

Branta canadensis

System: Freshwater_terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Aves	Anseriformes	Anatidae

Common name Canada goose (English), bernache du Canada (French), ganso Canadiense (Spanish), branta kanadarra (Basque), ganso do Canadá (Galician), oca del Canadá (Catalan)

Synonym *Anas canadensis* , Linnaeus, 1758
Branta canadensis maxima , Delacour, 1951
Branta canadensis moffitti , Aldrich, 1946
Branta canadensis parvipes , Cassin, 1852
Branta canadensis interior , Todd, 1938

Similar species

Summary *Branta canadensis*, Canada geese are very adaptable. They can live in a broad range of habitats, which includes cohabitation with humans. In addition, Canada geese are highly fecund and lacking in amount of predators. Population growth of this species over the past years has caused problems in many different areas including environmental, aesthetic, and human health. Canada geese can either be migratory or resident, which enables them to occupy a large geographical range. This species has created issues not only in areas where it has been introduced, but also in its native locations due to the population explosion of the species. Although this species has created problems, it also has been of economic use as well as being, at times, an enjoyable aspect of wildlife.



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GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Branta canadensis*

Species Description

Branta canadensis are a diurnal species, but they may be active day or night during migration (NatureServe, 2008). They are known for their v-shaped flying patterns. In fact, migratory flight of this species signals the beginning of fall (USDA Wildlife Services., 1998). Individuals have a grayish-brown body and wings. They have a white breast, black feet, bill and neck as well as a characteristic white patch on each cheek. They range in size from 3 to 15 pounds, with males typically being in the 8 to 14 pound range, and females being slightly smaller (7 to 12 pounds at maturity). Males are referred to as gander and females referred to as geese (Yocom, 1970). When individuals are in flight, they show large, dark wings, a U-shaped white rump and white under-tail feathers. In addition, they have a distinctive musical honking call (Invasive Aliens in Northern Ireland, 2005). Because of their weight, Canada geese require a low flight angle of about 13 degrees to take flight (Gosser, Conover & Messmer, 1997). In fact, Canada geese may exhibit the largest size variation of any animal species in the world (Smith, Craven & Curtis, 1999). Large Canada geese may even have a wingspan of 6 feet (USDA Wildlife Services., 1998). This species has two distinct behavioral patterns: truly migratory and non-migratory/resident (French & Parkhurst, 2001). Flocks of family groups migrate together (NatureServe, 2008). During their molting in late-June to mid-July, Canada geese undergo complete simultaneous replacement of all their flight feathers. This process takes a little less than a month to complete in which time the geese are unable to maintain sustained flight (French & Parkhurst, 2001). Nonbreeding yearlings, nonnesting adults, and adults whose nests have been destroyed are usually the first to molt (Smith, Craven & Curtis, 1999). An adult Canada goose may produce 1 to 2 pounds of guano per day (Filion, Kidd & Aguirre, 2006). Canada geese are very persistent and adaptable (Gosser, Conover & Messmer, 1997).

Notes

Population growth is most rapid in urban areas with little shooting pressure and correspondingly low adult mortality (Allan, Kirby & Feare, 1995). There are few natural predators to Canada geese to keep them in check, thus in areas where they are protected from legal hunting, there has been a population explosion over the past 20 years (MacGowan, Loven & Whitford, undated). In fact, the population explosion is largely due to human factors such as encouragement of hunting restrictions and artificial water sources of food and water created by humans in addition to humans giving "handouts" or feeding the geese (Maccarone & Cope, 2004). Predators of goose eggs include crows, ravens, magpies, seagulls, skunks, and raccoons. Coyotes, red foxes, mink, domestic and feral dogs, and snapping turtles are predators of juveniles (French & Parkhurst, 2001). In North America, Canada geese are protected under the Migratory Bird Act of 1918, which made it illegal to harm, take, or possess migratory birds, any parts of the bird, their nests, or their eggs, except during the hunting season, or by special permit (MacGowan, Loven & Whitford, undated).

Lifecycle Stages

Shortly following the construction of the nest, the laying of the eggs begins. Females lay one egg about every 1 and a half days and the average clutch size is about 5 or 6 eggs per nest but can range from 1 to 15 eggs (French & Parkhurst, 2001). Eggs are cream colored (USDA Wildlife Services., 1998). The clutch size may be linked to energy reserves. For example, migration distance from the last feeding grounds should correlate negatively with total energy investment in eggs (Sjöberg & Sjöberg, 1992). The female will not begin incubating the eggs until all of them have been laid in order to ensure that hatching will occur at the same time. Incubation lasts about 25 to 30 days. Once a clutch begins to hatch, it could take from 8 to 36 hours for them to be completely hatched out (French & Parkhurst, 2001). Canada geese are precocial; they are born with their eyes open, down covered, and able to move about freely (USDA Wildlife Services., 1998). Goslings will be mobile within 24 hours after hatching. The parents will continue to defend the goslings for about 10 weeks, then the goslings will be self supporting and fully capable of sustained flight. "Gang broods" may form, which are goslings from several family broods that join together. These "gang broods" can include up to 100 goslings. Juveniles typically reach maturity at age 2, but usually do not breed before the age of 3 years. Canada geese are relatively long-lived. In fact, it is not unusual for an individual to live up to 25 years. The average annual mortality rates for Canada geese range from 20 to 52 percent. The survival of first year resident birds ranges between 70 and 90 percent. Conversely, migratory birds have a survival rate that ranges from 25 to 80 percent. Males usually suffer a higher mortality rate than females, which is primarily due to greater hunting loss (French & Parkhurst, 2001).

Uses

In the United States, Canada geese greatly contributed to the economy specifically in 1996 when nationwide hunting resulted in 1.3 billion dollars in total hunting related expenditures. In addition, communities derive economic benefit from other recreational benefits associated with geese, which includes activities such as birdwatching (French & Parkhurst, 2001). Canada geese may be a sustainable target for dead bird surveillance activities. Based on experiments, Highly Pathogenic Avian Influenza (HPAI) Virus can be expected to produce pronounced neurologic signs and high deaths in this group (Pasik, Berhane, Embury-Hyatt *et al*, 2007).

Habitat Description

Migratory Canada geese spend spring and summer on breeding grounds in the northern part of their range and then they fly south to their wintering range during the fall period. Conversely, the resident individuals spend most of the year in the same general area and only fly far enough to find food or open water (French & Parkhurst, 2001). Individuals tend to favor grassland associated with water bodies. These habitats are mostly found in many urban and rural parks, thus also being areas where you can find many Canada geese (Feare, Sanders, Blasco *et al* 1999). In urban settings, Canada geese also prefer large lawns that are next to a body of water having few obstructions so that any predators can easily be seen (Elvecrog, undated). This species is native to North America where it occupies a wide range of habitats from tundra to woodland lakes and prairie. In areas of Europe where it has been introduced, this species is closely associated with larger waterbodies, both coastal and freshwater (Invasive Aliens in Northern Ireland, 2005). Warmer temperatures and longer days of spring bring an increase in activities of Canada geese (MacGowan, Loven & Whitford, undated).

Reproduction

This species is highly fecund, usually producing up to 6 young per pair and having high fledging success (Allan, Kirby & Feare, 1995). Males and females form pair bonds and remain together for life, only selecting a new mate if one dies. Each pair constructs a bowl-shaped nest approximately 1 and a half feet in diameter. Nests are usually made from vegetation and then lined with down feathers that have been plucked from the female's breast. Pairs will locate their nest beneath shrubs or small trees, in a raised patch of wetland vegetation, or on an elevated artificial nest platform. Pairs like to nest in areas of low nest concentration, however, they may sometimes nest within 10 feet of each other. Both sexes defend the nest site until all the eggs are laid, at which point the male becomes the defender while the female incubates the eggs. Canada geese will produce only one brood per year unless the clutch is destroyed by a predator or humans.

Nutrition

Adult and immature food habits of Canada geese cause them to be both granivores and herbivores (NatureServe, 2008). They spend the majority of daytime hours foraging for food. In addition, they can feed while in motion about 70 percent of the time, moving from plant to plant and rarely staying in one spot for very long (Elvecrog, undated). Canada geese forage on tender new shoots and stems of grasses, clover, watercress and aquatic plants. They also feed on agricultural grain crops such as corn, soybeans, and wheat. Goslings require a high protein diet for proper development, so they will consume insects, small crustaceans, and mollusks attached to aquatic vegetation, thus making Canada geese carnivorous at times (French & Parkhurst, 2001). Canada geese have low digestive efficiency. Therefore, food will pass through their digestive system in an hour or sometimes even a half hour. This is the reason for such large amounts of feces (Elvecrog, undated).

General Impacts

Experiments have shown that in some regions, the feces of the Canada goose contains Fecal Coliform Bacteria, which may contribute to pollution of water systems due to large amounts of their fecal deposits in the water (Aldersisio & Deluca, 1999). Aircraft collisions with Canada geese are a huge issue due to the damage caused to the aircraft as well as threatening the lives of people aboard (Baxter & Robinson, 2007). Canada geese trample vegetation and compact soil, which creates a "hard pan" that prevents new growth of vegetation (French & Parkhurst, 2001). Flocks of Canada geese can dramatically change grassland and wetland habitats through trampling, grazing and enrichment caused by their droppings. In addition, some authorities consider abundant droppings in public places to be a health hazard due to the bacteria they contain (Invasive Aliens in Northern Ireland, 2005). Individuals can be aggressive at times. They will aggressively charge people and pets and possibly bite them (MacGowan, Loven & Whitford, undated). Canada geese are suspected of transmitting salmonella to cattle, and a potential exists for individuals transmitting disease or parasites to humans (Smith, Craven & Curtis, 1999). Canada geese are also susceptible to influenza A virus and may be a risk factor if individuals are living close to domestic poultry (Bonner, Lutz, Jager *et al*, 2004). In total, the actual or perceived problems that are associated with large numbers of Canada geese include financial (crop loss), aesthetic (unsightly droppings), environmental (eutrophication of waterways), and human health-related issues (pathogenic bacteria in droppings, aircraft strikes, nuisance) (Maccarone & Cope, 2004).



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Management Info

Integrated management: Combining habitat management, behavioural modification of birds, and where necessary, population reduction, is necessary for management of Canada geese (Allan, Kirby & Feare, 1995). An integrated approach combining several techniques is usually the key to successful programs. Long term solutions usually require some form of population management to stabilize or reduce goose numbers (Smith, Craven & Curtis, 1999).

Preventative measures: In agricultural areas, the use of sonic deterrents such as propane cannons, cracker shells, screamers, and sirens have been implemented to control goose damage to agriculture (Castelli & Sleggs, 2000). Distress calls of Canada geese can also be recorded and played back as a means to scare them. In addition, reduce the amount and attractiveness of forage that exists near ponds and small bodies of water, and reduce the amount of fertilizer, thus decreasing nutritional quality of the forage. Reduce total amount of lawn area, planting the area between the water's edge and the foraging area with plants that are less palatable to geese. Visual devices such as simple strobe lights, might be sufficient to startle the geese providing temporary relief from nighttime goose problems. Other visual devices used to scare Canada geese include scarecrows, mylar reflective tape strung between posts, rubber snakes, owl effigies, and "eyespot" balloons. Harrassment by radio-controlled toy aircraft or boats present a threat to geese in addition to spray devices (pressurized water sprayers).

Physical barriers such as boulders strategically placed around the perimeter of a body of water create a potential hiding spot for predators, thus making that area not as desirable to the geese. This type of border also prevents the geese from easily moving to and from the water to the grassy feeding areas (French & Parkhurst, 2001). Pond edges could also be completely fenced in order to achieve the same result. It will deter geese from that area, especially during molting. Eliminating food handouts to Canada geese can help to alleviate the problems associated with large numbers of geese in an area. Access to ponds and other desirable areas can also be restricted by bordering ponds with a boardwalk or boulders over 2 feet in diameter, planting thick shrubs or hedges, or placing a short fence in the water and surrounding it with aquatic vegetation (Gosser, Conover & Messmer, 1997). Reducing or eliminating mowing helps to manage geese due to the fact that geese will have more difficulty locating new shoots in taller grass (MacGowan, Loven & Whitford, undated).

Chemical: The technique of population management involving coating of the eggs with a cheap and readily available chemical, liquid paraffin, to prevent hatching has been practiced (Baker, Feare, Wilson *et al* 1993).

Physical: Border collies have been used to harrass geese from an area, although this would require 24 hour harrassment per day at one site (Castelli & Sleggs, 2000).

Pathway

Individuals were established in Sweden for the purpose of establishing a population for hunting (Josefsson & Andersson, 2001). In addition, the impetus for the increase in the range and size of the Canada goose population was deliberate translocation of the population explosion of Canada geese in North America is due to human factors, which include management programs that have encouraged population growth (Maccarone & Cope, 2004). In England, the Canada goose was originally presented to the delight of Charles II (Invasive Aliens in Northern Ireland, 2005).

Principal source: [French, Lisa and Jim Parkhurst., 2001. Managing wildlife damage: Canada goose *Branta canadensis*. Undergraduate, Department of Fisheries and Wildlife Sciences, and Associate Professor and Extension Wildlife Specialist, respectively; Virginia Tech](#)
[Elvecrog, Haley., undated. The impact of *Branta canadensis* herbivory on shoreline restorations. Restoration and Reclamation Review. Student Online Journal University of Minnesota, St. Paul, \(MN\) USA](#)
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Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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Review:

Publication date: 2010-10-04

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Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

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Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals. Available from:

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