



Policy Forums

Nature's rights for threatened tropical coasts

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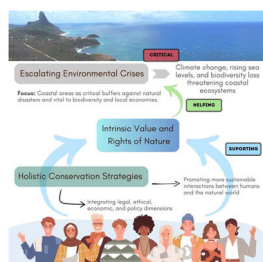
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HIGHLIGHTS

- Marine ecosystems are increasingly threatened by climate change, rising sea levels and coastal infrastructure development.
- PEC 3/2022 aims to reform the Brazilian Law to transfer ownership of part of the coastal areas, currently under federal jurisdiction, to the Brazilian states and municipalities.
- Public opposition to PEC 3/2022 has been surprisingly strong in comparison to other antienvironment regulations proposed recently.
- Amid these legal and political debates, the Rights of Nature (RoN) framework emerges as a potential tool for strengthening marine ecosystem protection.
- RoN implementation requires more than legal reform: it needs broad coalitions, including public mobilization and democratic engagement.

GRAPHICAL ABSTRACT



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ABSTRACT

Exploring nature's rights for coasts is urgent as rising seas, marine heatwaves, and storms increasingly threaten ecosystems, biodiversity, and livelihoods. New legal propositions currently under discussion in the Brazilian

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Environmental governance
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Public mobilization

Congress will have important consequences for coastal ecosystems and the people that rely on them (i.e., Proposed Constitutional Amendment, PEC 3/2022). Here, we navigate through some of these recent debates to highlight opportunities for pioneering legislation reforms that target coastal conservation in Brazil. The successful case of public engagement to resist PEC 3/2022 sheds light on the potential of Brazilian people's support to advance nature protection, starting from the littoral zones. Given the fragility of coastal protection in the country, integrating ethical dimensions through the lens of rights of nature provides a powerful framework for more effective science-based conservation. The key takeaway is that granting rights to coasts, backed by civic engagement, could foster their ecological resilience to escalating human threats.

After many years under attack, environmental legislation in Brazil may finally see fair winds. The Congressional Indigenous Caucus is spearheading efforts to secure the minimum number of signatures required to introduce a Proposed Constitutional Amendment (PEC) on the Rights of Nature (RoN) in the Chambers of Deputies (*Câmara dos Deputados*, 2024). If approved, this PEC could mark a Constitutional paradigm shift in the country. It would recognize ecosystems, species, and biomes as subjects of rights, imposing enforceable duties on the State to safeguard them (*Alves et al.*, 2023). The proposal also acknowledges the ancestral role of Indigenous and traditional peoples in sustaining human-nature relationships and guarantees that nature's rights can be legally defended through petitions and jurisprudence (*Xakriabá*, 2024). RoN framework has gained increasing global recognition for its potential to promote environmental protection (*Putzer et al.*, 2022). Grounded in Indigenous and traditional worldviews, the framework translates cosmologies and territorial management systems into measures that may anchor Constitutional provisions in lived experience and long-standing stewardship (*Chapron et al.*, 2019; *Kahui et al.*, 2024).

Against this backdrop, megadiverse countries like Brazil continue to grapple with the challenges and opportunities of adopting it. Although Brazil's environmental legislation protects large areas of terrestrial biomes and large areas along the coast (over 660,000 km²), effective science- and community-based actions to safeguard these ecosystems from human disturbance are insufficient (*Magris and Gonçalves*, 2025). Given that most environmental policies are outdated, not considering contemporary issues or alternative perspectives, the inclusion of Indigenous and traditional peoples worldviews within RoN could help reshape the conservation strategy towards the environment (*Kahui et al.*, 2024). Comparative analyses of RoN case studies around the globe show that such framework often emerge precisely in contexts of weak governance, catalyzed by society's mobilization and the search for alternative legal tools to protect ecosystems (*Kauffman and Martin*, 2021; *Kahui et al.*, 2024).

Although RoN holds promise, its potential implementation must also navigate through Brazil's conservation and political agendas. This is challenging because those agendas are spatially skewed, historically concentrating policy attention, funding, and enforcement in terrestrial ecosystems such as the Amazon rainforest, while neglecting others (*Couto et al.*, 2024). This imbalance is exemplified by the decade-long delay in advancing the approval of Bill Proposal 6969/2013 (PL) ("Law of the Sea"), which seeks to establish a national policy for the conservation and sustainable use of Brazil's marine biome (*Câmara dos Deputados*, 2013). This legislation provides management instruments better suited to their complex social-ecological dynamics. In parallel, the recent introduction of PEC 3/2022 — a proposal to amend Articles 20 and 49 of the Transitional Constitutional Provisions Act in the Brazilian Constitution to establish new regulations for the ownership and management of coastal areas — is currently under active discussion (*Cianciaruso*, 2024). Commonly referred to as the "Sand Beach Privatization Amendment", the proposal aims to eliminate the designation of coastal lands, currently under federal jurisdiction, by transferring their management to private entities, states, and municipalities. While we acknowledge that federal jurisdiction has not ensured the level of protection desired, it has nonetheless served as a barrier against the

unchecked expansion of unregulated coastal development (*Jablonski and Filet*, 2008). Although framed by its proponents as an effort to reduce bureaucracy, PEC 3/2022 has raised significant concerns about its potential environmental impacts and the implications for local and traditional communities that depend on coastal ecosystems for their livelihoods.

Unexpected by PEC 3/2022 proponents and supporters, public opposition was much louder than usual compared to other recent environmental deregulation propositions approved in the Brazilian Congress (*Cianciaruso*, 2024), such as Bill 2159/2021, later sanctioned as the General Environmental Licensing Law, widely known as the "Devastation Bill" (Supplementary Material). This surprising opposition was driven by multiple factors, raising from concerns over the privatization of the beaches to the growing awareness of coastal ecosystems' importance and impacts on the communities' livelihoods. While not expressed as RoN, some of these motivations are analogous to RoN principles that recognize the intrinsic and relational values of ecosystems, pinpointing a possible pathway for advancing the framework in the country (*Himes et al.*, 2024). By prioritizing targeted approaches for specific ecosystems and establishing clear, equitable guidelines, Brazil has an opportunity to bridge existing policy gaps and strengthen ecosystem-based protections for its diverse natural heritage.

In this perspective article, grounded in current legal debates and international RoN precedents, we aim to stimulate policy discussions on the implementation of RoN in Brazil. We argue that the unexpected and unprecedented wave of public mobilization against PEC 3/2022 presents a critical window of opportunity to embed RoN into Brazilian Constitutional law. Although experiences from other countries show that implementing RoN can be challenging, with uneven outcomes and persistent uncertainties, these experiences also demonstrate that political momentum and societal engagement are decisive for translating RoN principles into practice. Seizing this opportunity to integrate RoN into Brazil's legal framework, starting with coastal ecosystems, could set a precedent for long-term ecological governance and strengthen legal recognition of nature's rights nationwide.

Brazil's coastline

Brazil's coastline, spanning approximately 8,000 kilometers, holds immense social, economic and environmental significance, at both local, regional, and global levels. The area encompasses many nearshore ecosystems, including mangroves, coral reefs, estuaries and coastal wetlands (*Fig. 1*) (*Bunting et al.*, 2022). Beyond their intrinsic value as natural environments, these ecosystems are essential for supporting Indigenous communities, traditional coastal villagers, and tourists with food (e.g., fish, shellfish), scenic beauty, shoreline protection, and key cultural services such as recreational activities (*Curi and Gasalla*, 2021). The country's extensive coastlines have key blue carbon ecosystems like mangroves and salt marshes (*Soares et al.*, 2022), also providing critical habitats, landing sites, and nesting grounds for a diverse array of terrestrial and marine species (*Amaral et al.*, 2016) — including species of high economic importance like those sustaining industrial and artisanal fisheries (*Eggertsen et al.*, 2024). This is especially relevant in Brazil, which has the largest number of artisanal fishers in the Americas, mostly concentrated in coastal regions (*Cavole et al.*, 2025).

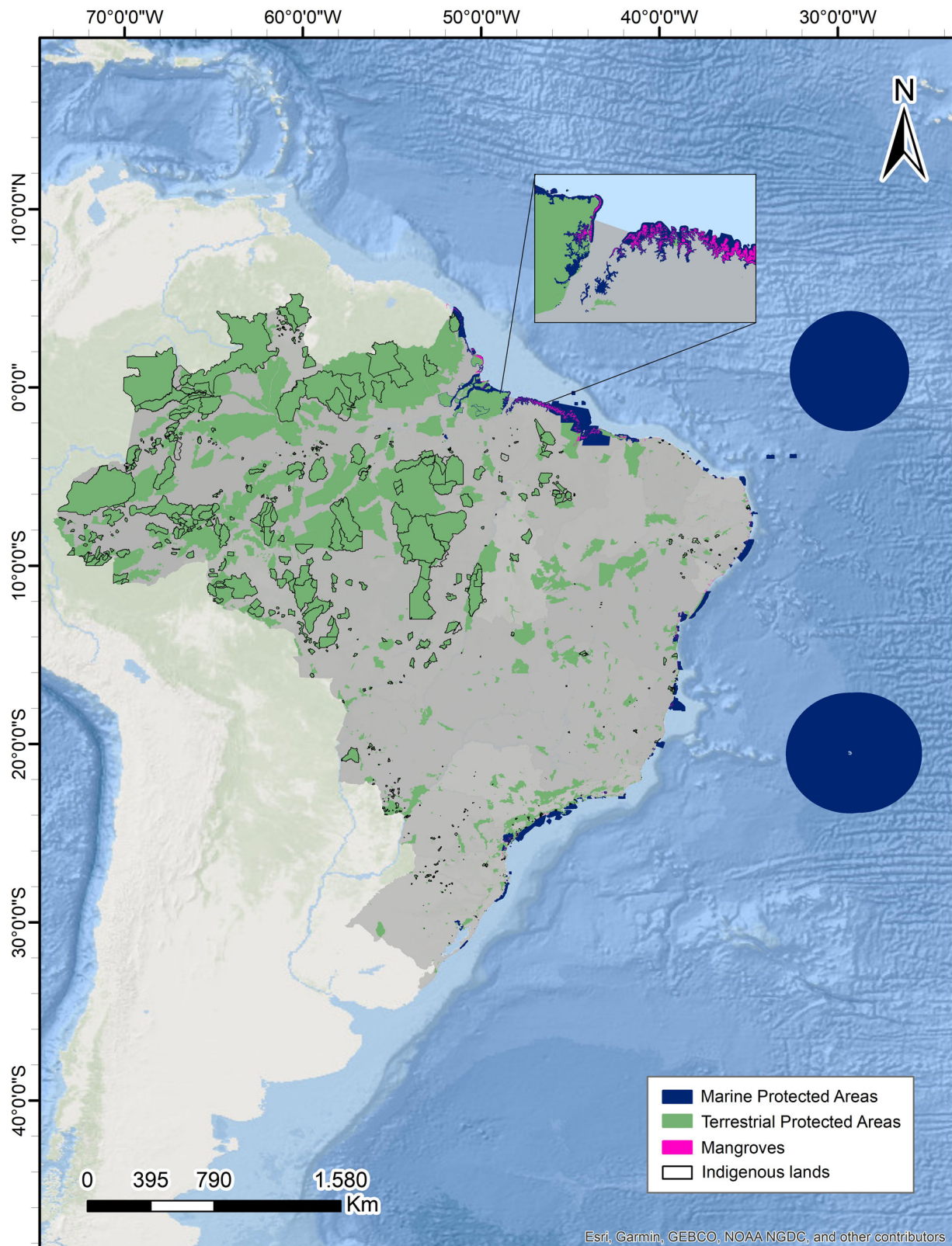


Fig. 1. Brazil's main marine protected areas, mangroves, and Indigenous territories. Large offshore Marine Protected Areas in Brazil's Extended Economic Exclusive Zone are concentrated around the São Pedro and São Paulo Archipelago and the Vitória-Trindade seamount chain. A zoomed-in view of the Gulf of Maranhão region, between the states of Pará and Maranhão, highlights the spatial dynamics among marine protected areas, terrestrial protected areas, and mangroves Data sources: The World Database on Protected Areas (WDPA), Global Mangrove Watch Version 3.0, Fundação Nacional do Índio (Funai).

Regardless of their significance, 38% of Brazil's marine biomes, designated as protected or areas for sustainable use by local communities (CNUC, 2026), suffer from ineffective management. This weak governance leads to environmental degradation and escalates the vulnerability of local communities to climate-related hazards. A way forward to fill these deficiencies could come by recognizing socio-ecological complexities in the country, and bridging conservation strategies with the country's diverse societies, including Indigenous and traditional views. The strong public opposition to changes in coastal ownership suggests the existence of a potentially large but untapped public support for advancing RoN policies targeting coastal areas (Supplementary Material).

Despite this possibility, other experiences to implement RoN globally have failed, providing some valuable lessons on their potential to advance environmental protection (Alves et al., 2023). The lack of a well-defined policy framework has been a major barrier to practical application (Epstein et al., 2023; O'Donnell et al., 2023), particularly regarding the legal representation for nature in courts (O'Donnell et al., 2023). Therefore, considering the tight human-nature interactions, effective stewardship must begin with a strong science-policy interface recognizing such an interplay. This interface not only grounds decision-making in socio-ecological evidence, but also allows that this knowledge is translated into legitimate and enforceable protections (Armitage, 2007). In this context, we discuss the ongoing case of PEC 3/2022 in the Brazilian coastal zones and the potential consequences if the Constitution is amended. Following this, we explore how public opposition to the proposal could be leveraged to support the incorporation of RoN into Brazil's Constitution, with a focus on coastal ecosystems.

PEC 3/2022 threatens the Brazilian coasts

In Brazilian Constitutional Law, a PEC refers to a proposed amendment to the Constitution. As the Constitution represents the supreme legal framework of the country, any modification to its provisions requires a legislative process designed to ensure democratic deliberation and consensus. A PEC can be proposed by at least one-third of the members of either the House of Representatives or the Federal Senate, or by the President of the Republic. Once introduced, the PEC undergoes multiple rounds of voting in both legislative houses, requiring approval by a three-fifths majority in each. This long and difficult process underscores the seriousness of altering the Federal Constitution, which typically involves topics of structural and foundational importance to the country.

PEC 3/2022 was proposed in the House of Representatives almost three years ago. After its approval in the House of Representatives, the proposal is currently under consideration in the Senate. The proposed amendment seeks to transfer coastal land rights – the 33-m shoreline strip above the high tide mark currently managed as public lands by the federal government – to lower levels of government and private companies. Authored by Deputy Arnaldo Jordy in the House of Representatives and now reported by Senator Flávio Bolsonaro in the Senate, the amendment is justified as a means to reduce bureaucracy in the control and revenue collection of coastal lands, increase assets, and grant greater autonomy to municipalities in managing these areas. It also claims to facilitate land regularization and promote urban development for the benefit of Brazilian society.

The proposal has passed key procedural milestones and despite of advances, the amendment has faced significant resistance from the public, academics and civil society organizations. In 2023, public opinion reflected concerns that the amendment could lead to the privatization of the beaches, which are one of the main sources of leisure for Brazilians. Social media platforms facilitated awareness campaigns, enabling dissemination of information and countering misinformation about the amendment's implications (Brasil de Fato, 2024; Governo Federal, 2024). Experts voiced concerns that the bill could pave the way

for new infrastructure developments that harm sensitive coastal ecosystems (Ministério da Gestão e da Inovação em Serviços Públicos, 2024).

Tropical and subtropical coastal areas, including mangroves, coral reefs and sandy beaches are at the forefront of anthropogenic change (Bernardino et al., 2024). Development projects and resource extraction exert immense pressure on these fragile interconnected environments. The economic value of Brazil's coastal ecosystems is immense, serving as a basis for the nation's prosperity. If approved, the amendment would place these ecosystems at greater risk. It could also catalyze disputes over land titles and public coastal access and shift environmental liability into contentious conflicts with private companies, undermining long-standing conservation initiatives. Small-scale coastal fisheries generate an estimated 60–146 million USD annually in Brazil (Basurto et al., 2025), underpinning their essential role in local economies and in the food security of Indigenous and coastal communities. The tourism sector depends on the pristine landscapes and ecological health of the coast, attracting international visitors who contribute significantly to local economies (Waechter et al., 2024). The region already contends with layered risks, and weakening climate mitigation, adaptation, and other ecosystem services could exacerbate them (Magris et al., 2021). Although public opposition delayed the vote due to concerns over beach access, the amendment could still pass upon reintroduction in the Senate, with commensurate impacts.

Advancing rights of nature with community support

The resistance against PEC 3/2022 underscores a key factor for the success of RoN policies: public engagement. The strong public mobilization opposing the amendment may also represent an opportunity to advance the integration of RoN into Brazil's legal system, particularly by strengthening protections for coastal ecosystems and recognizing them as legal subjects deserving rights and safeguards. While the PEC 3/2022 proposal has faced substantial resistance, this opposition has brought to light lessons and opened avenues for advancing the RoN framework. Civil society's ability to mobilize public opinion and pressure policymakers to halt harmful practices in coastal ecosystems also demonstrates its broader potential to drive positive changes in policy making.

If RoN is incorporated into Brazilian law, it could help strengthen protections for biodiversity, improve resources management, and provide legal mechanisms to hold violators accountable for environmental harm. With the public scrutiny revived and a strong societal support for coastal environments, PEC 3/2022 reveals that RoN laws targeting beaches and coastal ecosystems have high chances to succeed. Indeed, global experience on RoN policies shows that public engagement is critical when institutions fail, being classic cases of bottom-up environmental governance, as seen with Indigenous Kukama women's activism securing rights for Peru's Marañón River in the Amazon. In Ecuador, where the Constitution enshrines the RoN, a group of concerned citizens banded together to defend the Los Cedros forest from mining activities. Their case presented an opportunity for judges to assess these rights beyond theory. The Court ultimately ruled in favor of the forest, forcing mining companies to cease operations and permanently banning all extractive activities. Moving beyond terrestrial ecosystems, in 2025, the Constitutional Court of Ecuador recognized that coastal and marine ecosystems have legal rights that must be protected, establishing strict limits on activities such as industrial fishing. In Brazil, a shy movement seeks recognition of RoN within legal frameworks. A handful of municipalities have enshrined the principles in their Organic Laws (e.g., municipality of Bonito in the state of Pernambuco; Serro and Santo Antônio do Itambé in the state of Minas Gerais), but efforts at the state level are still awaiting legislative approval and some proposals grounded in legal theory have been rejected (EcoJurisprudence database systematically compile RoN worldwide; www.ecojurisprudence.org). At the national level, Indigenous Deputy Célia Xakriabá raised the possibility to propose an amendment to the Constitution granting RoN.

Mobilizing around specific targets like coastal rights, with the proper scientific backing, offers a strategic entry point to secure a universal and transgenerational ownership of preserved coastal ecosystems. As global environmental problems escalate to a crisis level, emerging social movements rise to the challenge, demanding new rights and forging a new political landscape. Lessons learned tell us that strong public and scientific support are important for the success of environmental conservation policies and their ability to deliver better outcomes, especially at levels such as Constitutional amendments. Effective stewardship, however, depends on strong science-policy and social interface, that translates ecological evidence into enforceable protections while ensuring legitimacy through public mobilization (Epstein et al., 2023). However, the successful implementation of RoN requires more than just legal recognition. Drawing on experiences from other countries, integrating Indigenous and local community perspectives with scientific evidence and grassroots actions can enable Brazil to build a more robust and inclusive legal framework to protect coastal environments for future generations. The unprecedented public mobilization against PEC 3/2022 has created new momentum for RoN. By intersecting civic resistance with Constitutional innovation, grassroots movements have the potential to drive transformative legal frameworks that safeguard Brazilian coasts.

Declaration of competing interest

The authors declare no competing interests.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.pecon.2026.01.001>.

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