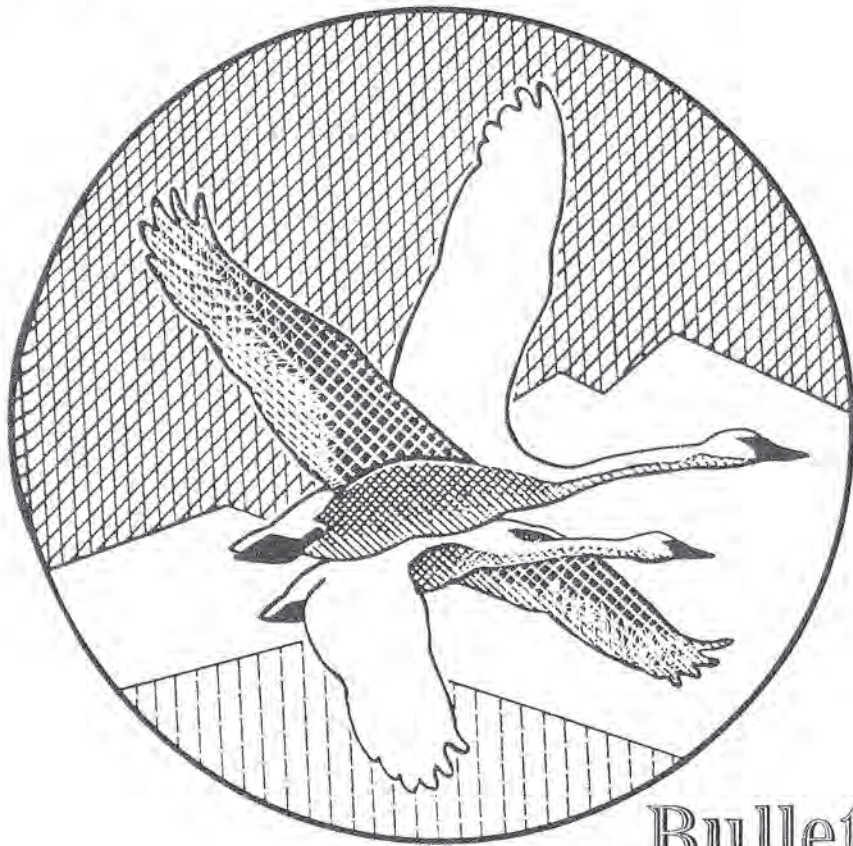
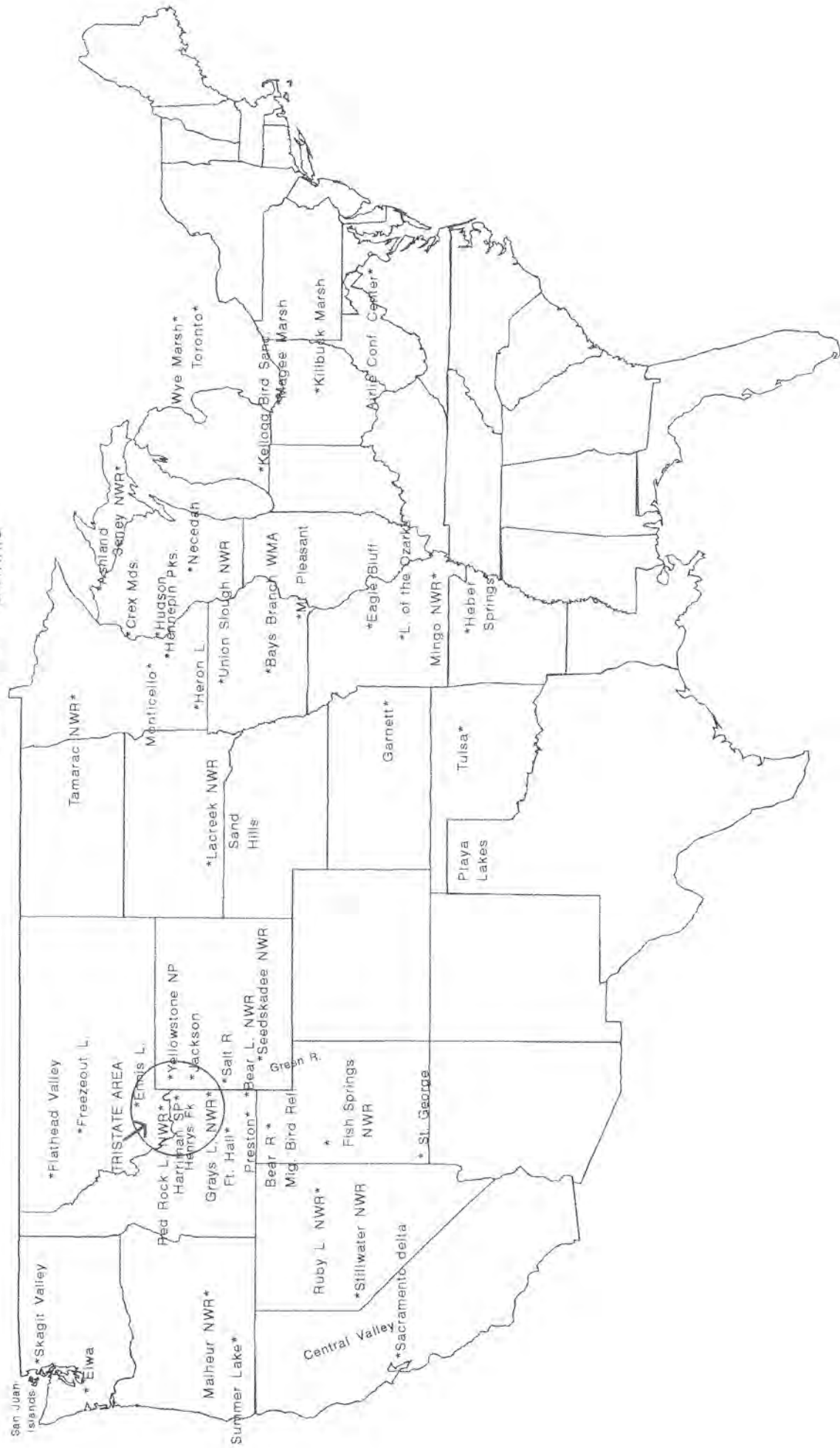


# North American Swans



Bulletin of The  
Trumpeter Swan  
Society

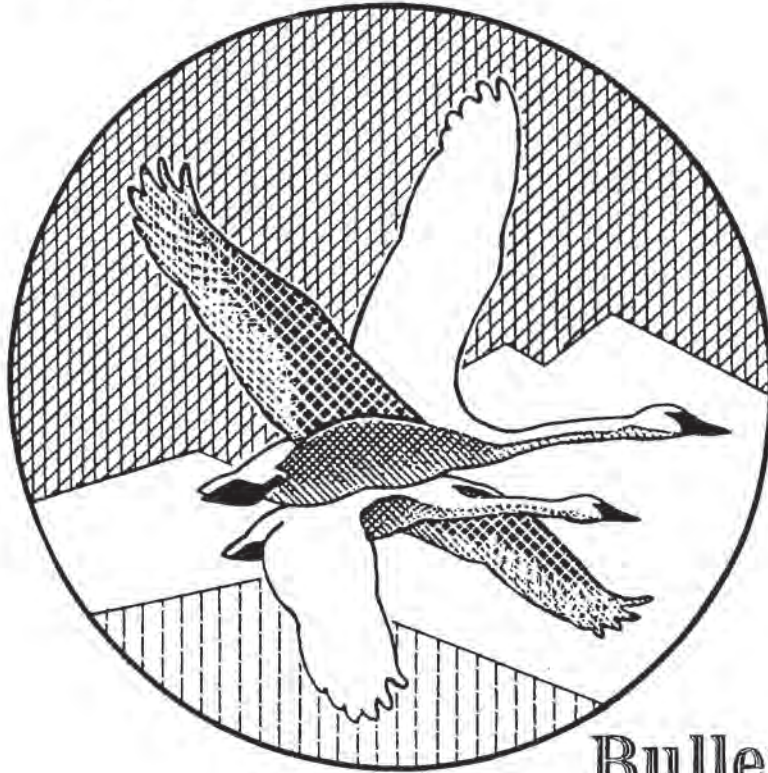
Volume 26, No. 2 - December 1997



AREAS OF SIGNIFICANCE FOR TRUMPETER SWANS



# North American Swans



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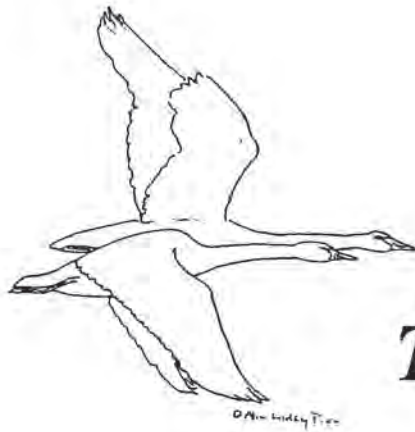
*Editor*  
*Donna Compton*

**Editor's Note:** This *Bulletin* is the second edition in our new format. This publication will be replacing *The Trumpeter Swan Society Newsletter*. We will preserve the same system of numbering volumes and issues so that historical information available from the *Newsletters* will not be lost. Our intent is to cover topics in depth, have regional information in each edition and publish reports of research and management that would otherwise be unavailable. We will include articles and research on other species of swans as the information is pertinent to Trumpeter Swans. The *Bulletin* will be published twice per year. The schedule will be determined by the Editor.

Please feel free to submit reports or articles for publication in this *Bulletin* at any time. Submit articles to: The Trumpeter Swan Society, 3800 County Road 24, Maple Plain, MN 55359. Diskettes can be accepted. Please format in Word Perfect 5.1 if possible. Clearly label diskette and send a hard copy as well.

Published twice each year by The Trumpeter Swan Society. For more information please contact: The Trumpeter Swan Society, 3800 County Road 24, Maple Plain, MN 55359, (612-476-4663).

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# Table of Contents

From the President . . . . .	1
Regional Reports . . . . .	2
Flyway Meeting Reports . . . . .	9
Selected Papers . . . . .	14
Mute Swan populations, distribution and management issues in the United States and Canada	
<i>Harvey K. Nelson</i> . . . . .	14
Swan banders in North America	
<i>Donna Compton</i> . . . . .	24
Trumpeter Swan survey of the Rocky Mountain Population/U. S. Flocks, Fall 1997	
<i>Daniel Gomez</i> . . . . .	31
Updated status report on the Trumpeter Swan in Canada	
<i>Robert Alvo</i> . . . . .	36
The Trumpeter Swan restoration program in Ontario - 1 September 1997	
<i>Harry Lumsden</i> . . . . .	42
A summary of Alaska Trumpeter Swan surveys 1996	
<i>Deborah J. Groves, Bruce Conant and Jack I. Hodges</i> . . . . .	45
Trumpeter Swans once wintered in Texas - why not now?	
<i>Harold and Ruth Burgess</i> . . . . .	50







## *From the President*

*Ruth Shea*

As our Society works on Trumpeter Swan restoration and management issues throughout the United States and Canada, maintaining communications among our Directors and staff is essential. Our dedicated part-time staff, Donna Compton and Madeleine Linck, run the daily operations out of our office at Hennepin Parks, Maple Plain, Minnesota. I confer at least weekly with our staff, and work constantly with individual Board members on responses to various issues or administrative tasks.

Our Directors live scattered across North America, from Ontario and Washington D. C. to Alaska and Washington State. To conduct formal Society business, the Executive Committee meets via conference calling every other month, and the entire Board meets twice per year. Where possible, the full Board meetings are in person. However, we most often "meet" via conference calls to minimize expenses.

The most recent Board Meeting was held on November 5, 1997. I'd like to provide you with the highlights. Four items requiring Board decisions were presented. First, the Board discussed options for our next Conference and decided to hold it in the Tristate area in September 1999. Because we are shifting from a winter meeting to a summer meeting, there will be a 2½ year interval between our 16th and 17th Conferences. We would like to meet in the Jackson Hole, Wyoming, area, if an affordable facility can be found. Idaho Falls, Idaho, located amidst the refuges of the Southeast Idaho Refuge complex, is also a possibility. I will take the lead in exploring facility options.

Second, the Board approved our proposed 1998 operating budget of \$41,740. Budget increases are due to increased costs of publications, our expanded attendance at meetings where decisions are made that impact Trumpeter Swans, and increased support to our working group projects. To meet this budget, we need to raise

approximately \$20,000 above and beyond our regular income from membership dues and the annual appeal. Our Finance and Fundraising Committee is spear-heading this effort and needs the help of all members. We will be seeking a dependable base of support from patrons, corporate sponsors and foundations. If any of our members have personal experience in fundraising or have ideas for potential donors, we welcome your assistance.

Third, the Board reviewed the latest draft of the *Pacific Flyway Management Plan for RMP Trumpeter Swans*. We did not concur with some of the recommendations and sent a letter to the Subcommittee Chair, Gary Will, expressing our concerns. The text of the letter appears on pp 10-12 of this issue of *North American Swans*.

Finally, the Board discussed ways to streamline our process for developing formal Society responses to major issues such as development and review of Trumpeter Swan management plans, the future of the 5-year, range-wide survey, U. S. Fish and Wildlife Service proposals to alter Tundra Swan hunts, Mute Swan management plans or major habitat threats or protection opportunities. It was decided that either the President or the Board member most familiar with the issue would create the first draft, work with other Board members most knowledgeable about the issue to refine the draft, and then fax or e-mail it to all other Board members for their comments within a specified time period. In their comments, Board members will indicate whether they believe an issue is controversial enough to require a vote, or if incorporation of Board comments will suffice.

Other topics of discussion included progress on creation of our web site, plans for the next two issues of *North American Swans*, threats to the dikes and wetlands that we own on Washington's Long Beach Peninsula, and brief updates concerning progress and issues in each region from the staff and various Board members. These updates are presented in the "Regional Reports" section of this issue.

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*Ruth Shea, TTSS President,  
3346 East 200 North, Rigby, ID 83442*





## Regional Reports

### Pacific Coast Population

#### Alaska

*Bruce Conant*

Based on only limited Trumpeter Swan survey work this year, we think Trumpeters experienced generally good production on Alaskan nesting grounds this past summer.

**Rod King** reports good to great production in the interior. The combination of an early spring followed by good brood rearing weather and the late arrival of fall should send a high number of young-of-the-year south to the wintering grounds. Where surveys were accomplished, he found the highest average clutch size ever recorded for the area. The average brood size also increased from last year.

**Mike Spindler** at Koyukuk National Wildlife Refuge feels that Trumpeters had good production in the western interior as well. An early spring with virtually no flooding, good summer weather and a fall freeze up about a week later than normal are all factors that should send good numbers of new swans south to Pacific wintering grounds.

In the Gulkana Basin, east of Anchorage, Rod expects medium to low production because of a cold spring. Average brood size was reduced and an unusually large percentage of infertile eggs was found during the Trumpeter egg transplant program. (These eggs are collected for use in Midwest restoration projects).

On the coast, on the Copper River Delta, we found average production. Both the number of nests and broods were average as were the total number of cygnets produced and the rate of nest success. Production was reduced on the southeast Alaska mainland with both the number of broods and young about two thirds of last year's production.

Rod King reported that a Preliminary Draft Environmental Impact Statement (PDEIS) is now out for the Golden Valley Electric Intertie Project south of Fairbanks. There is an **Interagency Working Group** that will be sending comments to the Bureau of Land Management. One positive note is that there is now no preferred alternative put forward in the PDEIS.

For more information on the history of this powerline issue see *The Trumpeter Swan Society Newsletter*, Vol. 24, No. 1 and *North American Swans*, Vol. 26, No. 1.

**Jim King** joined Rod for the spring Trumpeter surveys and took many rolls of pictures of Trumpeter nests from the air for analysis and correlation with habitat attributes. He now has perhaps the best collection of Trumpeter and Tundra Swan nest photographs from the air in Alaska. I was pleased to have **Graeme and Connie Fowler** join me for the southeast and Copper River Delta Trumpeter surveys in August. They both have a better picture now of Alaska Trumpeter nesting habitat on the coast. They also worked in the interior with **Terry Doyle and Bill Bohman** at Tetlin National Wildlife Refuge. The information gained will be useful in their work with swans and people on the Vancouver Island, B. C., wintering grounds with its increasing challenges.

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*Bruce Conant, TTSS Vice President, Pilot-Biologist,  
USFWS, 3000 Vintage Blvd., Suite 240, Juneau, AK 99801*



## Yukon Territory

### *Jim Hawkings*

#### The year in review

This year looks to have been an average year for Trumpeter Swans in the Yukon. In southern Yukon, spring 1997 began with a cooler than normal April and ice cover persisted a week or so later than normal in most wetlands. At spring migration areas on Marsh and Tagish Lakes near Whitehorse, the water was unusually low -- so low that some of the shallows normally used by swans were just ice sitting on mud. This ice didn't melt until mid-May, long after the swans had moved on. Unfortunately for the many swan watchers, this low water kept birds well out from shore during the peak migration period in late April. The summer, which eventually came, was a great one, generally warm and wet. The Yukon's Trumpeters are scattered over a vast area, and we get very little information on nesting success or productivity between the 5-year surveys. However, there was probably an average number of young produced and no doubt the breeding range continues to expand. Fall weather was good until early October, when a brief cold snap froze some of the fall migration areas such as Nisutlin Bay on Teslin Lake. November has been warmer than normal, and as of November 12th, there were still reports of Trumpeters on the Yukon River near Whitehorse.

Whitehorse sits in an interesting position between the breeding ranges of the Rocky Mountain Population to the east and north, and the Pacific Coast Population to the west and northwest. Both segments have been expanding their range and now we have nesting birds within 50 km to the west along the Mendenhall River, and 120 km to the east along the Nisutlin River. Sooner or later they are bound to meet!

#### Yukon Trumpeters featured in Up Here magazine

The annual April gathering of Trumpeter and Tundra Swans at Marsh Lake made the cover of the May/June issue of *Up Here* magazine. Inside, "Spectacle At Swan Haven" by Julie Lefebvre and Darielle Talarico, and "Triumph of the Trumpeters" by Cameron Eckert, describe the impressive gathering of swans at M'Clintock Bay and the fine interpretive program which has been developed there.

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*Jim Hawkings, TTSS Director, Biologist,  
CWS, 91782 Alaska Hwy, Whitehorse,  
Yukon Territory Y1A 5B7*

#### 1998 Celebration of Swans

Yukon's 1998 Celebration of Swans will be happening during the week of April 18-26th. In addition to the usual excellent swan viewing, there will be various activities and events to make an enjoyable week. For more information, contact Julie Lefebvre (ph: 867/667-8291, or e-mail: julie.lefebvre@gov.yk.ca).

## Rocky Mountain Population

### *Ruth Shea*

Just in time for the arrival of the Canadian Trumpeters, **Milt Haderlie** has arrived at the Southeast Idaho Refuge Complex in Pocatello. In addition to his supervisory duties, Milt will be the new Rocky Mountain Population (RMP) Trumpeter Swan Coordinator for the U. S. Fish and Wildlife Service (USFWS). Milt came north after many years as Manager of Kofa National Wildlife Refuge (NWR) near Yuma, Arizona, but he knows what snow and cold are like. Milt was born and raised in Star Valley, Wyoming, one of the recent expansion areas for wintering Trumpeters. Welcome back, Milt!

**Red Rock Lakes NWR** report for the fall of 1997 states that the U. S. flocks (Tristate, Malheur, Summer Lake and Ruby Lakes) contained a total of 352 adults and 69 cygnets. Totals for September 1996 were 381 adults and 78 cygnets. However, last year the survey included a number of translocated swans at Summer Lake, Oregon, and Bear Lake, Idaho, which subsequently scattered and returned to Canada in 1997. Overall, the flocks have remained stable since 1996, although substantially smaller than in the 1960's-1980's.

The Tristate flocks contained 301 adults and 53 cygnets in September 1997. After declining to a 50-year low of 239 adults in 1994, excellent production in 1994 (130 cygnets fledged) helped the flocks increase to 307 adults in 1995 and they have since remained stable. The Tristate flocks are still in a difficult period of recovery from the translocations and mortality associated with ending the artificial feeding in 1992-93.

The Society's **RMP Working Group** worked with all U. S. RMP flock managers this fall to compile and summarize the 1997 nesting effort and productivity of the RMP/U. S. flocks. There were 70 known nests with 57.7% nest success and 1.0 cygnets fledged per active

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*Ruth Shea, TTSS President,  
3346 East 200 North, Rigby, ID 83442*



nest. Productivity was reduced by high water that flooded some nests and heavy, cold rains during the peak of hatch that likely caused early cygnet mortality. (For a full discussion of the survey results see the "Trumpeter Swan survey of the Rocky Mountain Population/U. S. flocks, fall 1997" under Selected Papers section of this document.)

The RMP Working Group has also been busy organizing birders throughout the western U. S. to search for and report Trumpeter Swans as they explore new migration and wintering habitats. We are also working with Idaho Fish and Game and new member **Ron Cordes** to create options for rehabilitating injured Trumpeters, holding them at Ron's aerated pond, and releasing them back into the wild to supplement the Tristate flocks.

**Terry McEneaney** (National Park Service, Yellowstone) reports that the state and Federal agencies' Greater Yellowstone Trumpeter Swan Working Group met in October to coordinate and compile 1997 nesting data, and develop comments on the Pacific Flyway's Draft Management Plan for RMP Trumpeter Swans. Terry also reports that the swans in his captive rearing program in the Paradise Valley north of Yellowstone survived last spring's floods in better than expected condition. Two pinioned pairs nested and fledged eight free-flying cygnets and a nearby wild pair fledged three cygnets. Working with private landowners, Terry has completely removed the flock of 70+ Mute Swans that had established a foothold in this area in the 1970's and has now replaced them with nesting native Trumpeters. Congratulations, Terry!

**Craig Whitman, Rex and Christy Lockman** (yes, that's Dave's son and his wife), and **Mary Maj** are monitoring marked Trumpeters for USFWS this fall. They report that for a second consecutive year, swan numbers at Harriman State Park have remained relatively low. As of Thanksgiving, they had not yet needed to haze, although hazing will likely start soon, if numbers exceed 200. High river flows are making the habitat less attractive and helping to keep waterfowl concentrations in the park relatively low. Observations of Trumpeters migrating through Camas NWR (north of Idaho Falls in Idaho) and the Idaho Falls area in early November indicate that once again, substantial numbers are moving southward from the Tristate area intermingled with Tundra Swans. Although we will always have a risk of substantial mortality for Trumpeters that remain in marginal wintering sites in the Tristate region, it appears that the years of translocations and hazing have paid off and increasing numbers of RMP Trumpeters are moving further south.

**Mark Stackhouse**, owner of Westwings (birding tours) in Salt Lake City and a dedicated observer of swans, reports seeing a Trumpeter at Bear River Refuge

on November 8 and three to four others were heard along the tour route on the same day. Mark says Trumpeters are regular migrants to the Bear River delta and estimates that there must be several hundred intermixed with the 42,000 Tundra Swans in the area. **Vicky Roy** (USFWS, Bear River Refuge) reports that one of Wyoming's Trumpeters from the Green River has been observed at Bear River Refuge this fall and that at least one of the radioed swans that was released at Bear River last fall has returned to the vicinity.

## Interior Population

### *Donna Compton*

The number of Trumpeters wintering in the northern Midwestern states is increasing as the number of swans breeding in those states increases. The number of swans wintering in the states of Minnesota and Wisconsin and the sites being used is given in the table below.

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#### Minnesota

Hennepin Parks	
1/14/98	25 Trumpeters
Monticello on Mississippi River	
1/20/98	276 Trumpeters
Fergus Falls, on the Otter Tail River	
1/25/98	113 Trumpeters
Waterville, MN - Lake Sakatah State Park	
12/31/97	4 Trumpeters
Washington Co. at Ray Whitney's	
1/14/98	7 Trumpeters
Never's Dam, St. Croix River	
12/22/97	35 Trumpeters

#### Wisconsin

Hudson, on St. Croix River	
1/14/98	27 Trumpeters
Northern Wisconsin	
12/97 (in groups of 2 or 3)	<u>16 Trumpeters</u>

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Total	503 Trumpeters
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The very large concentration of swans wintering at Monticello, Minnesota, is a result of a 10-mile stretch of consistently open water below a power plant on the Mississippi River, and a local woman (a member of

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*Donna Compton, TTSS Administrative Assistant,  
Wildlife Technician, Hennepin Parks,  
3800 County Road 24, Maple Plain, MN 55359*



TTSS) who feeds 300 pounds of corn daily. Winter mortality at this site has been very low and intermixing of the two Minnesota flocks has made this a situation conducive to building breeding flocks. In the not-too-distant future, the states to the south may see some of these birds who choose to avoid the competition, congestion and cold in the north. Those states to the south need to prepare for the birds by finding ways to attract them to lead-free wetlands with minimal disturbance. The public and the hunting community need to be educated about the presence of Trumpeter Swans.

It is becoming very difficult to determine the numbers of swans breeding, particularly in Minnesota, due to the decreasing percentage of marked swans. A midwinter count such as the above may be the best available index of total swans when added to the number of identifiable birds wintering in the southern states.

The restoration effort will not be considered successful until at least half of the birds are migrating to safe southern wintering areas. Numbers of Trumpeters in the north are now high enough to allow some experimentation with methods to entice more of them to migrate. We need to identify those target wetlands and take the plunge!

## Iowa's Trumpeter Swan restoration program

*Ron Andrews and Dave Hoffman*

Iowa's Trumpeter Swan restoration program continued on track in 1997. Thirty-six additional collared 1- and 2-

year-old Trumpeter Swans were successfully released in the summer of 1997. To date, 86 Trumpeter Swans have been released (Table 1): four unmarked swans in 1994, 14 in 1995, 31 in 1996, and 36 in 1997. All but the initial four escapees were marked. Trumpeter Swan release sites are shown in Figure 1. Swans that migrated during the winter of 1996-97, went as far south as west-central Missouri and east-central Kansas. Three Trumpeters released at the Union Slough NWR near Titonka, Iowa, did migrate to southeast Colorado, near Ft. Lyon, and at least two of the three were sighted at Monticello, Minnesota, the following spring, a straight-line, round trip distance of over 1,300 miles. At least five of the Iowa-released swans spent the summer of 1997 in Iowa and several others were reported in southern Minnesota. Production in the wild is a major milestone for our project and we are hopeful that 1998 will be the year that we have our first wild nesting swans in Iowa since 1883.

**Migrating swans from other states:** For the past several winters we have had several swans from Wisconsin and Minnesota make stopovers in Iowa and a few have wintered here. Trumpeter Swans from Wisconsin have spent the past four winters on Blackhawk Lake near Lakeview, Iowa. Also, swans from the Lake Itasca region of Minnesota have spent portions of the past four winters on the Winnebago River near Mason City, Iowa. During the winters of 1996-97 and 1997-98, several swans, both marked and unmarked, have been observed in Iowa, and the winter of 1997-98 has been the best year yet for winter observations. We have also had three Trumpeters from Michigan observed on the

Table 1. Trumpeter Swans released in Iowa, 1994 - present.

Site #	Year	Area	County	Males	Females	Total
1	1994*	Ventura Marsh	Cerro Gordo	Unk.	Unk.	4
2	1995	Kettleon's WPA	Dickinson	5	5	10
3		Jim Foreman's	Dubuque	2	2	4
4	1996	Union Slough NWR	Kossuth	5	5	10
2		Kettleon's WPA	Dickinson	7	4	11
5		Spencer	Clay	3	1	4
6		Anderson Lake	Hamilton	2	2	4
7		Harold Brun's	Lee	0	2	2
1	1997	Ventura Marsh	Cerro Gordo	3	6	9
2		Kettleon's WPA	Dickinson	3	5	8
8		Lost Island Marsh	Palo Alto	4	4	8
9		Eagle Lake	Hancock	4	4	8
10		Goose Lake	Greene	1	1	2
11		Bill Colewell	Blackhawk	0	2	2
					TOTAL	86

\* The 1994 Ventura marsh swans escaped from captivity.





Figure 1. Trumpeter Swan release sites, 1994-present  
(see Table 1. for number key)

Mississippi River near Burlington, during the spring of 1997.

**Known swan mortalities:** Eighteen known mortalities have occurred to date: five from powerline collisions, six shot by violators, four from diseases, and three from unknown causes. Additional swans presumed dead, but never recovered, include one injured by an eagle and five that are missing from our release sites and presumed dead, because they were never observed in flight. This is more mortality than we would like to see, but hopefully with large enough numbers of swans released, we can overcome these losses.

**Trumpeter Swan partnership:** Through a cooperative agreement with the Wisconsin Department of Natural Resources, we obtained 15 cygnets hatched from eggs from the Alaskan nesting grounds in both 1996 and 1997. Jim Pichner, Curator at the Minnesota Zoo, hatched 12 of 15 eggs in 1996 and 13 of 15 in 1997. The cygnets were hand reared at three separate sites by private cooperators with only one cygnet mortality. The majority of these cygnets will be released in the summer of 1998. At this point, we do not expect to obtain any additional eggs from the Alaska breeding grounds. We have acquired several additional swans from Wyoming, Washington, Minnesota, Wisconsin, Michigan, and Mississippi. We have informal cooperative agreements with the Milwaukee Zoo, the Northeast Wisconsin Zoo, the Jackson Mississippi Zoological Park, Minnesota Zoo, and the Blank Park Zoo, Des Moines, Iowa. In 1998, we

will have 30 cooperators/contributors holding 32 pairs of swans that could potentially produce enough cygnets annually to sustain our release efforts. Our goal is to have 15 free-flying, wild-nesting pairs of Trumpeter Swans by 2003.

We are working to develop a uniform swan observation database that we hope will be useful in compiling and transferring observations between cooperative entities throughout the country. We believe a standardized observation database will allow electronic transfer and thus quicker access to data on the Interior Trumpeter Swan Population restoration efforts as well as what is happening with the swan population in the rest of North America. We have also developed a *Trumpeting the Cause for Wetlands/Trumpeter Swan Restoration* educational booklet for schools that we hope will be useful in educating students about wetlands and swans.

### Shooting of swans brings an odd apology *Brent Frazee*

Two Topeka men accused of illegally shooting six Trumpeter Swans on Christmas Eve have received an unusual punishment. They will be required to issue a public apology. As part of an out-of-court settlement arranged by the U. S. Fish and Wildlife Service and the U. S. Attorney's Office, Dustin Fisher (19) and Jeremy Brown (20) will write a letter apologizing for their actions, which will be provided to Kansas newspapers and Kansas Wildlife magazine.

Ron Andrews, Wildlife Biologist, Dave Hoffman, Natural Resources Technician, Iowa Dept. of Natural Resources, 1203 North Shore Dr., Clear Lake, IA 50428



Fisher and Brown also will be fined \$1,500 each and will forfeit the rifles used in the violation, the unlawful taking of migratory birds. "Some people have already complained that the fine wasn't higher," said Manny Medina, a special agent for the U. S. Fish and Wildlife Service. "But we felt that this was the best way to go. The two men are being made accountable for their actions. By requiring them to write a letter of apology, they are making everyone aware of what they did. And they are showing people that it's a big mistake to do something like this. Hopefully, others will think twice before acting in this manner." Medina said Fisher and Brown admitted shooting the swans on December 24 when they were out riding around.

The Trumpeters, classified as a rare species by the U. S. Fish and Wildlife Service [actually Trumpeters are not classified], were shot on a watershed lake south of Topeka. The birds had migrated to the area about a week earlier and had attracted bird watchers throughout the region. When news of the shooting got out, people in the Topeka area were enraged. "I had never seen a case produce this kind of emotion," said Jim Dunn, a law-enforcement official for the Kansas Department of Wildlife and Parks.

The department received a tip about the case and then turned the information over to the U. S. Fish and Wildlife Service. Charges were filed Monday, and a deal was struck that settled the issue out of court, Medina said.

Glen Koontz, president of the Topeka Audubon Society, said, "I think the fine was minimal. Something deliberate like that, I don't know if it'll make believers out of them and the rest of the folks. A lot of money has been spent over the years to bring these birds back from extinction, a lot more than \$1,500. The fines won't bring back the swans."

[Article reprinted from the *Kansas City Star*, January 14, 1998.]

## Shootings deal setback to Iowa Trumpeter Swans *Perry Beeman*

Hunters or vandals this month shot three Trumpeter Swans, expensive birds that were bought as part of a State program to reintroduce the rare species to Iowa more than a century after it disappeared. "The birds together were worth \$7,000, considering their maturity and rearing costs," said Ron Andrews, program coordinator. Just to buy an unhatched egg costs \$500; an adult swan could cost \$2,000 or more. The highest fine the State could give the hunters is \$194 - a \$50 fine and

court costs. "That's nothing!" exclaimed Jaime Edwards, a Biologist in the State's Boone-based Nongame Wildlife Program.

### Recovering costs

Now, the State is planning to go to small claims court, invoices in hand, to recover the cost of the birds, five of which have been shot over 3 years, said Rick McGeough, Chief of the Iowa Department of Natural Resources' Law Enforcement Division. That should help replace the birds, if judges side with the State, but still doesn't make up for lost time in the effort to establish nesting pairs in Iowa, McGeough said. It takes 2 to 3 years for a swan to mature enough to mate, and can take another year or 2 for them to develop a relationship with a partner.

### Mistaken identity

Edwards said hunters apparently are mistaking the swans for Snow Geese, and firing away. Trumpeter Swans are twice as big as Snow Geese, have a dark bill and have wingspans of up to 8 feet. Snow Geese have dark wing tips: the swans don't. The Trumpeter Swans in the State program have green collars and special bands on their legs. He said the State posts signs in areas where the swans are located.

Larry Wilson, Natural Resources Director, said the State gets a lot of help from hunters in this program and others. He said the shootings are isolated incidents, but everyone needs to be careful. "Hunters need to be aware of what they are shooting, and if they don't know, they shouldn't be shooting," Wilson said. Said Edwards: "You are going to see more swans, so you have to remember that if you see a big, white bird, it's not necessarily a Snow Goose."

McGeough said there is no excuse for hunters born after January 1967 to shoot a Trumpeter Swan. That's because those hunters have all taken a gun safety course that includes a section on identifying game birds. "Sometimes people make really stupid mistakes," McGeough said. "Someone sees a big, white bird and assumes it's a goose. These people need to be taught a lesson and used as an example. It's a pretty flagrant violation and sets us back in our restoration efforts."

One hunter this month shot a pair of swans that were beginning to form a bond near Lakin Slough in Guthrie County. They had been hatched from eggs that cost \$500 each and collected in the Alaska. They had been released at Clear Lake. The hunter, Jonathan Bacon, 24, of Scranton, pleaded guilty Thursday to killing two swans, officials said. He received two tickets for \$145 each and was ordered to pay \$100 in fees for the swans. The crime was discovered by a motorist who took down Bacon's license plate and later notified Department of

Natural Resources officers.

### **One of pair shot**

Another hunter shot an adult swan at Goose Lake in Greene County about 3 weeks ago. That swan was part of an established pair and was worth \$3,000 because it was breeding age, Andrews said. The shooter also will be prosecuted, officials said.

Two years ago, one of the first swans in the program was shot by a 16-year-old on a dare from a friend near Spirit Lake. The boy wasn't fined because he was a minor. In an incident last year, a swan was found shot near Atlantic, but the culprit wasn't caught.

Iowa has released 86 Trumpeter Swans and will add 56 birds next year, Andrews said. In addition, 38 pairs of Trumpeter Swans, spread across the State, are being kept as breeding stock with the help of Iowans who feed and care for them. The offspring of those pairs will be released, too.

So far, none of the birds has become a nesting pair in Iowa. Edwards said next year is the earliest that is expected to happen in Iowa. The goal of the program, begun in 1993, is to establish 15 wild nesting pairs in Iowa by 2003.

[Article reprinted from the *Des Moines Register*, November 23, 1997.]





# Flyway Reports

## Atlantic Flyway

*David K. Weaver*

### Drafting of the Atlantic Flyway Trumpeter Swan Management Plan

An ad hoc committee met on September 23 and 24, 1997, at Airlie Conference Center's International House in Airlie, Virginia, about 50 miles west of Washington, DC, to discuss and formulate a potential management plan for Trumpeter Swans in the Atlantic Flyway. Representatives from the states of North Carolina, Virginia, Maryland, and New York, the U. S. Fish and Wildlife Service (USFWS), Defenders of Wildlife, Environmental Studies at Airlie, The Trumpeter Swan Society (TTSS), and interested private citizens gathered as guests of Dr. Bill Sladen at Airlie in this initial meeting to respond to a draft plan that was written by Defenders of Wildlife with the aid of TTSS and Bill Sladen.

The following objectives were agreed upon for the management of Trumpeters in the Atlantic Flyway:

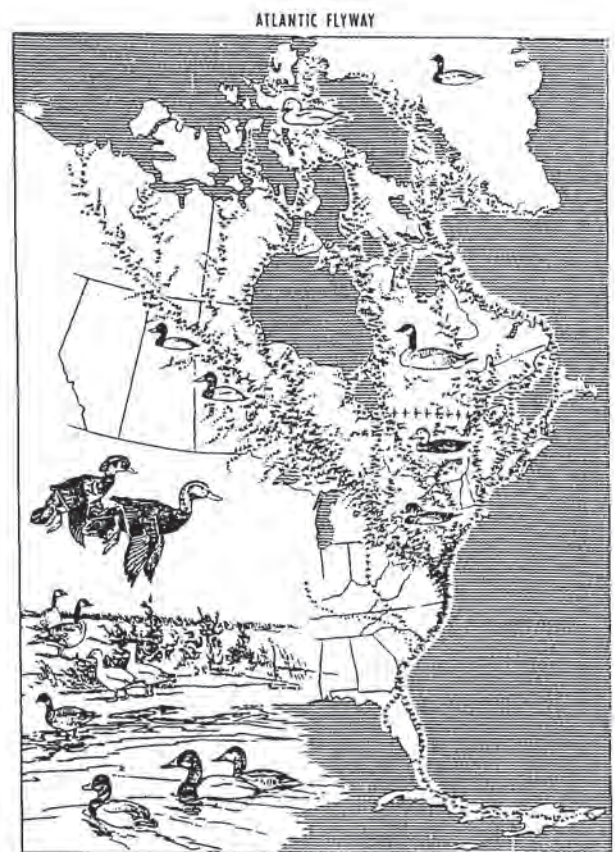
- Identify suitable predetermined breeding/wintering/nonbreeding stopover, sites and migratory corridors.
- Establish 25 breeding pairs of Trumpeter Swans, 200 total birds by 2003.
- Develop and implement a management program to encourage a migrant population.
- Minimize conflicts with other wildlife management programs.
- Provide optimal aesthetic/recreation benefits to public.

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- Develop and implement an effective information and education program to enhance Trumpeter Swan restoration.

Strategies were listed for carrying out each of these objectives. Much discussion ensued about how to implement the management plan. Concerns, such as the behavior of ultralight birds after being released, the incidental take of Trumpeters during the Tundra Swan hunting seasons in North Carolina and Virginia, and the





effect of a Trumpeter reintroduction on established Tundra Swan hunts were aired. It was agreed that an implementation plan had to be drafted prior to the entire package being taken to the Atlantic Flyway Council.

In addition to the Trumpeter Swan Management Plan, the Committee took time to focus on Defenders of Wildlife, Bill Sladen and Bill Lishman's ultralight experiment with Trumpeters, a sequel to their work with the "Ultrageese". All Committee members expressed support for moving ahead with the experiment and thought that the appropriate permits would be issued. Mute Swan management was also an issue of discussion. The USFWS now realizes that it must play an active role in dealing with this non-native species, but that it is up to the states to implement active management plans. All agreed that a public education program was all important and that the Atlantic Flyway Council should take the lead. TTSS and Defenders indicated that they could become involved with the public education effort.

A second meeting of the Committee was tentatively scheduled for January 22, 1998, at Airlie. A redraft of the plan will be prepared by Defenders of Wildlife and distributed for review preparatory to that meeting.

## **The Maiden flight**

*Marie Michelson  
Defenders of Wildlife*

[These excerpts were retrieved off of the internet as the three swans were in the process of making their maiden journey.]

### **December 18, 1997**

#### **7:30 am**

After an absence of nearly 200 years, three female Trumpeter Swans, Isabelle, Yoyo and Sydney, took off from Auburn, Virginia, on the first leg of their maiden, historical migration journey to the eastern shore of Maryland. The swans were accompanied by two ultralight aircraft piloted by Gavin Shire of Environmental Studies at Airlie and Joe Duff of Operation Migration.

#### **8:50 am**

The three swans and the two ultralights have crossed the Potomac River and have landed for a stop. According to Gavin Shire, the flight has progressed so well that it was decided to fly over landing site No. 1 at Whippoorwill Springs, and continue on to landing site No. 2 at Bud's

Ferry across the river. The flight will resume this afternoon.

#### **3:15 pm**

The swans took off from landing site No. 2 and headed towards landing site No. 3. It appears that they will fly over landing site No. 3 and proceed to landing site No. 4, where they will spend the night.

### **December 19, 1997**

#### **Crapo, eastern shore, Maryland**

The swans have landed! A small group of magnificent Trumpeter Swans - the largest waterfowl in North America - successfully completed a 103-mile experimental migration from Virginia to the eastern shore of Maryland at 9:05 am today, following an ultralight plane across the Chesapeake Bay.

The Trumpeter Swans will winter at a farm in Crapo, Maryland, managed by Defenders of Wildlife and are expected to return to their take off point in Airlie, Virginia, in the spring.

... Total flight time for the 103 miles from Auburn, VA, to Crapo, was just a little over 4.5 hours, making the swans' average speed about 26 mph. "We had the wind at our backs and were able to make good time, as soon as the birds clued in to the fact that we were on migration," said lead pilot, Gavin Shire.

... the birds fortuitously landed on the 77th birthday of swan expert Dr. William Sladen, Director of Environmental Studies at Airlie. [Happy Birthday, Bill!]

... The ultimate goal of the Migratory Bird Project is to restore migratory Trumpeter Swans to the eastern seaboard," says Bob Ferris, Director of Species Conservation at Defenders of Wildlife. "It was thrilling to see the swans fly into the farm for landing today, because it was the culmination of the first part of a journey for all of us involved in the experiment as well as for the birds."

## **Pacific Flyway**

### **The Society Board review of the Rocky Mountain Management Plan for Trumpeter Swans**

*Ruth Shea*

During the summer and fall of 1997, The Trumpeter Swan Society (TTSS) was asked to review and comment on draft revisions of the Pacific Flyway's Management Plan for the Rocky Mountain Population (RMP) of

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*Marie Michelson, Education Coordinator, Defenders of Wildlife, 1101 Fourteenth Street, NW, Suite 1400, Washington, DC 20005*





Trumpeter Swans. Although the U. S. Fish and Wildlife Service (USFWS) has the ultimate responsibility for management of migratory waterfowl, four flyway councils (Atlantic, Central, Mississippi and Pacific) provide a means of sharing information, and coordinating management efforts such as surveys, harvest allocation and research across state/provincial and national boundaries. Usually, twice per year (February/March and July) the flyways hold meetings that are open to the public.

When logistics and budget permit, TTSS sends a representative to these meetings. During the year, our Directors are often in close contact with various flyway biologists as well as the USFWS biologists, exchanging data on Trumpeters, reviewing and helping to formulate management recommendations and population management plans. In the Pacific Flyway, a subcommittee, composed of the state waterfowl managers from Montana, Idaho, Wyoming, Oregon, Utah, Nevada

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and California make recommendations to USFWS regarding management of RMP Trumpeter Swans.

This subcommittee is currently revising their Management Plan for RMP Trumpeter Swans. Our Board of Directors has reviewed two drafts and submitted comments in June and December 1997. The Flyway will consider approval of a revised plan in July 1998, which we hope will incorporate the changes that we have recommended. Our most recent comments, submitted in a letter to Gary Will, are reproduced below.

December 12, 1997

Dr. Gary Will, Chairman  
Pacific Flyway Subcommittee on RMP Trumpeter Swans  
Idaho Dept. of Fish and Game  
600 S. Walnut, Box 25  
Boise, ID 83707-0025

Dear Gary:

On behalf of The Trumpeter Swan Society, the Board of Directors would like to thank you for the opportunity to review the 5th draft of the Pacific Flyway Management Plan for RMP Trumpeter Swans. We commend you for all the work that you and the Subcommittee have expended on their management.

While we support the goal and objectives of the draft, the Board does not agree with some of the strategies. The Plan seeks to disperse substantial numbers of trumpeters (>1,500 in 1998, > 2,000 by 2002) from the Tri-state area, re-establish secure migrations to diverse wintering sites, and achieve annual population growth of 5%. The Plan rightly emphasizes this can only be achieved if swans pioneering new migration routes, experience greater survival rates than they have in the past. However, strategies to increase the survival of pioneering migrants or to encourage repeated use of key fall and winter swan habitats are absent in this draft. These are substantial omissions that should be addressed in the revised Plan.

Of even greater concern, this draft includes a strategy for a 3-year moratorium on transplants of trumpeters to habitats in extreme southern Idaho, or outside Idaho. **The Board cannot support this moratorium and requests that it be removed from the revised Plan.** We believe it is counterproductive to attempt to minimize southward migration of trumpeters and their use of key swan habitats in Utah and Nevada. This strategy will not achieve the Plan goal and objectives, and contradicts the intent that led to implementation of the experimental quota.



Our concerns have not changed substantially since our June 5, 1997, response to the previous draft. Overall, the Board believes that more effort is needed to continue implementation of the Recommendations for RMP Trumpeter Swan Management that the U. S. Fish and Wildlife Service (USFWS) distributed widely for comment in 1995. Those recommendations led to the establishment of the experimental quota system by USFWS in parts of the Pacific Flyway tundra swan hunts for the 1995-1999 seasons.

Specifically, we are concerned about the following:

- 1. Precluding the option for release of trumpeters into the Bear River Migratory Bird Refuge, Utah, through the year 2000 is in direct conflict with one of the primary objectives of the 1995 recommendations, which was to increase trumpeter swan migrations southward to wintering habitats in Utah, Nevada, and California.**

The quota system was created to facilitate this objective by eliminating hunter liability so transplants into this major migration route could occur and the Bear River Migratory Bird Refuge could be utilized in restoration efforts. Reversing this strategy unilaterally and placing a moratorium on transplants into or near Utah is an unacceptable breach of the intent of the experimental quota. Trumpeters may not be available for translocation every year, however the Plan should not preclude releasing trumpeters at Bear River Refuge after the hunt closes or in southern Idaho near Preston, at any time.

At the very least, national wildlife refuges, including Bear River and Stillwater, should play key roles in re-establishment of migrations and restoration of a secure distribution of RMP trumpeters. There is great potential that trumpeters could successfully use these refuges after swan hunting seasons close or where adequate rest areas are provided during the hunt. Now that hunter liability has been eliminated, if any incompatibility between trumpeter swan use of these refuges and swan hunting is perceived, the Plan should urge USFWS to take steps to improve the effectiveness of refuge security areas. From our perspective, management strategies should help trumpeter swans to migrate southward and utilize key refuge habitats, not attempt to exclude them.

- 2. The Plan should place higher emphasis on developing methods to accurately track population trends as the RMP adjusts to loss of winter habitats at Red Rock Lakes and Harriman.**

As the RMP disperses, it becomes increasingly difficult for the Mid-winter Survey to differentiate

between a growing population that is dispersing successfully and a static or shrinking population that is dispersing with high mortality. At the same time, Canada may further reduce its monitoring of some nesting areas. The proposed flyway effort to search for marked trumpeters in late January will help supplement winter surveys in the immediate future. As the proportion of marked swans declines below the current  $\pm 10\%$ , however, documenting the magnitude of dispersal and population trend will be extremely difficult. Perhaps some form of breeding area indices could be explored. The Plan should also include a strategy to correct the problems that reduced the value of the 1995 rangewide survey.

- 3. The Plan needs to identify what other significant wintering areas for RMP trumpeters are acceptable, and provide vision as to the numbers of trumpeters that are desired at alternate sites and how repeated use will be encouraged.**

Although this draft suggests that migration into Utah and Nevada is "currently undesirable", it does not present alternate realistic strategies. If the Plan will not help trumpeters utilize and survive in refuge habitats along the primary swan migration route that leads south from the Tri-state area, where does the Plan envision that 1,500+ trumpeters could migrate and winter successfully?

- 4. In several portions of this draft, discussions are confused and incorrect. Greater consistency of terms and accuracy of data are necessary in order to document changes in RMP distribution and evaluate progress toward achieving objectives.**

We'll briefly provide two examples of the types of errors in the Plan:

- a. Page 4 states that " swans wintering in the Tri-state region increased from about 150-200 in the early 1930's to 2,129 by 1996 and 2,197 by 1997, as measured by the Midwinter Trumpeter Swan Survey (Fig. 3)".

For the past several decades the term "Tri-state region" has referred to southwestern Montana, eastern Idaho, and northwestern Wyoming. This draft, at least in some places, uses "Tri-state region" to refer to the entire states of Montana, Idaho, and Wyoming. This usage confuses evaluation of distribution trends and damages the usefulness of long-term data sets. Terms such as "Tri-state region" should be clearly defined in a manner consistent with past usage, and used consistently throughout the Plan.

In addition to the confusion between "Tri-state" and



the entire three states, the data in this example also appear to be incorrect and Figure 3 is mislabeled. Figure 3 does not refer to total swans, it refers only to white birds and therefore omits cygnets. The total number of trumpeters wintering in the entire states of Idaho, Montana, and Wyoming in 1996 and 1997 was 2,709 and 2,586, respectively (Appendix I). [These tables and figures are not included here, but can be found in the RMP Draft Management Plan, available at the Society office.] The total numbers wintering in the core Tri-state area (illustrated in Fig. 8) in 1996 and 1997 were 2,479 and 2,212, respectively (Table 1). The text should be clear about which geographic area is being discussed and emphasize that wintering numbers declined between 1996 and 1997; they did not increase as the current text indicates.

b. Similarly, the discussion of the population trend of the Tri-state flocks on page 5 incorrectly states that the Tri-state flocks were relatively stable prior to recent lows that have resulted from relocations and terminating feeding. The discussion mistakenly refers to Figure 4, which deals with the U. S. Flocks (including Malheur and Ruby Lakes NWRs), not the Tri-state flocks.

Between the mid 1960's and early 1980's the Tri-state flocks were not stable; adult numbers declined by over 34% to a 35-year low by 1985. In response to this decline, USFWS and the Pacific Flyway invited The Trumpeter Swan Society to review the management of Red Rock Lakes NWR in 1983 and initiated the 3-year review of RMP history, ecology and management by Shea, Garton and Ball in 1984. It was this decline of the Tri-state flocks and the resulting analyses of their problems that led to the range expansion program and the termination of feeding.

The final Plan would benefit by including a stronger background section on population dynamics and distribution, a thorough scrutiny of data presented, coordination of text with figures, and consistent definition and use of flock names and geographic terms.

Overall, the Board cannot support making significant changes in Plan strategies based upon last winter's poorly understood shift in distribution. We suggest aggressively building upon this shift, but without foreclosing options, at least until progress toward attaining Plan objectives is much more definite. The revision should not preclude releases and management for trumpeter swans at national wildlife refuges in Utah and Nevada. Much greater understanding of the RMP dispersal and whether it will increase is needed before major options are foreclosed.

We thank you for the opportunity to comment.

Sincerely,  
Ruth Shea  
President







## *Selected Papers*

# Mute Swan populations, distribution and management issues in the United States and Canada

*Harvey K. Nelson*

[An earlier draft of this paper was presented at the 16th Trumpeter Swan Society Conference. A future draft of this paper will be published in the Proceedings of the 16th Conference, including information that continues to come in.]

### **Background**

The Mute Swan (*Cygnus olor*) was introduced to North America from Europe during the late 1800's, when private individuals brought them to their estates in the lower Hudson Valley and Long Island, New York. About 1910, it was reported that some of these birds had escaped or were released into the wild, resulting in the initial wild-breeding or "feral" swans becoming established in New York. Other records indicate that the first wild-breeding resulted from a pair of Mute Swans that escaped from an estate in 1919 (Williams 1997). Mute Swans are essentially non-migratory, but there are seasonal movements and some more lengthy migrations are beginning to occur. By the 1950's, they had expanded their range into other Atlantic Coastal states. During the early 1970's, they were reported in all four flyways, with the largest number (9,500+) 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, with the overall wild population increasing by more than 50% (65% in the Atlantic Flyway) during the past 10 years (C. E. 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 and Tundra Swan, with adult males averaging 25 pounds, 4.5-5 feet in length, and a wing span up to 7 feet. Mute Swans are distinguished by their orange bill with a black fleshy knob (cere), and a resting pose with neck in an s-curve and bill pointed down. There are two color phases: Royal, or gray, and the 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 animals in great volume, with eat-outs reported where larger concentrations of swans occur. In areas where winter feeding is conducted they readily accept corn, small grain and vegetables. Preferred nesting sites are small ponds or

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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) reported clutch sizes ranging from one to eight eggs, averaging four, with an incubation period of about 35-41 days. Nesting success is generally good, with cygnet survival averaging about 50% to flight stage. 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 has created concern about the competition this exotic species may be creating with other waterfowl and waterbirds. In some eastern states they are reported to be eliminating nesting of Least Terns and Black Skimmers and displacing Common, Forster's and Royal Terns (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 they 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.

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, CWS, 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 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 in 1998.

### **Summary of responses received**

A review of Tables 1-4 indicate that information is incomplete for many states and 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 3,000 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 3,600 Mute Swans in the wild and an additional 1,000 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 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



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

State/Province	Total Number of Swans	Number in Captivity**	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Connecticut	1,700	-	-	-	Protected	Other birds & public safety	Proposed policy
Delaware	50	-	1 pr. - 4 cygs.	-	Non-protected exotic	-	Yes
Florida	1,000	1,000	40 cygnets	-	Non-protected	-	None
Georgia	50	-	-	-	-	-	-
Maine	15	-	2 pr. - 4 cygs.	None	Protected - permits	None	None
Maryland	2,260	-	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	2,000	-	Unknown	To coast	Protected - permits	Other birds & public safety	Yes
North Carolina	30	-	-	-	-	-	-
Ontario	2,500	600	-	Great Lakes	Protected	Competition w/Trumpeter Swans	-
Pennsylvania	250	190	13 prs. - 24 cygs.	Unknown	Non-protected	Habitat degradation	Yes, on State land

State/Province	Number of Swans in Wild	Number in Captivity	Annual Production	Seasonal Movements	Legal Status	Management Problems	Control Measures
Rhode Island	1,300	-	-	To coast	Protected - State policy	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 from Atlantic Flyway Provinces has been requested but not received.

\*Incomplete, current information will be requested.

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



Table 2. Status of Mute Swans in the Mississippi Flyway, 1996\*

State/Province	Total Number of 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 prs. - 100 cygnets	Yes	Protected by IL law	Other wetland birds	None
Michigan	4,000	1,000	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/Trumpeter, Tundra Swans and other birds, public safety	Yes, prevent growth

\*Incomplete, current information will be requested.

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

\*\*\*Reported in CBC count from Springfield, MO.

**Table 3. Status of Mute Swans in the Central Flyway, 1997\***

State/Province	Total Number of 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

\* 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 Number of 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 around	Protected	Conflicts w/Trumpeters, Tundra Swans 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.

\*Incomplete, current information will be requested.

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



techniques are now considered unacceptable by some opponents (Williams 1998).

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 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 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, harassment, and elimination 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. See the Atlantic Flyway Council Recommendation #25 following this paper.)**
- **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.**

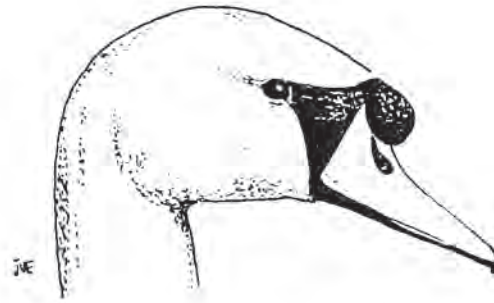


- **Proceed with completion of this assessment under the auspices of The Trumpeter Swan Society and prepare a more comprehensive status report during 1998 to support any Flyway Council actions as recommended above. This will require continued cooperation with the federal, state and provincial agencies involved, the flyway technical sections, other conservation organizations and private interest groups.**

Wood, R. and W. L. Gelston. 1972. Preliminary report: The Mute Swans of Michigan's Grand Traverse Bay region. MI Dept. Natural Resources. Rept. 2683, 6 pp.

### Acknowledgements

My special thanks for the assistance provided by the Flyway Biologists Jerry Serie, Ken Gamble, Dave Sharp and Bob Trost. I appreciate specific information provided by Joe Johnson and Jerry Martz (MI), Mike Mossman (WI), Carrol Henderson (MN), Guy Zenner (IA), Dan Holm (IL), Gildo Tori (OH), Bryan Swift (NY), Charles Allin (RI), Norm Saaki (NV) and Ken Lungle (AB). I am grateful to the other state and provincial biologists who responded to our request for information on the current status of Mute Swans, and look forward to hearing from those who have not yet replied.



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# ATLANTIC FLYWAY COUNCIL TECHNICAL SECTION

Recommendation No: 25

Initiated by: The Snow Goose, Brant and Swan Committee

Subject: Mute Swan Policy

Recommendation:

That the Atlantic Flyway Council adopt a policy to control Mute Swans in the Atlantic Flyway. The policy would endorse the following actions:

1. State and provincial wildlife agencies, if they do not already have the authority, should seek to gain authority over the sale and possession of Mute Swans and their eggs.
2. The sale of Mute Swan adults, young or their eggs should be prohibited.
3. States should seek to eliminate all importing and exporting of Mute Swans without a special purpose permit issued by the state wildlife agency.
4. Mute Swans captured due to nuisance complaints, sickness or injury should be removed from the wild or be euthanized.
5. Egg addling programs where feasible should be encouraged.
6. Both state and federal wildlife agencies should institute programs to prevent the establishment and/or eliminate Mute Swans.

7. States and provinces should seek to make the Mute Swan an unprotected species if this is not already the case.
8. States should strive to manage Mute Swan populations at levels that will have minimal impacts on native wildlife species or habitats.

Arguments in support:

1. Population growth and range expansion of this species has increased the number of swan related problems.
2. There is a documented case in Maryland of Mute Swans preventing the nesting of Black Skimmer and Least Tern, a state listed and threatened species.
4. In the absence of population control, Mute Swans could eventually become established throughout the Flyway. Until the impacts of this species on native wildlife and their habitats are better understood, Mute Swans in the Atlantic Flyway should be reduced or limited as closely as possible to present levels.

Arguments in opposition:

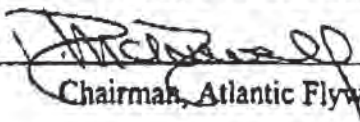
1. Valued for its aesthetic qualities, the Mute Swan has become popular with the public.

Attachments:

None.

**Action by TS:** None - Council Generated **Date:** 8/1/97

**Approved by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
Chairman, Technical Section

**Approved by:**  \_\_\_\_\_ **Date:** 8/1/97  
Chairman, Atlantic Flyway Council



# Swan banders in North America

*Donna Compton*

It is difficult to read collars and wing tags accurately! There is no doubt about it; it is also difficult to keep track of who is doing the marking, what the markers look like and who is interested in the information from a sighting. This article is an attempt to clarify what swan (Trumpeter, Tundra and Mute Swans) banders are doing with visual marking systems and to make the names and phone numbers of the banders available. I have not investigated codes authorized for U. S. Fish and Wildlife Service (USFWS) bands, because that information is readily available at the Bird Banding Lab.

The Bird Banding Lab in Laurel, Maryland, issues leg bands and authorizes the visual marker colors and codes for all banding projects in North America. Until recently, the Lab has not had a correlating computer program to keep both the authorized leg band code and the visual marker code readily available beside the bander's name and phone number. Therefore, each report of a visual marker required a letter be sent to the suspected bander before the sighting information would be given out. The whole process could take weeks (for sure), months and sometimes years. To avoid the delay, coordinators of marking efforts birds have often taken responsibility for the transmission of information about the visual markers as well as for passing along sighting information (i.e. Canada Goose banding in the Midwest). To gain a quick method of contacting banders with sighting information, The Trumpeter Swan Society has created a master list of all swan banders in North America and the visual marking systems being used.

Over the years, many different visual marking systems have been used in an attempt to find the best marker with the least impact on the swans. Most of the projects have settled on collars. However, in some climates, icing on the collars has been a problem, and the banders have gone to wing tags. Visibility and readability of the wing tags is much less than with the collars, but the icing problem is eliminated. The creativity of the banders becomes apparent as each attempts to make a visual marker that will identify the individual to its specific project, that maximizes readability under all conditions,

and that will yield some information even if the code on the marker cannot be read. Ultimately, the bander is left frustrated, because only the correct reading of the whole code can provide the information needed, and anything less is not sufficient. The creativity tends to do the opposite of the intent by confusing the observer, confusing the receiver of the sighting report and making it almost impossible to transmit to others clearly who is doing what with their markers!

A protocol was written to standardize color and code usage and to try to eliminate the creative confusion that individual fashions in collars have created (*The Trumpeter Swan Society Newsletter*, Vol. 23, No. 1, 1993). Several discussions have occurred since the protocol was written to answer remaining questions. An updated swan banding protocol will be published in the fall 1998 *North American Swans*. Included in that publication will be rules for "exceptions" to the established patterns of the protocol.

Tables 1-3 include all code assignments for visual markers for Trumpeters (1), Tundras (2), and Mutes (3). The left hand column indicates the letter of the alphabet (alpha) assigned to each bander. If there is more than one alpha assigned, the combination will appear on the table under the first alpha of the code. The color and type of marker and the combination and order of the alpha(A)/numeric(#) assignments are given at the top. Following the tables is an alphabetical listing of the key location words used in Tables 1-3 to indicate bander and the corresponding bander name, address and phone number. No attempt was made to describe all of the creative printing and artistic variations that banders have used on the collars within these tables. That information is available from the full report. (The full report can be obtained from the Society office.) For some of the marker colors, the alphanumeric could have been printed in either white or black. This information was also excluded here because of the confusion it would create in the tables.

An important issue that needs resolution is the request from the Bird Banding Lab to receive all sighting information for its database. Perhaps we could agree that annually we will submit our sighting records to the Lab. The Lab would then have a huge database that would be available to researchers worldwide. What are your thoughts?



Table 1. Visual markers on Trumpeter Swans -- type of marker, color, code used and bander reference.

Green Collars **						
Codes	A##*	#A#	##A	A###	###AA	
A	RRLNWR	Hennepin Parks	Copper River	Washington	AA - Malheur NWR AE - RRLNWR AY - Malheur NWR	
C			Copper River			
E	SE Idaho		Michigan		EE - British Columbia EJ - British Columbia	
F	Iowa	Iowa				
H	RRLNWR	SE Idaho	SE Idaho			
J	RRLNWR	RRLNWR	RRLNWR			
K	Yukon		Wisconsin	AA##		
L	Wyoming			LY - Wyoming		
M	Ohio	Ohio				
N	RRLNWR	SE Idaho	SE Idaho		MA - RRLNWR	
O	Malheur NWR					
P	RRLNWR	RRLNWR	RRLNWR			
R	Lacreek NWR					
S	Lacreek NWR					
T			Wisconsin/Tetlin NWR			
V	RRLNWR	SE Idaho	SE Idaho			
X	SE Idaho	SE Idaho	SE Idaho			
Y	Wyoming					

- \* A## = Alpha, number, number
- #A# = Number, alpha, number
- ##A = Number, number, alpha
- A### = Alpha, number, number, number
- ##AA = Number, number, alpha, alpha
- AA## = Alpha, alpha, number, number
- #A = Number, alpha
- A# = Alpha, number
- ### = Number, number, number

\*\* In some cases, leg bands of matching color and codes have been applied.



Table 1. cont. -- Trumpeter Swans.

Blue Collars**		White Collars**			Red Collars**			
Codes	##AA*	Codes	A#	#A	Codes	A##	##A	##AA
A	AK - Tetlin NWR	A	Utah	Utah	A	Alberta	RRLNWR	AC - Alberta
E	EA - Fairbanks	C	Utah	Utah	C	RRLNWR	RRLNWR	
H	HC - Fairbanks	E	Utah	Utah				
J	JL - Fairbanks	J	Utah	Utah				
P	PN - Fairbanks	K	Utah	Utah	K	Yukon		
		M	Utah	Utah				
		P	Utah	Utah				
					R		RRLNWR	
		T	Utah	Utah				
U	UJ - Fairbanks UR - Kenai NWR	U	Utah	Utah				
V	VA, VT, VY - Kenai NWR	V	Utah	Utah	V	Grays Lake		
		Z	Utah	Utah				

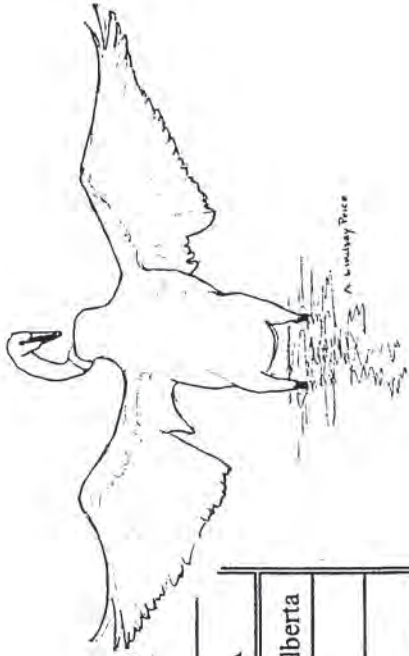


Table 1. cont. -- Trumpeter Swans.

Yellow Collars**				
Codes	##AA*	AA##	A##	#A
A	AC - Alberta	AC - Alberta	Utah	A-Z - Alberta
C	CK - Ontario		Utah	
E			Wisconsin	
F	FA - Lacreek NWR			
J			Utah	
K	KN, KT, KU - Wisconsin		Utah	
M	MC, ME, MR - Missouri			
N	NA, NC - Hennepin Parks			
R	RA, RC - Lacreek NWR			
T	TY - Saskatchewan	TY - Saskatchewan		
U			RRLNWR	

Wing Tags		
###*	A##	
Orange	Minnesota	
Green	Michigan, Wyoming	T Hennepin Parks
Yellow	Ontario	



Table 2. Visual Markers for Tundra Swans -- type of marker, color, code used and bander reference.

Codes	Blue Collars	Yellow Collars	Green Collars	Black Collars
	A###	A###	A###	A###
A	Airlie	Northwest Territories	Washington	Airlie
C				Airlie
E	Alaska			
F				Airlie
J	Fairbanks			Airlie
K	Yukon Delta			Airlie
M		Airlie		North Carolina
P	Izembek NWR			
R			California	
T	Airlie	Airlie		
U	Selawik			
Y				Airlie

	White Collars		Gray Collars
	#A	A#	A###
A	Utah	Utah	
C	Utah	Utah	
E	Utah	Utah	
J	Utah	Utah	
K	Utah	Utah	
M	Utah	Utah	
P	Utah	Utah	Airlie
T	Utah	Utah	
U	Utah	Utah	
V	Utah	Utah	
Z	Utah	Utah	

- \* A## = Alpha, number, number
- #A# = Number, alpha, number
- ##A = Number, number, alpha
- A### = Alpha, number, number, number
- ##AA = Number, number, alpha, alpha
- AA## = Alpha, alpha, number, number
- #A = Number, alpha
- A# = Alpha, number
- ### = Number, number, number

\*\* In some cases, leg bands of matching color and codes have been applied.

Yellow Wing Tags	
	###
A	Ontario

Table 3. Visual Markers on Mute Swans -- type of marker, color, code used and bander reference.

Codes	Black Collars	White Collars	Yellow Collars
	AA##*	AA##	AA##
A	AM, AP, AR, AT, AU, AY - Airlie	AA, AB - Massachusetts	
C			CA - Massachusetts
F			FM - Wisconsin
P			PR, PT - Wisconsin
U		UA - Massachusetts	
Z		Z0 - Airlie	

- \* A## = Alpha, number, number
- #A# = Number, alpha, number
- ##A = Number, number, alpha
- A### = Alpha, number, number, number
- ##AA = Number, number, alpha, alpha
- AA## = Alpha, alpha, number, number
- #A = Number, alpha
- A# = Alpha, number
- ### = Number, number, number

\*\* In some cases, leg bands of matching color and codes have been applied.



Table 4. Location names, bander names, addresses and phone numbers.

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# Trumpeter Swan survey of the Rocky Mountain Population/U. S. Flocks, Fall 1997

*Daniel Gomez*

*Red Rock Lakes National Wildlife Refuge*

We conducted most of the 1997 fall Trumpeter Swan survey during the week of 23 September 1997. Poor weather postponed the original attempt earlier in the month. We had good flying weather and visibility through most of the survey.

This fall's survey found a decrease from last year to 433 Trumpeter Swans (Table 1). "White birds" refers to adults or sub-adults, as distinguished from the readily identifiable gray cygnets. The state by state results of the fall survey are listed in Table 2. [More information regarding nesting success is given in Figure 9 from the full document and the tables provided by The Trumpeter Swan Society (Tables 3 and 4).]

I asked cooperators for statements which may give the reader a closer feel for the situation in various locations.

- Wyoming saw more cygnets (17) than last year (7) (Fig. 9). They are also having success with their captive rearing and release efforts (17 cygnets with three surrogate adults).
- Red Rock Lakes NWR again kept the Lower Lake at full pool through nest initiation. In the past, this level caused nest flooding if nests were initiated before runoff. Because of ample runoff, downstream irrigators did not need early release, and nests at full pool were not left "high and dry" in June. Downstream irrigators favor the Refuge holding water as a way to utilize the Refuge's "sponge" effect for water storage during high water years. Even though a cold spring predictably precluded some nesting,

Year (Sept.)	Total swans	White birds	Cygnets
1990	579 (100%)	432 (75%)	147 (25%)
1991	571 (100%)	463 (81%)	108 (19%)
1992	570 (100%)	473 (83%)	97 (17%)
1993	354 (100%)	303 (86%)	51 (14%)
1994	454 (100%)	302 (67%)	152 (33%)
1995	438 (100%)	372 (85%)	66 (15%)
1996	459 (100%)	381 (83%)	78 (17%)
1997	433 (100%)	360 (83%)	73 (17%)

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*Daniel Gomez, Refuge Manager, Red Rock Lakes NWR,  
Monida Star Rt., Box 15, Lima, MT 59739*



those swans using the Lower Lake appear to be adapting to the deeper water. The conditions favor diving ducks and provide winter habitat for fish as well. Several new muskrat mounds appeared this summer along shorelines corresponding to the deeper water. Swans may use these new mounds as elevated nest platforms. This winter, so far, has seen little snow and generally drier conditions. We may see warmer temperatures and less runoff in the spring of 1998. In the past, such conditions have usually led to improved nest initiation and cygnet survival locally.

State	Total swans	White birds	Cygnets
Montana	112	90	22
Idaho	131	112	19
Wyoming	127	110	17
Oregon	40	31	9
Nevada	23	17	6
U. S. RMP Total	433	360	73

- Red Rock Lakes NWR is exploring a graduate project to mark selected nesting swans with satellite transmitters. This would provide us with an understanding of where successful nesters are wintering and what survival strategies may help them return in good reproductive condition.
- Nest initiation and cygnet production at Red Rock Lakes was low this year. We again experienced a cold spring and high water. We do not know of any nest flooding. Instead, the combination of factors seemed to preclude nest initiation.
- Grays Lake had ample water this year. They did not need to relocate cygnets because of low water as in years past. They did see some late nesting and cygnets which almost did not fledge prior to freeze-up.
- Increased human use near traditional swan nesting territories may be affecting swan use. For example, this seems to be occurring on Island Park Reservoir and Henry's Lake. This May, I saw a lone Trumpeter along the southwest shore of Henry's Lake, with fly fishermen in float tubes and boats within 100 yards or so. There was a new road to this southwest corner of the lake, and a new boat launch on the lake. Henry's Lake has had historical swan territories, but has not produced swans in recent years. I saw a similar

situation on Island Park Reservoir where fly fishermen and boaters were close to marshy areas where Trumpeters appeared to be attempting to nest. I do not believe either lake had any nests this year.

- Even with fluctuations in production, the isolation of nest sites in the Centennial Valley, and subsequent production, continues to help in maintaining swan numbers.
- The Southeast Idaho Refuge Complex out of Pocatello has hired four technicians to monitor and haze Trumpeter Swans in the Henry's Fork and related areas. So far, they have not had to haze as the movement of swans southward appears to be delayed due to a relatively warm and dry fall. They are conducting intensive monitoring of areas in eastern Idaho, west to Market Lake. As of this writing, less than 200 Trumpeters are within Harriman State Park, more than 200 are within the remainder of the Island Park vicinity, over 200 are at Yellowstone Lake within Yellowstone Park, and over 700 are at Hebgen Lake in Montana for a total of 1,300 swans.
- In both Wyoming and Montana (Paradise Valley) cygnets are being added to the wild flock through captive rearing efforts. We will begin including these cygnets in the wild flock numbers in future surveys.

#### Observers and compilation:

In the core Tri-state and adjacent areas, D. Gomez and pilot B. Twist (Western Montana Aviation - Cessna 206) flew the southwest Montana portion. Other Montana observations were provided by J. Herbert, B. West, H. Knapp (volunteer observer) and T. McEneaney. M. Fisher, S. Bouffard and B. Twist flew Island Park and eastern Idaho, and south to Bear Lake Refuge. D. Gomez, T. McEneaney, J. Warren (Red Rock Lakes Technician), and B. Twist flew the Yellowstone portion. D. Stevenson and pilot G. Lust (Mountain Air Research) flew the Wyoming portion.

In the restoration areas, J. Mackay surveyed Ruby Lake NWR in Nevada, M. St. Louis surveyed Summer Lake WMA, OR, and vicinity, and G. Ivey provided numbers for Malhuer NWR. R. Shea provided consultation. Red Rock Lakes employees or volunteers, J. Vann, J. Warren, R. Gomez and J. Quinones helped verify, compile and distribute this report.

[A copy of the full report is available from Red Rock Lakes NWR, Monida Star Rt., Box 15, Lima, MT 59739.]



1997 Nesting Effort and Productivity of the RMP/U.S. Flocks of Trumpeter Swans.  
compiled by The Trumpeter Swan Society

	Occupied Sites (a)	Active Nests (b)	Successful Nests (c)	Cygnets Hatched (d)	Broods Fledged (e)	Cygnets Fledged (e)	Total Adults (September) (f)
<b>MONTANA TOTAL</b>	<b>15+</b>	<b>15</b>	<b>7</b>	<b>25+</b>	<b>6</b>	<b>18</b>	<b>88</b>
*RRLNWR	no data	8	4	15+	4	13	32
*Other Cent. V.	no data	5	1	2	1	2	51
*Madison River drainage East Front	0	0	0	0	0	0	1
	1	1	1	5	0	0	2
*Yellowstone R.	1	1	1	3	1	3	2
<b>WYOMING TOTAL</b>	<b>29</b>	<b>18</b>	<b>10</b>	<b>29</b>	<b>4</b>	<b>17</b>	<b>107</b>
*Outside YNP	21	13	7	24	4	17	89
*YNP	8	5	3	5	0	0	18
<b>IDAHO TOTAL</b>	<b>35</b>	<b>24</b>	<b>13</b>	<b>37</b>	<b>8</b>	<b>20</b>	<b>112</b>
*Island Park	12	8	4	11	2	3	53
*Ashton-Id. Falls	5	5	4	14	2	9	24
*Grays L. NWR area	16	9	4	10	3	6	31
So. central ID	0	0	0	0	0	0	2
Ft. Hall	1	1	1	2	1	2	2
Bear Lake NWR area	1	1	0	0	0	0	0
<b>OREGON TOTAL</b>	<b>9</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>4</b>	<b>8</b>	<b>28</b>
Malheur NWR	4	4	3	7	3	7	16
Summer L. area	5	4	2	2	1	1	12
<b>NEVADA TOTAL</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>3</b>	<b>6</b>	<b>17</b>
Ruby Lake NWR	6	5	5	15	3	6	14
Franklin Lake MA	0	0	0	0	0	0	3
<b>WASHINGTON TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>U.S. FLOCKS TOTAL</b>	<b>94+</b>	<b>70</b>	<b>40</b>	<b>115</b>	<b>25</b>	<b>69</b>	<b>352</b>
*GREATER YELLOWSTONE TOTAL	<b>76+</b>	<b>54</b>	<b>28</b>	<b>84</b>	<b>16</b>	<b>53</b>	<b>301</b>

(a) pair present on site with known or suspected suitability for nesting (does not include sites with 1 territorial bird); (b) incubation or clutch observed; (c) nest hatched at least 1 egg; (d) minimum estimate of cygnets hatched based upon early observation of broods; (e) cygnets, broods and adults counted on USFWS September survey.  
\*Greater Yellowstone sites are comparable to sites included in pre-1990 Tristate Survey totals. Data were gathered by US Fish and Wildlife Service, US National Park Service, US Forest Service, Idaho Dept. of Fish and Game, Wyoming Game and Fish Dept., Oregon Dept. of Fish and Wildlife and The Trumpeter Swan Society.



1997 Productivity parameters by state for the RMP/U.S. Flocks of Trumpeter Swans  
compiled by The Trumpeter Swan Society

State	% Nest Success (a)	Cygnets Hatched Per Active Nest (b)	Cygnets Fledged Per Active Nest	Cygnets Survival Hatching to Fledging (c)
Montana	46.7	1.7	1.2	0.72
Wyoming	55.6	1.6	0.9	0.59
Idaho	54.2	1.5	0.8	0.54
Oregon	62.5	1.1	1.0	0.88
Nevada	100.0	3.0	1.2	0.40
Washington	0.0	0.0	0.0	0.0
Mean	57.7	1.6	1.0	0.60

(a) % Nest Success = no. of successful nests / no. of active nests

(b) minimal estimate of cygnets hatched based upon earliest brood observations

(c) maximum estimate of survival since some mortality may have occurred before first observation of a brood

Data were gathered by US Fish and Wildlife Service, US National Park Service, US Forest Service, Idaho Dept. of Fish and Game, Wyoming Game and Fish Dept., Oregon Dept. of Fish and Wildlife and The Trumpeter Swan Society.

# Tri-State Cygnet Production, 1990-97

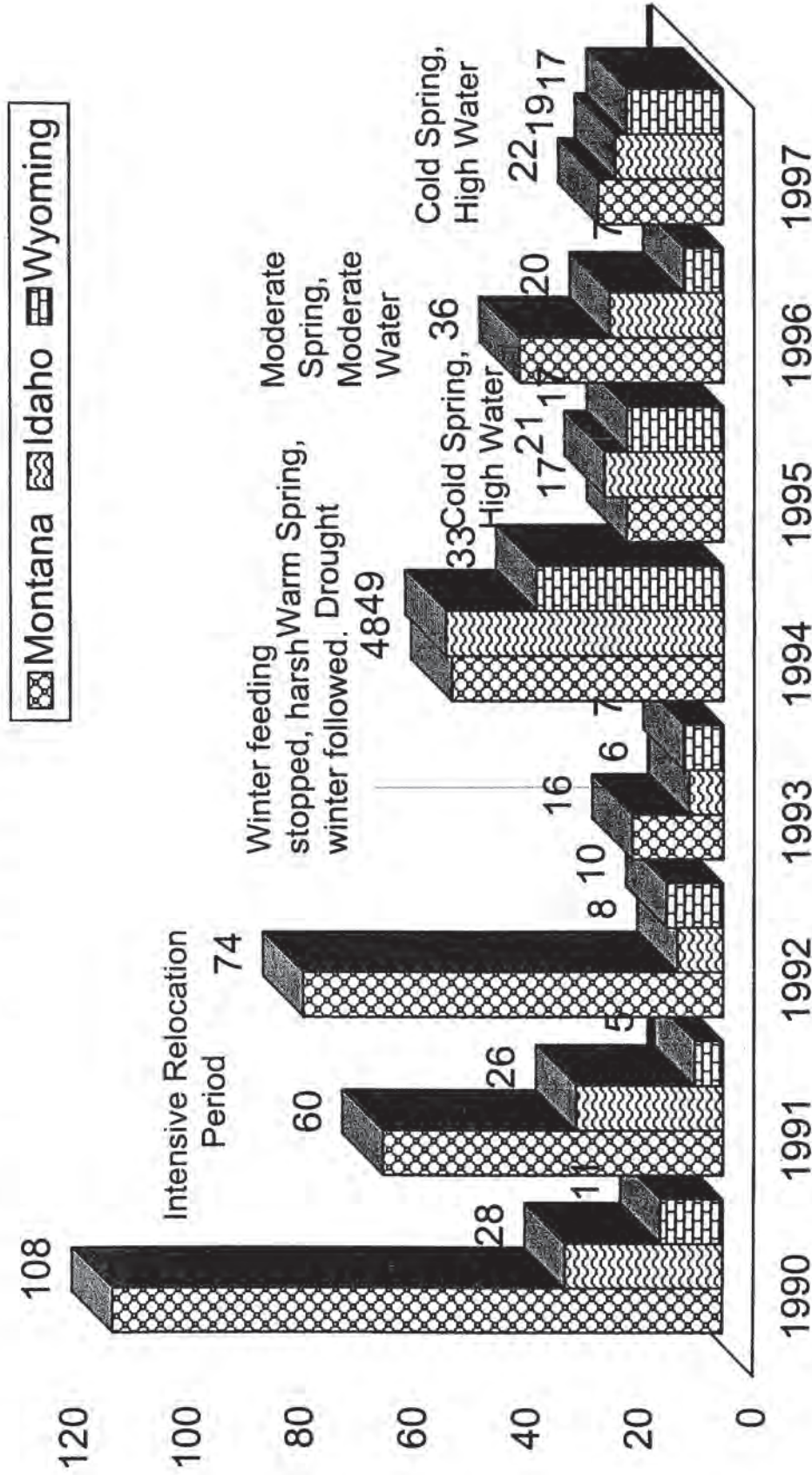


Fig. 9, 1997 Trumpeter Swan Fall Survey. Numerous relocations have changed the picture in the tri-state area of Montana, Idaho and Wyoming. Most swans need high quality wetlands, plentiful water, and protection from human disturbance during nesting and brood rearing. Cygnet production appears to be more consistent where those qualities are present. Weather also has an effect. Notice the unusual relationship between warmer and drier summers and production at high elevations.



# Updated status report on the Trumpeter Swan in Canada

*Robert Alvo*

Status not assigned in 1996  
Not at risk

[This report is a working document used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in assigning status according to criteria listed below. It is released in its original form in the interest of making scientific information available to the public.

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## Population size and trend

The Trumpeter Swan (*Cygnus buccinator*) was assigned "vulnerable" status in Canada by COSEWIC in 1978 (Mackay 1978). At that time it was known that:

- By 1920, following more than a century of exploitation and intolerable human encroachment, the Trumpeter Swan was thought to be on the brink of extinction and past the point of no return (Hansen 1973).
- By 1978, the world population had risen to 5,390 individuals - 4,280 breeding west of the Rocky Mountains in Alaska, British Columbia and the Yukon, and 1,110 breeding east of the Rocky Mountains in Alberta, Saskatchewan, British Columbia, South Dakota, Montana, Wyoming and Idaho and in scattered refuges in other areas (Mackay 1978).
- Trumpeter Swans breeding in Alaska were thought to have reached their peak at an estimated minimum of 3,400 individuals in 1968. There was little expectation of a further increase because the suitable habitat seemed to be fairly well saturated. Even though there seemed to be much unused potential breeding habitat, it was thought that much of it was

probably unavailable in cold years because of the proximity to the northern limit of the species' range (Hansen *et al.* 1971).

- The Rocky Mountain Population (RMP) was vulnerable to high winter mortality because its winter distribution had been greatly diminished. Over 90% of the population congregated in the harsh winter environment of the so-called "Tristate area", at the intersection of the borders of Idaho, Montana and Wyoming, where the numerous large warm springs were responsible for providing very limited winter habitat. Mortality from a disease outbreak or severe winter could affect all the breeding flocks of western Canada and the local resident birds. Scarcity of wintering habitat was thus probably the species' greatest problem -- the loss of any of that critical habitat would seriously reduce the population size (Mackay 1978).
- Some successful restoration programs had been carried out in the United States on national wildlife refuges, state projects and adjoining lands.

Since 1978, a considerable amount of new information related to the Trumpeter Swan's status has accumulated. Trumpeters nesting in Canada and Alaska continue to expand their breeding range (Ruth Shea, pers. comm.). The global population had increased dramatically from about 3,722 individuals in 1968 to 19,756 in 1995 (Table 1, Caithamer 1996). The increase in the RMP was mostly due to expansion of the Canadian flocks -- in 1974, the Canadian flocks comprised 18% of the RMP, whereas by 1995 the proportion was 82%. In 1993, 92% of the production could be attributed to the Canadian flocks (Ken Niethammer, pers. comm.).

The Pacific Coast Population (PCP) breeds in Alaska, while the RMP breeds in the Yukon, the Northwest Territories, British Columbia, Alberta and Saskatchewan (McKelvey *et al.* 1988). The Interior Population (IP) is

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scattered in central North America (Mitchell 1994).

Trumpeters were observed in 1993 in the Brackett Lake area of the Northwest Territories, and are thought to have been breeding there for at least several decades -- if so, this would represent a northward extension of the known breeding range by about 500 km (Kay and Stenhouse 1993).

Year	PCP*	RMP	IP	Total
1968	2,847	811	64	3,722
1975	4,170	799	116	5,085
1980	7,696	975	176	8,847
1985	9,504	1,195	209	10,908
1990	13,456	1,747	422	15,625
1995	16,312	2,517	927	19,756

Figure taken from Caithamer (1996).

- \* PCP: Pacific Coast Population
- RMP: Rocky Mountain Population
- IP: Interior Population

Prior to 1989, the only known breeding site in Saskatchewan was in the southwest corner of the province in Cypress Hills, where the population decreased from a peak of three pairs in the 1970's to one bird in 1993 (Dale Hjertaas, pers. comm.). Limited habitat and high cygnet mortality are believed to be preventing flock increase, and this flock is expected to be extirpated with the death of the lone adult (Beyersbergen and Shandruk 1994).

In 1988, a Trumpeter was first observed in the Porcupine Provincial Forest of east-central Saskatchewan, and in 1990 a pair without young was seen (Beyersbergen and Shandruk 1994). The population has steadily grown -- on September 1, 1994, Rhys Beaulieu (pers. comm.) saw 17 adults and 10 cygnets in the same area, but is convinced he missed another four that he had seen on June 22, 1994. On the same day, September 1, he found three additional adults in the Northern Provincial Forest, an area where the species had not been seen before, 58 km from the nearest swan in the Porcupine Provincial Forest. He strongly suspects that Trumpeters have been present in both areas since at least the mid-1980's based on the observations of a trapper who is a reliable source. All seven swans collared in 1991 in Porcupine Provincial Forest were observed at Lacreek NWR, South Dakota, in December 1994 (R. Beaulieu, pers. comm.). In conclusion, the Lacreek birds pioneered about 1,090 km north to the Porcupine Provincial Forest area (Harry Lumsden, pers. comm.)

It is thought that the Manitoba portion of the Porcupine Provincial Forest may also harbour an unknown breeding population. The Manitoba government will survey the area in 1995 (Gerry Beyersbergen, pers. comm.).

Trumpeter Swans were first observed in the Kenora area of northwestern Ontario, from 1989 to 1992 by a bait dealer. Breeding has been reported in the area every year from 1989 to 1996. Aerial surveys in the Kenora District in July 1995 reported a pair of Trumpeters with five cygnets and another pair with one cygnet in 1996 (H. Lumsden, pers. comm.). The region has numerous shallow lakes, many of which have much aquatic vegetation -- adequate habitat for Trumpeters. The Kenora area birds are apparently individuals that had been re-introduced in northwestern Minnesota -- they winter some 390 km south of their breeding site close to the re-introduction site (H. Lumsden, pers. comm.).

In 1993, a released pair bred successfully at Wye Marsh, for the first successful breeding in southern Ontario in probably well over 200 years. In 1996, there are currently about 123 free-flying individuals in southern Ontario compared to none in the 1970's. Current data suggest that if mortality rates do not increase and if 30, 2-year-old birds are released per year, the population should reach its first goal of 15 wild breeding pairs by 1999 (H. Lumsden, pers. comm.).

The species is considered extirpated from the Province of Quebec (Robert 1989).

There appears to be general agreement that Squire's (1976) record of breeding Tundra Swans in the Bay of Fundy area probably referred in fact to Trumpeter Swans, because the former has a circumpolar Arctic distribution, whereas the latter has a more southerly boreal distribution (A. J. Erskine, Pat Kehoe, and H. Lumsden, pers. comm.). However, there were probably no more than about 10 pairs (A. J. Erskine, pers. comm.).

Re-introduction in the Maritimes remains a possibility. Definite evidence of Trumpeter Swans occurrence in Newfoundland was the discovery of bones in the Port au Choix Indian burial site (Tuci 1976). The historical abundance of the species along the St. Lawrence River suggests that it possibly used to breed in Quebec (Lumsden 1984).

## Habitat

Given the presumed historic range of the species, the amount of breeding habitat available in Canada may be quite large, particularly in the boreal forest. However, it is not clear how swans pioneer into new territory. If they expand only from population centres, it is difficult to explain how new flocks have appeared so far from those centres. One possibility is that swans moving to traditional breeding areas explore favorable locations en



route (McKelvey *et al.* 1988). It is also possible that sub-adult birds wander to the north in summer and find suitable breeding habitat.

In short, available breeding habitat does not seem to be a limiting factor -- nor does the swans' ability to colonize much of it. The limiting factor, at least for the RMP, is clearly the availability of wintering habitat and the ability of the swans to incorporate new wintering areas into their traditions.

At least 100 individuals died at the Henry's Fork wintering area (part of the Tristate area) in February 1989, when flow in the river was reduced and a cold spell froze the open water. Others died at scattered sites in the Tristate area. This event was only a small example of what could happen to the Trumpeters in the area in a severe winter (R. Shea, pers. comm.).

Submerged aquatic vegetation became severely depleted in 1990, due to a combination of factors, including overuse by swans. This led to an increased river flow speed, which in turn caused the loss of most of the riverbed's silt -- the remaining sand/gravel substrate was not favourable to plant growth.

In September 1992, the Island Park reservoir was drained, resulting in heavy silt being deposited on the already damaged weed beds. The immediate effect was to temporarily cover the weed beds. In the long-term, there could be a beneficial effect of the nutrient-rich silt. However, even if the plant community can be restored to its previous state, this will benefit the swans only in the short term, because the population has increased to a much higher level than the maximum carrying capacity of the habitat. The danger of heavy mortality due to disease and/or food shortages increases as the wintering numbers increase (Shea 1993).

The only solution has been to relocate swans to new wintering areas. This must be done in the fall and early winter, before the birds really get settled -- after January 1, it is usually very difficult to displace them (R. Shea, pers. comm.).

The future security of the Canadian Rocky Mountain Sub-population breeding stocks and the swans that breed in the Tristate area will now depend in large part on the success of the trapping program and the willingness of the birds to return to their new wintering areas in subsequent years. About 15-20% of all Trumpeters trapped in the Rockies in 1990 returned the next winter to their release site; the winter bottleneck is starting to break up (Donahue 1994). Hazing with airboat, ultralight aircraft or helicopter appears to be effective in moving some birds. On the other hand, several hundred new cygnets are produced in Canada each year, thus putting more pressure on the wintering areas (R. Shea, pers. comm.).

The wintering habitat situation for the PCP is much

less clear. We know that a proportion of the PCP is currently dependent on agriculture for winter forage (Mitchell 1994). The PCP's highest concentration of wintering Trumpeters is in the Comox Valley, British Columbia (Donahue 1994). From 1982 to 1996, the overwintering population in the Comox Valley increased from 400 to about 2,141 birds (Fowler 1996). Many of these swans feed in potato fields in the fall and winter, then move to feed on pasture land and hay fields in spring. As a result, some farmers have experienced damage to their hay fields. Trumpeters have numbered up to 500 in some fields.

One of the Comox Valley Waterfowl Management Project's objectives is to encourage farmers to plant winter cover crops which are eaten by waterfowl, reduce nitrate leaching and reduce soil erosion. The crops are also relatively cheap to produce because the only costs are the cost of seed and planting (Theresa Duynstee, pers. comm.). Other objectives are to monitor swan and other waterfowl distribution, behaviour and field preferences, determine the effectiveness of scaring swans away from certain fields, and improve communications between all parties concerned (Anonymous 1991). What is not known is whether the cooperating farmers will continue to cooperate with this program.

The other big unknown as far as the PCP is concerned is the carrying capacity of the rest of the wintering habitat, i.e. the area where the majority of the world population winters. Most of the PCP is thought to winter in scattered groups along the extensive Pacific Coast from Juneau, Alaska, southward to Washington State, but some also winter on inland lakes in the interior of British Columbia (Rick McKelvey, pers. comm.). Because of the damage that the species inflicts on known wintering habitats, for example in the Tristate area and in the Comox Valley, it is possible that the willingness of landowners to accept their presence on cropland may become (or already be, especially in harsh winters) a limiting factor for the PCP.

Despite this, it has been argued that Canada should be more concerned with the immediate future of the RMP than with that of the PCP. Firstly, most of the birds breeding in Canada are in the RMP, which winters in the problematic Tristate area -- most of the PCP, on the other hand, breeds in Alaska. Secondly, the fact that about 70,000 Tundra Swans use the Pacific Flyway suggests that wintering habitat is not limiting for the much smaller Trumpeter Swan population, especially if they could be encouraged to winter further south, as Tundra Swans do, in California. Both species appear to be doing very well on the Pacific Coast. Even if the PCP wintering grounds do become limiting in Canada and/or the U. S., there is great potential, at least in parts of the U. S., to develop agricultural areas for Trumpeter Swans to eat agricultural



residues, especially of small grains. Also, there is no reason to believe that Trumpeters could not start wintering on the Atlantic Coast -- adoption of a new tradition could be facilitated by random wandering, by a storm, or by Trumpeters following Tundra Swans to the Atlantic Coast, a phenomena which may already be happening (R. Shea, pers. comm.).

### Evaluation and proposed status

Although its numbers and distribution are increasing, the Trumpeter Swan is still at risk from continued loss of wintering habitat, concentration of wintering flocks at few sites, and lack of migration in several wild and restored flocks (Mitchell 1994). Populations suffer a constant drain through loss from lead poisoning. About half the dead swans for which we know the cause, died of lead poisoning. In spite of restrictions on the use of lead shot and introduction of non-toxic shot, losses will continue for many years to come. Lead fishing sinkers are also a source of contamination which have caused mortality.

As numbers declined earlier in this century, the damage to the species was more complex than simply the loss of numbers. Essential knowledge died with the birds -- knowledge of other migration routes and wintering sites far from the Tristate area, knowledge that had been passed from generation to generation as adults led their cygnets to traditional wintering sites (Shea 1993). In fact, the population size is almost irrelevant in comparison to the importance of the number of potential wintering sites and even more so to the ability of the swans to use the available wintering sites year after year (i.e. develop new "traditions"). The greater the ability of the species to distribute itself widely in winter, the less vulnerable it will be to overcrowding, disease and harsh winter conditions at one particular site. This is why so much effort is being put into reintroductions.

A second consequence of low numbers earlier in this century, and one that will take a long time to repair, is the reduction in genetic diversity among the stocks that have passed through a genetic bottleneck as a result of very low population levels. For example, Joyce Marsolais (pers. comm.) has stated that the mean band sharing coefficients of the Interior Canadian Sub-population and the Tristate Sub-population are significantly different, meaning that there is no interbreeding between the two populations. The two flocks must therefore be managed as separate units.

There were three wild stocks of Trumpeter Swans totaling 19,756 birds in 1995 (Table 1). In terms of world abundance, this is not a very large number. The PCP is increasing steadily. The largest single winter concentration is at Comox, British Columbia, and it is dependent on farmland. While steps are being taken to alleviate crop damage and develop public appreciation for

the swans in the Comox area, the birds may be pushing the limit of farmer tolerance rather than being limited by food supply. We know very little about the Trumpeters that winter along the coast of British Columbia and cannot tell if further increases in this population can be accommodated in that habitat.

The RMP is divided into two breeding stocks. The resident swans in the Tristate area have declined 28% in the last 10 years. The Interior Canada Sub-population has increased at an average rate of 17% per year over the last 10 years to 2,076 birds in 1995. Combined, these sub-populations probably number about 2,900 birds in 1997. In February 1989, a blizzard froze virtually all habitat in eastern Idaho resulting in the death of about 100 Trumpeters (Shea 1992). Since then, winters have been mild and losses have been low. The winter habitat has been over-used by swans and is not in very good condition. A vigorous program of trapping and transplanting has been undertaken to relieve the problem of over-use of winter habitat and to try to establish new migratory traditions. The Interior Canadian Sub-population could again suffer severe losses should there be a recurrence of the severe winter of 1988-89.

The Interior Population, located in the Midwest and Great Lakes Region is increasing steadily, releases of captive raised birds continue, and the population should become self-sustaining before long. Lead poisoning and lack of migratory traditions are problems of concern. There is need for winter habitat that provides an abundance of natural food and avoids conflict with hunting. Such areas should be south of 40° N latitude where freeze-up does not prevent use by Trumpeters.

The Canadian national status that should be assigned to the Trumpeter Swan is not immediately obvious. On one hand, the species was almost extinct and is now being re-introduced in some areas and heavily managed in others due to great concern for the species' well-being. On the other hand, the greater part of the population is on the increase and the species is a local problem in one area. Clearly, "threatened" status is not warranted because there is no indication that the species will become endangered even if a disaster were to strike any one of the major wintering sites in a given year. The choice is thus one between "vulnerable" status and "not at risk". All three populations have increased substantially from 1968 to the present. Concern regarding a possible crash of the RMP in a severe winter is well-founded. The PCP, however, accounts for 82% of the total population, and there is no evidence suggesting vulnerability of that population. I therefore recommend that the Trumpeter Swan be de-listed to "not at risk" in Canada, with the cautionary note that we do not know the carrying capacity of the winter habitat of the majority of the global population.



## Acknowledgements

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British Col:	Bill Harper, Gary Kaiser, Graham Fowler, Syd Cannings, Theresa Duynstee, Rick McKelvey.
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Idaho:	Ruth Shea.

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# The Trumpeter Swan Restoration program in Ontario - 1 September 1997

Harry Lumsden

## Introduction

There were no wild Trumpeter Swans in Ontario before the restoration program began in 1982. This project has been operating now for 15 years. It did not make real progress until Scott Paper Ltd. funded the program for a 3-year period starting in 1991. This help permitted the acquisition of many breeding pairs and paid for important research on Trumpeter Swans.

The initial Ontario plan set an objective of 15 wild breeding pairs by 1999. We had 12 breeding pairs in 1997, so we should reach this goal. For a self-sustaining wild population of Trumpeters, however, we may need many more pairs than 15. This is because Trumpeters were reduced to such low numbers in the 1930's that they passed through a genetic bottleneck and became very in-bred.

## The winter of 1996-1997

The free-flying Trumpeters in southern Ontario came through last winter in good condition. It appears that there was no long distance wandering to the U. S. Only one swan was identified by its band number at Lancaster near Buffalo, New York, on 9 February.

Six Wye Marsh swans moved to the shore of Lake Ontario. Numbers 255, 336 and 340 were at Wye Marsh on 30 October, were seen at Barrie on 28 November and at Burlington on Lake Ontario on 2 December. Numbers 255 and 336 remained in that area at Bronte, La Salle Park and Burlington until 19 February, 1997, and were back at the Dam at Midland near Wye Marsh on 21 February. Numbers 254 and 283 were recorded at Wye Marsh on 12 January but moved to Pickering on Lake Ontario by 19 January. By 31 January they had moved to Bronte where they were last recorded on 28 February. They were seen again at Wye Marsh on 12 April. Number 257 and his five cygnets flew to the Otonobee River at Peterborough on 19 January. They left on 23 January and were not seen again until 8 April when they

returned to Hoggs Bay near Wye Marsh. Number 276 was released at Seneca College near King City in 1995. She spent the summer of 1996 at Duclos Point on Lake Simcoe where she was last seen on 22 December 1996. On 1 February she was at Bluffers Park on Lake Ontario, then at Queens Quay on 6 February, Ashbridges Bay on 23 March and back at Duclos Point on 20 April. Five of these birds were offspring of female Number 100.

By chance, Number 100 and two other cygnets wandered to the Burlington-Bronte area in the winter of 1991. They maintained themselves on natural food, as many Mute Swans do, before two returned to Wye Marsh. As a mature breeder, Number 100 returned to her 1991 wintering area in 1993, 1994 and 1995 with her current crop of cygnets. Bev Kingdon and her friends fed these broods throughout the very hard winter of 1993 and subsequently and probably were instrumental in holding the swans there. It seems likely that this practice has consolidated their tradition of wintering in a lead free, safe environment. There is an abundance of natural food in the form of the alga *Cladophora sp.* and submerged aquatic weeds. Swans, however, prefer corn, pelleted duck food and bread and readily accept them when offered. Number 100 did not raise cygnets in 1996 and remained at Wye Marsh throughout the winter of 1996-97. She raised a brood in 1997 and we anticipate that she will move to the Bronte area for the winter.

Over the years, many swans have wandered into the U. S. in the winter. Their wing tag numbers have been read and reported from Connecticut, New York, Pennsylvania, New Jersey, Maryland, West Virginia and Virginia. All of these states are in the Atlantic Flyway. Southeastern Ontario Trumpeters have not yet been recorded in the Mississippi Flyway.

It would not be possible to follow swan movements and estimate survival without the help of the many naturalists and birders who read the wing tag numbers and report them. We are most grateful for their help.

## Captive breeding stock

We started in 1997 with 23 pairs cared for by cooperators and contributors. We welcome three new

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cooperators: Tony Kostrich received his pair in March, Gordon Cook in August, and Karin Johnston in September.

Losses to our breeding stock held by cooperators in 1997 were lighter than usual. Only four died: from myocardial hemorrhage (1), kidney failure (2), and lead poisoning (1). One disappeared from its pen and is assumed to have been stolen. Two of our contributors lost birds. Wye Marsh lost a productive breeding male and St. Thomas Pinnafore Park also lost their male, both in September this year. Necropsies at the Veterinary College at Guelph are complete for only one. The St. Thomas bird succumbed to aspergillosis and visceral gout.

### **1997 production by captive Trumpeters**

In 1997, we had a total of 23 potential breeding pairs, 18 in the hands of cooperators and five owned by contributors. Among them 17 pairs laid eggs. One pair laid two clutches which were taken to an incubator, another female died after laying one egg. Thus, 15 pairs laid 95 eggs averaging 6.3 per clutch. They hatched 68 cygnets (72%) and raised 53 (78%) which were doing well on 1 September. The year 1997 has been the most successful so far for the Trumpeter pairs raising their own young. We have more cygnets for release in 1999 than ever before. In addition, Bill Carrick bought six eggs from Jack Goldsmith and with the two clutches of 10 eggs hatched them all in his incubator and raised 11 (69%).

### **Survival and losses of wild swans**

#### **1 September 1996 - 1 September 1997**

We estimated that we had 123 free-flying Trumpeters on 1 September 1996, in southern Ontario. Among these birds we know that 12 are dead and 14 have not had their numbers recorded for over a year. Therefore we assume that they are dead, although some may have lost their wing tags. The records show 85 birds whose numbers have been read during the last year. To these must be added 12 unbanded or which are banded but have no tags. Nine of these were seen on their breeding territories all summer and we assume they are all alive today. The other three have been recorded during the year and we assume for now that they are still alive. These figures suggest that there are 97 survivors from 1996. To these must be added 25 cygnets hatched by wild breeding pairs in 1997. We have also released 21 swans which had reached 2-years-of-age. The total number of Trumpeters flying at large in southern Ontario on 1 September 1997 is estimated at 143.

Of the 12 wild swans for which we received the carcasses, we know that three died of disease, one died of lead poisoning, one was hit by a truck, one suffered a

broken wing and eventually had to be destroyed, one was reported dead but we did not receive the carcass, one was shot, one killed by a coyote, and three flew into hydro wires. In recent years we have had swans which hit hydro wires checked for heavy metal contamination. In most cases, enough lead or mercury has been detected to suggest that their functioning was impaired. It is possible that the Trumpeter killed by a coyote was also contaminated. Overall survival for 1996-1997 appears to have been about 79%.

### **Nesting by wild Trumpeters**

The number of free flying Trumpeter Swans nesting in southern Ontario has steadily increased. In 1993, the first pair nested successfully, in 1994 - 2 pairs, in 1995 - 4 pairs, 1996 - 6 pairs in Ontario. In the 1996 report, we assumed that two pairs which nested in New York State were of Ontario origin and recorded eight pairs nesting in this region. We have now discovered that a substantial number of Trumpeters have been allowed to fly free from a private breeder's facility in New York. It is likely that the New York breeders originated from this stock. The number of Ontario breeders in 1996 is therefore six pairs. In 1997, 12 pairs nested in Ontario, 11 of which succeeded in hatching at least 34 cygnets. As of 1 September, 25 of these were alive and approaching flight stage.

### **Trumpeter Swans in the Kenora District**

There have been numerous sightings of Trumpeters in the Kenora area since early May 1997. The largest flock of 18 were seen by Lil Anderson, landing on Silver Lake. On the lake used for nesting in previous years, two nests were recorded by Doug Andersen. One pair hatched a single cygnet on 13 June and a second pair was accompanied by 5 cygnets on 27 July. There also were reports of a swan nest near Dryden and another near Ignace. We await confirmation that these were Trumpeter nests and whether any cygnets were hatched.

### **Acknowledgements**

A restoration program of this kind cannot be run without funds. We estimate that it costs about \$83 to feed a swan for one year. An increasing number of organizations and people are helping with donations and work to reestablish Trumpeter Swans in Ontario.

We are most grateful to the Waterloo Region Stewardship Council through the good offices of Peter Wilhelm who arranged for food and built food hoppers for the young Trumpeters we are holding. The Corbit Seed Company of Winterburn is providing corn for 3 years and the Ontario Drive and Gear Company of New Hamburg has provided the materials for the hoppers. The Grand River Conservation Authority provides the pen



facilities at the Fair Lake Game Farm for holding cygnets until they are old enough to release. Ron Bauman and his family have volunteered to feed the cygnets. Gill Henderson has agreed to pay the hydro bill for the ice-away equipment.

Many organizations helped to defray the program costs; among them were the Saugeen Field naturalists, the German-Canadian Hunting and Fishing Club of Kitchener, the Georgian Bay Osprey Society, Lambton Wildlife Inc., The King City Historical Society, Shirley Binns and the Aurora Garden and Horticultural Society, Patricia Chinnell and the Mason-Hogue garden group. We are most grateful for these contributions and those from the staff and all who supported the adoption of Trumpeters at Toppers Aveda Salon in Burlington, also from Frank Smith of Art Fun and Fantasy Daycamp in Aurora, Robert Atkins, Frank Kershaw, Dorothy Kings and Norah Hall. Beverly Kingdon and her friends again fed the wintering Trumpeters in the Bronte-Burlington area and David and Eleanor Wood supplied the food.

The Lake Erie Steel Company through Norman Jamison cared for and released Trumpeters at their plant at Nanticoke and made a handsome donation to the program.

Substantial help came from our contributors. Bill Carrick gave help in every aspect of the program and hatched cygnets for use in experiments with Harry Hewick using ultralight aircraft to induce migration. He also gave five swans for release. Frank Lattanzio of the City of St. Thomas Parks and Recreation Department released three yearlings and gave eight cygnets for release in 1999. We are most grateful to Mr. and Mrs. Gordon Keall and regret that they have had to give up their breeding pair of Trumpeters and withdraw from the program.

Don Foxall and Mary Cameron as usual took great care of the Trumpeters at Wye Marsh. Their daily inventories and observations of swan behaviour have been most useful. Bob Whittam has retired as Executive Director of the Wye Marsh Wildlife Centre. He persuaded Scott Paper Ltd. to fund the program for 3 years, and chaired the Trumpeter Swan Advisory Committee. He will be sorely missed and we all wish him well for the future. We thank the Ministry of Natural Resources for grants made under the Community Wildlife Involvement Program. Restoration of Trumpeters is made possible only by the conscientious care of breeding pairs by cooperators who feed them, maintain open water and raise cygnets for release.

The lives of many swans, both wild and captive breeding stock, have been saved by the veterinary staff at both the Veterinary College at Guelph and at Metro Toronto Zoo. For their skill and care we thank Dr. Michael Taylor and Becky Atkinson of the Wild Bird Clinic at Guelph and Dr. Kay Mehren and Dr. Graham Crawshaw at Metro Toronto Zoo. Valuable diagnostic information on cause of death was provided by Dr. Campbell and Dr. Brojer of the Canadian Cooperative Wildlife Health Center at Guelph. Dr. Joel Rumney of the North Simcoe Veterinary Services in Midland also cared for sick swans at Wye Marsh. We also thank Dick Rogers of Arbrux Ltd. in Uxbridge for his servicing of ice-away equipment and donations to Wye Marsh. Mrs. Myrna Wagner of the Amherst Wildlife Foundation accepted funds, kept accounts and paid bills for the program for which we are most grateful.

The Federation Anglers and Hunters are sponsors of the Trumpeter Swan Restoration Program in Ontario.



A. WINDSAY PRICE



# A summary of Alaska Trumpeter Swan surveys 1996

*Deborah J. Groves, Bruce Conant and Jack I. Hodges*

## Abstract

Trumpeter Swans (*Cygnus buccinator*) nesting in Alaska apparently experienced average breeding success in 1996. Weather conditions were generally favorable throughout much of the breeding season, although lake ice in the interior was thick during the spring and consequently melted later than normal. Inferences about production for the overall Trumpeter population in Alaska are hindered by the fact that several production areas were not surveyed in 1996. Comparative results of sample maps (areas) surveyed in fall from 1995 to 1996 are presented.

## Introduction

This report summarizes all 1996 Trumpeter Swan (*Cygnus buccinator*) data gathered with standard methods in Alaska and sent to Migratory Bird Management - Juneau for digitizing and computer tabulation. In 1996, 30 complete USGS 1:63,360 scale topographic maps and 2 quarter maps were surveyed during the spring nesting period; 49 complete maps and 6 quarter maps were surveyed during the late summer brood-rearing period. Because the surveys were conducted by several different organizations for various purposes, the samples were not randomly selected and are not necessarily representative of overall statewide production. For example, two production areas (Cook Inlet and Gulkana) together contained 39% of the Trumpeter Swans censused in Alaska in 1995 (Conant *et al.* 1996). In August 1996, no maps were surveyed in the Cook Inlet Unit, and only two maps were surveyed out of a possible 82 in the Gulkana Unit. Nevertheless, consolidating the information which is gathered annually from widely scattered sources can help us gain some understanding of how swans are faring in Alaska in years when a census is not conducted. Storing swan data collected with standard methods in a single location and in an easily retrievable, computerized

format allows the information to be readily accessible to land managers and others whose land-use decisions may have a significant impact on the swan resource.

Anyone who wishes to contribute swan data collected in Alaska with the standard map method should request a copy of the Alaska Swan Survey Protocol (USFWS 1995) prior to commencing surveys. Although we prefer that a sample unit consist of a complete USGS 1:63,360 scale topographic map, we will also accept 1/4 maps. Completed, original survey maps should be forwarded to Migratory Bird Management-Juneau by November of each year for inclusion in the growing database.

We thank the following dedicated biologists, pilots, and other personnel from the following organizations for contributing their data to this summary:

- National Park Service -  
Wrangell-St. Elias NP and Preserve
- U. S. Army -  
Office of Natural Resources - Ft. Wainwright
- U. S. Fish and Wildlife Service -  
Koyokuk/Nowitna NWR Complex  
Migratory Bird Management - Fairbanks  
Migratory Bird Management - Juneau
- U. S. Forest Service -  
Cordova Ranger District  
Yakutat Ranger District

## Survey areas

The locations of sample maps surveyed in 1996 are outlined in Figure 1. Maps were surveyed in six of the 11 production units. Figure 1 also shows the distribution of Trumpeter Swans in Alaska as plotted during the 1995 census (from Conant *et al.* 1996), in order to compare the 1995 swan distribution with the 1996 sampling effort.

## Methods

The standard aerial survey method used for all surveys was described by King (1973). Generally, a system of parallel tracks was flown over all known and suspected swan habitat within each complete or quarter quadrangle map at an altitude of 500-600 feet above ground. When pilot/biologists did the flying, they were responsible for navigation, making swan observations,

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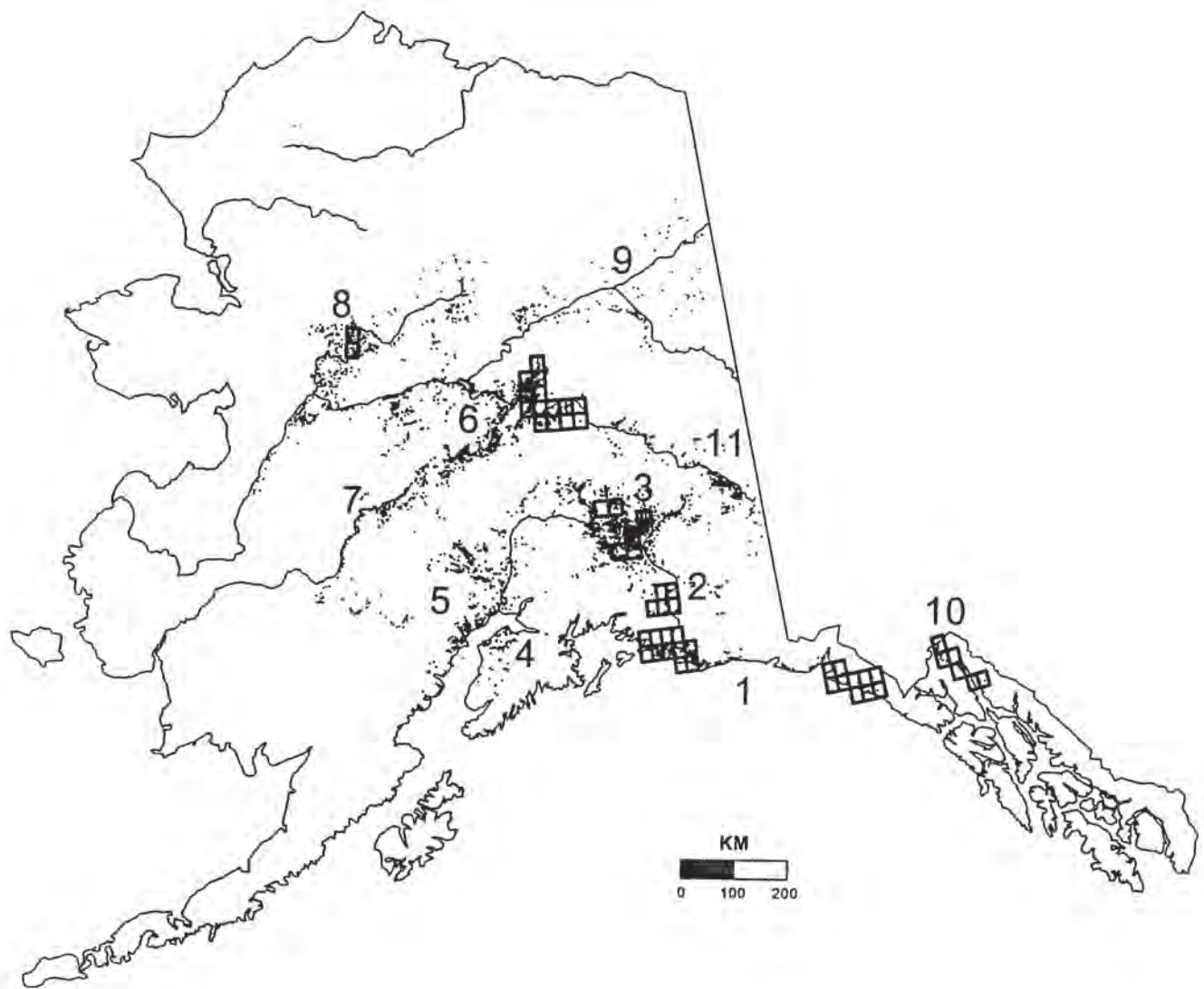


Figure 1. Locations of maps surveyed in 1996 as compared with the 1995 trumpeter swan distribution (from Conant et al. 1996). Survey units are 1) Gulf Coast, 2) Copper Canyon, 3) Gulkana, 4) Kenai, 5) Cook Inlet, 6) Lower Tanana, 7) Kuskokwim, 8) Koyukuk, 9) Yukon Flats, 10) Southeast Mainland, 11) Upper Tanana.



and ensuring that all swan habitat was adequately surveyed, considering factors such as visibility and the observer's level of training. The front seat observer was responsible for recording the flight path, making swan observations, and recording the type and exact location of each observation on USGS 1:63,360 scale topographic maps.

When non-biologist pilots did the flying, all of these duties were performed by the primary observer. In some cases, backseat observers were used to increase the eye power from the aircraft.

The swan observations were entered directly from field maps into a computer at the Juneau office. These data were then merged with exact latitude and longitude coordinates for each observation from field maps via an Altek digitizing system. The final data file formed the framework from which statistical summaries were produced.

The results obtained from each unit sample were used to calculate production estimates for the entire units (Table 1). This was done by computing proportional changes from the 1995 census for each unit using only those maps surveyed both years. The proportional changes were then applied to the 1995 unit totals to produce estimated totals. Estimates were computed for a production unit only if the sample area contained at least 15% of the total adults counted in that unit during the 1995 census.

## Results and discussion

Comparative results of sample maps surveyed in fall from 1995 to 1996 are presented by unit in Table 1. Tables are also appended which document detailed results of the 1996 spring and fall surveys by unit and by map. [Not included here.]

Weather conditions appeared to be generally favorable for breeding Trumpeter Swans in 1996. Spring breakup was early along the southcentral coast and was about average in the interior. Lake and pond ice in the interior disappeared somewhat late due to its thickness, which resulted from below-average winter precipitation and lack of insulating snowpack. Overall, Trumpeter Swans apparently experienced about average production in Alaska in 1996.

Swan production in the Gulf Coast Unit varied by area but was generally average overall. On the Copper River Delta (CRD), productivity was below average despite generally favorable weather conditions during the breeding period. Nest success (the fledging age) on the CRD was 0.38, up 27% from 1995 but 19% below the long-term average. Nest success on the Yakutat Forelands is not known, but data from the fall survey indicate that production was good. The proportion of pairs with broods there was 0.44 (compared to 0.19 on

the CRD), and the proportion of young in the population was 0.36 (0.19 on the CRD). The estimated average brood size for the entire production unit was 3.6, and the proportion of pairs with broods was 0.22. The proportion of young in the fall population was 0.21 (Table 1).

Production was average in the Copper Canyon Unit in 1996. Nest success in the sampled area was 0.50. The estimated average brood size for the entire unit was 4.0, and the proportion of pairs with broods was 0.17. The proportion of young in the fall population was 0.23 (Table 1).

Production was also average in the Lower Tanana Unit. Nest success in the area sampled both spring and fall was 0.53. The estimated average brood size for the entire unit was 3.1, and the proportion of pairs with broods was 0.26. The proportion of young in the fall population was 0.19 (Table 1).

Swans in the Koyukuk Unit also experienced average production in 1996. The estimated average brood size was 2.9, and the proportion of pairs with broods was 0.41. The proportion of young in the fall population was low at 0.16 (Table 1). However, an unusually large number of flocked birds was observed in 1996. It is possible that some of the flocked birds moved into the area from other parts of Alaska, in which case the proportion of young in the local breeding population would be higher than the survey results indicate.

Production was excellent in the Southeast Mainland Unit in 1996. (Note that this production unit was formerly called Chilkat Valley. It was renamed in order to accommodate the expansion of breeding swans beyond the Chilkat Valley into other areas of the southeast panhandle.) Nest success in the area surveyed both spring and fall was 1.00 (Appendix [Not included here]). The average brood size was 2.8, and the proportion of pairs with broods was 0.59. The proportion of young in the fall population was 0.42 (Table 1). This population of Trumpeters has benefited regularly from above-average nesting success since swans were first recorded breeding here in 1980, and their numbers have increased substantially (Conant *et al.* 1996). In 1996, swans were recorded for the first time breeding in southeast Alaska, outside of the Chilkat Valley. A nest was discovered in May in Berner's Bay, approximately 35 miles southeast of the Chilkat Valley. A brood was observed there in July, but could not be relocated during the August survey.

## Conclusion

Trumpeter Swan production was apparently average in Alaska in 1996. Unfortunately, our ability to extrapolate or make valid conjectures about the overall population is hindered by a lack of data for a major portion of the swan population and the non-random nature of the data collected.



Table 1. Comparative results of non-random trumpeter swan sample maps surveyed by area. Values are not actual totals, but are computed using proportional changes in the maps surveyed applied to the 1995 census totals. Estimates were computed for a production area only if the sample area contained at least 15% of the total adults counted during the 1995 census.

Unit	Year	Maps Surveyed <sup>a</sup>	Adults and Subadults				Cygnet	Total Swans	Number of Broods	Average Brood Size	Percent Juvenile	% Pair with Brood
			in Pairs	as Singles	in Flocks	Subtotal						
1 Gulf Coast	95	43	628	72	295	995	150	1145	57	2.6	13	18
	96	21	640	40	284	964	250	1214	69	3.6	21	22
2 Copper Canyon	95	6	76	7	15	98	21	119	7	3.0	18	18
	96	5	70	2	10	82	24	106	6	4.0	23	17
3 Gulkana	95 <sup>b</sup>	82	2332	280	965	3577	1002	4579	310	3.2	22	26
	96	2										
4 Kenai	95	23	130	11	29	170	79	249	29	2.7	32	42
	96	0										
5 Cook Inlet	95	82	838	91	269	1198	330	1528	107	3.1	22	25
	96	0										
6 Lower Tanana	95	118	2268	219	987	3474	1315	4789	426	3.1	27	37
	96	14	2328	200	1406	3934	943	4877	308	3.1	19	26
7 Kuskokwim	95	68	454	42	134	630	248	878	71	3.5	28	30
	96	0										
8 Koyukuk	95	81	524	56	158	738	228	966	85	2.7	24	31
	96	2	416	72	795	1283	248	1531	85	2.9	16	41
9 Yukon Flats	95	101	200	26	107	333	90	423	25	3.6	21	25
	96	0										
10 Southeast Mainland	95	6	58	2	18	78	61	139	19	3.2	44	66
	96	6	54	2	5	61	45	106	16	2.8	42	59
11 Upper Tanana	95	64	438	53	207	698	310	1008	82	3.8	31	37
	96	0										
Total <sup>c</sup>	95	674	7946	859	3184	11989	3834	15823	1218	3.1	24	30
	96	50	7900	819	4211	12930	3569	16499	1108	3.2	22	28

a Surveyed quarter quads are only included here if they collectively contained all swan habitat within a given 1:63,360 scale map.

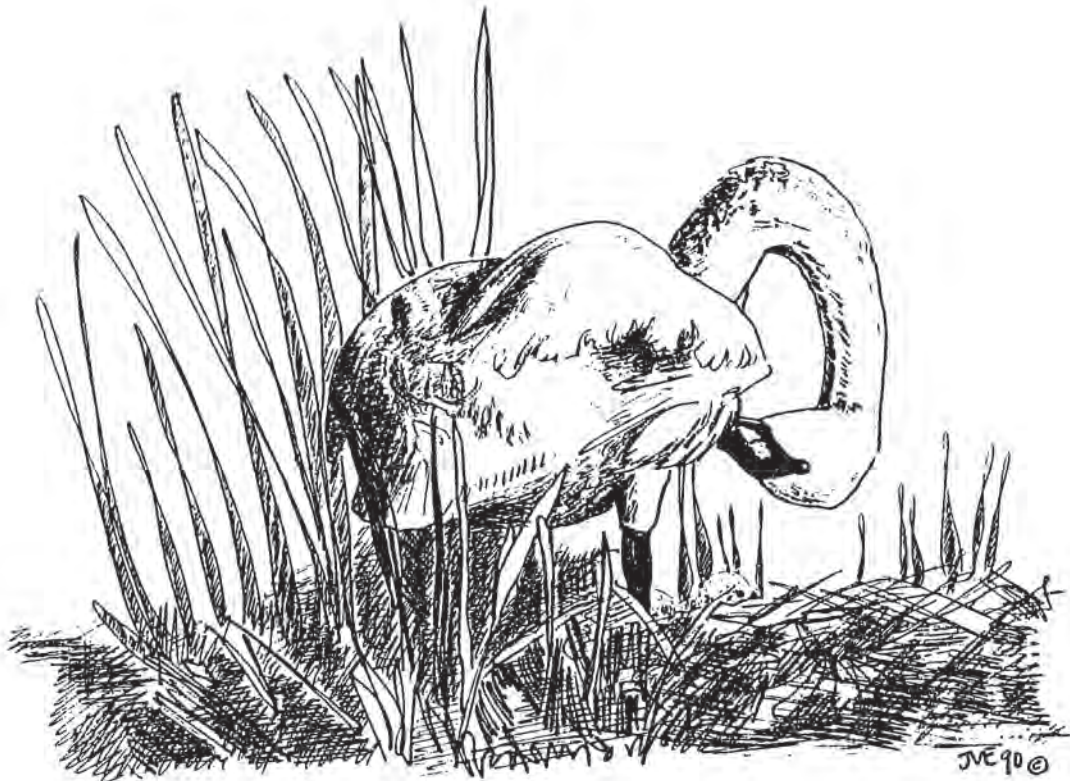
b Sample size insufficient to extrapolate to entire unit.

c Missing values for units in 1996 have been filled with 1995 census data.



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# Trumpeter Swans once wintered in Texas - why not now?

*Harold and Ruth Burgess*

Large numbers of Trumpeter Swans (*Cygnus buccinator*) historically wintered in Texas or migrated through Texas enroute to Mexico. [Audubon (1838) in Banko 1960, Dresser 1865, Nehrling 1882, Hornaday 1906, Phillips 1911, Forbush 1912, Coale 1915, Oberholser 1974, Rappole and Blacklock 1985, and Burgess *et al.* 1997a.]

Audubon (1838) wrote (in Banko 1960), "I have traced this species [Trumpeter Swan] as far southward as Texas, where it is abundant at times." McCall (1851) wrote, "62. C. Buccinator, Rich. Trumpeter Swan. In Texas, I at times saw flocks of this swan at great heights, and heard their wild and melancholy note, as they leisurely, yet swiftly, winged their way through the upper air." Dresser (1865) stated that swans were common at Brownsville, where Armstrong collected Harvard University's female Trumpeter specimen #49836 across the Rio Grande at Matamoros, Tamaulipas, Mexico, in 1909 (Phillips 1911). Nehrling (1882) wrote, "Every winter there are great numbers [of Trumpeters] on Galveston Bay and the Gulf of Mexico." Lloyd (1887) reported that Trumpeters were tolerably common in winter in Concho and Tom Green Counties, Texas. He does not mention Whistling Swans (*Cygnus columbianus*).

Hornaday (1906) wrote, "Living species [of Trumpeters] are purchasable at \$20 to \$30 each, and the majority of them come from Texas ..." Cooke (1906) reported, "The Trumpeters ... reach the Gulf of Mexico in Texas about the middle of November." Eldridge reported in Forbush (1912) that, "flocks of 75 to 1,000 Trumpeters were seen over Lampasas, Texas, in the 1890s, but none have been seen since 1909."

Editor Kincaid in Oberholser (1974) treated Trumpeter Swans cautiously writing, "Texas: Winter (extirpated): Formerly, prior to about 1900, locally fairly common to rare in eastern two-thirds. Last record: Galveston Co., High Island (1 shot Feb. 15, 1927, F.C. Clarkson)". He wrote, "Closest wild Trumpeters to Texas are those in Wyoming's Yellowstone Park Region." In 1974, the closest wild Trumpeters were nesting on

Valentine National Wildlife Refuge near Thedford, Nebraska, part of the restored High Plains Flock of the Interior Trumpeter Swan Population. (The High Plains Flock is defined as the Trumpeters nesting in the regions of southwestern South Dakota, southeastern Wyoming, western Nebraska and northeastern Colorado.) Rappole and Blacklock (1985) stated that Trumpeters were once abundant and well distributed in the Texas coastal bend region.

About 20 swans still continue to winter or migrate down the tributaries of the Canadian and Red Rivers in the Texas Panhandle. They have all been called Whistling or by the modern name, Tundra Swans. Yet Waterfowl Biologist Robert Jessen, a competent Trumpeter observer, saw two pairs of Trumpeters in that area in January 1990 and 1991. A green collared cygnet (P68) was called a Tundra Swan by several professional wildlife biologists in 1993 before it collided with a powerline. Its leg band (0619-24687) identified it as a Trumpeter from the Rocky Mountain Population, banded as a prefledged young, and released near Dubois, Wyoming.

Forty-one swans have been observed in Brewster County, Texas, since 1950 (Bonnie McKinney, pers. comm.). These were possibly following the Rio Grande, but cut across the Big Bend area. The four observed on a stock dam on Black Gap Wildlife Management Area 1-30 December 1966 were tame, large, and had no yellow lores and were probably Trumpeters (P. B. Uzzell pers. comm.). We suspect that Trumpeters have always migrated down the Rio Grande to Texas and Mexico.

Observations of Trumpeter Swans in adjacent states give clues to their presence in Texas. In November 1931, Raymond Smoot shot a swan out of a flock of five flying down the Rio Grande, 5 miles south of Mesilla Park, New Mexico. He gave it to Dr. W. A. Archer and his brother, A. E. Archer. They identified it as a Trumpeter Swan, prepared its skin, and presented it to the A. and M. College at State College, New Mexico (Morrill 1932). A swan was present in Bear Canyon Reservoir east of Silver City, New Mexico, about a month before it was shot on 23 February 1977. The salvaged specimen proved to be an adult Trumpeter Swan (Witzeman *et al.* 1977).

Gary Zahm photographed a Trumpeter cygnet in 1975 and again in 1982 at Bosque del Apache National

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Wildlife Refuge, New Mexico (on the Rio Grande). These photographs were later confirmed as Trumpeters by Harold Burgess due to their relatively long heads and long bodies. Morrison and others observed a Trumpeter Swan family at Elephant Butte Reservoir, New Mexico, in the 1984-85 winter (John Hubbard pers. comm.). Eleanor Wootten, Carol Anderson, and others observed a Trumpeter Swan 14-16 December 1985 on Gray's Ranch Pond in Dona Ana County, New Mexico, (Wootten and Anderson 1985). These New Mexico and Brewster County, Texas, observations suggest that a few Trumpeter Swans continued to migrate down the Rio Grande into Texas and Mexico even while the species was considered endangered (extirpated) in the state.

In addition to the well-documented female Trumpeter collected at Matamoros, Tamaulipas, Mexico, in 1909, Drewien and Benning (in press Wilson Bulletin) have compiled data on 121 swans observed in Mexico by U. S. Fish and Wildlife Service winter waterfowl aerial surveys (1947-94) and by other winter surveys (1972-95). Observations of 106 swans were made east of the Sierra Madre Occidental, our area of concern. Swans were not identified by species during aerial surveys, but identification was attempted during the other surveys.

Leg bands were recovered from two of the swans, including a Trumpeter and a Tundra Swan. Fourteen swans were identified. Five were Trumpeters and nine were Tundras. Applying this ratio to the 106 swans, it suggests that 38 were Trumpeters and 68 were Tundras. These are impressive figures for Trumpeter Swans that have been considered endangered, threatened, or a sensitive species during the time of these surveys. Most swans were observed in the States of Chihuahua and Durango, Mexico, which suggests that migrant Trumpeters were never extirpated from New Mexico and western Texas.

It appears that Trumpeters were once common migrants along the Texas Gulf Coast and into Mexico and a less common migrant farther west until they became nearly extirpated in the early 1900's. Historically, Whistling Swans were uncommon in Texas and Louisiana (Mc Ilhenney 1897). Most field observers could not differentiate between the two species and called all of them Whistling Swans or merely swans as the Trumpeters became rarer. Museum workers depended on postmortem examination to identify Trumpeter Swans. Full-winged Trumpeters were wary and difficult to collect. The specimens were big and bulky to pack. Few specimens were prepared.

The Texas Ornithological Society's Bird Records Committee (TBRC) did not recognize the Trumpeter as a Texas bird until 1990. This was because they could find no specimen collected in Texas and they could not prove that the Trumpeters mentioned in the literature

were, in fact, Trumpeters (Greg Lasley, pers. comm.). Yet, the Harvard University museum specimen (49836) which was collected immediately below Brownsville, Texas, must have migrated through Texas.

After 1960, Trumpeter Swans were restored as breeding birds in the north central states, and by 1970 some were migrating south in winter. Pulich (1988) wrote, "An unlikely number of 15 [Tundra Swans] were reported at White Rock Lake within the city limits of Dallas on 28 December 1971. It is possible that these were Mute Swans (*Cygnus olor*) ...." But it is also possible that these were Trumpeter Swans in an early wave of migrants from the High Plains Flock (flock from Lacreek NWR, South Dakota, and surrounding states) enroute to the Gulf of Mexico.

In 1978, U. S. Fish and Wildlife Service Biologist Edward Flickinger showed a series of close-up colored slides of 18 Trumpeter Swans coming in to a baited duck hunt club, rice reservoir near Edna, Jackson County, Texas. These swans wintered on Carancahua Bay, Gulf of Mexico and fed on the Edna Reservoir from 1977 to 1985, but we could never get Texas waterfowl biologists to look at them.

On 6 November 1988, Patricia Giddings identified eight Trumpeters flying and calling over Brenham, Texas, by using National Geographic recordings.

During the winter of 1989-90, a Trumpeter cygnet used the Texan and Mexican portion of the Rio Grande below Falcon Dam. It was discovered by Marion Condor and Charles Johnson, who were familiar with wintering Trumpeters in Washington State. It was confirmed by several Trumpeter Swan Society members and by Charles Sexton of TBRC. This record was accepted by TBRC. Seven Wisconsin-collared cygnets visited the Dallas area during winter 1989-90.

In 1995-96, two Trumpeters with green collars (2AO and 3A6) wintered in Garza County, Texas. These were subadults from Hennepin Parks, Minnesota, on a pioneering migration. The lack of traditional migration routes to adequate wintering areas is believed to be a serious limiting factor for restoring Trumpeter Swans in the Central Flyway (Burgess *et al.* 1997b). They must explore and pioneer their migration routes searching for adequate wintering habitat. They collide with powerlines, wander into leaded and other contaminated waters, and invade waterfowl hunting areas and are shot accidentally in their search for adequate wintering areas. They often stay too far north and suffer from freeze-outs and starvation. Some mid latitude states are providing good rest areas along their migration route, but no southern state is actively providing a wintering refuge for the Trumpeters.

Trumpeters once wintered in Texas, why not now? Some Texas Parks and Wildlife personnel are not



enthused about having non-huntable Trumpeter Swans in Texas. When restoration was first proposed, they followed the TBRC's lead that the Trumpeter Swan was not a Texas bird. After 1990, they shied away from enthusiastic support for fear that the presence of Trumpeter Swans might interfere with traditional waterfowl hunting. This concern seems to be changing. By restoring Trumpeter Swans, states and agencies could improve their image, improve the quality of life in their states, promote wetland conservation, and promote recreation and ecotourism. In reality, who in Texas would not want the largest of all waterfowl restored? Most of the thousands of bird watchers that visit Texas have never seen a Trumpeter Swan. They might spend several extra days in Texas just to add the Trumpeter Swan to their life bird lists.

We have investigated Hagerman National Wildlife Refuge on the Red River near Sherman, Texas, as a potential Trumpeter Swan wintering area. We found an 11,000 acre refuge with a series of shallow fresh water impoundments filled with moist soil and aquatic plants as a swan food base. The Red River reservoir above the dam contains deep brackish water that never freezes over. Swans could retreat to this water during the short frigid period common in this part of Texas. Our assessment indicates that it would be ideal and have so reported it to The Trumpeter Swan Society, The Texas Parks and Wildlife, and to the Southwest Region of the U. S. Fish and Wildlife Service (Burgess 1992). It is far down the Red River and would gather Trumpeters using the Red River corridor as well as migrants from farther north. It is not an important waterfowl hunting area. We believe it would be better to concentrate the Trumpeters here on a national wildlife refuge than to have them wander farther south into the Snow Goose hunting areas. We recommended the restoration of a Trumpeter decoy family flock at Hagerman NWR to bring in the migrants.

The policy of the U. S. Fish and Wildlife Service is that they will not restore Trumpeters in a state unless the state approves it. Here is an opportunity for Texas to work cooperatively with the northern states to help restore Trumpeter Swans. There are likely many other locations in Texas which could provide a similar opportunity, but, unless Texas Parks and Wildlife acts, Trumpeters will continue to wander haphazardly into the State at great expense to themselves and with little value to Texas.

### Acknowledgements

We wish to thank those that helped us recover historical literature regarding Trumpeter Swans and allied species in Texas and adjacent states. We thank the Weslaco (Texas) Public Library, its director, Virginia Allain, and particularly Susan Lazono for early computer

searches and recoveries. Unfortunately, Mrs. Lazono resigned, and we had to request the help of Mayor (Dr.) Gene Braught and many library staff members to continue our research. Some extra assistance was obtained from Librarian Nancy Paine, General Library, U. of Texas-Austin. Reprints of two early AUK periodicals were obtained from the Patuxent Research Center through the U.S. Fish and Wildlife Service's referral system.

We thank Dr. Stanley D. Castro, University of Mary Hardin-Baylor for characterizing some of the early writers. Dr. Rod Drewien, Ruth Shea, Charles Sexton, and Greg Lasley reviewed an earlier draft. Dr. Donald Hammer reviewed a later draft and Donna Compton edited the final draft.

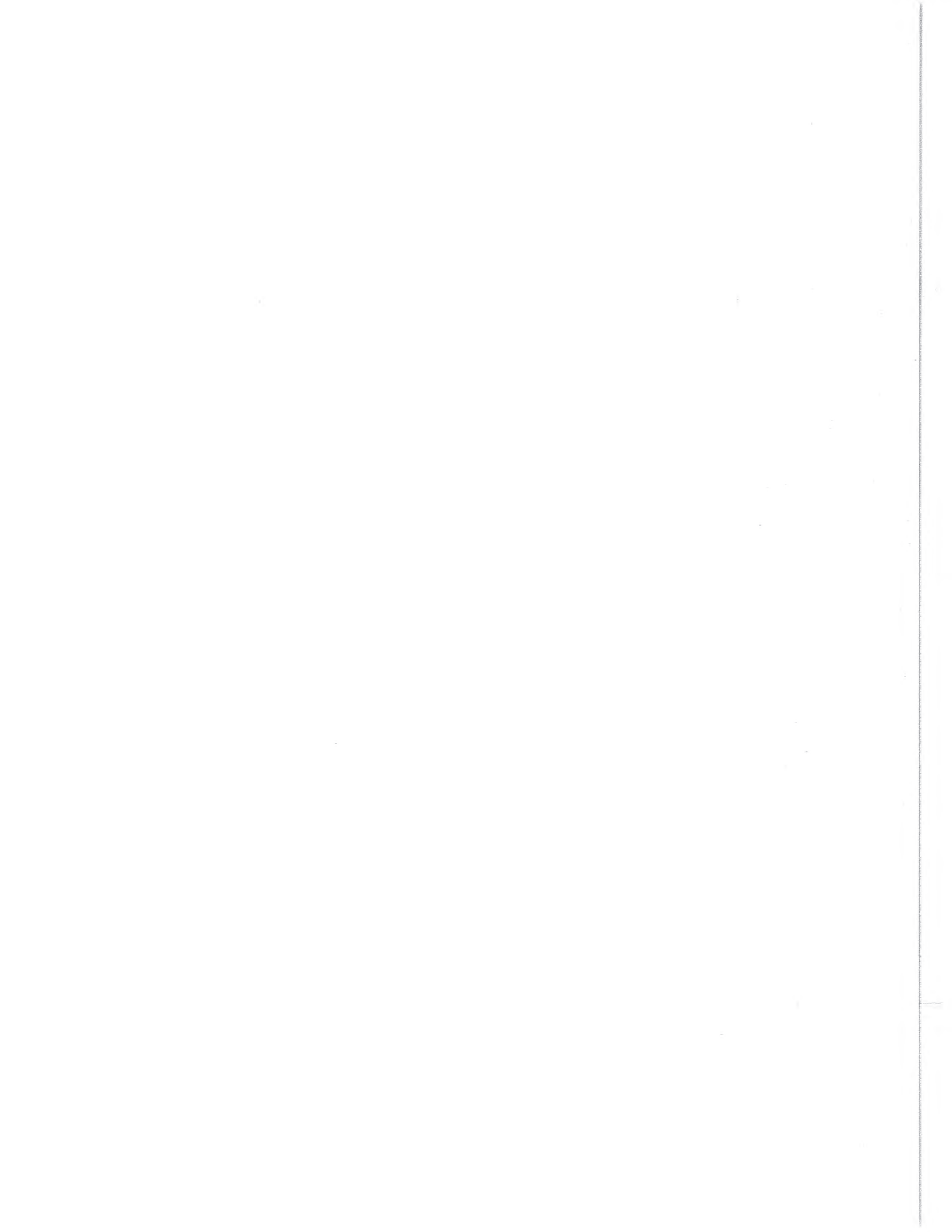
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# THE TRUMPETER SWAN SOCIETY

The Trumpeter Swan Society (TTSS) is a private, non-profit organization dedicated to assuring the vitality and welfare of wild Trumpeter Swan populations, and to restoring the species to as much of its former range as possible.

Since its founding in 1968, TTSS has provided the vision, knowledge and advocacy to move restoration efforts forward and improve management of Trumpeter Swans across North America. Our 440 members in the U. S. and Canada include interested private citizens and waterfowl propagators, plus most of the professional waterfowl biologists and managers who have guided Trumpeter restoration and management in recent decades. Most of our accomplishments result from the work of our members and Board of Directors in their professional roles and through their countless hours of volunteer effort.

The Society is run by a President, Vice President, Executive Secretary-Treasurer, Board of Directors and two part-time staff members who work at our headquarters located at Hennepin Parks, Maple Plain, Minnesota. We publish *Trumpetings* four times per year and *North American Swans* twice per year. We are a nonprofit, tax exempt corporation under Section 501(c)(3) of the Internal Revenue Code. Contributions are tax deductible.



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