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International Crane Foundation, Baraboo, Wisconsin.
Contact: Claire Mirande, mirande@savingcranes.org



ILLEGAL TAKE INCLUDING HUNTING, TRAPPING, AND POISONING

Elena Ilyashenko¹ and Claire Mirande² (with input from Jane Austin, Elisabeth Condon, Oleg Goroshko, Ahmad Khan, Gary Krapu, Kerry Morrison, Sergei Smirenski, and Liying Su)

¹ *Crane Working Group of Eurasia / Severtsov's Institute of Ecology and Evolution Russian Academy of Science*, ² *International Crane Foundation*

Hunting and egg collecting are believed to be a major cause for the near extirpation of the Whooping Crane in North America, and hunting and trapping for the precipitous decline of the Western/Central Asian population of the Siberian Crane. Several species and regional populations suffer from illegal hunting, accidental shooting, and disturbance during legal waterfowl hunting as well as from trapping and poisoning. Because crane populations grow slowly, any mortalities, particularly of adult breeding birds, can pose a significant threat to the long-term survival of the species. Illegal take represents a significant threat for Siberian, Whooping, Red-crowned, White-naped, Hooded and Demoiselle Cranes and a lesser threat for Grey Crowned, Black Crowned, Blue, Wattled, and Eurasian Cranes.

Currently only abundant Sandhill Cranes are legally hunted and hunting is not a significant threat on the species level. Sandhill Cranes are a game species in fourteen states of the USA, two provinces in Canada and three states in Mexico (Kruse and Dubovsky 2015). Diverse governmental agencies and stakeholders use strong science and public awareness to manage well-controlled and sustainable hunting practices. However, overhunting poses a potential risk to some populations (see details in Sandhill Crane species assessment). Although legally protected the migratory subspecies *G. g. canadensis* are hunted for subsistence in Russia (Krapu and Brandt 2010). In the United States where Sandhill Cranes are hunted, cases of the incidental shooting of the Endangered Whooping Cranes have occurred on wintering grounds in Texas and along migration corridor (Kansas, South Dakota, North Dakota, and Oklahoma). Research on mortality of the only wild self-sustaining Aransas-Wood Buffalo population from 1950 to 2009 indicated that 20% (n=10) of 50 recovered carcasses were killed by shooting (Stehn and Haralson-Strobel, 2014). There are currently 27 known shooting incidents since the 1967 listing of the Whooping Crane as a Federally Endangered Species (Condon et al. in press). Nature conservation agencies in Texas and Kansas have adopted a variety of strategies to address this problem while continuing to allow hunting of Sandhill Cranes (Linam et al. 2008). They include hunter education and issuing of licenses only after hunters pass an online certification test which includes background information about Whooping Crane conservation. In Texas hunting seasons for Sandhill Cranes are delayed until most Whooping Cranes have migrated through the Sandhill Crane hunting zones. Kansas agencies elected to start shooting hours at sunrise one-half hour later than federal requirements, thus providing better visibility for proper species identification to avoid mistaken shooting of Whooping Cranes. Both Kansas and Texas close selected areas for hunting to protect Whooping Cranes. From 2010–2015 there were fourteen documented Whooping Crane shootings with shootings currently accounting for 19% of known adult mortality in the reintroduced population in the eastern United States (Harrel and Bidwell 2014). A few were killed because they were mistaken for legally-

hunted species, but most appear to have been killed in acts of vandalism. A total of 27 known shooting incidents from accidental shootings and vandalism have been reported since 1967 when the Whooping Crane was listed as a Federally Endangered Species (Condon, in preparation). In 2015 ICF initiated a *Keeping Whooping Cranes Safe* program to reduce human-caused mortality of Whooping Cranes with four objectives: create communities that care, involve citizen “Whooper Watchers” for protection, eliminate accidental shootings, and increase negative consequences for shooting a Whooping Crane (file:///C:/Users/econdon/Downloads/2016V42N2_Bugle.pdf).

Illegal hunting is a significant threat to migratory cranes in West/Central Asia where three species are affected: Siberian, Eurasian, and Demoiselle Cranes. Regulation of hunting practices varies significantly between countries in the region, but in general, hunting legislation is weaker than in more developed regions, resources for enforcement are less available, and hunters generally lack any kind of systematic education regarding gun safety, quarry identification of protected species and wildlife management. There is also a lack of consistency between countries in the region in terms of the scientific and rational basis for the management of hunting, especially in relation to the management of waterbird populations. Political decisions supersede management authority’s decision on hunting seasons and permits (Khan 2004). This gives rise to unsustainable hunting practices which can impact regional waterbird populations. In Russia, cranes have been under legal protection for decades but these laws have never been strictly enforced. In 2000–2010, hunters became much better equipped with modern weaponry, while their knowledge and environmental ethics declined. Numbers of Eurasian and Demoiselle Cranes known to be illegally hunted escalated in this region after the USSR collapse, especially in Azerbaijan (E. Sultanov, personal comm. 2004), Kazakhstan (Bragin 2014), and Uzbekistan (Mitropolsky 2011). In addition, sports hunting by urban and overseas visitors with varying degrees of commercialization is gaining popularity as international travel becomes more accessible and affordable, especially in private game areas.

Along migration routes crane hunting and trapping have deep-rooted traditions in the cultures of Afghanistan and Pakistan involving a variety of hunting and trapping techniques (Perveen & Khan 2010). These practices were formerly widespread in these countries, and are believed to be a primary cause for the decline of the Siberian Crane population. Hunting and live trapping of Eurasian and Demoiselle Cranes for food, keeping in captivity as pets, and sale is a significant part of rural livelihoods. Recently hunting and trapping were made illegal in all areas in these two countries. However uncontrolled hunting and trapping with nets and nooses still occurs, especially in Khyber Pakhtunkhwa province of Pakistan and the tribal areas where it is difficult to control (Khan 2004). The ban on hunting, if not strictly implement, may spread as far as to Wasta Lake in Balochistan, a recently discovered potential staging site for Eurasian and Demoiselle Cranes (GeoTV 2013). For instance, cases of Eurasian Crane harvests, using nets in reed beds at roosting sites in the Amudaria River Valley in Afghanistan are unofficially reported (A. Sorokin, personal comm. 2011).

On the wintering grounds of the Siberian Crane in Mazandaran Province of Iran, gun shooting of waterfowl is strictly prohibited during the traditional waterfowl trapping season, which is an important livelihood in winter. Near the end of the wintering season, just before spring migration, Siberian Cranes become more vulnerable, as the number of waterfowl decreases and local people harvest ducks and geese using guns. To address this threat, the Department of the Environment has officially established a Non-Shooting Area in Fereydoonkenar (Sadeghi Zadegan 2011). A *Western/Central Asian Site Network for the Siberian Crane and Other Waterbirds* was launched in 2007 under Convention on Migratory Species (CMS) for strengthening species and habitat protection at key sites along Western/Central Asian Flyways. This effort was closely linked the broader Central Asian Flyway initiative for migratory waterbirds led by Wetlands International (www.wetlands.org). Siberian, Eurasian, and Demoiselle Cranes, as well as other waterbirds including endangered and vulnerable species use these flyways. In 2012 and 2014 projects on hunting regulation and hunter education was conducted in Russia, Kazakhstan, Turkmenistan, Uzbekistan, Afghanistan, and Pakistan with support from the Mohammed bin Zayed Species Conservation Fund. Guidelines on captive breeding of cranes were published in Pakistan aimed to increase breeding success

which aimed to decrease crane capture from the wild. Investigation of poaching cases in Kazakhstan and Uzbekistan indicated a decrease in illegal hunting due to mass education targeted to different target audiences including hunters (Mitropolsky 2011, Bragin 2014).

Cases of illegal hunting of Eurasian Cranes increased along the Baltic-Hungarian Flyway in the Balkan region: in Albania, Bosnia-Herzegovina, Croatia, and Montenegro (Stumberger and Schneider-Jacoby 2013). Illegal hunting and legal waterfowl hunting led to rapid decline of the Transcaucasia Eurasian Crane (*G. g. archibaldi*) in Turkey and Armenia due to disturbance and accidental or deliberate shooting affected breeding productivity (Ilyashenko et al. 2008, Akarsu et al. 2013).

Red-crowned and White-naped Cranes are threatened by illegal hunting during both spring and autumn migrations in the Russian Far East, Transbaikalia, and Yakutia. Uncontrolled waterfowl hunting led to an increasing number of cases of illegal hunting of cranes that now occur almost every year during hunting seasons, for example, in Khanka Lake in the Russian Far East where spring hunting is traditional (Sergei Surmach, personal comm. 2010). In southern Yakutia the Eurasian Crane flyway goes through places with traditional waterfowl hunting, therefore illegal hunting is a significant threat for this population, while poaching cases for Siberian and Hooded Cranes are very rare (Degtyarev 2011).

On the breeding grounds of Red-crowned and White-naped Cranes in the Russian Far East, cases of crane poaching are rare, for example in the Primorsky Region (Surmach 2005) and in Transbaikalia (Goroshko 2007). In most cases, cranes become unintentional victims of incorrect identification. The major contributor to disturbance and accidental shooting of cranes in these regions is associated with legal spring hunting of waterbirds. The hunting season opens after cranes begin breeding. Disturbance from shooting and human activity results in cranes losing most of their clutches and having extremely low or no breeding success outside the protected territories (Smirenski and Smirenski 2010, Goroshko 2015). In addition, gun shots and cigarettes from hunters caused widespread fires affecting crane habitats. Spring hunting is a particular issue in Russia, causing concern due to high impact on breeding waterbird populations. Efforts to control spring hunting in some regions of Russia have met with strong opposition. Therefore, there is a need to promote a scientifically based rationale for managing waterbird populations including consideration of population trends and prevailing environmental conditions.

Considerable hunting pressure exists in African countries. In Namibia, illegal and unsustainable hunting of Blue Cranes for both meat and traditional medicinal uses is considered a major threat when the birds leave the confines of the Etosha National Park during the winter months (Ntinda et al. 2012). The targeting of Blue Cranes is an added stress which this small isolated population probably cannot sustain, and at the present rate this practice is expected to contribute to the disappearance of the cranes in Namibia. Illegal hunting of Black Crowned, Grey Crowned, and Wattled Cranes occurs for both for food and for traditional purposes, which includes healing and practices that promote a particular behavior / outcome, such as monogamous relationships (Williams et al. 2003, Morrison and van der Spuy 2006, Morrison 2009).

In China illegal hunting is not a significant problem due to strong gun control laws. However, Red-crowned, Hooded, White-naped, and Siberian Cranes become victims to snares illegally set on their wintering grounds by duck and goose hunters (Su Liying, personal comm. 2016). Some cranes may escape with an injured leg or the snare dangling behind.

Eggs or adults also may be intentionally taken for food. For example, eggs and chicks of Sarus Cranes in south-central Nepal are taken for food (Aryal et al. 2009). Nest destruction and taking of eggs or chicks is a greatest threat in paddy systems where cranes nest in close proximity to agricultural fields, often in crop fields (Borad et al. 2002, Sundar 2017). Conflicts between farmers and Sarus Cranes in paddy agrosystems are a likely cause of population decline for this species in the Kheda district of Gujarat, India (Borad et al. 2002). Improving community awareness and protection of breeding cranes can ameliorate such threats to crane populations. For example, protection of nests and eggs following the establishment of the Longbao National Nature Reserve in the Qinhai Province, China in 1986 was one of the main factors contributing to the quadrupling of the summer population of adult Black-necked Cranes (Farrington and Xiulei 2013).

Illegal take from poisoning, both intentional and unintentional, is a significant threat especially in countries where hunting is prohibited or guns are not affordable for poor people (see also Unintentional and intentional poisoning or harassment of cranes related to agriculture). Intentional poisoning is the primary way that poachers take wintering cranes (Lin 2005, Su and Zhou 2012). Agrochemicals have been used in bait for illegal harvest of other birds and resulted in cranes deaths. For example, 37 White-naped Cranes and 11 Hooded Cranes were killed in Korea after consuming rice grains soaked in phosphamidon intended for illegal harvest of wild ducks (Kwon et al. 2004). On the breeding grounds of Blue and Wattled Cranes intentional poisoning has decreased dramatically over the last two decades, while data is limited informal reports indicate that incidents of poisoning are still occurring, primarily for food (Kerryn Morrison, personal comm. 2016). Unintentional poisoning usually occurs as a result of ingesting of or exposure to various pesticides (see details in threat section on Unintentional and intentional poisoning or harassment of cranes related to agriculture).

For all types of illegal take, there is concern on lack of data and challenges to document and address these potentially significant and politically sensitive threats.

SPECIES AND KEY LOCATIONS CURRENTLY MOST AT RISK

- Whooping Cranes on their traditional wintering grounds in coastal Texas, along the Central Flyway, along the eastern flyway, and in Louisiana where population has been reintroduced (accidental shooting and vandalism)
- Red-crowned and White-naped Cranes on their breeding grounds in the Russian Far East and Transbaikalia (disturbance from spring waterfowl hunting) and on migratory wintering grounds in China (snares)
- Siberian, Demoiselle, and Eurasian Cranes along Western/Central Flyway in Central Asia and Azerbaijan, and in Afghanistan and Pakistan ((illegal hunting, live trapping)
- Siberian, Eurasian, Demoiselle, Red-crowned, Hooded, and White-naped Cranes in Russia, China, and Mongolia (intentional and unintentional poisoning)

KEY RESEARCH AND MONITORING NEEDS

- Identify key areas and monitor levels of illegal take and legal hunting pressure on cranes and other waterbirds in North America, East Asia, Western/Central Asia, and African countries using tracking and monitoring, consultations with experts, interviews/questionnaires of hunters and local communities, and literature reviews
- Conduct studies on spring hunting to establish scientifically based waterbird population management practices that consider population trends and prevailing environmental conditions
- Investigate cases and reasons for crane trapping and poisoning to develop scientifically based conservation measures to mitigate these threats
- Conduct study to estimate the impact of unintentional poisoning on threatened crane species and identify strategies using local actions on key sites and national laws and international treaties to minimize mortalities

HIGHEST PRIORITY CONSERVATION ACTIONS

- Strengthen, adapt, or enforce regulations for legal waterfowl hunting (change dates, close zones for hunting, conduct education activities) and advocate for strengthened enforcement by governments
- Reduce indirect disturbance to cranes associated with hunting of other species, especially spring hunting in Asia, through hunter education and collaboration with hunting agencies
- Raise awareness of potential hunters of existing laws and penalties (fines, jail time) for illegal hunting and develop additional deterrents (social pressure)

- Develop strong local crane hunting networks (crane working groups, legal hunting groups), involve in crane censuses, and use as respondents for surveys on identification of rare crane sightings and determination of threats from illegal hunting, trapping, and poisoning
- Apply African-Eurasian Migratory Waterbird Agreement (AEWA) guidelines on sustainable harvest of migratory waterbirds for the African-Eurasian flyway, and apply international experience (e.g. in the European Union and North America) on sustainable hunting practices
- Address illegal hunting of Siberian, Eurasian, and Demoiselle Cranes along Western/Central Asia flyway through coordinated international actions by implementing approaches under CMS Siberian Crane MoU conservation plans
- Create awareness within governmental agencies, educate hunters, and build capacity of management authorities to reduce pressure on cranes in Pakistan and Afghanistan

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