

China is building the world's largest national park system

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This autumn, without much fanfare, China established a new government initiative that could have a profound impact on the nation's increasingly threatened biodiversity.

In October, President Xi Jinping announced the formal establishment of a network of five [national parks](#), covering a total of 230,000 square kilometers (88,800 square miles) and containing nearly 30% of the country's key terrestrial wildlife species. China, this year's host for the United Nations biodiversity conference, has vowed to use the new system to fix loopholes in its [conservation work](#). Once completed, it will be the world's largest national park system, replacing a complex and unwieldy structure of preserved areas and regional reserves that critics say gave little real protection from logging, illegal development or resource extraction.

The new structure will "break the barriers set by different government departments and local interest groups" and "build a unified and efficient management mechanism" for its ecosystems, said Li Chunliang, deputy director of the National Forestry and Grassland Administration.

China is one of the UN's 17 mega-diverse countries, boasting nearly 10% of the world's plant species and 14% of its animal species. But the introduction of alien flora and fauna, urbanization, deforestation, climate change and a lack of effective protection have pushed the extinction risks of vertebrate and higher plant species above the global average. About 90% of China's grasslands and 40% of its major wetlands suffer from degradation or desertification.

The first effort to designate a large area of ecological protection was Zhangjiajie National Forest Park, set up in 1982, almost a century after Yellowstone National Park was established in the U.S. With rapid economic growth and the rise of a middle class, the government added parks, reserves and scenic resorts.

Today there are at least 1,865 such areas in China, run by the state forestry administration, land ministry, water ministry, or, tellingly, the ministry of construction. Many are leisure areas around tourist

attractions, such as the Great Wall National Park, and most were created in the 2000s. "Some used to be called 'paper parks' because there was no actual management after you drew the line on the map and marked the place as 'protected,'" said Rose Niu, chief conservation officer at the Paulson Institute, who has decades-long experience focusing on China's biodiversity and ecosystems protection.

In practice, many of the areas had little or no regulation. Local governments were keen to monetize natural areas, either by encouraging tourism or by allowing developers to encroach upon protected regions. In 2018, 1,200 illegally built villas were found on protected land in the Qinling Mountains, in northwest China. Most were either demolished or confiscated by the state. Last year, state media reported that a company had spent 14 years mining 26 million tons of coal from the Qilian Mountains nature reserve in the western province of Qinghai.

China first launched a plan to create a unified national park system in 2015. Covering 18% of the world's second-largest country by land area, it brought the reserves under centralized control and has the potential to encourage more investment into the biodiversity protection, said Niu, who has led a series of Chinese delegations to visit national parks in other countries.

The newly designated national parks are an indication that the central government is taking the issue more seriously. But without the inclusion of many more reserves, they may be only a small step forward in stopping the degradation of natural areas and biodiversity.

To begin with, all the chosen areas are in economic backwaters that have largely been spared from encroachment by other land uses.

"All the five established national parks are in the regions where the ecological conservation was already good enough and there were few

conflicts with economic development," said Zhang Daqian, global communication officer at the China Biodiversity Conservation and Green Development Foundation. "In other places the negotiation will be more complicated."

This year, Asian elephants from southwest Yunnan province drew international attention when a herd of 15 roamed hundreds of miles to the north, a migration experts blamed on the loss of habitat to rubber plantations. Conservationists have been calling for a national park in the area for years, said Zhang, but it won't be part of any of the five new national parks.

Moreover, just one of the newly designated parks, in the remote and sparsely populated Qinghai-Tibet plateau in the west, accounts for more than four-fifths of total area of the new system. At 190,700 square kilometers, the Sanjiangyuan National Park is larger than Florida.

Only the smallest of the five, around Wuyi mountain in Fujian province, is in the east of the country, near the major urban centers, and that was already a Unesco World Heritage site.

China's conservation work has also been criticized for over-emphasizing "flagship species"— iconic animals like the giant panda, golden monkey and Siberian tiger.

The high-profile campaign to protect giant pandas, for example, dates back to the 1970s, and the government currently spends about \$255 million a year on the conservation of this single species. That compares with a 2021 conservation budget for the Forestry and Grassland Administration covering all its animal and plant species of about \$31 million.

Zhang Dengping is one of the rangers at a panda habitat in southwest

China's Sichuan province. For two weeks each month, he rises at 6 a.m. in a dormitory shared with three co-workers, dons a water-proof jacket and anti-skid shoes, and heads into the forest. Born and raised in the region, he's happy that the mountains where he works have been chosen to be part of the new Giant Panda National Park.

"It's a lonely job, but also a job that I am proud of," said Zhang, 51, who records the date, location and pictures of what he finds via an app on his phone. "I witnessed all the progress we have made in the 10 years here on panda habitat protection."

The monochrome mammal is no longer classified as endangered, but China said protection and breeding work on pandas won't be downgraded. Officials say these "umbrella" species help other animals and plants living in the same area.

The five initial parks in the system are also home to some of China's most impoverished communities. Improving the lives of those people while also preserving the natural environment will be one of the core issues for the new system, said conservationist Terry Townshend, founder of Birding Beijing website. He said local communities should be allowed to stay so that the parks preserve and showcase local culture and history.

"Local people who live there for generations know those areas better than anyone else," said Townshend. "In most cases, they live a pretty sustainable lifestyle that is integrated into the environment."

That's unlikely to happen in most cases. As part of Xi's poverty alleviation program, mass relocations have already been carried out in some of the park areas. More than 54,000 people will be moved out of the Qilian Mountains National Park by 2025.

Still, some inhabitants, like former farmer Zhang Dengping, will get jobs in the parks. Wang Hui, another farmer-turned-ranger at the Giant Panda National Park, remembers how his fellow villagers used to hunt and sell wild goats and deer to make a living, and cut down trees to make fire for cooking before a panda protection area was created about a decade ago. "People no longer dare to hunt," said Wang, and today most families cook with natural gas.

Its large potential human resource gives China an advantage few other national park systems enjoy. China has 1.7 million rangers across all its forests and parks. The U.S. National Park Service has the equivalent of 22,000 full-time employees, including fewer than 1,800 law-enforcement rangers, to cover an area almost as large as China's five new national parks.

"A solution is the harmonious co-living of man and nature, and to make the local farmers the real hosts of the region. I think it is a reward that they deserve," said Ni Jiubin, director of the Nature Conservancy's southwest center.

To supplement the army of rangers, the government has turned to companies such as Huawei Technologies Co. to help harness innovations such as 5G, cloud computing and artificial intelligence.

A forest fire monitoring system developed by Huawei, for example, has been applied at the panda national [park](#) since February. Detectors continually report the risk of fire at 651 locations to more than 140,000 rangers, said Yue Kun, president of Huawei's Global Government Business Department. He said the system helped eliminate 74 fires before they could take hold.

The combination of political will, deployment of labor and adoption of technology, including satellite monitoring, could turn Xi's new

conservation initiative into a model for other nature reserves in China and create a new and powerful lobby for the natural environment.

"My dream is in 10 years' time, we can see and observe all kinds of animals from very high up in the sky," said Wei Fuwen, a conservationist at the Chinese Academy of Science.

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