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for current and future generations."*

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MEMORANDUM

DATE: December 21, 2011
TO: Regional Offices
SUBJECT: Pennsylvania Results for 2011 Atlantic Flyway Mid-Summer Mute Swan Survey
FROM: Ian Gregg, Wildlife Biologist 3

This memorandum summarizes the results of the Pennsylvania portion of the 2011 Atlantic Flyway Mid-Summer Mute Swan Survey (MSMSS), which was conducted by District Wildlife Conservation Officers statewide this past summer. Surveys were conducted in 92% of WCO districts this year, which is similar to survey coverage in previous years. Most surveys were conducted from the ground (motor vehicle and/or on foot), with 4 officers using a combination of ground and boat surveys. Participants were also requested to record any trumpeter swans encountered; however, no trumpeter swans were observed during the survey period. Therefore, all results presented below are for mute swans only.

The attached tables and figures summarize data from this year's survey. Table 1 is a summary table of the 2011 results by region, while Table 2 includes data from the previous 3 surveys (2008, 2005, and 2002) for comparison. In 2011, a total of 167 mute swans were recorded statewide. This should be considered a minimum estimate of the Pennsylvania mute swan population; in addition to swans possibly present in districts not surveyed, some swans known to exist in surveyed districts, but not actually observed during the survey period, were not included in the totals. The number of mute swans observed was 41% below the 2008 total, and 52% lower than the peak total for this survey, which occurred in 2002.

Between 2008 and 2011, mute swan numbers declined in 5 regions and remained the same in 1 region. Total numbers of mute swans continue to be highest in the Southeast Region. The number of mute swans classified as feral (45) was down 15% from 2008 and represents a new record low for Pennsylvania since the initiation of the MSMSS (Figure 1).

Along with the decline in overall numbers, the range of mute swans in the Commonwealth appears to be contracting. Mute swans were observed in 30 WCO districts, fewest since 1999 (Figure 2). Figure 3 provides a map of current mute swan distribution by county in Pennsylvania based on this year's survey results.

The numbers of broods (10) and cygnets (17) documented in this year's Pennsylvania MSMSS both decreased from 2008 (Table 2; Figure 1) and both totals were the lowest since 1993. Feral birds accounted for 10% of broods, compared to 13% in 2008, 26% in 2005, and 38% in 2002. All broods consisted of either 1 or 2 cygnets with an overall average of 1.7.

In 2003 the Atlantic Flyway Council adopted a Mute Swan Management Plan with the goals of reducing mute swan populations in the flyway to levels that will minimize negative impacts on wetland habitats and native waterfowl, and preventing range expansion into unoccupied areas. Under the flyway management plan, Pennsylvania has a twofold mute swan population goal: zero free-ranging mute swans, and a maximum of 250 in captivity. The 2011 survey indicates further progress toward management plan goals: while feral swans remain, their numbers and productivity are decreasing; domestic swan totals appear to have declined and are at an acceptable level; and there is a contracting trend in the range of mute swans within the state. Much of this progress can be attributed to the diligent control efforts of the PGC and partner agencies following the removal of legal obstacles by the Migratory Bird Treaty Reform Act of 2004. Still, work remains to be done to adequately address the negative impacts of this invasive species. Population monitoring, control efforts, guidelines and regulations for keeping captive mute swans, and public education will all need to be continued or improved to further reduce the number of feral mute swans and keep in check the still-sizable population of domestic mute swans, which remains capable of causing nuisance and ecological problems while serving as a potential source for future increases in the free-ranging population.

Pennsylvania results have been provided to the Rhode Island biologist coordinating the Atlantic Flyway MSMSS for inclusion in the flyway-wide totals and analysis. Similar to trends observed in Pennsylvania, the MSMSS indicated a steady increase in mute swan populations at the flyway level from 1986 to 2002, but then a 5% decrease from 2002 to 2005, and a further 23% decline from 2005 to 2008. A summary of the 2011 mute swan survey results for the entire flyway, which will show whether the flyway as a whole continues to mirror Pennsylvania's progress toward management plan goals, should be available sometime this winter. If you are interested in seeing that report, let me know.

As always, the efforts of all involved in this year's mute swan survey are greatly appreciated. Thanks to each participant for their contribution to a successful statewide survey.

cc: Roe, Hough, DuBrock, Dunn, Jacobs, Brauning, Gross, Barber, Binder, Bish, Glass (USDA Wildlife Services)

Table 1. Summary of the 2011 Pennsylvania Mid-Summer Mute Swan Survey Results by Region

Region	Distribution by WCO District			Numbers of Mute Swans				
	# (%) Districts Present	# (%) Districts Not Present	# Districts with No Survey Conducted	# Adults	# Broods	# Cygnets	Total Swans	# Swans Assumed Feral
NW	5 (23%)	17 (77%)	2	21	3	5	26	9
SW	2 (8%)	23 (92%)	0	5	0	0	5	4
NC	0 (0%)	17 (100%)	5	0	0	0	0	-
SC	6 (30%)	14 (70%)	1	16	2	4	20	0
NE	4 (19%)	17 (81%)	2	19	2	3	22	0
SE	13 (62%)	8 (38%)	1	89	3	5	94	32
State Total	30 (24%)	96 (76%)	11	150	10	17	167	45

Table 2. Summary of the 2002 - 2011 Pennsylvania MSMSS Results by Region

Region	Year	# Adults	# Broods	# Cygnets	Total Swans	Assumed Feral
NW	2011	21	3	5	26	9
	2008	43	7	17	60	11
	2005	18	1	1	19	5
	2002	91	5	12	103	5
SW	2011	5	0	0	5	4
	2008	5	0	0	5	5
	2005	15	0	0	15	6
	2002	9	0	0	9	4
NC	2011	0	0	0	0	0
	2008	3	0	0	3	0
	2005	11	1	1	12	0
	2002	15	0	0	15	0
SC	2011	16	2	4	20	0
	2008	23	0	0	23	4
	2005	31	0	0	31	7
	2002	19	2	4	23	4
NE	2011	19	2	3	22	0
	2008	23	1	2	25	4
	2005	20	3	7	27	3
	2002	28	5	9	37	12
SE	2011	89	3	5	94	32
	2008	124	15	42	166	29
	2005	178	14	25	203	74
	2002	127	12	34	161	69
Total	2011	150	10	17	167	45
	2008	221	23	61	282	53
	2005	273	19	34	307	95
	2002	289	24	59	348	94

Figure 1. Trends in total, feral, and juvenile mute swans in Pennsylvania MSMSS, 1986-2011.

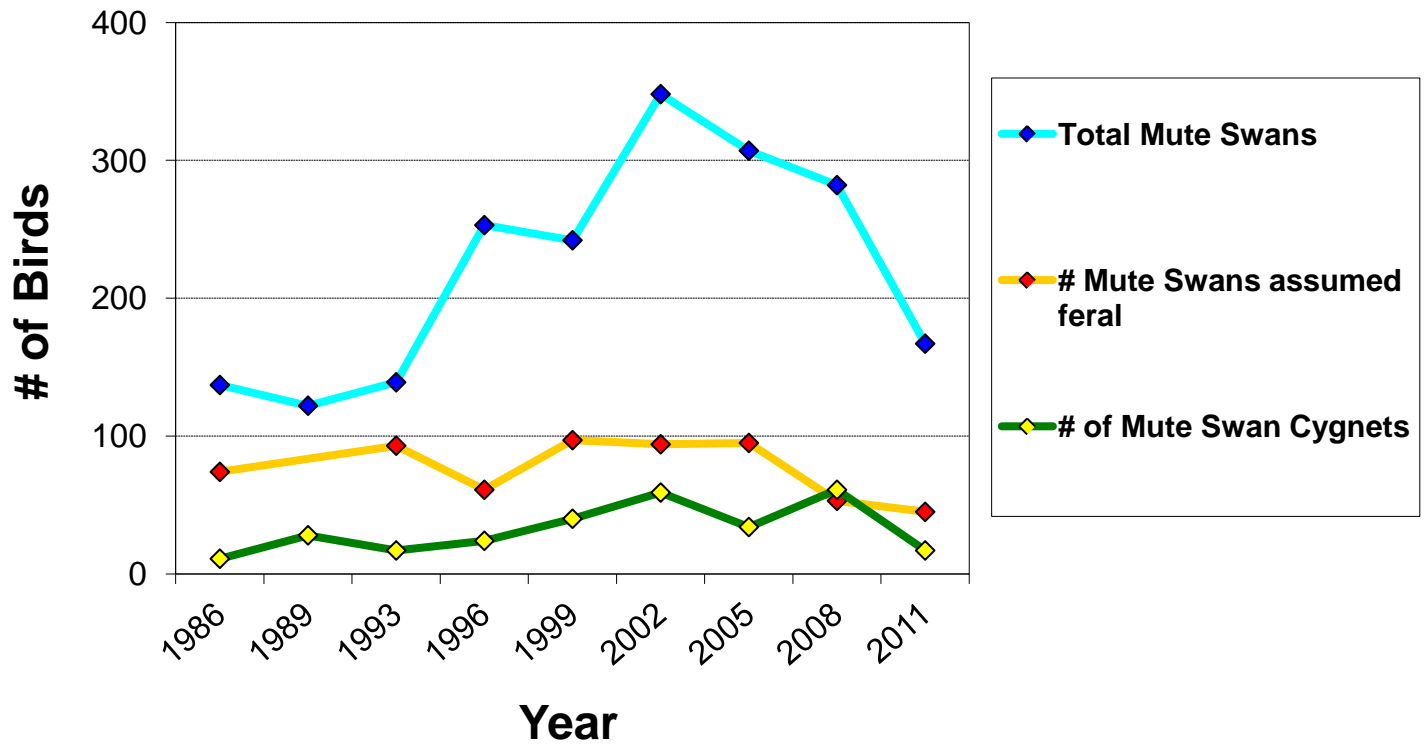


Figure 2. Trend in the number of WCO districts with mute swans present in Pennsylvania MSMSS, 1986-2011.

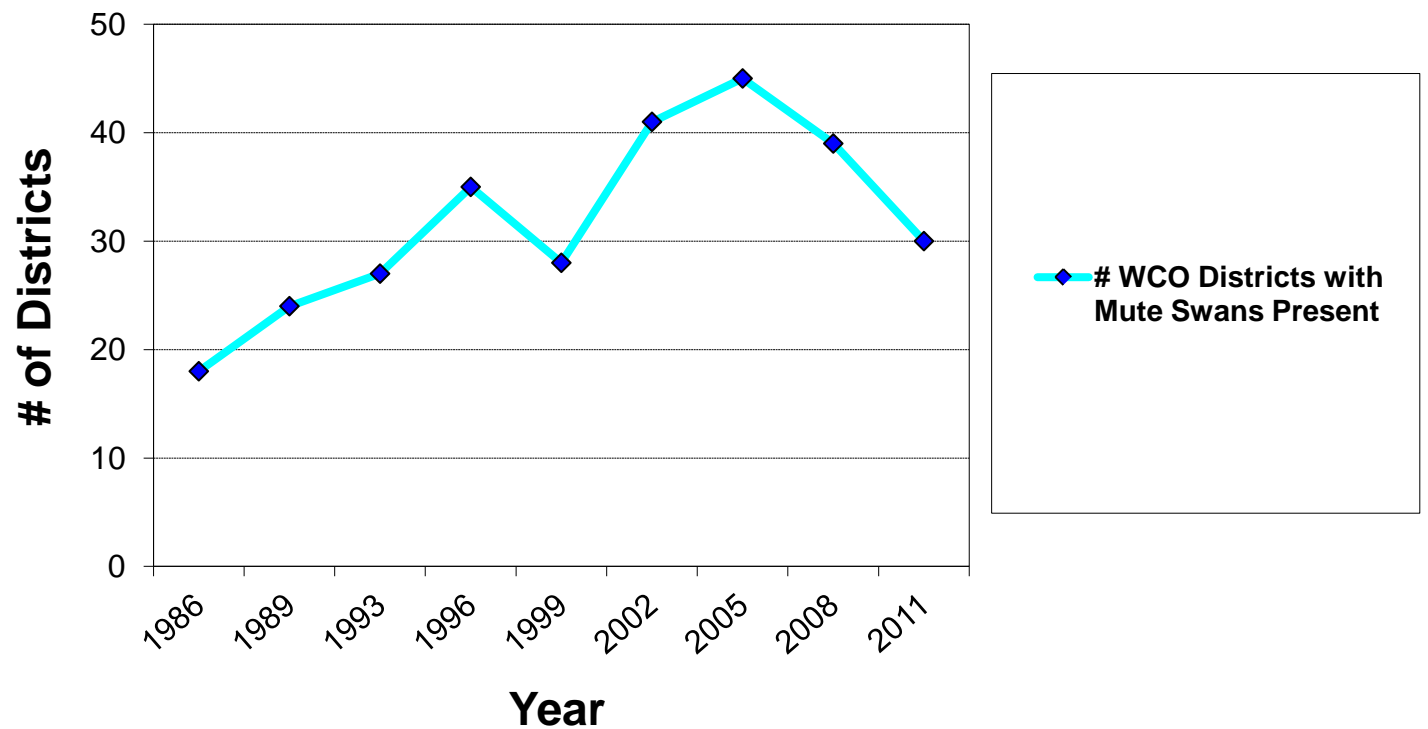


Figure 3. Mute swan distribution by county in 2011 Pennsylvania MSMSS. Totals include only those swans actually observed during the survey period; additional mute swans are known to be present in some counties.

