THE UNISON CALL

- Newsletter of the North American Crane Working Group -

Vol. 29 No. 1 Spring/Summer 2018

President's Report

A major activity of the NACWG during 2018 has been publication of the *Proceedings of the Fourteenth North American Crane Workshop*. That workshop was held in Chattanooga, Tennessee, in January 2017. The Proceedings, edited by Jane Austin and Richard Urbanek, is now available in both print and electronic (PDF) versions. The 172-page book includes 10 full papers and 8 brief communications as well as 43 abstracts of workshop presentations for which a paper was not published in this volume. The Proceedings can be ordered for $35 from www.nacwg.org or by contacting Barry Hartup at the International Crane Foundation. Registrants of Workshop 14 will receive a copy at no additional charge.

The next order of business will be planning Workshop 15 to be held in Lubbock, Texas, in January 2020. Texas Tech University will be hosting, with field trips to Muleshoe National Wildlife Refuge and local ranches. Stay tuned for more information. We hope that you will attend.

Sandhill Cranes at Muleshoe National Wildlife Refuge — Wyman Meinzer

Your Board of Directors welcomes your input. Let us know how we are doing and feel free to offer your suggestions on how we can further contribute to conservation of cranes in North America.

Richard P. Urbanek, New Lisbon, Wisconsin

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Announcements

2019 Yampa Valley Crane Festival

Save the dates for the 8th annual Yampa Valley Crane Festival: **August 29 – September 1, 2019**. The festival takes place in beautiful Steamboat Springs and Hayden, CO and will focus not only on the Rocky Mountain Greater Sandhill Cranes but also on the cranes of Africa. Kerryn Morrison, VP of International Programs for the International Crane Foundation and the longtime Manager of the African Crane Conservation Program for the ICF/Endangered Wildlife Trust Partnership will be the keynote speaker. Other festival activities include guided crane viewing sessions, nature and bird walks, documentary films, bird art, family activities, additional expert speakers, and more. The complete schedule will be available in spring at www.coloradocranes.org. Send questions to coloradocranes@gmail.com.

New Whooping Crane Book

Whooping Cranes: Biology and Conservation: A new book, edited by John French, Sarah Converse, and Jane Austin, summarizes current biological information on whooping cranes and provides the basis for future research necessary for conservation of the species. The book concentrates on work completed in the past 20 years in the area of whooping crane population biology, behavior, social structure, habitat use, disease and health, captive breeding, and conservation. For more information, visit https://www.elsevier.com/books/whooping-cranes-biology-and-conservation/nyhus/978-0-12-803555-9.

French, Jr., J.B., Converse, S.J., Austin, J.E., editors. 2018. Whooping Cranes: Biology and Con-servation. Biodiversity of the World: Conservation from Genes to Landscapes. Academic Press, San Diego, CA. 520pp.

Jeb Barzen Publications

Jeb Barzen has numerous crane projects and publications (many with full text available) listed on ResearchGate. Check them out — https://www.researchgate.net/profile/Jeb_Barzen/research

Editor's Note

My apologies for the tardiness of this issue. Indeed, it won't be too long before the next newsletter is in the works. Thanks to all who sent contributions for this issue, which has a decided (but unplanned) international *flavour*. Featured in this newsletter is an in-depth article by Riley Parrott of White Oak Conservation, the backstory to a Romeo & Juliet-like pair of Whooping Cranes, *16-11* and aptly named *Hemlock* (pages 3-6). Hillary Thompson's EMP update provides additional details on these star-crossed cranes (pages 12-13).

As a reminder, be sure to use **nysquirrel1@gmail.com** to contact me by email. If you use my old address (~~dshender@optonline.net~~) I won't receive your email. — Daryl Henderson

The Unison Call is a forum to share updates, news and opinions. It is published twice yearly (spring/summer and fall/winter) by the **North American Crane Working Group**, a 501(c)(3) non-profit organization incorporated in Wisconsin. Both print and electronic (PDF) versions are produced; PDFs of past issues of the newsletter can be downloaded free of charge from our website (**www.nacwg.org**). **The views expressed in *The Unison Call* are those of the individual authors and do not necessarily represent the positions of NACWG.** Comments and contributions are always welcome.

The Re-pairing and Successful Breeding of a Wild Migratory Whooping Crane within Managed Care — a Case Study at White Oak Conservation in Florida

Riley Parrott, White Oak Conservation Foundation, Yulee, Florida

Through decades of dedicated research and captive husbandry, the endangered whooping crane has been kept from the brink of extinction due in large part to the breeding and reintroduction of captive birds into their historic range. While survival of the adult birds has been relatively successful, chick recruitment is a rarity in the migratory Eastern Population and other experimental release programs. In 2015, 16-11, a male whooping crane hatched in 2011 at the International Crane Foundation and released into the wild as a hatch-year juvenile, paired with another bird, sired offspring, and reared a chick successfully in the wild. Unfortunately, 16-11 found his mate among a flock of greater sandhill cranes, and their progeny was a hybrid. The US Fish and Wildlife Service captured 16-11's offspring in 2015 and then 16-11 in 2016, hoping to find a more appropriate mate for the male whooping crane. Researchers selected Hemlock, a breeding-age whooping crane female born at ICF in 2012, for pairing introductions with 16-11. With the match decided, the two birds were transported from the International Crane Foundation and Horicon Marsh in Wisconsin in 2016 to White Oak Conservation in Florida, where they would be paired and conditioned for release back into the wild.

The introduction of 16-11 and Hemlock began at White Oak Conservation in October of 2016. Throughout their roughly two-year stint in managed care, the two whooping cranes were housed in Flight Pen 3 and 4 (FP 3/4), an isolated set of enclosures that could be split into two equal areas for pair introduction and possible separation. In each pen, there was a pond with a nest island to promote natural roosting, nesting, and foraging behavior. A remote camera system and trap doors built into the capture barn allowed for daily servicing and observation of the birds without human contact, and in order to promote handling in a safe, low-stress environment, a blind alley and dark capture barn were used to catch up the birds for veterinary exams and transport.

Seeking to create the greatest chance for pairing success, White Oak introduced these two whooping cranes in a series of stages designed to ensure the safety and positive receptivity of both animals. Beginning with visual access only, the potential pair reached behavioral milestones such as run flapping and dancing in synchrony through the chain-link fence. In the next stage, the pair was given full access to each other in FP 3 on 31 October 2016 for one hour. The time allocated for introduction increased over the next few weeks until they were left together for an entire day on 12 November. Hemlock and 16-11 remained tightly bonded throughout the introduction process and were observed dancing, moving in synchrony, and unison calling. Finally, on 7 December, the pair was left together overnight with full access to FP 3/4.

The first breeding season between this pair showed further affirmation of a successful pairing, with elaborate pair dancing, precopulatory positioning from female, and unison and contact vocalizations from both birds. In 2017, copulation was observed from early spring until 8 May, usually taking place in the early morning and occurring roughly every other day. Nesting behavior was seen from both the male and the female in FP 4 during the period of copulation, especially around the nest island, but no eggs were laid, possibly due to Hemlock's inexperience in a pair. During the second breeding season, copulation occurred more than a month earlier than the previous year and resulted in the laying of two eggs, the first of which was found on 26 March 2018. As was observed the previous year, roosting and courtship behavior, including early-morning copulation, tended to occur in FP 3 while nest-building behavior occurred around the pond in FP 4. The first egg was laid sometime between the afternoon of 25 March and the morning of 26 March, and the second was presumably laid two days afterward. Due to the high vegetation around the nesting area, the eggs were not seen until 6 April when the female stood up to turn two eggs. Incubation was thorough by both parents. In the initial stages, the female incubated for large amounts of time, leaving the eggs only briefly to feed or drink from the pond. The male, on the other hand, was rarely seen on the eggs in the first week, though he was highly responsive to the female's behavior, immediately moving to the nest and standing to tend them while the female took her brief excursions off the nest. As time progressed, 16-11 was seen incubating during the day with greater and greater frequency and duration, especially during the afternoon. Inferences from video recording led keepers to believe Hemlock incubated overnight, due to the female being the one to leave the nest in the early morning. Even during the incubation period, the pair maintained their bond through courtship behavior. Each

morning at about 6:30 am, the male drew the female from the nest into FP 3, the pair danced, and then the female returned to the nest after about 20 minutes.

Nearing the hatch date, keepers spent long periods observing 16-11 and Hemlock for signs of a chick. The female was still seen getting off the nest at first light, but the male was seen returning to incubate in the morning and incubating consistently throughout the afternoon. On 26 April 2018, the first chick (later determined to be a female) was found hatched around 7:00 am. The development of parental behavior in the adults was by degrees in the first few days. The male, who had successfully raised chicks before, displayed immediate parental competence with purring to the pipped egg, removal of egg shell from the nest once the chick had hatched, and careful leading of the chick to and away from the nest for brooding and foraging. The female was a novice at chick rearing and did have a few clumsy moments, such as stepping on and lightly mouthing the chick's head when it was near the nest. She was very attentive to the egg, however, and did successfully brood the first chick while still on the second egg. The second chick (later determined to be a male) was found hatched in the morning on 28 April. Both chicks were active, though it was obvious that the younger chick was weaker. The female spent time brooding both chicks, and when the older hatchling left the nest, one of the parents was always with her.

Adult whooping cranes tending to twins in pond (top) and brooding hatched/hatching chicks (bottom).
Photo credits — Stephanie Rutan, Mary Ellen Petraska

Although born roughly two days apart, the development of the twinned chicks was fairly equal and smooth. The first chick, having an extra two days to grow, very quickly gained the strength to follow adults while foraging, only stumbling in the tall grass from time to time. The second chick was left alone at the nest more often than the first chick at the same age, but he was mobile enough by the end of his first day to begin following the adults to the pond. By the younger chick's second day, the entire family group had ventured over into FP 3, where the parents foraged and fed the chicks. Conflict between the chicks was infrequent and mild. Whenever aggression was displayed, the adults separated the chicks quickly, sometimes unison calling afterwards. In order to decrease any negative competitive effects between the twinned chicks, mealworms with vitamin supplements were offered in or near the feed station multiple times a day. Hemlock had a higher tendency to feed provided insects to the chicks, while 16-11 was almost never seen feeding mealworms, instead preferring to offer wild forage to his offspring. Both chicks were soon eating on their own as well being fed by their parents, and as the chicks grew more competent, the insects provided by the keepers were weaned in order to encourage the increased consumption of natural forage.

Over the course of five months, the whooping crane chicks grew rapidly and well, learning to forage, preen, and fly on their own. In the last few weeks of their captivity, the family group could be seen flying laps around the flight pens, strengthening the flight muscles that they would need for release. The family group was also observed dancing together on a number of occasions. The adults would begin their dance in the FP 3 pond as usual, and the chicks mimicked their parents, bobbing their heads and spreading their wings out dramatical-

ly. All of these behaviors left the reintroduction team encouraged for the survivability of this group in the wild, and on 24 August 2018, all four whooping cranes were caught up and transported via private plane to Horicon National Wildlife Refuge in Wisconsin where they were released into the wild.

Loading whooping crane family into a plane in Florida for release in Wisconsin. Flight donated by Windway Capital Corporation.

Photo credit — Karen Meeks

Acclimation to managed care was a major component of behavioral observations in caring for 16-11. In order to reduce human impact and maintain wild behavior in the male whooping crane, daily observations and behavioral data were gathered and recorded using remote camera systems and peek holes from the enclosed capture barn. Evidence of maintained, wild behaviors was consistently documented during his nearly two years at White Oak, from his ability to incubate and raise chicks to his vigilance and predator-defense behaviors. 16-11 remained agitated by human presence and responded to keepers as a wild whooping crane would to predators, pacing, guard calling, and avoiding human interaction whenever possible. While any behavioral indication of potential stress is suboptimal, these behaviors also mark-ed a continued maintenance of wild behaviors, something essential for the future success of this bird and his family group in the wild.

Whooping crane family post-release at Horicon Marsh in Wisconsin.

Photo credit — Hillary Thompson

From her daily roosting habits to chick care and predator vigilance, Hemlock appeared to evolve in her behavior over her two years at White Oak, growing more like her mate and presumably more wild. When she first arrived at White Oak in October 2016, the female was observed roosting on her hocks in the grassy corners of her pen. In one of her earliest overnight introductions with 16-11, she was seen roosting in the FP 3 pond as a wild bird would. Hemlock also grew more vigilant and defensive while paired with 16-11, though this development took a great deal more time than her roosting adaptation. Even after a year at White Oak, the female was still consistently coming to the feeders if she heard human noise from the barn and making soft purring vocalizations indicative of a positive response. By early spring of 2018, she began to move away from human noise with the male, preferring to walk tightly with 16-11 in an alert posture. Initially, Hemlock also failed to stay vigilant while foraging, a crucial operation for survival in the wild. While the male kept his head up and alert to watch for predators, Hemlock was almost never seen taking over guard duty. As 2018 progressed, keepers observed an increase in her alertness and the early stages of this predator-vigilance behavior. Lastly, while the female's attention to her eggs was superior to her mate's, Hemlock's maternal instincts toward the hatched chicks came less naturally. Throughout the chicks' development, she became less clumsy around them and responded more readily to their calls, but these behaviors took time. Her defensive response regarding the chicks also shifted. During the chicks' first veterinary exam, the female mimicked the male's guard calls and flap jumping when keepers neared their offspring but was delayed in her response and did not appear to be moving aggressively toward the keepers. In subsequent exams, the female was markedly more aggressive toward humans, often charging, jumping, and kicking in an attempt to protect her chicks. Hemlock even began to perform the predator distraction display with 16-11, getting low in the grass with wings outstretched in order to draw a predator's attention.

The results of this novel experiment have been varied but ultimately encouraging. The re-pairing of a wild migratory crane in a captive setting was successful in every sense of the word, leading to not only increased wild behavior from the captive female but also the rearing of healthy, strong twin chicks to fledge, a rarity for captive breeding. Unfortunately, Hemlock was found deceased in a small copse of woods a month after her release. It appeared that she did not respond well to the new environment, and though she did not succumb to predation, she may have had difficulty foraging appropriately. Even with this setback, 16-11 and his two chicks have remained together as of early November and will hopefully migrate soon. One could speculate that as a fully mature bird, Hemlock's adaptation to captivity was possibly too great to overcome, and future re-pairing and release efforts may benefit from younger birds or single, adult mates also from the wild. Looking forward, this newly established technique may be utilized to help additional small endangered migratory crane populations rebound by maximizing pairing likelihood so that we can once again hear the bugling of these charismatic birds where it has fallen silent.

With thanks to Andrew Schumann (White Oak) and Anne Lacy (International Crane Foundation).

For further news on this crane family, see Hillary Thompson's report on pages 12-13. — Ed.

THE 6TH BLACK-NECKED CRANE CONSERVATION NETWORK MEETING HELD IN HUIZE NATIONAL NATURE RESERVE, YUNNAN PROVINCE OF SOUTHWESTERN CHINA

The 6th Black-necked Crane Network Meeting was held 11-13 December 2017 at Huize National Nature Reserve, Yunnan Province. The meeting was organized by the National Bird Banding Center of China, the Kunming Institute of Zoology of the Chinese Academy of Sciences, the International Crane Foundation, and the Yunnan Environmental Protection Agency of Yunnan Province and Huize National Nature Reserve. A total of 83 participants from 30 organizations attended the meeting. The 3-day event included two days of presentations and a one-day field trip to the Huize National Nature Reserve, which is a major wintering site of Black-necked Cranes. The presentations covered topics in research, habitat management, education, and migration. Participants discussed how to improve communication and cooperation among the network sites as well as with other networks, such as the East Asian-Australasian Flyway Partnership.

The meeting produced several highlights and concerns. Highlights included (1) presentations on applications of new technology in resource monitoring and reserve management; (2) reporting on the discovery of a large population of Black-necked Cranes wintering in Linzhi Prefecture, Tibet and its new migration route; (3) news that research and conservation capacity have increased (many young scientists and reserve managers presented their work at this meeting). While the global and regional populations of Black-necked Cranes are stable, there are serious concerns about emerging impacts on the cranes, such as transitioning away from traditional crop farming to new or alternative crops, increasing numbers of wild dogs, on-going or potential hydro-electric projects, tree plantations in wetlands, pressures from tourism, and disturbance from collecting of medicinal plants.

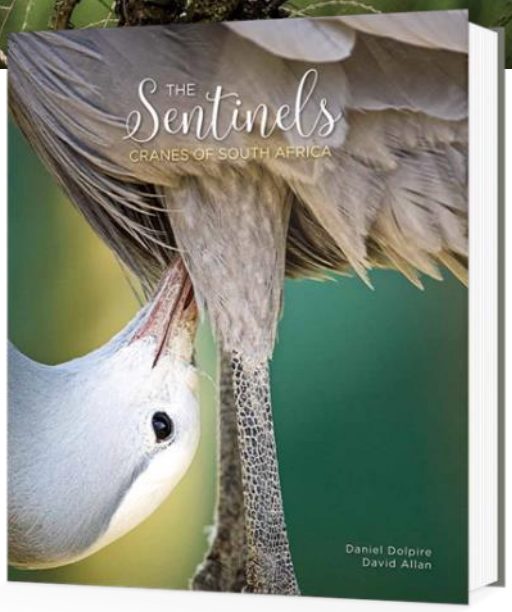
The Black-necked Crane Conservation Network was established in 2012 by the Kunming Institute of Zoology of the Chinese Academy of Sciences, the National Bird Banding Center of China, and the International Crane Foundation. The network aims to provide a platform for information exchange and sharing of research, monitoring, education and conservation of Black-necked Cranes and their habitats for the range provinces in China.

Li Fengshan, International Crane Foundation

the Sentinels

cranes of south africa

Photographs by Daniel Dolpire • Text by David Allan



In 2013, photographer Daniel Dolpire set off on a passion-driven odyssey that would consume the next five years of his life. *The Sentinels: Cranes of South Africa* is the culmination of that epic journey.

It is little wonder that cranes so captivated Daniel. They are some of the most stately and spectacular of all birds and their joyous and acrobatic dancing is simply breathtaking.

The Sentinels is a photographic festival celebrating the beauty and uniqueness of these remarkable birds. Daniel traveled through the heart of South Africa's 'crane country', meticulously documenting these birds in their natural habitat. Sharing with us timeless images of cranes at rest and in action as they go about their daily routines, he draws us deep into the private lives of these flagship species, even revealing intimate details of their nesting activities.

With text by ornithologist David Allan, *The Sentinels* provides an unmatched window into the allure and wonder of South Africa's cranes and the enchanting places they call home.

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Farmers as Stewards of Siberian Crane Habitat in Iran

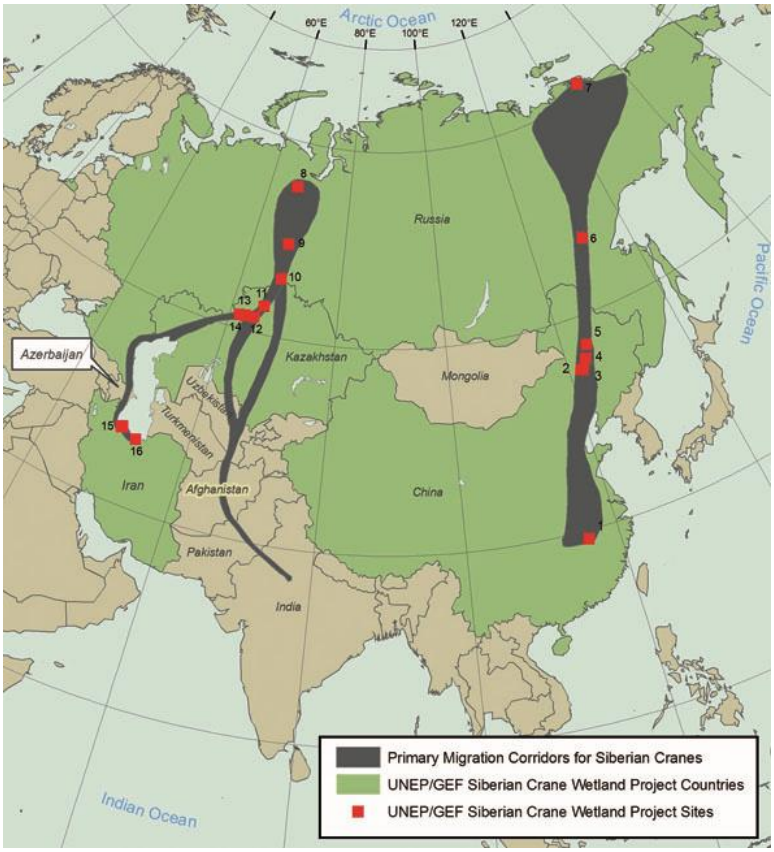
Lisa Pourlak, PhD candidate, Environmental Planning, Tehran University and member of the IUCN Crane Specialist Group

For more than a decade, a single Siberian Crane has been returning to its wintering grounds in Fereydunkenar, Iran, south of the Caspian Sea. The local farmers call him 'Omid', meaning 'hope' in Farsi. This lonely Siberian Crane is the remaining member of a flock of about 11 cranes which was first recorded in the same area in the mid-1970s by A. Ashtiani — a remnant of the historic western population of Siberian Cranes which bred in western Russia and wintered in Iran. Today, Omid has indeed become a symbol of hope for Fereydunkenar and its wetlands. The presence of the Siberian Crane each winter has helped protect these wetland habitats for millions of other migratory birds, some also endangered. In turn, the migratory birds benefit the local rice farmers by reducing their fertilizer costs and allowing traditional duck trapping, which has been practiced here for at least 300 years (Ahmadi, personal communication).

Omid at the Fereydunkenar Ramsar Site in November 2016.

Photo by Amir Memarzadeh

In 1998, a small crane conservation group, The Mazandaran Crane Conservation Association (MCCA), was formed in Iran with the support of Ellen Vuosalo Tavakoli (originally from Finland) and a few Iranian environmental conservationists. In 2000, this small group grew to include around 200 farmers/duck trappers, who joined the MCCA by investing in local trust funds to create additional monies for protecting the Damgahs. Damgahs are fields used for rice cultivation in summer and are inundated and managed by farmers/trappers to create unique wetland habitats for millions of migratory birds. In the face of rapid development and climate change, damgahs are becoming some of the last remaining freshwater wetlands in Iran, and therefore one of the few options left for wintering migratory birds. Additional funding for MCCA



Siberian Cranes are classified as Critically Endangered on the IUCN Red List, with approximately 3,600 remaining in the wild. Nearly all Siberian Cranes are now found in East Asia, where they breed in Siberia and winter in southeast China (Poyang Lake). The central population, which wintered in India, is now vanished. (map from https://www.cms.int/siberian-crane/en/page/siberian-crane-wetland-project)

projects has come from the Small Grants Program of the Global Environment Facility (Washington, DC) and the United Nations Development Program (2001-2004).

As a result of this initiative and through the efforts of the MCCA, local farmers/trappers became aware of the international importance of Siberian Cranes and, most significantly, they were recognized as "Guardians of the Cranes" by both Iran's Department of the Environment and conservation groups such as the International Crane Foundation. The area is now listed as both an Indigenous Community Conserved Area and a Ramsar Site.

Just days ago, on November 21, 2018, Omid once again returned to his Fereydunkenar damgah wintering ground, according to a news release from Ellen Vuosalo Tavakoli. This is a very late arrival, although close to last year's date of November 25. This autumn has been unusually warm and the migration of birds late. Historically, the mean date of Siberian Crane arrival in Iran has been November 2nd to 4th.

An initiative that remains to be tested is to release captively bred Siberian Cranes into the Fereydunkenar wetland so that they might learn the migration route from Omid. This initiative would need funding and technical support, which nowadays might be difficult to obtain due to US sanctions on Iran. Some work toward that goal was initiated in 2003 by an international effort catalyzed by the International Crane Foundation. Known as the Siberian Crane Wetland Project (SCWP) and co-funded by the Global Environment Facility, the seven-year project focused on protecting a network of wetlands in Eurasia that are of critical importance for migratory waterbirds, including the Siberian Crane (https://www.cms.int/siberian-crane/en/page/siberian-crane-wetland-project). However, all efforts for preserving the western population of Siberian Cranes died out once the SCWP ended. So, Omid has been flying between Iran and Russia all by himself for 10 years in a row!

Adapted (and expanded) from a lonely fly sheet tacked to a bulletin board at the International Ornithological Congress, Vancouver, BC, August 2018 — Ed.

An earlier version of this article is posted on the ICF website under the title "The Call of the Lonely Crane" (February 8, 2017) https://www.savingcranes.org/the-call-of-the-lonely-crane/

A guide for farmers and cranes to live together harmoniously is now available

BARABOO, WI -- Landscapes and regions important to cranes worldwide also are areas important to agriculture production. Cranes have had a close relationship with arable and pastoral agriculture that goes back hundreds and thousands of years. However, rapid changes in agriculture over the last 100 years have become a key threat and an opportunity to the world's cranes.

"Agriculture is involved in nine of the 19 threats to cranes identified in the 2018 International Union for Conservation of Nature Species Survival Commission (IUCN/SSC) Crane Conservation Plan, affecting all 15 species in some way," said Kerryn Morrison, Vice President International - Africa of the International Crane Foundation and Chair of the IUCN SSC Crane Specialist Group. "Crane species most closely reliant on wetlands are the most threatened, whereas those more associated with grasslands are less threatened and have better adapted to open, productive landscapes."

Among the top threats to cranes are loss of wetland and grassland habitats, altered hydrology from dams and water diversions, and changes in agricultural practices. Indirect threats related to agriculture include poisons and power line collisions. As human populations and agricultural demands have expanded and intensified, conflicts between cranes and farmers have become more severe. However, some populations have benefited from agricultural foods, lands and practices, and most crane species have adapted to using agricultural lands and crops in some way.

The need to share information via a publication that outlines how cranes can live harmoniously on agricultural landscapes with farmers and agricultural producers served as the impetus for a group of researchers and specialists to create the publication, "Cranes and Agriculture: A Global Guide for Sharing the Landscapes."

In a 2010 "Cranes, Agriculture and Climate Change" workshop of the IUCN Crane Specialist Group at Muraviovka Park in Russia, participants from 13 countries and five continents identified the need for a resource that synthesized information about the crane/agriculture interface that could help guide conservationists and other stakeholders. This guide gathers published information and personal accounts and experiences from around the globe.

"Cranes and Agriculture" outlines the life history and feeding ecology of cranes as they relate to both natural habitats and agricultural lands. It explores the patterns and drivers of agricultural development and change over the last 100 years and explains how crane populations have responded. The guide examines the interaction between cranes and domestic animals. It describes the various direct and indirect threats that the crane/ agriculture interface poses to cranes.

The guide also reviews the methodologies currently used to mitigate for human/wildlife conflicts that arise as a result of this interface; walks through the situation from a farmer's perspective; and provides ideas for programs that either mitigate for conflicts that arise, or make use of opportunities provided by the crane/ agriculture interface. In addition, 18 case studies from 13 countries provide examples of issues discussed in the chapters.

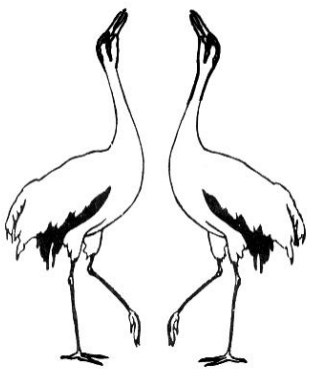
This guide is intended as a first step in sharing knowledge and experiences of the crane/ agriculture nexus from a diversity of situations, landscapes, flyways and species, to find and disseminate ways to sustainably balance the needs of cranes and agriculture.

Most importantly, the publication includes a call to action, to promote harmony between cranes and agriculture worldwide.

"On one side of this harmonious balance, we know that food production will need to increase by about 70% by 2050 to cope with human population increases, which in turn will increase competition between humans and wildlife for land and water resources," explained Morrison. "On the other side is our concern that the greatest threats to cranes worldwide are related to agricultural activities."

Information within the publication recognizes that alternative methods to reduce conflicts between cranes and farmers are available, ranging from relatively simple, inexpensive disturbance methods to changes in land use at a landscape scale.

This 306-page publication is free online at https://www.savingcranes.org/wp-content/uploads/2018/10/cranes_and_agriculture_web_2018.pdf. Pre-ordered printed copies are $30 by contacting Elena Smirenski (elena@savingcranes.org)



Regional Reports

Summary of Aransas—Wood Buffalo Whooping Crane Surveys for 2014-2018

	2014	2015	2016	2017	2018
No. of nests detected at WBNP (May)	82	68	78	98†	87
No. of fledged chicks detected (August)	32*	23	45**	63***	24
Average no. of chicks per nest#	0.39	0.34	0.57	0.64	0.28
Additional territorial pairs (non-nesters)	43	20-24	18	?	?
Estimated no. of birds at Aransas NWR in the primary survey area‡	308 95% CI 267-350 (early winter survey, Cessna)	329 95% CI 293-371 (early winter survey, Cessna)	431 95% CI 371-493 (early winter survey, Kodiak)	—	
	—	463 95% CI 392-549 (late winter survey, Kodiak)	489 95% CI 428-555 (late winter survey, Kodiak)	505 95% CI 439-576 (late winter survey, Kodiak)	
Estimated no. of juveniles at Aransas NWR	39 95% CI 33-46	38 95% CI 33-43	50 95% CI 36-61	49 95% CI 42-58	

†Most nests ever recorded. *Two families with twins; **one family with twins; ***four families with twins.

#20-year average is 0.48 chicks per nest.

‡Aerial surveys conducted later in winter and using a Kodiak aircraft (with improved ground viewing compared to the Cessna) were found to give higher estimates of crane numbers.

Wood Buffalo National Park (WBNP) 2014 data are from *Northern Journal* (norj.ca), Sept. 1, 2014, quoting Mark Bidwell; WBNP 2015 data are from Bidwell and Conkin (March 2016), *Recovery and Ecology of Whooping Cranes: Monitoring of the Aransas-Wood Buffalo Population during the Breeding Season 2015 Report*; WBNP 2016 data are preliminary results from the Canadian Wildlife Service, with thanks to Mark Bidwell; 2017 nest survey data are from Mike Keizer, Parks Canada; 2017 fledgling data are from CBC News, August 16, 2017 (www.cbc.ca/news); 2018 data are from an article posted by Cabin Radio, Yellowknife, NWT, September 7, 2018 (https://cabinradio.ca), citing Rhona Kindopp, Parks Canada; Aransas NWR winter data are from 'Whooping Crane Updates' at the ANWR website.

Update on the Eastern Migratory Population of Whooping Cranes

Hillary Thompson, North America Program Crane Analyst, International Crane Foundation

Current population size and status

As of November 2018, there are an estimated 102 (46 F, 53 M, 3 U) Whooping Cranes in the Eastern Migratory Population. As of 1 November, around 54 Whooping Cranes are in Wisconsin, 3 in Michigan, 9 in Illinois, 13 in Indiana, 2 in Kentucky, and 1 in Alabama. The remaining birds' locations have not been confirmed in the last month or two. Fall migration has begun, and many Whooping Cranes have already arrived on their wintering grounds.

Nesting Season

This year we had at least ten chicks hatch from 7 of 23 total nests in Wisconsin. In total, we had 18 first nests and 5 re-nests. One egg was pulled from each of four nests at Necedah National Wildlife Refuge (NNWR), as an effort to supplement captive breeding for this year's release cohort, and increase chick survival. Chicks hatched from 5 first nests and 2 re-nests (not including the two unknown first nests). Of the 10 known chicks that hatched in the wild, 6 of those chicks fledged, 5 of which are currently alive.

W5-18 with parents W3-10 and 8-04 at Necedah National Wildlife Refuge.

Photo credit: Hillary Thompson

W1-18 (F) hatched in early May to parents 12-11 and 5-11 in Juneau Co, WI. This is their first chick to survive to fledging. This family group has not yet migrated, but W1-18 has been banded and is doing well.

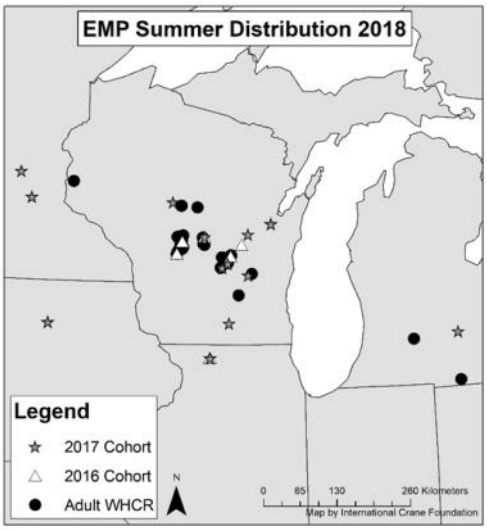
W3-18 (F) hatched in late May to parents 24-09 and 42-09 in Adams Co, WI. This pair fledged their first chick in 2017 (W3-17), who is still alive and spent the summer nearby, also in Adams Co. This family group has not yet migrated, but W3-18 has been banded and is doing well. We expect them to migrate to their normal wintering area in Kentucky this fall.

W5-18 (M) also hatched in late May, to parents W3-10 and 8-04 at NNWR in Juneau Co. W5-18 is this pair's first chick to fledge and is also **the first offspring of a wild-hatched parent to fledge, making him our first second-generation wild-hatched Whooping Crane!** During the summer, researchers at NNWR found a transmitter patch with feathers attached that had been glued to W5-18, right around the time the family group went missing. We had assumed the pair had lost their chick, and were quite surprised to see them turn up with a fledged colt in the fall! This family group has already migrated to Indiana, where they will likely spend the winter.

W6-18 (M) hatched in early June to parents 1-04 and 16-07 at NNWR. 1-04 had a chick with a previous mate in 2016 who fledged, but this is the first chick to fledge from this pair of cranes. W6-18 has been banded and the family group left their territory, but have not yet been seen further south.

W10-18 (U) hatched in late June to parents 4-08 and 23-10 at NNWR. This is also this pair's first chick to fledge. W10-18 has also been banded, and the family group has already reached its wintering grounds in Indiana.

Summer Distribution



During 2018, breeding pairs of Whooping Cranes nested in Juneau, Adams, St. Croix, Marathon, Marquette, and Green Lake Counties, Wisconsin. Approximately 80 Whooping Cranes spent the summer in Wisconsin. There were three cranes in Michigan (14-12, 68-15, and 72-17), however they were not together. Some of the 2017 cohort wandered into Minnesota (W7-17, 19 -17, and 25-17), and Iowa or Illinois (1-17, 2-17, and 8-17). Within Wisconsin, many birds were distributed across the central and eastern parts of the state (see map). We did not conduct any translocations of Whooping Cranes during summer 2018 who were outside of Wisconsin.

Releases of Whooping Cranes in Wisconsin

With fewer pairs of Whooping Cranes breeding in captivity this year, paired with the spring snow storm that prevented us from collecting eggs from nests in Wisconsin, we had very few juveniles to release during 2018. However, we did release two juveniles and two adults at Horicon in August, and two parent-reared juveniles at White River Marsh in October.

In 2015, 16_11 (M) nested with a Sandhill Crane at Horicon NWR in Dodge Co, WI. He was captured in spring 2016 and brought to a captive center in Florida, White Oak Conservation, with a captive female, 18_12 (Hemlock). 18_12 was slated to be released with the 2012 DAR cohort at Horicon, but had a health issue that kept her from being released in 2012. 16_11 and 18_12 paired in captivity, nested in 2018, and laid two eggs which both hatched. In August, Windway Capital Corp. flew the four Whooping Cranes from Florida to Wisconsin. They were all released at Horicon NWR on 25 August near 16_11's territory. As of early September, 16_11 (M) and 73_18 (F) were associating and 18_12 (F) and 74_18 (M) were associating, both in the same general area of their release site. They explored more of the marsh, roosted in appropriate habitat, and made it through some severe storms in the area. On 24 September, the carcass of 18_12 was collected and sent to the National Wildlife Health Center for necropsy and it appears her cause of death was emaciation. We are not sure why she was not foraging in appropriate habitat since she seemed to capture food items well in her natural habitat in captivity in Florida. 16_11, 73_18, and 74_18 are together at Horicon NWR, are doing well, and have not yet migrated.

16-11, 18-12, 73-18, and 74-18 after release at Horicon National Wildlife Refuge. Photo credit: Hillary Thompson

76_18 (F) was released at White River Marsh in Green Lake Co, WI, on 2 October. She moved around the area on her own for a week or so, and was seen with other Whooping Cranes. Her carcass was found on 12 October in the same field 30-16 (M) and 3 -17 (M) were seen. The cause of death is likely predation.

77_18 (M) was also released at White River Marsh, on 11 October. He associated with target pair 5-12 and 67-15 for a while, but is now with a group of Sandhill Cranes. He is still in Green Lake Co, and seems to be doing well.

Release of 77-18 at White River Marsh State Wildlife Area. Photo credit: Sabine Berzins

Louisiana Whooping Crane Update

Eva Szyszkoski, Louisiana Department of Wildlife and Fisheries

Reproduction summary – Thirteen nests by nine pairs were initiated in five parishes (Acadia, Allen, Avoyelles, Jefferson Davis and Vermilion) in central and southwestern Louisiana in 2018, the fifth year of nesting by the Louisiana flock. First nesting attempts were initiated in February (4), March (2), April (1) and May (2). Renesting attempts were initiated an average of 17 days after the first nest attempt was completed and occurred during April. The single third nesting attempt was initiated nine days after the failure of the pairs' second nesting attempt and occurred in early May.

Twenty-five confirmed eggs were produced from the 13 nest attempts. Of these, three hatched, 10 (five by one pair, five others by four pairs) contained no detectable embryo or evidence of development, and eight were fertile but died prior to hatch (either prior to collection or while in captivity). The remaining four eggs disappeared and could not be examined.

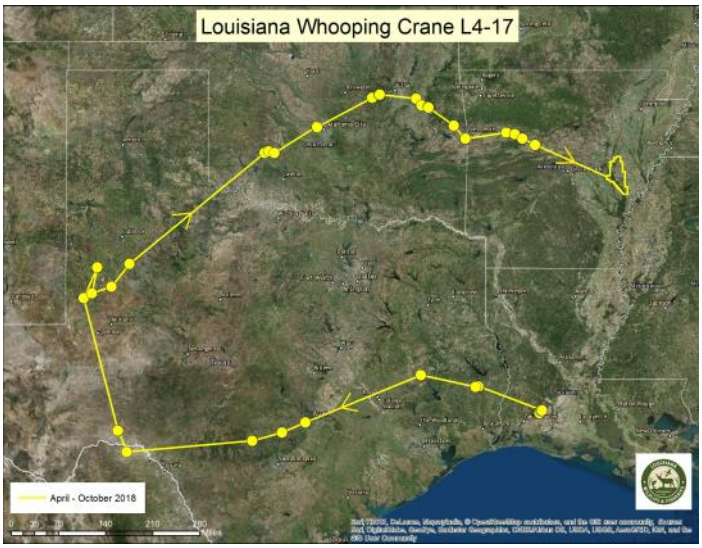
Use of data-logging eggs – Previous studies led by the Calgary Zoo have used data-logging eggs (Advanced Telemetry Systems, Inc.) to collect real-time incubation data in captive populations of Whooping Cranes. The eggs collect temperature and humidity readings, as well as positional rotation of the egg and are constructed to mimic real Whooping Crane eggs in both weight and appearance. After a pilot test with a single pair in 2017, we expanded the use of data-logging eggs in Louisiana nests in 2018, with the hope that data collected from the nest environment itself may help explain the high rate of embryo deaths documented in this population. Eggs were deployed into nests at the same time trail cameras were deployed. If a pair had two real eggs, one egg was removed and replaced with the data-logging egg. Eggs removed from nests were transported to the Freeport-McMoRan Audubon Species Survival Center in New Orleans for continued incubation. Data-logging eggs were deployed in four nests in 2018 for an average of 26.5 days and will continue to be used in future nests.

Wild-hatched chicks – Five chicks hatched to four pairs in 2018; three hatched naturally to their biological parents and two hatched from fertile eggs produced in captivity that were switched into wild nests. One of the captive-produced eggs hatched while still in captivity, so the newly hatched chick (less than two hours old) was placed in the nest. All five chicks were reared to fledging. Only one pair (L6-12 and L8-13) had previous parenting experience, having successfully hatched two chicks in 2016, rearing one of them to independence.

Male L1-13 and wild-hatched LW3-18 in Allen Parish, August 2018. Eva Szyszkoski/LDWF

Long distance movement – Female L4-17 moved from Louisiana into Texas on 1 May 2018. Data indicate that she crossed into the Mexican state of Coahuila while in flight on 6 May and she roosted ~18 miles north of the border in Terrell County, TX that night. She continued to move

within Texas until entering Oklahoma on 11 May and eventually settling for the summer in Wagoner County. She left Wagoner County in late September, moving generally southeast and was located in Monroe County, Arkansas as of 9 November. L4-17 had spent time in Alabama last winter after departing from the pen site shortly after release.



Mortalities – Mortalities from mid-March through early November included one yearling male and one adult male in Texas and one adult female and two adult males in Louisiana. Additionally, two long-term missing cranes (one male, one female) were removed from the population totals.

Current Population Size – As of 14 November 2018, the Louisiana non-migratory population consisted of a maximum of 63 cranes (28 males, 33 females and 2 unknown).

News Release: LDWF Receives 12 Juvenile Whooping Cranes at Rockefeller Wildlife Refuge

Nov. 20, 2018 – Louisiana's wild whooping crane population continues to grow as the Louisiana Department of Wildlife and Fisheries (LDWF) and partners work to re-establish a flourishing population to the Bayou State.

Twelve juvenile whooping cranes were received Monday (Nov. 19) at Rockefeller Wildlife Refuge near Grand Chenier. It will bring the Louisiana wild population to 75 once the new arrivals are released.

Of the new arrivals, 7 juvenile whooping cranes came from the International Crane Foundation and 5 cranes hatched at the Freeport-McMoRan Audubon Species Survival Center in New Orleans, part of the Audubon Nature Institute.

The 12 whooping cranes were placed into a holding pen at Rockefeller for observation as they acclimate to their new home. They're expected to be released from the release pen after several weeks.

One of 12 juvenile Whooping Cranes received by LDWF at Rockefeller Wildlife Refuge. http://www.wlf.louisiana.gov/news/42401

Lesser Sandhill Cranes, Annual Summary
Homer, Alaska, Summer 2018

By Kachemak Crane Watch

A Project of the Center for Alaskan Coastal Studies

As the fall colors spread a mantle of brilliant warm foliage across the hillsides, the last of Homer's Sandhill Cranes forage in small family groups with their later hatched colts and most of us wistfully savor the last moments with these iconic summer visitors.

Kachemak Crane Watch's three Citizen Science Count Days at the end of summer culminated Saturday September 8th with enthusiastic craniacs gathered at Beluga Slough counting cranes as they arrived between 6:30 p.m. and 9:30 p.m. Folks were not disappointed! Cranes arrived slowly at first, but then steadily dropped in, with evening sun transforming their soaring forms into golden, graceful gliders parachuting down, legs extended, wings arched to slow descent as they landed among the gathered flock already foraging, calling, dancing, and socializing. The grand finale this year was the 73 cranes that arrived just before the counters left for the evening. There is no way to know if that flock was our local cranes or ones that had flown in from further north on the Alaska Peninsula or even Siberia. Cranes gathering to roost for the night in Beluga Slough has been occurring for at least the past three years. For data on the counts at Beluga Slough the past two years, see the **Beluga Slough Count Days Table** at the end of this article.

Several callers reported sightings to Kachemak Crane Watch of many groups of hundreds flying in from across Cook Inlet, kettling up to catch the wind currents, then heading east toward the head of Kachemak Bay. Other observers lucky enough to be up in the Fox River Flats called to report thousands on the ground staging in the wetlands between September 8th and 10th. Most of the flocks flying to the head of the Bay came from the west side of Cook Inlet and flew over the North Fork area.

The 2018 nesting season was very successful overall. Reports of crane arrivals began on April 7th. This year, the overall fledging success rate was 76.2%, (63 colts hatched from 33 reported nests and 48 colts survived to fledging). That is a 13.2% increase over 2017. A few more nests were reported this year. In comparison to earlier years, the trend shows improvement in the numbers of young cranes surviving till fledging. The local crane population, based on the nesting success and reports throughout the summer, including the final three Count Days, indicate the population is at least stable or slightly increasing. More reports of cranes in new places were received this year than in past years.

Predation is still a factor in survival of colts. This year several were lost for unknown reasons and one nest was lost to eagles. However, one colt needlessly died as a result of a dog attack. Three loose dogs in a Skyline Drive neighborhood attacked the young colt, mangling and severing one of its legs, breaking the other, and taking chunks out of its breast. Once the extent of the colt's injuries was discovered, the colt was euthanized.

This year, cranes arriving in the Central Valley of California around the Sacramento area will find good winter habitat conditions. According to Dr. Gary Ivey, a leading crane expert, "Overall, water and habitat conditions are pretty normal in the Central Valley this year. There is plenty of water for their roost sites. Most of the fires are pretty much out or contained, and they weren't in areas where cranes winter. The biggest concern is the continued shift away from crane-compatible grain crops to permanent crops such as vineyards and orchards in the cranescapes, which at some point could cause major winter food shortages for cranes."

Bart McDermott, Refuge Manager of Stone Lakes NWR in Elk Grove, CA, elaborated, "One issue for the cranes has been a significant amount of land use conversion from grain and alfalfa for dairy farming and irrigated and dry pasture for grazing to walnut orchards over the past few years. Along some of the back roads east of the Refuge, many fields that used to be in wildlife-compatible crops are now trees. Fortunately, one of the larger dairys that supports cranes that roost at both Cosumnes and Stone Lakes is still in operation, with large fields of alfalfa and corn. We are collaborating with a few partners, including our Friends group, on ways to conserve some of the remaining farms in the area, either with conservation easements or other incentive programs, but it takes time and outreach."

McDermott also mentioned that they will continue conducting coordinated roost counts with all of the wetland managers in the Delta and San Joaquin Valley over the winter.

While in their wintering area, the colts will gain their red crowns and develop yellow eyes. Just when they get their adult voices is not completely clear. Dr. Gary Ivey says, "I still hear some chick calls in early April during migration north, near Burns, Oregon and Othello, Washington. As with their body feather molt, I suspect the timing of the voice change is

Clockwise from top left: An adult Sandhill Crane with its colt; two of this year's fledged colts; adult Sandhill Cranes at Inspiration Ridge Preserve; time to head south!

variable by individual, as some birds tend to molt and get their red crowns much earlier than others." It would be interesting to know if this summer's colts returning to Homer next spring with their families have their adult voices or still have their chick voices.

Citizen Scientists reporting breeding success and non-breeding flock numbers help Kachemak Crane Watch keep track of Homer's Sandhill Cranes population. Citizen Science and working with other crane groups like Save Our Sandhill Cranes in Sacramento and the International Crane Foundation help Kachemak Crane Watch gather and share information to educate people about cranes in both their summer and winter habitats. Sign up for our email list on the Kachemak Crane Watch website at www.cranewatch.org.

Beluga Slough Count Days						
Count Day	8/26/17	9/2/17	9/9/17	8/25/18	9/1/18	9/8/18
Colts	14	25	16	27	38	25
Adults	103	111	40	87	99	152
Total Cranes	117	136	56	114	137	177

This is an abridged version of a report provided by Nina Faust and Edgar Bailey — Ed.

Cranes in the News

Imperiled Birds Must Find New Nesting Spots

Patuxent center's research work to save Whooping Cranes is drawing to a close

When the nation's most treasured flyers have faced extinction over the past half-century – bald eagles, California condors, and the majestic whooping crane – scientists have studied how to save them from deep within thousands of acres of forests and wetlands along the Patuxent River just south of Howard County.

The crane has defined that work ever since a one-winged bird known as Canus, at the time one of fewer than 50 whooping cranes alive, helped establish the Patuxent Wildlife Research Center in 1966.

For decades, biologists at the center near Laurel, Maryland overcame whoopers' scarcity by dressing as cranes themselves, wearing costumes while rearing the birds. Through trial and error, they learned new ways around cranes' finicky reproductive capabilities, developing artificial insemination techniques and strategically stealing their eggs, a practice that coaxes them to lay even more.

…

[Over the years], each season's brood grew from a handful to as many as 20 or 30. Scott Hereford, a biologist and manager of the Patuxent crane flock in the late 1980s, said there was a sense among the scientists that they were building momentum.

"It was a very exciting time," said Hereford, now a senior biologist at Mississippi Sandhill Crane National Wildlife Refuge. "We knew we were part of something really special."

…

But the era of the whooping crane – and perhaps of any captive breeding of imperiled birds – is ending in Maryland.

Nearly half of the Patuxent whooping crane flock is being shipped to Louisiana, and 200 acres of whooping crane pens are expected to be empty by the end of the year.

The Trump administration moved last year to eliminate the $1.5 million-a-year breeding program, run by the U.S. Geological Survey on a federal Fish and Wildlife Service refuge. Zoos and other private wildlife centers are taking over the work.

The decision is a pivotal moment at the research center, where generations of scientists have dedicated their careers to the whooping crane's survival.

The center will remain open, but its focus will shift from breeding experiments to studies exploring the potential impacts of West Nile virus or offshore windfarms.

…

"We've been doing it for 50 years, but that itself isn't a reason to continue the program," said John French, director of the USGS Patuxent Center.

…

Some researchers worry the abrupt end to the Patuxent program could have lasting impacts on still perilously small whooping crane flocks.

Even slight disruptions can prevent them from successfully breeding – new pens surrounded by chain-link proved that once in the 1980s – so scientists expect it could take years before a new generation of cranes is born.

"It could end the Eastern migratory flock," said Joe Duff, co-founder of a recently abandoned 15-year effort to teach cranes to migrate using ultralight aircraft. That group of about 100 whooping cranes is one of only two migrating flocks, spending summers in Wisconsin and winters in Florida.

"They may not breed for another couple of years, if ever again," said Duff, CEO of Operation Migration. "Meanwhile, the Eastern migratory population was counting on those birds. The Louisiana flock was counting on those birds."

…

"It's very sad to see it wrap up," said Glenn Olsen, a veterinarian who has worked with Patuxent whoopers for three decades.

"In the current climate in Washington, a lot of our funding sources have dried up," meaning fewer opportunities to bring on graduate students or pursue field research, Olsen said.

…

Wade Harrell, whooping crane recovery coordinator for U.S. Fish and Wildlife, notes that cranes can live more than 30 years – giving the flock time to adjust. One facility in Florida [While Oak Conservation] that has adopted some of the Patuxent flock is putting the birds in larger enclosures with more natural water sources and vegetation, perhaps better replicating what they would experience in the wild, he said.

"It's a bit of a hurdle to get through," Harrell said of the move. "I think long-term we'll be fine, and we'll be back to where we are."

Excerpts from an article by Scott Dance, *The Baltimore Sun*. Published in *The Columbia Flier*, Thursday October 25, 2018. Thanks to Jane Austin for passing this one along. — Ed.

New Whooping Crane Breeding Facility Opens at the Smithsonian Conservation Biology Institute

Twelve Whooping Cranes moved to the Smithsonian Conservation Biology Institute (SCBI) December 16. It is the first time the 3,200-acre research facility dedicated to breeding and studying endangered species has been home to Whooping Cranes. The six mated pairs will be the founding members of SCBI's Whooping Crane research and breeding program. The chicks that the pairs hatch will be candidates for reintroduction to the wild.

"Since there are so few Whooping Cranes left, it's critical that every crane has an opportunity to breed and help create a self-sustaining population in zoos and breeding centers, like SCBI," said William Pitt, deputy director of SCBI. "We have the space for multiple breeding pairs of cranes and their chicks, and we are experts in breeding cranes. We hope to have the same success breeding [Whooping Cranes] as we have had with White-naped Cranes, Red-crowned Cranes and Hooded Cranes."

Ten of the birds arrived from the Patuxent Wildlife Research Center in Laurel, Maryland. The other two birds moved from the Smithsonian's National Zoo in Washington, DC. All of the birds were driven the approximately two hours to their new home in individual travel crates placed beside their mate's crate during the trip. At SCBI, each pair will live in outdoor enclosures 50 yards long by 16.5 yards wide. Each enclosure has two ponds, three water troughs and a small shelter for the cranes.

In addition to breeding cranes, SCBI studies their reproductive biology and endocrinology. Through their research, SCBI scientists have identified the components of a habitat that are necessary for Whooping Cranes in human care to successfully breed and raise chicks. They will also continue to study Whooping Crane hormones through blood and fecal samples to determine how they affect the birds' ability to lay fertile eggs. Those data combined with ultrasounds will help

scientists understand the relationship between hormones and how follicles in the ovary develop. Finally, scientists will also research more effective methods to cryopreserve Whooping Crane semen, which has proved challenging. If scientists can freeze semen, then it could be used to inject genetic diversity in the Whooping Crane population decades from now. That may be especially useful in the future because only 52 of 163 Whooping Cranes living in human care are consistently laying eggs.

The Whooping Crane Breeding Facility and research program were made possible by the Volgenau Foundation and an anonymous donor.

"It's very exciting to have four species of cranes living at SCBI now," said Chris Crowe, lead crane keeper. "Whooping Crane populations have been increasing, but the species still needs help recovering. It will be especially rewarding to grow our crane program and positively impact the wild population."

Although the cranes will require human assistance to breed, the pairs will raise their own chicks, or the chicks will be cross-fostered by an experienced pair.

…

SCBI plays a leading role in the Smithsonian's global efforts to save wildlife species from extinction and train future generations of conservationists. SCBI spearheads research programs at its headquarters in Front Royal, Virginia, the Smithsonian's National Zoo in Washington, DC, and at field research stations and training sites worldwide. SCBI scientists tackle some of today's most complex conservation challenges by applying and sharing what they learn about animal behavior and reproduction, ecology, genetics, migration and conservation sustainability.

Photos: Skip Brown, SCBI

Adapted from a Smithsonian news release (December 18, 2018): https://nationalzoo.si.edu/news/new-whooping-crane-breeding-facility-opens-smithsonian-conservation-biology-institute

Parks Canada Completes Wood Buffalo Crane Count

The numbers are in. This August, 24 whooping crane fledglings were counted in and around Wood Buffalo National Park.

Rhona Kindopp, manager of resource conservation with Parks Canada in Fort Smith, N.W.T ., said that while two dozen fledglings is a low number, "it's still within the natural range of variation that we would expect from this species."

Kindopp continued: "In some migratory bird species, productivity is influenced greatly by weather. This spring, in early June, we saw a significant increase in the amount of rain that we received locally."

Kindopp stressed the weather may be just one contributing factor. "Another factor could have been local predation cycles. In other words, there may have been a greater number of predators in the area than in previous years," she said.

Parks Canada conducts two aerial surveys of the endangered species each year – once in May, when they count the number of breeding pairs with eggs, and once in August, when they count the fledglings who are almost ready to fly to Texas for the winter months.

This spring, 87 nests with eggs were counted (up from the 86 originally reported in May following further examination of the data).

Excerpts from an article by Sarah Pruys, published September 7, 2018, at https://cabinradio.ca

A wonder to behold. Brian Johns submitted this photo of a large flock (>100 birds) of Whooping Cranes, part of a total of 151 birds (!) he observed on October 17, 2018 in fields near Marcelin, Saskatchewan (about 95 km north of Saskatoon). This total is approx. 30% of the entire Aransas-Wood Buffalo flock.

James Thomas Harris 1950-2018

Remembering Jim Harris – Champion for the Conservation of Cranes and Wetlands

"The haunting calls of the world's cranes are sadder today because they have lost a devoted friend, and the conservation community has lost a true hero." ~ Kenneth Strom, National Audubon Society

On September 19, 2018, we lost a dear friend and champion for the conservation of cranes and wetlands, Jim Harris.

In 1984, Jim joined the International Crane Foundation in Baraboo, Wisconsin, as the Director of Public Education. By the late 1980s, Jim served as Deputy Director, expanding our activities in Asia. In 2000, Jim became our second President, succeeding our Co-founder Dr. George Archibald. Under Jim's leadership, we were directly involved in 45 projects in 22 countries around the world. Six years later, Jim transitioned back to serve as director of our East Asia Program, while continuing as Vice-President. From 2006, he also oversaw our Africa Program, a post he held until just before his retirement in early 2018.

Jim was a journalist by training and an eloquent and prolific writer. He wrote lovely pieces detailing his experiences with people and cranes in Asia, featuring evocative descriptions of landscapes and their inhabitants.

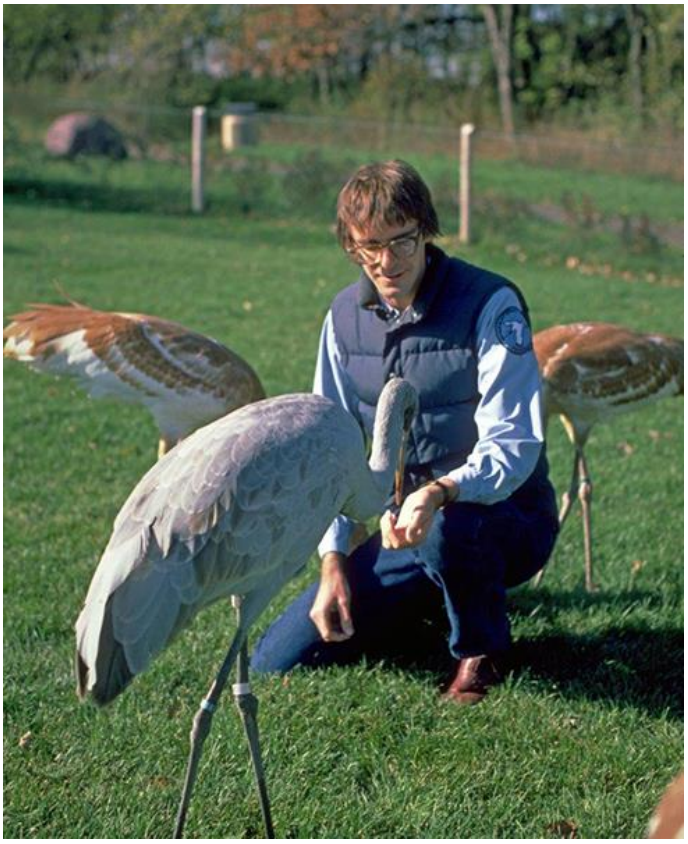
As Co-chair (1988-2008) and Chair of the International Union for the Conservation of Nature (IUCN) Crane Specialist Group (2008 to 2018), Jim's vision for cranes and their landscapes has always been global in scale. He adeptly integrated the expertise and passion of 350 members in over 50 countries. He led workshops and produced publications that changed the course of how we address complex crane challenges, such as agricultural land use and climate change. Jim brought diverse people together to find solutions to provide water for wetlands and cranes while balancing human needs. His contributions are culminating later this year with the publication of the much-anticipated *Crane Conservation Strategy* that engaged over 150 crane specialists in a review of the status and trends for all 15 crane species. A comprehensive assessment of 19 direct threats identifies research needs and priority actions for the next five years, with measurable actions linked to diverse partners.

Jim's dedication, along with his wife Dr. Su Liying, to the cranes and wetlands of China, Russia and beyond is well-known and greatly appreciated. He pioneered conservation work with a micro-lending program for

farmers in return for crane habitat conservation in China, introduced improved water management techniques as part of reserve management plans in Northeast China, promoted sound science as a basis for improved management, organized highly popular and effective international nature schools and camps and established monitoring networks.

Jim's infectious reverberating laugh, gentle smile and sense of humor radiated an energy, positivity and sense of hope to everyone around him. Jim's insights, critical thinking and recommendations were always constructive and valuable. His wise counsel was often sought by partners throughout the crane world, in part because Jim was always so supportive and giving of his time. An incredible mentor, guide and confidant, Jim leaves behind many people, all over the world, who have benefited, flourished and been inspired by his example.

Thank you, Jim, for decades of dedication and the legacy you have left for us all, to continue for the conservation of the world's cranes. Thank you for your unfailing friendship to so many around the world.



Courtesy of the International Crane Foundation — https://www.savingcranes.org/remembering-jim-harris-champion-for-the-conservation-of-cranes-and-wetlands/

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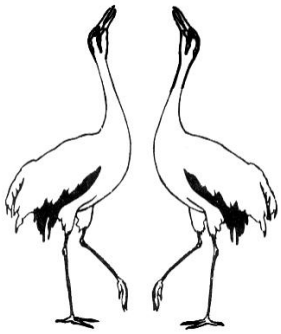
Barry Hartup, International Crane Foundation, PO Box 447, Baraboo, WI 53913, USA



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