THE UNISON CALL

- Newsletter of the North American Crane Working Group -

Vol. 29 No. 2

Fall 2018 — Fall 2019

President's Report

Sandhill Cranes at Muleshoe National Wildlife Refuge
Photo: Christena Stephens

The North American Crane Workshop is the key activity of the North American Crane Working Group. Workshop 15 will be held 8-11 January 2020 in Lubbock, Texas. NACWG is finalizing preparations, especially with the great job done by Dr. Blake Grisham and Kathy Brautigam, Texas Tech University, on local arrangements. Two days of presentations will include a Plenary session on Texas High Plains issues plus special Symposia on the past 10 years of research on the Aransas-Wood Buffalo whooping crane population, effects of telemetry and marking on cranes, and human dimensions of crane conservation. Overall, the science program includes 34 oral and 14 poster presentations (see pages 16-19). Two student travel awards have been granted. The Workshop will provide field trips to view wildlife and habitat management on nearby Muleshoe National Wildlife Refuge and a local ranch. An introductory social will include a Texas BBQ dinner and special presentations. Other activities include a silent auction, open business meeting to elect the Working Group Board and plan for the next workshop, and the concluding Banquet, highlighted by presentation of the Walkinshaw Award, our most prestigious recognition of merit. Registration is now open and along with more details can be found on our website at: http://www.nacwg.org/workshop15.html

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. We look forward to seeing you in Lubbock.

Richard P. Urbanek, New Lisbon, Wisconsin

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The 15th North American Crane Workshop
— *You are invited!*

The 15th North American Crane Workshop will be held **8-11 January 2020** in Lubbock, Texas, at the **Overton Hotel and Conference Center** (https://www.overtonhotel.com/) and **Texas Tech University**. The Workshop will include two full days of presentations and one day of field trips. Registration is now open (http://www.nacwg.org/workshop15.html).

The introductory social (Wednesday night), banquet meal (Friday night), and field trips (with lunch on Saturday) are included in the registration fee (Students — $150; All others — $300), as are 3 years of NACWG membership (2020-2022). The Wednesday evening social includes a Texas-style BBQ dinner catered by Bingham's Smokehouse, beer and wine from Triple J's, hosted at the National Ranching Heritage Center, and excellent shuttle accommodations will be provided to and from the hotel and NRHC. Room accommodations are not included in the registration fee, but a block of rooms has been reserved in the Overton at special rates. Those rates will also apply to the 3 days before and the 3 days after the Workshop, subject to availability at the time the room reservation is made. Please contact the hotel directly to arrange your accommodations.

Lubbock is located in the center of the Southern High Plains in Lubbock County. Lubbock has ~275,000 residents and is referred to as the "Hub City" due to its central role in education and health care on the Southern High Plains. Lubbock is a college town, and the foundation of the economy in the city is Texas Tech University. Texas Tech University is a non-land grant, public university founded in 1923 and has ~39,000 students across 9 colleges. The Southern High Plains is also home to ~80% of the overwintering Mid-Continent Population of sandhill cranes due to numerous saline lakes and playa wetlands.

The vast, arid grassland landscape of west Texas is punctuated by saline lakes such as Upper Goose Lake at Muleshoe National Wildlife Refuge. Photo: Wyman Meinzer

The University has a system of "Raider rooms" with state-of-the-art technology (large projectors & screens, touch screen systems, Microsoft Office 2016, large white boards, and plug-ins for laptops and other media) at room capacities holding 30-400 attendees. Given classes will not be in session during the Workshop, the hosts have coordinated with the University (and *Tier I*, the University catering service) to hold the Workshop in a Raider room with appropriate breaks and refreshments.

The field trips will be coordinated with USFWS Region 2. The first is to **Muleshoe National Wildlife Refuge**, which hosts >30,000 sandhill cranes in January. Muleshoe is the oldest national wildlife refuge in Texas and is a public trust due to the three saline lakes on the refuge, which are central to sandhill crane ecology on the Southern High Plains. Jude Smith, Refuge Manager of Muleshoe NWR, will lead the field trip and discuss the history, ecological importance, and threats to saline lakes on the Southern High Plains. Muleshoe also hosts numerous waterfowl, shorebirds, and songbirds in winter and supports one of the largest remaining tracts of short-grass prairie on the Southern High Plains. The second field trip will be to the privately owned **Weaver Ranch** near Causey, New Mexico, and will be guided by Dr. Blake Grisham. This trip will provide an up-close view of grassland and sand-shinnery oak shrubland restoration and management, and more free time to bird in this unique habitat. Pronghorns might also be visible along the 40-minute drive from the refuge to the ranch.

Female–Female Nesting Pair of Whooping Cranes in Wisconsin

Nicki Gordon and Hillary Thompson, International Crane Foundation

Left: **Unison calling at the nest. Female 2-15 is off the nest as seen by her color bands.** ***Middle:*** **One of the two females incubating the nest.** ***Right:*** **The authors collecting the nest camera.**

This year, for the second time*, a female–female pair of Whooping Cranes was recorded nesting and incubating eggs together in Wisconsin. Female 2-15 and 28-05 have been together since 2017. Their nest was found by an aerial survey and we quickly sprang into action. After a tough slog into the marsh warily watching out for protective mother cranes, we found the nest. The next step was to set up the nest camera in order to monitor the pair's nesting behaviors. Once we got word from the pilot that the nest had been abandoned, we went out to collect our camera. After viewing 8,444 photos we were able to get some insight into their incubation routines. We categorized numerous different behaviors such as preening, egg manipulation, incubation, vigilance, and more.

A previous study of nesting Whooping Cranes found three behaviors that were associated with cranes successfully hatching eggs: the amount of time spent incubating, manipulating eggs, and time away from the nest during daylight hours. When we compared behaviors of male–female Whooping Crane pairs to this female–female pair, we found them to be pretty similar. The female–female pair spent about the same amount of time on the nest and away from the nest as successful male–female pairs, but they spent more time manipulating eggs, similar to unsuccessful male–female pairs of cranes. We found that these females only left their nest 5 times during a 22-day period! Less time away from the nest decreases risk of predation and ensures eggs to be the optimal temperature for hatching. Unfortunately, we don't believe their eggs were ever fertilized, so they weren't able to hatch. Interestingly, this pair exchanged incubating duties quite frequently during the day and even sometimes at night. In contrast, Sandhill Crane females nesting in Wisconsin tend to spend most of the time on the nest, often incubating all night. Sandhill females typically only switch incubation duties with males about one or two times per day.

This female–female Whooping Crane pair brings up the question of why they are together and not with another available male? One theory is they could be practicing breeding for when they do find an available male. However, these two females have had associations with other males in the wild, and they still chose to stick together. Although these females are potentially reducing the number of breeding pairs in the population by not breeding with available males, they are behaving similar to male–female pairs and potentially could have a productive nest if they did have fertile eggs. Either way, we're glad they are doing well, have the drive to breed, and have found a beautiful marsh!

****In 2017 there were two female–female nests (including one from this pair), and then none in 2018. So, this is the second nest for 2-15 and 28-05.***

UV Lights on Power Lines May Help Save Sandhill Cranes

Cranes are at risk of colliding with power lines as they make low-altitude flights between roosting and foraging areas, often around dawn and dusk when light levels are reduced. Photo: James Dwyer

Crane species are declining around the world, and lethal collisions with power lines are an ongoing threat to many crane populations. Current techniques for marking power lines and making them more visible to cranes aren't always effective, but new research published in *The Condor: Ornithological Applications* shows that adding UV lights—to which many birds are sensitive—can cut crane collisions with power lines by 98%.

EDM International's James Dwyer and his colleagues created what they dubbed the Avian Collision Avoidance System, or ACAS, by mounting UV lights on power lines' supporting structures and shining them on the lines at night. They tested its effectiveness in 2018 at Nebraska's Iain Nicolson Audubon Center, where a power line crosses the Central Platte River in key habitat for migrating Sandhill Cranes. Randomly assigning the ACAS to be on or off each night, they observed the behavior of cranes flying along the river at dusk and during the night. They documented 98% fewer collisions and 82% fewer dangerous flights when the ACAS was on and showed that cranes reacted sooner and with more control to avoid hitting the power lines.

"This project came about as a result of years of studying avian collisions with power lines throughout North America. My studies included collisions involving numerous species and families of birds, even on lines modified to industry standards to mitigate avian collisions, and I thought perhaps there could be a more effective approach," says Dwyer. "Even so, I did not imagine that the ACAS would have the effect that it did—a 98% reduction in collisions! I thought it would have some effect, but I didn't dare think the ACAS would pretty much solve the Sandhill Crane collision problem at our study site on our first try."

Conventional line markers were already in place on the power lines crossing the Central Platte River, and Dwyer and his colleagues speculate that the ACAS illuminated them and made them easier for cranes to see. "We don't know how effective the ACAS will be on wires without line markers, so we're testing that now," says Dwyer.

"I hope to see the ACAS applied to and studied on other power lines and on communication towers to identify whether it is as effective with other species, habitats, and wire configurations," he continues. "From there, if the ACAS proves broadly effective, I hope to see it made easily available to the global electric industry. I also very much hope to see collision studies expanded. Because large carcasses like those of cranes and waterbirds are more easily noticed than smaller species like sparrows and warblers, collision studies have mostly focused on those larger species, and I fear that we may not understand the true distribution of species and habitats involved in the global avian collision problem."

News release of the American Ornithological Society. The abstract to the original article in *The Condor* can be found at https://academic.oup.com/condor/article-abstract/121/2/duz008/5476728?redirectedFrom=fulltext

Alabama Sets First Sandhill Crane Season in Century

This an abridged version of an article by David Rainer, Alabama Department of Conservation and Natural Resources. Published August 8th online in the* Courier Journal *(Florence, Ala.).

Alabama hunters will have their first opportunity in 103 years to hunt a migratory bird that has been making a steady comeback for the past few decades.

The Alabama Wildlife and Freshwater Fisheries (WFF) Division will conduct a draw of 400 permits to hunt sandhill cranes, becoming the third state east of the Mississippi River to hold a sandhill hunt.

"The last sandhill crane hunting in Alabama was in 1916," said Seth Maddox, WFF Migratory Game Bird Coordinator. "This is the first time in 13 years that we've had a new species open to hunting. The last was the alligator in 2006. It's pretty exciting."

The sandhill crane season will be split with the first segment from December 3, 2019, to January 5, 2020. The second segment will be January 16-31, 2020. [Wheeler NWR near Decatur, Ala. has its *Festival of the Cranes* celebration the weekend of January 11 & 12. – Ed.]

The daily, season and possession limit will be three birds per permit. Hunters can harvest all their birds in one day if they choose.

"This sandhill crane season came about through the feedback of hunters," Maddox said. "They started seeing increased numbers of sandhills while they were out hunting other species, especially waterfowl. Hunters wanted the opportunity to hunt this species in Alabama. They'd heard about the seasons in Kentucky and Tennessee from their friends. Hunters have paved the way for the species recovery of sandhill crane. We want to provide hunting opportunities when they are available.

In the early 2000s, discussions began about sandhill crane seasons in the Mississippi and Atlantic flyways. In the Eastern U.S. the subspecies is called the giant [sic] sandhill crane.

Maddox said by 2010 the U.S. Fish and Wildlife Service approved a sandhill crane management plan that included a hunt plan in the Mississippi Flyway, which includes Alabama, Tennessee and Kentucky.

"Kentucky was the first state to take advantage of that," Maddox said. "They opened their season in 2011. Tennessee opened their season in 2013. We'll be the third state east of the Mississippi to have a sandhill season this year."

Thirteen states west of the Mississippi River have sandhill hunting seasons

"We started counting sandhills in 2010 in conjunction with our aerial waterfowl surveys," Maddox said. "We conduct the aerial surveys each fall and winter. Since 2010, we've seen a 16% increase on average per year in the state."

In 2016, WFF staff began discussions about the possibility of a sandhill season and began the tedious process to get a hunting season approved by the USFWS.

"We had to go through the Flyway (The Mississippi Flyway Council) process, just like any other state that wants to add a new season on migratory birds," Maddox said. "We began discussing that with the Flyway. We gathered all of our data and put together a proposal for a hunt plan. It took a couple of years to get through that process."

When that effort was completed, Alabama was granted a three-year experimental season, beginning in 2019.

WFF opted to make the season a limited draw with 400 permits that will be issued through a computer-controlled random draw. Those drawn must complete the process. Once approved, each permittee will be issued three tags for a maximum total harvest of 1,200 birds.

The registration process is limited to Alabama residents 16 or older or Alabama lifetime license holders. Applicants must have their regular hunting license and a state waterfowl stamp to apply.

Maddox said the registration process will open in September and be open for several weeks. The drawing will occur in October.

However, the process is not complete even if you are lucky enough to be drawn.

"If drawn, they will have to take an online test that includes species identification and regulations," Maddox said. "Once they pass

that test, we will issue the permit and tags. Then they must purchase a federal duck stamp and HIP (Harvest Information Program) license, and if hunting on a WMA (wildlife management area), a WMA license. Once they have all that, they are good to hunt."

Maddox said the number of permits was derived from the number of sandhill cranes counted over a five-year average.

"Our five-year average is 15,029 birds," he said. "For the experimental season, we elected to keep the harvest below 10 percent because we wanted to take it slow and ensure hunting will not be detrimental to the population."

Maddox said the majority of migratory sandhill cranes are found in the Tennessee River Valley with some birds wintering in Weiss Reservoir on the Coosa River.

…

Hunting will be limited to north Alabama in a zone that runs from the Georgia state line down Interstate 20 to Birmingham, then north of I-22 to the Mississippi state line.

"There are areas south of Birmingham associated with non-migratory populations in southeast Mississippi and Florida," Maddox said. "Those birds are protected. That's why we chose to keep it in north Alabama."

After the season, all permit holders will be required to take a postseason survey provided by WFF. If those permit holders fail to complete the postseason survey, they will not be eligible for the drawing in the future. WFF is required to provide that information to USFWS to continue the experimental seasons.

As expected, Maddox said WFF received some negative feedback when the sandhill season was announced.

"We have received some negative feedback," he said. "Mainly, the callers did not know much about the species. We try to provide them with information about what the hunt is going to be like, the data we have collected, and the vetting and thought process that had gone into this. Conservation efforts funded mostly from hunters is one of the main reasons for the rebound of the crane, similar to many other species of wildlife. Most of the people I have talked to have changed their minds by the end of the conversation, or at least been okay with it. There will still be people who are not going to be swayed because they don't want to see this species hunted."

…

The complete article can be found at https://www.courierjournal.net/online_only/article_061e37ee-ba1a-11e9-9646-3753b246ec27.html

What do *you* think about the growing number of state-implemented hunts impacting the Eastern Migratory Population of Sandhill Cranes? -- Ed.

WANTED: The Whooping Crane Conservation Association (WCCA) is looking to fill its Membership Treasurer position currently occupied by Dr. James Lewis, who is stepping aside. We are seeking a person who will track membership dues and donations, pay WCCA expenditures through the WCCA account with Merrill Lynch, write a 4-page annual financial report, and complete two short tax forms online related to the WCCA's status as a non-profit. No special accounting or software knowledge is required. Like all other positions within the WCCA, this a voluntary position with no remuneration except the knowledge that you are contributing to the recovery of the Whooping Crane. The WCCA has been promoting Whooping Crane conservation for more than 50 years. For more information on the WCCA, please go to https://whoopingcrane.com/

Expressions of interest for the Treasurer position should be sent to WCCA President Tom Stehn at tstehn@cableone.net

Regional Reports

This August, 37 Whooping Crane fledglings were counted in Wood Buffalo National Park — up from just 24 fledglings last year

Friends of the Wild Whoopers, a Whooping Crane conservation organization, reported the Parks Canada and Canadian Wildlife Service count last week (August 8th) on its website (www.fotww.org).

The endangered cranes that nest in Wood Buffalo are the last natural wild migratory flock in the world. In late May, according to *Friends of the Wild Whoopers*, Parks Canada counted 97 nests. This is the second-highest number of nests recorded — in 2017, Parks counted 98 nests and a record 63 fledglings. (See the table on the next page for inter-year comparisons, 2015-2019.)

Last year, 87 nests were counted, but a very rainy season likely caused fewer fledglings, only 24, to survive.

"There's natural year-to-year fluctuation in the number of breeding pairs [and fledglings surviving], but the trend is really positive overall," said Rhona Kindopp, manager of resource conservation with Parks Canada in Fort Smith, NWT. She said 2018 was a "down year" but still within the variation expected.

"Whooping cranes start breeding when they're about four years old. About five to six years ago, there was a boom in the number of fledglings and so those fledglings have been getting to breeding ages recently in the last couple of years," said Kindopp.

"I think that's why the numbers have been higher than what we'd seen a decade ago."

Wintering numbers at Aransas National Wildlife Refuge in Texas for 2018-19 have not yet been released by the US Fish and Wildlife Service.

The Whooping Cranes will start their migration in September or October, heading 4,000 km (2,500 miles) south.

Adapted from *'Trend Really Positive' as Wood Buffalo Whooping Cranes Counted*, by Sarah Pruys, published 15 August 2019 by cabinradio.ca. Thanks to Chester McConnell of *Friends of the Wild Whoopers* for obtaining the count data from Parks Canada, and Tom Stehn for submitting the article.

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.

Regional Reports *continued*

Summary of Aransas—Wood Buffalo Whooping Crane Surveys for 2015-2019

	2015	2016	2017	2018	2019
No. of nests detected at WBNP (May)	68	78	98†	87	97
Additional territorial pairs (non-nesters)	20-24	18	?	?	?
No. of fledged chicks detected (August)	23	45*	63**	24	37
Average no. of chicks per nest#	0.34	0.57	0.64	0.28	0.38
Estimated no. of birds at Aransas NWR in the primary survey area‡	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)	504 95% CI 412-660 (late winter survey, Kodiak)	
Estimated no. of juveniles at Aransas NWR	38 95% CI 33-43	50 95% CI 36-61	49 95% CI 42-58	13 95% CI 10-19	

†Most nests ever recorded. *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) 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; 2019 nest survey and fledgling numbers were reported by Friends of the Wild Whoopers (https://friendsofthewildwhoopers.org/), July 12 and August 8, 2019; 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 September 2019, there are an estimated 88 (43M, 42F, 3U) Whooping Cranes in the Eastern Migratory Population. This number includes three wild-hatched chicks that have fledged. As of early September, cranes are still on their summer territories and have not yet started migration. There are currently 75 Whooping Cranes in Wisconsin, 4 in Michigan, 1 in Iowa, and 1 in Illinois. The remaining cranes' locations are unknown. We have had quite a few mortalities of breeding birds this summer, including known mortalities of two breeding age males and two females. We've also had three confirmed mortalities of non-breeding birds, and six missing birds whose mates have been seen without them and are also likely dead. We're hopeful some of the newly single birds will find new mates for breeding season 2020, however we will likely have fewer breeding pairs next year than we had this year.

Nesting Season

This spring we had a total of 19 chicks hatch from 14 of the 36 nests in Wisconsin. Nineteen eggs were pulled from 10 first nests at Necedah National Wildlife Refuge (NNWR) as black flies started to emerge on the landscape. In total we had 25 first nests and 11 re-nests (including 1 third nest attempt). We also had new nesting pairs in Eastern Wisconsin, for a total of 5 pairs nesting in the new release area. This year we had the first two chicks hatch in Eastern Wisconsin! Twelve of the 19 chicks hatched at NNWR and the rest were on state or private land. Currently there are 3 wild-hatched chicks still alive, all of which have fledged.

Nest photo is of 9-05, 13-03, and W19-19 at the nest at Necedah National Wildlife Refuge. Photo credit: USFWS

W1-19 (F) hatched to parents 12-11 and 5-11 in Juneau County in early May, is banded, and has fledged. She has been moving around this summer with her parents and is doing well. This pair also fledged a chick in 2018 who is still alive and is in Marathon County, WI.

W14-19 (F) hatched at NNWR to parents 12-03 and 12-05. She is also banded and is doing well. W14-19 fledged in late August and has been seen moving around the refuge with her parents.

W19-19 (U) is the youngest chick of the year and hatched from a third nest attempt by parents 9-05 and 13-03 at NNWR. W19-19 fledged in mid-September and is exercising its wings getting ready for migration.

Summer Distribution

Breeding pairs of Whooping Cranes this year were in Juneau, Adams, Marathon, St. Croix, Green Lake, and Marquette Counties, Wisconsin. Most Whooping Cranes (about 72 birds) spent the summer in Wisconsin. Four cranes spent the summer in Michigan, although none of them were together (3 adults and 1 from the 2018 cohort). One two year old spent part of the summer in Minnesota but came back to western Wisconsin mid-summer. Another two year old spent the summer in northern Iowa. She was one of the birds from the 2017 cohort who were translocated from Wisconsin to Indiana in fall, and has never returned to Wisconsin. Lastly, one adult male spent part of the summer in Wisconsin, but then moved down to northern Illinois mid-summer.

Releases of Whooping Cranes in Wisconsin

The two parent-reared birds raised at the Calgary Zoo, Alberta, in 2018 that were released at Horicon National Wildlife Refuge this spring are both still in the area and are doing well. 75-18 and 78-18 have explored a bit on their own, but are currently together and are still near the refuge.

Parent-reared birds 75-18 and 78-18 raised at the Calgary Zoo and released at Horicon National Wildlife Refuge. Photo credit: Doug Pellerin

One of the birds from last year's release cohort, 77-18, is currently in Michigan. The other two, 73-18 and 74-18, were raised at White Oak Conservation by parents 16-11 and 18-12. The family group was released last fall, the chicks migrated south with father 16-11, and returned this spring to Horicon National Wildlife Refuge. They spent most of the summer together south of the refuge but recently returned to Horicon and are spending time again with father 16-11.

We also plan on releasing two additional parent-reared Whooping Cranes this fall who are currently being raised at the International Crane Foundation. The details of these releases are not yet determined, but we plan to follow protocols used in previous years.

Louisiana Whooping Crane Update

Eva Szyszkoski, Louisiana Department of Wildlife and Fisheries

2018 cohort — Thirteen captive reared juveniles were released into the Louisiana population in the winter of 2018/19. Twelve juveniles (6 males, 6 females) arrived at the Rockefeller Wildlife Refuge in Cameron Parish in two shipments on 19 November 2018: seven from the International Crane Foundation in Wisconsin and five from the Freeport-McMoRan Audubon Species Survival Center (ASSC) in New Orleans. They received their permanent bands and transmitters on the day of their arrival and were placed in the top-netted portion of the release pen until their release on 3 December. One additional male was transported to the White Lake Wetlands Conservation Area, Vermilion Parish, from the ASSC on 15 January 2019 where he was banded and released on nearby private property.

Cranes from the Florida population — Two adult females from the remnant Florida non-migratory population were transported to the White Lake Wetlands Conservation Area on 6 February. They received their permanent bands and transmitters that evening and were released the following morning.

Captures — Fourteen free-flying cranes were captured for banding or transmitter replacement on 26 days of attempts from 1 November 2018 – 6 February 2019, including 4 of 5 wild-fledged juveniles.

Reproduction — Twenty-seven nests by 13 pairs were initiated in seven parishes (Acadia, Allen, Avoyelles, Calcasieu, Cameron, Jefferson Davis and Vermilion) in central and southwestern Louisiana in 2019, the sixth year of nesting by the Louisiana flock. First nesting attempts were initiated in February (6) and March (7). Renesting attempts were initiated an estimated average of 17 days after the first nest attempt was completed, or after loss of their chick in the case of

one pair, and occurred during March (1), April (5) and May (2). Third nesting attempts occurred in April (2) and May (2) and two fourth nesting attempts were initiated in May. Third and fourth attempts were initiated an average of 11 days after failure of the previous attempt.

A minimum of 46 eggs was produced in 2019, 45 confirmed by visual sighting or discovery of eggshells and 1 presumed due to the pair sitting on a nest platform for a minimum of 2 weeks. Twenty eggs were confirmed fertile; thirteen died prior to hatch (4 early dead, 1 mid-dead, 8 late dead) and seven successfully hatched either in the wild or in captivity. Ten eggs were determined to be non-viable and the remaining 16 eggs were of unknown viability, with most disappearing or breaking at the nest.

Partially hatched LW6-19 was swapped into the nest of L3-11 and L1-13 on 22 May. The adults readily adopted the chick, but unfortunately it disappeared between 3-6 days old. Photo by Sara Zimorski.

Six chicks hatched to six pairs in 2019; three hatched naturally to their biological parents and three hatched from fertile eggs that were swapped into wild nests. Two of these eggs hatched or were nearly hatched prior to placement into nests. Chicks disappeared at 2-22 days old, despite four of the six pairs having previously raised offspring to independence.

Nesting season was plagued by frequent, extremely heavy flooding rains, which likely contributed to the failure of at least five nests and to the death of two chicks. Seven nests were incubated to, or past, full term with no hatch, and the remaining failed for various reasons, including a snake attempting to eat the egg (see photo on next page), human disturbance due to attempted camera deployment, abandonment, failed egg swaps (embryo deaths prior to hatch) and other, unknown, reasons.

Of particular interest, one two-year-old female produced two eggs and one two-year-old male produced at least one fertile egg, becoming the second Louisiana two-year-old male to do so. Additionally, one pair produced a three-egg clutch during their first nesting attempt.

Frequent heavy rainfall and storms played a role in failure of multiple nests in 2019. Here, the renest of L5-14 and L12-16 is seen the morning after heavy rains in the area. The pair had laid their first egg just a day or two prior to the storm. Photo by Eva Szyszkoski.

Use of data-logging eggs — We continued the use of data-logging eggs (*Advanced Telemetry Systems, Inc.*) to collect real-time incubation data in wild nests in Louisiana. Data-logging eggs were deployed in four nests in 2019 for an average of 15.5 days.

Long distance movement — Female L4-17 wintered at the Wheeler National Wildlife Refuge in northern Alabama with thousands of sandhill cranes and numerous Whooping Cranes from the eastern migratory population. In early March, she returned to northern Louisiana before departing again to NE Oklahoma where she summered in 2018.

Regional Reports *continued*

Mortalities — Mortalities from mid-November through August included two yearling males, one yearling female, one adult female and one adult male in Louisiana and one yearling female and one adult female in Texas. An additional adult male went missing in June and is considered dead. Two of the mortalities were yearling wild-hatched cranes.

Current Population Size — As of 1 September 2019, the Louisiana non-migratory population consisted of a maximum of 69 cranes (32 males, 36 females and 1 unknown).

A large snake attempts to eat an egg in L3-11 and L1-13's nest in the middle of the night. This egg was a plaster-filled dummy egg due to a swap that was conducted just a couple days earlier, however the end result was that the egg ended up in the water, causing the nest to ultimately fail.

Mississippi -- Record-Smashing Nesting

Nesting. In a landmark year in the long history of the crane program, a whopping 15 chicks fledged! That is a 250% increase over the previous high of six. This was the first time that two sets of twins fledged. The number of pairs nesting reached the 40 mark. We detected 52 nests.

Release. We released two cohorts of captive-reared cranes from a temporary top-netted acclimation pen in the savanna behind the Refuge Headquarters/Visitor Center. These were the first releases from this site with goals to increase crane use in the 1000 acres near HQ/VC and to increase chances of visitors being able to view cranes from areas open to the public. The second cohort of three did just that, spending the vast majority of their time in the adjacent savanna and the HQ/VC grounds, including roosting most nights in the backyard lawn, perhaps finding the short well-lit grass protective against predators.

Scott Hereford, Gautier, MS

Trio of released cranes behind Visitor Center.
Scott Hereford, USFW

Lesser Sandhill Cranes, Annual Summary
Homer, Alaska, Summer 2019

By Kachemak Crane Watch

A Project of the Center for Alaskan Coastal Studies

Nina Faust of Kachemak Crane Watch submitted links to video of interesting behaviors of Sandhill Cranes she recorded during the 2019 breeding season in Homer, Alaska. Also below are the first three paragraphs of Kachemak Crane Watch's Annual Summary, which highlight unusual deformities in two crane chicks. The full report, including an update on conditions at the cranes' wintering area, California's Central Valley, can be found at http://cranewatch.org/wp-content/uploads/2019/09/Annual-Sandhill-Crane-Summary-2019.pdf — Ed.

After a summer of little rainfall and record high temperature, Homer's Sandhill Cranes had a successful nesting season with almost no bad weather to challenge them as they raised their colts. The last colt to fledge among those families reported to Kachemak Crane Watch, took wing on August 27, considerably later than those reported at the beginning of August. As of September 25, one family with two colts was still reported to be in Homer.

For the first time, deformities were noted in locally hatched crane colts. One colt was hatched with a deformed beak; it died about a month before fledging. Crane expert Gary Ivey commented, "I have never seen this condition in cranes, so I would say it's very rare. I suspect it is a deformity. I have seen similar deformities in white pelicans."

A second colt was reported with a short, crooked neck. It has to eat with its knees bent. This colt fledged, but we don't know how vigorous it is or whether it will make migration. It has been seen in different parts of Homer, so it is able to fly fairly well. "It sounds like a severe developmental deformity. I doubt it will be able to migrate, and I think its likelihood of survival is very low," said Ivey. As of September 21, 2019, this colt and its parents were still in Homer but that is the last reported sighting.

Video of the short-necked crane: https://youtu.be/rR8bXqJJcPQ

Colt with deformed, short neck. (Nina Faust)

Crane Siege on a Coyote https://youtu.be/e7IbKpQG9DA

When a coyote comes into the field where the Sandhill Cranes can see it, they bunch up and all walk toward the predator. Often this will chase the coyote away.

A Critical Mass of Cranes https://youtu.be/IMZh7jjadus

A Sandhill Crane family determined to keep a desirable foraging area for themselves tried to run off all other cranes, until one day a critical mass of cranes showed up.

Sandhill Cranes: Migrational Unrest on the Ridge https://youtu.be/7gXVPwDUpCA

Mid-August, most of the colts in Homer, Alaska have fledged. This signals the beginning of migrational unrest and the gathering of the flocks for migration.

Sandhill Cranes: Stop Action Flock Fights https://youtu.be/uBMRGs6AICA

Tempers sometimes flare when Sandhill Cranes gather into their larger premigrational flocks in Homer, Alaska. The ritualized moves help prevent serious injury but are very beautiful and exciting to watch.

Cranes in the News

Crane Rare to Nova Scotia Nesting in Province

A sandhill crane stands in a field in Stewiacke, Nova Scotia, in early August. (Jason Dain)

Looming at over a metre tall, a fairly rare bird to Nova Scotia has begun to nest in the province.

Sandhill cranes were almost unheard of in the area until about five years ago, said Nova Scotia Bird Society president David Currie. Members of the society have spotted chicks in recent years, but haven't found nests yet.

"With changes in climate and changes in habitat and protections of some of the wetlands that we have here in the province, they're finding this to be suitable for them, and we are finding an increased number of them due to those factors here, I expect," said Currie. The birds have been enjoying the isolated marshes and agricultural fields of Stewiacke and Cumberland County near Amherst, he said.

This summer, a pair of sandhill cranes settled around the Stewiacke area, drawing the attention of birders. Their grey and rusty brown plumage makes them difficult to find, Currie said.

Jason Dain heard the rattling bugle-like calls of the pair before he saw them. He spotted them in a field, but photographed them from his car so he wouldn't disturb them. "This time of year they're quite nice with the red on their backs," said Dain.

"The two of them started running like ostriches," said Dain. "They put their necks down and they kinda start running and flapping their wings and off they go. They're like pre-historic chickens. They're hilarious."

This wasn't Dain's first encounter with a sandhill crane. In the winter of 2017, he found one on a snowy beach in Three Fathom Harbour along the Eastern shore.

"If you see them in the winter, they're just grey. The sort of rusty red colour that's on their back is from soil that they actually pick up and rub in their feathers. The iron in the soil turns their feathers red."

Currie said the Stewiacke pair may have landed in the area after hearing calls from a captive pair living in the Shubenacadie Wildlife Park. He said he expects they'll become more common in the area now that they've started to nest here.

Article by Mairin Prentiss CBC News, August 18, 2019 (with some formatting changes)

https://www.cbc.ca/news/canada/nova-scotia/crane-rare-to-nova-scotia-begins-to-nest-in-the-province-1.5251568

Malicious Shooting of a Whooping Crane in Ontario

Sadly, another Whooping Crane of the Eastern Migratory Population was wantonly shot and killed, this time in Ontario, on Barrie Island in Lake Huron. What little we know about the incident has come from local reporting in the Manitoulin Expositor *(manitoulin.ca), as outlined below in these edited excerpts from several news articles by Tom Sasvari.*

The Whooping Crane was first spotted April 20 (or 21) on private property on Barrie Island by two residents. The bird stayed around, and on April 30 two other residents contacted Terry Land [a local birder and photographer], as they had just seen the bird. Mr. Land went out to view the Whooping Crane and tried to get pictures of it in the fading (evening) light.

Mr. Land said it was "probably the first Whooping Crane ever seen in the Algoma-Manitoulin District. As it is a rare bird, everyone who had seen the bird felt it would be wise to keep this information under our hats to protect the bird, which as it turns out didn't work."

He noted the Whooping Crane is predominantly white in colour and is larger in body size than a Sandhill Crane. "This one had coloured bands on its legs and a transmitter on one leg with a number on it." [The bird was *39-17*, a 2-year-old female, part of the parent-reared cohort of 2017. — Ed.]

Mr. Land said that all four of the local residents saw the Whooping Crane on a regular basis, one of whom saw it in the afternoon of May 5, "and it was fine."

However, "On that evening (May 5) there was a report between 8 pm and 8:30 pm of a shotgun blast and then later what sounded like a .22 calibre rifle," said Mr. Land. "The person who reported this saw the bird walk a short distance to where it normally went to lay down. The next morning it was still in the same place and hadn't moved. It had died."

They reported it to a CO (conservation officer with the Ontario Ministry of Natural Resources and Forestry) on Monday morning (May 6) after it was determined that it was dead. Mr. Land noted the CO visited the area where the bird had been found dead. But after it had died, the carcass fell victim of a fox, raccoon or other animal as it was no longer intact. The CO recovered one of its legs.

The case remains unsolved.

The Wildlife Enforcement Division of Environment and Climate Change Canada (the Canadian Wildlife Service) and Crime Stoppers are seeking the public's assistance in identifying the suspect(s) in the senseless killing of Whooping Crane 39-17.

Any information leading to the identity of the person(s) or vehicle(s) involved would be appreciated. Contact Crime Stoppers at 1-800-222-8477 or visit sudburycrimestoppers.com.

The *Whooping Crane Conservation Association* has offered up to $2000 (CAD) for information leading to the arrest and conviction of the person(s) responsible for this crime. — Ed.

To Save the Science Poster, Researchers Want to Kill it and Start Over

If you're presenting a poster at the Workshop (or any other meeting), you might want to have a look at this story and video published by NPR. Thanks to Scott Hereford for passing this one along.

https://www.npr.org/sections/health-shots/2019/06/11/729314248/to-save-the-science-poster-researchers-want-to-kill-it-and-start-over

15th NORTH AMERICAN CRANE WORKSHOP
MEETING OVERVIEW

MEETING VENUE
OVERTON HOTEL AND TEXAS TECH UNIVERSITY, LUBBOCK, TX
806-776-7000
https://www.overtonhotel.com/

WEDNESDAY, JANUARY 8: NATIONAL RANCHING HERITAGE CENTER (3121 4th St.)
http://www.depts.ttu.edu/nrhc/

1800-2100 REGISTRATION
1800-2100 SOCIAL AND BBQ, Buses provided from hotel
Special Presentations: *A Trip to Siberia to See the Sandhill Cranes in Spring and Summer that Winter near Lubbock* by Masha Vladimirtseva and George Archibald
Dinner Kite Demonstration by IBEX Puppetry

THURSDAY, JANUARY 9: Holden Hall Room 150
ALL DAY REGISTRATION
0800-0810 INTRODUCTION BY BLAKE GRISHAM
0810-1010 PLENARY: TEXAS HIGH PLAINS
1010-1040 BREAK & POSTER SESSION Holden Hall Room 152
1040-1120 THE FUTURE OF HABITAT CONSERVATION
1120-1300 LUNCH
1300-1420 HUMAN DIMENSIONS AND OUTREACH SYMPOSIUM
1420-1510 BREAK & POSTER SESSION Holden Hall Room 152
1510-1640 EFFECTS OF TELEMETRY AND MARKING SYMPOSIUM
1640-1730 NACWG BUSINESS MEETING (OPEN TO ALL)
EVENING DINNER ON OWN

FRIDAY, JANUARY 10: Holden Hall Room 150
0800-1010 WHOOPING CRANE 10-YEAR TRACKING PROJECT SYMPOSIUM
1010-1030 BREAK Holden Hall Room 152
1030-1130 WHOOPING CRANES II
1130-1300 LUNCH
1300-1500 WHOOPING CRANES III
1500-1530 BREAK Holden Hall Room 152
1530-1730 SANDHILL CRANES
EVENING SILENT AUCTION, BANQUET, AWARDS Overton Hotel

SATURDAY, JANUARY 11: Buses leave from hotel
0800-1700 FIELD TRIP TO MULESHOE NATIONAL WILDLIFE REFUGE AND WEAVER RANCH.
BOXED LUNCH PROVIDED FOR REGISTRANTS.

15th NORTH AMERICAN CRANE WORKSHOP
SCIENTIFIC PROGRAM

THURSDAY, JANUARY 9
0800-0810 INTRODUCTION Blake Grisham

0810-1010 PLENARY: TEXAS HIGH PLAINS
0810-0840 *Winter Ecology of Sandhill Cranes on the Southern High Plains of Texas*, Kathryn Brautigam (03)
0840-0910 *Fragmentation of the Network of Isolated Wetlands on the Southern High Plains of Texas*, Nancy McIntyre (27)
0910-0940 *Salinas of the Southern Great Plains of Texas: Origins, Threats, and Importance to Sandhill Cranes and Migratory Birds*, Warren Conway (11)
0940-1010 *Effects of Saline Lakes and Playa Wetland Ecological State Changes on Sandhill Crane Space Use of the Southern High Plains*, David Haukos (17)

1010-1040 BREAK & POSTER SESSION

1040-1120 HABITAT CONSERVATION
1040-1100 *Sandhill Cranes in Mexico: Status of Historical Habitats and Conservation Challenges*, Antonio Cantu (07)
1100-1120 *Rethinking Wetland Conservation in a Water-scarce Future*, Sammy King (20)

1120-1300 LUNCH

1300-1440 SYMPOSIUM: HUMAN DIMENSIONS AND OUTREACH
1300-1320 *Public Communication of Crane Research: SciComm Principles and Methods*, Anna Turkett (42)
1320-1340 *Human Dimensions of Whooping Crane Conservation in Alabama*, Wayde Morse (30)
1340-1400 *Whooping Crane Outreach in the Eastern Flyway*, Elisabeth Condon (10)
1400-1420 *Countdown to Engagement: Habitat and Adult-focused Outreach in Texas*, Anna Turkett (41)

1420-1510 BREAK & POSTER SESSION

1510-1640 SYMPOSIUM: EFFECTS OF TELEMETRY AND MARKING
1510-1530 *Effects and Effectiveness of Telemetry and Marking of Cranes for Research, Monitoring, and Public Relations*, Anne Lacy (21)
1530-1550 *Impacts to Integument from Leg-band Mounted Telemetry Devices in Whooping Cranes*, Barry Hartup (16)
1550-1610 *Designing More Crane-friendly Transmitters: the Importance of Working with Manufacturers and Lessons Learned*, David Brandt (02)
1610-1640 *Discussion*

1640-1730 NACWG BUSINESS MEETING (OPEN TO ALL)

EVENING DINNER ON OWN

(*Note: for each oral or poster presentation, the number in parentheses refers to the abstract number in the program booklet.*)

FRIDAY, JANUARY 10

0800-1010 SYMPOSIUM: WHOOPING CRANE TRACKING PROJECT–10 YEARS
0800-0820 *Presence of Wind Towers Displace Migrating Whooping Cranes*, Aaron Pearse (33)
0820-0840 *Identifying Sustainable Habitat for Wintering Whooping Cranes*, Kris Metzger (28)
0840-0900 *The Aransas-Wood Buffalo Whooping Crane Population: Multi-level, Multi-scale Habitat Selection of Whooping Cranes on the Texas Coast*, Sarah Lehnen (23)
0900-0920 *Climate Change Threatens Whooping Crane Recruitment and Population Growth*, Matthew Butler (06)
0920-0940 *Whooping Crane Stay Length in Relation to Stopover Site Characteristics*, Andrew Caven (08)
0940-1000 *A Metapopulation Viability Analysis for Whooping Cranes and What It Means for Species Recovery Planning–Next Steps*, Wade Harrell (15)

1010-1030 BREAK

1030-1130 WHOOPING CRANES II
1030-1050 *Environmental Factors Driving Nocturnal Whooping Crane Movement Patterns on the Texas Wintering Grounds*, John Pistone (34)
1050-1110 *Progress Made with Land Managers to Identify and Improve Potential Stopover Habitats for Migrating Whooping Cranes*, Chester McConnell (26)
1110-1130 *Update on the Captive Whooping Crane Population*, Kim Boardman (01)

1130-1300 LUNCH

1300-1500 WHOOPING CRANES III
1300-1320 *An Update on the Louisiana Non-migratory Whooping Crane Reintroduction*, Eva Szyszkoski (39)
1320-1340 *Behavior Analysis and Long-term Survival of Captive-reared Juvenile Whooping Cranes in the Reintroduced Louisiana Non-migratory Population*, Phillip Vasseur (45)
1340-1400 *Five Years of Releasing Parent-reared Whooping Cranes in Wisconsin*, Glenn Olsen (32)
1400-1420 *Releases of Parent-reared Whooping Cranes in the Eastern Migratory Population 2013-2018*, Susanna Mann (24)
1420-1440 *Video Behavior Analysis of Two Wintering Populations of Whooping Cranes Using Program BORIS*, Virginia van Vianen (43)
1440-1500 *Using Ultrasonography and Endocrinology to Understand Folliculogenesis and Reproductive Failure in Whooping Cranes*, Megan Brown (04)

1500-1530 BREAK

1530-1730 SANDHILL CRANES
1530-1550 *Importance of Food Subsidies for Migratory Birds Wintering in Central New Mexico*, Dan Collins (09)
1550-1610 *Historical Nesting Trends of the Mississippi Sandhill Crane*, Henry Woolley (47)
1610-1630 *Testing Use of Small UAS to Detect Nesting Sandhill Cranes*, Scott Hereford (18)
1630-1650 *Summer Home Ranges and Nesting Ecology of Greater Sandhill Cranes in Northeast Oregon*, Cathy Nowak (31)
1650-1710 *First Aerial Surveys of a Unique Subpopulation of Sandhill Cranes in the Pacific Northwest*, Myles Lamont (22)
1710-1730 *Nest and Chick Survival of Sandhill Cranes in Southcentral Wisconsin*, Andrew Gossens (14)

FRIDAY, JANUARY 10 *continued*

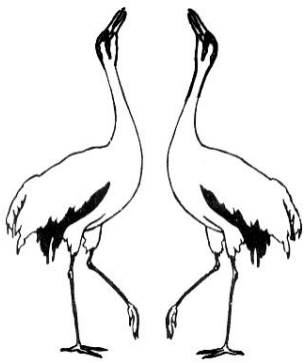
EVENING: SILENT AUCTION, BANQUET, WALKINSHAW AWARD

POSTERS (AUTHORS WILL BE PRESENT DURING BREAKS ON THURSDAY)

Understanding the Influence of the Major Histocompatibility Complex on Mate Choice and Successful Reproduction in the Whooping Crane, Megan Brown (05)
Factors Associated with Local and Statewide Population Trends of the Florida Sandhill Crane, Andrew Cox (12)
Florida Sandhill Crane Marsh Use and Nest Success in Improved Pasture and Fire- and Mechanically-managed Dry Prairie, Tim Dellinger (13)
Mississippi Sandhill Crane Conservation Update 2017-2019, Scott Hereford (19)
How Stressful Is It to Move? A Study in Whooping Crane Glucocorticoid Response During Facility Transfer, Christopher Martin (25)
Trends in Sandhill Crane Numbers in Eastern New Mexico–an Update, Jim Montgomery (29)
Factors Affecting Colt Survival of Wild-hatched Whooping Cranes in the Eastern Migratory Population, Bianca Sicich (35)
Muraviovka Park–Specially Used Nature Area, Sergei Smirenski (36)
High Vector-borne Haemosporidia Prevalence in Eastern Sandhill Cranes over Two Decades, Skye Sneed (37)
Monitoring Whooping Crane Nests in Louisiana Through the Use of Trail Cameras, Eva Szyszkoski (38)
Population Update for the Eastern Migratory Population of Whooping Cranes 2017-2019, Hillary Thompson (40)
Diurnal Time-activity Budgets and Habitat Use of Whooping Cranes in the Reintroduced Louisiana Nonmigratory Population, Phillip Vasseur (44)
Comparison of Human- and Camera-monitored Whooping Crane Nests to Determine an Effective Surveillance Rate, Phillip Vasseur (46)
Dispersal of Captive-reared Yearling Whooping Cranes from Release Sites in Southwest Louisiana, Sara Zimorski (48)

Silent Auction Items Requested

As in past Workshops, we are requesting donated items for a silent auction. Proceeds will go toward funding research and two student travel awards granted for this Workshop. Items donated previously include bird-related books, framed pictures and other kinds of artwork, handicrafts, apparel, birding materials, and anything crane-related. Please bring items to be donated with you to the Workshop.



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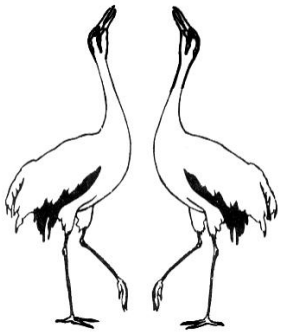

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The Unison Call **is published semiannually by NACWG; Daryl S. Henderson, *Editor***