Ecuador's sharks face threats from within

In their Letters, J. J. Alava and F. Paladines ("Illegal fishing on the Galápagos high seas," 29 September, p. 1362) and L. R. Gerber and D. Quiroga ("Incentives for Galápagos protection," 20 October, p. 313) referred to the threat posed by foreign vessels to highly migratory endangered species, such as sharks, in Ecuadorian waters. The Letters were prompted by Galápagos National Park and Navy operatives' recent seizure of a Chinese vessel carrying more than 6000 sharks inside the protected waters of the Galápagos Marine Reserve (1). It is true that foreign fleets operating in and adjacent to Ecuador's exclusive economic zone (including Galápagos Marine Reserve waters) are a threat to sharks. However, the effect of Ecuador's own artisanal longline fleet on these species should not be overlooked.

Ecuador's artisanal fleet is made up of more than 45,000 vessels, which are allowed to land sharks as "by-catch." At least 250,000 sharks are landed annually, with a substantial portion of the effort concentrated along the Galápagos Marine Reserve border (2). Many of these sharks are both threatened and migratory, and they belong to populations that use the Galápagos Marine Reserve. Ecuador's artisanal vessels are not obliged to carry automatic tracking systems (3), so they could potentially slip into Galápagos Marine Reserve waters undetected. Furthermore, in 2016, an experimental longline fishery was approved within the Galápagos Marine Reserve, involving local fishing boats (4). This is the fifth experiment of its kind since 1997, and all previous experiments resulted in unacceptable levels of by-catch (5).

The hard work of the Galápagos National Park rangers to protect sharks is thus also under threat from within. Fortunately, a new Fisheries Law is under discussion in Ecuador. The current draft of this law is promising (6). If approved, it will require artisanal vessels to have satellite tracking mechanisms to monitor their fishing activities and preserve their safety. This is an encouraging step forward. However, it is still necessary to strengthen national regulations to protect sharks through providing an unambiguous definition of by-catch and putting an end to the string of longlining experiments in the Galápagos Marine Reserve.

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REFERENCES

TECHNICAL COMMENT ABSTRACTS
Comment on "Water harvesting from air with metal-organic frameworks powered by natural sunlight"  Francis Meunier
Kim et al. (Reports, 28 April 2017, p. 430) describe a method for harvesting water from air, using a metal-organic framework (MOF) as the adsorbent. The process as described in the paper is, however, inadequate, and the system cannot deliver the claimed amount of liquid water in an arid climate. A modification of the process design and the use of more suitable MOFs may be more likely to achieve the goals targeted by Kim et al.
Full text: dx.doi.org/10.1126/science.aao0361

The comment by Meunier states that the process we described in our Report cannot deliver the claimed amount of liquid water in an arid climate. This statement is not valid because the parameters presented in our study were inappropriately combined to draw misguided conclusions.
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