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**Summary of NGO Initiatives for the Conservation of the Black-necked Crane (*Grus nigricollis*)
and Recommendations for Future Management**

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Summary:

Black-necked Cranes (BNC) are classified as 'vulnerable' according to the IUCN red list and have been listed in CMS Appendices I and II since 1979. Considering that the CMS member states declared the protection status of the Black-necked Crane more than 40 years ago and taking into account its special ecological and cultural significance as a flagship species in the mountains of the Himalayas, the authors of this document would like to emphasize the potential of intensified cross-border cooperation for this species.

After a description of current conservation efforts in China, India and Bhutan, this document presents the key priority actions for Black-necked Cranes in IUCN's *Crane Conservation Strategy* and concludes with suggestions for intensified international cooperation on the species.

Summary of NGO Initiatives for the Conservation of the Black-necked Crane (*Grus nigricollis*) and Recommendations for Future Management

1. NGO Initiatives for Black-necked Crane Conservation

The Black-necked Crane (*Grus nigricollis*) is the only alpine crane species in the world and counts a global population of approximately 13,500. Its breeding range is the Qinghai-Tibet Plateau of western China and Ladakh, a neighbouring area of India. It breeds in tundra-like valley swamps and bogs from 2,600-4,800 meters above sea level. The winter range includes southern areas of the Tibetan Plateau and the Yunnan-Guizhou Plateau, the Himalayan Valleys of Bhutan and northeast India. Black-necked Cranes (BNC) are classified as 'vulnerable' according to the IUCN red list, and have been listed in CMS Appendices I and II since 1979. Considering that the CMS member states declared the protection status of the Black-necked Crane more than 40 years ago and have taken into account its special ecological and cultural significance as a flagship species in the mountains of the Himalayas, the authors of this document would like to encourage the international community to support intensified cross-border actions for this species.

The specific conservation efforts in the three Range States are manifold. In many respects, effective results can be achieved through productive cooperation between the states and civil society actors. At the same time, nature conservation NGOs are in communication about their conservation activities. In China, important conservation work is being conducted by the International Crane Foundation (ICF). In India, the World Wide Fund for Nature - India (WWF - India) has been implementing effective conservation measures for many years. In Bhutan, the Royal Society for the Protection of Nature (RSPN) has a government mandate for the protection of the species and has been working closely with the ICF for years. Recently, RSPN has joined forces with NABU International and Crane Conservation Germany as part of a research project funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. Furthermore, the Ministry supports the process of international networking on the species and encourages scientists and nature conservation actors to come together under CMS and to work towards a joint conservation of the Black-necked Crane.

With this document, the authors would like to inform the international community about the current non-governmental conservation activities for the Black-necked Crane and emphasize the great potential of increased cross-border cooperation at all levels. After a description of current conservation efforts in China, India and Bhutan by these organisations, this document presents the key priority actions for Black-necked Cranes in IUCN's *Crane Conservation Strategy* and concludes with suggestions for intensified international cooperation on the species.

2. ICF's Conservation Measures in China

The majority of the breeding and wintering sites of Black-necked Cranes are located in China. The country's breeding sites extend over western and central Xinjiang to the north-eastern Qinghai-Tibet Plateau. The country's winter sites are located in the central south and east of Tibet, in north and northeast Yunnan and in northwest Guizhou.

ICF's objectives in Black-necked Crane conservation are to strengthen the Black-necked Crane Network, to monitor the global population, to strengthen environmental education and outreach programs, and to establish Black-necked Crane nature reserves.

ICF strengthens the BNC network in China and beyond – a Black-necked Crane Conservation Network was jointly initiated by the International Crane Foundation, the National Bird Banding Centre of China, and the Kunming Institute of Zoology of the Chinese Academy of Sciences in 2012. The network consists of 70 institutional and individual members from all of the provinces in China. Up to now, a total of 7 network meetings have been held in 5 provinces. The network has provided a platform for reviewing the status of cranes in China and in the world, and sharing experiences in research, monitoring, management, education and culture in breeding and wintering grounds. The network has effectively promoted the protection of Black-necked Cranes and their habitats across regions.

ICF conducts global population monitoring through both global counts at least every five years and key sites every year – the global population of this species is monitored mainly through winter counts. Black-necked Cranes winter in three provinces in China – Guizhou, Yunnan and Tibet. The winter counts of Black-necked Cranes have been regularly made on an annual basis in the Guizhou and Yunnan Provinces by nature reserves and/or research institutions, while ICF tries to count Black-necked Cranes every 5 years in Tibet.

ICF strengthens environmental education and outreach programs, such as promoting the Black-necked Crane as a flagship species in conservation. The Black-necked Crane education program is the strongest among all crane species education activities in China, including developing and teaching local school curricula, organising ecological summer and winter camps, providing training and study tours for local reserve and school educators, and building a network for educators in the Black-necked Crane range provinces.

Establishment of the Black-necked Crane Nature Reserves – by the end of 2018, China had established 27 national and provincial nature reserves designated to protect Black-necked Cranes and their habitats, with a total area of 255,000 km². In addition, many county-level Black-necked Crane reserves had been established, although most of them without normal management operations.

3. WWF's Conservation Measures in India

In India the Black-necked Crane has been reported from three states namely Jammu & Kashmir, Sikkim and Arunachal Pradesh. The western-most extension of the breeding range of the Black-necked Crane is in Ladakh in India. A small population of around 100 birds breeds in the Changthang Cold Desert Wildlife Sanctuary in Ladakh, Jammu & Kashmir. This breeding population includes about 15 breeding pairs. At the same time, the species has been reported at some high-altitude wetlands in Sikkim during summer months. However, there is no regular confirmed record of breeding for the Black-necked Crane in Sikkim. In the state of Arunachal Pradesh in India, a very small population of less than 15 birds visits some valleys during winter months and these wintering birds are currently restricted to the Sangti and Pangchen valleys of Arunachal Pradesh.

During the past two decades, WWF-India, with support from the forest and wildlife departments of the Government of India, has been actively engaged in various conservation measures for Black-necked Cranes. As part of these conservation initiatives, the following measures have been taken in India:

- Regular surveys are being conducted to establish a long-term database on breeding and wintering population for the species in India.
- Focussed education and awareness activities are being conducted with school children in educational institutions in Ladakh, Sikkim and in Arunachal Pradesh.
- The tourism sector in the Indian Himalayas has been involved in the conservation of the Black-necked Crane.
- The Indian Army and ITBP (Indo Tibetan Border Police) are also involved in the conservation of the species and its habitat in Ladakh.
- Site-specific management plans have been designed for some wetlands where Black-necked Cranes breed.
- Education and awareness materials in the form of reports and posters have been published for wider circulation.
- Conservation leadership workshops are being conducted for college and university students.
- Capacity building programmes for high altitude wetland managers in India are being organised at regular intervals.
- Alternate livelihood initiatives for nomadic graziers have been initiated to reduce grazing pressure in some areas.
- For regional level cooperation, two workshops, one in Delhi in 2011 and one in Arunachal Pradesh in 2015, were organised. In these workshops, Black-necked Crane experts from India and Bhutan participated.

- A side event highlighting the conservation issues related to Black-necked Cranes in India was organised at CMS COP 10 in Norway.
- A recommendation was developed for India's national action plan to protect breeding sites of Black-necked Cranes as important locations within the Central Asian Flyway.

4. RSPN's and ICF's Conservation Measures in Bhutan, Additional Co-operation with NABU International and Crane Conservation Germany

From the estimated global population of 13,500, about 600 BNCs migrate to several valleys in Bhutan every winter between October and December. There are four major wintering sites in Bhutan: Phobjikha and Khotokha in the west, Bumthang in the country's centre and Bumdeling in the east. Among these three, the Phobjikha valley in the Wangduephodrang district receives the highest number of BNCs each winter (437 individuals 2018-2019), followed by Bumdeling in the Trashiyangtse district (119 in 2018-2019). The Royal Government of Bhutan declared the Bumdeling Wildlife Sanctuary in 1994 to primarily protect the eastern population of Black-necked Cranes in Bhutan. Bird counting at the Royal Society for Protection of Nature since 1986 shows an increasing trend in the wintering population of Black-necked Cranes (from 370 in 1986 to 626 in 2018) in Bhutan. However, some of the historic habitats like Paro and Bajo no longer host the wintering population due to habitat loss by developmental activities in these valleys.

Since 1987, RSPN has implemented a Black-necked Crane conservation program with a holistic approach using ecosystem-based solutions. Some of the conservation activities include community-based sustainable tourism, environmental and health activities, alternative energy, agro-ecological farming and community forest development. These conservation initiatives have helped engage local communities in managing important habitats for Black-necked Cranes. Since 1996 up to the present, ICF has been the major partner of the work on BNCs by RSPN in Bhutan. In 1998, the two organisations initiated the first crane festival in Phobjikha Valley, and ICF secured the continuation of the yearly event with the establishment of an endowment fund. Beyond ICF's further financial assistance in the establishment of RSPN's crane centre in the Phobjikha Valley to accommodate field staff and a robust visitor-public education program, RSPN's researchers have been supported by the ICF with trainings, and in some cases by earning graduate degrees in conservation biology in the United States and Australia. ICF and RSPN collaborated in the late 1990s and 2000s for the first telemetry studies and mapped the migration route from Bomdeling to north-central Tibet. Since 2011, the Ugyen Wangchuck Institute for Conservation and Environment Research (UWICER) has been engaged in BNC annual movement studies with the support from the Max Planck Institute for Animal Behaviour (MPI_ab) in Bhutan. Based on the 1998 telemetry study, in July of 2000, the ICF, RSPN and Bird Banding Centre, China organised a BNC banding expedition to the Shensa area, and colour-banded 19 BNC juveniles. In 2011, Crane Conservation Germany invited an RSPN member to a crane catching, banding, and conservation methods workshop in Germany. Since 2017, ICF has

provided substantial financial support for RSPN's crane conservation activities. In 2018, RSPN started an additional GPS crane-tagging studies project in cooperation with NABU International and Crane Conservation Germany funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The current projects in Bhutan aim to improve the data situation for wintering cranes. With this data, action and management plans can be created and improved in the future.

5. IUCN Black-necked Crane Conservation Strategy

The species assessment of the Black-necked Crane in IUCN's *Crane Conservation Strategy* was first developed by the ICF in 2012. The document contains the sections 'Distribution and Status of Key Sites Ecology', 'Numbers and Trends', 'Threats', 'Conservation and Research Efforts Underway', 'Change Since 1996', and 'Priorities for Conservation Action'. The draft document was translated into Chinese and published in the scientific journal *Zoological Research* in 2014. The draft was also presented at the Black-necked Crane Conservation Network meetings in China. Comments and suggestions were well received from the meeting participants and readers and incorporated into revisions, which will be officially published by IUCN/ICF by end of 2019 (Mirande CM, Harris JT, editors. 2019. *Crane Conservation Strategy*. Baraboo, Wisconsin, USA: International Crane Foundation. 452p).

The study's key priority actions guide the way for future conservation measures for the Black-necked Crane. Identified key priority actions include the following:

- Conduct long-term monitoring of cranes and wetlands in breeding areas with a focus on climate change, including at least one area not affected by glaciers and one area likely to be directly impacted by glacial melt and then by glacial shrinking;
- Conduct coordinated, range-wide counts in winter every five years;
- Strengthen networking among Range States and key sites to share information on threats and conservation responses;
- Promote strategies for using this flagship species to preserve fragile high-altitude wetland ecosystems and other biodiversity;
- Build capacity for resource managers, especially nature reserve staff;
- Conduct genetic studies within and among different populations, especially wintering populations which are separate on wintering grounds;
- Establish baseline information on chemical contaminants, including heavy metals and pesticides, to assess the impact of these factors on cranes, if any;
- Educate livestock herders about methods they can use to reduce disturbances to cranes and crane habitats;

- Ensure coordination among developmental and conservation agencies in the crane landscapes.

6. Recommendations for Range-wide Black-necked Crane Conservation

Research and conservation projects are being conducted in the entire range of the Black-necked Crane. The commitment of the named NGOs complements the conservation efforts of the Range States. At the same time, these activities are only made possible through the framework conditions and conservation efforts of the states. The authors therefore express their gratitude for the cooperation with the People's Republic of China, the Republic of India and the Kingdom of Bhutan. Special thanks are also due to the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety for their efforts in bringing together active researchers and conservationists of the Black-necked Crane and for their commitment to further potential actions under CMS. With regard to the presented key priority actions for the Black-necked Crane, it appears that only some of the tasks will be manageable in a state of separate international management. By bringing management together, synergies could be used in a strengthened cross-border network. A good structural basis for joint conservation strategies exists through the Black-necked Crane Conservation Network in China, in which crane conservationists from India and Bhutan also participate. Important further steps could be taken under CMS. With extra funding, the cooperation on Black-necked-Cranes could be expanded into an international partnership that harmonizes range-wide activities and contributes to the best potential outcome of conservation efforts. The organisations involved in the preparation of this informational document would therefore like to encourage dialogue for intensified joint cooperation on the Black-necked Crane. To discuss conservation issues and options for intensified cooperation, we would like to invite you to a joint side event on Black-necked Cranes at the CMS COP 13 in Gandhinagar which will be supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

