

Controlling Conflicts with Resident Canada Geese in Maryland

Canada geese are a valuable natural resource and a source of recreation to the general public, bird watchers, and hunters. Of all the waterfowl, geese are particularly opportunistic and can easily become accustomed to people. In many areas of the United States, resident Canada goose populations have increased dramatically since the 1960's. Flocks of non-migrating Canada geese have become established throughout Maryland and other Atlantic flyway states. In urban areas, Canada geese have responded to landscape features that provide expanses of short grass for food, lack of natural predators, absence of hunting, and hand feeding by some people.

Although most people find a few geese acceptable, problems develop as local flocks grow and the droppings become excessive (a goose produces a pound of droppings per day). Problems include over-grazed lawns, accumulations of droppings and feathers on play areas and walkways, nutrient loading in ponds, public health concerns at beaches and drinking water supplies, aggressive behavior by nesting birds, and safety hazards near roads and airports. Geese can also damage agricultural crops by excessive grazing.

The information contained here describes the most effective methods available to discourage geese from settling on your property and to reduce problems with geese that have already become established on a site.

Legal Status

The Migratory Bird Treaty Act (16 USC 703-711) protects Canada geese, their nests and eggs. This federal law prohibits capturing or killing Canada geese outside of legal hunting seasons.

Presently, the U.S. Fish and Wildlife Service allow property owners to conduct certain control methods with the appropriate authorization. Most permits are issued to destroy nests and to oil and addle eggs; authorization is also given to kill geese on farms or other agricultural facilities where geese damage commercial crops; and in some cases, permits may be given to landowners suffering damage. At qualifying sites, communities are issued federal permits for goose roundups; and the meat is processed and donated to food pantries.

General Biology

In Maryland "resident" or nonmigratory Canada geese originated from the release of decoy flocks during the 1930's and government and private stocking programs. Many flocks were started with giant Canada geese brought from the Midwest. The earliest Canada goose stocking in Maryland dates back to 1935 when a group of 41 geese were transplanted from the Midwest to Blackwater NWR (National Wildlife Refuge) in Dorchester County. Resident geese, as their name implies, spend most of their lives in one area, although some travel hundreds of miles to wintering areas. Resident geese are distinct from the migratory population that nests in northern Canada. Banding studies have shown that resident geese are not simply migrant geese that stopped flying north to breed. In fact, Canada geese have a strong tendency to return to where they were born and use the same nesting and feeding sites year after year. This makes it hard to eliminate geese once they become settled in a local area.

Because of their short migrations and their association with nonhunted locales in urban areas, resident Canada geese have low exposure to hunting in the fall and winter and have high survival relative to migrant geese. The result is that they live longer; 15-25 year old resident geese are common. They also tend to breed earlier in life and lay larger clutches of eggs and nest in a more hospitable environment than migrant geese.

Most resident geese begin breeding when they are 2-3 years old and they nest every year for the rest of their lives. They mate for life, but if one member dies, the other will mate again. Geese lay an average of 5 eggs per nest, and about half will hatch and become free-flying birds in the fall. A female goose may produce more than 50 young over her lifetime.

The annual life cycle for geese begins in late winter when adult pairs return to nesting areas in late February or March. Egg laying and incubation generally extend through April, with the peak of hatching in late April or early May, depending on location in the state. Geese will aggressively defend their nests, and may attack if approached. Non-breeding geese often remain nearby in feeding flocks during the nesting season. After hatching, goose families may move considerable distances from nesting area to brood-rearing area, appearing suddenly "out of nowhere" at ponds bordered by lawns.

After nesting, geese undergo an annual feather molt, a 4-5 week flightless period when they shed and re-grow their outer wing feathers. Molting occurs between mid-June and late July, and the birds resume flight in August. During the molt, geese congregate on ponds or lakes that provide a safe place to rest, feed, and escape danger. Severe problems often occur at this time of year because the geese concentrate on lawns next to

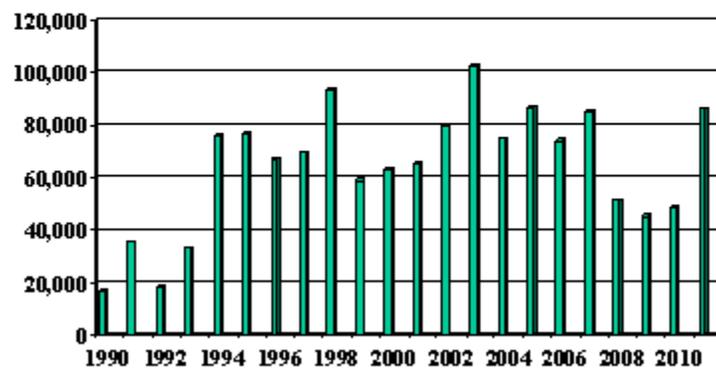
water. Some geese without young travel hundreds of miles northward to favored molting areas. These "molt migrations" account for the disappearance of some local goose flocks in early June.

After the molt and through the fall, geese generally increase the distance of their feeding flights and are more likely to be found away from water. Large resident flocks, sometimes joined by migrant geese in October, may feed on athletic fields and other large lawns during the day, and return to larger lakes and ponds to roost at night. This continues until ice or snow eliminates feeding areas and forces birds to other open water areas nearby or to the south, where they remain until milder weather returns and nesting areas open up.

Population Growth

In Maryland, most resident Canada geese are found west of Chesapeake Bay, mainly in the Piedmont region. Breeding waterfowl surveys conducted annually in Maryland between 1990 and 2011 showed that the number of resident geese increased from about 25,000 to over 60,000 by the mid 1990s and then declined to less than 60,000 after 2007.

Estimates of Resident Canada Geese in Maryland 1990-2011



Damage Prevention: A Community Effort

Reducing damage caused by Canada geese takes the cooperation of the entire community.

It may surprise you, but the first steps do not involve geese.

Step 1: Decide if you are truly dedicated

It is easy to talk about controlling Canada goose damage, but mounting the necessary efforts on a long-term basis is not easy. If a community makes only a minimal, short-term effort, no reduction in damage will likely occur; and the time and money spent will be wasted. The ultimate goal is to solve conflicts humanely with minimal controversy. Each landowner and community will have their own tolerance for and relationship with Canada geese. The challenge is to balance the need for nuisance relief with appropriate respect for wildlife. Because Canada geese may fly from lake to lake within an area, the plan also should include working with neighboring communities and property owners to reduce goose damage and population growth in their areas as well. If your community decides to commit resources to control goose damage according to the methods provided in this booklet, go to Step 2.

Step 2: Set up an infrastructure

Although it is important to have a committee for support, one person should be in charge. This person, whether elected or appointed, should: (1) have the desire and ability to lead other community members in measures to control geese; (2) have the authority and the support of the community to modify the surrounding habitat as needed; (3) be well educated on goose management issues; and (4) be willing to communicate regularly with a qualified wildlife biologist about the latest goose abatement methods. Once this person is chosen, go to Step 3.

Step 3: Assess and document the problem

Arrange for a USDA Wildlife Services biologist to visit with the community leader selected in the previous step to document damage and past attempts to solve goose damage problems. Before the meeting, fill out as completely as possible a history of goose conflicts and management efforts. The wildlife biologist will discuss all control methods that can be used to reduce goose damage. The wildlife biologist and community leader should then meet with other community members to answer questions and explain any abatement methods or habitat modifications being considered. After this meeting, the wildlife biologist will suggest an integrated pest management approach, which will use many control methods to solve the problem rather than relying on a single method. Although the wildlife biologist will help develop a plan, it is up to the community to adopt and use it.

Types of Control Methods

Five different classes of methods are available to reduce goose damage:

- **Habitat modification**
- **Exclusion**
- **Harassment**
- **Chemical repellants**
- **Lethal control.**

To effectively reduce goose damage, the community leader selected to manage geese, with the guidance of the wildlife biologist, needs to use as many methods as possible.

Note: Typically, Canada geese cannot fly from mid June to early July when they molt their primary flight feathers. Because it is illegal to harm Canada geese, harassment may not be an option during the flightless period. If there is a question about the legality of a technique in your area, contact the USDA Wildlife Services.

When considering nuisance goose control methods for an area, you have to consider several things, i.e., how large is the problem area; how do the geese get there; and what specifically is the problem. Additionally, it is important to consider how large of an area do you want or need to have control over the problem. Use the following as a guideline in evaluating control methods for your area.

The first question to ask is - How did the geese get to the problem site? If geese ALWAYS walk to the site, then consider exclusion techniques. If they fly onto the site, use harassment techniques.

There are many ways to discourage Canada geese from settling in your area. No single technique is universally effective and socially acceptable. Persistent application of a combination of methods is usually necessary and yields the best results.

Goose problems in suburban areas are especially difficult because birds are not afraid of people and may become accustomed to scaring techniques. Also, some techniques aren't compatible with desired uses of suburban properties. For example, loud noisemakers in residential areas, putting grid wires over swimming areas, or letting grass grow tall on athletic fields or golf courses are not practical remedies in those situations. But don't rule out any technique that might be feasible; dogs under strict supervision can safely be used in parks and schools, and controlled hunting has been successfully used at some golf courses in Maryland.

Initiate control measures as soon as you notice geese in your area, and be persistent. Once geese settle in a particular location, they will be more tolerant of disturbances and be difficult to disperse. No method works well with just a few attempts, and a comprehensive, long-term strategy is usually needed.

Control measures work in various ways. Some reduce the biological carrying capacity of an area to support geese by reducing food or habitat. Other methods disperse geese to other sites where, hopefully, they are of less concern. Some techniques reduce the actual number of geese to a level that people can tolerate ("social carrying capacity").

Control techniques described here include only those that have the best chance for success based on past experience. Other methods may work, and new techniques will undoubtedly be developed in the future.

Habitat Modification

Canada geese require upland and aquatic habitats for resting, feeding, and breeding. Habitat modification involves physically altering property to make it less attractive to Canada geese. Modifications made to your property should focus on eliminating or reducing nesting sites and food sources, as well as the access between these items and your pond or lake. Habitat modifications make a property or area less suitable to geese and limit the number that can exist on the property or area.

Remove nest structures

When Canada goose populations were low in the 1960s, nesting structures or tubs were a popular management tool used to augment available nesting sites, compensate for a lack of nesting materials and provide a nearly predator-free environment for the hen to incubate the clutch. Needless to say, Canada geese have made a phenomenal recovery and nesting tubs are no longer necessary. Every community that is serious about reducing Canada goose damage should remove all nesting tubs as soon as possible.

Discontinue feeding

Although many people enjoy feeding waterfowl in parks and on private property, this often contributes to goose problems. Feeding may cause large numbers of geese to congregate in unnatural concentrations. Well-fed domestic waterfowl often act as decoys, attracting wild birds to a site. Feeding usually occurs in the most accessible areas, making a mess of heavily used lawns, walkways, roads, and parking areas.

Supplemental feeding also teaches geese to be unafraid of people, making control measures less effective. Feeding may be unhealthy for the birds too, especially if bread or popcorn becomes a large part of their diet. Once feeding is discontinued, geese will disperse and revert to higher quality natural foods. Geese that depend on human handouts are also less likely to migrate when severe winter weather arrives, and are more vulnerable to disease.

Feeding of all wild and domestic waterfowl on both public and private property in urban situations should be prohibited as an important step in controlling Canada goose problems. A public education program should accompany the initiation of an anti-feeding ordinance to stimulate public interest, participation, and support. An anti-feeding ordinance must be enforced to be effective and may require a penalty sufficient to deter the activity. An alternative punishment to fines is to require "community service" (e.g., cleaning up droppings) for violations. An example of a no-feeding ordinance is included with this information for adoption by housing associations, municipalities, and county governments.

In public areas, signs should be posted that read, "Do Not Feed Waterfowl." People who feed the geese need to be educated about the problems they are creating. When fed by hand, geese become concentrated, making them more aggressive toward people because they are expecting to be fed. Hand feeding also makes geese more susceptible to diseases, such as avian botulism and avian cholera. Moreover, artificial feeding, especially with bread, rarely provides the proper nutrients that geese require. Thus, artificially fed geese often develop wing deformities, which hamper their ability to fly. In situations where city officials are trying to disperse large concentrations, a no-feeding ordinance may need to be passed and enforced. See the end of this document for an example of an ordinance and signs that you can copy and use for your community's no-feeding campaign.

Remove domestic waterfowl

Domestic waterfowl, including mute swans, act as decoys for Canada geese when they are flying over an area. If you allow these birds to remain, they often attract geese into areas where they are not wanted.

Steepen Banks of Ponds and Creeks

Canada geese prefer a gentle, grassy slope coming out of the water that enables them to easily walk into and out of the water to feed or rest. If access to the water is poor, the adult geese may leave that area to raise their young elsewhere. To steepen the shoreline, build a vertical seawall 3 feet above the surface of the water or create a sharp angle from the water's edge. Allowing vegetation to grow tall along this slope will help protect it from erosion and keep the geese from walking up. Rip-rap, while ineffective on gentle slopes, is often effective on steeper ones.

Manage Grass and Plants

Eliminate mowing: Geese graze on grass. Grass that is frequently mowed and is fertilized is an excellent food (proteins and carbohydrates) for geese. Mowed lawns also provide loafing areas where predators can be seen from a distance. By eliminating mowing at least 20 feet from pond shorelines or in even larger tracks of land, geese will be encouraged to shy away from these areas and look for safer spots with better food sources. Long, poorly-fertilized grass is a poor food for geese and much less attractive. Canada geese are reluctant to walk through high vegetation; tall grass management limits the number of geese that can use an area. To make grass areas less attractive to geese: (1) limit lawn sizes; let grass grow 10 inches to 14 inches tall, (2) especially along shorelines; and (3) limit the application of fertilizer on grass areas to reduce the nutritional value of grass to the birds.

Plant Less palatable plants and grass: Replacing plants that geese like to eat with ones they do not typically bother may discourage them from remaining in an area.

Geese prefer:	Geese do not prefer:
Kentucky bluegrass Brome grass Canary grass Colonial bentgrass Perennial ryegrass Quackgrass Red fescue	Mature tall fescue Periwinkle Myrtle Pachysandra English ivy Hosta or plantain lily Ground juniper Switch grass

Land Use Regulation and Planning: Municipal planning boards and other regulatory authorities should work with developers and property owners to assure that urban and suburban landscapes which promote goose damage are not developed within the area under control of the cooperators. Geese prefer to build their nests on islands, peninsulas, and undisturbed grounds. Typically, they build nests on the ground close to water, hidden by vegetation. However, geese are very adaptable and nest in a variety of habitats, including woodlands, flower gardens, and rooftops. During landscaping, do not create small islands or peninsulas in ponds; where these features already exist, consider changes to make these areas unavailable to waterfowl. Local zoning regulations may be a way to discourage habitat developments that favor geese.

Allow water to freeze

Aerating ponds is one of the reasons Canada geese have become year round residents in this northern climate. Allowing a pond to freeze over will force the geese to seek alternative water sources and may encourage them to migrate. Concentrations of geese will maintain open water even in below freezing temperatures. Harassment may be necessary to force the birds to leave long enough for the ice to form.

Exclusion

Exclusion methods are used to keep geese from entering specific areas. Some methods listed are inexpensive and simple, while others are more complex and costly. When used correctly, especially in conjunction with other management tools, exclusion can be effective.

Barriers: Grids

To diminish the attractiveness of a lake or pond construct a grid of suspended wires over the water to deny the birds' access to the surface. Grids can be made of single strands of #14 wire or 80 to 100-pound monofilament line arranged in 10 to 15-foot squares. Each wire must be secured so that it remains 12 to 18 inches above the water surface. This method does not work well on ducks, but has been effective in keeping geese off lakes and ponds.

Fencing: Artificial/Natural

Geese prefer to land on water and walk up onto adjacent grassy areas to feed and rest. Perhaps the most effective tools for controlling goose movement, especially during the summer flightless period, are fences, hedge rows, and other physical barriers. All fences should completely enclose the site, with no breaks for geese to sneak through. To be effective, fences should be at least 30 inches tall (48-60" to block aggressive birds) and be solidly constructed. Chicken wire (2" x 2" mesh) or welded wire fencing (2" x 4" mesh) is durable and will last years. New types of strong light weight and nearly invisible plastic or nylon fencing is also available, but will have to be replaced more often. Snow fencing or erosion control fabric may be used as a temporary barrier to molting geese.

Some homeowners have found that a fence made of two parallel monofilament fish lines (20 pound test) strung 6 inches and 12 inches above ground level and secured by strong stakes (6-foot intervals) is quite successful in excluding geese. However, occasional bird mortality has been reported due to entanglement. Therefore, these lines must be erected securely on stakes and checked periodically to prevent this type of problem. Some success has been reported with low voltage electric fencing. Fences may be beautified or hidden by planting hedges of boxwood or privet.

Canada geese typically prefer to use a route from a body of water that allows them a clear view of predators. By planting large, dense shrubs or placing large rocks (4 feet in diameter or more) along a shoreline, you may create a barrier that geese will be reluctant to penetrate.

Use Scaring Devices

Various materials may be used to create a visual image that geese will avoid, especially if they are not already established on a site, such as newly seeded areas. Geese are normally reluctant to linger beneath an object hovering overhead. However, visual scaring devices are not likely to be effective on suburban lawns where trees or other overhead objects exist and where geese have been feeding for years.

Mylar Tape

Mylar tape is a visual barrier that can be used in conjunction with other exclusion methods. Mylar tape is 1/2 inch wide, red on one side and shiny on the other. The tape reflects sunlight to produce a flashing effect. When a breeze causes the tape to stretch, it pulsates and produces a loud, humming noise that repels birds. To discourage geese from walking up onto lawns from the water, create a fence along the water's edge by stringing one or two strands between two posts and twist the tape two or three times. To ensure maximum reflection and noise production, leave some slack in the tape and twist the material as you string it from stake to stake. When the wind blows, the tape rotates, creating a flash between the red and shiny sides. This unfamiliar flash acts as a visual barrier and makes the geese shy away from the area.

Harassment

It is permissible to harass Canada geese without a Federal or State permit, as long as these geese are not touched or handled by a person or the agent of a person (e.g., a trained dog). Landowners wishing to chase Canada geese from their property using any of these techniques should check with local law enforcement agencies (Police) about noise control ordinances, fire safety codes, or restrictions on possession and discharge of firearms. A county, township, or municipal permit may be required for this activity. Noisemakers work best as preventive measures before geese establish a habit of using an area and where the birds are too confined to simply move away from the noise. At sites with a history of frequent use by geese and people, the birds may become acclimated in 1-2 weeks. Noise devices are often not effective for moving nesting geese. However, harassment can be very effective in keeping pairs with young from using lawns.

Dogs

Dogs trained to chase but not harm geese have become one of the most popular and successful methods to disperse geese from golf courses, parks, athletic fields, and corporate properties. While some nuisance animal businesses use highly trained border collies, just about any athletic, medium large dog capable of obeying commands can be used. Control of the dog is vital because dogs used in this manner are legally considered an extension of your hand and must not be allowed to catch, injure or kill a Canada goose. Except where permitted, compliance with local leash laws or park regulations is still required. Initially, chasing must be done several times per day for several weeks, after which less frequent but regular patrols will be needed. Geese will not become acclimated to the threat of being chased by dogs.

This method is most practical where the dog and handler are onsite at all times, or where daily service (as needed) is available from private handlers. Another approach is to allow dogs to roam freely in a fenced (above ground or "invisible" dog fence) area that is not open to the public, but this may be less effective. Dogs generally should not be used when geese are nesting or unable to fly, such as during the molt or when goslings are present. Use of dogs may not be practical near busy roads or where a property is divided into many small sections by fences, buildings, or other barriers. Also, dogs can not easily repel geese from large water areas, but may be able to keep geese off shoreline lawns or beaches. Although this technique has proven effective, it is often expensive and labor intensive. Harassment should continue and be repeated until the geese leave the area permanently.

Lasers

Relatively low-power, long-wave length lasers (630-650 nanometers with red beams) can effectively disperse some problem bird species under low-light conditions. Canada geese have shown extreme avoidance of laser beams. Although they should never be pointed directly at people, roads or aircraft, lasers are safe and effective species specific alternatives to pyrotechnics, shotguns and other traditional harassment tools. They can be expensive, costing \$1,000 and up, and are only effective in low light from sunset through dawn.

Remember: Treat lasers like a long-range firearm by considering the background; range of the beam, which is like the projectile; and the reflection, which is like a ricochet. Always consult the owner's manual for safety information before using.

Automatic Exploders

Automatic exploders are machines that ignite acetylene or propane gas to produce loud explosions at timed intervals. When properly employed, particularly in agricultural damage situations, these machines can scare geese off areas when the landowner is not around to use shell crackers or other pyrotechnics. A permit may be required to use automatic exploders, since there is some fire hazard and they create loud noises. Check for local noise control ordinances. Best results are achieved when the machine(s) is relocated around the property every 3 -5 days. Explosions should be discontinued once geese have left the area. Automatic exploders can be purchased at farm supply centers or refer to the source list at the end of this narrative.

Where discharge of firearms is allowed, occasional shooting of geese can increase the effectiveness of noisemakers, as geese associate the sound with a real threat. A special Federal permit is needed to shoot geese outside of established hunting seasons.

Use Flagging and Balloons

Canada geese are reluctant to linger beneath an object hovering above them. Flagging can be made of 3 - 6-foot strips of 1-inch colored plastic tape or 2 x 2-foot pieces of orange construction flagging. Large balloons, 30 inches in diameter, filled with helium, and tethered on 10 to 30-foot long monofilament fishing lines (50 to 70-pound test) will often keep geese from feeding and resting on lawns. Numerous flags or balloons may be needed to protect each acre of open lawn. Use light colored balloons if geese are present at dusk/dawn. Large eye spots, located so that two are always visible from any direction, will increase a balloon's effectiveness. Periodic relocation of balloons is recommended. Eye-spot balloons may be "homemade" from party balloons, or may be purchased from some garden centers or party supply stores. Balloons should be located where they will not become entangled with tree branches, power lines, etc. They may be subject to theft or vandalism in areas open to the public. If geese become acclimated, frequent relocation of the materials is recommended.

Lawn Sprinklers

In some situations, lawn sprinklers will be effective in preventing goose use of lawn areas. Geese do not like the noise and disturbance created by pulsating sprinklers. Use of sprinklers is most effective in small sections of lawn immediately around the sprinkler head.

Remote Control Boats

For small ponds, remote control boats can be used to repel geese, and may be practical if local hobbyists are willing to help out.

Chemical Repellants

A common request of people experiencing damage is for a chemical spray to repel the geese from an area. Although there are many home remedies, of which few are legal, over-the-counter products are few because of the strict registration requirements. Chemical sprays registered for these specific applications, can be somewhat expensive and are, therefore, not suitable for all situations. To be registered, a product must be shown to have little or no adverse environmental impact while demonstrating it can do what the manufacturer claims. Even so, the use of these products, like any other control technique, does not guarantee success and should be used as part of an integrated management plan. Some of the products currently registered are listed below. See "Supply Sources" near the end of this document.

Methyl Anthranilate

There are several products using the active ingredient methyl anthranilate (MA) (artificial grape flavoring): ReJeX-It Migrate, GooseChase and Goose-BGone. These products help change the birds' behavior. When applied to grass where geese feed, methyl anthranilate makes the grass unpalatable. Geese may still frequent the treated area, but they will not feed there.

Methyl anthranilate is a human-safe food flavoring derived from grapes. The material is available at some garden centers and cost about \$125 per acre per application. Several applications per year are usually necessary. Methyl anthranilate will not wash off after a rain if allowed to dry first, but must be reapplied after mowing. Therefore, it is most practical and cost-effective for homeowners with only small areas of lawn to protect. For best results, follow directions on product labels: if too diluted, it won't work, if too concentrated, it can kill the grass. ReJeXiT® or Goose Chase® may not be used in ponds or wetlands in Maryland.

Anthraquinone

Flight Control, a relatively new product containing anthraquinone, repels geese in two ways. First, geese experience a strong, harmless "gut reaction" after eating the grass. Secondly, the grass appears unnatural and uninviting because the anthraquinone brings out the ultraviolet spectrum when applied to turf. Combining the strange look of the grass with the intestinal

reaction they experience, geese will look elsewhere to loaf and feed. Flight Control will not wash off after a rain, but needs to be reapplied after mowing. Adding a growth regulator can keep the grass from growing as rapidly. This product is considered to be environmentally safe and does not produce long-term physical effects on the birds that ingest it. Although results may vary, several studies have indicated this product to be very effective.

Lethal Control

Hunting

Wherever possible, hunting should be encouraged during established hunting seasons in accordance with Federal, State, and local laws and regulations. Hunting in suburban areas is often limited by lack of open space and local ordinances prohibiting discharge of firearms. Where feasible, however, hunting can help slow growth of resident goose flocks. Hunting removes some birds and discourages others from returning to problem areas. Hunting also increases the effectiveness of noisemakers, because geese will learn that loud noises may be a real threat to their survival. Hunting is considered to be the most important management tool for controlling local Canada goose populations.

The Maryland DNR will work with landowners and local units of government to make hunting more effective in solving local goose problems. Cooperators should consider opening nontraditional areas such as parks, estates, golf courses, and corporate facilities to landowner-controlled hunting. It may be necessary to acquire exemptions to municipal ordinances to permit hunting in these nontraditional areas.

Canada goose hunting that targets local flocks is permitted in Maryland during September, prior to the fall arrival of migratory Canada geese from Canada. An 80-day regular Canada goose season is also held in the fall and winter in central and western Maryland to target resident Canada geese.

To hunt waterfowl, a person must have a valid Maryland hunting license (which requires a hunter safety course), a Federal Migratory Bird Hunting and Conservation Stamp, and a Maryland Migratory Bird Stamp (includes HIP certification). Only non-toxic shot may be used for waterfowl hunting. Hunters should check local laws regarding discharge of firearms. Landowners concerned about potential conflicts can limit the number of hunters and times they allow hunting on their property.

Cooperators should review the goose problem affecting their properties, and contact the USDA Wildlife Services (1-877-463-6497) for technical assistance in controlling nuisance Canada geese and/or the Maryland DNR to develop all potential hunting opportunities. Contact the nearest Maryland DNR - Wildlife and Heritage office to obtain assistance in developing hunting programs and copies of the annual Maryland Migratory Game Bird Hunting Season synopsis or go to http://www.dnr.maryland.gov/wildlife/Hunt_Trap/index.asp.

Control Goose Nesting

Geese usually return in spring to the area where they hatched or where they nested previously. Over time, this results in increasing number of geese in areas that once had just a few birds. Local population growth may be controlled by preventing geese from nesting successfully. Although it is difficult to eliminate nesting habitat, harassment early in spring may prevent geese from nesting on a particular site. However, they may still nest nearby where they are not subject to harassment. If nest prevention fails, egg adding or oiling of eggs prevents the embryo from developing and prevents hatching. This can be done by puncturing, shaking, freezing, or applying 100% food grade corn oil to all of the eggs in a nest. The female goose will continue incubating the eggs until the nesting season is over. If the nest is simply destroyed, or the eggs removed, the female may re-nest and lay new eggs.

If you are a landowner, public land manager, or local government in the Maryland or the District of Columbia, you may obtain legal authorization to destroy Canada goose nests and eggs on your property between March 1 and June 30 to resolve conflicts with geese and to prevent injury to people, property, agricultural crops, or other interests. Before any goose nests or eggs may be destroyed, landowners must go on-line at <https://epermits.fws.gov/eRCGR/geSI.aspx> to register with the U.S. Fish and Wildlife Service. Landowners must register employees or agents that may act on their behalf. Registration is free and is valid for one nesting season and must be renewed each year before nests and eggs may be destroyed. No State permit is required to destroy nests or eggs in Maryland.

Canada Goose Egg Oiling Video

<http://www.youtube.com/usdaaphis#p/a/u/0/2CLIL-381Lw>
(courtesy of USDA APHIS Wildlife Services)

Canada Goose Egg Oiling Brochure

Go to: http://www.aphis.usda.gov/publications/wildlife_damage/index.shtml then click on Management of Canada Goose Nesting.

Egg treatment helps in several ways. First, it directly reduces the number of geese that will be present on a site later in the year. Second, geese without young will be more easily repelled from a site after the nesting season. Finally, if conducted on a large enough scale (throughout a town), it can help slow the growth of a local goose population, and over time lead to stable or declining numbers. Egg treatment may be necessary for 5-10 years before effects on goose numbers are evident.

Controlling Geese that Damage Agriculture Crops

Agricultural producers including landowners, operators, and tenants actively engaged in commercial agriculture may kill Canada geese on lands that they personally control and where geese are damaging agricultural crops with proper authorization. While State authorization is required to conduct this control, a federal permit is not required. Goose nests and eggs may only be destroyed between March 1 and June 30, and geese may only be killed between May 1 and August 31. All management actions must occur on the premises of the depredation area. Geese may not be taken in a hunting manner, e.g., decoys and calls may not be used. For agricultural producers to obtain a free State permit, they may apply in person or by telephone to the USDA Wildlife Services, 1568 Whitehall Road, Annapolis, MD 21409, Tel. 1-877-463-6497.

Shooting Geese outside Legal Hunting Seasons

This lethal technique requires a Federal permit issued by the USFWS. Usually a limited number of geese are permitted to be taken with a shotgun no larger than 10-gauge. The use of decoys, blinds, and calls are not permitted. Contact USDA Wildlife Services, Tel. 1-877-463-6497 for additional information.

Capture and Euthanasia

Euthanasia of Canada geese was used as a large-scale damage control measure for the first time in the U.S. in 1996. This technique involves the roundup of geese when they are undergoing their annual feather molt. The meat from the geese is usually given to local food banks. Because of the sociological sensitivity of this action, this technique is used only after other options have been exhausted. The capture and euthanasia of geese requires a Federal permit from the USFWS. Landowners are encouraged to hire USDA Wildlife Services or a state-licensed private nuisance animal control company to carry out this work. Since capture and euthanasia operations are conducted during the summer flightless period (late June and early July), the Federal permit must be completed and submitted no later than May 15. The completed application must include a clear statement of the problem and documentation of the past control techniques attempted with a description of the results. If you want to pursue this alternative, contact USDA Wildlife Services (Tel. 1-877-463-6497) first to obtain a Migratory Bird Damage Assessment done for your property and instructions for obtaining a Depredation Permit application. Applications may be downloaded from:

U.S. Fish and Wildlife Service
Migratory Bird Permit Office
Webpage: <http://permits.fws.gov/mbpermits/birdbasics.html>

For More Information

If the techniques described here are unsuccessful, or if you need more information, contact:

U.S. Department of Agriculture Wildlife Services - Their staff are experts in controlling wildlife damage and can offer valuable assistance in use of fencing, scare devices, chemical bird repellents, harassment techniques, and habitat modification to control or lessen problems with geese and other waterfowl. Wildlife Services can often remove geese from a location where urgent public safety concerns are involved.

In Maryland, contact USDA Wildlife Services at the following location:

USDA Wildlife Services
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
1568 Whitehall Road
Annapolis MD 21409
Tel. 1-877-463-6497

Maryland Department of Natural Resources - The Maryland DNR generally does not provide field assistance to individual landowners with goose problems, but will work with local governments or corporations to develop hunting programs to help control nuisance goose problems. Contact your local Maryland DNR Wildlife and Heritage Service office.

Additional Information

Two excellent reference materials developed by Cornell Cooperative Extension are recommended: Suburban Goose Management: Searching for Balance (28-minute video, \$19.95); and Managing Canada Geese in Urban Environments: A Technical guide (42-page manual, \$10.00). The video provides a general overview of techniques and issues to help communities begin developing an effective action plan. The manual provides additional details for selecting and implementing various techniques to reduce conflicts with resident geese. To order, contact the Cornell University Media and Technology Services Resources Center, Ithaca, NY, Tel. 607-255-2090.

Methods not Recommended

For almost every method that has been tried to alleviate problems caused by geese, there has been success and failure. However, some methods are not recommended here for various reasons. These include: use of swan (real ones create other problems; fake ones don't work); bird distress calls (effective for some bird species, but not proven for geese); scarecrows or dead goose decoys (ineffective for resident Canada geese); use of trained birds of prey to chase geese (labor-intensive, generally not available); sterilization (very labor-intensive for surgery, no chemical contraceptives available in the foreseeable future); fountains or aerators in ponds (not effective, may even attract geese); introduction of predators (already present where habitat is suitable, but none take only geese); disease (impossible to control and protect other animals); and use of poisons and toxicants (illegal).

Plastic Scare Devices

Plastic swans, alligators, owls, snakes and dead goose decoys, as a rule, have not proven to be effective in repelling Canada geese. There have been some reports of dead goose decoys floating in small ponds keeping migrant geese at bay. But in general, the effectiveness of these devices is short lived, and they are not recommended.

Capture and Relocation

Capture and relocation of geese that cause a particular conflict is commonly requested. Goose removal and translocation has been conducted in the past by Maryland DNR when justification was presented by golf courses, homeowner associations, individuals with 'sole ownership', or upon request of local units of government. However, there are no longer sites in the state at which geese can be released without creating additional nuisance problems. Furthermore, opportunities for out-of-state transfer have been virtually exhausted as resident goose flocks now occur throughout the United States and Canada. Thus, the Maryland DNR no longer authorizes the capture and relocation of Canada geese.

Relocation of geese is also less effective than permanent removal. Banding studies have shown that many relocated geese return to their initial capture locations by the following summer. Some have returned to Maryland from as far away as South Carolina. Geese taken short distances (less than 50 miles) may return soon after they are able to fly. Adult geese are most likely to return, whereas goslings moved without parent birds will often join a local flock and remain in the release area. Birds that don't return may seek out areas similar to where they were captured, and may cause problems there too. Many wildlife and animal health professionals are concerned that relocating problem wildlife increases the risk that diseases may spread to wildlife or domestic stock in other areas.

Toxicants

There are no toxicants registered with the Environmental Protection Agency for controlling Canada geese in the United States.

Swans

Some communities have attempted to use swans to discourage pond use by Canada geese. The premise is that these aggressive birds will defend their territory, especially during the breeding season, and will exclude other waterfowl from the area. Because native swans are difficult to acquire, non-native mute swans have been commonly used in other states instead. However, State regulations prohibit the possession of mute swans except by permit. Mute swans negatively impact other native wildlife and plant species. Sometimes the swans are even more aggressive than the geese toward people. Use of mute swans can compound a difficult situation and, therefore, is not permitted in Maryland.

Supply Sources and Services for Controlling Geese

Listed below are suppliers which the Maryland Department of Natural Resources knows carry the product, service, or supply indicated. Inclusion of businesses on this list does not imply endorsement or recommendation by USDA/APHIS/Wildlife Services or the Maryland Department of Natural Resources. Omission of businesses from this list is not intentional. No discrimination is intended against businesses not listed. Product names are mentioned solely to report factually on available data and to provide specific information. This list is for your convenience only and should not be considered an endorsement of the product or supplier.

Goose Repellants

Product: Flight Control
Environmental Biocontrol International
3521 Silverside Road
Wilmington, DE 19810
Tel. 877-55-GEESE
Web address: www.flightcontrol.com

Product: Goose-B-Gone
Bird-Be-Gone Inc.
23918 Skyline
Mission Viejo, CA 92692
Tel. 800/392-6915
Web address: www.birdbgone.com

Product: ReJeX-It Migrate
Ceannard Inc.
P.O. Box 2404
Gastonia, NC 28053
Customer Service: 888-3-BIRDS
Orders: 704-689-5898
Web address: www.ceannardinc.com

Pyrotechnics and Propane Cannons

Margo Supplies Ltd.
Site 20, Box 11, R.R. #6
Calgary, Alberta, Canada T2M 4L5
Tel. 403-285-9731
Fax: 403-280-1252
Web address: www.margosupplies.com

Reed-Joseph International
232 Main Street
P.O. Box 894
Greenville, MS 38701
Tel. 800-647-5554

Sutton Ag Enterprises
746 Vertin
Salinas, CA 93901
Tel. 866-280-6229

Lasers

Sea Technology Inc.
P.O. Box 31151
Albuquerque, MN 87190
Tel. 800-732-2246
Web address: www.aviandissuader.com

Reed-Joseph International Co.
P.O. Box 894
Greenville, MS 38701
Tel. 800-647-5554
Fax: 775-703-2074
Web address: www.reedjoseph.com

Plastic Coated Kevlar Grid Line

Phillystran, Inc.
151 Commerce Drive
Montgomeryville, PA 18936-9628
Tel. 215-368-6611
Fax: 215-362-7956

Remote Controlled Devices
The Goosinator
Web address: <http://www.goosinator.com/>

Mylar Tape

Bird-X, Inc.
Chicago, IL
Tel. 800-662-5021
Forestry Suppliers, Inc.
Jackson, MS
Tel. 800-647-5368
Web address: www.forestry-suppliers.com

Modern Agri-Products
322 Main Street
Lyden, WA 98264
Tel. 360-354-8884

Automatic Exploding Cannons

Reed-Joseph International Co.
P.O. Box 894
Greenville, MS 38701
Tel. 800-647-5554
Fax: 775-703-2074
Web address: www.reedjoseph.com

Forestry Suppliers, Inc.
Jackson, MS
Tel. 800-647-5368
www.forestry-suppliers.com

Ben Meadows Company
Atlanta, GA
Tel. 800-241-6401
www.benmeadows.com

Motion Sprinkler

Contech Electronics
Tel. 800-767-8658

Barrier Fencing

Forestry Suppliers, Inc.
Jackson, MS
Tel. 800-647-5368
www.forestry-suppliers.com

Trained Goose Dogs

Environmental Quality Resources
8711 Snouffer's School Road
Gaithersburg, MD 20879
Tel. 301-208-0123
www.eqri.com

Wild Goose Chasers
1007 Town Point Road
Chesapeake City MD 21915
www.chesapeakewildgoosechasers.com
Tel. 443-553-7828
Email: geeseout@gmail.com

Goose Control Contractors

A-1 Wildlife Management Services
17002 Staytonville Road
Lincoln, DE 19960-3737
Tel. 302-284-2032
Tel. 800-431-2322
e-mail: wildlifede@aol.com

Geese B. Gone, Inc.
Tel. 703-675-5928
Email: GeeseBGone@GeeseBGone.com
Website: www.GeeseBGone.com

Geese Solutions
Serving the DC Metro Area and Frederick County
Tel. 240-832-2506

Maryland Goose Patrol
414 Plainview Avenue
Edgewater, MD 21037
www.marylandgoosepatrol.com
Tel. 443-370-3542
Tel. 443-370-2765

Elements for a Model Anti-feeding Ordinance

Statement of Purpose

To prevent such conduct that may attract and concentrate migratory and domestic waterfowl to properties in..... It has been determined that the presence of large numbers of waterfowl cause a public health nuisance by contaminating drinking water supplies, beaches, swimming facilities, etc.

Definitions

Migratory Waterfowl--ducks, geese, and swans native to North America.

Domestic Waterfowl--Non-native ducks, geese, and swans not retained in agricultural operations.

Feed or Feeding--The act of or the furnishing of food or other sustenance which is essential for growth or maintenance of waterfowl.

Prohibition of Feeding

No person shall feed, cause to be fed or provide food for domestic or migratory waterfowl in _____ lands, either privately or publicly owned.

No person shall create or foster any condition, or allow any condition to exist or continue, which results in a congregation or congestion of domestic or migratory waterfowl.

Enforcement

The Police Department and members of the Department of Health/Parks and Recreation are hereby authorized and directed to enforce this Ordinance.

Violations and Penalties

Persons found to be violating any provisions of this Ordinance shall be first (Given a written warning, which shall be filed with the _____ (appropriate government agency). Any subsequent violations of the Ordinance shall be punishable by imposition of a fine not to exceed \$_____.

**Help Keep
Our Geese Wild**



**Please,
Do Not Feed Them**