

number of swans. Many tourists bring food, for instance bread, which is not appropriate for the wild swans.

As we think about the natural protection of native and wild birds and animals, we realise that we must work diligently to preserve the natural balance between man, the wild swans and the environment.

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THE TRUMPETER SWAN SOCIETY

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Introduction

Cygnus cygnus buccinator is native only to North America. When European settlers arrived, this magnificent bird apparently ranged over much of what is now the United States and Canada. But today, except for isolated regions of the Rocky Mountains, Alaska and Canada, human development of the continent has caused a decline in the number of *C. c. buccinator* to a remnant of the bird's former population. The Trumpeter Swan Society has assumed the responsibility of working with those agencies charged with managing *C. c. buccinator*, such as the US Fish and Wildlife Service, to help assure that *C. c. buccinator* survives and flourishes in the face of further encroachment on wild places.

Its genesis

The Trumpeter Swan Society was founded in the fall of 1968 in Carver Park Reserve about 40 km west of Minneapolis, Minnesota. Fred E King was the Society's first president and acknowledged founding father. A banker by trade and a lover and conserver of natural resources by avocation, it was through his efforts as chairman of the Hennepin County Park Reserve District Board of Commissioners that a *C. c. buccinator* restoration programme was started in Minnesota.

Its purpose

Today, the Trumpeter Swan Society is composed of people from many walks of life. They all share a common interest in maintaining existing wild *C. c. buccinator*

populations and in restoring the bird to as much of its original range as possible. To help meet these challenges, this small, international scientific and educational organization of 200 members embraces the following objectives:

- To promote research into the ecology and management of *C. c. buccinator*;
- To advance the science and art of *C. c. buccinator* management, both in captivity and in the wild;
- To be a focal point for assembling known *C. c. buccinator* data;
- To provide a framework for the exchange of knowledge about *C. c. buccinator*; and
- To provide a common meeting ground for all who are interested in *C. c. buccinator*.

Its organization – present

A membership-elected Board of Directors meets twice a year to govern the Society's business. A president, vice-president, secretary-treasurer and four directors comprise the Board. Currently, the secretary-treasurer is the chief administrative officer. He acts without pay, as do all officers.

In responding to enquiries about *C. c. buccinator*, the Society provides an educational function, stimulating aesthetic interests and enlightening many, especially the younger generation. A bibliography of *C. c. buccinator*, as yet incomplete, has been compiled. A biannual newsletter keeps Society members apprised about activities.

In fulfilling its objective 'to provide a common meeting ground for all who are interested in *C. c. buccinator*', the Trumpeter Swan Society holds a biennial conference. At these meetings, biologists and laymen gather and discuss their common interest. The Sixth Conference was held in Anchorage, Alaska, in September 1978. The Seventh Conference will be held in Victoria, British Columbia, in February 1981.

The Propagation Techniques Committee prepared 'A Guideline to Propagation of Captive Trumpeter Swans' based upon the collective experiences of many members, but primarily those of the biologists at the Hennepin County Park Reserve District near Minneapolis, Minnesota. This committee also keeps a record of the status of captive *C. c. buccinator* in North America.

The Restoration Committee has investigated and identified potential breeding and wintering areas in Canada and the United States within *C. c. buccinator*'s original range. Currently, a concerted effort is being made to begin a restoration programme for *C. c. buccinator* in the Mississippi Flyway.

The Research Needs Committee reviewed current knowledge of *C. c. buccinator* and determined research priorities. Basic research is needed first because so little is known about *C. c. buccinator* biology. Applied research is aimed mainly at future restoration attempts. Having fulfilled its original charge, this committee was dissolved in September 1979.

The Research Advisory Committee was established to identify newly occurring research opportunities, to review research proposals, and advise the North American Wildlife Foundation on *C. c. buccinator*.

Its organization – future

The Society's Board of Directors believes that the Trumpeter Swan Society must move ahead with its proposed restoration programme if the species is to remain a viable member of the birds of the world. The success of current restoration proposals will influence considerably what might be done in the future.

In September 1979, the Board of Directors agreed to: 1) realize 'political clout' through larger membership; 2) establish a salaried executive secretary position; 3) maintain an active role in management of and research on *C. c. buccinator* in North America, in order to ensure that there is no further decline in existing populations, and, over the next ten years, to bring about reasonable increases in established populations; and 4) establish an active *C. c. buccinator* restoration programme in eastern North America, including at least three newly established *C. c. buccinator* flocks in ten years, and *C. c. buccinator* wintering in the lower Mississippi Flyway.

A membership committee and a concerted public relations effort will be required, including a good brochure. This will be a major change for a group that has prided itself on its small, informal organization. A salaried executive secretary position may be needed to accommodate the increased general administrative duties. A small dues increase is set for 1 July 1980.

Research opportunities

1) *C. c. buccinator* taxonomy is a prime research opportunity that has both fundamental and practical implications. There may be two distinct races: the larger Alaskan and the interior birds. There seems to be no intermixing of the groups. Taxonomy must be clarified before, for example, Alaskan birds could be used as a potential source of eggs and cygnets for transplant to the interior of the continent (see Vyse and Barrett 1981).

2) There are small flocks of *C. c. buccinator* whose annual movements and distribution must be identified to prevent accidental adverse human impact on their breeding or wintering areas. This may require colour- and collar-marking and

radio-tracking.

3) In addition to basic feeding ecology, we must know the impact of birds on their food resources. Ruth Shea studied the breeding ecology of *C. c. buccinator* in Yellowstone National Park and adjacent environs (1979). Her observations on cygnet mortality prompted additional field study in 1979. Another University of Montana graduate student has proposed to study winter habitat requirements.

4) Studies of reproductive energetics, nutrition and food selection with captive birds are needed.

5) Imaginative research is needed to develop restoration methods in areas where *C. c. buccinator* must acquire site-specific migratory habits.

6) Population dynamics of the relatively stable wild *C. c. buccinator* populations, at what appears to be carrying capacity, are of particular interest, as are analyses of habitat carrying capacity.

7) A carefully conceived individual marking programme would allow the study of family member interactions, including parent-offspring and sibling relationships, keeping disturbance to a minimum and precluding changes in behaviour. Spacing, long-term relationships of known individuals, the mating system and many other topics should also be studied, relating temporal adjustments in behaviour and social organization to the seasonal changes of their habitat.

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Summary

The paper reviews the origin, aims and organization of the Trumpeter Swan Society, and lists seven fields where further research relating to *Cygnus cygnus buccinator* is required.

References

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