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Commentary: Addressing illegal longlining and ghost fishing in the Galapagos marine reserve: an overview of challenges and potential solutions

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A Commentary on

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In “Addressing illegal longlining and ghost fishing in the Galapagos Marine Reserve: an overview of challenges and potential solutions” (*Front. Mar. Sci.*, Vol.11), [Castrejón and Defeo \(2024\)](#) argue that coastal fishery resources in Galapagos are overexploited and that the solution is to promote and develop an incipient offshore tuna fishery. The authors acknowledge that this has resulted in increased use of banned longlines. Momentum is now building to overturn the 20-year ban of this harmful fishing practice. We are concerned that the implicit message is that a sustainable tuna fishery could be achieved by legalizing longlining. While acknowledging their efforts to reconcile conservation goals with local economic interests, we disagree that promoting a new fishery will reduce effort on coastal resources, and reject that longlining is a viable option for the Galapagos Marine Reserve (GMR). We provide a broader vision to balance human uses with conservation at this iconic Marine Protected Area (MPA).

A new fishery is not the solution to overfishing

Coastal GMR fisheries are overexploited as a result of poor management, compliance and self-control; and external markets outstripping local resources ([Hearn, 2008](#); [CDF, 2019](#)). The authors propose that further developing an offshore tuna fishery will promote recovery of coastal resources by shifting effort. However, the Galapagos fishing fleet does not operate at full capacity, so new fisheries may simply activate the pool of latent effort, rather than shift effort away from coastal resources ([Bucaram and Hearn, 2014](#)). They also

suggest that the decision to promote an offshore tuna fishery has fueled illegal longlining and the push to overturn the ban. Had the decision-makers (management authorities and NGOs) considered the potential for this perverse outcome, perhaps they would not have agreed to it. It would not be the first time that well-meaning conservation efforts in Galapagos have backfired (Burbano et al., 2020).

The longline issue

Although longlining occurs in some MPAs, this does not make it fit for purpose in Galapagos. As Shea et al. (2023) state – an optimal sanctuary should ban longlining. The authors question the impact of the ban in Galapagos given illegal longlining occurs, yet they provide no quantitative evidence to measure the ban's impact. Just because longlining occurs, does not imply that the ban is unenforceable. The longline ban has likely played a crucial role in protecting vulnerable marine species: Peñaherrera-Palma et al. (2018) found that scalloped hammerhead shark abundance in the GMR increased significantly between 2007 and 2017, contrasting with global population declines. Moreover, White et al. (2015) revealed that strict protection resulted in a 35% increase in shark biomass within a decade in a neighboring MPA. These findings provide compelling evidence that the longline ban has helped maintain populations of threatened marine species in the GMR.

While Castrejón and Defeo (2024) argue that longlining can be selective and sustainable, their claims are not supported by the broader scientific literature. Longline fisheries are responsible for significant bycatch of threatened species, including sea turtles, seabirds, and sharks (Lewison et al., 2014). Even when using bycatch-reduction gear and other selective mitigation efforts, the impacts on non-target species remain substantial (Ward and Myers, 2005; Gilman et al., 2016). Galapagos and its surrounding waters is no exception to this, as reports from both legal and illegal fishing activities show (Alava and Paladines, 2017; Alava et al., 2017; Bonaccorso et al., 2021; Jacquet et al., 2008; Schiller et al., 2014). Although there may be some examples of sustainable longlining, sustainability is strongly linked to effective management (Hilborn et al., 2023). Galapagos fisheries management, past and present, does not instill confidence that a longline fishery would be well managed, adequately funded and effectively monitored.

Ecuador's Constitution establishes the rights of nature and obligates the State to apply precautionary measures for activities that may threaten ecosystems. Strong fishing restrictions are crucial for maintaining the Galapagos UNESCO World Heritage status. Relaxing or eliminating the ban could be challenged in court on constitutional grounds.

A blue vision for Galapagos

The authors frame the issue as representing the needs of the Galapagos community, but in reality, their view represents the financial desires of a subgroup of the fishing sector. They focus on the income expectations that high quality tuna would generate, but fail to consider how this would translate into food security for the

local community that cannot afford sushi-grade tuna. This sector-focused approach in Galapagos is partly responsible for ongoing conflicts and weak governance.

Instead, our approach is to identify the broader needs of the island community and biodiversity. We propose re-purposing the economic activity of mother vessels and their crew away from fishing to provide a broader range of services and economic livelihoods. For example, Galapagos is in need of vessels for film and research expeditions, beach plastics cleanups, and marine education programs.

Galapagos is ranked the worst province of Ecuador for obesity, especially among children, with residents eating “surprisingly little fish” (Freire et al., 2018). Fishing skiffs can re-orient towards local markets, tackling food security issues by transitioning away from an export-based economy. We propose the adoption of an observer-linked traceability label, and a ban on importing fish to Galapagos. Fishing should focus on partnerships with restaurants and liveboard vessels, and on added-value products. An island-wide school dinner program, run by the fishing community could be funded through the Galapagos Life Fund: a debt-for-nature swap created to support the management of the Galapagos and Hermandad Marine Reserves (Hearn et al., 2022). What better example than to show that conservation can fund community wellbeing while providing sustainable incomes for artisanal fishers?

Conclusion

One of the dangers threatening MPAs is the quiet dilution of the conservation measures that were put in place for their protection (Cramp et al., 2018; Magris and Pressey, 2018). We hope that the GMR avoids this pitfall. We share common ground with Castrejón and Defeo in working towards a solution that protects the fragile environment of the GMR while providing a stable income for local fishers. As the process to update the fishery regulations in Galapagos is underway, we recall that this should be guided through the precautionary principle and the participation of all stakeholders. Through safeguarding our natural heritage, we can support a healthy community and a successful artisanal fishing sector.

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