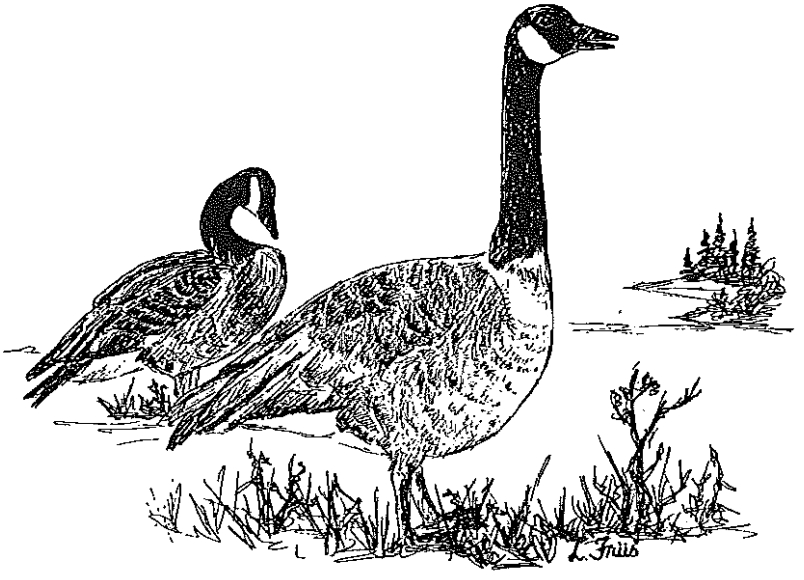
Preliminary Canada Goose Management Plan for British Columbia



Province of British Columbia
Ministry of Environment

PRELIMINARY CANADA GOOSE

MANAGEMENT PLAN FOR

BRITISH COLUMBIA

Fish and Wildlife Branch
Ministry of Environment
December, 1979

PREFACE

This plan was drafted by W.T. Munro, Fish and Wildlife Branch. Many constructive comments were made on an earlier draft by headquarters and field personnel of the Fish and Wildlife Branch. The typing was ably and cheerfully done by Lynne Foxall, Fish and Wildlife Branch.

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SUMMARY

Probably more people can recognize the Canada goose than any other bird, its flights are the harbinger of spring and winter to thousands of people, while it is highly prized by sportsmen for its wariness, size and table qualities. It is one of the most amenable of all waterfowl to management. It is highly adaptable and can reproduce prolifically in close proximity to man when habitat is available. On occasion, geese can cause damage to some agricultural crops and fine turfs. While it has a high reproductive rate, some populations nesting in the Arctic are susceptible to years of low production when spring is late and their breeding grounds are covered by ice and snow. Seven subspecies occur in B.C., some as year-round residents, some as wintering birds, and some only during migration. Management is co-ordinated with neighbouring states and provinces and two federal governments. The population breeding in B.C. is estimated to be 25,000, which results in a late summer population of 75,000 $\pm$ 20% birds. Several hundred thousands of geese migrate through or over B.C. annually.

OBJECTIVES

1. Increase breeding populations to 40,000 birds distributed throughout their existing range.
2. Develop major concentrations of migrating Canada geese in several parts of the Province to provide "wildlife spectacles" for public viewing.
3. Develop programmes to reduce or prevent serious conflicts between geese and intensive agriculture.
4. Provide 45,000 sport-hunting days of recreation and an annual sustained hunter kill of 20,000 birds.

POLICY FOR USE

The Canada goose will be managed for recreational use for hunting and viewing. Sanctuary areas will be provided in selected areas to attract concentrations of birds for viewing where agricultural damage is not likely to be a problem. In areas where re-introductions are being established, temporary closed hunting seasons and/or reduced bag limits will generally be the rule. Commercial uses other than guiding will not be allowed.

MANAGEMENT PRESCRIPTIONS

1. Protect and enhance critical breeding and migration habitat. This consists of marhes, river valleys and shallow lakes with nearby food sources.

2. Identify populations of Canada geese nesting in B.C. and determine migration routes, wintering areas and mortality rates.
3. Develop sanctuaries including upland feeding areas on major migration routes.
4. Transplant Canada geese into suitable vacant habitats where advisable.
5. Make a special effort to prevent crop damage in high conflict areas by scaring and killing birds and by enhancing adjacent feeding areas.

PROBLEMS

1. Inventory information is not available for geese nesting in northern B.C.
2. Migration routes and wintering areas of some goose sub-populations are not known.
3. Geese can cause damage to some agricultural crops at certain times of the year.
4. Some wetland areas of importance as goose habitat are being destroyed.
5. Some appartently good habitat is not being used by geese.
6. Potential benefits to farmers of some cases of field feeding geese are not recognized.

INTRODUCTION

This plan is one in a series of draft management documents being prepared by the Fish and Wildlife Branch on individual species or groups of species. Comments from interested individuals are welcome within three months of release of the plan and will aid in the revision of the plan. After revision, the plan will guide management of Canada geese in British Columbia for the next five years consistent with management goals.

The goals of wildlife management in B.C. are:

1. *To maintain the diversity of species representative of the major biophysical zones of the province; and*
2. *To ensure that within the constraints of land capability and biological limits of each species, wildlife is available in sufficient abundance to meet the recreational and economic needs of society.*

To meet these goals; objectives, policies and management prescriptions have been developed. This plan describes how and why they were derived for Canada geese. In addition it confirms and provides guidelines for the development of Regional Wildlife Management Plans which will present in greater detail regional objectives for numbers and distribution of geese, uses to be made of them, and the cost of meeting those objectives. It also provides the reader with general information on which the management of Canada geese in B.C. is based.

THE RESOURCE AND ITS HABITAT

All waterfowl are under the dual jurisdiction of the federal and provincial governments. Because they are migratory birds there are also international implications to their management. While this plan reflects national and international realities, it is tailored to fit the management of the species in B.C. by the Fish and Wildlife Branch.

The Canada Goose appears to be the most amenable of all waterfowl to management. It has shown itself to be highly adaptable and to reproduce prolifically in close proximity to man provided there is some water and grazing available. There is no reason to suspect its survival is in doubt. Populations of Canada geese increase or decrease depending upon production and mortality rates. Those populations that nest in the Arctic are susceptible to years of lowered production when spring is late and much of their breeding grounds are covered by ice and snow. Harvests are well regulated and throughout North America Canada geese are doing well.

TAXONOMY AND DESCRIPTION

Canada Geese in B.C. vary in size from the 3 pound Cackling to the 9 pound Vancouver. However, in appearance all subspecies, sexes and ages are similar with black bill, legs, feet, tail, rump, head and neck with a white cheek patch extending under the throat from behind the eye; brownish back, sides and breast; white belly, flank, and undertail and uppertail coverts. The black rump and tail are separated by the white uppertail coverts which form a V when viewed from above.

Canada geese usually breed at three years of age. They have strong homing tendencies to both breeding and wintering grounds. Although the subspecies overlap in various parts of their range, especially the wintering grounds, each has traditional migration patterns and breeding areas.

Seven subspecies of the Canada Goose (Branta canadensis) probably occur in B.C. Those are:

B.c. moffitti	Western
B.c. occidentalis	Dusky
B.c. parvipes	Lesser
B.c. taverneri	Taverner's
B.c. fulva	Vancouver
B.c. minima	Cackling
B.c. leucopareia	Aleutian

In addition there are hybrid geese introduced to the lower mainland and southern Vancouver Island that come from stocks of several different races.

The Canada Goose is classed as a migratory game bird under the Migratory Birds Convention Act and as a game bird under the British Columbia Wildlife Act. Thus management is shared between the federal and provincial governments. Provincial regulations may not be in conflict with federal regulations except that they may be more restrictive.

DISTRIBUTION AND NUMBERS

The distribution and abundance of Canada geese in B.C. varies enormously with the seasons. Migrating birds pass through in the spring and fall, others breed in the Province, while others may only winter here. Each of the seven subspecies is discussed below and estimates of numbers breeding in B.C. are provided. Most areas historically occupied by Canada geese in B.C. are still occupied although some areas such as central Vancouver Island and central B.C. have lower population densities.

Western Canada Goose (Wt. 8 - 10 lbs.)

This race is the most common nesting goose in B.C. It breeds between the Coast Range and the Rockies from the International Border North to about 56^{o} latitude in the west and 58^{o} in the east. Birds nesting in the Columbia Marshes probably winter in the Columbia Basin in Washington and Oregon. Birds from the Chilcotin and Cariboo probably winter in the Columbia Basin and/or the Imperial and Central Valleys of California. Insufficient banding has ben done to trace with certainty the migration routes and wintering areas. Birds nesting in the Okanagan-Thompson area appear to remain all year in B.C. with up to 3,500 birds wintering in the South Thompson-Shuswap-Okanagan area. Breeding pair estimates made by the B.C. Waterfowl Advisory Committee suggest 800 pairs in the Kootenays, 700 in the Thompson-Okanagan, 2,500 in the Cariboo-Chilcotin and 5,000 in the North Prince George-Peace River area. Birds of this race were introduced near Victoria many years ago and have gradually spread northward as far as Duncan. A number of birds of this subspecies have been released in the lower mainland over the years and have interbred with other subspecies.

Vancouver Canada Goose (Wt. 9 - 12 lbs.)

This race is believed to be the one that breeds on the mainland coast, northern Vancouver Island, Queen Charlotte Islands and other adjacent islands. The bulk of the population breeds in the Alaska panhandle. The B.C. Waterfowl Advisory Committee estimate the breeding population at 1,500 pairs on the North Coast and Queen Charlotte Islands, and 500 pairs on the South Coast and Vancouver Island. This race is less

migratory than others, often spending the winter along the coast not far from their breeding areas. Coastal surveys in January, 1977, counted in excess of 4,500 birds, probably of this race. Those few that migrate tend to winter on the Washington coast and the Willamette Valley in Oregon.

Dusky Canada Goose (Wt. 8 - 10 lbs.)

This race nests on the Copper River Delta, Alaska, and winters in the Willamette Valley, Oregon. It occurs in B.C. only during migration and then most commonly on the Queen Charlotte Islands and the west coast of Vancouver Island. Recent estimates of the wintering population in the United States are about 33,000 birds.

Taverner's Canada Goose (Wt. 4½ - 6 lbs.)

This race may be the one which nests west of the Rocky Mountains north of Smithers. Numbers are unknown but are probably in excess of 500 pairs. Most nest in the interior of Alaska and migrate down the coast to Washington and Oregon. Some are seen along the B.C. coast, but most appear to migrate non-stop past B.C. in the fall. Increasing numbers of birds presumed to be of this race migrate inland and spend several weeks in the fall in a sanctuary near Tranquille, east of Kamloops. The spring migration of this species is through the central interior with the major staging area being on the Nechako River near Vanderhoof. The fall population is estimated at 100,000 birds.

Cackling Canada Goose (Wt. 2½ - 3½ lbs.)

This race breeds on the coast of Alaska between the Yukon and Kuskokwin Rivers. They tend to migrate direct to the mouth of the Columbia River and hence to the Central Valley of California. Small numbers stop along the west coast of Vancouver Island and sometimes the lower mainland. The population numbers about 150,000 birds.

Aleutian Canada Geese (Wt. 3½ - 5 lbs. ?)

This race is considered endangered in the United States, numbering about 1,200 birds. It nests only on a very few Aleutian Islands that are free from foxes, notably Buldir. They appear to migrate non-stop to northern California and then inland to the central valley. Recent colour marking programmes have provided no records from B.C. but it is possible that some of these birds stop on Vancouver Island or the lower mainland on occasion.

Lesser Canada Goose (Wt. 5 - 6 lbs.)

This race may nest east of the Rocky Mountains in northeast B.C. They likely winter in Colorado.

Mixed Races

Canada geese of mixed subspecies have been re-introduced successfully in the lower mainland. The breeding population of these non-migratory birds is estimated at 2,000 pairs.

The population of Canada geese breeding in British Columbia is estimated at 25,000 birds.

BIOLOGY

Canada geese do not generally breed until three years old although up to one-third of the females may breed at two. Pair bonds are formed prior to the first breeding season and frequently last for life. Remating usually takes place when a previous mate dies. Young birds, especially females, normally return to nest in the area where they learned to fly, a trait that has been used successfully by wildlife managers in establishing new breeding populations. The birds migrate as a family group and yearling disperse upon return to the breeding grounds. Non breeding birds often go north to moult.

In most of B.C. nesting is along rivers or in marshes and while many pairs may be found in close proximity, especially on islands, they are not colonial nesters. Many geese adapt readily to man-made nesting structures. The female incubates the eggs while the male stands guard nearby. Incubation of the eggs (usually 4 to 7, average 5) takes about 26 to 28 days and the young leave the nest soon after hatching. Canada geese in B.C. often renest if the first clutch is destroyed. On average about 70 percent of breeding pairs are successful and fledge an average of four young (Bellrose, 1976). That translates into average production of 2.8 young per nesting pair.

Canada geese graze on the leaves of clover and grasses and other short plants and eat the seeds of many cereal grains, weeds and marsh plants. Breeding and young geese are primarily grazers. Seeds are more important during migration and on wintering areas.

Mortality rates of geese are highest in the first year, from 39 to 65 percent, depending on the population, and less in subsequent years, 32 to 52 percent (Bellrose, 1976). Data for populations nesting in B.C. are scanty, but suggest a high mortality rate for those nesting in the East Kootenays, and very low mortality for those nesting in the Okanagan. A first year mortality of 45 percent and a subsequent rate of 35 percent will

allow a stable population under average production conditions (2.8 young per breeding pair). The maximum harvest from a population breeding in an area would be about the same number of birds as there are breeding birds in the population. Such harvest (about 30 percent of the fall population and composed of all age classes, especially young of the year) should allow the population to remain stable. Conservative harvests that would allow for population increase would be about 20 percent of the fall population. One must remember that these harvest rates apply to the total harvest, not just the portion taken in B.C.

During migration and in winter Canada geese are gregarious and often concentrate in large flocks. They are usually wary birds and require areas to rest and feed unmolested by man. Without such areas the birds soon move elsewhere. In British Columbia there is some evidence that migrating birds no longer come in as large numbers or spend as much time in B.C. as they once did, especially on the west coast of Vancouver Island.

HABITAT

Canada geese are one of the most adaptable of waterfowl. Any area with permanent water and short green plants for grazing is potential goose breeding habitat. An island or other nesting area secure from most predators adds to the attractiveness of any site. In southern B.C. farmland, especially where there is pasture or hayfields adjacent to water, has proven particularly attractive.

In many areas where nesting sites have appeared to be limiting expansion of geese, artificial nesting structures have proven to be useful. Old washtubs, with bottoms perforated to allow water to drain and filled with hay, tied to trees or mounted on posts near marshes; wooden platforms with old car tires filled with hay; and small man-made islands have all been widely used.

During the late summer and winter geese often feed on seeds, including those of cereal grains, and can cause damage to farms crops. Also their habit of grazing in late winter and spring can cause damage to newly seeded hay or pasture and sprouting cereal grains. Benefits of such grazing are often overlooked and may include fertilization and increased sprouting.

The preferred natural habitat of geese nesting in B.C. appears to be backwaters along the major river valleys, ponds and small lakes in the grasslands, and the shores of larger lakes in the south. Because geese are the earliest of all waterfowl to breed they have usually hatched their young before the spring floods inundate many of the valley bottoms which limit production of other species.

During migration geese use larger water bodies for resting and feed on surrounding fields or tidal flats.

In most parts of B.C. there is sufficient habitat to support additional numbers of Canada geese. In some instances enhancement measures will have to be taken to increase production. In areas of intensive agriculture such as the lower mainland and Okanagan valley the goose population is close to the limit that can be tolerated by farmers unless feeding areas for geese are established. Elsewhere that is not a problem and expansion should be encouraged as long as the birds migrate to wintering grounds in the United States that can support them.

Because of the attraction of cereal grains to geese any major change in agricultural practices which results in increased production of these grains will certainly increase the number of geese using the area during migration.

USES

Geese were used historically by natives in the Arctic for food. In B.C. traditional use by native peoples was not extensive. Since the arrival of white man, they have been hunted for food and sport. Goose down was used by early settlers for quilts, clothing and pillows.

Today there are two main uses of the Canada goose. It is a bird highly prized by sportsmen across North America. Its wariness, size, and table qualities make it prized wherever it is taken. Major regulation changes and recent harvests in B.C. are given in Appendices A and B. Geese also attract people for viewing. Large gatherings of geese have been shown repeatedly to be a major attraction to people. Anyone who has visited the Jack Miner sanctuary in Kingsville, Ontario during the goose migration and seen mile after mile of parked cars, realizes the great drawing power of geese.

By judicious use of sanctuaries and development of feeding areas increased use of both kinds can be expected in British Columbia.

CONFLICTS

Three conflicts have been identified. The first concerns damage caused to agriculture by geese. Geese eating swathed grain, picking newly sprouted corn, peas or other crops, and grazing in wet pastures or hayfields may cause damage to crops. Excessive numbers of geese should not be allowed to develop in such areas unless sufficient land is reserved for goose use. Another conflict involves geese using recreational areas such as beaches and golf courses where their droppings can be a

nuisance. The remaining conflict involves hunting, especially near urban areas. Hunting is one form of control used to limit Canada geese where potential damage to crops is expected. In addition to reducing the numbers of geese it makes the survivors more wary and easier to keep away from fields where they are not wanted. Provided areas are made available where people can see geese undisturbed hunting elsewhere should be viewed as a legitimate use of the resource and an important management tool. One potential problem is that of Canada geese near airports. Goose-aircraft collisions can and do occur and are often fatal to both bird and machine (including contents). Concentrations of geese should not be encouraged near airports.

MANAGEMENT

Management is directed towards maintaining a resource within prescribed limits and regulating its use for the benefit of man. The management principle for use is to provide quality recreational experiences.

Because the Canada goose is a migratory bird its management must be coordinated with the federal government, other provinces, territories, states and the U.S. federal government. Within B.C. cooperation with the federal government is handled through the B.C. Waterfowl Advisory Committee, a joint group of the Canadian Wildlife Service and Fish and Wildlife Branch. Nationally, the Federal-Provincial Wildlife Conference and its many committees provide a forum for joint operations. Internationally, the Pacific Flyway Waterfowl Technical Committee, at which western states and provinces and the two federal governments are represented, is the major group dealing with management problems. This international group is currently preparing management plans for all geese using the flyway and this plan should be compatible with those.

OBJECTIVES

Four objectives have been identified for management of Canada geese in British Columbia

The first objective is to increase the breeding population to 40,000 birds distributed throughout their existing range. This objective is thought to represent what can be achieved with modest enhancement efforts centred in the Cariboo/Chilcotin area. Much of the required work would be done by volunteer groups and Ducks Unlimited (Canada), a non-profit organization that enhances habitat for waterfowl.

The second objective is to develop major concentrations of migrating Canada geese in several parts of the Province to provide "wildlife spectacles" for public viewing. This objective is designed to provide for the growing demand to view wildlife and to provide areas for geese to rest and feed when migrating in the spring and fall.

The third objective is to develop programmes to reduce or prevent serious conflicts between geese and intensive agriculture. Geese can sometimes cause serious damage to certain agricultural crops. This objective is designed to alleviate that damage where it is serious.

The fourth objective is to provide 45,000 sport-hunting days of recreation and an annual sustained kill of between 20,000 and 30,000 Canada geese. This objective is based on the productivity of Canada geese, the allowable harvest in Canada and in the United States, the provision of sanctuary areas, and past hunting statistics (Appendix A).

POLICIES FOR USE

Canada geese will be managed for recreational use with emphasis on enhancement. The first priority for use will be non-hunting recreation. Sanctuary areas will be provided where required to attract concentrations of birds for viewing. Advice will be provided to people who wish to attract geese to their property.

The second priority for use will be hunting. Goose hunting is a traditional activity in many parts of B.C. Hunting will be on an optimum sustained yield basis with the harvest of geese in B.C. being less than the productivity of geese nesting in B.C. While some of the geese harvested in B.C. will have been produced in areas north of the Province many of the geese produced in B.C. will be harvested to the south of B.C. The policy is directed at making B.C. produce more birds than are killed in the Province. In areas where re-introductions are being established, temporary closed seasons or reduced bag limits will generally be the rule.

Other permitted uses will be scientific and cultural.

MANAGEMENT PRESCRIPTIONS

Reaching the objectives set for Canada geese will require the protection and enhancement of breeding and staging habitat and the establishment of some sanctuaries. Breeding habitat, marshes, river valleys and shallow lakes, should be identified and protected from alternate land uses. Draining, excessive livestock grazing and hydro-electric water impoundments are the most critical alternate uses. Excessive livestock grazing is the most easily controlled. While expensive, fencing can be erected around productive marshes and lakes leaving sufficient access for stock to drink. Draining and flooding are less easily controlled but efforts will be made to prevent them on good habitat.

Enhancement of existing or potential habitat, usually by means of water control and nest site construction, can make an important contribution to the numbers of breeding and staging birds. Ducks Unlimited (Canada) will be encouraged to carry on this type of activity.

The wintering grounds of the different populations of geese breeding in B.C. should be identified and examined to determine if they can accommodate greater numbers of birds. At the same time mortality rates of the populations should be determined as a basis for setting harvest levels.

To provide concentrations of birds for public viewing areas sanctuaries will have to be selected where the geese are not likely to cause serious damage to agriculture. In some instances land may have to be purchased for that purpose.

Where habitat for geese is available but occupied only sparsely transplanting birds may be a viable option. In such instances where it can be shown that geese are unlikely to cause problems private agencies and individuals will be encouraged to conduct transplants.

Where geese cause problems the Fish and wildlife Branch will provide advice on how best to reduce such problems. In urban areas with excessive numbers of birds the solutions are often costly (provide alternate land for the birds) or are publicly unacceptable (destroy many of the birds). The best way is often to prevent populations that are likely to cause problems from becoming established.

Finally, because Canada geese are migratory birds jurisdiction over them is shared with the Federal government. The Fish and Wildlife Branch will work closely with the Canadaian Wildlife Service to develop complimentary programmes for Canada geese in B.C. In addition the Branch will continue to be actively involved with international bodies for cooperative management of those populations which migrate outside of Canada.

In summary, the Fish and Wildlife Branch recognizes the present uses of and priorites for the Canada goose resource and while they may not be those of the future, the proposed programmes will maintain the resource so that most options for management and use in the future will be available.

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APPENDIX A

Major events in regulations governing the hunting of Canada geese

1910 Season during which wildfowl could be sold shortened to one month.

1914 Goose season terminated end of February.

1917 Migratory Bird Convention Act proclaimed in Canada. Market hunting prohibited. Seasons reduced to $3\frac{1}{2}$ months.

1920 No shooting from power boats.

1929 Goose bag limit 10 per day and 50 per season.

1937 Goose bag limit 5 per day and 50 per season.

1938 Goose bag limit 5 per day and 25 per season.

1961 Goose bag limit 5 per day and 10 in possession.

1972 Nimpkish Valley closed to goose hunting to protect transplanted birds.

1974 Lower Mainland closed to goose hunting to permit re-introduced birds to become established.

1976 Nanaimo area closed to goose hunting to permit re-introduced birds to become established.

1978 Portion of Fraser Valley opened to limited goose hunting, limit 1 per day and 2 in possession.

1979 Three day season near Nanaimo, limit 2 per day and 6 in possession.
Preliminary goose management plan prepared.

APPENDIX B

Estimated Harvest of Canada Geese in British Columbia, 1967 to 1977*

Year	Number of Canada Geese Harvested	Number of Active Waterfowl Hunters
1967	13,888	**
1968	11,651	**
1969	11,502	22,610
1970	10,602	22,377
1971	8,306	**
1972	7,800	**
1973	10,087	22,473
1974	10,590	18,941
1975	9,604	17,029
1976	8,644	17,375
1977	10,438	18,751

* Taken from Canadian Wildlife Service Progress Notes 5,7, 12, 16, 22, 28, 37, 41, 51, 70, 81, 92, and 95.

** Information not available.