EASTERN CRANE BULLETIN

June 2017

The Eastern Crane E-bulletin is distributed to those interested in cranes in general, and specifically, the Eastern Populations of Sandhill and Whooping Cranes, as well as the continuing work for the protection of these birds and their habitats.

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Whooping Crane survival threatened by climate change

Why would climate change be so disastrous for this species?

It all comes down to Whooping Crane biology and behavior, said Dr. Richard Beilfuss, President and CEO of the International Crane Foundation. While the cranes normally lay two eggs in a breeding season, it is unusual for both chicks to survive to fledge as they are highly vulnerable to predation. This naturally low recruitment rate overall makes the recovery of the species "challenging." Research has indicated that if the wild Whooping Crane population were to reach 200 to 250 breeding pairs with approximately 1,000 cranes in the wild population, the species' chance of survival would be better –well, perhaps in a perfect world, without escalating climate change.

Climate change – a huge, looming road block in what is already an uphill battle for Whooping Cranes. Unusual weather on the breeding grounds could affect recruitment through low water levels and the resulting risk of predation; precipitation during autumn migration could influence juvenile mortality, and water-use decisions tied to prolonged drought in the southwest U.S. could lead to reduced water with negative impacts on the Aransas wintering grounds. Therefore, when considering the negative impact climate change could have on Whooping Cranes, one must look at the entire cycle of breeding, migration, wintering and the habitat needed for each – it is all connected.

The following are excerpts from the article, *"Are whooping cranes destined for extinction? Climate change imperils recruitment and population growth,"* by Matthew J. Butler, Kristine L. Metzger and Grant M. Harris, in the journal Ecology and Evolution.

"…Climatic changes may affect whooping crane recruitment through direct (i.e., increases in predator densities) or complex indirect interactions. For example, whooping cranes build nests in shallow lakes and ponds of the taiga to deter predation. Climate change is reducing the amount of surface water and likely the depth and seasonal longevity of these ponds. Fewer, shallower, and more ephemeral ponds failing to persist through the entire nesting period may increase nest predation, thereby reducing recruitment of juveniles.…If ponds dry too quickly, nests may become more vulnerable to terrestrial predators, thereby lowering hatchling survival resulting in reduced recruitment.

"…Other factors outside of the breeding grounds may also affect whooping crane recruitment as it represents a combination of several demographic parameters (e.g., breeding propensity, clutch size, hatch and fledge rates, and juvenile survival during migration).…juveniles may be influenced by conditions encountered during southern migration (e.g., inclement weather, food quality, and quantity) that could reduce their survival and subsequently affect their recruitment into the winter flock.

"…Heightened solar activity increases the amount of radiation striking the Earth's surface. This raises atmospheric temperatures and alters weather patterns thereby influencing plant growth, surface hydrology, and faunal responses. Solar activity, as indexed by the sunspot number, had the greatest magnitude of effect on whooping crane recruitment having ≥2.3 times more effect than any other variable.

"…The amount of precipitation in the northern U.S. Great Plains during the autumn migration was the second most important predictor. This variable had ≥36% the influence of the remaining weather variables. Recruitment declined as the amount of precipitation increased during autumn migration. We hypothesize that juveniles are more vulnerable to mortality or abandonment during inclement weather. As juveniles have greater energy expenditure during migration than adults and are inexperienced foragers, inclement weather may reduce foraging opportunities, predisposing juveniles to greater morality risk. Further, inclement weather conditions can increase risk of collision for migrating birds with power lines or other infrastructure and juvenile cranes are more vulnerable to collisions than adults.

"…On the breeding grounds, recruitment increased with more days remaining below freezing during winter. We also observed that nesting pond depth decreased as the number of days remaining below freezing during winter decreased.…Frozen earth retains pond water into the nesting period, with thinner layers more easily breached by the water trapped above. Thawing of the ground allows water to permeate the soil, resulting in reduced pond depth, size, and longevity. Presumably, adult whooping cranes nest within ponds to reduce predation on themselves, eggs and hatchlings. If ponds dry too quickly, nests may become more vulnerable to terrestrial predators, thereby lowering hatchling survival resulting in reduced recruitment.

"…Recruitment affects whooping crane population growth most, and our model predictions show that climate change may imperil it. … There appears to be a connection between recruitment, breeding pond hydrology, and predation. Already, the numbers of boreal ponds and their temporal longevity during summer are declining.…"

To read the article abstract, go to this issue's **Science News** *section.*

To read the full text paper, "Are whooping cranes destined for extinction? Climate change imperils recruitment and population growth," published in the journal Ecology and Evolution, go here: http://onlinelibrary.wiley.com/doi/10.1002/ece3.2892/full

And to download a full text pdf of the article, go here:
http://onlinelibrary.wiley.com/doi/10.1002/ece3.2892/epdf

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Stay informed!

Editor's note: *The following groups (with publications, e-bulletins, and a library that provides access to published research), share a wealth of information about Whooping Cranes, Sandhill Cranes, environmental issues and how it impacts the two species, current crane conservation research, and programs to benefit the species. Check them out.*

The Birding Community E-bulletin

The Birding Community E-bulletin is distributed to active and concerned birders, those dedicated to the joys of birding and the protection of birds and their habitats. This is an excellent monthly e-bulletin covering: rarities, importance of access to habitats, environmental issues, book reviews, Important Bird Area (IBA) updates, etc.

A posting of all previous issues can be found on the National Wildlife Refuge Association website: http://refugeassociation.org/news/birding-bulletin/
Anyone can sign up for the The Birding Community E-bulletin quickly and easily, here:
http://tinyurl.com/E-bulletinSIGNUP

The **Center for Biological Diversity**
The Center for Biological Diversity is a national, nonprofit conservation organization with more than 1.3 million members and online activists dedicated to the protection of endangered species and wild places. On May 17, 2017 the Center launched a new online media outlet called *The Revelator*, which will focus on news about environmental issues, investigative reporting and deepening the conversations about the most important conservation issues of this century. The site will include daily stories about wildlife, climate change, public lands and other environmental topics as well as essays, commentary and investigative pieces at the intersection of politics, conservation and economics**.**

International Crane Foundation Library
"The **Ron Sauey Memorial Library for Bird Conservation** is the research library of the International Crane Foundation and supports our programs by collecting and disseminating materials on bird conservation and crane conservation in particular. The library was founded in 1991 in memory of Ronald Sauey, Co-founder of the International Crane Foundation. The library serves as a global clearinghouse for crane information for biologists, researchers, and colleagues around the world, and thus welcomes any new research, manuscripts, articles or reports on cranes in any language."

Louisiana Department of Wildlife and Fisheries (LDWF):
Friends of the Louisiana Whooping Cranes newsletter, quarterly e-newsletter; LDWF Whooping Crane Facebook page

North American Crane Working Group (NACWG)
"Unison Call," biannual publication

Whooping Crane Conservation Association (WCCA)
"Grus Americana," biannual publication

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Protocol for reporting rare and at risk species:

Code of Birding Ethics
The American Birding Association's (ABA) Code of Birding Ethics can be found here: http://listing.aba.org/ethics/

The following is an excerpt from the code:
(c) Before advertising the presence of a rare bird, evaluate the potential for disturbance to the bird, its surroundings, and other people in the area, and proceed only if access can be controlled, disturbance minimized, and permission has been obtained from private landowners. The sites of rare nesting birds should be divulged only to the proper conservation authorities.

All birders should follow the ABA Birding Code of Ethics.

eBird guidelines for rare and "at risk" species
eBird has guidelines for reporting sensitive species when entering your sightings. To read them, go here: http://help.ebird.org/customer/portal/articles/1006789

Whooping Crane sightings
The Whooping Crane Eastern Partnership (WCEP) asks that if you encounter a Whooping Crane in the wild, please give them the respect and distance they need. Do not approach birds on foot within 200 yards; remain in your vehicle; do not approach in a vehicle any closer than 100 yards. Also, please remain concealed and do not speak loudly enough that the birds can hear you. Finally, do not trespass on private property in an attempt to view or photograph Whooping Cranes.

When Whooping Cranes are present at sites other than eight specific refuges only the birds' county-level location should be shared.

Approaching a Whooping Crane too closely either on foot or in a car increases the risk of flushing the crane into nearby power lines or into oncoming traffic. This behavior is viewed as "harassment" of a federally endangered crane and should be reported immediately to local conservation authorities.

Please report your Whooping Crane sighting to WCEP at its website, here: http://www.fws.gov/midwest/whoopingcrane/sightings/sightingform.cfm.

Eastern Migratory Population of WHOOPERS

Tracking Whooping Cranes – YOU Can Help!

A new cohort of Parent-Reared Whooping Cranes will be released in Wisconsin in September. As last year, the Operation Migration team will monitor these new releases while they remain in Wisconsin until they migrate south for the winter.

Five of the cranes will be fitted with remote Global System for Mobile Communications (GSM) transmitters so that they can be tracked via Google Earth. The five transmitters, each with 3 years of data acquisition fees will cost $25,000. This year, Operation Migration has committed to raise the funds needed to acquire the five GSM remote tracking units.

To help accomplish this, Operation Migration has set up a campaign on GivingGrid – Why not have a look for yourself? Please share the campaign with your family and social media friends using this link: https://www.givinggrid.com/cranetracking/

Whooping Crane Egg Scorecard 2017

A tradition at the International Crane Foundation (ICF) is to post an "Egg Scorecard," which tracks the Whooping Crane eggs from their captive flock and the wild nests in Wisconsin.

To read updates about the eggs that have been transferred to ICF for hatching; the Wisconsin wild Whooping Crane nests, and this season's wild-born chicks (currently 4 pairs with chicks!), go here: https://www.savingcranes.org/whooping-crane-egg-score-card-2017/

WCEP Whooping Crane Update, June 1

According to a recent update by the Whooping Crane Eastern Partnership (WCEP), the current maximum size of the eastern population is 97 (44 F, 51 M, 2 U). This does not include the 2017 wild-hatched chicks. As of 1 June, at least 84 Whooping Cranes had been confirmed in Wisconsin, 2 in Illinois, 1 in Iowa, 2 in North Dakota, and 1 in Kentucky. The remaining birds' locations have not been reported during May. Sadly, there were two documented mortalities in May.

To date there have been 37 confirmed nests by 26 pairs in Juneau, Adams, Marathon, St. Croix, and Green Lake counties, Wisconsin. There are currently two active first nests and eight active re-nests. Six chicks have hatched from four first nests and one re-nest. Four chicks are still alive as of 1 June.
For more information on the 2017 wild-hatched chicks, cranes of the Parent-Reared 2016 Cohort, and mortalities, check here:
http://www.bringbackthecranes.org/index.html

Aransas-Wood Buffalo WHOOPERS

Record 98 nests found in Wood Buffalo National Park

In a report issued by Mike Keizer, External Manager at the Wood Buffalo National Park a record number of Whooping Cranes were found in Wood Buffalo National Park during the recent 2017 nesting survey carried out by Parks Canada and Environment and Climate Change Canada. This season's survey found 98 nests, an increase of 16 over the previous record of 82 set in 2014. Another aerial survey will be run in August to determine the number of fledged colts.

For updates on the wild Whoopers and the Wood Buffalo National Park breeding season, go here:
http://friendsofthewildwhoopers.org

457 Whooping Crane eggs removed from Canada nesting grounds between 1964-1998

From 1964 to 1998, an incredible 457 Whooping Crane eggs were removed from nests of the only self-sustaining wild population of Whooping Cranes in the world – the Aransas-Wood Buffalo Population (AWBP) – the breeding grounds of which are in Canada's Wood Buffalo National Park (WBNP).

By 1945, with only 18 Whooping Cranes remaining in the AWBP population, it seemed inevitable that the species was headed towards extinction. In an attempt to safeguard the remaining wild population, the U.S. Fish and Service (USFWS) and Canadian Wildlife Service (CWS) collaborated in an egg removal plan that involved taking one egg from wild nests with two eggs.

It was determined that these eggs would help establish (or augment) captive breeding programs in order to increase the numbers and genetic diversity of the captive cranes and then, starting in 1975, would be used in several experimental projects to try establish additional wild Whooping Crane populations. Some of these projects failed and were discontinued. It remains to be seen whether the eastern migratory population, or the non-migratory Louisiana population, can become self-sustaining, viable populations.

While there has not been agreement among researchers as to whether AWBP egg removal should continue, the Whooping Crane International Recovery Team (IRT) recognizes that collection of eggs has benefited the Whooping Crane recovery program by providing stock to establish the captive flocks and providing offspring for release, thereby increasing the total number of Whooping Cranes (cranes artificially reared and released into the wild) and has helped to preserve the genetics of the species.

In 2016, the IRT initiated a process to update the International Recovery Plan for the Whooping Crane, 2007 (IRP-2007). The goal is to incorporate new information and techniques, with the overall goal of down-listing and eventually fully recovering the species.

Chester McConnell, President and co-founder of Friends of the Wild Whoopers (FOTWW), served for 12 years in a variety of capacities with the Whooping Crane Conservation Association. He also worked as a wildlife biologist with the Tennessee Wildlife Agency and as Wildlife Management Institute Representative for 31 years, and has a Masters of Science in Wildlife Biology. FOTWW is opposed to any additional collection of wild AWBP Whooping Crane eggs.

To read Chester McConnell's article, published in the The Unison Call, – Newsletter of the North American Crane Working Group – Vol. 27 No. 2, The Fall/Winter 2016-1, *go here:*
http://friendsofthewildwhoopers.org/457-whooping-crane-eggs-taken-from-canadas-nesting-grounds/

Wild Whoopers' 2017 spring migration

For a map of the AWBP Whooping Crane sightings as reported to the Whooping Crane Conservation Association during spring migration, go here and click on the map location icons for more information: http://whoopingcrane.com/spring-migration-2017/

Survival of species may rest with the wild Whoopers

At a recent meeting of stakeholders of the San Antonio Bay Partnership, Tim Grunewald, director of North America Programs for the International Crane Foundation, spoke about past successes and failures of four populations of Whooping Cranes reintroduced to the wild. Based on what has been learned from the experimental populations, it is thought that the best chance of attaining the goal of reclassification of the species from "endangered" to "threatened" lies with the Aransas-Wood Buffalo flock.

There are approximately 329 cranes in the Aransas-Wood Buffalo population and it is currently growing at an annual rate of about 4 percent. Given that Whooping Cranes lay two eggs each breeding season with usually one chick surviving to fledge, it will take until 2060 to reach a wild population of 1,000 cranes – the number viewed by biologists as the number to reach for re-classification of the species.

And, as the AWBP grows so does the need for acquisition of protected, suitable habitat to support them. It is estimated that an additional 80,000 to 130,000 acres of land will be needed for 1,000 cranes. The challenge is daunting and Grunewald called on those who care about the iconic species to protect its habitat and the bay's freshwater inflows.

"The sand literally is running through the hourglass, and I truly believe that this is the final stand for these birds. We are not going to get another chance. This is our only chance to save this species," Grunewald said.

To read the Victoria Advocate *article "Whooping Crane species' success tied to wild flock," go here:* https://www.victoriaadvocate.com/news/2017/apr/17/whooping-crane-species-success-tied-to-local-flock/

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Canada:

Whooping Cranes stopover at Medstead, Saskatchewan

Much to the delight of residents in the small farming community of Medstead Saskatchewan (population 148), five Whooping Cranes stopped in to rest and refuel during their migration north to their breeding grounds in Wood Buffalo National Park (near the Alberta-Northwest Territories border). The cranes were first spotted on April 18 and remained foraging on waste grain in area fields through April 25. While individuals of the wild population have been reported before in the area of Midnight Lake near Glaslyn, this was a first for Medstead.

Environmental threats, poor management endanger World Heritage Site classification of Wood Buffalo National Park

In a report released in March 2017 by the United Nations Educational, Scientific and Cultural Organization (UNESCO), findings indicate that northern Alberta's Wood Buffalo National Park is threatened by energy development, hydro dams and poor management. It warned that unless management of the area improves, the park will be added to the list of World Heritage Sites in Danger.

Wood Buffalo National Park became a designated UNESCO World Heritage Site in 1983 and is one of the largest parks in the world, composed of approximately 4.5 million hectares of Canada's boreal plains. Wood Buffalo is made up of boreal grasslands, wetlands and forests, numerous rivers, creeks, lakes and ponds and home to the Wood Bison and breeding grounds for the only wild population of endangered Whooping Crane.

In 2014, the Mikisew Cree submitted a petition to UNESCO requesting it conduct a mission investigation into the health of the park. First Nations had long expressed concern about the cumulative impacts on the Peace-Athabasca Delta by hydro projects in British Columbia, oil sands development in Alberta and climate change, which has already changed the landscape.

UNESCO inspectors visited the park for ten days during September and October 2016. According to the report, the park is being affected by upstream energy development and points to evidence suggesting the oil sands are depositing contaminants in the air, water and land – toxins such as mercury are showing up in the food web via bird eggs and fish.

UNESCO's report includes 17 recommendations to Canada on how to avoid getting the park listed as an endangered World Heritage site. At the top of the list was Indigenous rights and encouraging Indigenous groups and government to work in partnership with managing the park, conduct studies on water flow and to improve monitoring. A Strategic Environmental Assessment (SEA) will be conducted to assess the potential cumulative impacts of all developments on the Outstanding Universal Value (OUV) of the property, including hydroelectric dams, oil sands development, and mining. The results should be available to the public in March 2018.

To read the response by Minister Catherine McKenna, Canada's Minister of Environment and Climate Change and Minister responsible for Parks Canada, to the UNESCO Reactive Monitoring Mission to Wood Buffalo National Park, go here:
https://www.canada.ca/en/parks-canada/news/2017/03/minister_mckennawelcomesreportonjointreactivemonitoringmissionto.html?_ga=2.129683791.295308110.1496243976-254659242.1496243976

To read the "Report of the joint WHC/IUCN Reactive Monitoring mission to Wood Buffalo National Park, Canada 25 September - 4 October 2016," by UNESCO World Heritage Centre (WHC) and the International Union for Conservation of Nature (IUCN), go here:
WBNP_RMM_report_published version_20170310.pdf

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Florida:

Whooping Crane changes hangout

An 11-year-old female Whooping Crane, known officially as "1644," used to frequent La Chua Trail, a trail leading to Alachua Sink and the center of the prairie marsh and wetlands. Those interested in catching a glimpse of her had to hike 1.5 miles down to the end of the trail where, if lucky, they might spot her as a white speck much farther out in the wetlands. On February 28, 2017, to the delight of birders, 1644 moved to Sweetwater Wetlands Park making it possible to see her much closer, without the long hike. The park is made up of more than 125 acres of wetlands and ponds and was created to improve the water quality of wetlands in Paynes Prairie Preserve State Park and the Floridan Aquifer.

1644 is one of 14 non-migratory Whooping Cranes remaining in Florida. Hatched and reared in captivity, she was released by state wildlife officials in 2005 as part of an experimental, reintroduction program headed by USFWS and conservation partners that ran from 1993 to 2006. When it was determined that a viable, self-sustaining population in the state would not be possible the program was ended. While 289

young cranes were released, just the 14 cranes remain – four pairs, five wild-hatched and one recently widowed bird.

Read more about this non-migratory population in the Eastern Crane Bulletin, September 2014 issue.

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Louisiana:

Louisiana loses its first wild-hatched Whooper

Sadly, the Louisiana population of Whooping Cranes has lost its first wild-hatched crane. Louisiana Department of Wildlife and Fisheries (LDWF) biologists reported that LW1-16 was found dead in Jefferson Davis Parish in mid-May.

LW1-16 was Louisiana's first wild-hatched Whooping Crane since 1939. In February 2017 routine blood samples taken when the crane was captured for banding confirmed that she was a female. She turned one year-old on April 11, 2017.

An early cause for concern among biologists was that LW1-16's left wing developed a droop when she was about 6 weeks old raising questions as to whether it would hinder her ability to fly. Biologists checked the wing when they banded her and it appeared that the droop was caused by a slipped tendon along the leading edge. And, while this prevented her from fully extending her wing it seemingly did not hinder her ability to fly moderate distances as she was observed flying with her parents and over roads and canals.

It was not mentioned whether LW1-16 was predated or died of another cause. According to LDWF bobcats, coyotes and alligators are the most likely natural predators for healthy adult Whooping Cranes in Louisiana. Alligator predation has not yet been documented among the Louisiana cranes but it has been known to occur in Florida so it is not out of the question.

Currently the Louisiana population stands at 57 individuals: 29 males, 26 females and 2 recently hatched chicks.

To read more about LW1-16 and the Louisiana reintroduction program, go here:
http://www.theadvocate.com/baton_rouge/news/article_4836e168-1ee9-11e7-9409-73c170d8e1f8.html

Please find the link below to the first quarterly newsletter for 2017:
http://www.wlf.louisiana.gov/newsletter-issue/friends-louisiana-whooping-crane-newsletter-0
Friends of the Louisiana Whooping Crane Newsletter

Keep up with the Louisiana Whoopers by checking for updates on the cranes, nesting activity and new chicks on the KDWF Facebook page:
https://www.facebook.com/lawhoopingcranes/

Recognizing those who share their land with the Whoopers

On May 12, 2017 the U.S. Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS) #Fridaysonthefarm featured Louisiana Department of Wildlife and Fisheries' (LDWF) 2016 Whooping Crane family (LW1-16 and her parents) and the private landowners and farmers who are providing important habitat for these cranes. This pair of reintroduced Whooping Cranes raised their chick, LW1-16, the first in Louisiana since 1939, on private agriculture property. Private property, and the landowners and farmers who manage it, continue to be important partners in this project and USDA/NRCS is grateful for their cooperation and support!

To read more and see photos from the May 2017 "#Fridaysonthefarm: A Place to Call Home," go here: http://nrcs.maps.arcgis.com/apps/Cascade/index.html?appid=67c29d8fe01e44bf8efcb08509b4ac41
Follow the #Fridaysonthefarm and other voluntary conservation stories on @USDA_NRCS Twitter and @USDA Facebook.
View all #Fridaysonthefarm feature stories.

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Mississippi:

Three critically-endangered Mississippi Sandhill Cranes hatch at Audubon Center

Fewer than 35 Mississippi Sandhill Cranes existed in 1975, when the U.S. Fish and Wildlife Service established the refuge Mississippi Sandhill Crane National Wildlife Refuge Center in Gautier, Mississippi – the first refuge ever created under the Endangered Species Act of 1973.

A partnership with the Freeport-McMoRan Audubon Species Survival Center began in 1995 in an attempt to increase the fledging success rate among the refuge Sandhills. Biologists remove eggs from the wild Sandhill Crane nests to be hatched at the Audubon Center. The chicks are then raised at the center for six months by crane foster parents before being released back at the refuge. Data shows that there is a much higher survival rate by using this conservation program. Today, 65% of the wild Mississippi crane population was hatched and raised at Audubon, resulting in a stabilized population along the Mississippi Gulf Coast.

Currently, the Mississippi refuge population is 120 to 130 birds. *The goal is to help create a self-sustaining population of birds in the wild that is no longer reliant on captive breeding.*

Read more about the Audubon Center and newest additions to the Mississippi population here:
http://wgno.com/2017/05/02/three-critically-endangered-mississippi-sandhill-crane-hatch-at-audubon/

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Nebraska:

New trends observed in Sandhills along the Platte River

More than 80 percent of the world's population of Sandhill Cranes — about 500,000 birds — converge in Nebraska in waves during a six-week period each spring to rest and forage along the Platte River before continuing their migration north from their wintering grounds in the south.

Andy Caven, lead biologist at the Crane Trust, runs weekly aerial census counts along the 90-mile span of river during migration and noticed not only that Sandhills are arriving earlier each season but that the concentration of birds arriving in February and March has also shifted eastward along the Platte. More observations of Whooping Cranes are also being reported east of Grand Island.

While a mid-March peak population of cranes along the Platte isn't unusual, the count of 150,000 cranes on the river is becoming earlier by 1.4 days a year according to statistics from 2002 -2017. As recently as 20 years ago, aerial counts of cranes typically didn't hit 150,000 birds until late March but that number is now being seen in early March.

Factors contributing to this trend are yet to be determined but it is thought that warming temperatures and climate change are impacting migration. Data gathered in the coming years from the Platte River Sandhills will help biologists better understand crane migration.

Read more about the Crane Trust's work with the Sandhills here.
http://www.omaha.com/outdoors/sandhill-cranes-are-arriving-in-nebraska-earlier-and-earlier-expert/article_53d46286-3f56-54a7-9557-f12cbba68900.html

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Ohio:

Ohio's Black Fork Sandhill Cranes

On March 23, 2017 Dr. Laura Kearns, wildlife biologist with the Ohio Division of Wildlife, Olentangy Research Station in Delaware, Ohio lectured on "Sandhill Cranes of the Black Fork and Beyond: Recent Research Findings." The lecture was one in a series of environmental science lectures at Ashland University.

Sandhill Cranes have been frequent visitors in recent years to the Black Fork Wetlands Preserve – 300 acres of diverse wetlands and upland habitats managed by Ashland University that support undergraduate and faculty research and habitat conservation. The population of breeding Sandhills has been growing throughout the state of Ohio and the region. The Ohio Department of Natural Resources (ODNR) – Division of Wildlife has been involved recently with research to help understand the biology of the local cranes. Dr. Kearns provided an overview of findings from these projects, including research on habitat use and movement ecology.

For more information on Sandhills in Ohio by the ODNR Division of Wildlife, go here: http://wildlife.ohiodnr.gov/species-and-habitats/fish-and-wildlife-research/sandhill-crane-migration-study
And here:
http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/sandhill-crane

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Tennessee:

2016-2017 Sandhill Crane harvest report

Based on a rule change, beginning with the 2017-18 season TWRA will be able to implement hard deadlines on hunter survey submission and penalize those who do not comply.

The 2016-2017 season dates were December 3, 2016 – January 12, 2017 and January 16 – 29, 2017. Permits for 3 cranes per hunter were issued to 400 hunters, for a maximum total harvest of 1,200 birds. The designated hunting zone was the SE corner of TN – south of Interstate 40 and east of Highway 56.

Total harvest: 586 Sandhills – 497 adults and 89 juveniles
"Crippling loss" (birds wounded but not retrieved): 83 cranes
There were 56 hunts where an average of 4 Whooping Cranes of the eastern migratory population were seen during the hunt.

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Texas:

Joining forces help secure freshwater for both San Antonio Bay and Whooping Cranes

Over the six years since its formation, San Antonio Bay Partnership (SABP) has completed a number of studies and implemented several projects aimed at providing critically important freshwater supplies for

environmental needs within the San Antonio Bay - Guadalupe Estuary System, particularly projects to provide freshwater for use by the Aransas Wood-Buffalo Population (AWBP) of endangered Whooping Cranes wintering in the area. The health and productivity of this system depends on having adequate amounts of fresh water flowing into it from the Guadalupe and San Antonio Rivers. Both the quantity and timing of these freshwater inflows matter, especially during severe droughts.

SABP and the International Crane Foundation (ICF) have agreed to work together in developing a stakeholder driven, consensus-based effort to design and implement a freshwater inflows management program.

Already a primary research goal of the International Crane Foundation's (ICF) Texas Program is to protect coastal habitat for wintering Whooping Cranes, including the productive salt marshes and tidal flats that fringe the shorelines of the central Texas coast. Protecting these coastal habitats is critical for the species, but so is the freshwater needed by the cranes to survive.

With that in mind, the Coastal Bend Bays & Estuaries Program, along with ICF's Senior Whooping Crane Scientist, Dr. Liz Smith, and colleagues at the San Antonio Bay Partnership have been working to create upland freshwater wetlands for the cranes.

After identifying three sites that fell within the project's guidelines: an area closest to existing Whooping Crane territories, a wetland that had been excavated to hold water during a drought that would form a natural pond with a continuous water source, and a site located on lands privately owned as well as protected under a conservation easement that would restrict future development – two wells were drilled. The pumps for the wells are solar-powered.

ICF also worked with landowners to ensure that the resulting ponds and surrounding area be kept clear of invasive vegetation and that livestock access was managed. Then, in September 2016 water from the wells filled the ponds. Game cameras set up nearby have already confirmed use by Whooping Cranes, Sandhills as well as a number of other species. Success!

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Wisconsin:

Whooping Cranes achieve nesting milestones

On April 27, 2017 the Whooping Crane Eastern Partnership (WCEP) reported that Whooping Cranes returning to Wisconsin this spring achieved what is considered by biologists as two important milestones towards establishing a self-sustaining flock in eastern North America.

For the first time a pair of cranes has been observed nesting at the White River Marsh Wildlife Area, marking an expansion of their nesting range in Wisconsin and providing an important backstop to Necedah National Wildlife Refuge, where most of the returning cranes have nested to date.

And another pair of cranes, nicknamed "The Royal Couple," nesting in Necedah claimed the distinction of the first nest in Wisconsin resulting from a released 'parent-reared' bird, a bird reared by a parent crane in captivity, not by costumed human caretakers. The nest is being monitored by "citizen scientists" and other online observers on a live-streaming video camera recently set up by Operation Migration (OM). According to OM, this is the first time a Whooping Crane nest has ever been monitored by camera 24 hours a day, seven days a week. Operation Migration cautioned viewers that "this is a wildlife camera and sometimes, nature can be harsh. If you see something that is upsetting, please turn off the stream. We will NOT intervene and will let nature take its course."

Whooper cam update: While the "Royal Couple" nest was predated by a coyote on May 8, the Whooper pair remained in the area, however did not renest. The live cam has been moved to overlook the pen that

will house this season's cohort of juvenile Whooping Cranes. To watch all the action, go here: https://www.youtube.com/c/OperationMigration/live

For nesting updates, go here: http://operationmigration.org/InTheField/

To learn more and read the WCEP press release, go here: http://www.bringbackthecranes.org/newsroom/2017/nr04April2017.html

A Sandhill season won't stop crop damage

On April 10, 2017 at the annual Department of Natural Resources spring hearing and Wisconsin Conservation Congress County Meeting, it was voted to support legislation for a Sandhill Crane season in Wisconsin. However, the next step before the Department of Natural Resources can develop a Sandhill hunt is for the state Legislature to approve a quota-based season. This is not the first time a vote for legislation for a Sandhill season has taken place in Wisconsin.

In an April 17, 2017 letter to the editor of the *Wisconsin Rapids Daily Tribune,* Richard Beilfuss, president and CEO of the International Crane Foundation (ICF) said, *"…A well-intended but misdirected belief about the Wisconsin sandhill crane hunt proposal is that a fall hunt would somehow alleviate spring crop damage.…."*

As the eastern population of Sandhill Cranes has grown so has a rise in reports of spring crop damage by cranes and the number of "crop-depredation" permits issued by the U.S. Fish and Wildlife Service. According to the Wisconsin Department of Natural Resources (DNR), approximately 2,000 to 3,000 of the Upper Great Lakes' estimated population of 100,000 Sandhill Cranes, are killed under depredation permits.

In contrast to most game bird species, Sandhill Cranes reproduce very slowly. Cranes usually first nest at 4-5 years of age, lay two eggs with typically only one hatchling surviving to fledge. Most crop-depredation permits get filled in the spring raising concerns that the breeding population could be negatively impacted without achieving the end goal of controlling crop damage.

If more farmers planted seeds treated with liquid Avipel, which makes seeds taste awful, it is likely that far fewer crop-depredation kill permits would get issued each year. Once cranes realize the seeds aren't edible, they often stay in the same field but switch to eating insects, worms, mice and waste grains.

Beilfuss went on to say, *"Accidental shootings of endangered whooping cranes misidentified by well-intentioned hunters also is a concern. Our tracking data of all known whooping crane mortalities in other states indicates that misidentification during sandhill crane hunts does occur. ICF has worked for decades to reintroduce endangered whooping cranes to Wisconsin, but the population remains highly vulnerable to shootings."*

"A sandhill crane hunt is not right for Wisconsin, but we applaud further discussion aimed at finding common ground among those who love the Wisconsin outdoors."

To learn more about Avipel, go here: www.savingcranes.org/sandhill-crane-crop-damage.

Habitat Matters!

Illinois:

Urban birding – birds flock to Humboldt Park

Just because you may live in the city doesn't mean you won't see birds. Chicago resident and bird enthusiast Sam Burckhard has documented 205 different species of birds over the course of the ten years he has birded Chicago's urban oasis, Humboldt Park. In 2009, Burckhardt spent the year visiting the park almost daily, and compiled a report of his sightings, Birds of Humboldt Park. Both Sandhill Cranes and a Whooping Crane were seen there during the year.

The park at 1200 N. Sacramento Ave., features 219 acres including wetlands, a lagoon and prairies filled with wildflowers. These areas provide prime habitat for the thousands of birds passing through Chicago during spring and fall migration to rest and refuel before continuing on their journeys. Some even stay to breed and nest there.

Michigan:

Big Marsh Farm land now protected from development

Larry Holcomb, a retired DNR wildlife biologist, recently obtained a Conservation Easement on his Big Marsh Farm property through Portage-based Southwest Michigan Land Conservancy (SWMLC). The agreement is tied to the deed of the land and runs with the property in perpetuity whereby protecting the property from future development. The Conservation Easement was purchased with a $530,000 grant from the Michigan Department of Environmental Quality, said SWMLC Conservation Projects Manager Emily Wilke, and landowners with easements are able to get income tax breaks.

The 476-acre property is located in Convis Township at the southern end of Michigan Audubon Society's (MAS) Bernard W. Baker Sanctuary in Calhoun County. A mix of wetland, former agricultural land restored to grassland, and oak hickory forest, this area has proven to be an important stopover site for migrating Sandhill Cranes, as 3,000 to 6,000 cranes have been reported foraging in the nearby agricultural fields during the day and resting in the the large open wetland at night.

In 2004, SWMLC protected the Holcombs' 248-acre residential property that is near the Big Marsh. Holcomb was involved in numerous resource management projects during his career. He is currently working on a variety of habitat and wildlife management projects on the Big Marsh site, including work to protect the soon-to-be federally-listed Eastern Massasauga Rattlesnake.

To learn more about Conservation Easements, go here: http://swmlc.org/how-to-protect-your-land/

For more information about the Southwest Michigan Land Conservancy, go here: http://swmlc.org/

Nebraska:

Loup Public Power receives grant to protect Whooping Cranes

The Nebraska Environmental Trust awarded $14,132 to Loup Public Power District for a project to protect Whooping Cranes and other migratory birds at the Wilkinson Wildlife Management Area (WMA) between Columbus and Platte Center. The wetland at Wilkinson WMA was acquired and restored in the mid-1990s and current management has focused on providing habitat for migratory birds.

During March 2016, three Whooping Cranes spent 12 days at the WMA in Platte County before continuing their migration north to their breeding ground in Canada. The endangered birds' presence raised serious concerns because a portion of the area the cranes frequented is bisected by a powerline, erected when the area was farmed, that runs through the interior of the wetland. Powerline collisions are a leading cause of Whooping Crane deaths. WMA personnel temporarily closed to the public the area where the cranes were in order to protect them.

Following the crane sighting, Loup Public Power District, the Nebraska Game and Parks Commission and U.S. Fish and Wildlife Service developed a plan to remove the danger of the powerline from the interior of the wetland by burying it. In another area of the WMA bird diverters were installed on a line to increase its visibility to help prevent bird collisions.

Sandhill Cranes prefer wide channels, short bank vegetation

During the annual spring migration approximately half a million Sandhill Cranes will descend on the Platte River. Data from a study spanning five migrations from 2003 to 2007, shows that where the cranes choose to roost is dependent on channel width, height of bank vegetation, access to cornfields and proximity to human disturbance such as roads, bridges and houses. In this study, Gary Krapu of the U.S. Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, ND and two fellow biologists examined over 6,300 roost sites in south-central Nebraska for more than 300 cranes bearing VHF transmitters. Results from this study will aid crane managers in determining the most effective ways to enhance the habitat for the birds.

Study findings show that cranes chose wider areas of the river with shorter bank vegetation to maintain an unobstructed view that minimizes the chances of predators ambushing them in the channel. The narrower the channel, the more the cranes showed a preference for sites with shorter bank vegetation and easy access to cornfields.

To read the Journal of Wildlife Management *research article, "Sandhill crane roost selection, human disturbance, and forage resources," by Aaron T. Pearse, Gary L. Krapu and David A. Brandt, go here*:
http://wildlife.org/jwm-study-sandhill-cranes-prefer-wide-channels-short-bank-vegetation/

Extinction…

From the article "Extinction is Final" in the May issue of *NEBRASKAland*: "…Helping Whooping Cranes in Nebraska translates into restoring wetland complexes, which also provides valuable habitat for migrating flocks and shorebirds and waterfowl. These wetlands also clean our drinking water.…"

National Geographic photographer Joel Sartore is responsible for the beautiful photos of some of Nebraska's threatened and endangered species that accompany the article.

To read the digital version of the "Extinction is Final," (pages 42-47), go here:
http://mag.outdoornebraska.gov/i/823575-maynebraskaland

ENVIRONMENTAL impact issues:

Editor's note: *With the new U.S. administration we are witnessing an attack on the environment unlike any in recent memory. Now is not the time to wait for others to take action, but the time to speak out and take a stand for the preservation of not only clean air and water but for our natural national monuments and antiquities, forests, national and state parks, wildlife refuges, wildlife habitat and all the amazing wildlife that is found there. All of it needs protection so we must serve as its voice – once it is gone we and future generations will be the poorer for it. Get involved!*

Twice the toxicity: Farmers, public interest groups sue EPA for approving highly toxic Enlist Duo

On March 21, 2017 the Center for Biological Diversity issued a press release announcing that farmers, conservation groups and food-and farm-justice organizations have sued the Environmental Protection Agency under new administrator Scott Pruitt for approving Dow AgroScience's highly toxic Enlist Duo. The novel mixture of the weed-killing chemicals glyphosate and 2,4-D is sprayed directly on corn, soybean and cotton plants that are genetically engineered by Dow to survive exposure to the pesticide. The EPA approved use of the pesticide in 34 states, posing extensive risk to rural communities, food supplies and the environment.

Farmers will be hit hard by the human-health harms of Enlist Duo, and are put at risk financially by 2,4-D's known tendency to volatize, drift and damage neighboring crops. The U.S. Department of Agriculture projects that Enlist Duo's approval will lead to as much as a seven-fold increase in agricultural use of 2,4-D — a component of the infamous Vietnam-era defoliant "Agent Orange" that has been linked to Parkinson's disease, non-Hodgkin's lymphoma and other reproductive problems. The other component of Enlist Duo is glyphosate, the active ingredient in Monsanto's flagship pesticide Roundup. Glyphosate was classified as a probable human carcinogen by the World Health Organization in 2015.

In addition to health risks, significant crop damage from pesticide drift, and increases in both weed resistance and pesticide use, spraying Enlist Duo on millions of acres will contaminate waterways and important wildlife habitat. The EPA's own assessments found that Enlist Duo is highly toxic to numerous plants and animals, including endangered Whooping Cranes, Indiana bats and Hines emerald dragonflies found in or near agricultural fields.

"In reissuing an expanded approval for this toxic chemical cocktail, the EPA has shown an utter disregard for human health, our drinking water and iconic endangered species like Whooping Cranes," said Stephanie Parent, a senior attorney at the Center for Biological Diversity. "The law requires reasonable safeguards, and the EPA has left us with no choice but to force the issue in this suit."

Legal counsel, Earthjustice attorney Paul Achitoff said: "EPA knows that spraying a hundred thousand tons of this pesticide on millions of acres every year will threaten the survival and recovery of some of our most iconic endangered species, but it refuses to follow the law that protects them. We will hold EPA accountable."

The above are excerpts from the press release. To read the entire press release go here:
http://www.biologicaldiversity.org/news/press_releases/2017/pesticides-03-21-2017.php

Keystone XL Pipeline threatens endangered species

"The Keystone XL pipeline was rejected by the Obama administration because it's an absolute disaster for wildlife, water and our climate," said Jared Margolis, a senior attorney at the Center for Biological Diversity. On March 24, 2017 President Trump granted a permit for the TransCanada Corp's Keystone XL pipeline.

On May 24, 2017 a press release from the Center for Biological Diversity announced that landowner and environmental-protection groups, including the Center, Friends of the Earth, Bold Alliance, Sierra Club and the Natural Resources Defense Council added a new claim today to their ongoing lawsuit challenging the Keystone XL pipeline project. The claim highlights the project's threats to the federally endangered Whooping Crane, the endangered interior Least Tern, and the threatened Piping Plover, citing that U.S. Fish and Wildlife Service failed to fully consider the risk of harm, ignored the best available science and relied on inadequate conservation measures.

"Construction of the pipeline and the associated power lines would harm these birds by significantly increasing the risk of collisions and providing artificial perches for predators that target these imperiled species. Collisions are a leading source of death for whooping cranes, and the proposed pipeline route follows the main migratory corridor for the largest surviving wild population of whooping cranes, which numbers fewer than 300 birds. Habitat fragmentation from construction activities and inevitable oil spills during operation will also threaten cranes, terns and plovers and the natural areas they depend on for feeding, breeding and nesting."

The Keystone XL pipeline poses dangerous threats to the environment by poisoning our waters, endangering wildlife, worsening the escalating climate crisis and threatening the well-being and lives of communities all along the pipeline route.

To read the Center for Biological Diversity press release, go here:
http://www.biologicaldiversity.org/news/press_releases/2017/keystone-xl-pipeline-05-24-2017.php
To read the ammended complaint, go here:
http://www.biologicaldiversity.org/campaigns/no_keystone_xl/pdfs/2017-5-24-first_amended_complaint.pdf

"Bringing the Keystone XL pipeline back to life is dead wrong. It puts America's birds and people in danger, and would further destabilize our changing climate," said Bill Taddicken, director of Audubon Nebraska's Rowe Sanctuary.

Read more of Audubon's response here:
http://goldrushcam.com/sierrasuntimes/index.php/news/local-news/9360-audubon-says-the-keystone-xl-pipeline-is-an-extra-large-disaster-waiting-to-happen

And to read Audubon's 2014 Birds and Climate Change Report, go here: http://climate.audubon.org/

Science News:

Are Whooping Cranes destined for extinction? Climate change imperils recruitment and population growth

Matthew J. **Butler**, Kristine L. **Metzger,** Grant M. **Harris**
Ecology and Evolution published by John Wiley & Sons Ltd.
Volume 7, Issue 8, April 2017, Pages 2821–2834

Summary: Identifying climatic drivers of an animal population's vital rates and locating where they operate steers conservation efforts to optimize species recovery. The population growth of endangered whooping cranes (*Grus americana*) hinges on juvenile recruitment. Therefore, we identify climatic drivers (solar activity [sunspots] and weather) of whooping crane recruitment throughout the species' life cycle (breeding, migration, wintering). Our method uses a repeated cross-validated absolute shrinkage and selection operator approach to identify drivers of recruitment. We model effects of climate change on

those drivers to predict whooping crane population growth given alternative scenarios of climate change and solar activity. Years with fewer sunspots indicated greater recruitment. Increased precipitation during autumn migration signified less recruitment. On the breeding grounds, fewer days below freezing during winter and more precipitation during breeding suggested less recruitment. We predicted whooping crane recruitment and population growth may fall below long-term averages during all solar cycles when atmospheric CO_2 concentration increases, as expected, to 500 ppm by 2050. Species recovery during a typical solar cycle with 500 ppm may require eight times longer than conditions without climate change and the chance of population decline increases to 31%. Although this whooping crane population is growing and may appear secure, long-term threats imposed by climate change and increased solar activity may jeopardize its persistence. Weather on the breeding grounds likely affects recruitment through hydrological processes and predation risk, whereas precipitation during autumn migration may influence juvenile mortality. Mitigating threats or abating climate change should occur within ≈30 years or this wild population of whooping cranes may begin declining.

To read the full text article, go here:
http://onlinelibrary.wiley.com/doi/10.1002/ece3.2892/abstract
To download a full-text PDF, go here: http://onlinelibrary.wiley.com/doi/10.1002/ece3.2892/epdf

High nest density of Sandhill Cranes in central Wisconsin

Jeb A. **Barzen**, Liying **Su**, Anne E. **Lacy**, Andrew P. **Gossens**, Dorn M. **Moore**
PROCEEDINGS OF THE NORTH AMERICAN CRANE WORKSHOP 13:13-24

Abstract: We conducted aerial surveys to determine nest locations of greater sandhill cranes (Grus canadensis tabida) in central Wisconsin 2001-03. Helicopter flights covered 8.90 km2 of wetlands in each year and we found 41 nests in 2001, 50 nests in 2002, and 48 nests in 2003 from 11 wetlands. Our best estimate of nest density included wetlands containing 5 or more nests and averaged 5.25 + 1.36 nests/km2 of wetland. Maximum nest density of larger wetlands in any one year was 7.80 nests/km2. As some nests had likely failed by the time we completed our surveys, our measure of nest density likely underestimates the total number of territories in each wetland. Minimum distances between nests averaged 222 + 198 m (range 33-666 m) among all wetlands and 151 + 91 m (range 33-571 m) for wetlands with 5 or more nests. Nest locations differed from a random distribution ($P<0.05$) and were clustered within wetlands and within years. Nest locations were found more than expected in the wetland habitat type (Jacob's Index D = 0.72 in 2001, 0.66 in 2002 and 0.76 in 2003) and less than expected in open water, open shrub and closed shrub. No nests were found in wetland forests. Crane nests also tended to occur on the outside margins of the wetlands. Nest density in central Wisconsin was greater than any previous estimate for any other crane population yet recorded and likely represents a breeding population at carrying capacity as well as a species that utilizes both upland and wetland habitats together.

A full-text PDF download is available from Jeb Barzen at: *https://www.researchgate.net/publication/312539145_High_nest_density_of_Sandhill_Cranes_in_central_Wisconsin*

Habitat selection by breeding Sandhill Cranes in central Wisconsin

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PROCEEDINGS OF THE NORTH AMERICAN CRANE WORKSHOP 13:1-12

Abstract: We used compositional analysis to describe habitat use for a dense population of breeding sandhill cranes (Grus canadensis tabida) in central Wisconsin at 2 spatial scales: selection of home range within a study area and selection of habitats within the home range. Habitat use and home range size were estimated from radio-telemetry data from 12 breeding sandhill crane pairs. Research in Wisconsin

that was performed on the landscape level suggests that breeding cranes depend on wetlands and do not select upland habitats. Evaluating habitat selection at different spatial levels, such as during different stages of the breeding season, can better illustrate the hierarchical nature of selection by breeding sandhill cranes. In establishing home ranges, breeding cranes selected wetland habitat over all other land-use categories. Within home ranges, breeding cranes still selected wetland habitat above all other habitat types; however, row crops and tall grass were also important. During daylight hours, habitats that were used consisted primarily of wetland (38.7% ± 4.5 [mean ± 1 SE]), row crop (24.3% ± 5.7), and short crop (14.0% ± 4.6). Home range size as well as the selection of habitat type was not constant during the breeding season. On average, home range size during the post-fledging stage was 3 times greater than pre-fledging stage. Wetlands were used daily (97.4% of all days) throughout the breeding season but for a greater percentage of each day when chicks were small than when large. Wetland accounted for 50.1% of all locations during the pre-fledging stage and for 30.6% of all locations during the post-fledging stage. The knowledge that breeding cranes require emergent wetlands at all spatial and temporal scales, but that the presence of both upland and wetland habitat within a home range is important, provides a greater refinement to the understanding of habitat needs of breeding sandhill cranes in Wisconsin.

A full-text PDF download is available from Jeb Barzen at:
https://www.researchgate.net/publication/298807806_Sandhill_and_Whooping_Cranes

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