

THE 2005 CENSUS OF TRUMPETER SWANS ON ALASKAN NESTING HABITATS

Bruce Conant, John I. Hodges, Deborah J. Groves, and James G. King U.S. Fish and Wildlife Service, 3000 Vintage Blvd., Suite 240, Juneau, AK 99801-7100

ABSTRACT

The eighth complete census of Trumpeter Swans (*Cygnus buccinator*) on their Alaska summering grounds was completed in late summer 2005. This year, 1,040 hours of flight time were expended by many survey crews to fly about 124,000 km of survey tracks (84,829 km in 2000) over all the potential Trumpeter Swan habitat (128,332 km² in 2005 compared to 123,864 km² in 2000) depicted on 780 (733 in 2000) USGS, 1:63,360 scale maps. Compared to 2000, the population was comprised of: paired birds 11,940 (+20%), singles 1,157 (+29%), flocked birds 4,148 (+36%), total white swans 17,245 (+24%), cygnets 6,447 (+100%), and total swans 23,692 (+38%). Cygnets accounted for 27% of the population (19% in 2000) and 2,084 broods (+81% from 1,149 in 2000) were found with an average brood size of 3.1 (2.8 in 2000). Although the population of white plumage (yearling and older) trumpeters summering in Alaska continues to follow a logistic growth curve, a comprehensive Alaska Trumpeter Swan Management Plan is still needed to ensure that they remain an integral part of each geographical unit of their present distribution. The continual loss of Pacific Coast wintering habitat and the recent large losses of Pacific Coast wintering swans to lead poisoning are of special concern. To provide the high quality data needed for the best management of this magnificent international resource, a complete census is recommended in Alaska every 5 years until the Alaska summering population stabilizes.

Table 1. Summary of Trumpeter Swans from censuses during August-early September, by census unit in Alaska for 1968, 1975, 1980, 1985, 1990, 1995, 2000, and 2005.

Unit	Year	White in pairs	As singles	In flocks	Total White	Cygnets	Total Swans
1 Gulf Coast	1968	442	29	191	662	363	1,025
	1975	442	32	190	664	193	857
	1980	586	52	266	904	351	1,255
	1985	778	76	440	1,294	164	1,458
	1990	666	59	205	930	434	1,364
	1995	628	72	295	995	150	1,145
	2000	754	58	230	1,042	314	1,356
2005	800	85	474	1,359	459	1,818	
2 Copper Canyon	1968	56	5	53	114	44	158
	1975	56	2	72	130	49	179
	1980	70	4	33	107	33	140
	1985	74	8	108	190	11	201
	1990	88	7	0	95	21	116
	1995	76	7	15	98	21	119
	2000	68	7	12	87	25	112
2005	56	3	33	92	24	116	
3 Gulkana	1968	288	31	81	400	190	590
	1975	556	43	155	754	284	1,038
	1980	1,026	42	632	1,700	660	2,360
	1985	1,736	143	595	2,474	533	3,007
	1990	2,142	225	776	3,143	778	3,921
1995	2,332	280	965	3,577	1,002	4,579	

	2000	2,520	280	683	3,483	503	3,986
Table 1, cont.	2005	2,440	252	510	3,202	1,228	4,430
4 Kenai	1968	86	3	27	116	65	181
	1975	72	5	29	106	39	145
	1980	90	12	8	110	65	175
	1985	92	5	40	137	51	188
	1990	114	5	7	126	78	204
	1995	130	11	29	170	79	249
	2000	200	15	34	249	105	354
	2005	282	20	91	393	172	565
5 Cook Inlet	1968	224	19	50	293	124	417
	1975	340	36	60	436	181	617
	1980	608	38	186	832	369	1,201
	1985	800	66	454	1,320	241	1,561
	1990	904	79	162	1,145	516	1,661
	1995	838	91	269	1,198	330	1,528
	2000	938	57	219	1,214	331	1,545
	2005	1,470	196	310	1,976	694	2,670
6 Lower Tanana	1968	224	21	94	339	137	476
	1975	518	21	185	724	388	1,112
	1980	746	16	585	1,347	773	2,120
	1985	1,202	113	426	1,741	503	2,244
	1990	2,070	179	559	2,808	1,072	3,880
	1995	2,268	219	987	3,474	1,315	4,789
	2000	2,788	227	1,026	4,041	901	4,942
	2005	3,054	305	1,040	4,399	1,786	6,185
7 Kuskokwim	1968	--	--	--	--	--	--
	1975	20	6	4	30	7	37
	1980	60	0	22	82	63	145
	1985	122	0	62	184	55	239
	1990	386	21	141	548	233	781
	1995	454	42	134	630	248	878
	2000	662	40	177	879	226	1,105
Table 1, cont.	2005	1,016	69	338	1,423	535	1,958
8 Koyukuk	1968	--	--	--	--	--	--
	1975	94	6	45	145	35	180
	1980	124	4	27	155	104	259
	1985	206	23	29	258	45	303
	1990	366	40	86	492	133	625
	1995	524	56	158	738	228	966
	2000	772	80	162	1,014	248	1,262
	2005	950	104	467	1,521	460	1,981
9 Yukon Flats	1968	--	--	--	--	--	--
	1975	2	0	0	2	1	3
	1980	2	0	0	2	4	6
	1985	10	0	0	10	3	13
	1990	66	8	22	96	56	152
	1995	200	26	107	333	90	423
	2000	412	35	173	620	129	749
	2005	632	40	374	1,046	324	1,370
10 S.E. Mainland	1968	--	--	--	--	--	--
	1975	2	0	0	2	0	2
	1980	6	0	3	9	11	20

	1985	16	1	7	24	16	40
Table 1, cont.	1990	34	1	23	58	50	108
	1995	58	2	18	78	61	139
	2000	64	4	24	92	70	162
	2005	76	10	56	142	70	212
11 Upper Tanana	1968	--	--	--	--	--	--
	1975	--	--	--	--	--	--
	1980	6	1	4	11	4	15
	1985	84	14	43	141	64	205
	1990	220	23	58	301	224	525
	1995	438	53	207	698	310	1,008
	2000	808	96	309	1,213	369	1,582
	2005	1,164	73	455	1,692	695	2,387
TOTAL	1968	1,320	108	496	1,924	923	2,847
	1975	2,102	151	740	2,993	1,177	4,170
	1980	3,324	169	1,766	5,259	2,437	7,696
	1985	5,120	449	2,204	7,773	1,686	9,459
	1990	7,056	647	2,039	9,742	3,595	13,337
	1995	7,946	859	3,184	11,989	3,834	15,823
	2000	9,986	899	3,049	13,934	3,221	17,155
	2005	11,940	1,157	4,148	17,245	6,447	23,692

Table 2. Summary of Trumpeter Swan production from censuses during August-early September, by census unit in Alaska for 1968, 1975, 1985, 1990, 1995, 2000, and 2005.

Unit	Year	Number of Cygnets	Number of Broods	Average Brood Size	Percent Juvenile	Number of Pairs	Percent Pairs w/Broods
1. Gulf Coast	1968	363	93	3.9	35	221	41
	1975	193	61	3.2	23	221	27
	1980	351	99	3.5	28	293	33
	1985	164	57	2.9	11	389	14
	1990	434	125	3.5	32	333	37
	1995	150	57	2.6	13	314	18
	2000	314	99	3.2	23	377	25
	2005	459	141	3.3	25	400	35
2. Copper Canyon	1968	44	13	3.4	28	28	39
	1975	49	16	3.1	27	28	57
	1980	33	10	3.3	24	35	29
	1985	11	3	3.7	5	37	8
	1990	21	9	2.3	18	44	20
	1995	21	7	3.0	18	38	18
	2000	25	7	3.6	22	34	21
	2005	24	7	3.4	21	28	21
3. Gulkana	1968	190	52	3.7	32	144	36
	1975	284	93	3.1	27	278	33
	1980	660	194	3.4	28	513	36
	1985	533	191	2.8	18	868	22
	1990	778	276	2.8	20	1,071	25
	1995	1,002	310	3.2	22	1,166	26
	2000	503	187	2.7	13	1,260	14
	2005	1,228	393	3.1	28	1,220	31
4. Kenai	1968	65	21	3.1	36	43	49
	1975	39	15	2.6	27	36	42
	1980	65	19	3.4	37	45	42
	1985	51	16	3.2	27	46	35
	1990	78	23	3.4	38	57	40
	1995	79	29	2.7	32	65	42
	2000	105	35	3.0	30	100	34
	2005	172	52	3.3	30	141	36
5. Cook Inlet	1968	124	36	3.4	30	112	29
	1975	181	61	3.0	29	170	36
	1980	369	103	3.6	31	304	34
	1985	241	85	2.8	15	400	21
	1990	516	157	3.3	31	452	34
	1995	330	107	3.1	22	419	25
	2000	331	105	3.2	21	469	22
	2005	694	216	3.2	26	735	28
6. Lower Tanana	1968	137	42	3.3	29	112	33
	1975	388	112	3.5	35	259	42
	1980	773	202	3.8	36	373	54
	1985	503	179	2.8	22	601	29
	1990	1,072	336	3.2	28	1,035	32

1995	1,315	426	3.1	27	1,134	37
2000	901	340	2.7	18	1,394	24
2005	1,786	607	2.9	29	1,527	39

Table 2. continued

Unit	Year	Number of Cygnet	Number of Broods	Average Brood Size	Percent Juvenile	Number of Pairs	Percent Pairs w/Broods
7. Kuskokwim	1968	---	---	---	---	---	---
	1975	7	3	2.3	19	10	30
	1980	63	16	3.9	43	30	53
	1985	55	18	3.1	23	61	30
	1990	233	68	3.4	30	193	34
	1995	248	71	3.5	28	227	30
	2000	226	81	2.8	20	331	24
	2005	535	186	2.9	27	508	35
8. Koyukuk	1968	---	---	---	---	---	---
	1975	35	16	2.2	19	47	34
	1980	104	36	2.9	40	62	55
	1985	45	16	2.8	15	103	13
	1990	133	50	2.7	21	183	26
	1995	228	85	2.7	24	262	31
	2000	248	104	2.4	20	386	26
	2005	460	163	2.8	23	475	33
9. Yukon Flats	1968	---	---	---	---	---	---
	1975	1	1	1.0	33	1	100
	1980	4	1	4.0	67	1	100
	1985	3	1	3.0	23	5	20
	1990	56	18	3.1	37	33	55
	1995	90	25	3.6	21	100	25
	2000	129	51	2.5	17	206	25
	2005	324	103	3.1	24	316	32
10. S.E. Mainland	1968	---	---	---	---	---	---
	1975	0	0	---	---	1	---
	1980	11	2	5.5	55	3	67
	1985	16	3	5.3	40	8	38
	1990	50	10	5.0	46	17	59
	1995	61	19	3.2	44	29	66
	2000	70	22	3.2	43	32	69
	2005	70	22	3.2	33	38	50
11. Upper Tanana	1968	---	---	---	---	---	---
	1975	---	---	---	---	---	---
	1980	4	1	4.0	27	3	33
	1985	64	19	3.4	31	42	45
	1990	224	53	4.2	43	110	48
	1995	310	82	3.8	31	219	37
	2000	369	118	3.1	23	404	28
	2005	695	194	3.6	29	582	33
Total	1968	923	257	3.6	32	660	37
	1975	1,177	378	3.1	28	1,051	35

1980	2,437	683	3.6	32	1,662	40
1985	1,686	588	2.9	18	2,560	23
1990	3,595	1,125	3.2	27	3,528	31
1995	3,834	1,218	3.1	24	3,973	30
2000	3,221	1,149	2.8	19	4,993	22
2005	6,447	2,084	3.1	27	5,970	34

AVERAGE

3.2 26 32