

## LETTERS

Edited by Jennifer Sills

## Quantify endangered species listings

The U.S. Congress is considering changes to the Endangered Species Act (ESA) of 1973, a law that protects more than 1500 U.S. species facing extinction. Currently, decisions about which species should be protected appear arbitrary and are frequently litigated (1). The ESA could benefit from a transparent and predictable quantitative framework that standardizes these decisions. However, such improvements do not require any changes to the Act itself, and Congress's proposed revisions would have the opposite effect, making classification decisions more political and unpredictable.

Countries such as Canada (2) and New Zealand (3) already use quantitative thresholds to determine species' extinction risk (4). Using such systems as a model, Florida adopted a quantitative listing system in 2010 that led to protection for 40 species and removal of protection for 15 that do not merit it (5). The quantitative system uniformly applies objective criteria such as current population size and rate of decline to all species.

Instituting quantitative definitions for "threatened" and "endangered" does not require any legislative change to the ESA. The law already gives agencies authority to develop a listing system by regulation. Such regulations should require listing decisions to be made according to criteria similar to those that have been developed by scientists and extensively tested (4). This strategy would be substantially more effective in meeting the ESA's goals than the proposals under discussion in Congress, which include giving state governors veto power over decisions about the species in their state (6).

Our understanding of extinction risk has advanced since 1982 when listing categories under the ESA were last amended. Defining these terms, and making decisions about listing and recovery more quantitative and legally defensible, would reduce controversy and free up resources to recover wildlife.

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## Research cuts threaten public trust

In her News In Depth story "NIH overhead plan draws fire" (2 June, p. 893), J. Kaiser reports that President Trump's budget proposal cuts the National Institutes of Health budget by \$4.6 billion without affecting spending on science by substantially reducing payments for indirect costs. What many in Washington don't realize is that such indirect cost payments cover processes that serve to protect the safety and rights of those who participate in research.

After revelations that U.S. researchers exploited African-American men in Tuskegee, Alabama, and mentally disabled children at the Willowbrook State School (1), among others, federal rules were put in place to prevent such abuses from happening again. The rules require all federally funded research to be reviewed and approved by an institutional review board, which is charged with protecting research participants in accordance with rigorous ethical principles. While imperfect (2), contemporary institution-based "human research protection programs" support

robust research oversight, ongoing research monitoring, and investigator education in ethics. Recent revisions to the regulatory framework (3) are widely viewed as a welcome effort to modernize protections and reduce unnecessary administrative burden (4).

Large reductions in indirect cost payments will result in funding cuts for institutional oversight activities that protect research participants. In research, patients and volunteers expose themselves to potential harm. A successful research enterprise depends on public trust, and a commitment to the rights and welfare of research participants is central to that trust. As Congress and the Administration determine levels of research funding, they would do well to understand that reducing indirect cost payments to research institutions could weaken the ethical foundation upon which the U.S. human research program rests.

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## Reform China's fisheries subsidies

Despite the moratorium on fishing in China's coastal waters ("China cracks down on coastal fisheries," D. Normile, *In Depth*, 12 May, p. 573), the nation's fisheries remain under threat by fuel subsidies. Because of the money saved on fuel, commercial fishermen can afford to use more ships and catch more fish than the local ecosystem can support. Fuel subsidies should be redirected toward development of sustainable aquaculture and artisanal and recreational fishing activities such as competitions, festivals, and tourism.

China currently manages its fisheries through seasonal closures, mesh size restrictions, and catch and effort caps (1). However, these measures are largely offset by harmful subsidies (2). Between 2011 and 2013, the central government provided RMB 38.13 billion in subsidies (2), which have become indispensable to China's fisheries companies. Inexpensive fuel has allowed these companies to build a bigger fleet than necessary, and the increased capacity has led to fish overexploitation. Between 2012 and 2014, Fujian's production increased by 63% (3). Yet, vessel capacity grew by 149%, indicating that many of those subsidized ships were not contributing to production. Subsidies are both harmful to ecosystems and an inefficient use of funds.

The United Nations Sustainable Development Goals call for prohibition of harmful subsidies (4). Instead of subsidizing fuel, China should use those funds to retrain commercial fishermen for environmentally friendly jobs in, for example, aquaculture and recreational fisheries, which use less fuel and allow ecosystems to flourish. The

The snowy egret was removed from Florida's protected species list after the state adopted a quantitative listing system.

Fishermen Transfer and Fishery Transition Programme has been in place since 2003 with the goal of transitioning fishermen to more sustainable industries, but the number of professionals in commercial marine fisheries fell by only 7% between 2003 and 2014 (5). Diverting fuel subsidies to support employment and training in sustainable aquaculture would also help to reduce pollution and help safeguard natural fisheries (6). Income from China's recreational fisheries—including the manufacture and sales of fishing tackle, the design and building of recreational fishing boats, and the provision of fishing boats for charter and guided fishing trips—was just 3.2% of all fishery income in 2015 (7), lagging behind the United States' 33% (8).

Fish depletion is a global challenge, and international collaboration through organizations such as the United Nations Food and Agriculture Organization (9) and the United Nations Environmental Programme (10) is increasingly vital. To avoid fishery collapses such as that which befell Canada's Newfoundland fishing ground (11), China's fishery subsidies need urgent reform and its fisheries policies should be refocused on training and redeployment.

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# Science

## Reform China's fisheries subsidies

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