THE CURRENT STATUS
OF THE SIBERIAN CRANE GRUS LEUCOGERANUS

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EXTENDED ABSTRACT

The Siberian Crane Grus leucogeranus is the world’s third rarest crane. It is listed in the IUCN
Red List as a Critically Endangered species, and is also listed in regional and national Red Data
Books, bilateral agreements and international conventions. As a result of international cooperation in research and conservation, our knowledge of the biology of the Siberian Crane is quite good. However, gaps remain in our understanding of this enigmatic species. Over the past three decades, the International Crane Foundation (ICF) has been working with a network of experts in the eleven nations within the species’ range to acquire basic information about the Siberian Crane, including the location of its breeding grounds, migration routes, and the gauntlet of threats it encounters. Unfortunately, while our knowledge is growing, the number of Siberian Cranes in Western and Central Asia has continued to decline.

The Siberian Crane is a monotypic species with two isolated populations. The East Asian
population spends the winter in China at Poyang Lake in the Lower Yangtze River Basin and
breeds in the northeast Siberian tundra between the Yana and Kolyma Rivers. The Western/Central Asian population is divided into a Western Asian flock and a Central Asian flock. The former winters near the Caspian Sea shores of the Islamic Republic of Iran and nests in the central part of western Siberia. Until recently, the Central Asian flock wintered in northern India, breeding in Western Siberia near the lower reaches of the Ob River. The total world population of the Siberian Crane is estimated at 3,500 birds. Approximately 99% belongs to the East Asian population, which is stable or slightly increasing. The Western/Central Asian population is estimated at about 10-20 individuals.

East Asian Population. The East Asian migration route of the Siberian Crane stretches for nearly 6,000 kilometers from Arctic Siberia to the Yangtze River valley in eastern central China with significant migratory stopovers in northeast China. With support from the United Nations Environment Programme /Global Environment Facility Siberian Crane Wetland Project (SCWP) in recent years, the annual monitoring of breeding grounds, migration stopovers and wintering grounds has been organized by the Institute of Biological Problems of the Cryolithzone (IBPC) in Yakutia and the National Bird Banding Center in China. On the breeding grounds, the monitoring system currently includes the main study area in Kytalyk Resource Reserve in Yakutia, Russia with the highest Siberian Crane densities, where 1,118 crane pairs were found. The breeding success of the population varies broadly (from 6 to 70%) and depends on the climatic conditions during the beginning of egg-laying in late May and early June.

Non-breeding individuals range widely, and have occasionally been observed during the breeding season in the Russia-Mongolia-China border region: in the Amur River Basin, Torey Lakes, along the Onon, Uldza, and Khalkhin Gol Rivers, and along the upper reaches of the Tuul River. Twenty-four sightings were registered during the period 2001-2008.

While it has been known for some years that Siberian Cranes pass through southern Yakutia on their way to China, there was only limited information about staging areas along the major river
valleys until recent investigations were conducted. An inventory of the Russian part of the East Asian migration route conducted by IBPC staff since 2004 indicated the importance of some short-term migration stopovers. In the Indigirka basin, the most suitable Siberian Crane stopover sites are located in Momskiy Ulus (district) along the Indigirka, Inyali and Moma Rivers and near large lakes. Between 50 and 300 birds staged there in different years, with a maximum number of 1,500 individuals. In the Aldan basin, Siberian Cranes stop over near the banks of the river Aldan and its tributaries as well as on large and small lakes in their valleys. Several important sites along the Middle Aldan were included in Phase 2 of the SCWP.

After reaching northeast China, Siberian Cranes have a long rest at their staging areas. In the 1980s, Siberian Cranes stopped primarily at Zhalong National Nature Reserve (NNR) in Heilongjiang Province, and small flocks also used Keerqin NNR in Inner Mongolia, Momoge and Xianghai NNRs in Jilin as well as other sites. Regular monitoring during SCWP indicated that since 2004 the number of Siberian Cranes at Momoge NNR increased up to 3,000 birds. This site continues to be an important stopover site for migratory Siberian Cranes during both autumn and spring migrations.

With support from SCWP, annual censuses of wintering cranes and other waterbirds were conducted from 2004-2008 in all five provinces (Jiangxi, Anhui, Hunan, Hubei, and Jiangsu) in the middle and lower reaches of the Yangtze River including the whole of Poyang Lake Basin. Regular monitoring of the wintering grounds at Poyang Lake indicates a stable or slightly increasing trend in the size of this population during the period 2000 to 2009.

The breeding grounds of the East Asian population are relatively undisturbed. Oil, however, has been discovered in and near the breeding grounds, and oil exploration and development pose a significant threat. Although Siberian Cranes migrate across eastern Siberia through remote and relatively pristine areas, development pressures are appearing. A huge hydroelectric scheme involving a cascade system of power generating dams is being planned for the headwaters of the Aldan River Basin. The most important threat to date at the wintering grounds has been the construction of the Three Gorges Dam on the Yangtze River that can affect water levels in the Poyang Lake Basin including the wintering grounds of the Siberian Crane. Additionally, plans are under assessment to build a water control structure at the outlet of Poyang Lake in order to regulate water levels throughout the year. By raising winter water levels, this project could have significant negative impacts on the Siberian Crane and other regional migratory waterbird populations as well as the overall ecological integrity of this dynamic wetland ecosystem.

Western/Central Asian Population. The Siberian Cranes in the Western/Central Asian population use two migration routes. The last known pair of the Central Asian flock was seen on its wintering grounds in India in the winter of 2001/2002. In 2003, for the first time since 1981, the known Siberian Crane pair was not found in the Kunovat River Basin, the breeding grounds of the Central Asian flock. The numbers of Siberian Cranes in the West Asian flock arriving at the only known wintering site in Iran, have progressively declined with only one wild bird observed since the winter of 2007/2008. In June 2005, an aerial survey of the breeding grounds of the West Asian flock in the Konda and Alymka Interfluves found no Siberian Crane nests for the first time since they were first observed in 1996. In spite of this fact, the All Russian Research Institute for Nature Protection and Oka State Nature Biosphere Reserve staff continued aerial surveys of the breeding grounds of the Western and Central Asian flocks, distributed questionnaires and interviewed local people with support from the Sterkh Foundation, ICF and the SCWP (2003-2006). From 2003-2008, 27 sightings of Siberian Cranes were reported in the Kunovat River Basin in spring and autumn, and five sightings during the breeding season; and for the period 2005-2008, six sightings were reported in the Konda and Alymka Interfluves, mostly in spring and autumn.

Both the Western and Central Asian flocks use the same migration route from their breeding grounds in Russia to Kazakhstan, where Siberian Cranes make their first long-term migration
stopovers of up to 1.5-2 months, mostly in Nauruzum Lake System in Kostanay Region. Since 1998, with support from ICF, the Convention on the Conservation of Migratory Species (CMS), SCWP, and national colleagues, Siberian Cranes were reported annually, although numbers have declined precipitously. One to seven birds have been sighted in most recent years by ornithologists and local people.

After resting in Kazakhstan, Siberian Cranes continue their migration in one of two directions: along the Central Asian migration route through Uzbekistan, Turkmenistan, Afghanistan, Pakistan, and India; and along the West Asian migration route through Russia (Volga Delta and Dagestan), Azerbaijan and Iran. There are only historical records of Siberian Crane sightings in Turkmenistan, Afghanistan, and Pakistan along the Central Asian migration route, while in Uzbekistan there are still reports of Siberian Cranes in the last decade, mostly in flocks of Eurasian Cranes *G. grus*. Along the West Asian migration route a few Siberian Crane records continue to come regularly from Astrakhan State Nature Reserve in the Volga Delta in Russia and from Kurinsksaya Kosa in Gyzyl-Agach Nature Reserve in Azerbaijan.

Regular sightings of up to 10 birds on the breeding grounds in West Siberia and at migratory stopovers in Kazakhstan, Azerbaijan and Russia, combined with the absence of Siberian Cranes on wintering grounds in India and Iran suggest the existence of unknown wintering areas for the Central and West Asian flocks.

Almost no industry occurs near the Siberian Crane’s breeding grounds in West Siberia. However, the breeding grounds of both the Western and Central flocks are located in potential gas and oil producing regions, in which exploration and production activities could cause disturbance and habitat degradation. However, the main threat for the Western/Central Asian population is hunting along the flyways, especially in Afghanistan and Pakistan. Crane hunting was formerly widespread in these countries but has recently been made illegal in all areas. However, hunting is difficult to control especially in tribal areas. Following the collapse of the USSR, hunting has escalated in Azerbaijan, Kazakhstan and Uzbekistan.

Although the Western/Central Asian population might soon disappear, the East Asian population remains stable or slightly increasing. However, the East Asian population is highly vulnerable because 99% of the birds winter at a single site, Poyang Lake. Existing and proposed hydro-engineering projects affecting Poyang Lake could significantly alter waterbird habitats and adversely impact waterbird populations including the Siberian Crane. Integrated water management at migratory stopover sites in Northeast China, guided by on-going monitoring of the condition of these wetlands, is also highly important.

**Captive Breeding and Reintroduction.** A captive population of the Siberian Crane was created with the goals to restore the Western/Central population and to provide education. There are four primary colonies of captive Siberian Cranes: the Oka Crane Breeding Center (OCBC) in Russia, the Cracid and Crane Breeding and Conservation Centre in Belgium, ICF in the USA, and the Beijing Zoo in China. OCBC is responsible for maintaining the *International Siberian Crane Studbook*. As of 31 December 2009, there were 393 captive Siberian Cranes (166 males, 177 females, and 52 of unknown sex) in 55 institutions in 14 countries. During the period 2007-2009, 81 birds were reared in eight institutions in seven countries.

From 1992 to 2009, 126 Siberian Cranes (112 from OCBC and 14 from ICF) were released into the wild on the breeding and wintering grounds and at migration areas. Another 39 eggs produced at the OCBC were placed in Eurasian Crane nests in the Kunovat Wildlife Refuge for cross-fostering. Despite the large number of released cranes, there were few verified sightings of released Siberian Cranes due to high mortality in the wild, the huge and remote range area, limited post-release monitoring system and the ongoing development of release techniques.

The *Flight of Hope* Project aspires to restore the Central Asian flock of Siberian Cranes through isolation rearing of chicks in captivity and the use of ultralight aircraft to lead them to wintering grounds. This technique was developed and is being used to restore a migratory
population of the Whooping Crane *G. americana* in the eastern USA with promising results. However, there are many challenges to overcome in restoring Siberian Crane populations; therefore the implementation of this project and adaptation of release techniques to match the ecology and behaviour of Siberian Cranes requires more time.

**Conservation Measures.** Significant measures for the conservation of the Siberian Crane and its habitats have been outlined in the Conservation Plans developed collaboratively by the eleven range states under the CMS *Memorandum of Understanding concerning Conservation Measures for the Siberian Crane* (MoU). 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; strengthen habitat protection and development of flyway wetland site networks in East Asia and Western/Central Asia; improve public awareness and information exchange; and strengthen national and international cooperation. The goals of the SCWP were closely linked to Conservation Plan objectives, with a focus on improving habitat protection. Twelve sites of importance to the Siberian Crane along both the Western and Central Asian migration routes have been included in the Western/Central Asian Site Network for the Siberian Crane and other Waterbirds under the framework of the CMS MoU, and another 24 sites have been proposed. The CMS MoU continues to be the primary international mechanism for the conservation of this beautiful and enigmatic species.

**Key words:** Siberian Crane, flyway, species conservation plan, CMS, Siberian Crane Wetland Project

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1 *Note:* The full paper will be submitted for publication in a peer reviewed journal to promote wider accessibility. Please contact the authors for information on how to obtain a copy: Elena Ilyashenko: eilyashenko@savingcranes.org or Claire Mirande: mirande@savingcranes.org

A detailed Siberian Crane bibliography is included in these proceedings.