

# Sanctioning to extinction in Iran

The lifting of economic sanctions on Iran in early 2016 raised hopes among conservationists that much-needed support would finally be made available (1) to protect the country's unique and threatened biodiversity (2). Unfortunately, on 4 November, economic sanctions were reimposed, likely leading to serious repercussions on both science (3) and biodiversity conservation (4).

Conservation of threatened biodiversity often relies heavily on international cooperation, which can become impossible under economic sanctions. Sanctions reduce opportunities to transfer international expertise and skills (2) and erect barriers to international financial support (5), which together limit the capacity of conservationists within sanctioned countries to enact effective conservation interventions. These factors have hampered conservation efforts to save the critically endangered Asiatic cheetah (*Acinonyx jubatus venaticus*) (6), the population of which is confined entirely to Iran and now numbers fewer than 50 individuals (7).

Rightly, international law enshrines peoples' right to humanitarian relief during conflicts and embargos (8). Recently, the United Nations has taken steps to protect globally important cultural heritage sites during conflict (9). Biodiversity, which has global value and is critical for human well-being (10), requires similar protections. The UN Convention of Biological Diversity (CBD) (11) enshrines international responsibilities to safeguard ecosystems and biodiversity. Additional measures are needed to ensure countries meet their CBD obligations during conflicts by providing exemptions that allow the international cooperation and resources needed to save threatened species, while requiring all countries to adhere to their responsibilities to safeguard conservation personnel (12, 13). Without such measures we may see the first continent-wide extinction of a big cat, the Asiatic cheetah, in modern times (14).

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1. A. Ghoddousi *et al.*, *Front. Ecol. Environ.* **15**, 9 (2017).
2. H. Jowkar *et al.*, *Iran. Stud.* **49**, 1065 (2016).
3. R. Stone, *Science* **361**, 961 (2018).
4. M. Rao *et al.*, *AMBIO* **43**, 789 (2013).
5. D. O'Driscoll. Impact of Economic sanctions on poverty and economic growth. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies. (2017). <http://gsdrc.org/wp-content/uploads/2017/06/136-Impact-of-economic-sanctions-on-poverty-and-economic-growth.pdf>
6. H. Jowkar *et al.*, *The IUCN Red List of Threatened Species* (2008); [www.iucnredlist.org/details/220/0](http://www.iucnredlist.org/details/220/0)
7. L. Khalatbari *et al.*, *Cat News* **66**, 10 (2017).
8. UNESCO, "Unite4Heritage: UNESCO's response to protect culture in crises" (Paris, France, 2016); <http://unesdoc.unesco.org/images/0024/002449/244984e.pdf>.
9. K. King *et al.*, Understanding humanitarian exemptions: U.N. Security Council sanctions and principled humanitarian action. (2016). [http://blogs.harvard.edu/pilac/files/2016/04/Understanding\\_Humanitarian\\_Exemptions\\_April\\_2016.pdf](http://blogs.harvard.edu/pilac/files/2016/04/Understanding_Humanitarian_Exemptions_April_2016.pdf)
10. B. J. Cardinale *et al.*, *Nature* **486**, 59 (2015).
11. United Nations Convention on Biological Diversity (1992); [www.cbd.int/convention/text/](http://www.cbd.int/convention/text/). 12. IUCN. Resolution 2.37 "Support for environmental defenders" adopted at World Conservation Congress 2000 in Amman, Jordan (2000).
13. R. Stone, *Science*, (2018). doi:10.1126/science.aav8999 <https://www.sciencemag.org/news/2018/11/letter-researchers-call-fair-and-just-treatment-iranian-researchers-accused-espionage>
14. S. Ostrowski, *Cat News* **66**, 5 (2017).

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## REFERENCES