

# Controlling Conflicts with Urban Canada Geese in Missouri



CHARLES W.  
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Serving nature and you®





MAURY BEDFORD PHOTO

*Use the information in this booklet to manage the giant Canada goose populations in your area so you won't have to put up signs like this.*

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# GIANT CANADA GOOSE FACTS

Missouri hosts five species of geese each year: Canada, cackling, greater white-fronted, snow, and Ross' geese. However, the giant Canada goose (*Branta canadensis maxima*) is present in Missouri 12 months of the year and is the only sub-species to nest and raise its young here. It also is the one that causes the most problems for homeowners and businesses.

Once thought extinct, giant, or temperate-nesting, Canada geese have made a phenomenal recovery, with approximately 4.8 million birds in the United States. In Missouri, the breeding population is estimated at 65,000 geese.

This recovery has resulted in a number of problems:

- Accumulation of droppings on lawns, ball fields, golf courses and sidewalks
- Erosion on lawns and golf greens
- Personal injuries from attacks when geese defend their nests
- Threats to aviation safety and aircraft
- Destruction of newly sprouted field crops

Although most people enjoy having giant Canada geese around, these waterfowl can cause hundreds of thousands of dollars in damage each year.

Damage caused by geese in Missouri can be significant. Although Canada geese are protected by state and federal laws, many effective control methods can be used to minimize or eliminate damage.

*Note: Some methods, such as egg oiling and addling, require registration or permits before the activity occurs, but many do not. If registration or a permit is needed, see Page 22 for information on how to apply.*



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*Although most people enjoy having Canada geese around, they cause hundreds of thousands of dollars in damage each year.*

## General biology

The average adult giant Canada goose weighs 11 to 12½ pounds, but some reach as much as 16 pounds. They have a wingspan of approximately 6 feet, making them one of the largest flying birds in Missouri. Giant Canada geese generally winter close to their breeding grounds as compared to other subspecies of Canada geese that migrate between nesting and wintering grounds.

Giant Canada geese may become sexually mature as early as 2 years of age, while other subspecies mature at 3 or 4. They generally mate for life with a single partner, but will find another if the first one dies.

In Missouri, geese begin establishing nesting territories as early as February where they remain throughout the nesting season, which

lasts into May. Usually, they establish nests on islands or near water, but occasionally choose rooftops, parking lot islands and large plant pots near building entrances, where they can become a hazard or a nuisance. Each pair produces a single clutch of eggs during the season, but if the nest is destroyed early in incubation, they may produce a second.

Generally, a female Canada goose lays one egg every 1½ days until she has a full clutch of five to six eggs. She remains on the nest for 28 days. The adult geese lead their young to a lake or pond within 24 hours of hatching.

Young Canada geese grow quickly and can usually fly within 70 days of hatching. They imprint on the area where they learn to fly, and are likely to return there to produce young of their own.

Generally, a female Canada goose lays one egg every 1½ days until she has a full clutch of five to six eggs. She remains on the nest, incubating the eggs for a period of 28 days. The adult geese lead their young from the nest to a lake or pond within 24 hours of hatching.

Approximately one-third of the young survive to adulthood. In urban areas, where they are protected from predators and hunting, their survival rate is likely to be higher. Geese sometimes live for 20 years or more.

Canada geese are primarily grazers, feeding on grass and crops. During the summer months when most damage occurs, they are attracted to the succulent new shoots of grass growing on lawns and golf courses, as well as to sprouting crops.

Fecal contamination is the most common Canada goose damage complaint in Missouri. Some studies have shown that geese can leave droppings every seven minutes while feeding. In addition to the unsightly aspects of fecal matter on public walkways and in children's play areas, the accumulation of feces may cause increased levels of fecal coliform bacteria in the water, which could result in closure of public swimming areas.

Canada geese are attracted to areas that have sources of food and water. They prefer bodies of water that have gentle sloping shorelines with manicured lawns, as this habitat provides easy access to food and offers quick escape from predators. The area becomes even more attractive if other waterfowl are present.

Another major attractant is people who feed geese, thus providing an artificial food supply that concentrates the geese in unnatural numbers.



Well-meaning, but misguided people typically feed geese bread, which does not provide the geese with the proper nutrients they require. Even if nutritious food is used, feeding artificially causes large numbers of geese to congregate, which increases spread of diseases such as avian botulism or avian cholera that could potentially affect the entire local goose population. And if artificial feed is not supplied regularly, the concentrated number of birds may cause greater damage to landscaping plants.

### 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 except with a special permit. The U.S. Fish and Wildlife Service offers online

registration for the destruction of nests and eggs (found on Page 22), and allows the Missouri Department of Conservation to issue permits to property owners to help control nuisance geese.

Landowners must register online anytime between January 1 and June 30 of the year in which egg oiling and adding activities take place ([epermits.fws.gov/ercgr/gesi.aspx](http://epermits.fws.gov/ercgr/gesi.aspx)). The registration must be renewed annually and requires reporting the number of nests with eggs destroyed by October 31. In some rare cases, kill permits may be given to landowners suffering damage. At qualifying sites, communities are issued permits for lethal goose removals; and the meat is processed and donated to food pantries.

*Note: To register or apply for permits, see addresses on Page 22.*

## DAMAGE PREVENTION: A COMMUNITY EFFORT

**R**educing damage caused by Canada geese takes the cooperation of the entire community. It may surprise you, but the first steps do not involve geese.

### *Lay the groundwork*

Controlling Canada goose damage is easier said than done. Efforts are long-term and time-consuming. If a community makes only a minimal 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.

A committee should be formed in the community for support, and one person should be in charge. This person must be well educated on goose management issues, have the authority and community support to modify the surrounding habitat as needed, and be willing to communicate regularly with a qualified wildlife biologist about goose abatement methods.



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*An adult Canada goose produces up to ¼ pound of feces daily. The accumulation of feces may cause increased levels of fecal coliform bacteria in the water, which could result in closure of public swimming areas.*

### **Assess and document the problem**

Arrange for a Conservation Department or USDA Wildlife Services biologist to visit with the selected community leader to document damage and past attempts to solve goose damage problems. Before the meeting, fill out the “History of Goose Conflicts and Management Efforts” worksheet on Pages 16–21. 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 sprays
- 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 or Conservation Department office near you. See Page 22 for addresses and phone numbers.

### Habitat modification

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.

#### ***Eliminate artificial feeding***

All artificial feeding should be stopped immediately. 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



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*Artificially feeding geese should not be allowed because the birds become too concentrated and more aggressive. Also, most handouts do not provide the proper nutrients that geese require. A no-feeding ordinance is one of the first steps that should be taken to control concentrations of Canada geese.*

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 Page 24 and the inside back cover for examples of 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 (63 degrees) 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**

Canada geese prefer to eat grass, especially young succulent shoots, found in abundance on mowed, fertilized lawns. The techniques listed below can reduce this goose smorgasbord in your community.

**Eliminate mowing:** Geese like short, succulent grass to feed upon because taller grass isn't as palatable to them. 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.

**Plant native grasses:** Planting tall, lush native prairie grass stands along shorelines provides the same benefits as eliminating mowing because geese cannot see over the grass while they walk through it. Also prairie grass species are not as palatable to the geese as turf grass. Effectiveness is improved by widening the stand.

*Note: Sometimes giant Canada geese adapt to plant barriers and walk through them with little concern.*

**Plant less palatable plants and grass:** Above is a list of plant and grass species that geese generally prefer and do not prefer to eat. By planting the ones they do not prefer and eliminating the ones they do, you can make your property less inviting to Canada geese.

## **Using Plants and Rocks as Management Tools**

Geese prefer Kentucky bluegrass, brome grass, canary grass, colonial bentgrass, perennial ryegrass, quackgrass and red fescue, and a clear line of sight that allows them to spot predators. Replacing traditional mowed lawns with native grasses and plants will help discourage geese from an area. Large, dense shrubs or large rocks (4 feet in diameter or more) placed along a shoreline may also create a barrier that geese will be reluctant to penetrate. The following native species can be used to modify landscapes to make them less goose friendly.

**Shrubs and vines:** American bittersweet, flowering dogwood

**Trees:** eastern red cedar, black oak, northern red oak, white oak, red maple, sugar maple, American sycamore

**At water's edge:** broadleaf arrowhead, cattails, yellow pond lilies (spatterdock), white water-lily

**Drier areas:** New England aster, black-eyed Susan, butterfly weed, common milkweed, daisy fleabane, goldenrod

**Wet shoreline:** boneset, Virginia bluebells

*Note: Sometimes giant Canada geese adapt to rocks and vegetation barriers. If so, fencing may need to be added.*

### **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 Canada geese from entering a specific area. Some methods listed below are inexpensive and simple, while others are more complex and expensive. When used correctly, especially in conjunction with other management tools, exclusion can be effective.

### **Overhead grid systems**

One of the most effective methods of exclusion is the installation of a grid system over the water surface. Grids work on a simple principle: Canada geese are large birds, requiring a long glide-slope to land, much like an airplane. A grid system above the water surface will be seen by the geese as a barrier between them and the water.

Grids work best on bodies of water less than 150 feet across, but can be used on larger bodies up to 300 feet across. Nearly any type of cord can be used to construct the grid, from cotton kite string to plastic-coated Kevlar cord. Anchor points for the grid lines can be trees, wooden stakes or "U" channel fence posts.

Grid system specifications are variable, but spacing the grid lines 20 feet apart and suspending them at



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*Allowing ponds to freeze forces geese to seek alternative water sources and may encourage them to migrate.*

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*Note: To avoid accidentally shocking pedestrians, electric fences should be well marked with signs and not used in public-use areas.*

### **Mylar tape**

Mylar tape is a visual barrier that can be used in conjunction with other exclusion methods. Mylar tape is ½ inch wide, red on one side and shiny on the other. To use as a fence, string one or two strands between two posts and twist the tape two or three times. When the wind blows, the tape rotates, creating a flash between the red and shiny sides. This unfamiliar flash is startling to geese and makes them shy away from the area. Mylar tape suppliers are listed on Page 23.

### **Harassment**

Canada geese seek areas where they can go about their daily activities with minimum disturbance. If someone or something bothers them enough, they usually will find another area where they will not be disturbed. However, they sometimes get used to some harassment techniques when they learn they will not be harmed.

Harassment techniques usually will not stop damage once it has started. They are, however, useful in preventing damage before it begins. If Canada geese were raised in the area or have become accustomed to using it for feeding, they will be more difficult to move. Harassment activities should start early in the nesting cycle when geese are first starting to look at your property in late February or early March.

least 3 feet above the water's surface should be sufficient to exclude geese, while allowing ducks, gulls or other smaller birds' access to the water.

Modifications can be made if water levels change or if geese penetrate the system. For example, geese may land on the shore and walk into the water under the grid.

The solution would be to place a barrier around the water to keep them from entering under the grid. For example, place two strands of cord 6 inches and 12 inches above the ground running the length of the shore and attached to the anchor points. For a more permanent solution, plant a hedge row or install a fence.

### **Fencing**

Because geese can fly, fencing alone may not exclude them from an area.

During the nesting season, opaque fencing can be installed successfully

between a nest and pedestrian traffic to keep geese from attacking. This will allow geese to incubate their eggs in peace while keeping people safe.

Fencing also is effective during the flightless period to prevent geese from entering a large area. During most of the year when geese can fly, short fences can enhance other methods to keep geese off small areas, including lawns and sidewalks, or to prevent geese from walking onto yards next to shorelines.

Fences to consider include: conventional woven wire, snow, chain link, picket, single or dual strands of cord or wire, or chicken wire.

One popular fence that seems to be effective, especially for private yards, is a triple-strand electric fence. The wire should be strung 5, 10 and 15 inches above the ground. The amperage required to exclude Canada geese is minimal and will not harm them.

## Dogs

Using dogs to harass geese from an area has become one of the most popular and successful methods. 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.

Typically, a handler and a dog enter an area occupied by unwanted geese. On command, the dog is allowed to chase after the geese. Geese will likely seek refuge from the dog in a nearby body of water. If this is the case, the dog can be allowed to enter the water. To make this method more effective, use a boat or pyrotechnics to further harass the geese. Harassment should continue and be repeated until the geese leave the area permanently.

## Lasers

Class III B moderately-powered lasers between 5 and 500 mW with red or green beams can effectively disperse some problem bird species under low-light conditions. Canada geese have shown extreme avoidance of these types 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,*



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*Using dogs to harass geese from an area has become one of the most popular and successful methods. While some nuisance animal businesses use highly trained border collies, just about any athletic, medium-large dog capable of obeying commands can be used.*

*which is like the projectile; and the reflection, which is like a ricochet. Always consult the owner's manual for safety information before using.*

## Pyrotechnics

Although not all geese react to pyrotechnics, most do. Pyrotechnics are specially designed Class C fireworks that are used to frighten wildlife. The types of pyrotechnics in this class include:

- **Screamers and bangers** — Large bottle rocket-type devices fired from a 15 mm starter's pistol that whistle loudly or explode. May be used without a permit.
- **Shellcrackers** — Firecrackers fired from a 12-gauge shotgun. A permit is required to use these

and other explosive pest control devices. All have specific storage requirements (check with your local Bureau of Alcohol, Tobacco, Firearms and Explosives office for specific details and visit [www.atf.gov/explosives/explosives-pest-control-device-requirements](http://www.atf.gov/explosives/explosives-pest-control-device-requirements) for more information).

The distance a particular pyrotechnic device will travel varies from 50 to several hundred yards depending on manufacturer and type. Check with the manufacturer to be sure a particular device fits your needs.

Individuals using pyrotechnics should be trained in their use, and should wear eye and ear protection.

Be cautious when using them in populated areas. Suppliers are listed on Page 23.

*Note: Check with local authorities for possible ordinances restricting the use of pyrotechnics before purchasing these devices.*

### **Chasing**

Chasing geese on foot or in a golf cart is labor intensive; but in conjunction with other harassment methods, it can be successful if people are persistent. The idea is to chase geese long enough to cause them to go elsewhere, where they can live without being chased.

### **Other Techniques**

Other techniques that can also be used to harass Canada geese:

- High pressure water sprayers
- Air horns

When coupled with techniques mentioned previously in this booklet, they encourage Canada geese to move from an area. The key is to be more persistent than the geese. As long as the geese are not physically harmed, these harassment techniques are legal.

### **Chemical repellents**

People experiencing goose-related damage commonly request a chemical spray to repel the geese from an area. Although there are many home remedies, few are legal, and 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



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*Harassment devices can be effective to keep geese from overgrazing in urban lawns. Check with local authorities for restrictions on using pyrotechnics and other devices. Some may be restricted or banned in urban areas.*

use of these products, like any other control technique, do 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” on Page 23 for addresses.

#### ***Methyl Anthranilate***

There are several products using the active ingredient methyl anthranilate (artificial grape flavoring): ReJeX-It Migrate, GooseChase and Goose-B-Gone. 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 area, but they will not feed there.

Methyl anthranilate will not wash

off after a rain if allowed to dry first, but must be reapplied after mowing.

#### ***Anthraquinone***

Flight Control is a product that contains anthraquinone and 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



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*When Canada goose populations were low, nesting tubs provided a nearly predator-free environment for the hen to incubate the clutch. Now that the geese have made a phenomenal recovery, nesting tubs are no longer necessary and should be removed from areas where goose nesting is not desired. However, they can be used in areas with localized goose issues to increase egg-oiling efficiency. In rural settings, if geese are nesting on a pond, removing a tub with a nest inside may be all that is necessary to discourage use.*

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**

There are three methods of legal, lethal control, all of which require permits: hunting, nest and egg destruction, and capture and euthanasia.

### **Hunting**

Where feasible, hunting is an important tool for managing problems caused by Canada geese. Hunting helps to reduce the number of birds in an area, provides a strong repellent effect for the geese not taken and reinforces the use of non-lethal techniques, such as pyrotechnics. In Missouri, early goose hunting opportunities are designed to harvest local giant Canada geese before the migrants arrive.

Many areas with resident Canada

geese prohibit the use of firearms. Check federal, state and local regulations before hunting.

### **Nest and Egg Destruction**

Egg addling or oiling prevents the embryo from developing. This popular damage abatement method slows the rapid growth of local goose populations and eliminates the aggression of adult geese protecting their nest.

A pair of Canada geese can increase to more than 50 birds in as little as five years. With sufficient sustained effort, you can reduce the number of geese produced on your property using the methods described on Pages 13-14.

Because geese are federally protected, registration is required for egg and nest destruction activities. The U.S. Fish and Wildlife Service offers online registration for egg and nest destruction at [epermits.fws.gov/ercgr/gesi.aspx](http://epermits.fws.gov/ercgr/gesi.aspx) if the reasons are justified.

### **Capture and Euthanasia**

With authority from the U.S. Fish and Wildlife Service, the Conservation Department issues permits for the removal of localized Canada goose populations from sites where other control measures have proven ineffective. Geese are captured during their flightless period (mid-June to early July), shipped to a commercial processor, and the meat is donated to food pantries for distribution to the needy. This method of last resort is allowed only when other substantial control efforts have been unsuccessful. The requesting party is responsible for all removal and processing costs.

If you are interested in this control method, you will need documentation of the type of damage experienced



*Hunting helps to reduce the number of geese even if only a few are harvested. Check federal, state and local regulations for the area you want to hunt before the season begins.*

### **Toxicants**

There are no toxicants registered with the Environmental Protection Agency for controlling Canada geese in the United States. Therefore, none are recommended.

### **Swans**

Some communities have attempted to use swans to harass 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 are commonly used instead. These birds are much more tolerant of other waterfowl and may only defend the immediate area around their nests. It is not uncommon to find situations where mute swans and Canada geese peacefully share a site, adding to any fecal concerns that may already exist.

Mute swans can even attract Canada geese to bodies of water and also may 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 an already difficult situation and, therefore, is not recommended.

and the control methods attempted at the site. The property owner requesting the round up, or their representative, must submit a round up request in writing to a wildlife damage biologist no later than February 15. Regional Conservation Department office contact information can be found on Page 22.

### **Methods that are not recommended**

The methods listed below are often asked about, but are not considered effective methods of deterrent.

#### ***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.

#### ***Capture and Relocation***

Capture and relocation of geese that cause a particular conflict is commonly requested. This is not a viable solution for adult geese because the birds will imprint on the area where they are raised and learned to fly. Most will return to the capture site or a similar setting.

However, relocation is effective for young, flightless juveniles because they imprint on the release area where they learn to fly rather than returning to the area where they were captured.

## HOW TO ADDLE AND OIL EGGS

**E**gg addling and oiling are effective ways to manage goose populations, but they require a large time commitment, and it is not always an easy task. As a result, some communities enlist volunteers or hire companies that specialize in nuisance wildlife problems.

Register online at **epermits.fws.gov/ercgr/gesi.aspx**. You may register anytime between January 1 and June 30 of the year in which the activity will take place. Registering early will ensure you are ready when the nesting season begins in March and April. Before applying, consider how many nests you usually have every year on your property. You can do this by estimating the number of goslings produced in previous years on your property and on that of your neighbors and divide by five. When your nest treatments are complete, return to the registration site and report the number of nests treated by October 31; this will ensure you are able to register in future years.

Besides registering online, you will also need the following:

- Pail of water
- Data sheets to record information (Make enough copies of the form on Page 15 so you can record all your nests)
- Egg flotation chart (see Page 14)
- A small spray bottle filled with corn oil if you plan to oil eggs (Only corn oil should be used because other types of oil are not registered for this use)

Next, locate all the nests. This is usually fairly easy, although some Canada geese may hide their nests on islands, beneath shrubbery, in high grass or on roof tops. Simply walking around the perimeter of the lake will usually allow you to locate 90 percent of all nests.



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*When addling eggs to help manage geese populations, keep accurate records on a data sheet. See Page 15. Be sure to register online between January 1 and June 30 before undertaking this management program.*

Because Canada geese tenaciously defend their nests, you should be accompanied by another person or a dog to help fend off goose attacks while you addle or oil the eggs.

*Hint: Geese may be easily repelled by stiff-arming them and gently pushing them back to the ground. This will help reduce chances of injury as most injuries associated with goose attacks are related to falling rather than being struck by a wing or being bitten.*

After fending off the geese, check the incubation stage of the eggs. If they are cool to the touch, the female has not finished laying her entire clutch and incubation has not begun. Record this information, on your data sheet and return in one week.

If the eggs are warm, take one or two eggs and place them in a pail of water. By looking at the egg flotation chart on Page 14, note how the egg is floating in the water and record the incubation stage number.

If the eggs are in stage 5 or 6, they can be removed and disposed of by burying. When eggs are at these stages, it means that the geese have nested for at least three weeks and the egg follicles in the female have dried up so no new eggs can be laid.

*Warning: If any of the eggs are pipping or cracking open to hatch, **leave the nest alone**. The eggs are about ready to hatch, and your permit does not allow you to destroy eggs in this stage.*

If the egg is in stages 1 through 4, you can oil the entire clutch. It is not necessary to pick up any of the remaining eggs. Apply the oil to the top two-thirds of each egg. When the top of a round object is sprayed well, excess oil will cover the remaining one third of the egg. It only takes a small amount of oil to prevent the gases from diffusing through the pores of the egg, which cause the embryo to die of asphyxiation.

If shaking eggs, be sure you check and shake each one separately. It is almost impossible to successfully shake an egg in stage 1. Wait until the egg is in stage 2 or 3, when it can be successfully shaken in a few seconds. Vigorously shake each egg until you hear sloshing sounds inside the egg.

After you have either shaken or oiled all eggs, refer to the egg floatation chart below and record the nest stage so you will know when to remove the eggs.

Geese must be allowed to nest for at least three weeks. A nest treated in stage 2 has been incubating for four to eight days; so the waiting period to pick up the eggs is 15 days, which would total three weeks.

You must return to the nest after the waiting period and remove the eggs. If you don't, the female goose will remain on the nest too long, deplete her food reserves and suffer needlessly.

*Warning: Take extreme care when removing eggs from the nest after the waiting period. Because spoiled eggs may explode if dropped, do not toss them. Gently place them in a hole, and bury them as soon as possible.*



DAN MCMURTRY PHOTO

*Addling or oiling eggs, which requires registration and reporting of nest treatment activities, slows the rapid growth of local goose populations and eliminates the aggression of adult geese protecting their young. A dog or another person can help keep the geese away from the nest so the eggs can be addled quickly and safely. Careful record keeping is important so you will know when to remove the eggs from the nest. If you don't, the goose may remain on the nest too long, deplete her food reserves and suffer needlessly.*



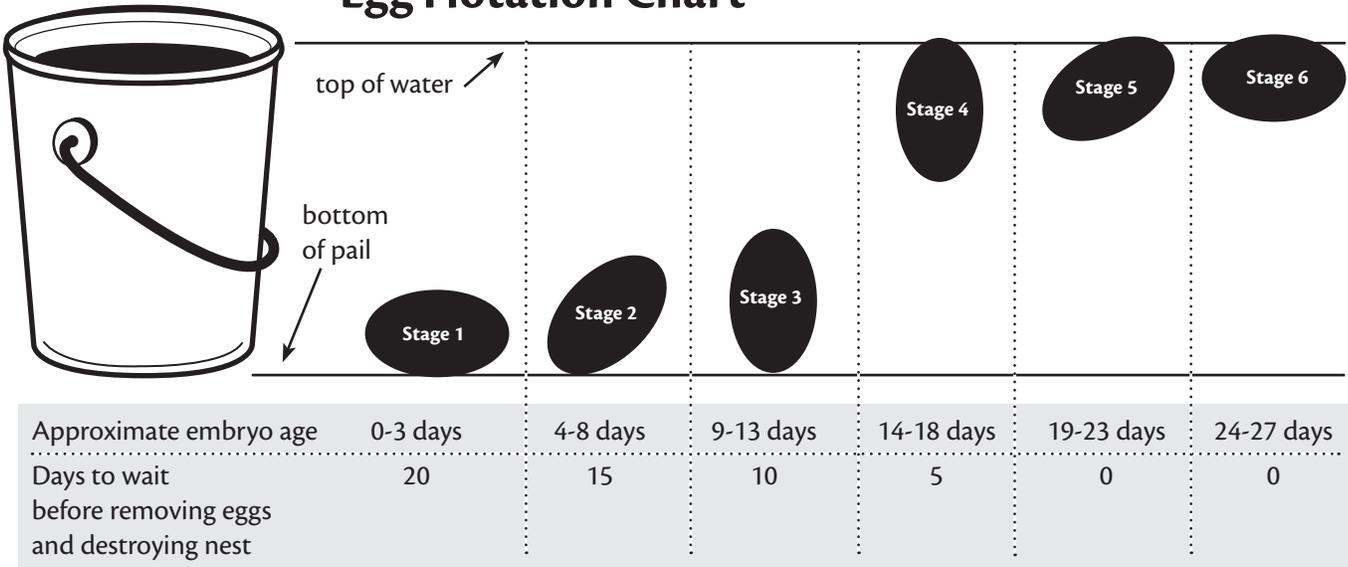
MAURY BEDFORD PHOTO



SCOTT BECKERMAN PHOTO

The geese may become aggressive when you approach the nest to oil the eggs. Bring along a dog or another person to help you.

### Egg Flotation Chart



# Egg/Nest Destruction Data Sheet

Property Name \_\_\_\_\_ Year \_\_\_\_\_

Nest # \_\_\_\_\_

Date of visit	# of eggs in nest	# of eggs treated	# of new eggs in nest	Embryo stage	Comments

Nest # \_\_\_\_\_

Date of visit	# of eggs in nest	# of eggs treated	# of new eggs in nest	Embryo stage	Comments

Nest # \_\_\_\_\_

Date of visit	# of eggs in nest	# of eggs treated	# of new eggs in nest	Embryo stage	Comments

Nest # \_\_\_\_\_

Date of visit	# of eggs in nest	# of eggs treated	# of new eggs in nest	Embryo stage	Comments

Make as many copies as you need of this form to record all your nests.

# History of Goose Conflicts and Management Efforts

Name of landowner or community: \_\_\_\_\_

Owned by: \_\_\_\_\_ Individual \_\_\_\_\_ Subdivision \_\_\_\_\_ Municipality

Contact person: \_\_\_\_\_

Location of property or address: \_\_\_\_\_

County: \_\_\_\_\_

Total acreage of property: \_\_\_\_\_ (Include map or aerial photo if possible.)

Bodies of water present: \_\_\_\_\_ Type (pond, lake, stream, etc.) \_\_\_\_\_ Acreage \_\_\_\_\_

Briefly describe: \_\_\_\_\_

Number of geese present: \_\_\_\_\_ summer \_\_\_\_\_ winter

Number of nests present: \_\_\_\_\_

Types of problems/damage: \_\_\_\_\_

Length of time problems have been occurring: \_\_\_\_\_

When are problems the worst: \_\_\_\_\_ summer \_\_\_\_\_ winter

## Solutions used to date:

Stopped artificial feeding: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

Human harassment: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

**Solutions used to date (continued):**

Dog harassment: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Pyrotechnics: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Fencing: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Repellents: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Habitat Modifications: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Nest Destruction: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

Egg Oiling/Addling\*: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

\_\_\_\_\_

\*Requires registration on the U.S. Fish and Wildlife Service website: [epermits.fws.gov/ercgr/gesi.aspx](http://epermits.fws.gov/ercgr/gesi.aspx)

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Hunting\*\*: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

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Roundup and Removal\*\*\*: Yes/No \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

Results and comments: \_\_\_\_\_

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Other: \_\_\_\_\_ Dates used: \_\_\_\_\_ Cost \_\_\_\_\_

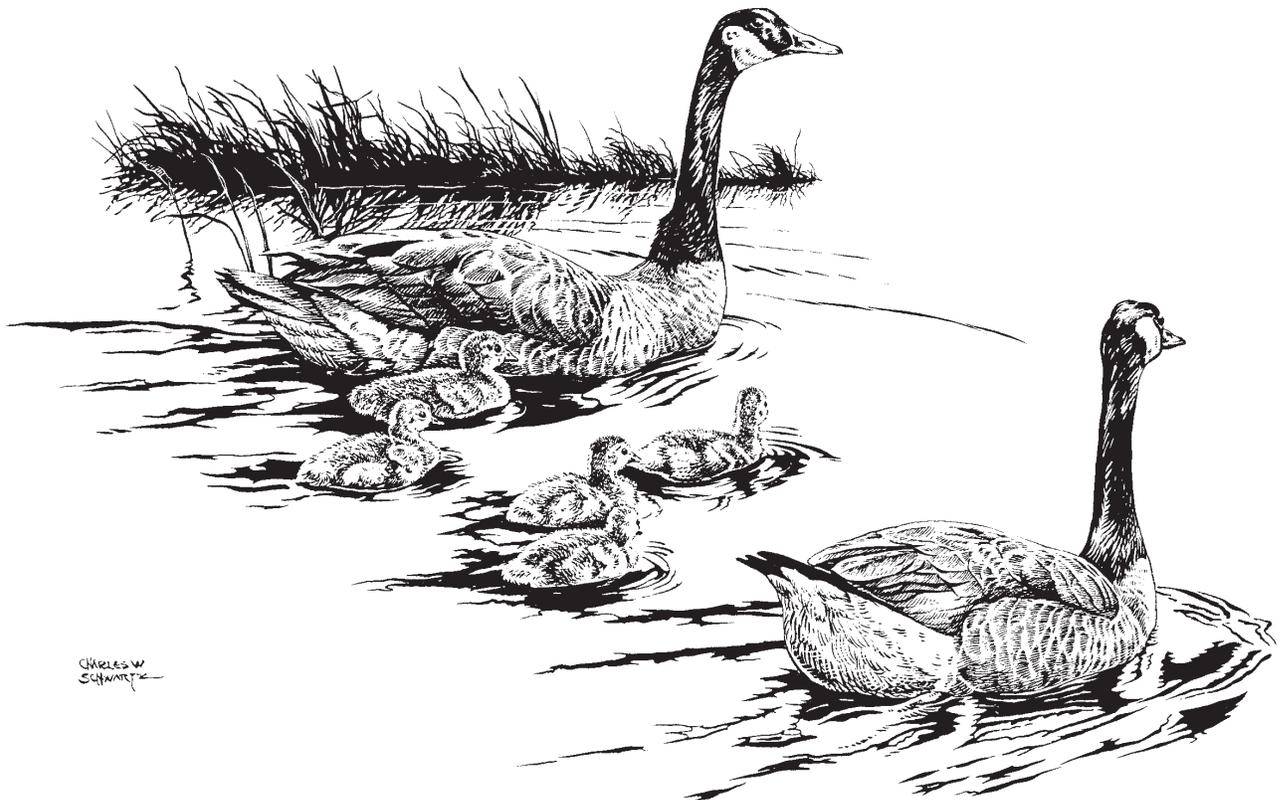
Results and comments: \_\_\_\_\_

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*\*\*Permitted only during the regular waterfowl season or by special permit through the Missouri Department of Conservation. Hunting may be prohibited within municipal boundaries. Be sure to check local ordinances regarding discharge of firearms.*

*\*\*\*Requires special permits that can be obtained through the Missouri Department of Conservation.*



# Management Objectives

## Goose Population Stabilization:

1. What population level is acceptable (i.e., how many geese)? \_\_\_\_\_

2. Do geese need to be removed to reach this level? Yes/No \_\_\_\_\_ If so, how many? \_\_\_\_\_

3. List all landscape modifications that can be used effectively on this property and the date they will be implemented (see Pages 5–8 for examples):

*Type of habitat modification*

*Location*

*Date*

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4. Egg oiling/addling permit obtained from the Conservation Department (date): \_\_\_\_\_

Number of nests: \_\_\_\_\_ Number of eggs in nests: \_\_\_\_\_ Dates treated: \_\_\_\_\_

5. Other Strategies:

*Type of strategy*

*Location*

*Date*

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**Goose Nuisance Abatement:**

“No Artificial Feeding” signs/ordinance put in place (date): \_\_\_\_\_

Harassment methods to be used (see Pages 8–10):

<i>Type of harassment</i>	<i>Dates of use</i>	<i>Projected cost</i>
_____		
_____		
_____		
_____		
_____		

**Goose Removal:**

Number of geese to be removed \_\_\_\_\_

Removal method (roundup, hunting, etc) \_\_\_\_\_

Removal date(s) \_\_\_\_\_

Community authority requesting removal \_\_\_\_\_

Removal agent \_\_\_\_\_

**Assisting Neighbors (check the ones used):**

\_\_\_\_\_ Education efforts within community and surrounding communities

\_\_\_\_\_ Home owner association meeting

\_\_\_\_\_ Local town hall meeting

\_\_\_\_\_ Flyers and other print media

\_\_\_\_\_ Other resources that can be shared \_\_\_\_\_

**Follow-up Monitoring:**

Was there a reduction of geese/human conflict reports? Yes/No \_\_\_\_\_

Was the goose population effectively reduced? Yes/No \_\_\_\_\_

Number of geese after the plan was implemented: \_\_\_\_\_

Did the habitat recover from the goose damage? Yes/No \_\_\_\_\_

**Date of Plan Initiation:** \_\_\_\_\_

**Date of Plan Completion:** \_\_\_\_\_

# CONTACTS FOR PERMITS AND ADDITIONAL INFORMATION

A state permit must be obtained before any activity is conducted that involves the handling of Canada geese or their eggs. For technical information, contact a Missouri Department of Conservation office near you.

## Conservation Department Headquarters

PO Box 180 (ZIP 65102-0180)  
 2901 W. Truman Blvd.  
 Jefferson City 65109-0580  
 Phone: 573-751-4115  
 Fax: 573-751-4467  
 Website: [mdc.mo.gov](http://mdc.mo.gov)

## Conservation Department Regional Offices

Contact the appropriate regional office below if you have questions about permits or need further information about Canada geese.

### Northwest

701 James McCarthy Drive  
 St. Joseph 64507  
 816-271-3100

### Kansas City

12405 SE Ranson Road  
 Lee's Summit 64082  
 816-622-0900

### Northeast

3500 S. Baltimore  
 Kirksville 63501  
 660-785-2420

### Central

3500 E. Gans Road  
 Columbia 65201  
 573-815-7900

### St. Louis

2360 Highway D  
 St. Charles 63304  
 636-441-4554

### Southwest

2630 N. Mayfair  
 Springfield 65803  
 417-895-6880

### Ozark

551 Joe Jones Blvd.  
 West Plains 65775  
 417-256-7161

### Southeast

2302 County Park Drive  
 Cape Girardeau 63701  
 573-290-5730



### For technical information only, contact:

**USDA/APHIS/Wildlife Services**  
 11714 Commerce Court, Suite C  
 Columbia, MO 65202  
 Phone: 573-449-3033  
 Website: [www.aphis.usda.gov/aphis/ourfocus/wildlifedamage](http://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage)

### To register for addling and oiling eggs, contact:

**U.S. Fish and Wildlife Service**  
 Website: [epermits.fws.gov/ercgr](http://epermits.fws.gov/ercgr)

## SUPPLY SOURCES

This is a directory of known businesses that distribute products or provide services for controlling Canada goose damage. Inclusion of businesses on this list does not imply endorsement or recommendation by USDA/APHIS/Wildlife Services or the Missouri Department of Conservation. 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.

### Lasers

Feather-Light Technologies LLC  
2210 Goldsmith Lane, Suite 214  
Louisville, KY 40218  
Phone: 1-800-830-5736  
Email: info@aviandissuader.com  
Website: [www.aviandissuader.com](http://www.aviandissuader.com)

Reed-Joseph International Co.  
800 Main Street  
Greenville, MS 38701  
Phone: 800-647-5554  
Email: sales@reedjoseph.com  
Website: [www.reedjoseph.com](http://www.reedjoseph.com)

**Plastic-coated Kevlar Grid Line**  
Phillystran Inc.  
151 Commerce Drive  
Montgomeryville, PA 18936-9628  
Phone: 215-368-6611  
Email: information@phillystran.com  
Website: [www.phillystran.com](http://www.phillystran.com)

**Mylar Tape and Pyrotechnics**  
Margo Supplies Ltd.  
2727 North Lake Valley Road  
Prescott Valley, AZ 86314  
Phone: 888-652-1199  
Email: info@margosupplies.com  
Website: [www.margosupplies.com](http://www.margosupplies.com)



KIRK GUSTAD PHOTO

*This residential lake with mowed lawns up to the shoreline, along with a fountain to keep the water from freezing in the winter, provides excellent habitat for geese to live year round and to raise their young.*

Reed-Joseph International Co.  
800 Main Street  
Greenville, MS 38701  
Phone: 800-647-5554  
Email: sales@reedjoseph.com  
Website: [www.reedjoseph.com](http://www.reedjoseph.com)

Sutton Ag Enterprises  
1044 Harkins Road  
Salinas, CA 93901  
Phone: 866-280-6229  
Email: info@suttonag.com  
Website: [www.suttonag.com](http://www.suttonag.com)

### Repellents

*Product: Flight Control*  
Arkion Life Sciences, LLC  
551 Mews Drive  
New Castle, DE 29127  
Phone: 877-55-GEESE  
Email: info@FlightControl.com  
Website: [www.flightcontrol.com](http://www.flightcontrol.com)

*Product: Goose-B-Gone*  
Bird-Be-Gone Inc.  
15375 Barranca Parkway #D  
Irvine, CA 92618  
Phone: 866-572-8708  
Email: nobirds@birdbgone.com  
Website: [www.birdbgone.com](http://www.birdbgone.com)

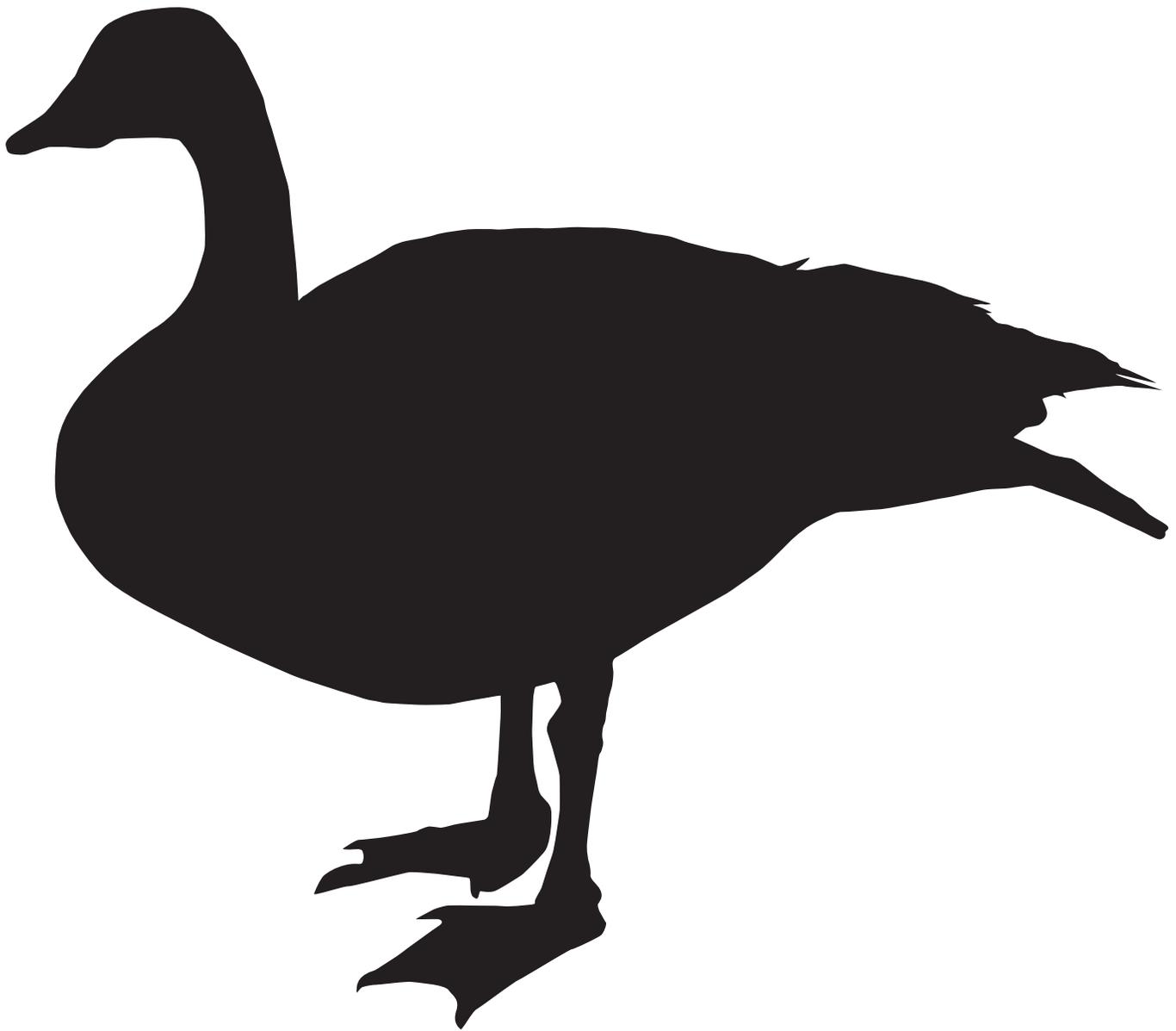
*Product: ReJeX-It Migrate/Avian Control*  
Avian Enterprises, LLC  
2000 Pontiac Drive  
Sylvan Lake, MI 48320  
Phone: 888-868-1982  
Email: sales@aviancontrol.com  
Website: <http://aviancontrolinc.com>

# Help Keep Our Geese Wild



**Please,  
Do Not Feed Them**

**Don't Feed  
the Geese**





*Serving nature and you<sup>®</sup>*

[mdc.mo.gov](http://mdc.mo.gov)