

LETTERS

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A better way forward for Brazil's fisheries

IN DECEMBER 2014, the Brazilian Minister of the Environment released the new national red lists enumerating 2113 plants and 1173 animals threatened with extinction (1). Of the 475 aquatic species on the list, 83 are commercially exploited by fisheries, mainly as by-catch. The industrial fisheries sector is now using its political influence to persuade the government to change the contents of the list of aquatic animals or revoke it entirely. This would be an enormous setback for the conservation of Brazil's aquatic fauna. The situation is reminiscent of that of the agribusiness lobby weakening the new Forest Code, and other recent political maneuvers that could lead to the opening of mining concessions in strictly protected areas (2, 3).

The effect of the new lists on industrial fisheries is actually less disruptive than what is being purported. The ordinance that deals specifically with threatened aquatic animals provides for continued capture and trade of fishes classified as Vulnerable—the category in which most species of commercial interest fall—if they are subject to specific management plans and their fishery is regulated by federal agencies. Annual updates to the list based on new or revised information are also foreseen in the ordinance.

Therefore, instead of putting Brazil's

aquatic fauna at increased risk, the industrial fisheries sector should work with government agencies and the ministries of the Environment and Fisheries and Aquaculture to implement management strategies that have been historically lacking in Brazil (4). A permanent system to evaluate and manage stock status would eventually result in the downgrading of the extinction risk of legally protected species. Ideally, it would also prevent the overexploitation of fishing stocks that now seem to be at sustainable levels.

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REFERENCES

1. Brazil, Ministério do Meio Ambiente. Portarias Nos. 443, 444, 445, de 17 de Dezembro de 2014, Diário Oficial da União—Seção 1, **245**, 110 (18 December 2014); <http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?data=18/12/2014&jornal=1&pagina=110&totalArquivos=144>.
2. B. Soares-Filho *et al.*, *Science* **344**, 363 (2014).
3. J. Ferreira *et al.*, *Science* **346**, 706 (2014).
4. C. T. Elfes *et al.*, *PLOS ONE* **9**, e92589 (2014).

Complex ecology of China's seawall

IN THE POLICY Forum “Rethinking China's new great wall” (21 November 2014, p. 912), Z. Ma *et al.* demonstrated that coastal land reclamation and infrastructure construction are destroying coastal wetlands and threatening biodiversity. However, the ecological impacts of the “new Great Wall” are complex and unpredictable. With the construction of seawalls, these hard-substrate structures become “stepping stones” for rocky shore organisms (1, 2) and promote gene flow between populations in northern and southern China. Some species can rapidly occupy the “new Great Wall” and thereby extend their biogeographic ranges.

Substrate availability is one of the major factors affecting distribution of rocky intertidal species along the Chinese coastline, and there is a phylogeographic barrier to movement of rocky intertidal species at the Yangtze River estuary (3). The distribution and diversity of rocky intertidal macrobenthos (invertebrates that live on the ocean floor) have been investigated since July 2013 on the artificial seawalls along the Jiangsu coastline, where a phylogeographic barrier for these species occurred before construction of large-scale artificial seawalls (4). Our preliminary observations suggest that biodiversity on the new Great Wall is showing a tendency to increase.

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REFERENCES

1. L. Airoldi *et al.*, *Coast. Eng.* **52**, 10 (2005).
2. L. B. Firth *et al.*, *Divers. Distrib.* **19**, 10 (2013).
3. Y. Dong *et al.*, *PLOS One*, e36178 (2012).
4. Y. Dong *et al.*, World Conference on Marine Biodiversity, Qingdao, China (2014).

In January 2015, fishing boats blocked the passage of a transatlantic cruise ship at the port of Itajaí, Santa Catarina, to protest the publication of the new red lists.

