

Navigating the Tide: Coastal Displacement and Local Seafood Accessibility in Culebra, Puerto Rico

Navegando la Marea: Desplazamiento Costero y Accesibilidad al Marisco Local en Culebra, Puerto Rico

Naviguer sur la Marée: Déplacement Côtier et Accessibilité aux Produits de la Mer Locaux à Culebra, Porto Rico

EMMANUEL MALDONADO-GONZALEZ¹, NICOLÁS X. GÓMEZ-ANDÚJAR², NATHANIA MARTÍNEZ³

University of Puerto Rico at Rio Piedras,

²*Asociacion Pesquera de Culebra,* ³*De Base LLC*

emmanuel.maldonado6@upr.edu

EXTENDED ABSTRACT

This study explores the growing impact of coastal displacement on small-scale fishers' livelihoods and resource access in Culebra, Puerto Rico, a community deeply intertwined with traditional fishing practices. Increasingly, these practices are disrupted by economic, environmental, and social pressures driven by tourism and real estate development. Coastal displacement, largely fueled by short-term rental platforms such as Airbnb, has transformed the real estate market in Culebra, pushing property values higher and leading to a significant privatization of coastal spaces. This process is symptomatic of what is described as a new "gentrification battlefront" in tourist destinations (Cócola-Gant, 2016), where the proliferation of vacation rentals displaces residents and limits access to communal resources. In Culebra, these dynamics directly affect the fishing community, which is already vulnerable due to its reliance on small-scale, often seasonal fishing activities. Through qualitative interviews with local fisherfolk and residents and spatial analyses of coastal access points, this research investigates the specific barriers to seafood accessibility in Culebra.

The study is anchored in *access theory*, as defined by Myers and Hansen (2020), which provides a framework for examining how privatization, regulatory gaps, and other social mechanisms restrict or enable access to critical resources. In Culebra, coastal areas that were once shared among local communities have been converted into private or restricted-use spaces, effectively reducing the public's ability to reach fishing spots and increasing the operational challenges for fishers. By February 2023, a spatial analysis of Ensenada Honda revealed a total of 162 docks, of which only 25 provide access to public land. Most of these docks, 137 in total, lead to private properties owned by second-home owners and short-term rental operators, restricting access to fishing resources for local fishers and residents. The privatization of coastal areas does not only limit physical access for fishers; it also introduces environmental challenges. The proliferation of illegal docks has impacted sensitive habitats such as mangroves and seagrass beds, which serve as nurseries for fish species vital to the local fishing industry, including Silk Snapper (*Lutjanus vivanus*) and Queen Snapper (*Etelis oculatus*). Unregulated construction has led to the degradation of these habitats, affecting fish stocks and creating long-term ecological consequences that ultimately hinder fishers' ability to sustain their livelihoods. Recent remote sensing data indicate significant mangrove degradation between 2020 and 2022, particularly in areas near public docks, where environmental pressures are greatest. This environmental degradation adds another layer of complexity for Culebra's fishing community, which is already contending with restricted access and competitive pressures from recreational and commercial fishing operations. The socio-economic impacts of these barriers are equally significant. As the local fishing community grapples with limited access to the sea, the COVID-19 pandemic has exacerbated food insecurity across Puerto Rico, with particularly acute effects in remote areas like Culebra. The pandemic disrupted food supply chains, further intensifying the reliance on imported foods to meet basic needs (Ostolaza et al., 2021).

In Culebra, all food is imported, and the availability of local seafood could play a crucial role in mitigating food insecurity. For Culebra's fishers, the ability to continue their work is not only a matter of livelihood but also a key factor in supporting local food systems and resilience. In addition to these access issues, our findings reveal that gentrification in Culebra is reshaping the social and economic dynamics of the island. The influx of affluent tourists and new property owners has led to increased competition for resources, while rising property values have made affordable housing scarce, displacing many younger and lower-income residents. Many fishers can no longer afford to live near their fishing grounds, which adds further costs and logistical challenges to their operations. Cócola-Gant (2016) points out that short-term rentals like Airbnb create new challenges by converting housing stock into vacation accommodations rather than residences for locals, pushing rental and property prices beyond the reach of the community. This trend has been particularly visible in Culebra, where the vacancy rate has climbed to 68.5%, nearly three times the average in Puerto Rico, with 52% of vacant properties targeted specifically for short-term rental. As access to housing and coastal resources becomes increasingly limited, the displacement of local fishers and their families poses a direct threat to the cultural fabric of Culebra. Despite these challenges, there is a strong community drive toward sustainable fishing practices and cooperative efforts aimed at improving seafood distribution within the island. Fishers in Culebra have organized to advocate for policies that would

protect their rights and enhance local seafood accessibility. Their efforts underscore the need for comprehensive policy interventions to regulate coastal development, protect public access to the sea, and support the availability of affordable local seafood. As Pereira et al. (2018) highlight, creating transformative spaces for community resilience is critical to adapting to external pressures and fostering long-term sustainability. This concept aligns closely with the needs of Culebra’s fishing community, which seeks not only to preserve its way of life but also to adapt to new realities brought about by tourism and urban development.

To mitigate the impacts of coastal displacement and support sustainable fishing practices in Culebra. First, the implementation of sustainable fishing policies that address both ecological and economic factors is crucial for maintaining fish stocks and supporting small-scale fishers. Second, developing local fish markets would provide residents with affordable seafood options, strengthening local food security and reducing dependence on imports. Third, launching educational programs to raise public awareness about the importance of supporting local fishers and sustainable practices could

foster greater community involvement in preserving Culebra’s fishing heritage. Additionally, enforcement of environmental regulations, particularly around dock construction and coastal habitat protection, is essential to safeguard the island’s natural resources.

By implementing targeted solutions, we aim to contribute to a more equitable and sustainable future for Culebra’s fishing community. Ensuring that local seafood remains accessible to residents supports both the island’s cultural heritage and economic resilience, offering a pathway toward a more self-sustaining local food system. In summary, this study underscores the urgent need for coordinated action among policymakers, local authorities, and community stakeholders to protect Culebra’s unique fishing culture and foster an environment where traditional livelihoods can thrive in harmony with sustainable development practices.

LITERATURE CITED

Cócola-Gant, A. 2016. Holiday rentals: The new gentrification battleground. *Sociological Research Online*, 21(3), 112–120.
 Myers, R., & Hansen, C. P. 2020. Revisiting a theory of

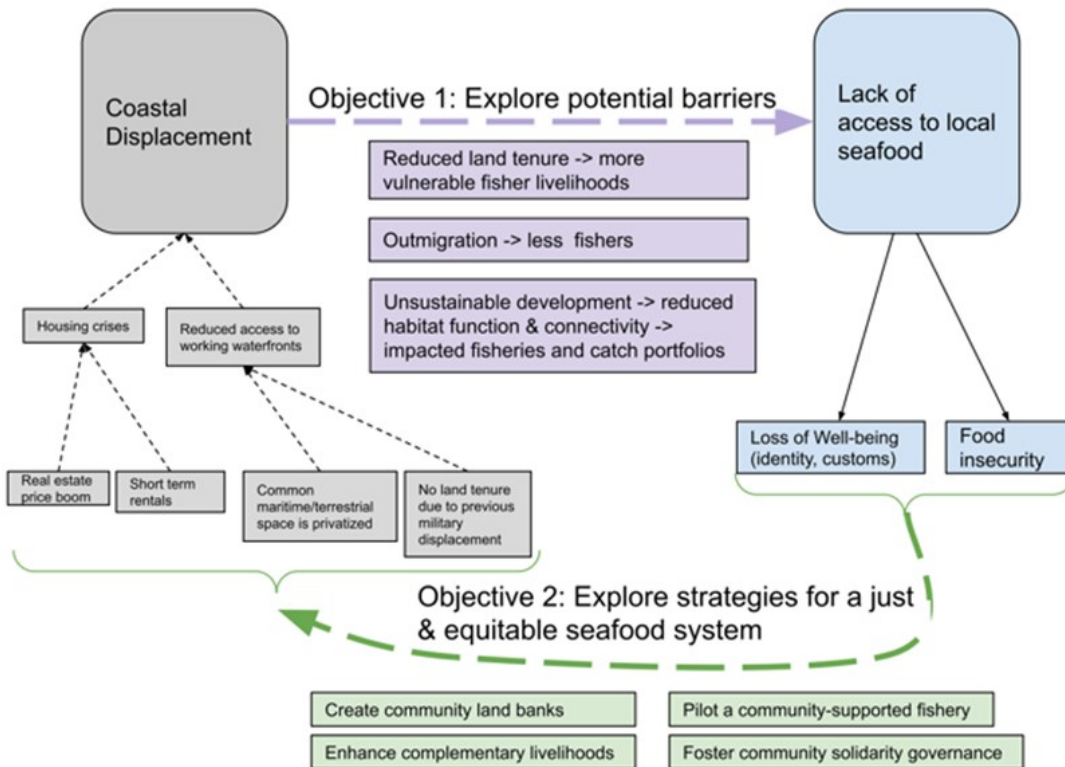


Figure 1. Targeted solutions flow diagram for seafood, aimed at fostering a more equitable and sustainable future for Culebra’s fishing community.

access: a review. *Society & Natural Resources*, **33** (2), 146–166.

Ostolaza, C., Rosas, C., García-Blanco, A. M., Gittelsohn, J., & Colón-Ramos, U. 2021. Impact of the COVID-19 pandemic on food insecurity in Puerto Rico. *Journal of Hunger & Environmental Nutrition*, **16**(1), 1–16.

Pereira, L. M., Hichert, T., Hamann, M., Preiser, R., & Biggs, R. 2018. Using futures methods to create transformative spaces. *Ecology and Society*, **23**(1), Article 1.

KEYWORDS: Coastal Displacement, Seafood Access, Culebra, Fisheries, Tourism Impact