

Plastic tides: Marine litter challenges for artisanal fisheries



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Resumo: Marine litter is one of the greatest problems of the Anthropocene, directly impacting coastal communities. The present article examines the perception of artisanal fishers regarding the impact of marine litter on their activities. Semi-structured interviews were conducted with fishers from Bertioga, within the scope of the Nós da Ação project. Results showed that litter has direct impacts when it damages fishing equipment, and indirect impacts, since it reduces catch potential and increases the time spent fishing.

Coastal communities, which include artisanal fishers, suffer from environmental injustice in several ways: from the struggle to maintain their territory, which is threatened by intense occupation and real estate speculation, to the fact that they are in an area receiving all the pollution accumulated on the continent that flows through rivers, which affects many of their traditions and livelihood, such as fishing (Bennet et al., 2023). Moreover, these communities are among the most vulnerable socioeconomic groups, given their high exposure to environmental changes and, in many cases, precarious housing infrastructure, low education levels, and little – or no – negotiating power in the design of policies that affect them (Béné, 2009).

Although there are several publications on the impacts of marine litter, the socioenvironmental perspective, which concerns the damage inflicted on these fishing communities due to waste, is still poorly explored (Guerrato; Gonçalves, 2025). Also, the emphasis given to fishers as victims of this structural problem of ocean pollution is still neglected in many places. Therefore, understanding the need to actively involve them in the co-construction of fairer and more sustainable paths regarding the issue of marine litter is imperative.

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Keywords: Artisanal Fisheries; Marine Litter; Impacts; Reports



Figure 1. Researcher from the Nós da Ação project sorting the waste that was accidentally caught by artisanal fishers during their shrimp trawling activities. Photo: Deborah Gallo/Nós da Ação.

NÓS DA AÇÃO

Along the coast of São Paulo, the damage caused by marine litter is a frequent topic of discussion and participation, such as in management board meetings of the Marine Environmental Protection Area of the Central Coast (APAMLC). As a result, some initiatives have been developed across the territory. This is the context in which the research project “Nós da Ação: Engaging artisanal fishers in combating marine litter” was created at the Federal University of São Paulo (UNIFESP). This project, developed in partnership with managers of environmental protection areas and fishers, seeks to understand the problem of marine litter and find solutions to reduce the impact of waste on fishing activities.

The project took place from 2021 to 2024 and included monitoring marine litter that was brought voluntarily by fishers during shrimp trawling activities, as well as interviews and workshops to understand the impacts they perceived and what solutions could be applicable in this context (Fig 1 e Fig 2). The reports obtained throughout the project’s activities are presented below¹.

1. To learn more, see the study: Guerrato & Gonçalves, 2024. *Entre Redes e resíduos: O lixo no mar e seus impactos ambientais para a pesca artesanal*. Master’s Thesis. Available at: [Entre redes e resíduos: o lixo no mar e seus impactos socioambientais para a pesca artesanal](#).

Damage to fishing equipment	João, fisher from Bertioga	"Because when there's too much litter, you're working and then the net gets buried in the mud and you have to keep stopping. Then all that mud comes up with the plastic bags, plastic bottles filled with mud, and that gets in our way. It's damaging, it is"
	Bruno, fisher from Bertioga	"I've lost nets because of litter. Couldn't get any more use out of it. It was torn, a stump of wood, a piece of tin"
Decrease in catch potential	Marcelo, fisher from Bertioga	"When I worked with gillnets, we would go to Farol do Boi, we'd arrive there, and instead of catching fish, we just caught litter. So, there was no fishing, just pure trash"
	Walter, fisher from Bertioga	"Because sometimes a place that has a lot of trash, the shrimp doesn't stay. No fish stays. It's like I said about when there's a lot of litter in Riviera, you don't find any kind of fish there. It's just trash. Sometimes you see one or other floating, but then, like, when there's a lot of litter floating, you say, not much is coming from the bottom, when there's this much floating"
Increase in the time spent due to litter	José, fisher from Bertioga	"As a fisher, if I were to separate the litter, I'd spend almost twice as much time. Like, if I spend an hour separating the shrimp, if we were to separate all the trash, we would spend almost twice as much time. We're talking about two hours of work"
	Celso, fisher from Bertioga	"Because, like, there are days when a lot comes, a lot. And there are days when there's some, sometimes the shrimp is clean, there's just a bit, but you are able to pick it out. But on days when litter really comes, there's wood stumps, there's plastic, you're stalled there for two hours. For you to get twenty or thirty kilos of shrimp from all that, all that litter. So, if you have to stay there for two hours, you're not going to have any rest, you don't even go inside the cockpit".

Table 1. Reports by the fishers. Source: Data collected by the authors.

FINAL CONSIDERATIONS

In view of these reports, the impact caused by marine litter on artisanal fishing is clear, both directly, as a result of damaged nets or vessels due to entangled waste, and indirectly, when fishers increase their fishing effort, there is lower fishing productivity, and consequently an economic impact on the sector.

This environmental problem, combined with other situations of environmental conflicts that the artisanal fishing sector faces, such as large-scale enterprises, inspections, and unregulated tourism (Prado et al., 2022), worsens the scenario of vulnerability and environmental injustice. Thus, understanding the impacts of marine litter from the perspective of fishing communities is essential. By giving a voice to the experiences and perceptions of fishers who face these challenges on a daily basis, we cannot only recognize the scale of the problem but also identify paths to solutions that integrate local knowledge and collective actions.



Figure 2. Fisher holding the waste that was collected at sea over the course of 2 hours of shrimp trawling. Photo: Deborah Gallo/Nós da Ação.

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