical analysis of this table, despite not encompassing the entire recorded universe, supports the notion that the increased frequency of the page being saved corresponds to moments when the topic peaked in the media. This increase also correlates numerically with the periods during which the number of votes, especially "no" votes, rose rapidly, demonstrating heightened interest in the subject and concerns regarding the potential consequences of approving such proposals.

Critically analyzing the data obtained with the aid of the tool also known as the "Internet Archive," a reduced level of engagement is observed in terms of total responses during the first two years of the PEC's availability for public consultation. However, even from its initial availability, the proposal's "unpopularity" becomes evident, characterized by the consistent predominance of votes against the proposals. With the "explosion" of the topic, these votes—particularly the "no" votes for the PEC—grew exponentially, multiplying rapidly over a short period and further underscoring the collective controversy surrounding the issue. To present these data in a more illustrative and visual manner, Graph 1 below depicts the configuration of positive and negative votes on the subject, further clarifying the points discussed thus far. This graph was generated using all the numerical data presented in Table 1, providing a schematic approach.



Source: Prepared based on Brazil (2022), with the support of Wayback Machine (2024).

The visualization of this data, in a summarized form, highlights the population's predominant opposition to the PEC, both in absolute numbers, with "no" votes vastly outnumbering "yes" votes, and in percentage terms, demonstrating a significant homogeneity in citizens' opinions on this matter.

Beyond the analyses presented, it can be concluded that society's participation in governance and decision-making is of great relevance not only concerning the Marine Lands but also in other situations. The study by Imbroni and Nascimento (2024) exemplifies this idea about popular mobilization in various contexts and actions, summarizing that urban spaces and sustainability: "[...] benefit from involving the populations while revaluing ecosystems and integrating them into society has a tangible impact on local life, strengthening the sense of recognition and potentially providing lasting economic and environmental benefits" (Imbroni & Nascimento, 2024, p. 395, translated by the authors).

5 FINAL CONSIDERATIONS

From the understanding of the historical importance of Marine Lands for Brazilian territory and their connections to all dimensions of sustainability, the necessity of perpetuating integrated and careful management strategies for these areas is reinforced. Emphasis is placed on the importance of public authorities acting together with society to ensure that the spaces discussed in this article fulfill their social, environmental, and economic functions.

In summary, the bibliographic and documentary review conducted supports these ideas, with the analysis of data recorded in the public consultation on the PEC since its availability, the growth in votes, and the current scenario. Both quantitative and qualitative analyses demonstrate society's perception of such proposals. The amplification of popular

participation among the actors involved in the topic enhances the discussion and offers perspectives on the progress of the issue, as it remains ongoing and controversial.

Considering the challenges of managing marine lands, especially in a large and diverse country like Brazil, it is crucial that discussions continue—not only concerning legislation but also encompassing historical aspects. The aforementioned integrated management must necessarily be multidisciplinary, with plans tailored to the specificities of each region. This approach should involve various stakeholders and address public awareness and environmental education while employing technical tools such as continuous environmental monitoring, mapping, and georeferencing to optimize such management.

Finally, as noted throughout this study, a key limitation was the challenge of obtaining materials from the past two years, particularly peer-reviewed scientific articles published in journals. This observation underscores the need for more future research on marine lands, especially considering the controversial developments that, despite popular votes, remain unresolved. These analyses and discussions should continue, given the importance of these areas for the population and for environmental, economic, and social sustainability. Another limitation lies in the scope of international research, which was not the primary focus of this article, as the demand was to specifically address Brazilian legislation. However, understanding the global panorama in a general and comparative way is suggested for future research, as it could strengthen the debates.

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DECLARATIONS

AUTHOR CONTRIBUTIONS

- **Study Conception and Design:** Arthur Alves Costa Lignani de Miranda, Paula Navarro Nunes and Cézar Henrique Barra Rocha.
- **Data Curation:** Arthur Alves Costa Lignani de Miranda and Paula Navarro Nunes.
- **Formal Analysis:** Arthur Alves Costa Lignani de Miranda and Paula Navarro Nunes.
- **Funding Acquisition:** Cézar Henrique Barra Rocha and Ercilia de Stefano.
- **Investigation:** Arthur Alves Costa Lignani de Miranda and Paula Navarro Nunes.
- **Methodology:** Arthur Alves Costa Lignani de Miranda and Paula Navarro Nunes.
- **Writing - Initial Draft:** Arthur Alves Costa Lignani de Miranda and Paula Navarro Nunes.
- **Writing - Critical Review:** Arthur Alves Costa Lignani de Miranda, Paula Navarro Nunes, Cézar Henrique Barra Rocha and Ercilia de Stefano.
- **Review and Final Editing:** Arthur Alves Costa Lignani de Miranda, Paula Navarro Nunes, Cézar Henrique Barra Rocha and Ercilia de Stefano.
- **Supervision:** Cézar Henrique Barra Rocha and Ercilia de Stefano.

DECLARATION OF CONFLICTS OF INTEREST

We, **Arthur Alves Costa Lignani de Miranda, Paula Navarro Nunes, Cézar Henrique Barra Rocha and Ercilia de Stefano**, declare that the manuscript titled "**The management of Marine Lands and the use of space: discussions on historical context and public participation in current proposals**":

1. **Financial Ties:** Does not have financial ties that could influence the results or interpretation of the work.
 2. **Professional Relationships:** Does not have professional relationships that could impact the analysis, interpretation, or presentation of the results.
 3. **Personal Conflicts:** Does not have personal conflicts of interest related to the manuscript content.
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