

EMP FIELD TEAM ANNUAL REPORT 2022

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During 2022, there were about 75 Whooping Cranes in the Eastern Migratory Population. The majority spent the summer in Wisconsin, with the exception of 2 birds that spent the summer in Michigan (Fig. 1). There were 6 confirmed mortalities during 2022, including the 4 released birds, due to various causes.

Highlights related to monitoring and management of the EMP from 2022 include:

- We recorded a total of 31 nests by 24 different pairs breeding in Wisconsin. This does not include 1 nest of a hybrid Sandhill-Whooping Crane pair in Michigan, and 2 nests of a hybrid pair in Dodge County, Wisconsin. We collected 16 eggs from 9 first nests for forced renesting, to encourage pairs to renest after black flies were no longer on the landscape. Additionally, we recovered 2 eggs from abandoned nests, and collected 4 additional eggs from 4 re-nests with 2 egg clutches (took 1 egg from two 2-egg clutches). In total we brought 22 eggs into captivity for rearing and release. 14 chicks hatched from 8 first nests and 4 re-nests (Table 2). Two wild-hatched chicks fledged and survived to migration (Table 3).
- Two adults were captured for transmitter replacement and one wild-hatched chick was captured for initial banding.
- We released 4 captive-reared Whooping cranes into the wild. Two died prior to migration, one died during migration, and one was released on the wintering grounds where she was later found dead. It was a tough year for released birds! The two that died prior to migration were both 1 year old birds raised at the Calgary Zoo, whose transfer to Wisconsin was delayed due to COVID-19 and HPAI.

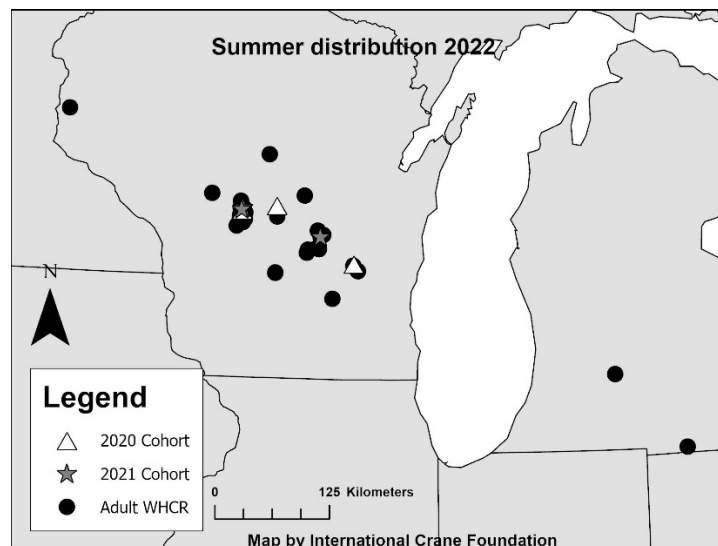


Figure 1. Summer distribution of the Eastern Migratory Population of Whooping Cranes during 2022. Seventy-one cranes spent the summer in Wisconsin and 2 were in Michigan.

Winter 2021-22

The estimated population size as of 1 January 2022 was 79 (38 F, 38 M, 3 U). The final wintering locations of Whooping Cranes in the EMP during winter 2021-22 were as follows (Fig. 2): 34 in Indiana, 11 in Illinois, 8 in Kentucky, 1 in Tennessee, 16 in Alabama, 3 in Georgia, and 1 in Florida. There were 5 in unknown locations, including 1 pair who consistently winter in an unknown spot, 1 bird who was confirmed dead in early 2022 but had likely died in fall 2021, and 2 birds who became long-term missing in 2022.

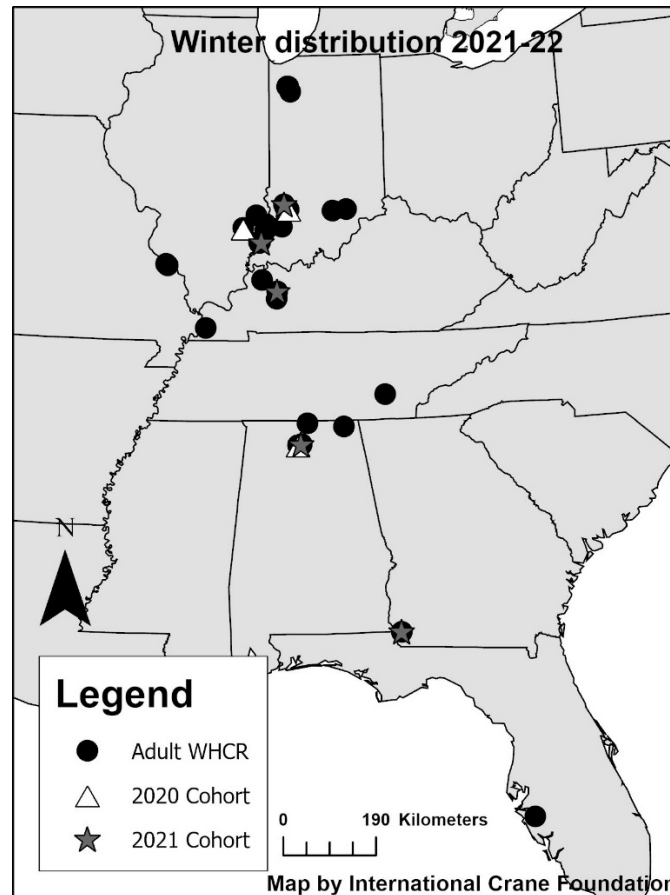


Figure 2. Distribution of the Eastern Migratory Population of Whooping Cranes during winter 2021-22.

Captures and Banding in 2022

- Captures for transmitter replacement:
 - W5-18 Juneau County, Wisconsin, 5 Apr
 - 42-09 Juneau County, Wisconsin, 23 Sept
- Captures of pre-fledged wild-hatched chick (transmitter and bands):
 - W4-22 Portage County, Wisconsin, 14 July
- Banding prior to release for captive-reared birds:
 - 81-21 and 82-21 Juneau County, Wisconsin, 30 Aug
 - 90-22 ICF, 12 Sept
 - 88-22 SCBI - banded by SCBI staff, 2 Nov

Winter distribution as of 3 January 2023

The maximum population size as of 3 January 2023 was 75 (37 Female, 35 Male, 3 Unknown). The distribution of these birds is as follows (Fig. 3): 25 in Indiana, 11-12 in Illinois, 5-8 in Kentucky, 2 in Tennessee, 15 in Alabama, 2 in Georgia, and 2 in Florida. There were 9 in unknown locations, 7 of which have not been seen south of the breeding grounds.

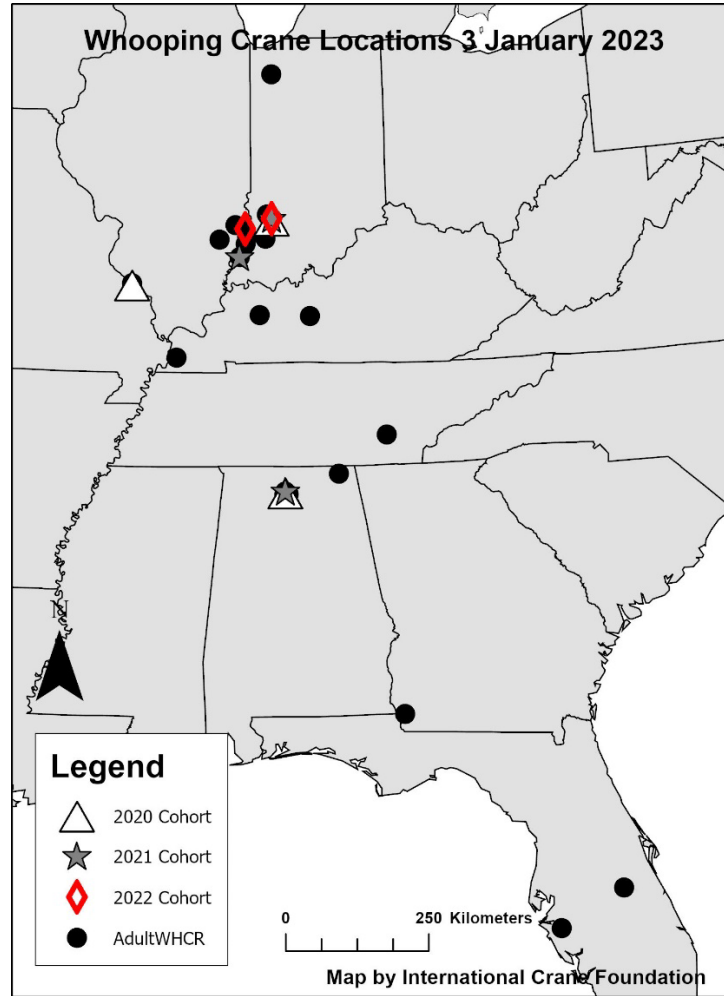


Figure 3. Distribution of wintering Whooping Cranes in the EMP as of 3 Jan 2023.

Survival

- The total (both captive releases and wild-hatched chicks) coming into this population since 2001 is 333 (Fig. 4), of which 75 (23%) may be alive as of 31 December 2022 (Fig. 5). There have been 302 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 34 wild-hatched chicks that survived to fledging (see Reproduction section below).
- There were 6 confirmed mortalities recorded in 2022 (not including pre-fledge wild-hatched chicks born in 2022, Table 1, Fig. 6):
 - 69-16 - remains collected 8 Jan, due to broken leg but unknown how injury occurred
 - W14-20 - remains collected 7 Apr but mortality likely occurred fall 2021, cause unknown
 - 81-21 - remains collected 19 Sept, cause unknown – suspect predation
 - 82-21 – remains collected 11 Oct, due to injury
 - 90-22 – remains collected 1 Dec, cause unknown – suspect vehicle collision
 - 88-22 – remains collected 6 Dec, cause unknown – suspect bobcat predation
- There were 4 cranes classified as long-term missing during 2022.
 - 19-10 – last seen 13 July 2021 in Juneau County, WI
 - W19-19 – last seen 13 July 2021 in Juneau County, WI
 - 10-11 – last seen 24 Jan 2022 in Lawrence County, IL
 - 25-09 – last seen 24 May 2022 in Juneau County, WI

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 2001-2021	Number of cases 2022
Predation	39	2
Impact Trauma – confirmed or suspected power line collision	10	0
Impact Trauma – other (vehicle or aircraft collision, unknown source of trauma)	11	1
Gunshot	14	0
Disease (including lead poisoning)	8	0
Other	14	1
Unknown	76	2
Total confirmed mortalities	172	6

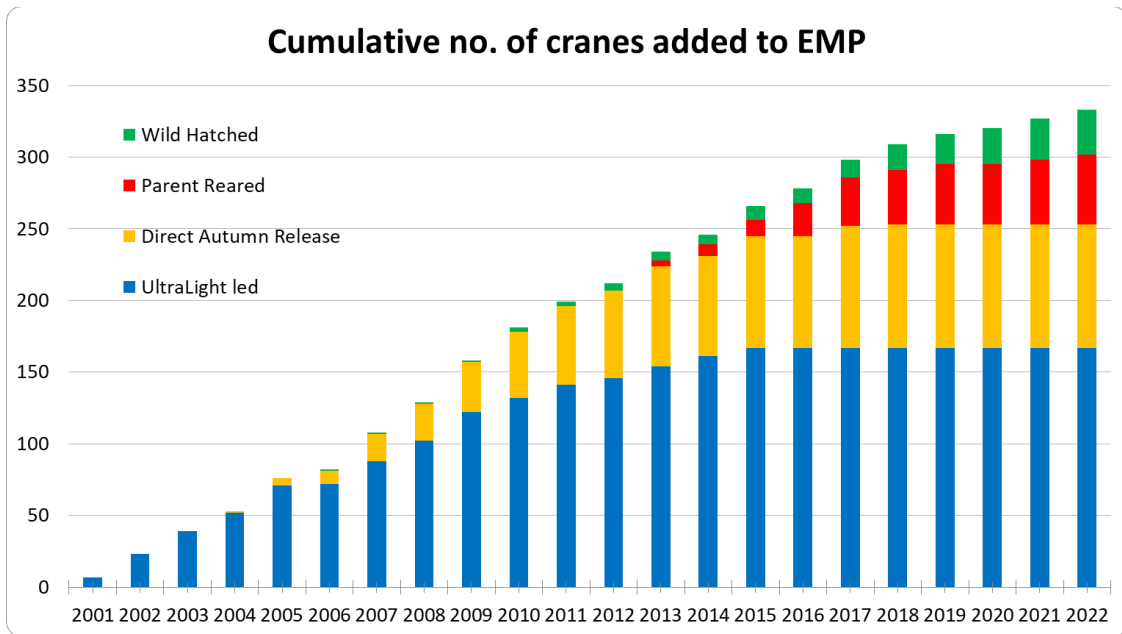


Figure 4. Cumulative number of cranes added to the Eastern Migratory Population by rearing method since 2001. As of 2022, there have been 167 UltraLight led, 86 Direct Autumn Release, 49 Parent Reared, and 31 Wild Hatched Whooping Cranes added to the EMP.

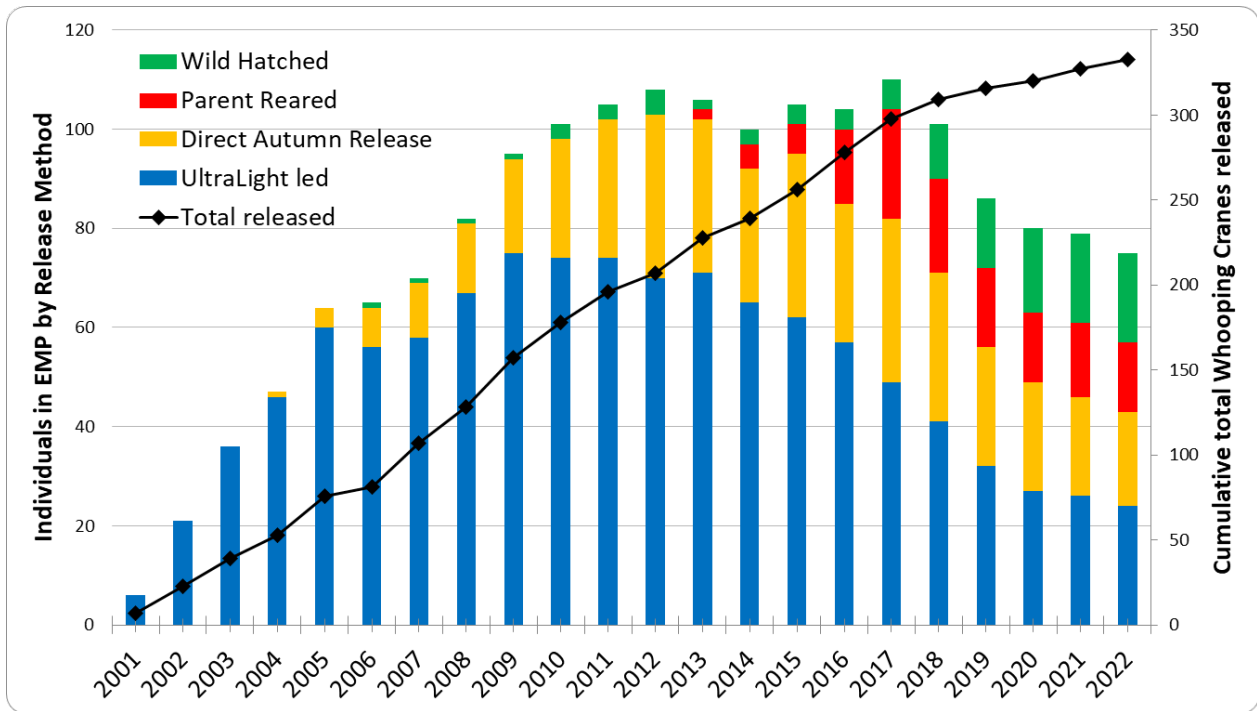


Figure 5. Population size of EMP by rearing method. As of 1 January 2023, there were 75 birds recorded in the EMP (left axis; 35 males, 37 females, 3 unknown). Black line indicates the total birds released (or wild-hatched and fledged) into the population cumulatively (right axis; same number as Fig. 4, above).

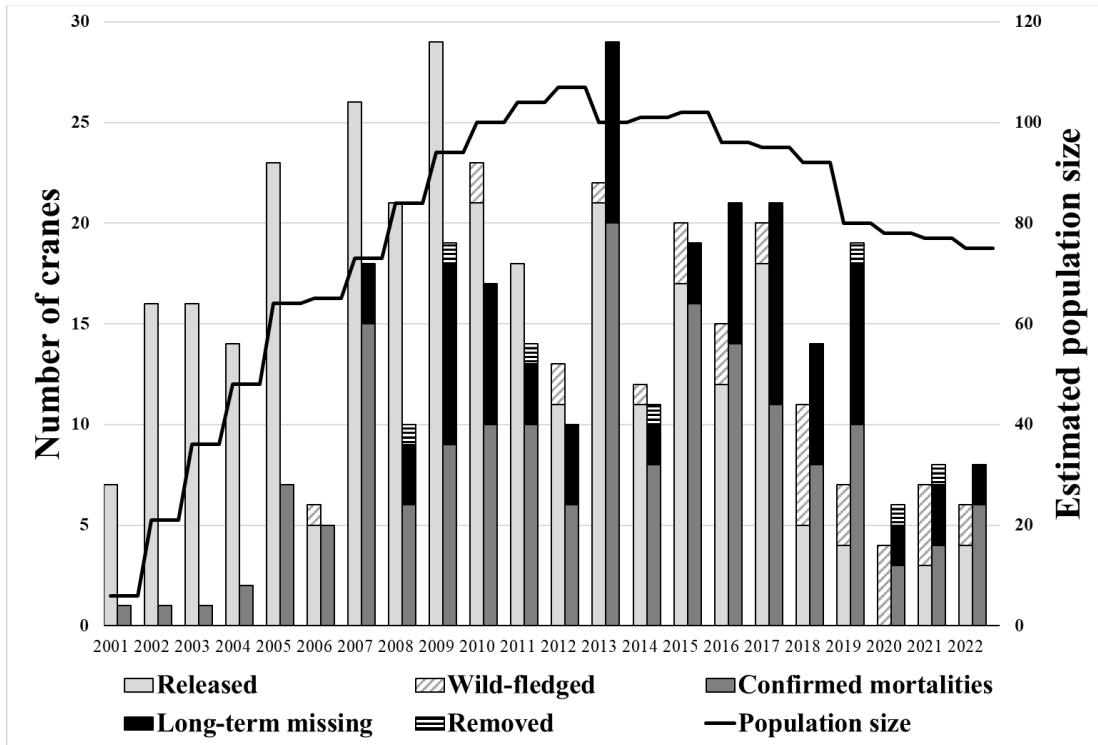


Figure 6. Estimated population size of the Eastern Migratory Population of Whooping Cranes from 2001-2022 (right axis). The number of cranes added into the population each year are shown in a stacked bar on the left (left axis). The number of cranes subtracted from the population each year are shown in a stacked bar on the right (left axis).

Reproduction

- This year we recorded a total of 31 nests by 24 different Whooping Crane pairs breeding in Wisconsin. The numbers reported here are the total we observed but there may have been a few missed nests or young chicks.
- We collected 16 eggs from 9 first nests for forced re-nesting, to encourage pairs to re-nest after black flies were gone. We recovered 2 eggs from abandoned nests and collected 4 eggs from 4 re-nests with 2 egg clutches. In total we brought 22 eggs into captivity for rearing and release.
- Eight 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 pairs were confirmed later without chicks.
- There was 1 hybrid Sandhill-Whooping Crane pair in Michigan and 1 in Dodge County, Wisconsin. In Michigan, Michigan DNR staff replaced the hybrid eggs with dummy eggs. The hybrid nests in Dodge County were destroyed (Table 2).
- 14 chicks hatched from 8 first nests and 4 re-nests (Table 2). Two wild-hatched chicks fledged and survived to migration (Table 3).
- At the end of 2022, there have been a total of 408 nests (318 first nests, and 90 re-nests). 181 chicks hatched in the wild, of which 34 have fledged. As of 1 January 2023, 18 of those survive in the wild (Tables 3 and 4).

Table 2. Nesting summary for 2022. Asterisks indicate a re-nest.

Female	Male	Nest Outcome	Date Completed	County	Chicks	Notes
12-11	5-11	Hatched	5/2/22	Juneau	W1, W2	W1-22 fledged
3-14	4-12	Hatched	5/5/22	Green Lake	W3	
59-13	1-11	Failed – abandoned	4/17/22	St. Croix		Egg infertile
25-09	2-04	Failed – unknown	4/21/22	Juneau		
W3-17	30-16	Failed – predation	4/22/22	Green Lake		Unknown predator
24-08	13-02	Failed – abandoned	4/23/22	Juneau		Eggs scavenged
W1-06	W10-15	Active nest management	4/25/22	Juneau		
13-03	9-05	Active nest management	4/25/22	Juneau		
12-03	12-05	Active nest management	4/25/22	Juneau		
73-18	3-04	Active nest management	4/25/22	Juneau		
42-09	37-07	Active nest management	4/25/22	Juneau		
W10-18	W6-18	Active nest management	4/25/22	Juneau		
6-15	19-09	Failed – unknown	4/29/22	Juneau		
2-17	16-04	Failed – abandoned	5/4/22	Juneau		
15-11	29-08	Active nest management	5/4/22	Juneau		
W3-10	7-07	Active nest management	5/4/22	Juneau		
36-09	W5-18	Active nest management	5/4/22	Juneau		
8-17	28-17	Unknown	5/5/22	Marquette		
W1-19	1-17	Hatched	5/7/22	Portage	W4	W4-22 fledged
67-15	3-17	Hatched	5/14/22	Green Lake	W5, W6	
7-17	4-14	Hatched	5/16/22	Green Lake	W7	
24-17	4-17	Hatched	5/17/22	Sauk	W8	
38-17	63-15	Hatched	5/23/22	Dodge	W9	
10-15	4-13	Hatched	5/23/22	Green Lake	W10	
25-09	2-04	Failed* - unknown	5/23/22	Juneau		
59-13	1-11	Failed* - abandoned	6/6/22	St. Croix		Eggs were infertile – gave them a fertile egg from another pair
13-03	9-05	Hatched*	6/12/22	Juneau	W11	
24-08	13-02	Hatched*	6/12/22	Juneau	W12	
W1-06	W10-15	Hatched*	6/13/22	Juneau	W13	
15-11	29-08	Hatched*	6/17/22	Juneau	W14	
12-03	12-05	Full Term*	6/27/22	Juneau		
SACR	14-12	Failed - management	4/7/22	Lenawee Co, MI		Hybrid eggs were removed and replaced with dummy eggs.
SACR	16-11	Failed - management	5/2/22	Dodge		Removed hybrid eggs from the nest.
SACR	16-11	Failed* - management	6/13/22	Dodge		Removed hybrid eggs from the nest.

Table 3. Nest initiation dates, number of nests, number of chicks hatched, and number of chicks fledged 2005-2022. 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
2021	<31 Mar	21	2	23	14	4
2022	30 Mar - 2 Apr	24	7	31	14	2
Total		318	90	408	181	34

*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	2021	
29-09	12-03	2016		
12-05	12-03	2019	2020	2021
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	2022
4-08	23-10	2018		
8-04	W3-10	2018		
1-04	16-07	2018		
63-15	38-17	2020		
18-03	36-09	2021		
4-12	3-14	2021		
1-17	W1-19	2022		

*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.