LETTERS

Père David's deer (*Elaphurus davidianus*) remain at risk after rewilding.

PHOTO: ZHENYU ZHONG

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Reversing extinction in China's Père David's deer

Père David's deer (*Elaphurus davidianus*) became extinct in the wild in China in the late 19th century (*1*), but after reintroduction three decades ago, the population has grown to more than 8000 individuals, with at least 2420 living in the wild in China (*2, 3*). This species reintroduction is considered one of the most successful stories in the world (*4*); it provides a watershed example of biodiversity conservation best practices for the upcoming UN Decade on Ecosystem Restoration. However, the species needs continued support to thrive.

Heavily endangered as a result of overhunting and habitat loss (*1*), the last of China's Père David's deer had been pillaged by Europeans and sent to zoos across Europe before the Qing Dynasty fell in 1912 (*1*). In 1985, nearly a century later, 38 deer were donated back to China for re-wilding (*5*). After the reintroduction of an additional 39 deer from zoos in England in 1986 (*6*), the population in Dafeng Milu National Nature Reserve grew to 5681 individuals (*2*). Père David's deer populations now cover all habitats in which they lived before the species' extinction in the wild.

The conservation of Père David's deer, however, faces ongoing challenges. The populations within China lack genetic diversity and are therefore susceptible to multiple risks, such as high miscarriage rates, reduced life span, and diseases (*4*). Wild populations are also limited by environmental constraints, keeping population numbers low and hindering stability. Moreover, there is no master plan for Père David's deer conservation at the national level and thus no coordinated monitoring platform or guidelines for overcoming inbreeding and environmental obstacles. Finally, there is a lack of international cooperation between researchers in China and abroad. National and international cooperation to strengthen monitoring of Père David's deer populations and to develop a shared database and germplasm databank between all countries with wild populations would be a major step forward for securing the long-term conservation of this species.

Yuanyuan Zhang[1,2], Jiade Bai[1,2]*, Annah Zhu[3], Ruishan Chen[4], Dayuan Xue[5], Zhenyu Zhong[1,2], Zhibin Cheng[1,2]

[1]Beijing Biodiversity Conservation Research Center, Beijing, 100076, China. [2]Beijing Milu Ecological Research Center, Beijing, 100076, China. [3]Environmental Policy Group, Wageningen University, 6706 KN Wageningen, Netherlands. [4]East China Normal University, Shanghai 200042, China. [5]College of Life and Environmental Sciences, Minzu University of China, Beijing, 100081, China.
*Corresponding author.
Email: baijiade234@aliyun.com

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A marine biodiversity plan for China and beyond

Although China has taken important steps to protect biodiversity, including a 10-year fishing ban in inland waters (*1*) and a summer fishing moratorium in oceans (*2*), the country's marine biodiversity protection needs a plan to better ameliorate the threats to marine life, including the deterioration of ecosystems and loss of biodiversity (*3*). By 2019, China had established 271 protected areas that include oceans (*4*, *5*). They cover 12.4 million hectares of ocean but represent only 4.1% of China's maritime area (*4*, *5*), far below the 10% goal set by Aichi Target 11 (*6*). In contrast, China has established protected areas covering 18% of its total terrestrial habitats and inland waters, more than the 17% goal of Aichi Target 11 (*6*, *7*). Nearly all of China's marine protected areas (MPAs) are in coastal and continental-shelf regions (*5*), and their ability to protect migratory fishes and mammals is likely hindered by their fragmentation (*4*). The current MPA system cannot keep up with the demand for effective marine biodiversity protection. China needs to accelerate the optimization and integration of existing MPAs and establish new MPAs that use the national