

Edited by Jennifer Sills

## 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.

**Fabio Di Dario,<sup>1\*</sup> Carlos B. M. Alves,<sup>2</sup> Harry Boos,<sup>3</sup> Flávia L. Frédou,<sup>4</sup> Rosângela P. T. Lessa,<sup>4</sup> Michael M. Mincarone,<sup>1</sup> Marcelo A. A. Pinheiro,<sup>5</sup> Carla N. M. Polaz,<sup>6</sup> Roberto E. Reis,<sup>7</sup> Luiz A. Rocha,<sup>8</sup> Francisco M. Santana,<sup>9</sup> Roberta A. Santos,<sup>3</sup> Sonia B. Santos,<sup>10</sup> Marcelo Vianna,<sup>11</sup> Fábio Vieira<sup>12</sup>**

<sup>1</sup>Núcleo em Ecologia e Desenvolvimento Socioambiental de Macaé, Universidade Federal do Rio de Janeiro, 27910-970, Macaé, RJ, Brazil. <sup>2</sup>Projeto Manuelzão, Universidade Federal de Minas Gerais, 31270-901, Belo Horizonte, MG, Brazil. <sup>3</sup>Centro de Pesquisa e Conservação da Biodiversidade Marinha do Sudeste e Sul, Instituto Chico Mendes de Conservação da Biodiversidade, 88301-700, Itajaí, SC, Brazil. <sup>4</sup>Departamento de Pesca e Aquicultura, Universidade Federal Rural de Pernambuco, 52171-900, Recife, PE, Brazil. <sup>5</sup>UNESP, Campus Experimental do Litoral Paulista (CLP), Group of Studies on Crustacean Biology (CRUSTA), 11330-900 São Vicente, SP, Brazil. <sup>6</sup>Centro Nacional de Pesquisa e Conservação de Peixes Continentais, Instituto Chico Mendes de Conservação da Biodiversidade, 13630-000, Pirassununga, SP, Brazil. <sup>7</sup>PUCRS, Faculdade de Biociências, Laboratory of Vertebrate Systematics, 90619-900, Porto Alegre, RS, Brazil. <sup>8</sup>Institute of Biodiversity Science and Sustainability, California Academy of Sciences, San Francisco, CA 94118, USA. <sup>9</sup>Unidade Acadêmica de Serra Talhada, Universidade Federal Rural de Pernambuco, 56903-970, Serra Talhada, PE, Brazil. <sup>10</sup>Departamento de Zoologia, Universidade do Estado do Rio de Janeiro, 20550-900, Rio de Janeiro, RJ, Brazil. <sup>11</sup>Instituto de Biologia, Universidade Federal do Rio de Janeiro, CCS, bl. A. 21941-617, Rio de Janeiro, RJ, Brazil. <sup>12</sup>Centro

de Transposição de Peixes/Coleção de Peixes, Universidade Federal de Minas Gerais, 31270-901, Belo Horizonte, MG, Brazil.

\*Corresponding author. E-mail: didario@macae.ufrj.br

### 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 Jangsu 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.

**Xiong-Wei Huang, Wei Wang, Yun-Wei Dong\***

State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen, China.

\*Corresponding author. E-mail: dongyw@xmu.edu.cn

### 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.