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Understanding Canada Goose Management

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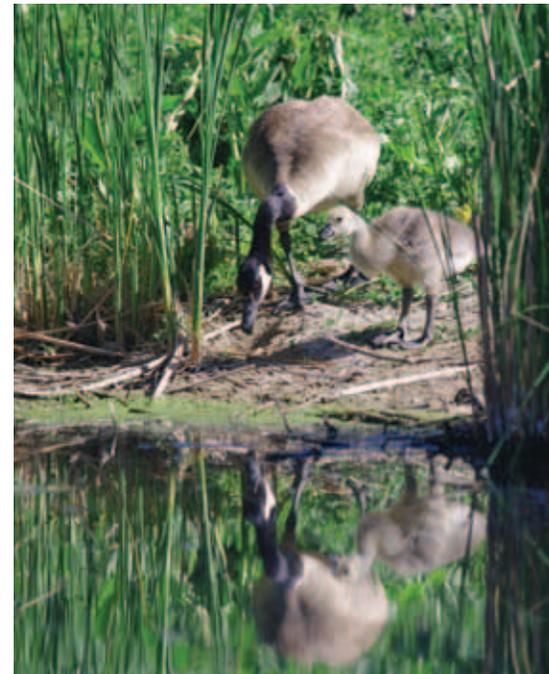
The Canada goose — is it an iconic symbol of our nation or a pest that plagues our green spaces? Just as opinions of this bird vary, so does the goose itself — not all Canada geese are created equal. And thus come the challenges of Canada goose management. No singular management technique is effective or even appropriate to relieve the pressure these birds can apply to our landscapes. To improve our ability to manage geese and goose related conflict, we must know more about the issues and the birds themselves. It is not the intention of this article to describe the different methods of management (and there are many), but to identify some considerations important to understanding Canada goose management.

Taxonomy

The first issue is basic taxonomy — understanding the differences in subspecies

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and how they are categorized. Canada goose taxonomy is a dynamic classification system — one that has evolved and will likely continue to do so. Recently, the American Ornithologists' Union (AOU; the body responsible for naming birds in North America) divided Canada geese into two species — large bodied (Canada geese; *Branta canadensis*) and small bodied (Cackling geese; *Branta hutchinsii*). Within each species are several subspecies, such that 12 different subspecies of Canada and



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Table 1. Taxonomy of Canada and Cackling Geese.

Large Bodied (<i>Branta canadensis</i>)		Small Bodied (<i>Branta hutchinsii</i>)	
Scientific Name	Common Name	Scientific Name	Common Name
B.c. canadensis	Atlantic	B.h. hutchinsii	Richardson's
B.c. interior	Interior	B.h. asiatica	Bering
B.c. maxima	Giant	B.h. leucopareia	Aleutian
B.c. moffiti	Moffit's	B.h. taverneri	Lesser*
B.c. parvipes	Lesser*	B.h. minima	Cackling
B.c. fulva	Vancouver		
B.c. occidentalis	Dusky		

*These geese are part of a group of geese called the "Lesser Complex." Features can be challenging to differentiate in the field.

Cackling geese are recognized in North America (Banks et al. 2004; Table 1). For the purpose of this article, all subspecies will be collectively referred to as Canada geese.

The differences in subspecies include physical size (e.g. the smallest form—the small Cackling Canada goose weighs 3 - 5 pounds, whereas the largest form — the Giant Canada goose weighs over 20 pounds), population numbers, status, distribution, and management.

Ecology

Understanding life-history and annual patterns of geese can assist managers to identify appropriate management windows. Canada geese are considered Arctic-nesting geese; that is, when following natural patterns, these birds generally nest in northern latitudes and migrate south after the breeding season. During mild climatic conditions, particularly in south-western Canada, Canada geese may begin nesting as early as February. Egg-laying is initiated in March and can continue into late May. Females typically lay 4 - 7 creamy white eggs (average is 5; total can be as high as 12) on consecutive days (Figure 1). They may also lay replacement eggs if originals are preyed upon, or the nest is destroyed early in incubation, which is approximately 25 - 27 days (Mowbray et al. 2002, Environment Canada 2003).

In late summer, prior to the fall migration, adult geese moult their flight feathers and grow a full new set over approximately 4 - 6 weeks. During moult young birds lose their down and grow their first set of flight feathers as well. Geese are vulnerable to predation during moult. Consequently, geese will form large moulting flocks on water bodies for protection. In addition, Canada geese exhibit high philopatry to nesting, migration and wintering areas allowing for perpetuation of distinctive subspecies. These traits have allowed biologists and managers the ability to create management programs targeting specific subspecies.

Geese form permanent pairs at 2 - 3 years. A pair will return to the female natal area to breed — some females set up nests in close proximity to their own hatch site. Geese may live greater than 20 years in the wild, particularly in urban settings where predation is low and forage is readily available.

Geese prefer to forage on tender grasses, but will take advantage of wetland vegetation, turfgrass, farm crops, and palatable ornamental vegetation. Geese generally clip the vegetation, but will also grub roots leaving an area denuded if grazing pressure is heavy.

Distribution

Canada is home and native land to most stocks of Canada geese — at least for some part of their life cycle. Being naturally migratory, these birds are capable of extraordinary migrations. Depending on the subspecies, these trips can extend thousands of kilometres. Typically, an annual migratory pattern consists of nesting on northern breeding grounds, migrating south for the winter (making some stops along the way), wintering in southern latitudes and then returning north again. Geese are extremely site faithful and repeatedly use the same route and teach the route to their offspring. Each species has a different migratory pattern; however, migratory pathways do overlap, particularly at temporary stopover sites in the spring and fall. During these times, members of threatened stocks may mix on fields with members of stocks with no conservation concern—even problem stocks.



Figure 1. Canada goose nest with five eggs.

Status

Understanding that there are 12 different subspecies of Canada geese provides the backdrop for understanding “status.” Here, the term applies to the conservation and legal status of goose subspecies—e.g. is there a conservation concern and how is that concern labelled.

For those who have experienced crop or field damage from unremitting flocks of Canada geese, it may seem difficult to believe that some stocks of Canada geese are of conservation concern — critically so — and they are being managed to sustain their numbers. In fact, the Bering goose subspecies (*B.h. hutchinsii*) was extinct by the early 1930’s caused by heavy predation by Arctic foxes and human exploitation.

In the early 1900’s many Canada goose populations experienced huge declines. Hunting, habitat loss, and introduced predators all contributed to declines that triggered awareness and conservation programs. Stochastic events also contributed to losses — the Dusky Canada goose suffered a huge loss in 1964 when an earthquake decimated the breeding colony on the Copper River Delta. This subspecies continues to be managed carefully to secure its sustainability.

The response to declining goose numbers was efforts to re-establish geese to native habitat and/or introduce stocks to new areas not previously inhabited by geese. For most stocks, the response has been more than successful.

Example 1:

The Giant Canada goose was extirpated from much of its native range. Reintroduction from its native habitat has been so successful that translocations of birds outside of its original range have occurred to control nuisance populations inside its native range (mid-western United States). The result has been an over successful expansion of the population into Canada and the United States.

Example 2:

Canada geese were introduced to parts of western Canada (e.g. Okanagan Valley; Southern Vancouver Island; Lower mainland,

British Columbia) in the 1960 - 70’s to provide sport hunting opportunities and increase wildlife viewing opportunities. Since then changes in habitat, urban expansion, and agricultural practices have resulted in exponential increases in these birds in non-native landscapes.

In both examples, as with many translocations of geese across North America, translocated geese and their progeny did not migrate. The groups established non-migratory resident populations in locations to which they were located. The full understanding of the inability to migrate is not complete; however, reasons likely stem from young geese/eggs being removed to a

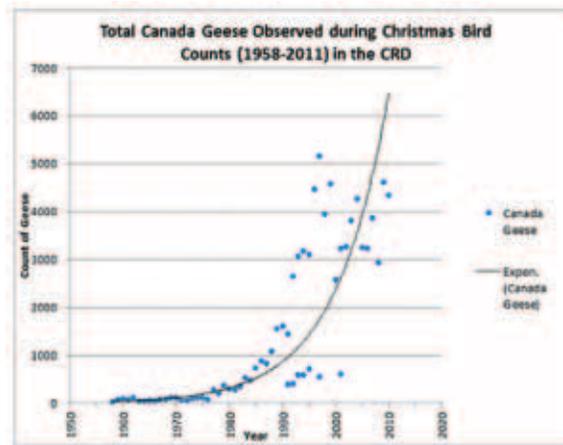


Figure 2. An example of exponential growth, typical of urban populations of Canada geese.

new location without the benefit of adult geese to initiate a migratory pattern. That is, young geese were moved to a new location, did not know where to fly, and no one was there to show them.

Population Numbers

Environment Canada states that Canada geese have increased dramatically in abundance and geographic distribution during recent decades. By their estimate, at least 7 million Canada geese are present in North America. The population status of each subspecies is provided in the Migratory Birds Regulatory Report Series (see www.ec.gc.ca/rcom-mbhr). In many urban regions the population growth is exponential (e.g., the Capital Regional District on southern Vancouver Island, Figure 2).

Management Issues

The arise of huge non-migratory resident goose populations is a relative new phenomenon, but has quickly risen to the top of “pest” problems for many turf, park, school, and farm operators in addition to a significant safety hazard for water reservoir and airport authorities.

Confounding the obvious economic and safety concerns associated with goose management is the responsibly to manage geese within the legislative framework and respect that some goose stocks still have conservation concerns (recall the Dusky geese). In addition, the general public may have substantial concerns with goose management that will need to be respectfully addressed.

Regulatory Considerations

Prior to the consideration of any management program for Canada geese, it is likely that authorizations from the federal government and other levels of government will be required for management activities. Like all migratory waterfowl, geese are protected under the federal Migratory Birds Convention Act (1994) and pursuant Migratory Bird Regulations. This federal piece of legislation does not differentiate nuisance populations and ensures protection to all geese regardless of conservation status. Having stated that, the Canadian Wildlife Service (Environment Canada) provides authorizations for specific management and control activities which are helpful for mitigating conflict between people and geese. To facilitate goose management, Environment Canada has developed a series of handbooks to assist with management planning and best management practices (see www.ec.gc.ca/mbc-com).

Approaches to Management

To appropriately manage Canada geese and allocate resources for effective management several questions need to be addressed which can help form the basis of a Management Plan.

For example:

- 1) Define the problem—are the problem birds resident or migratory? Are the problem birds affecting a small area, (e.g. a field) or a larger area? (e.g. several towns)
- 2) Who are the impacted stakeholders?
- 3) What is an acceptable level of impact from Canada geese? (e.g. tolerance at a park may be higher than tolerance at an airport)
- 4) What is attracting the geese? (e.g. do people feed geese)
- 5) Are any tools in place to control geese? (e.g. hunting within regular hunting seasons)

In general, conducting goose management at the largest possible scale will be most effective so that geese are not bounced back and forth between jurisdictions; wasting resources (e.g., see www.okanangangooseplan.com for an example of a collaborative goose management program in British Columbia).

Summary

In general, the rise of the Canada goose population has come from changes on the landscape, and well-intentioned, but overly successful introductions of subspecies outside of their native ranges. The loss of migratory behaviour and decreased predation in urban environments has developed a robust population almost everywhere introductions were applied.

As a nation, we are suffering from uncontrolled growth of nonmigratory resident geese which need to be managed, but without disregarding native stocks that retain migratory patterns and are more self-regulating. In addition, we should aim to prevent the mixing of migratory stocks with non-migratory geese to ensure subspecies integrity remains intact. Using the tools that are available, under appropriate authorizations, we should humanely control and reduce population growth of introduced populations which were created under artificial conditions. Finding this balance is the conundrum that faces all managers—be it of geese, habitat or other green spaces. But by understanding the issues underlying management, we can move forward making successful and effective decisions. •

References

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Mowbray, Thomas B., Craig R. Ely, James S. Sedinger and Robert E. Trost. 2002. Canada Goose (*Branta canadensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/682> doi:10.2173/bna.682



Non-migratory resident Canada goose nest on houseboat (District of West Kelowna, BC).



Non-migratory resident Canada goose nesting in planter (5th floor balcony), (Kelowna, BC).



The result of geese grazing on pasture.

National Audubon Society. 2012. Christmas Bird Count Results Data and Research. Available: <http://birds.audubon.org/christmas-bird-count> (Accessed June 2012).

Additional Sources of Information

Okanagan Valley Goose Management Program: www.okanangangooseplan.com

Environment Canada: <http://www.ec.gc.ca>

US Humane Society Canada Goose Egg Addling Protocol: www.humanesociety.org/assets/pdfs/WILD_Goose_Egg_Addling_Protocol.pdf