2023-2024 Louisiana Whooping Crane Report

Louisiana Department of Wildlife and Fisheries

Wildlife Division

1 July 2023 through 30 June 2024

EXECUTIVE SUMMARY

The maximum size of the Louisiana non-migratory population at the end of the report period was 82 individuals (36 males, 34 females, 12 unknown) with 80 birds located in Louisiana and two of unknown or long term missing status. This total does not include one wild-hatched juvenile that may have fledged (71 days old), but fledge was not confirmed until shortly after the end of the report period. Based on location data generated via remote transmitters, we documented cranes in 24 parishes throughout Louisiana. Only three cranes were documented in Texas during the report period, all spending just one night in the state before returning to Louisiana.

Unfortunately, two of the five whooping cranes transferred from the discontinued Florida non-migratory population died during the report period, and a third was discovered with a severe, but non-fatal, leg injury. The remaining two cranes (both female) nested and successfully hatched at least one chick, one of which survived and fledged shortly after the end of the period covered by this report.

Four captive reared juvenile whooping cranes (2 parent-reared males, 2 costume reared females) were received in early November 2023 from the Freeport-McMoRan Audubon Species Survival Center in New Orleans. Three had been hatched and reared at this location and one had been reared by a pair of captive cranes at the Dallas Zoo's Whooping Crane Center of Texas and transported to New Orleans on 27 September where he was socialized with the other chicks. They were transported to the White Lake Wetlands Conservation Area (WLWCA) in Vermilion Parish on 7 November, banded and placed in the top-netted section of the release pen until their release five days later. Within a week, all four had left the marsh individually, with the two females quickly reuniting and remaining together. The two single male cranes both died within two months of release (one suspected predation, one due to gunshot). Additionally, five wild-hatched chicks from 2024 survived through the end of the report period.

During the 2024 breeding season, 15 pairs initiated 24 nests in seven different parishes in Louisiana, producing 15 wild-hatched chicks; seven pairs hatched one chick, three pairs hatched two, and one pair hatched two from two separate nesting efforts. All chicks hatched to their biological parents. Four chicks were confirmed fledged by the end of the report period and one was close to fledging at 71 days old (fledge later confirmed). Three pairs with chicks have successfully fledged chicks together in the past, one pair consisted of a female with rearing experience and an inexperienced male, and the last pair had some rearing experience together, with the female previously fledging chicks with a different mate.

Now in its 14th year, the Louisiana whooping crane reintroduction is focusing on the issues surrounding the high amount of embryo mortality that has been documented. We have collected two years of egg, eggshell and embryo samples, as well as a small number of samples from breeding females which our collaborators at the United States Geological Survey (USGS) Alaska Science Center will be examining. Despite the embryo mortality issue, we continue to see a small number pairs successfully hatching and fledging their own chicks in the wild.

DISTRIBUTION

Whooping cranes were monitored via remote tracking devices and in real time via very high frequency (VHF) transmitters in order to record movement, assess behaviors indicative of nesting and molting, and document the general health and survival of the population. Remote monitoring was accomplished using three types of GPS transmitters: two developed by Microwave Telemetry, Inc.: 22-g solar Argos/GPS platform transmitter terminals (PTT) and 25-g solar Global System for Mobile Communications (GSM)/GPS transmitters along with a newer GPS/GSM design developed by Ornitela. The PTTs are programmed to collect data three times per day (06:00, 14:00, and 22:00 GMT) and transmit data every 48 hours. The Microwave GSM transmitters collect numerous location points throughout the day and transmit data approximately once per day, whenever cranes are within range of cell towers. The Ornitela transmitters can be programmed to collect and transmit data at different times, even after deployment. Programming for these transmitters varied but was set mainly to collect a data point every hour or half an hour throughout the day (with decreased collection for transmitters that had lower battery levels) and transmit data two to three times per day. Based on the data collected, cranes were documented in 24 parishes in Louisiana and seven counties in Texas during the reporting period. A distribution map can be found in Figure 1.

Use of Distant Locations
No cranes were documented using locations greater than 325 kilometers (approximately a one-day flight) from the release area during the report period.

MOLTING

In 2024, molting was confirmed in three individuals: L10-15 (nine-year-old female), L4-21 (three-year-old male), and a wild-hatched, unbanded bird (two- or three-year-old, unknown sex) that died due to a vehicle collision while in molt. We strongly suspect a number of other cranes also molted during the report period based on extended periods of limited movement during the spring and summer when molting takes place, feather condition in past years, and previous suspected or confirmed molts along with behavior of their mates. These include L3-22 and one member of each of the following pairs: L11-17/L7-11, L16-17/L6-16, and LW3-18/L21-17.

CAPTURES

Five captures of free-flying cranes were made on 18 days of attempts from 3 November 2023 – 11 April 2024. Three captures were hand grabs and two were via a leg noose. All captures were for the purpose of banding or transmitter replacement. More information can found in Table 1.

PAIRING AND REPRODUCTION

During the 11th year of nesting by the Louisiana flock, a total of 24 nests by 15 pairs were confirmed in seven parishes (Acadia, Allen, Avoyelles, Calcasieu, Cameron, Jefferson Davis, and Vermilion) in central and southwestern Louisiana in 2024. All pairs consisted of individuals who had previous experience nesting together. One pair that nested in 2021 and remain together have not been documented nesting again. One additional pair (both wild-hatched and unbanded) were observed sitting on a platform in Rapides Parish during a single observation, however due to severe weather which resulted in movement of the platform across the field, presence of eggs was unable to be confirmed and this possible nest is not counted in the nesting totals. Two additional pairs were observed with platforms but did not lay eggs.

Eighteen nests from 10 pairs were located on private agricultural properties, all but two (1 fallow, 1 rice) in actively crawfished fields, while the remaining six nests from five pairs were located in marsh habitats; two in the WLWCA marsh and three in marsh habitat on private property. First nesting attempts were initiated in January (1), February (4), March (7), and April (3). Re-nesting attempts were initiated an estimated average of 17 days after the first nest attempt was completed or a chick disappeared (two instances) and occurred during March (1), April (2) and May (3). Two third nesting attempts were initiated in April (1) and May (1) and a fourth attempt was initiated in June. Nesting season ran from 23 January, with the initiation of the first nest, until 26 June, when a single (rotten) egg was pulled from a fourth nest attempt a week prior to full term incubation.

A minimum of 42 eggs were produced in 2024. Twenty-nine eggs were confirmed fertile, of which 12 died prior to hatch (5 early dead, 2 mid-dead, 5 late dead) and 16 successfully hatched; 15 in the wild and one in captivity. One additional egg is presumed to have hatched based on evidence found at the nest, but with no additional evidence of a chick, it is not included in the chick totals. Four other intact eggs were collected and were determined to be non-viable and the remaining nine eggs disappeared or broke at the nest.

Of the 24 confirmed nests, four were incubated to full term or beyond with no hatch, five were abandoned or failed prior to full term, 12 successfully hatched 15 chicks, one nest had eggs replaced with a dummy egg but was then later abandoned, one outcome is unknown (but is a presumed hatch) and a single egg from one nest was pulled prior to full term. Up to three nest failures may have been caused by severe weather conditions and a lack of vegetation for nest maintenance may have also contributed to failure in two of these cases.

The remaining two females who were translocated from the discontinued Florida reintroduction project both nested in 2024. The older female (LF1-98) nested with her mate, L10-18, in Jefferson Davis Parish. They successfully hatched their single egg, and their chick (LW9-24) remained alive and was close to fledging by the end of the report period (71 days old). Female LFW12-15 and mate L5-18 had one nest attempt in Cameron Parish, successfully hatching at least one of their two eggs, however the chick (LW12-24) disappeared shortly after hatch. Of note, this is the first time this pair is known to have had a fertile egg, despite four previous nesting attempts during 2021-2023.

Summary of breeding history from 2014 to 2024 is displayed in Table 2.

Chicks

In 2024, 15 chicks hatched to 11 pairs (seven pairs hatched one chick; three pairs hatched two and one pair hatched two from two different nesting attempts). All chicks hatched to their biological parents and five (from five pairs) ultimately survived to fledging, with fledging of one confirmed shortly after the end of the reporting period. Earliest confirmed fledging (one chick) occurred by/on 74 days old. The remaining ten chicks disappeared or died between 0-15 days of age.

Four chick deaths were confirmed via discovery of remains or evidence from trail cameras placed at nests:
LW2-24: hatched 23 February in Calcasieu Parish to pair L6-16 & L16-17. Trail camera photos show the chick disappeared on 2 March after leaving the nest with its family in the morning and not returning that evening.
LW7-24: hatched on 7 April in Jefferson Davis Parish to pair L5-14 & L12-16. Trail camera photos show that strong winds moved the nest from its original location on the morning of 10 April, and the chick's carcass and the unhatched second egg were located the following day, floating in the water along one of the fields' levees.
LW10-24: hatched on 22 April in Jefferson Davis Parish to pair L12-17 & LW1-18. Trail camera photos show the family at the nest for roost on the evening of 27 April when a large snake (unknown species) disturbed them, crawling onto the nest shortly after 9pm. The chick was no longer seen after the snake left.
LW15-24: hatched on 16 June in Jefferson Davis Parish to pair L12-17 & LW1-18. Trail camera photos show the chick moving around on the nest and then floating, dead, in the water at the edge of the nest later that same day.

Pair Information

Pair, as used in this section, refers to consistent association between a male and a female that were observed copulating, nest building, or were together mainly exclusive of other individuals for at least 30 days.

Formed	Dissolved
LW5-21/L7-22, September	L9-19/L7-22, July, death of male
L8-16/L4-19, October	LW6-21/Wild, summer
L8-14/L4-21, December	L4-19/FW12-19, October, death of female
Wild/Wild, January	L13-14/L6-15, March, death of male
L8-14/LW2-20, March/April	L8-14/L4-21, March/April
L6-15/L4-21, June	L15-17/L17-17, June, death of male
	Wild/Wild, June, death of one member

In addition to the 15 pairs who laid eggs in 2024, two other pairs were observed with platforms but did not lay eggs: L13-16/LW3-17 in Cameron Parish and L25-16/L6-19 in Vermilion Parish.

Current Population Structure
The population contained a maximum of 82 individuals as of 30 June 2024.

Confirmed breeding pairs (i.e., have produced eggs): 18
LF1-98/L10-18, L2-11/L13-11, L3-11/L1-13, L7-11/L11-17, L11-11/L1-19, L2-12/L3-14, L5-14/L12-16, L2-15/L11-15, L10-15/L19-16, LFW12-15/L5-18, L6-16/L16-17, L17-16/L9-18, L23-16/L3-17, L9-17/L12-18, L12-17/LW1-18, L14-17/L3-21, L21-17/LW3-18, L7-18/L3-19

Pairs that built platforms in 2024: 2
L13-16/LW3-17, L25-16/L6-19

Pairs without confirmed breeding activity or newly formed pairs: 7
L1-12/L10-19, L8-14/LW2-20, L6-15/L4-21, L8-16/L4-19, L10-17/L6-18, L1-18/LW7-21(?), LW5-21/L7-22

Unpaired adult males: 7
L6-13, LFW29-16, L8-19, LW6-21, L3-22, L4-22, LW4-22

Unpaired adult females: 5
L17-17, L1-22, L2-22, L9-22, L10-22

Long-term missing and/or suspected dead: 1
L13-18

Unbanded wild-hatched: maximum of 4*
LW14-21, LW5-22, LW9-22, LW11-22, LW13-22

Yearlings (HY2023): 7
L2-23, L3-23, LW1-23, LW3-23, LW4-23, LW9-23, LW14-23

Wild-fledged juveniles: 4
LW1-24, LW3-24, LW4-24, LW6-24

Unfledged, wild-hatched juveniles not yet counted in population (fledging confirmed after the reporting period): 1
LW9-24

*five cranes are listed but one (unknown ID) was found dead during the report period

Camera Deployments
Trail cameras were deployed near a subset of nests to help supplement nest and chick monitoring efforts. Cameras were deployed at nine different nests (5 first attempts, 3 second attempts, 1 third attempt) at 2-16 days into the incubation period (average = 9.5 days). Programming differed among them; however, most were programmed to take a photo every 1, 3 or 5 minutes for most of the day and night. As usual, cranes tolerated the disturbance well, remaining off nest for a maximum of 10-66 minutes (average 37 minutes). Cameras were deployed an average distance of 4.91 meters from the nest.

Heavy Metal Screening and Egg Swabbing
Heavy metal testing of blood and feather samples is ongoing. Since we began screening for lead in 2017, 54 unique individuals have been tested with no concerning levels detected thus far. The same 54 individuals have also been screened for mercury with results from 13 samples noted to be at the “high-normal” end of the range; however, the database for crane results is noted to be small. None of these individuals exhibited any signs of illness, and other test results were generally normal and indicative of a healthy bird. Seven of the individuals noted to have a “high-normal” result have been tested two or more times with three having a higher level at a later testing date and four having a lower level result at a later testing date. Feathers from 51 cranes have been tested for arsenic, with all results within normal limits so far. We

plan to continue this testing to increase the number of cranes in our database and to compare samples from the same individuals in order to document changes over time.

The 2024 breeding season marked the second and likely final year of specific sample collection from eggs for the purpose of investigating bacterial infection as a possible cause of the high level of embryo mortality. During the early stages of incubation, samples were collected from eggshells using sterile swabs at nests where cameras were also deployed. Eggs that were past full term or abandoned and otherwise intact, were also swabbed at collection. Upon examination of any intact, unhatched eggs, content samples were collected. Finally, if the egg contained a large enough dead embryo, liver samples were also saved. Ten eggs swabbed during early incubation ultimately hatched, though one hatched in captivity and one died within several hours of hatching for unknown reasons. Twenty-four contained dead embryos and 20 were later confirmed non-viable or were of unknown fertility due to breaking or disappearing prior to collection. Sixteen eggs were swabbed twice; once early in incubation and once after collection. Samples (4 cloacal swabs from breeding females, 9 liver samples from late dead embryos, content from 38 eggs, and 73 eggshell swabs from 56 unique eggs) were shipped to our partners at the USGS Alaska Science Center for analysis, which is expected to begin in late 2024.

SURVIVAL

As of 30 June 2024, 167 juvenile whooping cranes have been released in Louisiana since 2011. Additionally, 29 wild-hatched chicks have fledged (1 each in 2016, 2017, and 2020; 5 in 2018; 4 in 2021; 8 in 2022; 5 in 2023 and 4 in 2024) and three adult females and two adult males were relocated to Louisiana from the discontinued Florida reintroduction. One additional wild-hatched chick fledged shortly after the end of the reporting period. In total, 201 whooping cranes have been a part of the reintroduction during the 13.5 years of the project, and as of the end of this report period, a maximum of 82 (40.8%) individuals survive.

Mortality and Morbidity
The following nine mortalities were recorded during the report period:

L9-19: male, Cameron Parish, Louisiana, ~July, unknown
LFW28-16: male, Vermilion Parish, Louisiana, ~10 September, unknown
LFW12-19: female, Vermilion Parish, Louisiana, 20 October, powerline collision
L1-23: juvenile male, Cameron Parish, Louisiana, 17 December, suspected predation
L4-23: juvenile male, Evangeline Parish, Louisiana, 7 January, gunshot
L8-22: female, Vermilion Parish, Louisiana, 12 January, predation
L13-14: male, Vermilion Parish, Louisiana, ~31 March, gunshot
L15-17: male, Vermilion Parish, Louisiana, 15 June, unknown
Wild-hatched (2021 or 2022): unknown sex, Rapides Parish, Louisiana, ~21 June, vehicle collision of molting bird

One crane disappeared, is presumed dead, and has been removed from the population totals:
L3-13: Male L3-13 was last observed on 9 August 2023. His mate was observed without him on 14 August and eventually paired with another male. He carried a nonfunctional VHF transmitter.

One long-term missing crane was removed from the population totals during the report period:
L2-21: Male L2-21 was last observed at the White Lake WCA, Vermilion Parish, on 31 May 2022. He carried only a VHF transmitter.

One crane was observed with a significant injury, however continued to move around and has been able to survive:
LFW29-16: Male LFW29-16 was reported with an injury to his right leg on 10 February 2024. Further observations indicate that he had lost control of any movement in that leg at and below the hock.

Through the end of the reporting period, there have been 119 mortalities since the start of the reintroduction; 90 confirmed by recovery of remains and 29 others inferred based on supporting evidence or long-term missing status. Pre-fledged wild-hatched chicks are not included in these totals. Of mortalities where remains were recovered, the primary contributing factor of death could not be determined in 24 cases (26.7%) due to severely degraded or minimal remains recovered. The primary known or suspected cause of mortality in the remaining cases (n = 66) was trauma (26.7%), followed by predation (21.1%) and gunshot (18.9%). Sixteen trauma mortalities (17.8% of mortalities where remains were

recovered) are attributed to collisions with power lines or fences.

EDUCATION, OUTREACH, AND MEDIA

Outreach by LDWF

LDWF's traveling whooping crane display continued to make its way around the state and was housed at eight separate locations in five different parishes, reaching 3,437 individuals (self-reported via a signature at the display) during the reporting period. Additionally, LDWF staff reached over 1,200 individuals through a variety of presentations at children's summer and 4-H camps, National Hunting and Fishing Day, the Port Aransas Whooping Crane Festival, as well as several presentations for various interested organizations. There were also several news stories produced about the crane program on Louisiana Public Broadcasting as well as local Lafayette and New Orleans news stations. LDWF whooping crane biologists also participated in two documentary films about whooping cranes that should both be released in late 2024 or early 2025 and participated in a podcast (*DETOURS*) by the Baton Rouge based Country Roads magazine. Finally, in coordination with the Louisiana Wildlife and Fisheries Foundation, a first of its kind whooping crane art show and contest was held in order to generate awareness about the project and raise money to support the ongoing reintroduction. Over 60 adult art pieces were submitted along with 54 student entries from all grade levels (Figure 2).

Social media continues to be a popular and effective format for sharing information and updates on the project with those who are interested as well as the general public who may come across these sites. The LDWF Whooping Crane Facebook and Instagram pages remain popular with 25,537 and 987 followers respectively.

Outreach by the International Crane Foundation

Our partners with the International Crane Foundation (ICF) continued their outreach work in Louisiana, reaching almost 3,000 individuals through 42 different presentations and events.

ICF's library program for elementary school age children (initiated in spring 2023) continued into the spring and early summer 2024 with close to 30 programs reaching almost 400 children and 171 adults. To go along with the library programs, ICF developed a whooping crane bookmark (Figure 3) to hand out to participants as well as a post-program survey to gauge the reception of the program and the knowledge and attitudes of the adults who attended with the children. Some of the knowledge and attitude questions were the same previously asked in the survey conducted by Louisiana State University.

ICF is also planning to expand their outreach to gun owners through the creation of some new outreach material that will be distributed to gun shops, shooting ranges, and LDWF license vendors in the Lafayette and Baton Rouge areas, with plans to further expand distribution next year.

RESEARCH PRODUCTS

Publications

Sime, M. J., H. L. Thompson, E. K. Szyszkoski, S. E. Zimorski, T. A. Dellinger, and S. M. Schmidt. 2024. Power-line collisions in reintroduced whooping cranes (Grus americana). Southeastern Naturalist 23:194-211.

Presentations

Szyszkoski, E. K. *and S. E. Zimorski. 2023. Nest success rates and survival of wild-hatched whooping crane chicks in Louisiana. 16th North American Crane Workshop, Baraboo, WI, and Louisiana Department of Wildlife and Fisheries Research and Management Symposium, Baton Rouge, LA. Oral presentation.*

Zimorski, S. E. *and E. K. Szyszkoski. 2023. A first record for the species – Louisiana whooping crane pair renests after successfully fledging a chick. 16th North American Crane Workshop, Baraboo, WI. Oral presentation.*

Zimorski, S. E.*, E. K. Szyszkoski, T. Dellinger, W. Brooks, and A. Schumann. 2023. Translocating non-migratory adult whooping cranes from Florida to Louisiana. 16th North American Crane Workshop, Baraboo, WI. Oral presentation.*

Table 1. Summary of captures of free-flying whooping cranes in the Louisiana non-migratory population, 1 July 2023 - 30 June 2024.

ID	Sex	Date	Method	Reason	Parish/County	
LW1-23	M	12/6/2023	leg noose	initial banding	Calcasieu	
L16-17	F	12/6/2023	hand grab	transmitter replacement	Calcasieu	
L11-17	M	12/12/2023	hand grab	transmitter replacement	Avoyelles	
L19-16	M	12/13/2023	hand grab	transmitter replacement	Acadia	
L3-11	F	4/11/2024	leg noose	transmitter replacement	Allen	at overdue nest

Table 2. Breeding history of egg laying pairs in the Louisiana non-migratory population of whooping cranes through 30 June 2023. Only confirmed nests are included in totals and only specific details for pairs active during the report period are shown.

Male	Female	Pair formed	Number of nest attempts/year											Chicks[j]		Egg information[h]				Pair dissolved
			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Hatch	Fledge[f]	Infertile/ nonviable	Fertile		Unk[a]	
																	Dead	Hatch		
Former pairs (20)		≤ Dec 2024	2	3	5	11	6	7	5	16	5			21, 2[b]	7	35	22	21	19	< Jan 2023
L2-11	L13-11	Apr 2015		1	2	4	1	2	1	2	1	2	1	3[b]		8	9	2	10	
L1-13	L3-11	May 2015		1	2	3	2	3	2	3	2	3	4	1, 5[b]	4	6	23[e]	4	13	
L12-16	L5-14	Jan 2018					2	4	7[g]	5[g]	4	3	3	3	1	7	15	3	16	
L13-14	L6-15	Jan 2018					1	1		1	1	1		5	2			5	5	Mar 2024[c]
L19-16	L10-15	Feb 2018					1	4	2	1	2	2	1	8, 2[b]	3	6	7	8	1	
L3-13	L8-14	July 2018						2	1	2	1	2		3	2	4	1	1	4	Aug 2023[d]
L6-16	L16-17	Dec 2018						1	1	2	2	1	1	5	2	1	5	6	2	
L3-14	L2-12	Jan 2019						1		1				0		2	1			
L11-17	L7-11	Jan 2019						2	3	2	1	2	2	5	4	8	3	5	7	
L10-18	F1-98	Feb 2020								1	2	1	1	1, 2[b]	1[f]		3	2	2	
L5-18	FW12-15	Aug 2020								1	2	1	1	1		6		1	3	
L23-16	L3-17	Oct 2020								1	1	2	1	4	1	1	1	4	1[i]	
LW1-18	L12-17	Dec 2020								1	2	3	2	3, 1[b]			7	3	4	
L3-19	L7-18	Mar 2021								2	0		2	0		2	2		1[i]	
L21-17	LW3-18	Jan 2020									1	1	2	0		4			3	
L2-15	L11-15	Feb 2022										2				1			2	
L17-16	L9-18	Oct 2022										1	1	3				3	1	
L9-17	L12-18	Fall 2022										1					1		1[i]	
L1-19	L11-11	Jan 2023										1	1	2	2		1	2	1	
L4-19	FW12-19	Mar 2023										1				1				Oct 2023[c]
L3-21	L14-17	Mar 2023										1	1	2	1		1	3		
Totals			**2**	**5**	**9**	**18**	**13**	**27**	**22**	**41**	**27**	**31**	**24**	**67, 15[b]**	**30**	**92**	**102**	**73**	**96**	

[a] Includes eggs that disappeared, were broken, or fertility could not be determined upon examination.
[b] Hatched from fertile egg(s) swapped into the nest while the pair's own eggs were removed.
[c] Death or injury of one member of the pair.
[d] Disappearance of one or both members of the pair.
[e] One fertile/viable egg pulled at day 8-10 died while hatching at captive center.
[f] Fledging date may be just shortly after the end of the report period.
[g] Number of nests are determined by number of new platforms containing an egg even if timing indicates eggs are from the same clutch.
[h] Eggs laid by Louisiana cranes, including those pulled from nests prior to full term and their outcome in captivity.
[i] Egg likely fertile but outcome (hatch/no hatch) unconfirmed.
[j] Only includes chicks that were hatched in the wild, regardless of egg source.

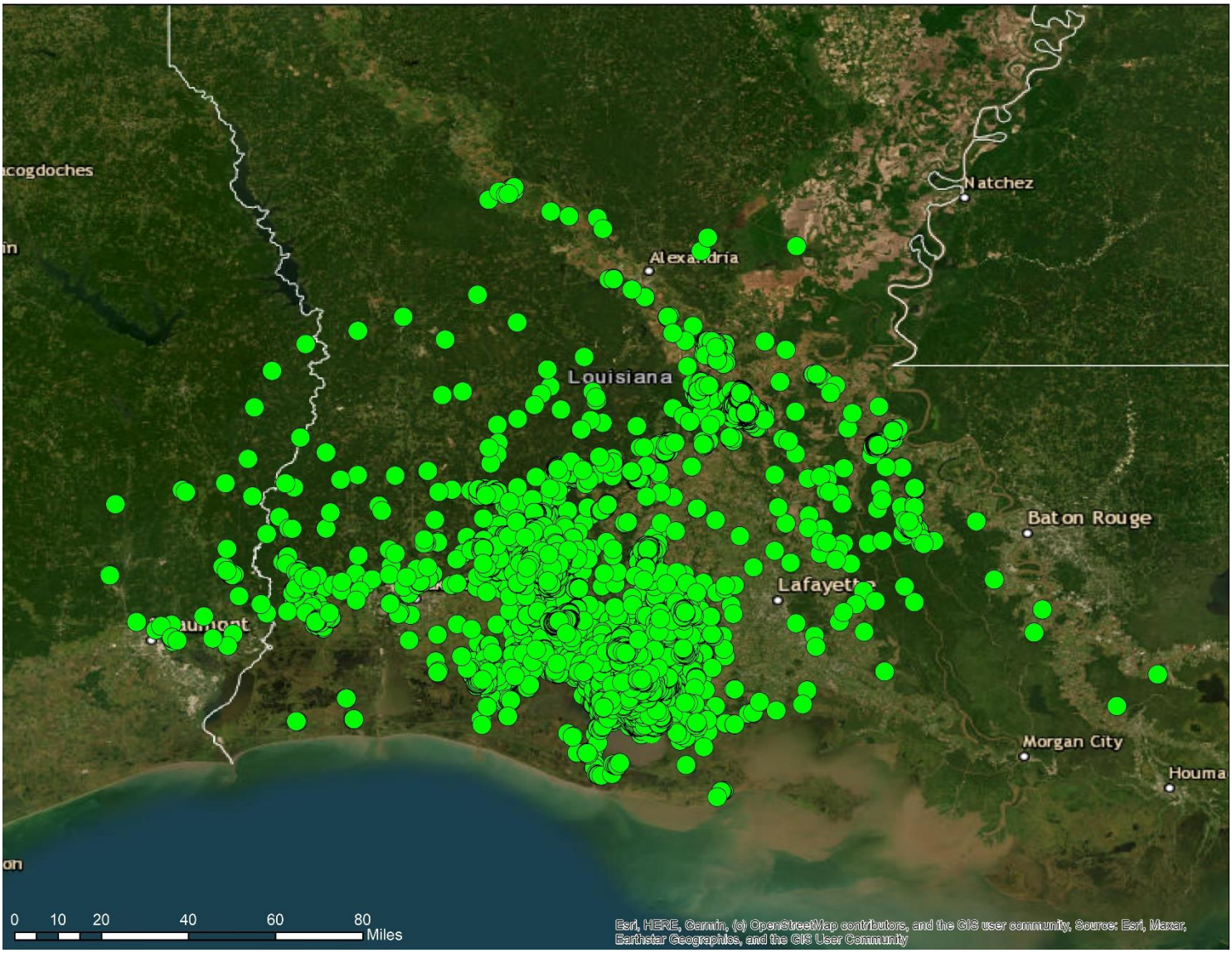

Figure 1. Location data collected from remote transmitters of reintroduced whooping cranes, 1 July 2023 – 30 June 2024

Figure 2. Children and adult art submissions on display for the whooping crane art show and contest.

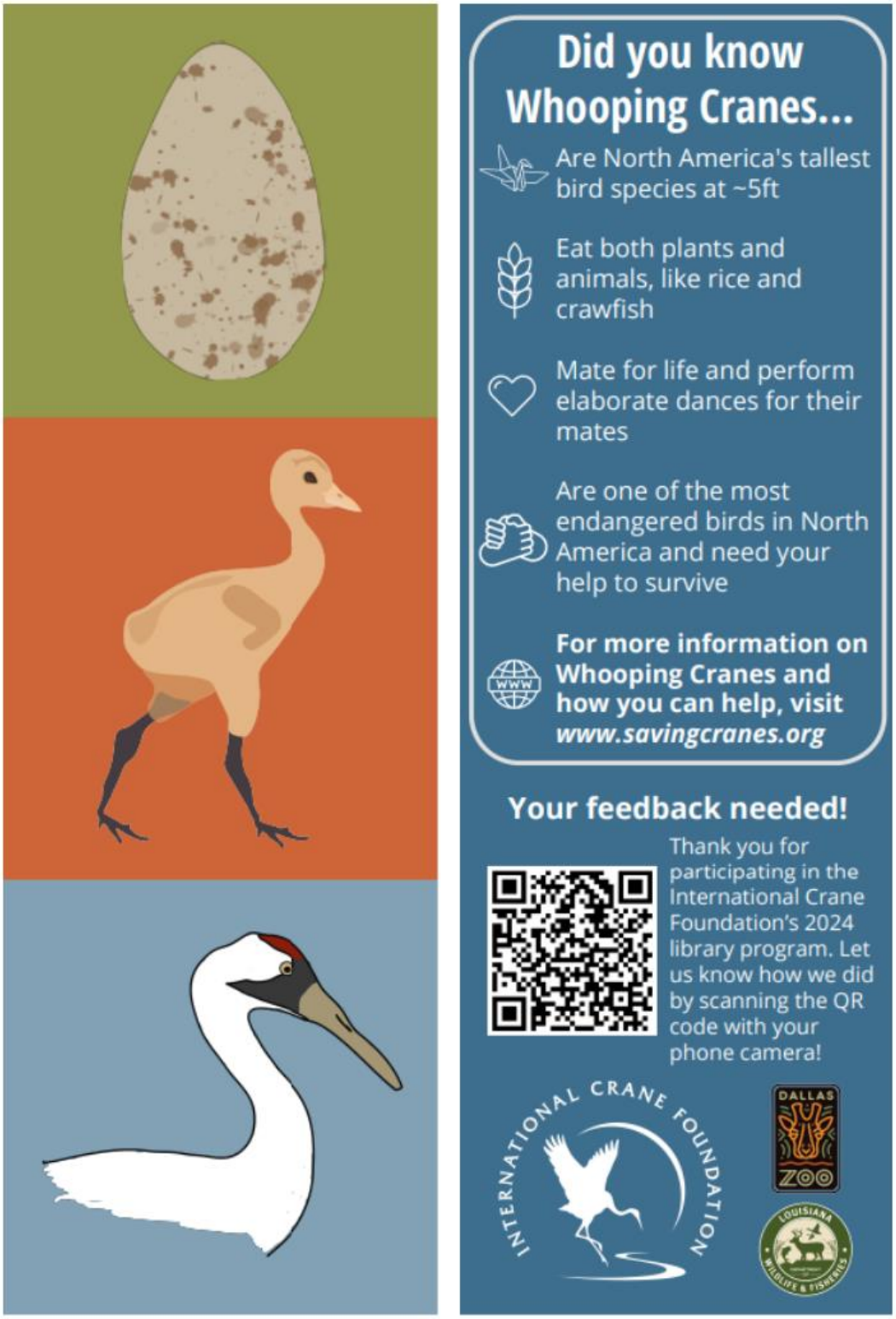

Figure 3. Bookmark created by the International Crane Foundation to go along with their library program presentation.