

The «Lily of Birds»

A Journey To Help the Most Unique
and Endangered of Cranes



The Siberian Crane Memorandum
of Understanding

photo by I. Gavrilova



THE SIBERIAN CRANE IS A TREASURED BIRD OF ASIA

Its exquisite gleaming white plumage, elaborate dances and flute-like calls have endeared this crane to humans for thousands of years. The indigenous peoples of the tundra and taiga zones of Russia where Siberian Cranes breed hold these great white birds as sacred.

The Khanty people in western Siberia keep their herds of domestic reindeer away from the marshes where Siberian Cranes are nesting. And, after killing a dangerous bear, they dress in crane costumes and dance to drive away the bear's spirit. Far to the east, some Yakutians believe that seeing a Siberian Crane can bring healing to someone who is sick. Far to the south in India, where Siberian Cranes wintered until the last pair vanished in 2002, they are known as the «Lily of Birds».

Scientists are also attracted to the spectacular and unusual traits of these birds. Siberian Cranes have the longest beaks of all cranes, and they are the most wetland-dependent. In ankle-deep water they probe in the mud for small animal life and the roots and tubers of aquatic plants. Their threat displays and calls are quite different from those of other cranes.



photo by A. Withney

photo by Zhou Haixiang



FLYWAYS

The Siberian Crane annual migrations span continents, luring researchers to solve the mysteries of these movements. When the marshes start to freeze in the arctic in late August, mated pairs and their offspring, start their long passage south. Migration usually begins in mid-morning when clear skies and prevailing winds allow cranes to mount the rising thermals. From this altitude they then glide perhaps hundreds of kilometres along a path traversed by their ancestors, landing before dark in wetlands along the route. In this manner the cranes continue daily passage, moving south from wetland to wetland. The survival of Siberian Cranes depends on the protection of the individual cranes and the conservation of the wetlands where they breed in summer, rest during migration, and spend each winter – wetlands akin to pearls along a flyway necklace. The Siberian Cranes' migration flyway extends over several thousand kilometres taking the cranes across many invisible national borders that did not exist when their ancestors first made this epic journey. Today, the conservation of these beautiful birds and the wetlands along their flyways depends on the cooperation of the people of Afghanistan, Azerbaijan, China, India, Iran, Kazakhstan, Mongolia, Pakistan, Turkmenistan, Russia and Uzbekistan, working together to save these special birds.



AN INTERNATIONAL AGREEMENT FOR SIBERIAN CRANE CONSERVATION

The Siberian Crane's multi-country migration flyways are indicative of the special conservation challenges faced by many other animals whose periodic migration takes them across national boundaries. In recognition of the need for international agreements to conserve such migratory animals, the **Convention on the Conservation of Migratory Species of Wild Animals** (CMS), was created in Bonn, Germany, in 1979. The CMS, also known as the Bonn Convention, now counts more than 100 Contracting Parties. Its secretariat is administered by the United Nations Environment Programme.

One of the key functions of the Convention is to develop specialized agreements for individual species or groups of species that are in need of conservation action. In 1993, an agreement was developed specifically for the Siberian Crane, employing for the first time an innovative format that has since been replicated successfully for many other species. The so-called **Memorandum of Understanding concerning Conservation Measures for the Siberian Crane** has now been signed by all 11 Range States of this endangered species, including several countries that are not yet Parties to CMS.

In addition, this MoU has been signed by several conservation organizations such as the International Crane Foundation and the Wild Bird Society of Japan and has included strong supporting partners such as Wetlands International and the Cracid Breeding and Conservation Center. With CMS and the supporting conservation organizations, government officials and Siberian Crane specialists from the range states meet regularly to develop and coordinate conservation action plans.



CONSERVATION PLAN

The most important measures for protection of the Siberian Crane and its habitat are outlined in the Memorandum of Understanding's Conservation Plan, which is renewed every 2–3 years by the signatory countries. The primary objectives are to reduce direct and indirect mortality of Siberian Cranes; conduct research and monitoring to improve understanding of Siberian Crane ecology; increase population numbers and genetic diversity; improve habitat protection and development of a flyway wetland site network in Eastern and Western/Central Asia; improve public awareness and information exchange; and strengthen national and international cooperation.

At each meeting of the range states, the Conservation Plan has been revised according to considerations of what happened, what did not, why not, best practices, and future activities. This document has been very

photo by E. Nazarov



photo by I. Gavrilova



useful for working with governmental agencies and protected area managers. In particular, it has guided decision-making related to legislation implementation of monitoring programmes, crane reintroduction efforts, and the organization of education events and meetings.

MONITORING OF SIBERIAN CRANE POPULATIONS

Although the Siberian Cranes are legendary birds in Asia, little was known about their biology and their habitat needs until recent decades. Dr. Vladimir Flint and his team documented the ecology and behaviour of Siberian Cranes on their breeding grounds in Eastern Siberia in the 1960s and '70s. In 1980,



photo by Y. Markin

Dr. Zhou Fuchang and Dr. Ding Wining discovered the wintering grounds of these cranes at Poyang Lake in China. In 1981, Flint's assistant, Dr.

Alexander Sorokin and his team located the nesting grounds of Siberian Cranes in the basin of the Kunovat River in western Siberia. These birds were

later confirmed to be the well-known cranes that wintered at Keoladeo National Park in North Central India. In 1978, Dr. Ali Ashtiani discovered a small flock of Siberian Cranes wintering on Iran's Caspian lowlands. In 1996, Dr. Yuri Markin and Iranian colleagues working together with the Wild Bird Society of Japan attached a radio transmitter (capable of communicating with a satellite) to a male crane from that flock. Later that spring, by following the signals from the satellite transmitter, Dr. Markin and Dr. Sorokin discovered the nesting grounds in a remote area about 1000 km south of the Kunovat Basin. The use of satellite transmitters on cranes in the Eastern Siberian population will help to identify spring migration routes, juvenile summering areas, and winter movement patterns within the Poyang Lake basin in China.



photo by C. Prentice



photo by Y. Markin

MONITORING OF SIBERIAN CRANE POPULATIONS (CONT)

Since these remarkable discoveries, the three Siberian Crane populations have been carefully monitored. Sadly, the number of Siberian Cranes wintering in India declined from 75 birds in 1974 to just a single pair in 1996. That last pair disappeared in 2002. The wintering flock of Siberian Cranes in Iran remained steady at 10–12 birds from 1978 through 1998, then slowly declined to just a single male by February 2007. In contrast to these declines, recent surveys of the eastern population of Siberian Cranes wintering in the Poyang Lake basin of China have consistently reported more than 3,000 birds. Although the number of Siberian Cranes reported at Poyang Lake has increased, this is likely due to a concentration of the cranes as other winter habitat was lost and also due to improved census methods. The relatively better welfare of the eastern flock can be attributed to the protection provided to both the cranes and their wetland habitats in both Russia and China. The decline of the western flocks is undoubtedly attributed to widespread hunting which in turn is correlated to great social challenges in several of the range states, most notably Azerbaijan, Afghanistan and Pakistan. Recent reports of Siberian Cranes on migration in Kazakhstan and in winter in the Volga Delta offer hope that further individuals of the western population still exist.

The productivity of a Siberian Crane population can be measured by the relative number of juveniles to adults in flocks on wintering grounds early in the season before the juveniles turn white. Productivity was good in the past in India, with 10–15% juveniles in the flock. These numbers implied good conditions on the breeding grounds in Russia. Although high survival rates through the wintering season may suggest healthy wetland habitat and good protection, pressure on the wintering grounds in Iran is high and the cranes' extremely low numbers make them very vulnerable. The primary problems for the western flocks are likely the challenges faced during migration; however, recent oil exploration on their breeding grounds in West Siberia is of concern. Hope for these cranes lies with the nations that signed the MoU for the Conservation of the Siberian Crane.

HABITAT CONSERVATION AND DEVELOPMENT OF SITE NETWORKS FOR SIBERIAN CRANES

Siberian Cranes are wetland specialists. Their long and powerful beaks are used to dig small animals and the fleshy roots and tubers of aquatic plants from the mud.

On the breeding grounds where Siberian Cranes feed their fast-growing chicks a predominance of animal food, each breeding pair evicts other Siberian Cranes from an enormous wetland territory that frequently includes several square kilometres of habitat. In contrast, during migration and on their wintering grounds, Siberian Cranes typically gather in large flocks and dig communally for abundant food resources in the wet soils. However, in Iran and India, Siberian Cranes on wintering grounds have been reported as territorial, a behaviour that has been observed for other large cranes on wintering grounds, such as Whooping Cranes at Aransas in Texas. While wintering Siberian Cranes at Poyang are observed mostly in large flocks, some pairs have been reported to be territorial.

Despite seasonal differences in social behaviour, Siberian Cranes need wide expanses of wetlands. In the arctic where human populations are low, there are extensive wetlands for nesting Siberian Cranes. In contrast, along the migration routes across Asia and on the wintering grounds, Siberian Cranes encounter large human populations that place increasingly high demands on fragile wetland resources and on water resources in general.

Dams used to control and manage water resources for use by agriculture and cities can dramatically alter natural water cycles and effectively destroy wetland habitats. Wetlands are often drained to produce fertile fields for crops. Until recently, leaders did not recognize the importance of wetlands as huge sponges that absorb water to reduce flooding, and slowly release water to maintain stream flows in time of drought. Wetlands also serve as enormous filters that deactivate dangerous pollutants. For short-term gain, humans are losing the long-term benefits of wetlands as well as the high biodiversity and valuable natural resources produced by wetland ecosystems.

UNEP/GEF SIBERIAN CRANE WETLAND PROJECT

With a seriously declining population, the Siberian Crane is listed as Critically Endangered. Concern for its survival and the wetlands upon which it depends goes back many years. In response to this growing concern, an international project was developed to improve and maintain the ecological integrity of the network of wetlands significant for many migratory waterbirds, including the Siberian Crane.

The Siberian Crane Wetland Project (SCWP) began in 2003 with funding from Global Environment Facility (GEF) and implementation through the United Nations Environment Programme (UNEP). In cooperation with the Convention on Migratory Species (CMS), the International Crane Foundation (ICF) together with the governments of four of the range states – China, Iran, Kazakhstan, and Russia – have been working to integrate their conservation efforts on behalf of the Siberian Crane and the chain of wetlands encompassed by its flyways. Because the Siberian Crane is a charismatic bird with deep cultural significance, it also serves as a significant flagship species, focusing attention on conservation efforts for the entire system of wetlands, with the potential for benefiting all wildlife in that system.

The second phase of SCWP is now well underway. Its objectives are to strengthen the work already begun under the CMS Siberian Crane Memorandum of Understanding and to add new elements where feasible. Participatory management will continue to be a significant goal.

Communication efforts will be increased, with the hope of sharing successes and communicating lessons learned with all partners in the project. A self-sustaining and integrated conservation effort is the long-term goal.



photo by M. Bathaï



photo by S. Zadegan

THREATS

Hunting is perhaps the most immediate and serious threat to the restoration of Siberian Cranes in West Asia; however, recent economic growth in Kazakhstan and other central Asian countries is placing greater pressures on wetlands and water resources. Wetland conservation is already an enormous challenge in East Asia, especially in China. A complex of four large wetlands in northeast China provides vital resting areas for Siberian Cranes in both autumn and spring. Since the 1950s, approximately 90% of the wetlands in northeast China have been destroyed to create farmland in the area the Chinese refer to with pride as their Great Northern Food Basket. Attempting to conserve what remains of these wetlands is a significant challenge for conservationists.



photo by E. Mukhina

If Siberian Cranes are to be restored in the area of the former central flyway population – the cranes that migrated through Afghanistan and Pakistan to India – conservation education and the enforcement of laws protecting Siberian Cranes must be implemented throughout the wide range of the species, especially in Afghanistan and Pakistan where both shooting and live-trapping of cranes is widely practiced. If the crane population that winters in Iran is to be restored, cranes must be protected at wetlands in Iran, Azerbaijan, Kazakhstan, and Russia where the cranes rest during migration and where the hunting of waterfowl has increased in recent years.

photo by T. Bragina

photo by T. Kashentseva



POPULATION RECOVERY SUPPORTED BY CAPTIVE BREEDING

While in recent years we have witnessed the disappearance of the Siberian Crane populations that migrated to India and Iran, we have also witnessed the blossoming of captive flocks of Siberian Cranes at special propagation centres in Russia, Belgium, the USA, and China. In the early 1970s, there were fewer than 10 Siberian Cranes in captivity worldwide. They had never reproduced in captivity. Adopting a different approach, captive populations of Siberian Cranes were established from eggs collected from wild Siberian Cranes in Eastern Siberia through collaboration between the Oka Nature Reserve in Russia and the International Crane Foundation in the USA,. The first captive breeding was achieved at ICF in 1981 with the birth of Siberian Crane, «Dushenka».



photo by D. Feklistov

Through photoperiod manipulation to artificially create in captivity the long periods of light to which wild cranes are exposed in the Arctic spring, and through artificial insemination and improved husbandry practices, the captive population has grown to about 200 birds. The technique of costume-rearing was developed at ICF in 1985 and is now applied worldwide to rearing cranes in captivity so that they are imprinted on their own species and, at the same time, are fearful of humans, hence suitable for release. Since 1991, crane-costume techniques have been used to rear birds in Russia, India, and Iran, and to release these cranes into the wild.



photo by T. Kashentseva

REINTRODUCTION

During the past 15 years, more than 100 Siberian Cranes that originated from captive-produced eggs have been released into the wild. Some were released with wild Siberian Cranes on the breeding grounds of the cranes that migrated to India. Some were released on the migratory resting areas of Eurasian Cranes at Belozerski Zakaznik in Southwest Siberia. Others were foster-reared by Eurasian Cranes nesting in the same regions as the wild Siberian Cranes. After fledging, most of these cranes migrated with their wild foster parents, but only a few were subsequently seen in Russia. None were reported from the wintering grounds. In like manner, efforts were made to transfuse captive-produced birds into the flocks of wild cranes on wintering grounds in Iran and in India. Most of these cranes failed to migrate and those that did were not seen again.

Since 2002, Russian colleagues have worked to adapt techniques used in the human-led migration of Whooping Cranes in North America. In 2006, Russian specialists affiliated with the Sterkh Foundation and with support from the Russian oil and gas company, ITERA, led two juvenile Siberian Cranes and two juvenile Eurasian cranes behind an ultra-light aircraft, flying from the Kunovat Basin to southern Russia. It was a test flight to open the way for future migrations, steps they hope will eventually lead to the re-establishment of a flock of Siberian Cranes migrating from the Kunovat Basin to winter in India.



photo by Y. Markin



photo by A. Sorokin

A new possible wintering area in Uzbekistan could offer a shorter migration route. Eurasian Cranes that breed in the Kunovat area have been moving to new wintering grounds further north in Uzbekistan, suggesting a more favourable wintering site for human-led, reintroduced Siberian Cranes.

The reintroduction of Siberian Cranes is unlikely to succeed until factors (such as hunting) that led to the demise of the original flocks are addressed. Efforts to reduce those threats are now underway in all range states, thanks to ongoing work under the CMS MoU for Siberian Cranes.



photo by E. Smirenski



photo by C. Miranda



photo by A. Ermakov

INFORMATION EXCHANGE

Communication is vital to effective conservation, and a significant communications role is filled by Elena Ilyashenko, the Siberian Crane Flyway Coordinator. From an office graciously donated by the Moscow Zoo, Ms. Ilyashenko collects and shares information about Siberian Crane sightings and other issues that are important to the CMS MoU and the UNEP/GEF Siberian Crane Wetland Project. This information is published in the biannual Siberian Crane Flyway News, and available through the Siberian Crane Flyway Coordination

web site at <http://www.sibeflyway.org/>. Information about conservation activities under the UNEP/GEF Siberian Crane Wetland Project is available on the SCWP web site at <http://www.scwp.info/>

Important news is promptly shared through an email distribution list and summarized in newsletters published twice each year. It is also important that scientific data is exchanged among specialists. A database has been designed and approved and valuable information on the Siberian Crane and its habitats is being entered and will be shared.

INCREASING PUBLIC AWARENESS

Any conservation efforts are futile without changing human behaviour and improving understanding about the importance of crane conservation and wetlands protection. To increase public awareness, MoU signatory states have conducted various education programmes, involving government officials,

scientists, conservation managers, hunters, teachers, farmers, fishermen, schoolchildren, and the media in Siberian Crane conservation. Special training sessions and meetings have been organized to engage hunters, trappers, and other stakeholders in the reduction of threats to Siberian Cranes.

Many useful educational materials have been developed and widely shared. Through the kindness of Canadian artist, Robert Bateman, thousands of large, colourful prints of his painting of a Siberian Crane were produced in India and distributed throughout the range states; slogans in the 12 languages of the signatory states underscored the international scope of this effort. To share the story of the Siberian Cranes, ICF created a 25-minute video for television broadcasting, produced

in the languages of the range states. Booklets, brochures, stickers, and buttons have also been used to draw attention to these magnificent birds.

«Siberian Crane Festivals,» now celebrated at 70 sites in eight countries, have demonstrated that the charisma of this crane can successfully engage the private sector. In Russia, much has been accomplished through the efforts of the Sterkh Foundation, a private organization committed to conservation efforts and the initiation of public awareness events. In fact, activities like the crane celebrations have proven to be effective across the project. Through the media of music, art, song, and dance, people of all ages have learned about Siberian Crane behaviour, ecology, and habitat, and have acquired a better understanding of the threats to crane survival and the need for conservation measures.



photo by Y. Markin



photo by G. Archibald

BUILDING BRIDGES

The Siberian Crane's hope for the future remains a real possibility thanks to the initiative and perseverance of dedicated individuals from many different countries who built bridges for conservation where none had existed. This epic story began in the early 1970s with the vision and imagination of two young scientists, George Archibald and Ron Sauvey, who co-founded ICF. The story reached out to these majestic birds when George initiated correspondence with the renowned Dr. Vladimir Flint of Russia, and Ron Sauvey began his doctoral research on Siberian Cranes in India in 1974. The following year, ICF initiated a program with Iran as a first step toward the dream to reintroduce Siberian Cranes – a step rewarded with the rediscovery of Siberian Cranes in Iran in 1978. In 1979, ICF engaged their Chinese colleagues to find the wintering grounds of the Siberian Cranes in China. Elsewhere, an independent conservationist, Steven Landfried, promoted crane conservation in Pakistan in the 1980s and 1990s, with support from Dave Ferguson of the U.S. Fish and Wildlife Service.



photo by I. Gavrilova

These efforts were drawn together through intergovernmental negotiations guided by Douglas Hykle of CMS, culminating in the adoption of the Siberian Crane Memorandum of Understanding in 1993 under CMS's leadership. Through the special working relationship of CMS and ICF, this international cooperation was further strengthened by the UNEP/GEF project to conserve the network of wetland sites along the migration flyways of the Siberian Crane in West and East Asia. This project facilitated the creation of the Western/Central Asian Site Network for the Siberian Crane and other Waterbirds. Ultimately, the integration of these multi-country initiatives into the CMS Siberian Crane MoU will assure continuity of a sustained effort to conserve the «Lily of Birds» across its vast range.



photo by I. Gavrilova



photo by C. Prentice

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