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LOST EGGS AND FAILED FIRST **CLUTCHES OF EGGS**

AT WILD BALD EAGLE NESTS, 2006-2020

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Lost Eggs

From 2006-2020 at the nests observed, there were a total of 388 nests with first clutches of eggs (not counting second clutches), producing a total of **910 eggs** (See Table 1):

- 1-egg clutches produced 27 eggs.
- 2-egg clutches produced 488 eggs.
- 3-egg clutches produced 378 eggs.
- 4-egg clutches produced 12 eggs.
- One 5-egg clutch produced 5 eggs.

Through all years, 20.8% of the 910 eggs were lost. Table 3 enumerates these.

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References

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Click on th	ne Pop-Out but	tton to open	in a new tab.
Check off th	ici op Out bu	tton to open	

NESTS TOTAL EGGS 1-egg nests	6										2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 201							
		12	16	20	19	23	23	28	28	27	33	36	40	38	39		388	
																	eggs in clutch size /	eggs in clutch size / tota
1-egg nests	12	29	39	47	44	56	54	64	66	59	75	89	87	90	99	910	total eggs (910)	eggs in clutch size
	1		1	1	1			2	4	3	1	4	6		3	27	3.0%	
eggs hatched	1		0	1	1			1	1	1	1	3	2		0	12	1.3%	44.4%
eggs lost			1					1	3	2		1	4		3	15	1.6%	55.6
2-egg nests	8	20	20	22	24	28	30	34	26	38	44	44	48	54	48	488	53.6%	
eggs hatched	4	16	16	20	19	20	29	25	22	25	35	37	41	43	33	385		78.9%
eggs lost	4	4		-	5	_	1	9	4	13	9	7	7	11	15	103	11.3%	21.1
3-egg nests eggs hatched	3	9	18 14	24 20	15 13	24 22	24 23	24 20	36 29	18 17	30 26	36 30	33 26	36 29	48 37	378 315	41.5%	83.3%
eggs lost	3	3			2		1		29	1/	4	6		7	11	63	6.9%	16.7
4-egg nests					4	4	- 1	4		-	4	0		- '		12	1.3%	10.7
eggs hatched			<u> </u>	<u> </u>	1	4		4								9	2.370	75.0%
eggs lost				t	3									1		3	0.3%	25.0
5-egg nests												5				5	0.5%	
eggs hatched												0				0		0.0%
eggs lost												5				5	1%	100
TOTAL EGGS HATCHED	8	22	30	41	34	46	52	50	52	43	62	70	69	72	70	721	hatches / total eggs	79.25
																	eggs lost / total eggs	
CAUSES OF LOSS																		
unhatched				4	4	3	1	3	3	3	7	8	7	6	7	56	29.6%	1
unhatched broken			2	4	4		1	4	3	4	1	8	3	3	9	41	29.6% 21.7%	
unhatched broken intruder	1	1	3			1			6					3 3	9 4	41 24	29.6% 21.7% 12.7%	
unhatched broken intruder unknown	1	1		4	4			4		4	1		3	3	9	41	29.6% 21.7%	
unhatched broken intruder	1	1	3		2	1		4	6	4	1		3	3 3 1	9 4 2	41 24 14	29.6% 21.7% 12.7% 7.4%	unhatched eggs for each
unhatched broken intruder unknown predated disappeared hatching failure			3 1 1		2	1 3		4 4 1	6	4	1		3	3 3 1	9 4 2	41 24 14 10 9 8	29.6% 21.7% 12.7% 7.4% 5.3% 4.8% 4.2%	cause / total unhatched
unhatched broken intruder unknown predated disappeared hatching failure nonviable	1	1	3		2	1 3		4 4 1 1	6 1 1	4 2 2 3	1 2		3 5 1	3 3 1 4	9 4 2 4 1	41 24 14 9 8 7	29.6% 21.7% 12.7% 7.4% 5.3% 4.8% 4.2% 3.7%	unhatched eggs for each cause / total unhatchec eggs (189)
unhatched broken intruder unknown predated disappeared hatching failure nonviable abandoned		4	3 1 1		2 1 1	1 3 1		4 4 1	6 1 1	4 2 2	1		3 5 1	3 3 1 4	9 4 2 4	41 24 14 10 9 8 7 7 7	29.6% 21.7% 12.7% 5.3% 4.8% 4.2% 3.7% 3.7%	cause / total unhatched
unhatched broken intruder unknown predated disappeored hatching failure nonviable abandoned weather			3 1 1		2	1 3		4 4 1 1	6 1 1	4 2 2 3	1 2	8	3 5 1	3 3 1 4	9 4 2 4 1	41 24 14 10 9 8 7 7 7 6	29.6% 21.7% 12.7% 5.3% 4.8% 4.8% 4.2% 3.7% 3.7% 3.2%	cause / total unhatched
unhatched broken intruder unknown predated disappeared hatching failure nonviable abandoned		4	3 1 1		2 1 1	1 3 1		4 4 1 1	6 1 1	4 2 2 3	1 2		3 5 1	3 3 1 4	9 4 2 4 1	41 24 14 10 9 8 7 7 7	29.6% 21.7% 12.7% 5.3% 4.8% 4.2% 3.7% 3.7%	cause / total unhatched

- 1-egg clutches lost 55.6% of their eggs.
- 2-egg clutches lost 21.1% of their eggs.
- 3-egg clutches lost 16.7% of their eggs.
- 4-egg clutches lost 25% of their eggs.
- The single **5-egg** clutch lost **all** of its eggs.

The causes of the losses include external events, such as bad weather, a fallen nest, Bald Eagle intruders, and intrusions by other animals, which can lead to broken, abandoned, or predated eggs. Other causes include accidents (such as a misstep by a parent) and hatching failure (when the egg begins to hatch but fails to complete the process). Often, but not always, these events can be observed on cam, and even when they can be viewed, the effect on the eggs is not always clear. Among the lost eggs at these nests:

- 12.7% were lost as a result of intruders.
- 5.3% fell to predation.
- 4.2% experienced hatching failure.
- 3.7% were abandoned.
- 3.2% succumbed as a result of **bad weather**.
- 1.6% were lost when the **nest fell**.
- 1.1% broke as a result of an accident.

LIST OF BALD EAGLE NESTS

EGG CALENDARS 2009-2023

2019-2020 BREEDING SEA-SON

2020-2021 BREEDING SEA-SON

2021-2022 BREEDING SEA-SON

2022-2023 BREEDING SEA-SON

CONTACT

Eggs that were lost without observable cause make up the majority of the lost eggs:

- 29.6% failed to hatch.
- 21.7% broke before hatching.
- 7.4% were lost for unknown reasons.
- 4.8% disappeared.

An egg that fails to hatch is either infertile or nonviable. (See discussion of unhatched eggs here):

- Infertility is a reproductive problem with one or both parents that prevents the female's ovum from being fertilized by the male's sperm. In the data in Table 3, 1.1% of eggs were found by laboratory examination to be infertile.
- Nonviability is a problem with the embryo that prevents it from developing properly, which can result from myriad reasons, including external events such as enumerated above. In the data in Table 3, 3.7% of eggs were found either by laboratory examination or by evidence visible on cam (such as a partially developed embryo in a broken egg) to be nonviable.

Failed First Clutches

Of 389 first clutches of eggs observed, 11.3% were unsuccessful, resulting in the loss of all eggs, as listed in Table 4.

Table 4

Click on the Pop-Out button to open in a new tab.

		ΓA	FAILED FIRST CLUTCH)						
YEAR	1-EGG CLUTCHES LOST: NEST, CAUSE	2-EGG CLUTCHES LOST: NEST, CAUSE	3-EGG CLUTCHES LOST: NEST, CAUSE	4-EGG CLUTCHES LOST: NEST, CAUSE	5-EGG CLUTCHES LOST: NEST, CAUSE	TOTAL FIRST CLUTCHES, ALL NESTS	FAILED FIRST CLUTCHES		TOTAL EGGS, ALL NESTS		SS LOST FIRST JTCHES
2006		CA cWE, infertile				6		16.7%	12	2	
2007 2008	OD day latendar	Alf the DACA intended				13 16	0	0.0%	29 39	0	0.0%
2008	OR des, intruder	*VA nbg, BAEA intruder BC owl, unhatched				20	2	5.0%	39	2	4.3%
2010		OR des, unhatched				19	1	5.3%	47	2	4.5%
		BC owl, unhatched		l				1			
2011		ME br1, weather?				23	2	8.7%	56	4	7.1%
2012						23	0	0%	54	0	0%
2013	WI e4k, unknown	OK seq, GHOW intruder CA zSC, BAEA intruder? BC wht, BAEA intruder	MN dnr, broke			28	5	17.9%	64	10	15.6%
2014	*CA zSC, broke BC har, unhatched	be wit, breating der	CA trt, broke			28	3	10.7%	66	5	7.6%
2015	*IA dav, broke	OK seq, hatch fail CA zSC, broke PA pit, broke WI e4k, BAEA intruder BC dI2, abandoned				27	6	22.2%	59	11	18.6%
2016		MD blk, abandoned CA cTH, unhatched WI e4k, BAEA predated				33	3	9.1%	75	6	8.0%
2017	*†PA pit, nest tree fell	*CA trt, nest fell			*CA zSC, broke	36	3	8.3%	89	8	9.0%
2018	IA dav, BAEA intruder *IA dnn, broke WV shp, BAEA intruder CA cTH, unhatched	NJ duk, broke PA han, BAEA intruder	MN dnr, BAEA intruder			40	7	17.5%	87	11	12.6%
2019		FL nef, BAEA intruder *AZ gfd, ravens predated DC ecc, BAEA intruder				38	3	7.9%	90	6	6.7%
2020	*AZ gfd, abandoned *CA zSC, broke	OK seq, BAEA intruder CA bbl, unhatched GA ber, broke *CA cWE, ravens predated PA han, broke				39	7	17.9%	99	12	12.1%
TOTAL CLUTCHES	27	244	126	3	1	389					
TOTAL FAILED FIRST CLUTCHES	12	28	3	0	1		44				
failed/total clutches	44.4%	11.5%	2.4%	0%	100%			11.3%			
TOTAL EGGS LOST	12	56	9	0	5				910	82	9.0%
_	-	-	© elfruler 20 TABLE 4 FAILED FIRST CLUTCE		-						2
		۵٦	WILD BALD EAGLE N								

1-egg first clutches failed at the highest rate, while none of the 4-egg first clutches failed:

- 44.4% of 1-egg clutches failed.
- 11.5% of 2-egg clutches failed.
- 2.4% of 3-egg clutches failed.
- None of 4-egg clutches failed.
- The only **5-egg clutch** failed.

The causes of failed clutches include some of those described above in reference to lost eggs, including external events, infertility, and nonviability, but a large number failed for unknown reasons. Table 4 enumerates these failed clutches at specific nests (referred to by abbreviated codes, which are identified at the end of the table) and gives the cause, if known. See this page for discussion of unhatched <u>eggs</u>.

The number of lost clutches varies from year to year. 2018 and 2020 saw the most lost clutches, with 7 lost each year. However, the highest percentage of lost first clutches occurred in 2015, when 22.2% of first clutches were lost. In 2007 and 2012 no first clutches were lost. 2009, 2010, and 2019 were good years, when 5%, 5.3%, and 7.9% clutches were lost respectively.

At nests marked in Table 4 with an asterisk (*) the adults later produced a second clutch of eggs, which is discussed here.

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