

# MUTE SWAN POPULATIONS, DISTRIBUTION AND MANAGEMENT ISSUES IN THE UNITED STATES AND CANADA

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## BACKGROUND

The Mute Swan (*Cygnus olor*) was introduced to North America from Europe during the late 1800s, when private individuals brought them to their estates in the lower Hudson Valley and on Long Island, New York. About 1910, it was reported that some of these birds had escaped or were released, resulting in the initial wild breeding swans becoming established in New York. Other records indicate that the first wild breeding in 1919 resulted from a pair of Mute Swans that escaped from an estate (Williams 1997).

Mute Swans are essentially nonmigratory, but there are seasonal movements, and some more lengthy migrations are beginning to occur. By the 1950s, they had expanded their range into other Atlantic Coastal states. During the early 1970s, they were reported in all four flyways, with the largest number, over 9500, reported in the Atlantic Flyway during the 1993 summer survey. Other significant numbers occurred in Michigan, Wisconsin, Washington, Ontario, and British Columbia. Surveys conducted during 1996 indicated that wild populations of Mute Swans were present in at least 24 states and six provinces, with annual reproduction reported in nine states and one province. Established breeding populations are increasing at the rate of 6-25% annually. During the past 10 years, the overall wild population increased by more than 50%, including a 65% increase in the Atlantic Flyway (Allin 1981, 1996).

As their name implies, Mute Swans are silent most of the time, although they do hiss and grunt when alarmed. They are intermediate in size between the Trumpeter Swan and the Tundra Swan, with adult males averaging 25 pounds, 4½-5 feet in length, and a wing span of up to 7 feet. Mute Swans are distinguished by their orange bill with a black fleshy knob (cere) and by their resting pose with the neck in an s-curve and the bill pointed down. There are two color phases, Royal, or gray, and Polish, or white, phase (Gelston and Wood 1982).

Mute Swans use a variety of small ponds, bays of larger marshes and lakes, river systems, and estuaries in the coastal zone. They utilize aquatic vegetation, especially submergents, and aquatic invertebrates in

great volume, with eat-outs reported where larger concentrations of swans occur. In areas where supplemental winter feeding is conducted, they readily accept corn, small grain, and vegetables.

Preferred nesting sites are small ponds or protected bays, where they select islands or construct mounds of emergent vegetation, usually cattail or bulrush. In the northern latitudes, they begin nesting during March and April, depending on the location. Studies conducted in Michigan (Wood and Gelston 1972) report clutch sizes ranging from one to eight eggs, average four, with an incubation period of about 35-41 days. Nesting success is generally good, with cygnet survival to fledging averaging about 50%. As a result, recruitment rates are relatively high.

## MANAGEMENT ISSUES

The major population increase during the past 10-15 years and the aggressive behavior demonstrated by Mute Swans have created concern about the competition this exotic species may be creating with other waterfowl and waterbirds. In some eastern states, they are reportedly eliminating nesting of Black Skimmers (*Rynchops niger*) and Least Terns (*Sterna antillarum*), an endangered species, and displacing Common Terns (*S. hirundo*), Forster's Terns (*S. forsteri*), and Royal Terns (*S. maxima*) (Williams 1997). There have been documented accounts of competition for nesting sites and other aquatic resources, as well as conflicts with human activities such as swimming, boating, and fishing. Other recreational pursuits are indirectly affected by fouled lawns and waters. Reports of attacks on children and pets are increasing, and Mute Swans have been observed challenging jet skiers that harass them. These incidents have led to greater concerns about public safety (Jerry Martz, pers. comm.). There is particular concern about potential conflicts with the growing breeding flocks of Trumpeter Swans and in certain areas where there have been impacts on Common Loons (*Gavia immer*).

Because of these concerns, The Trumpeter Swan Society initiated action in 1996 to begin an assessment of current Mute Swan population levels, distribution, annual recruitment rates, and related management issues across the United States and

Canada. There is an apparent need for better coordination of periodic surveys and production studies to monitor population growth. Further consideration should be given to management measures that might be implemented to prevent further growth and expansion of Mute Swan populations. Some states have already developed management policies to deal with growing populations of Mute Swans, while others are confronted with confusing regulatory procedures.

In the United States, Mute Swans are not protected under federal migratory bird regulations while, in Canada, they are included with all swan species protected under the Migratory Birds Convention Act (Mary Wyndham, pers. comm.). The Canadian provinces are thus bound to protect Mute Swans under this Act. In some states, Mute Swans are listed as a protected species while they are not protected in others, and they are listed as a deleterious species in at least one state, Washington.

During July 1996, I discussed these issues with the four flyway representatives of the U. S. Fish and Wildlife Service to determine the current status of management activities underway in the states, provinces, and private organizations in the flyways. In November 1996, I requested their assistance in obtaining current information from the states and provinces through the flyway technical sections. We also discussed future coordination required, resolution of regulatory problems, and a variety of ongoing management issues. The responses received to date are summarized for each flyway in Tables 1-4. As additional information is received, a more comprehensive analysis will be completed .

### **Summary of responses received**

A review of Tables 1-4 indicates that information is incomplete for many states and that there needs to be a more standardized approach used for data collection and analysis. It is evident that, in 1996, there were more than 10,000 wild and captive Mute Swans in the Atlantic Flyway, and there may have been an additional 3000 in captivity. With an annual growth rate of 6-7%, it is believed that this flock may exceed 20,000 swans by the year 2000.

In the Mississippi Flyway, there were more than 3600 Mute Swans in the wild and an additional 1000 in captivity. The greatest number are in Michigan, where an annual increase of 16% was reported. Based on reports received to date, there are relatively few Mute Swans in the Central Flyway, and those

present are being raised in captivity under permit. In the Pacific Flyway, there were more than 700 Mute Swans in British Columbia and over 200 in Washington, but annual production in the wild is unknown.

Based on population estimates provided, there must have been 18,000-20,000 Mute Swans present in the wild and in captivity during 1996. These numbers have increased further since then.

It also is obvious that there is great variation in the attention being given to Mute Swans by the respective federal, state and provincial agencies, and private organizations involved. There, likewise, is a varied public interest. In most eastern states, there is increasing public opposition to population control measures being implemented or proposed for Mute Swans. The strongest opposition occurs in Vermont, Massachusetts, Connecticut, Rhode Island, and Maryland. Anti-control sentiments are building in Michigan, where a new organization, "Save Our Swans," has been formed. Control measures are used on a selective basis in Michigan, Ohio, and Wisconsin to address specific problems and on state lands. Capture and transfer programs have been initiated in some states where population reduction is believed necessary. Even these techniques are now considered unacceptable by some opponents (Williams 1997).

It is evident that, where significant populations of Mute Swans are now present in the wild, population control is becoming more difficult, and elimination may be impossible. These experiences should help guide actions in those states contemplating the need for population control. Where the need for control is anticipated, clear policies and guidelines on legal status, regulatory measures, and acceptable control methods should be developed quickly.

### **Current status**

Based on a review of selected literature available on Mute Swans and the information received to date from the respondents to our recent inquiry, the current status is summarized as follows:

- The continental population of Mute Swans in the wild may exceed 18,000 birds, with strong annual recruitment.
- The coordinated periodic swan surveys are beginning to provide more meaningful information. Better data are required for those states and provinces having significant numbers

of Mute Swans to properly monitor the rapid increase of this exotic species.

- There is increasing concern about potential conflicts between Mute Swans and other waterfowl, especially Trumpeter and Tundra Swans on wintering areas.
- There is considerable variation in state regulations pertaining to Mute Swans, ranging from protected status to unprotected, and different interpretations of such laws as related to implementation of population control measures. At least six states now conduct direct control programs under management plans or exotic species guidelines. Five states are considering regulatory changes to permit control when needed. Others apparently remove feral swans in a “silent manner.” Public concern over removal of Mute Swans is being voiced in some states, especially in the eastern U. S. This indicates an immediate need to improve public understanding about the danger of expansion of an exotic species. To some, however, all swans are beautiful, big white birds.
- Control measures generally consist of requiring mandatory permits for private rearing, pinioning of all birds held in captivity, prohibiting releases into the wild, sterilizing captive and feral males, shaking or oiling eggs, removing eggs from nests, harassing birds, and eliminating birds by trapping, euthanasia, or shooting. Further attention must be given to developing and using practical and socially acceptable population control methods.
- The rapid growth of populations in the Atlantic Flyway, with large wintering concentrations occurring in Chesapeake Bay, and, more recently, in the Great Lakes Region, is alarming and indicative of what could happen in similar coastal and fresh water habitats in other flyways.
- There is an apparent need for a uniform policy on the prevention of further population growth and range expansion of Mute Swans. Population dynamics of current Mute Swan flocks will need to be considered in this policy statement.
- Wildlife management agencies and private conservation organizations are beginning to devote more attention to all swans and are becoming aware of the potential conflict posed by Mute Swans. Greater emphasis is needed on information, education, and public involvement.

- More definitive information is needed on the potential conflicts between Mute Swans and other swan management programs, particularly the Trumpeter Swan restoration programs.

## **RECOMMENDATIONS**

At this stage of the assessment process, I believe the following recommendations are in order:

- Develop better policy guidelines and administrative procedures to fully address the biological, ecological, and sociological relationships involved in the management of the Mute Swan as an exotic species.
- The flyway councils and technical sections should take the lead in each flyway to develop the necessary policies, regulatory changes required, and management guidelines to address the growth of this exotic species in North America. The Atlantic Flyway has indeed already taken action.
- The U. S. Fish and Wildlife Service and the Canadian Wildlife Service should reassess their role and responsibility in the management of Mute Swan populations as related to potential adverse impacts on other migratory birds and their shared habitats.
- Proceed with completion of this assessment under the auspices of The Trumpeter Swan Society and prepare a more comprehensive status report during 1998 to support any flyway council actions as recommended above. This will require continued cooperation with the federal, state, and provincial agencies involved, the flyway technical sections, other conservation organizations, and private interest groups.

## **ACKNOWLEDGMENTS**

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**LITERATURE CITED**

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Table 1. Status of Mute Swans in the Atlantic Flyway, 1996

State/Province	Total Swans	Number in Captivity*	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Connecticut	1700	-	-	-	Protected	Other birds & public safety	Proposed
Delaware	50	-	1 pr. - 4 cygs.	-	Non-protected exotic	-	Yes
Florida	1000	1000	40 cygnets	-	Non-protected	-	None
Georgia	50	-	-	-	-	-	-
Maine	15	-	2 pr. - 4 cygs.	None	Protected - permits	None	None
Maryland	2260	-	340	Yes	Non-protected	Other birds & public safety	Yes
Massachusetts	900	-	180	To coast	Protected - permits	None	None
New Hampshire	50	-	2 pr. - 6 cygs.	Unknown	Non-protected	Other birds & public safety	Yes
New Jersey	900	-	-	-	-	-	-
New York	2000	-	Unknown	To coast	Protected - permits	Other birds & public safety	Yes
North Carolina	30	-	-	-	-	-	-
Ontario	2500	600	-	Great Lakes	Protected	Competition w/ Trumpeters	-
Pennsylvania	250	190	13 prs - 24 cygs.	Unknown	Non-protected	Habitat degradation	Yes, on state land
Rhode Island	1300	-	-	To coast	Protected - state	Other birds & public safety	Yes
South Carolina	10	-	-	-	-	-	-
Vermont	5	-	2 pr. - 2 cygs.	-	Preparing policy	-	-
Virginia	250	100	2 pr. - 4 cygs.	-	Preparing policy	-	-
West Virginia	10	-	1 pr. - 2 cygs.	None	Protected	-	None

NOTE: Information is incomplete. Current information will be requested. Information from Atlantic Flyway Provinces has been requested but not received.  
 \* Most state/province surveys did not include Mute Swans in captivity.

State/Province	Total Swans	Number in Captivity *	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Arkansas	0	-	0	-	Non-protected, no releases allowed	Reexamine regulations	None
Iowa	75	50	Unknown	Unknown	Being reviewed	Reexamine regulations	None
Illinois	200	-	25 pr., 100 cygnets	Yes	Protected by IL law	Other wetland birds	None
Michigan	4000	1000	Unknown est. 17-20% annual increase	Yes	Exotic by MI law, permits required	Conflicts w/ Trumpeter Swans and loons, habitat degradation, public safety	None
Minnesota	60	50	None	None	Non-protected, exotic permit required	Conflicts w/ Trumpeter Swans, loons and other birds, public interpretation	Yes
Missouri	12 **	-	-	-	-	-	None
Ohio	Unknown	-	Yes	Yes	Nongame	Conflicts w/ Trumpeter Swans, habitat degradation	Yes, on State lands
Wisconsin	340	-	50+ cygnets, 17% annual increase	Yes	Non-protected, policy to remove from wild by 2005	Conflicts w/ Trumpeters, Tundras Swans and other birds, public safety	Yes, prevent growth

Data is incomplete; current information will be requested.  
 \* Most state/province surveys did not include Mute Swans in captivity.  
 \*\* Reported in CBC count from Springfield, MO.

State/Province	Total Swans	Number in Captivity *	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Alberta	67	67	Unknown	Captive	Protected, permit required	Aggressiveness	None
Colorado	<50	50	Unknown	Sedentary	Protected, permit required	None	None
Kansas	None	-	None	N/A	Protected	None	None
Montana	None	-	None	N/A	Unknown	None	None
Nebraska	<12	-	2-4 Broods	Sedentary	Protected	None	None
New Mexico	Unknown	-	Unknown	Captive	Unknown	None	None
North Dakota	Unknown	-	Unknown	Sedentary	Unknown	None	None
NWT	-	-	Will receive from CWS				
Oklahoma	Unknown	-	None	None	Unknown	None	Unknown
Saskatchewan	-	-	Will receive from CWS				
South Dakota	None	-	None	N/A	Unknown	None	Unknown
Texas	Unknown	-	Unknown	Sedentary	Not protected	Aggressiveness	None
Wyoming	19 **	-	Unknown	Captive	Protected, permit required	Unknown	None

Data incomplete; current information will be requested.  
 \* Most state/province surveys did not include Mute Swans in captivity.  
 \*\* National Park Service has removed 70+ Mutes over the past few years and replaced with Trumpeters.

Table 4. Status of Mute Swans in the Pacific Flyway, 1996.

State/Province	Total Swans	Number in Captivity *	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Alaska	0	-	-	-	Permits required, no release	-	-
Arizona	0	-	-	-	-	-	-
British Columbia	500	-	Unknown	None - coastal habitat year-round	Protected	Conflicts w/ Trumpeters, Tundra, and other birds	-
California	No info	-	-	-	-	-	-
Idaho	No info	-	-	-	-	-	-
Nevada	0	-	-	-	Protected, permit required	-	-
Oregon	No info	-	-	-	-	-	-
Utah	No info	-	-	-	-	-	-
Washington	200	-	-	-	Deleterious species, permits required	Conflicts w/ Trumpeter Swans, habitat degradation	Yes

Note: The information from the states/provinces of Alberta, Colorado, Montana, New Mexico and Wyoming included in Central Flyway report.

Data incomplete; current information will be requested.

\* Most state/province surveys did not include Mute Swans in captivity.