

Hunting and Management

MANAGEMENT OF SWANS IN THE UNITED STATES

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Management plans

The US Fish and Wildlife Service (USFWS) and Canadian Wildlife Service (CWS) are independently developing national plans for managing waterfowl and will eventually work together with Mexico towards development of a plan for North America. Apart from these national and continental plans for waterfowl in general are those for particular species and populations within the flyways. Initially in the Pacific and Central Flyways, to be followed in the Mississippi and Atlantic Flyways, biologists from state wildlife agencies and USFWS, aided by those from Canada, Mexico and USSR, have drafted guidelines for managing swans, geese, *Branta bernicla* and cranes. These plans identify goals, objectives, information and habitat requirements, and assign priorities, responsibilities and schedules for accomplishing necessary tasks. The draft plans will be changed where deemed advisable after review and comment by participating agencies and the public. The formal agreements stemming from these plans will provide long-term benefits to both swans and people who enjoy them.

Hunting

In the fall of 1962, Utah became the first state where *C. c. columbianus* could be legally hunted since enactment of the Migratory Bird Treaty Act of 1918. Nearly 1000 hunters, who were authorized by special permit, bagged 320 swans. Utah is now authorized to issue 2500 permits free of charge to hunters for the taking of one swan during the season. Interest in hunting swans is high, with applicants numbering more than three times the number of permits issued. The only other states where swan hunting is permitted are Montana and Nevada, each of which is authorized to issue 500 permits. Swan hunting is permitted only in Churchill County in Nevada and in Teton County in Montana. Statewide hunting is not allowed in these two states, to lessen the chance killing of *C. c. buccinator*. Seasons may be of the same length as, and must be concurrent with, those for ducks.

During the past nine years (1970–78) when the three states were authorized to issue 3500 permits, hunters bagged an average of 1234 swans per season (Regenthal and Provan 1979, Barngrover 1979, D Childress pers comm). Utah hunters reported knocking down but not retrieving 22% of the number bagged (Regenthal and Provan 1979) or almost twice the percentage of unretrieved geese. Hunters may use only shotguns of 10 gauge or smaller bore for hunting waterfowl. However, shot-shell loads and gauge size are selected at the hunter's discretion. We believe that some crippling can be attributed to duck hunters who shoot opportunistically at

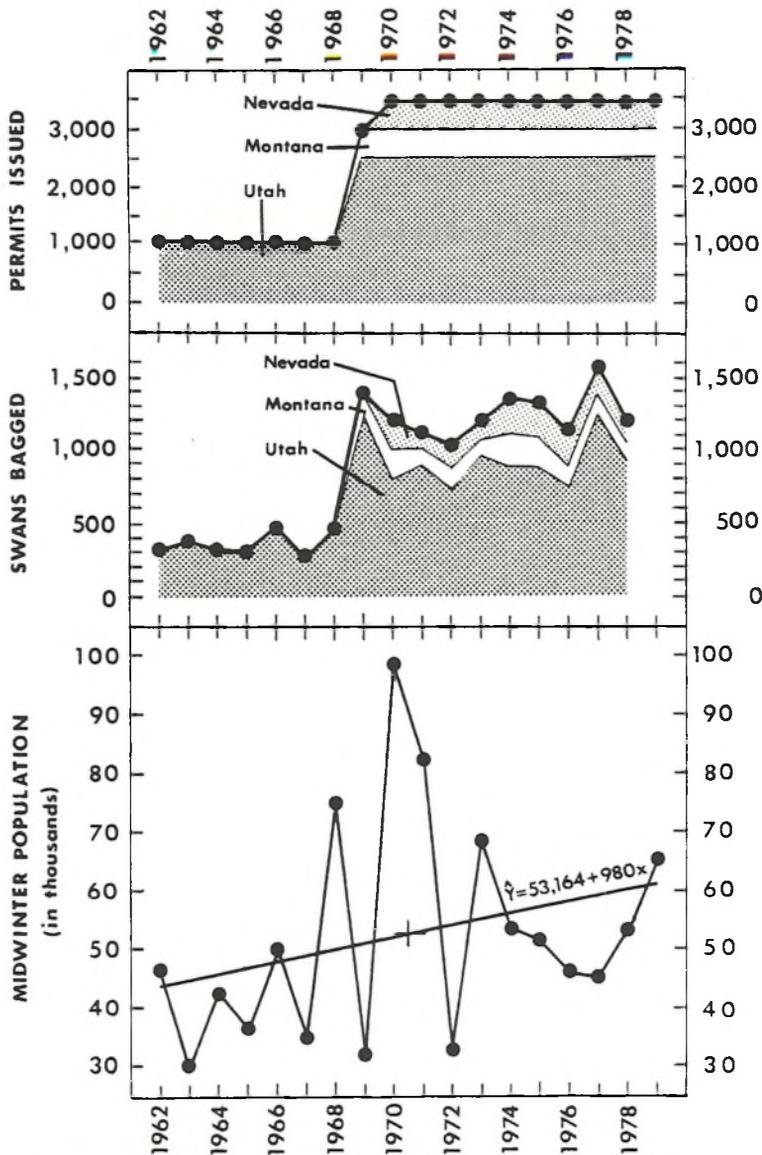


Fig 1. Numbers of hunting permits issued, *C. c. columbianus* bagged, and counted during Midwinter Waterfowl Surveys in the Pacific Flyway. Winter counts were in January and are shown under the preceding hunt season, eg the survey of January 1980 is shown under 1979.

Table 1. Harvest of *C. c. columbianus* by permitted hunters in Utah (statewide), Nevada (Churchill County) and Montana (Teton County), 1962–78.

Hunting season	Utah ¹			Nevada ²			Montana ³		
	Permits issued	Estimated harvest of swans	% grey swans in harvest	Permits issued	Estimated harvest of swans	% grey swans in harvest	Permits issued	Estimated harvest of swans	% grey swans in harvest
1962–63	1000	320	38						
1963–64	1000	392	48						
1964–65	1000	335	37						
1965–66	995	336	45						
1966–67	1000	491	42						
1967–68	1000	246	54						
1968–69	1000	520	58						
1969–70	2500	1290	62	500	87	63			
1970–71	2500	812	52	500	208	49	500	179	41
1971–72	2495	916	33	500	102	37	500	91	33
1972–73	2500	754	38	500	124	34	500	150	31
1973–74	2500	981	50	500	109	47	500	101	45
1974–75	2500	928	42	500	190	39	500	259	48
1975–76	2500	929	46	500	188	38	500	247	34
1976–77	2500	764	41	500	206	34	500	139	43
1977–78	2488	1277	54	500	84	46	500	214	35
1978–79	2500	916	45	500	90	47	500	146	—

¹ Regenthal and Provan (1979)

² Barngrover (1979)

³ D Childress, Montana Department of Fish and Game, pers comm

swans with less than optimum shotshell loads.

Forty-seven percent of 14 975 swans harvested in the three states during 18 seasons were grey-plumaged (young) birds (Table 1). Since grey-plumaged swans in wintering areas generally comprise about 15% to 20% of the population, they are being harvested at a greater rate than white-plumaged (subadult and adult) swans. Younger birds are less wary and, therefore, more vulnerable to gunning than are older birds. Some hunters believe the younger birds are better eating. Other hunters seek older birds for display as trophies.

During the 15 seasons (1947 to 1961) immediately prior to regulated swan hunting, the midwinter population of Pacific Flyway *C. c. columbianus* averaged 32 080 birds, with an average annual increase of 1762. During 18 seasons (1962 to 1979) of hunting, the population averaged 53 164, with an average annual increase of 980. Fig 1 shows the number of permits issued and swans bagged and the size of the swan population in winter since hunting has been allowed.

Hunting of swans in Alaska is prohibited. The state requested but was denied a fall season on *C. c. columbianus* in areas where mixing with either *C. c. buccinator* or *C. c. cygnus* would be unlikely. An illegal subsistence harvest of swans is known to occur in Alaska. Klein (1966) reported that residents of the Yukon-Kuskokwim delta took 5600 swans annually. That particular population of swans winters in the Pacific Flyway. Some persons speculate that the harvest has been increasing in proportion to the size of the rapidly increasing human population and because improved modes of transportation facilitate access to hunting areas. Some native leaders report that residents of the delta are purposefully reducing their harvests of swans and of certain geese that have undergone recent declines in numbers. Satisfactory data on this illegal harvest are neither available nor readily obtainable.

Recent efforts by the United States to modify various bi-lateral migratory bird treaties are directed toward allowing a regulated and legal subsistence harvest of waterfowl by residents of rural Alaska. Conceivably, a subsistence season could allow for limited harvest of swans in spring and summer. However, such seasons and sizes of allowable harvests have not been considered or proposed.

The Atlantic Flyway Technical Committee has recommended to its governing Atlantic Flyway Council that a season on *C. c. columbianus* and *C. olor* be initiated. They recommend that early emphasis be given to seasons in Delaware, Maryland, Virginia and North Carolina where crop depredation is increasing. The Committee cites as reasons for this hunt: (1) an increasing number of swans that in no way seem in jeopardy (Bartonek *et al* 1981), (2) the increased hunting opportunities, (3) a desire to substitute hunting mortality for natural mortality, and (4) the need to alleviate crop depredations. The Council has not as yet submitted to the USFWS any specific proposals. It appears likely that there would be strong objections from some quarters to a swan hunting season in the eastern United States.

Depredation

Once it was only the hapless hunter who fell into an 'eat out', a crater caused by foraging swans, and complained about the eating habits of swans. Now, with the recent changes in feeding behaviour of these birds, it is likely to be a farmer who complains about damage to winter wheat, rye or barley caused by swans when they puddle or compact soil. Field feeding by swans was an oddity in the mid-1960s (Nagel 1965), but during the past three to four years *C. c. columbianus* has been observed feeding in dry, disced corn fields on the Sacramento River Delta in early fall and in barley fields in January and February in the Sacramento Valley of California (J R LeDonne pers comm).

The initiation of field feeding by *C. c. columbianus* wintering along the Atlantic Coast can be traced to the winter of 1969/70, when a six-week cold wave forced swans into nearby fields for food. The following fall, some swans moved into the fields, thereby instilling a tradition for field feeding in a segment of the population (Munro 1981).

Depredation complaints come mainly from local areas along the Atlantic Coast, particularly North Carolina. The magnitude and costs of these depredations have not been estimated. Farmers are not hesitant to harass from their fields and occasionally kill those swans causing problems.

Swans regularly eat out submerged aquatic vegetation at the Mattamuskeet National Wildlife Refuge, North Carolina, early in the season. They are thereby forced to move elsewhere for the remainder of their winter sojourn. However, this phenomenon has not produced any irreversible change in the vegetation of the refuge; it most likely influences use of the refuge by other waterfowl.

Swan introduction and restoration efforts

From the 1930s up through the 1960s *C. c. buccinator* taken from the Red Rock Lakes National Wildlife Refuge in Montana were used with varying success to establish breeding flocks at other national wildlife refuges in an effort to bolster the small population. They were established at the National Elk Refuge in Wyoming, Turnbull Refuge in Washington, Malheur Refuge in Oregon, Ruby Lake Refuge in Nevada, and Lacreek Refuge in South Dakota. The USFWS no longer gives priority to establishing breeding flocks of either swans or geese on its refuges, but encourages the development of flocks should they become established through normal pioneering. Goose restoration efforts are now handled mainly by state wildlife agencies.

Further, the USFWS no longer supports supplemental winter feeding on refuges where introductions were attempted. Winter feeding at Red Rock Lakes National Wildlife Refuge where swans occur naturally is the only exception, and even that

supplemental feeding programme may be terminated. Before the USFWS will support the release of artificially-reared or transplanted *C. c. buccinator* outside their present range, a plan of the proposed introduction must be brought before the appropriate flyway council and the public for review and discussion. Establishing new flocks of *C. c. buccinator* could pose unacceptable problems in those states where *C. c. columbianus* or *Anser caerulescens* seasons might need to be closed to provide protection for the introduced swans.

Aviculture

C. c. buccinator, both healthy and crippled birds, have been provided to zoos. However, few have been available for sale or exchange among aviculturists and for breeding experiments. This situation occurs at a time when the natural population at Red Rock Lakes National Wildlife Refuge appears to have saturated its environment to the point where productivity is depressed. Since 1978 the USFWS has made limited numbers available to aviculturists for propagation and display purposes but not for release programmes. Six permits are issued annually for the taking of either one clutch of eggs or one male and one female cygnet from either on, or in the vicinity of, Red Rock Lakes Refuge. Conditions of the permit are: (1) the federal government retains ownership of the wild swans or those swans produced from eggs taken in the wild, but the progeny of the wild birds are property of the permittee, (2) the captive swans are to be segregated from free-flying waterfowl to prevent transmittal of contagious pathogens, (3) permission from landowners must be obtained prior to collecting, and (4) the permittee must prevent the swans from being released into the wild.

Generally the USFWS, with co-operation from the Alaska Department of Fish and Game, has been reluctant to make Alaskan *C. c. buccinator* available to aviculturists until such time as differences between the Pacific and Midcontinent populations can be evaluated. If differences are significant, then interbreeding would be undesirable and could be minimized by prohibiting the use of the Alaskan swan by propagators. The USFWS-funded study by Vyse and Barrett (1981) on genetic comparisons in *C. c. buccinator* provides part of the evaluation required. Alaskan *C. c. buccinator* have been given to the Moscow Zoo for display purposes, and others undoubtedly would be available for *bona fide* studies of comparative differences between the two populations.

Cygnets and eggs of *C. c. columbianus* generally are available to aviculturists but the logistical costs make their collection expensive. While state and federal permits are usually available, difficulty often arises in obtaining the required permission from native groups in Alaska to trespass and collect on their lands. Some native groups contend that so long as they may not legally egg or hunt during the spring and summer, aviculturists and scientists should not be allowed to do so by means of special permits.

C. olor is excluded from official lists of migratory birds and thus is unprotected by federal laws. A growing concern is the increasing number and flock size of *C. olor* which became feral after release or escape (Bartonek *et al* 1981). The pugnacious *C. olor* is dominant over *C. c. columbianus* and *C. c. buccinator* and potentially threatens the well-being of some Midcontinent population *C. c. buccinator* in its limited and perhaps overcrowded wintering habitat. We prefer having the native *C. c. buccinator* in those areas where *C. olor* is now found. Substitution of species is a possible solution, provided previously stated conditions regarding the establishment of new flocks is first met. It may require pinioning or neutering of ornamental birds, except those of licensed breeders, if a problem develops.

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Summary

In this paper we highlight certain practices, issues and problems of general interest in management of the three swan species occurring naturally in the United States, *Cygnus columbianus columbianus*, *C. cygnus buccinator* and *C. cygnus cygnus*, and the feral *C. olor*. Descriptions of range, migration and habitat requirements of these swans are for our purpose adequately described by both Bellrose (1978) and Palmer (1976) with supplemental information on population size and status in Bartonek *et al* (1981).

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