



Safeguarding Cranes and Wetlands in a Rapidly Developing World:

THE INTERNATIONAL CRANE FOUNDATION CHINA PROGRAM



Since ancient times, cranes have held deep cultural importance for the people of China. Chinese mythology tells us that cranes carry the souls of the dead to heaven. Cranes are a favorite subject of Chinese paintings, ceramics, and folklore, and symbolic of nobility, wisdom, and long life. In Beijing, two crane sculptures vigilantly stand guard to the Supreme Hall of the Forbidden City. One of the oldest musical instruments known—a flute, dating back 9,000 years, carved from the bone of a Red-Crowned Crane—comes from central China.

“Every land where they appear has tales and myths about the cranes, which since ancient times have represented longevity and good fortune, harmony and fidelity”

– Peter Matthiessen, *The Birds of Heaven*.

Cranes are important to China, but China is even more important to cranes. China is home to more crane species than any other country in the world. Four threatened crane species—Siberian, Red-crowned, White-naped, and Hooded—as well as the more common Eurasian and Demoiselle Cranes, migrate each spring and autumn across the plains of eastern China, one of the most highly populated and developed regions in the world. Black-necked Cranes inhabit the more sparsely populated high-altitude plains of Western China.

- An astounding 98% of the world's 4,000 **Siberian Cranes (Critically Endangered)** winter in and around Poyang Lake in southeastern China. On migration from their breeding grounds in the Russian arctic, Siberian Cranes require a chain of critical staging sites in the Amur-Heilong River basin of northeast China to rest and refuel on their long journey. Siberian Cranes are the most aquatic crane species, seldom found far away from water. This has made them especially vulnerable to the loss and degradation of wetlands—the most important threat to the species.
- **Red-crowned Cranes (Endangered)** occur in two distinct populations in mainland Asia and the Japanese island of Hokkaido. The mainland population has been in steady decline for decades. At present, about 1,500 birds breed in China and adjacent parts of Russia. Some 500 of these birds winter along the rapidly developing Chinese coast, with the largest population centered around Yangcheng Nature Reserve, the remaining birds winter along the fragile Korean Demilitarized Zone. Critical staging areas along the migration route include the Liao River Estuary and Yellow River Delta in China. Major threats to Red-crowned Cranes include wetland loss, human disturbance, and poisoning, especially in China. Over the last fifteen years, the winter population in China has declined by more than half.
- The entire western migratory population of **White-naped Cranes (Vulnerable)** breeds in China, Mongolia, and Russia, and winters at Poyang Lake. This population has declined dramatically, from 3,000 to 1,000 birds, over the past decade. In China, White-naped Cranes share many breeding and staging areas with Red-crowned Cranes, and are likewise highly threatened by habitat loss, disturbance, and poisoning.
- **Hooded Cranes (Vulnerable)** are the most successful of China's threatened cranes. Hooded cranes breed in the boreal forests of southeast Russia and migrate through the Amur-Heilong basin of northeast China and Mongolia. About 1500 Hooded Cranes winter at Poyang Lake, Shengjin Lake, and other wetlands in the Yangtze River basin. Most others winter near Izumi, Japan, where they are dependent on feeding stations.
- **Black-necked Cranes (Vulnerable)** breed on the high altitude Qinghai-Tibetan Plateau and adjacent mountainous areas of western China. In the winter, the birds descend to valleys and lower-altitude plateaus, where they feed extensively on waste barley and other grains left in the farm fields. The impact of climate change is pronounced across Tibet and many glaciers are rapidly melting. In the short term, wetlands in crane breeding areas may have more water available, but over the long-term they stand to lose much of their water supply from the diminishing glaciers.



Photo by Dai Qiu

Opportunities and Challenges in China

The deep cultural connections between China's people and cranes is reflected in the nation's significant commitment to establishing protected areas. China's 46 National Crane Nature Reserves protect 71 million acres across the country. However, all of China's cranes continue to be significantly threatened by the loss and degradation of wetlands due to conversion for agriculture and the diversion of water for human use in China's burgeoning cities. Fragmentation of remaining habitats is also severe. Just 8% of habitat used by wintering Red-crowned Cranes in the 1980s in China is still available.

Loss of habitat forces cranes into closer proximity to people, where they are increasingly vulnerable to chemical toxins, power line collisions, and poisons and snares set out by poachers. Livestock and human disturbance can prevent cranes from successfully rearing their chicks or using otherwise suitable habitats.

Just recently, poisons have emerged as a significant threat and are likely a major factor behind declines in the populations of wintering Red-crowned and White-naped Cranes in China. The poisoning is not intentional; poisoned grain is spread on fields and wetland edges as bait to catch ducks and geese. However, the cranes increasingly feed on these waste grains and become accidental victims.

The Chinese Government now devotes substantial financial resources to conservation. Increasingly ecosystem values and biodiversity are considered in land and water management and planning. But the rapid pace of economic development, with limited technical or regulatory oversight, means that many development projects continue to have a negative impact on cranes and their habitats.

OUR IMPACT

ICF was among the first international NGOs to work on conservation in China, beginning when founder George Archibald visited Beijing in 1979. ICF's long history of engagement, achievement, and positive approach to problem-solving, and our commitment to helping the Chinese government achieve its conservation objectives, have made us a partner of choice.

ICF's activities in China have undergone significant changes over the last four decades. In the early years, ICF provided essential information and vital funding to scientists investigating the status of cranes in China. In the 1980s our role shifted more toward providing advice on management approaches and improving protection of the many nature reserves established for cranes. In the 1990s, we emphasized support for international technical exchanges involving Chinese reserve managers and biologists, and research to provide a stronger scientific basis



Photo by Shaohai Sun

for conservation planning and management. In 2017, ICF formally registered as a Non-Government Organization operating in China under their new law governing overseas organizations in country, and was honored by China's State Forestry Administration for our long-term partnership. We now have a China Program Office in Beijing, through which we support our core mission in China.

Our China Program now focuses on three key regions: the Amur-Heilong River basin in northeast China; Poyang Lake in the Yangtze River basin in southern China; and the Qinghai-Tibetan Plateau and adjacent mountainous

areas of western China. These sites are critical to the survival of China's threatened cranes, and to the diverse and abundant wildlife—and the people—who likewise depend on these productive lands. At each site, we draw on the deep cultural and spiritual connection that cranes inspire to safeguard these spectacular birds. We champion them as flagships for saving some of the most important wetlands on Earth, and as ambassadors for international goodwill and cooperation across political boundaries.

Securing wetlands and water in the Amur-Heilong Basin

The Amur-Heilong Basin is home to some of the world's outstanding wetlands and wildlife, including six crane species. Many protected areas—Zhalong, Momoge, Xianghai, and Dalai Lake National Nature Reserves in China; Muraviovka Park and Daurski Nature Reserve in Russia; and Daguurun Nature Reserve in Mongolia—have been established here to protect the most important breeding grounds for Red-crowned and White-naped Cranes, and vital staging areas for Siberian and Hooded Cranes. The International Crane Foundation works with partners in China, Russia, and Mongolia to address serious threats to key wetlands in these arid landscapes. These threats include water shortages caused by the diversion of river inflows to thirsty cities, conversion of floodplains to agriculture, and other water alterations that degrade wetlands and trigger uncontrolled fires and the spread of invasive species. At Momoge National Nature Reserve, for example, we were instrumental in rerouting water from agricultural areas to re-flood wetlands that now provide healthy stopover conditions for Siberian Cranes. We have recently focused on reducing the incidence of crane poisoning, in an effort to arrest the alarming declines in Red-crowned and White-naped Crane populations. We also work to prevent power line collisions near roosting sites, and to reduce chemical toxins in the water and in the foods that cranes eat. Our key projects in the Amur-Heilong basin include:



Photo by Crane Wu

- In cooperation with Hui River Nature Reserve in China, monitoring nest productivity of Red-crowned Cranes and leading outreach efforts to reduce nest disturbance from people and livestock. (Over the past decade, our work has resulted in a ten-fold increase in the number of fledged chicks.)
- Providing management guidance to wetland managers at Zhalong Nature Reserve in China (another important breeding site for Red-crowned Cranes), based on ten years of research and monitoring of waterbirds, hydrology, water quality, and vegetation.
- In partnership with Mongolian scientists, capturing and marking White-naped Cranes and tracking their movements across East Asia, allow us to identify key stopover sites in China needing protection. We assess the water requirements of these sites, monitor nest success, and work with herding communities to reduce nest disturbance from horses and dogs.
- Supporting wetland experts from the U.S. Geological Survey and U.S. Fish & Wildlife Service to assist Momoge, Xianghai, and other flyway nature reserves with best management practices and restoration guidelines for wetlands in arid regions.

- Coordinating synchronized migration counts across eastern China for thirty major wetlands, enabling more accurate tracking of population numbers, trends, and threats for imperiled cranes.
- Raising community awareness throughout the flyway, using visually-appealing materials to emphasize the importance of cranes and wetlands and the need to address such threats as poisons, snares, nest disturbance, and wetland degradation and destruction.

Safeguarding Poyang Lake—the most important wetland in East Asia

Poyang Lake is the largest lake in China and home to more than 400,000 wintering waterbirds, the most of any site in East Asia. Poyang provides winter habitat for almost all of the world's Siberian Cranes and significant wintering populations of White-naped Cranes, Hooded Cranes, Oriental White Storks, Swan Geese, Tundra Swans, and many other species of conservation concern. The incredible productivity of Poyang Lake is sustained by the significant natural variations in its water levels, between and among years. This special ecosystem is now threatened by dams and water diversions in the surrounding watershed that are fundamentally altering the hydrological system. Declining water quality is reducing the availability of aquatic food plants that cranes and other tuber-feeding birds require. For thirty years, the International Crane Foundation has cooperated with Poyang Lake Nature Reserve to study the ecological relationships among cranes, aquatic plants, and water levels, providing critical data for evaluating future water projects and management schemes. The situation has recently become even more complex as some Siberian Cranes have for the first time shifted to foraging in rice paddies and lotus ponds. This shift could open up vast agricultural lands for foraging. However, it could also make the cranes more vulnerable to ingestion of the poisoned grains that farmers spread to catch ducks and geese, or to snares and toxins that are set near the water. To safeguard the future of Poyang Lake and its abundant waterbirds, we are:



Photo by Jim Harris

Declining water quality is reducing the availability of aquatic food plants that cranes and other tuber-feeding birds require. For thirty years, the International Crane Foundation has cooperated with Poyang Lake Nature Reserve to study the ecological relationships among cranes, aquatic plants, and water levels, providing critical data for evaluating future water projects and management schemes. The situation has recently become even more complex as some Siberian Cranes have for the first time shifted to foraging in rice paddies and lotus ponds. This shift could open up vast agricultural lands for foraging. However, it could also make the cranes more vulnerable to ingestion of the poisoned grains that farmers spread to catch ducks and geese, or to snares and toxins that are set near the water. To safeguard the future of Poyang Lake and its abundant waterbirds, we are:

- Evaluating the scale and impact of poisoned grain bait and snares on crane populations, conducting public awareness campaigns to reduce these practices, and promoting legislation to make them illegal.
- In cooperation with Ocean Outcomes and Poyang Lake and Nanjishan National Nature Reserves, developing a pilot program that integrates waterbird conservation and sustainable fisheries management.
- Monitoring long-term ecological change through bi-annual basin-wide waterbird surveys, and gap-filling studies of vegetation, hydrology, and water quality.
- Researching the impacts of shifting Siberian Crane foraging patterns on their nutrition and breeding success.
- Facilitating community involvement in conservation and community-based tourism; reducing threats to cranes through community awareness programs; and encouraging appropriate behaviors that reduce harassment of cranes by photographers and visitors.

A Conservation Network for Black-necked Cranes and Wetlands in western China

In 1993 ICF initiated the first demonstration of community-based conservation for Chinese nature reserves at Cao Hai, winter home to Black-necked Cranes. This signature project, tremendously influential in China, has continued for more than twenty years with inspiring results. The wintering population of Black-necked Cranes at Cao Hai has grown from 300 to more than 1,700 birds. ICF research in Tibet on wintering Black-necked Cranes, which began in 1989, led to establishment of the Black-necked Crane Yarlung-Zangbo Nature Reserve, protecting the species' most important wintering sites in Tibet. Going forward, our key actions for Black-necked Cranes continue to build on our rich history of conservation action, including:

- Working with the National Nature Reserve at Ruergai, a stronghold for breeding Black-necked Cranes, to assess population size, address threats (including wetland degradation and predation by domestic dogs), and support environmental education at local schools.
- Supporting the Black-necked Crane Network, which brings together reserve managers (often from remote areas), researchers, and educators in China and beyond to share experiences and propose cooperative actions to conserve this iconic species



Photo by Zhou Qiliang

WE NEED YOUR SUPPORT

The International Crane Foundation is working to safeguard the remarkable diversity of cranes and other wildlife that depend on China's waters, wetlands, and grasslands. Your support will help us strengthen our China Program, building on decades of engagement in China and expanding our conservation impact to the wild places that matter most.

Please join us in safeguarding cranes and wetlands in China, so these magnificent birds and the landscapes they live in can continue to provide inspiration to people in China and the world.

FOR MORE INFORMATION CONTACT:

Spike Millington, VP-International (East Asia), International Crane Foundation, Wisconsin, USA | spike@savingcranes.org | +1-608-356-9462 ext. 140

Yu Qian, Program Director for China, International Crane Foundation, Beijing, China | yqian@savingcranes.org | +86-138-1039-7543



Photos by Luo Sang