

# Canada Goose Ecology and Impacts in New Jersey

Fact Sheet FS1214

## Cooperative Extension

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One of the most widely distributed waterfowl species in the United States is the Canada goose (*Branta canadensis*). Due to habitat loss and overexploitation in the 19th and early 20th century, the Canada goose population rapidly declined to near extinction. Through regulatory actions, habitat restoration, and species conservation initiatives, the population rapidly recovered and then expanded, with current numbers far exceeding historic estimates. Canada geese are now found in every state throughout the U.S. (except Hawaii) and every province in Canada for at least part of the year. Considered a nuisance by some and a culturally important species by others, resident geese significantly affect both human and ecosystem health. An understanding of Canada goose history, ecology, and behavior will assist decision-makers in the successful management of populations.



Figure 1. Canada geese (*Branta canadensis*) are easily identified by their black head and white chinstrap.  
Photo credit: Brooke Maslo

## Biology of Canada Geese

There are 11 subspecies of Canada goose, four of which occur in New Jersey including the Atlantic (*Branta canadensis canadensis*), giant (*canadensis maxima*), interior

(*canadensis interior*), and western (*canadensis moffittii*) Canada geese. These birds range from two to three feet in height and 15 to 22 inches in wingspan and weigh, on average, seven to 14 lbs (females are slightly smaller). Canada geese have black heads and tail feathers, light gray to dark brown breasts, and grayish-brown wings and backs (Figure 1). The characteristic white patch covering their throat (or *chinstrap*) immediately distinguishes Canada geese from other waterfowl species. Canada geese are found in several natural and manmade habitats, predominantly in areas where a body of water exists adjacent to an open landscape. In New Jersey, Canada geese occur in lakes, ponds, rivers, open fields, airports, and parks. Manicured lawns with adjacent stormwater retention ponds (e.g., golf courses, corporate lawns, etc.) are highly attractive habitats. Canada geese are generally herbivorous, preferring grasses, aquatic vegetation, clover, grains (e.g., corn, soybeans), berries, and seeds. In some cases, this species will consume crustaceans, insects, and small fish.

The average lifespan of Canada geese ranges between 20-25 years. Geese reach sexual maturity at two to three years of age, after which they form life-long monogamous mating pairs. Nesting in New Jersey begins in March, with females laying a clutch of four to six cream-colored eggs in a large ground nest (2 ft in diameter) of twigs and other vegetation lined with breast feathers. Nests are usually located on a slightly elevated mound within 150 ft from the water's edge, but they have also been documented in parking lots and on rooftops and abandoned cars. While the nest itself is usually somewhat concealed, geese prefer to place their nests in open areas where they have a good view of approaching predators. The female incubates the eggs while her mate stands guard at a distance. Approximately 25–30 days after the last egg is laid, the eggs hatch. Newly hatched geese (or *goslings*) are covered

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in soft, yellowish down. As *precocial* animals, they can see and walk almost immediately after hatching and must leave the nest within 24 hours to begin feeding. Although goslings acquire their adult plumage in three to four months, they may remain with their parents for up to a year.

Towards late spring when breeding has finished, Canada geese enter an eight to ten week molting period, where they lose and then replace their primary (flight) feathers. During this time, the birds are incapable of flight and rely on water bodies as a refuge from predators. Successful breeders caring for goslings regain their flight feathers by the time the goslings are able to fly. In many northern states, unsuccessful breeders or subadults migrate northward before molting (termed *molt migration*), congregating in large flocks close to water to reduce predation risk. However, in New Jersey most Canada geese molt locally due to the abundance of suitable habitat.

## Resident vs. Migratory Canada Geese

Two classes of Canada geese exist in the U.S. *Migratory* Canada geese (considered the Atlantic population) are those that breed north of the continental U.S., in Alaska, Canada, Newfoundland, and Labrador. These birds spend the nonbreeding season in the U.S. and northern Mexico and are present typically between October and February. *Resident* Canada geese are those that spend the entire year within the continental U.S. These geese were introduced along the Atlantic Coast in the early 1900s from a semi-domesticated stock to be used as live decoys for sport hunting. When federal regulations prohibited live decoys in 1935, these geese were released into the wild. Although they are not considered migratory, some resident geese, typically located in northern states close to Canada, do undergo molt migrations within the U.S. There are no distinguishing morphological characteristics between resident and migratory geese. Identification of resident geese is strictly by their presence and breeding behaviors during the spring season.

## Why Are Canada Geese Overpopulated?

The current estimated population of resident Canada geese in the eastern U.S. is greater than one million birds; in New Jersey alone, there are an estimated 81,000 individuals (based on 2012 surveys). These extraordinary numbers are the result of a combination of several factors. First, Canada geese are extremely

adaptable and benefit significantly from human dominated landscapes. Large expanses of mowed lawns adjacent to stormwater detention basins, landscape designs typical of corporate campuses, residential developments, and golf courses, are perfect habitat for Canada geese, which prefer open land adjacent to bodies of water. Detention basins provide refuge from predators. These turf lawns are often heavily fertilized, increasing their quality as a food resource. In addition, as many Canada geese nest in urban/suburban landscapes, where fewer predators exist, nest and gosling survival are high. Finally, recreational hunting of Canada geese is less popular relative to other waterfowl; therefore, adult survival is high.

## Ecological Impacts

At appropriate densities, Canada geese provide many ecological benefits. Geese disperse seeds by consuming fruits and berries and then depositing the seeds in feces in another location. They also enrich ecosystems through nutrient inputs (feces) and as prey items for several predatory species, including raptors, foxes, coyotes, and snakes. However, an overabundant Canada goose population can negatively impact ecosystems. Large groups displace other native waterfowl, reducing the availability of food, shelter, and nesting sites. Canada geese frequently overgraze natural habitats, particularly along fresh and brackish water shorelines, which directly reduces plant species diversity. Vegetation loss along shorelines results in increased erosion and sedimentation of water bodies, as soil and other particulates are suspended in the water column. Excessive quantities of fecal matter both in and around water bodies largely contributes to declines in water quality. Excess phosphorus and nitrogen in the water cause significant increases in the productivity of phytoplankton (termed *eutrophication*), which depletes dissolved oxygen levels, causes fish die-offs, and can be toxic if ingested by wildlife or livestock. Due to their preference for young plant material, Canada geese also thwart ecological restoration efforts by consuming or trampling recently planted vegetation.

## Impacts on Human Health and Safety

### Disease

Canada geese are carriers of several bacteria and parasites that may be pathogenic to humans. The bacterium most commonly associated with Canada goose droppings is the fecal coliform, *Escherichia coli*. While *E. coli* is a normal inhabitant of the gastrointestinal tract of warm-blooded animals and is

usually harmless, some pathogenic strains have been found in Canada goose droppings. Other bacteria that have been documented in droppings include species of *Campylobacter* (enteritis) and *Salmonella*, *Legionella pneumophila* (Legionnaires disease), and *Toxoplasma gondii* (toxoplasmosis). No evidence exists linking these illnesses to direct contact with Canada goose droppings; however, exposure to water contaminated with goose feces is a possible epidemiological risk.

## Air Strikes

Canada geese can be a significant threat to aircrafts, creating potentially dangerous takeoff and landing conditions. Of the approximately 95,000 bird-aircraft strikes that occurred in the U.S. since 1990, about 5,300 involved Canada geese. While the majority of goose air strikes do not cause serious damage or injury, a threat to human safety does exist, particularly to those traveling in smaller aircrafts. As engines continue to be designed, Canada geese and other birds are less able to detect approaching aircrafts, which may potentially increase air strikes in the future.

## Nuisance Behavior

Canada goose flocks tend to occur in areas commonly used for recreational purposes, such as parks, athletic fields, and shorelines. Accumulation of feces potentially creates a foul odor and slippery conditions, and these areas quickly become unattractive to people. In general, Canada geese are docile animals. However, when protecting nests and goslings, geese can become aggressive. Attacks are rare, but they can cause injury to small children and pets.



Figure 2. Canada geese (*Branta canadensis*) can cause significant damage to agricultural crops.

Photo credit: USDA APHIS Wildlife Services

## Agricultural Damage

Canada goose damage in agricultural systems can be severe, particularly during the molt migration when energy demand is at its peak. Crops are primarily vulnerable in the spring when seedlings first emerge and in late summer and fall when seed heads mature. Preferred crops include field and sweet corn, soybeans, and winter wheat, but geese also consume a wide array of vegetables, several grains, and sod. Evidence of damage includes clipped stalks and leaves, combined with the presence of goose droppings (Figure 2).

Livestock may also be at risk from the presence of Canada geese on farms. Transmission of avian influenza or Newcastle Disease from Canada geese to chickens and turkeys is possible (although unlikely). In addition, water sources contaminated by feces may impact domestic livestock.

## Coexisting with Canada Geese

Appropriate management of the resident Canada goose population in New Jersey can reduce negative human-geese interactions and improve overall ecosystem health. An integrated approach will be most effective. A detailed description of population management strategies for Canada geese can be found at [wildlife.rutgers.edu](http://wildlife.rutgers.edu).

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