

EMP FIELD TEAM ANNUAL REPORT 2020

Prepared by Hillary Thompson and Nicki Gordon, International Crane Foundation

During 2020, there were about 80 Whooping Cranes in the Eastern Migratory Population. The majority spent the summer in Wisconsin, with the exception of 5 birds that spent all or part of the summer in Michigan or Illinois (Fig. 1). We recorded a total of 23 nests by 20 breeding pairs of cranes, from which 18 chicks hatched. Four of these chicks made it to fledging, migrated south, and wintered with their parents. There were no releases of captive-reared cranes due to constraints on captive breeding centers related to COVID-19. There were 3 confirmed mortalities during 2020, due to various causes. Members of the Field Team captured 5 adult Whooping Cranes during 2020 for transmitter replacement, as well as 6 wild-hatched juveniles for initial transmitter deployment. All 5 of the adults were tagged with Ornitela GSM transmitters which will help us monitor nesting and chick-rearing seasons. Additionally, 1 adult Whooping Crane (2-15) was captured and removed from the Eastern Migratory Population and was placed back into captivity, at the Northeastern Wisconsin Zoo (NEW Zoo). She had a wing injury that was not repairable and thus she was not able to be re-released.

Highlights related to monitoring and management of the EMP from 2020 include:

- During 2020, we recorded a total of 23 nests by 20 different pairs breeding in Wisconsin. This does not include a female-female nesting pair nor a hybrid Sandhill-Whooping Crane pair. The numbers reported here are the total we observed but there may have been a few missed nests or chicks who only lived a few days. We had limited monitoring during April due to COVID-19 restrictions. We were not able to do large-scale nest management at Necedah National Wildlife Refuge in response to black fly emergence during 2020 due to constraints on captive breeding centers and transport of eggs. We pulled fertile eggs from one nest and swapped them into a female-female nest. The female-female pair hatched 1 chick, which did not survive to fledging. Six nests failed due to a variety of causes (predation, abandonment, unknown). One nest was incubated full term but did not hatch and 1 nest had an unknown outcome but the pair was confirmed later without chicks. 18 chicks hatched from 12 first nests and 3 re-nests. Four wild-hatched chicks made it to fledging and all migrated south (Table 3). Nest monitoring was limited in early April due to restrictions from COVID-19, so we likely missed a few breeding pairs.
- Five adults were captured for transmitter replacement, 6 wild-hatched chicks were captured for initial banding, and 1 adult was captured and placed back in captivity due to an injury during 2020.
- There were 3 confirmed mortalities of adult or sub-adult (post-fledge) Whooping Cranes in Wisconsin during 2020 (Table 1).
- We did not release any captive-reared cranes during 2020 due to constraints on captive centers and egg or bird transfers due to COVID-19.

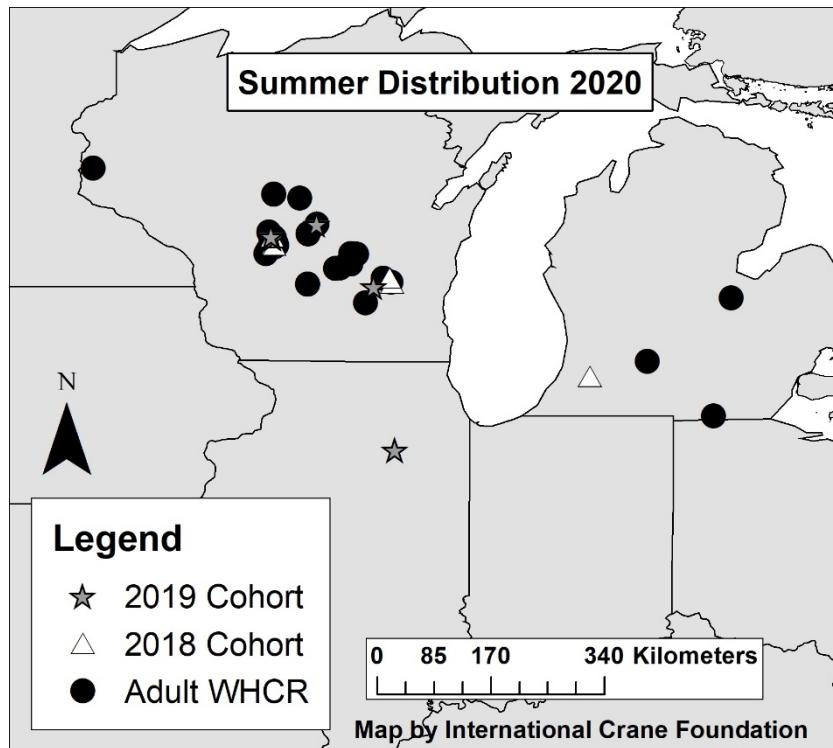


Figure 1. Summer distribution of the Eastern Migratory Population of Whooping Cranes during 2020. At least 74 cranes spent the summer in Wisconsin, 1 in Illinois, and 4 in Michigan. The locations of 6 cranes were unknown during summer 2020, 5 of which were considered long-term missing by the end of the year, and the 6th missing crane will be missing for a year and considered long-term missing in early 2021. One additional crane was detected in Wisconsin in March 2020 but was not seen again after that, and will also be considered long-term missing in early 2021.

Winter 2019/2020

The estimated population size as of 1 January 2020 was 86 (41 F, 42 M, 3 U). The final wintering locations of Whooping Cranes in the EMP during winter 2019/2020 were as follows (Figure 2):

- Indiana – 35
- Illinois – 9
- Kentucky – 7
- Tennessee – 2
- Alabama – 20
- Georgia – 2
- Florida – 2
- Unknown – 9 (6 of which were later considered long-term missing, the other 3 were a family group that wintered in an unknown location)

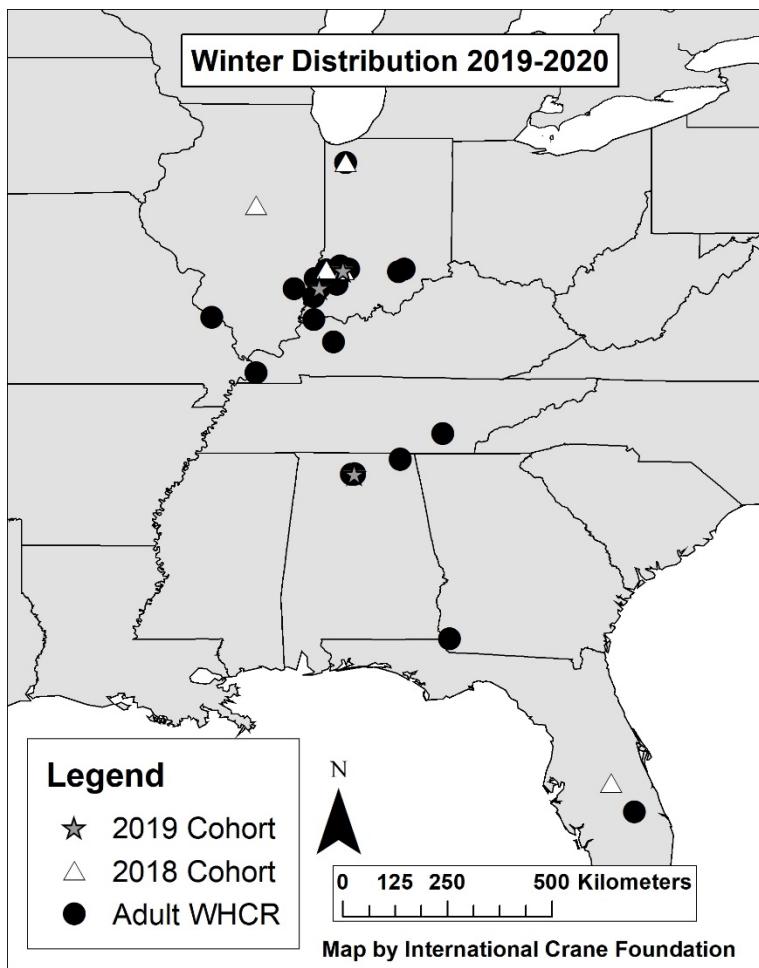


Figure 2. Distribution of the Eastern Migratory Population of Whooping Cranes during winter 2019-2020.

Captures and Banding in 2020

- Captures for transmitter replacement:
 - 13-03 Greene County, Indiana, February 2nd
 - 42-09 Adams County, Wisconsin, June 25th
 - 2-04 Juneau County, Wisconsin, September 18th
 - 29-08 Juneau County, Wisconsin, September 22nd
 - 13-02 Juneau County, Wisconsin, October 2nd
- Captures of pre-fledged wild-hatched chicks (transmitter and bands):
 - W1-20 Juneau County, Wisconsin, June 15th *remains collected July 7th
 - W2-20 Juneau County, Wisconsin, June 15th *remains collected August 16th
 - W3-20 Adams County, Wisconsin, June 25th
 - W13-20 Dodge County, Wisconsin, September 11th *post-fledge
 - W14-20 Juneau County, Wisconsin, July 20th
 - W18-20 Juneau County, Wisconsin, September 2nd
- Capture due to wing injury and could not be released back into the wild
 - 2-15 Marathon County, Wisconsin, July 22nd

Winter distribution as of 1 January 2021

The maximum population size as of 1 January 2021 was 80 (39 Female, 38 Male, 3 Unknown). The distribution of these birds at this time is as follows (Figure 3):

- Michigan – 1
- Indiana – 37
- Illinois – 8
- Kentucky – 11
- Tennessee – 1
- Alabama – 14
- Georgia – 2
- Florida – 1
- Unknown – 5 (2 of which will soon be considered long-term missing)

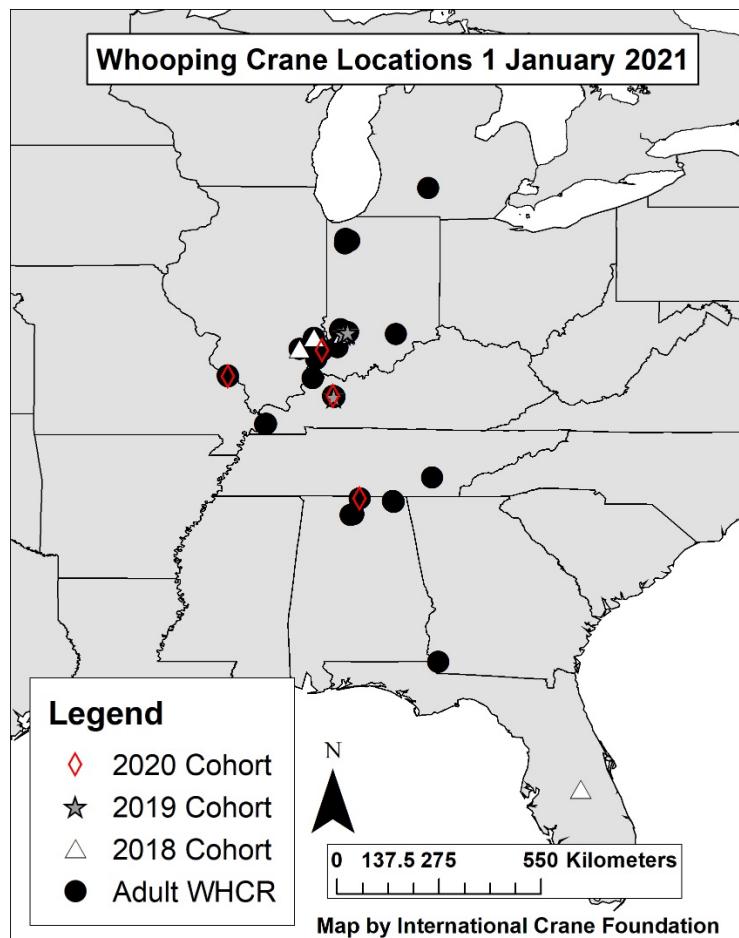


Figure 3. Distribution of wintering Whooping Cranes in the Eastern Migratory Population as of 1 January 2021.

Survival

- The total (both captive releases and wild-hatched chicks) coming into this population since 2001 is 320 (Figure 4), of which 80 (25%) may be alive as of 31 December 2020 (Figure 5). There have been 295 captive raised Whooping Cranes released since the beginning of the reintroduction in 2001. This number does not include the 17 HY2006 ultralight-led juveniles that died during confinement in a storm and one HY2007 ultralight-led juvenile that was removed from the project prior to release. There have been 28 wild-hatched chicks that survived to fledging, 25 of which have been recruited to the EMP (see Reproduction section below). Three of the fledged wild-hatched chicks died prior to fall migration.
- There were 3 confirmed mortalities recorded in 2020 (not including wild-hatched chicks born in 2020, Table 1):
 - 1-10 – remains collected July 7th, cause unknown
 - 28-05 – remains collected July 16th, cause unknown but suspected predation during molt
 - 75-18 – remains collected September 29th, lead poisoning
- There were 6 cranes classified as long-term missing during 2020, that had not been seen in more than a year.
 - 5-12 - last seen 7 February 2019 in Wakulla County, Florida
 - 20-15 – last seen 23 May 2019 in Juneau County, Wisconsin
 - 17-11 - last seen 14 April 2019 in Allamakee County, Iowa
 - W18-15 - last seen 20 June 2019 in Juneau County, Wisconsin
 - 4-08 - last seen 24 July 2019 in Juneau County, Wisconsin
 - 28-08 - last seen 23 October 2019 in Marathon County, Wisconsin

Table 1. Causes of death for fledged, wild-hatched and captive-reared Whooping Cranes in the Eastern Migratory Population. We did not include confirmed mortalities for wild-hatched pre-fledged chicks. “Other” causes of mortality included euthanasia due to injuries, hemorrhages, capture myopathy, emaciation, and egg binding.

Cause of Death	Number of cases cumulatively 2001-2019	Number of cases 2020
Predation	38	0
Impact Trauma – confirmed or suspected power line collision	10	0
Impact Trauma – other (vehicle or aircraft collision, unknown source of trauma)	11	0
Gunshot	14	0
Disease (including lead poisoning)	7	1
Other	14	0
Unknown	71	2
Total confirmed mortalities	165	3

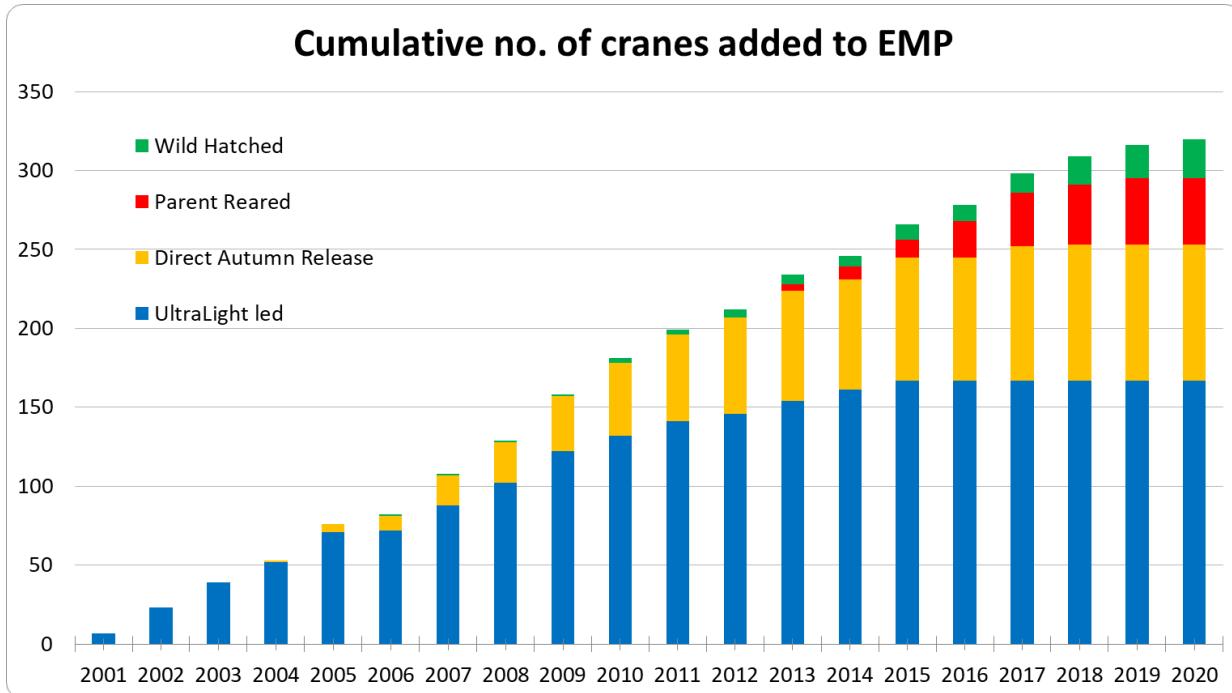


Figure 4. Cumulative number of cranes added to the Eastern Migratory Population by rearing method since 2001. As of 2020, there have been 167 UltraLight led, 86 Direct Autumn Release, 42 Parent Reared, and 25 Wild Hatched Whooping Cranes added to the EMP.

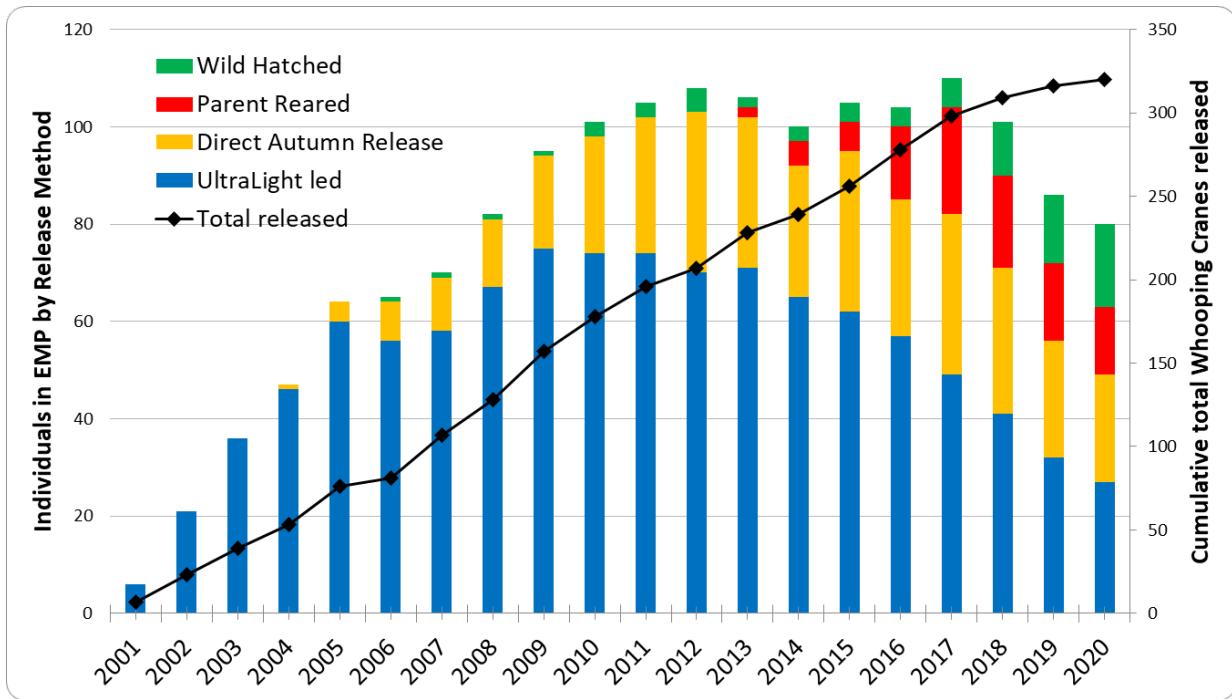


Figure 5. Population size of EMP by rearing method. As of 1 January 2021, there were 80 birds recorded in the EMP (left axis; 38 males, 39 females, 3 unknown). Black line indicates the total birds released (or wild-hatched and fledged) into the population cumulatively (right axis; same number as figure 4, above).

Reproduction

- This year we recorded a total of 23 nests by 20 different pairs breeding in Wisconsin. This does not include a female-female nesting pair nor a hybrid Sandhill-Whooping Crane pair. The numbers reported here are the total we observed but there may have been a few missed nests or chicks who only lived a few days. We had limited monitoring during April due to COVID-19 restrictions.
- We were not able to do large-scale nest management at Necedah National Wildlife Refuge in response to black fly emergence during 2020 due to constraints on captive breeding centers and transport of eggs. We pulled fertile eggs from one nest and swapped them into a female-female nest (Table 2). The female-female pair hatched 1 chick, which did not survive to fledging.
- 6 nests failed due to a variety of known and unknown causes (predation, abandonment, Table 2). Additionally, 1 nest was incubated full term, and 1 nest had an unknown outcome but the pair was confirmed later without chicks.
- There was 1 hybrid Sandhill-Whooping Crane nest in Michigan. When Michigan DNR staff went to replace hybrid eggs with dummy eggs, they discovered 2 hybrid chicks, neither of which lived very long. The hybrid pair was later seen without chicks and they re-nested. The eggs from their 2nd nest were replaced with dummy eggs (Table 2).
- 18 chicks hatched from 12 first nests and 3 re-nests (Table 2). Four wild-hatched fledged and migrated south (Table 3).
- At the end of 2020, there have been a total of 354 nests (273 first nests, and 81 re-nests). 153 chicks hatched in the wild of which 28 fledged of 31 December 2020, 17 of those survive in the wild (Tables 3 and 4).

Table 2. Nesting summary for 2020. Asterisks indicate a re-nest.

Female	Male	Nest Outcome	Date Completed	County	Chicks	Notes
27_14	10_11	Failed – possibly predation	4/21/20	Marquette		Water around nest dried up and nest was found on dry land.
25_09	2_04	Active nest management – eggs pulled	4/22/20	Juneau	(see below)	Eggs were collected when black flies were emerging on the landscape and were put in the nest of a female-female pair (see below).
12_11	5_11	Hatched	4/24/20	Juneau	W1-20, W2-20	Both chicks were last seen in late June, and were found dead close to fledging
69_16	W10_15	Failed - abandoned	4/25/20	Juneau		Abandoned around black fly emergence, likely black flies caused abandonment.

42_09	11_15	Hatched	4/30/20	Adams	W3-20	Chick first seen early May. Hatch date estimated. W3-20 fledged and migrated south with parents
W3_17	30_16	Unknown	4/30/20	Green Lake		Could not confirm nest outcome due to limited monitoring in April because due to COVID-19 restrictions.
6_15	37_07	Failed – likely abandoned	4/30/20	Juneau		Nest failed around black fly emergence. May have abandoned due to black flies.
6_17	4_17, 24_17	Hatched	5/1/20	Sauk	W4-20	24-17 blood-tested as male but was seen incubating this nest with male 4-17. Female 6-17 was seen on the nest around when eggs were laid but then did not incubate later, nor did she raise the chick. Chick did not fledge.
3_14	4_12	Failed – predation	5/2/20	Green Lake		Coyote predation
67_15	3_17	Failed – abandoned	5/7/20	Green Lake		We do not know why they abandoned.
10_15	4_13	Hatched	5/8/20	Green Lake	W5-20	Chick did not fledge.
7_11	19_10	Hatched	5/8/20	Juneau	W6-20	Chick did not fledge.
13_03	9_05	Hatched	5/8/20	Juneau	W7-20, W8-20	Neither chick fledged.
W1_06	1_10	Failed – unknown	5/11/20	Juneau		Could not confirm what happened to the nest.
24_08	13_02	Full Term	5/10/20	Juneau		Pair incubated for 30 days and were seen off nest on 11 May and eggshells present in nest but no chick seen.
59_13	1_11	Hatched (2 of 2)	5/13/20	St. Croix	W9-20, W10-20	Neither chick fledged.
36_09	18_03	Hatched	5/15/20	Juneau	W11-20	Chick did not fledge.
2_15, 28_05	None	Hatched	5/15/20	Marathon	W12-20	Female-female pair had 3 eggs in the nest,

						2 of which were swapped with fertile eggs pulled from 2-04/25/09. One chick hatched but did not fledge (see above).
38_17	63_15	Hatched	5/17/20	Dodge	W13-20	W13-20 fledged and migrated south with parents.
12_03	12_05	Hatched	5/10/20	Juneau	W14-20	W14-20 fledged and migrated south with parents.
15_11	29_08	Hatched	5/26/20	Juneau	W15-20	Chick did not fledge.
25_09	2_04	Hatched*	6/14/20	Juneau	W16-20	Chick did not fledge.
W1_06	1_10	Hatched*	6/22/20	Juneau	W17-20	Chick did not fledge.
24_08	13_02	Hatched*	7/2/20	Juneau	W18-20	W18-20 fledged and migrated south with parents.
SACR	14_12	Hatched	4/25/20	MICHIGAN	NA	14-12 and a SACR hatched 2 hybrid chicks in Michigan, neither of which lived very long.
SACR	14_12	Eggs pulled	7/1/20	MICHIGAN		Eggs were removed from hybrid re-nest and replaced with dummy eggs.

Table 3. Nest initiation dates, number of nests, number of chicks hatched, and number of chicks fledged 2005-2020. This does not include hybrid nests or chicks, nor does it include same-sex pairs. There was one same-sex female pair that nested in 2020, was given fertile eggs, and hatched a chick that did not fledge. This chick is included in the number of chicks hatched, but the nest is not included in nest totals.

Year	First Nest Initiation	# First Nests	# Re-nests	Total Nests	# Hatched	# Fledged
2005	16 Apr	2	0	2	0	0
2006	5-6 Apr	5	1	6	2	1
2007	3 Apr	4	1	5	0	0
2008	7 Apr	11	0	11	0	0
2009	2 Apr	12	5	17	2	0
2010	<1 Apr	12	5	17	7	2
2011	3-4 Apr	20	2	22	4	0
2012	<26 Mar	22	7	29	9	2
2013	15 Apr	21	2	23	3	1
2014	7 Apr	25	3	28	13	1

2015	1-3 Apr	27	9	36	24	3
2016	29-31 Mar	25	16	41	24	3*
2017	30 Mar	25	10	35	18	2
2018	8 Apr	17	6	23	10	6*
2019	30 Mar	25	11	36	19	3
2020	25 Mar	20	3	23	18	4
Total		273	81	354	153	28

*One chick was old enough to have fledged when it died, but flights were never observed.

Table 4. Pairs that have successfully fledged chicks with years of fledging

Sire	Dam	Year(s)		
11_02	17_02	2006		
3_04	9_03	2010	2013	2015
12_02	19_04	2010	2012	2014
9_05	13_03	2012	2019	
10_09	17_07	2015		
2_04	25_09	2015		
29_09	12_03	2016		
12_05	12_03	2019	2020	
1_04	8_05	2016		
12_02	4_11	2016*		
14_08	24_08	2017	2018**	
13_02	24_08	2020		
24_09	42_09	2017	2018	
11_15	42_09	2020		
5_11	12_11	2018	2019	
4_08	23_10	2018		
8_04	W3_10	2018		
1_04	16_07	2018		
63_15	38_17	2020		

*12-02 died before chick fledged. Chick was old enough to have fledged when it died, but flights were never observed. 4-11 was found shot at her wintering area at the beginning of 2017.

** 14-08 disappeared before chick fledged and 14-08 is believed to be dead. The chick (W9-18) was old enough to have fledged when it died, but flights were never observed.