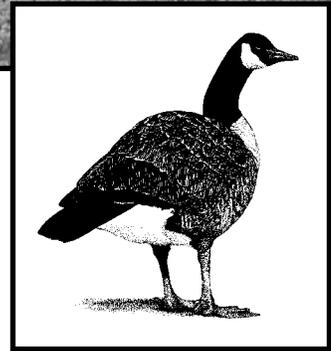


Division of Wildlife

HUMAN - GOOSE CONFLICT



GIANT CANADA GOOSE HISTORY IN OHIO

Giant Canada geese were reportedly extirpated from Ohio between the end of the Civil War and the turn of the century. The Ohio Division of Wildlife initiated a giant Canada goose restoration program with 10 pairs each on three state-owned wetland areas in 1956. Goose population surveys were conducted annually on the three goose management areas since the start of the program; however, the first statewide survey was not conducted until 1979. At that time, Canada geese were nesting in 49 of Ohio's 88 counties with a state population of 18,000 geese. Recent surveys have found goose nests in every county with a population estimate of 84,000 geese, thus this quickly expanding goose population has caused conflicts with our growing human population.



THE HUMAN - GOOSE PROBLEM

Canada geese are probably the most adaptable and tolerant of all native waterfowl. If left undisturbed, they will readily establish nesting territories on any suitable pond, be it located on a farm, backyard, golf course, apartment or condominium complex, or city park. Herein lies one of the major problems. Most people will readily welcome the first pair of geese on their pond, but these geese soon wear out their welcome. In just a few years a pair of geese can easily become 50 to 100 birds that are fouling the area around the pond and surrounding yards, as well as damaging landscaping, gardens, and other vegetation.



Human - Goose Conflict

Additional problems arise when Canada geese feed on agricultural crops. Geese are primarily grazing animals and feed on seeds, grasses, and other young, tender plants. As a result, they can cause damage to crops such as corn, soybeans, sunflowers, and cereal grains when they are in the early growth stage. The key to solving your problem is to make your property less attractive to geese and utilize scare tactics immediately when geese show up.



We have compiled a list of suggestions and techniques for reducing waterfowl conflicts throughout the year. These techniques, especially when employed in combination, have been proven to work. However, they must be employed persistently as soon as the geese arrive on your property. If immediate action is not taken, you will experience much more difficulty in your goose control efforts. A permit is not required to merely scare, repel, or herd nuisance migratory birds, provided no attempt is made to confine the birds or destroy their nests. If, despite your efforts utilizing the following techniques, further control is needed, a special permit is required from the Ohio Division of Wildlife. Contact the nearest wildlife district office listed on the back of this sheet



STATUTORY RESPONSIBILITY

The Ohio Division of Wildlife holds the statutory responsibility for managing Ohio's wildlife resources. At times, certain species conflict with human interest. These sheets are designed to help the landowner or organization alleviate waterfowl conflict situations.

PROTECTED STATUS

Canada geese and all native waterfowl are protected under both the Federal Migratory Bird Treaty Act and Ohio state law. This protection extends to the bird's nest and eggs. It is illegal for any person, agency, or organization to take or attempt to take (pursue, hunt, shoot, wound, kill, trap, capture, or collect), any bird, nest, or egg outside of the regular hunting season without a special permit from the Ohio Division of Wildlife and the U.S. Fish and Wildlife Service.

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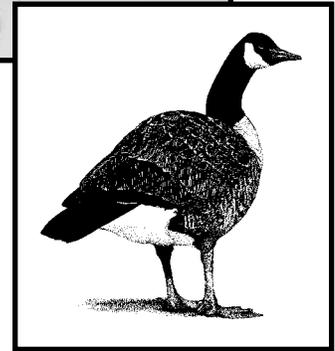
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Division of Wildlife

HUNTING



HUNTING IS USUALLY THE BEST OPTION

Due to fewer natural predators and the large amount of available habitat (e.g., golf courses, corporate ponds, private lakes, etc.), resident goose numbers have increased dramatically the last few years, especially in urban areas. This in turn causes an increase in the number of human – goose conflicts.

The most successful way to keep the goose population in check and resolve human-goose conflicts is to allow hunting. This option is not possible in every location due to city ordinances or for safety reasons. However, if hunting is feasible, this option should be the number one harassment technique used.

Hunting decreases the number of geese; moreover, hunting will make other harassment techniques more effective. Geese become much warier when hunted. Geese that have been hunted notice helium balloons, loud sounds, or anything else unnatural in an area, and they will be more likely to seek a different area to feed and rest than geese that have only been harassed.

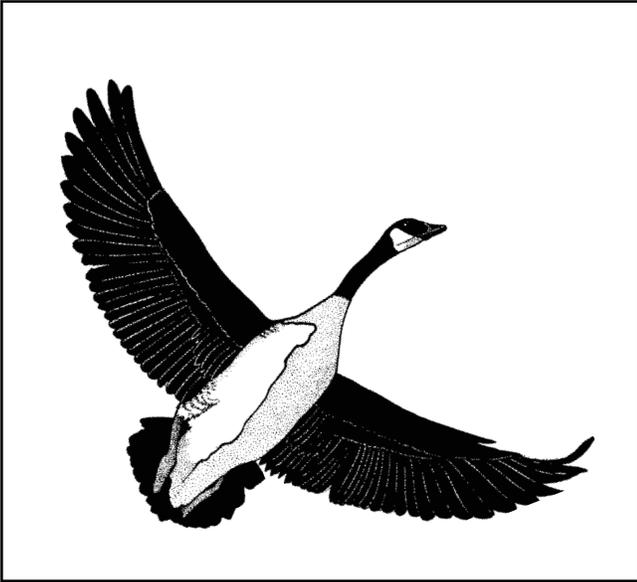


CANADA GOOSE HUNTING SEASON DATES

Canada geese are hunted in the fall and winter throughout Ohio. The Division of Wildlife (DOW) established an early goose season (Sept. 1-15) specifically to harvest resident geese, and many geese involved in conflict situations are taken during this season. Please refer to DOW Publication 298 for more information. Publications can be obtained from DOW district offices which are



Hunting



listed on the bottom of this sheet. The season dates for the regular goose season (Oct. to Jan.) vary from year-to-year depending on the status of the migratory Canada geese which pass through Ohio (DOW Publication 295). A hunting license, state wetlands habitat stamp, federal waterfowl stamp, and a phone-in registration (HIP) are all needed before hunting geese or ducks.

ADVANTAGES OF HUNTING

- Decreases the local goose population
- *Makes other harassment techniques more effective*
- *No cost to landowner*
- *Provides recreation for hunters*
- *Provides food*

ESTABLISHING A GOOSE HUNTING PROGRAM

Goose hunting is well suited to rural agricultural areas; however, hunting within the city limits may raise safety concerns and in most instances will not be feasible. In some situations (e.g., golf courses, large parks away from high-use areas, farms within city limits, and some businesses with a large amount of property), geese can be safely hunted. The local police department should be contacted to receive a variance for discharging a firearm and/or hunting within city limits. The Division of Wildlife does not have the authority to allow discharge of firearms within city limits. Safety concerns related to hunting are noise and pellet fallout (or ricochet).

Goose hunting can be either controlled (limits are placed on who and how many people hunt) or open to the public (with written permission). For most urban/suburban situations the controlled hunt may be the only workable option. Rural hunts can be either open (with permission) or controlled, depending on the location of houses, roads, and adjacent property. In an open hunt, the number of hunters is also controlled but less effort is involved. Contact your county wildlife officer or Division of Wildlife district office for possible waterfowl hunter names.

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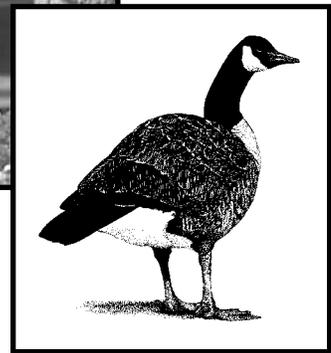
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Division of Wildlife
GOOSE ATTACKS



**GENERAL BACKGROUND
INFORMATION ON ATTACKS**

Geese have adapted well to the ponds and well manicured lawns of urban habitats, which has placed people and geese in proximity to one another. This is especially apparent during the spring when geese aggressively defend their nesting territories. The Ohio Division of Wildlife has documented goose attacks on humans that have caused serious physical injury, such as broken bones and head injuries, and emotional distress. Many of these injuries have occurred when the person tried to avoid an attack and tripped over an object (e.g., stairs, curbs, etc.).

When fed by humans, geese tend to lose their natural fear of people. This lack of fear often leads to more violent attacks during the spring nesting season. In addition, when geese lose their fear they will begin nesting closer to areas that people frequent such as buildings, flower beds, parking lots, picnic tables, etc. People who have had a negative experience are more likely to be afraid of geese upon their next encounter, and often fall victim to attacking geese every time they come into contact with geese. For example, each spring many people are repeatedly attacked by geese nesting next to the entryway of a building they must enter. Individuals who are not afraid of geese usually have trouble understanding how

someone could possibly be afraid of a bird, but to the person who has been attacked and/or injured these threats are real.

**WHY DO GEESE ATTACK ME?
WHY DON'T THEY LEAVE ME
ALONE?**

Breeding instincts are among the strongest drives of animals. Canada geese usually start choosing mates and selecting a territory for nesting in late February to early March. The females start laying eggs anytime from mid-March to mid-May. Incubation by the female begins as soon as all her eggs are laid. The gander's job during nesting season is to defend the female, their nesting territory, and eggs. If a person or another goose enters the territory, the gander will usually give a warning call to the intruder before chasing it away. Some geese can be very aggressive and will only stop their attack when the intruder has left or the goose's life is threatened.



Goose Attacks



WHAT TO DO IF A GOOSE ATTACKS

- Maintain direct eye contact and keep your chest and face pointed at the goose.
- If the goose acts aggressively, calmly and slowly back away, watching for obstacles.
- Maintain a neutral demeanor, i.e., do not act hostile or show fear.

WHAT SHOULD I DO IF A GOOSE ATTACKS ME?

Waterfowl have excellent vision. Geese seem to pay very close attention to the eyes and body language of humans and other animals. An encounter with an aggressive goose can usually be resolved if you maintain **direct eye contact** while facing your body directly towards the attacking goose. **Never** turn your back or shoulders away from the hostile goose, and **never** close or squint your eyes or block your eyes with a purse or briefcase. If the goose makes an aggressive move towards you while hissing or spreading out its wings, you should slowly back away while using your peripheral vision to watch for obstacles you could trip over. Maintain a **neutral** demeanor toward the goose (i.e., do not yell, swing, kick, or act hostile). At the same time, do not cower, hide your face, turn your back, or run from the goose. Over aggression may cause the female to join the confrontation which usually causes an even more aggressive attack from the male. If a goose flies up towards your face, then duck or move away at a 90 degree angle to the direction of flight, still facing the attacking goose.

I AM A FACILITY MANAGER, WHAT CAN I DO?

First, you must stop all feeding of geese and take measures to keep the geese off of your property. If avoidance and harassment tactics have failed to discourage geese from nesting on your property, the Division of Wildlife can issue you a permit to remove the eggs, nest, and/or the offending geese. The landowner or facility manager must first contact your local Division of Wildlife District Office to procure this permit. District personnel will provide you the technical assistance you need to address your goose problem.

Prior to the action, the facility manager should notify all employees that the eggs, nest, and/or geese are being removed for the health and safety of all concerned. Some people will be in favor of the removal, some will be adamantly opposed. You will have a better chance of gaining their consent if you are up front and honest in your explanation. Everyone needs to understand the point of view of the people who are frightened by geese - the ones that will be attacked, several times per day, and who are traumatized just thinking about facing the geese.

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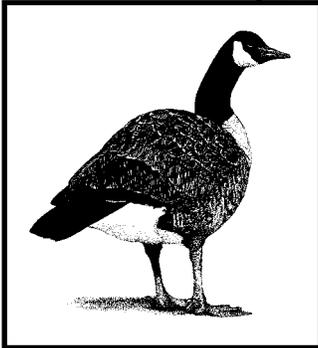
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Division of Wildlife

DON'T FEED THE GEESE



GENERAL BACKGROUND

People residing in urban and suburban areas enjoy seeing and interacting with wildlife. Feeding ducks and geese brings these birds into proximity to people. People that feed wildlife feel they are helping the birds and this provides these people with a sense of well-being and excitement. To the ducks and geese, however, the result of relying on handouts is devastating. Feeding popcorn, bread, or shelled corn is like feeding a child junk food since the geese are not receiving a balanced diet. This activity is a very selfish pursuit when only one party, humans, derives a benefit.

WHAT HAPPENS WHEN GEESE LOSE THEIR FEAR OF HUMANS?

Geese that are fed by well-meaning people lose their natural fear of man and reside closer than normal to humans. This can lead to violent attacks during the nesting season (March, April, May), especially to people who are afraid of geese. Most injuries occur when the person is backing away from the attacking gander and trips over a curb, planter, bumper block, or steps. Parks, businesses, apartment or condo associations may be held legally liable for physical or psychological damages. Thus, the goose feeding creates justifiable public health and safety concerns.



Don't Feed the Geese

NEGATIVE EFFECTS OF FEEDING

- ☛ Lack of balanced diet may cause wing deformity in goslings, hindering the bird's flight ability
- ☛ Feeding causes overcrowding allowing diseases such as botulism and cholera to spread easily and possibly result in massive waterfowl die-offs
- ☛ Geese lose their fear of humans and become aggressive
- ☛ Feeding reduces the need for geese to migrate so they stay in an area longer and create more problems

WHY BIRD NUMBERS AND PROBLEMS INCREASE WITH FEEDING

Feeding waterfowl attracts and keeps so many birds that the biological carrying capacity (how many birds the environment can naturally support) is exceeded, and the birds are staying only because of the unnatural feeding activity by humans. This leads to damage to the grounds, (i.e., grass destroyed, people walking through feces and bringing the feces, on shoes, into restaurants, work or homes). Goose droppings at parks are also a concern to the parents of children playing in the parks. The cultural carrying capacity (how many geese people can tolerate) is usually much lower than the biological carrying capacity. Park, business, apartment/condo or facility managers are faced with a dilemma each day – “how do I get rid of the overpopulated geese or ducks.”

WHAT CAN FACILITY MANAGERS DO TO STOP THE FEEDING

Facility or park managers need to educate their constituents about the potential hazards to geese and people associated with feeding waterfowl. Newsletters, pamphlets, and/or signs are usually the easiest and most convenient method to convey the message.

Newsletters or pamphlets should be distributed to employees, associates, and members. This publication can be duplicated and/or reprinted as you see fit. Signs requiring or urging people not to feed the ducks and geese can be placed at picnic or eating areas, parking lots, beaches, etc. People can still interact with wildlife, just leave the food at home.

If we truly care for waterfowl, here is what we can do to improve their chances of survival:

- 1.) **Stop feeding** the ducks and geese. Help them to retain their “wildness” and maintain their health. They do not understand nutrition
- 2.) Learn more about waterfowl by visiting a library, nature center, zoo, museum, or a state wildlife area --- then teach your friends and family what stewardship of wildlife is all about.

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VISUAL DETERRENENTS



SEEING IS OFTEN BELIEVING FOR GEESE

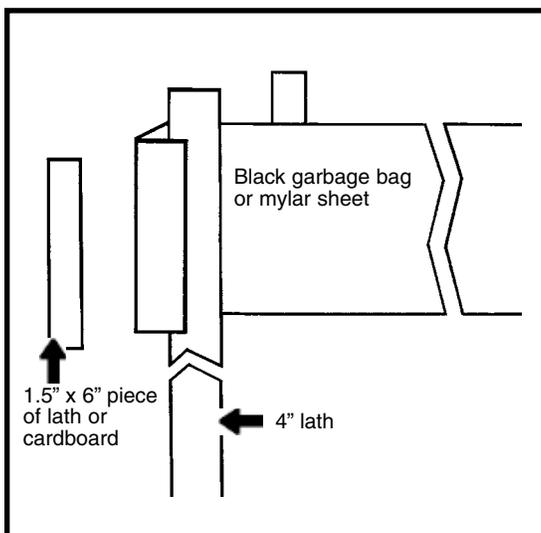
Almost any foreign object placed in a field will initially repel geese. The length of time frightening devices are effective depends on the type, number, and variety of devices used. Regardless of the type, devices should be moved every two to three days to prevent habituation by the geese. Visual repellents should be in place before the start of the damage season (Feb./Mar.) to prevent geese from establishing a use pattern.

Visual repellents, including flags, scarecrows and balloons, should be used at the rate of one to two per acre before geese become accustomed to using the area (Feb./Mar.). More may become necessary as the season progresses. For optimum results, supplement devices with automatic exploders and/or pyrotechnics (See Technical Guidelines Sheet on Pyrotechnics).

FLAGS

Flags can be made by using four foot wooden stakes or laths and 6"x 30" sheets of three mil safety orange plastic or Mylar. Wrap 3 inches of the end of the plastic or Mylar sheet around the stake and staple a piece of cardboard or lath (1.5" x 6") to both sides of the stake, sandwiching the plastic or Mylar between the stake and cardboard to prevent the material from tearing in strong winds.

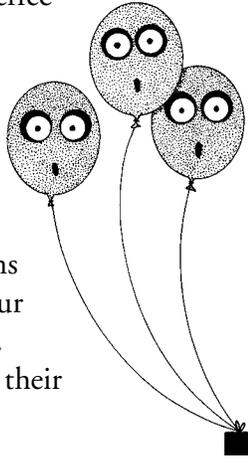
Plain black trash bags tacked onto lath or other wooden stakes can be an effective means at repelling geese from large grass areas or cropfields. Place flags so they are visible by geese from all points within a field. Geese will land in an area where flags are not visible. Once the birds land in a field and begin feeding, the flags' effectiveness may be lost.



Visual Deterrents

BALLOONS

Helium balloons staked in open fields or anchored over water, have proven effective in repelling geese. Tether the balloons with 75 lb. test monofilament line at least 10 feet into the air. The use of balloons larger than two feet in diameter is not recommended due to their increased wind resistance. Balloons should be moved every three to four days to increase their effectiveness. Eyespots on balloons also increase their effectiveness.



MYLAR TAPE

Mylar Tape is a shiny foil-colored tape that comes in rolls approximately 1/2" - 3" wide. Mylar also comes in sheets up to 36" wide. Mylar works by reflecting sunlight, and when wound in a spiral with the bright red and silver coated sides alternating, any movement of the wind will cause the tape to flash brilliantly. This brilliant flashing seems to signal danger to birds. For best results install prior to the damage (nesting) season (Feb./Mar.). If you do not install Mylar tape until after the geese have nested, you are probably just wasting time and money. Irritape is another type of tape similar to Mylar that uses a prism pattern printed in the tape to reflect sunlight in all directions.

Mylar can be installed in many situations.

For example: Start by inserting your fingertips into the cardboard center of the roll as if you were putting on a bracelet. Tie the lead end of the ribbon to the first stake, then play out the ribbon as you walk. This automatically causes the ribbon to spiral as it is being fed out. Take up the slack but not enough to take the spiral out of it. Do this on all areas that border the waters edge.

SCARECROWS

Scarecrows can be made from a variety of materials; however, three features should be incorporated in any scarecrow design: movement, bright colors, and large eyes. For maximum effect, the arms and legs should readily move in the wind. Construction materials should be of bright colors. The brighter the color the better it can be seen. Bright red, blaze orange or safety yellow are recommended. Also, the larger the eyes, the more effective the scarecrow.

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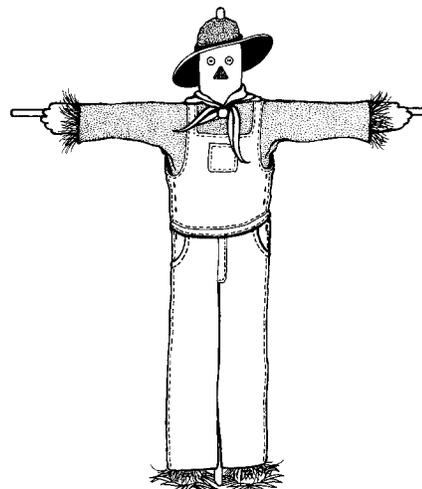
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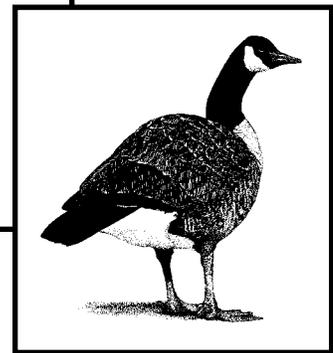
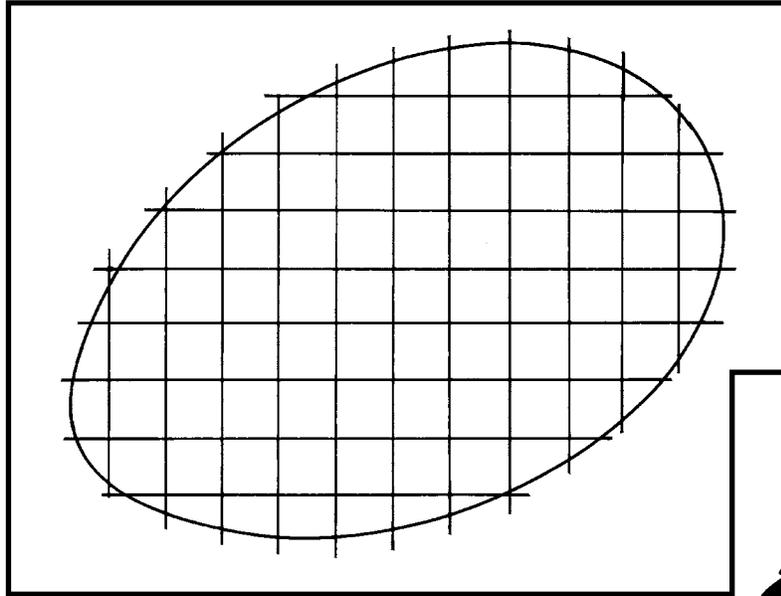
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PHYSICAL BARRIERS



POND GRIDS

Bodies of water are the focal point of residential waterfowl activity. Denying the birds easy access to these areas is an effective control measure. Overhead grid systems composed of sturdy posts and Kevlar wire (e.g., Philly strand) have been used successfully to deny geese access to small ponds. For initial installation, posts which support the line should be spaced 20' apart. If this spacing proves ineffective, additional posts can be placed between the original posts, thus creating a 10' grid.

A grid system might be installed several feet above the water surface to permit human utilization of the pond; however, grids are most effective if installed approximately 1' above the surface. Effectiveness is also enhanced by installing bright reflective objects on the line at scattered locations. As it will be necessary to keep the lines taut, posts must be well anchored, and each line should be equipped with a device (e.g., turnbuckles) to take up the slack.

PERIMETER FENCING

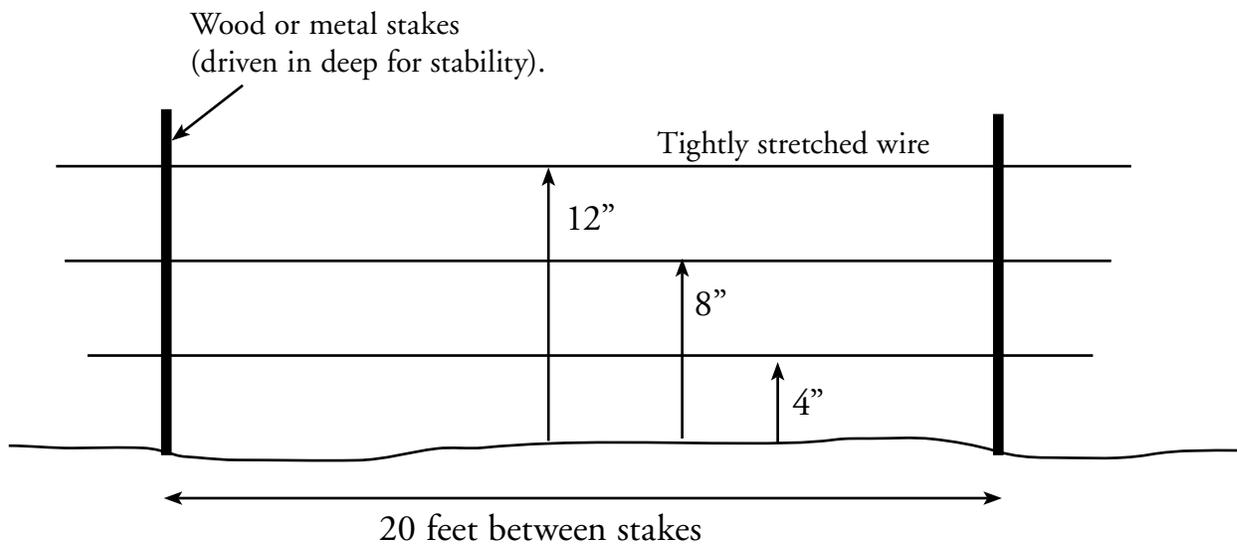
Waterfowl may learn to alight on adjacent land areas and walk in underneath the grid system to gain access to the water. Consequently, perimeter fencing may be required. This fencing may be constructed for permanent or temporary use. Plastic material is most suitable for temporary fencing. It is relatively cheap and can be easily installed by utilizing existing fence posts and twist ties. Other alternatives include 3' high chicken wire or a split-rail fence with chicken wire or plastic netting on the bottom 18". A no-cost alternative would be to allow a 10'-20' border around the perimeter of the pond to develop tall, thick vegetation (e.g., prairie grass or shrubs) which might function as a barrier to "walk-in" geese.



Physical Barriers

OTHER SUGGESTIONS

- Physical barriers should be installed prior to March 1, before goose territories are established, and the barriers should be left intact at least until July 1st. It is best if the barrier is left up all year.
- Erect a multi-strand fence completely around the perimeter of the pond. The fence consists of 2 or 3 strands of thin wire strung 4", 8", and 12" off the ground.
- When properly installed and maintained, this fence will prevent the geese from walking from the pond into your yard and makes the property less attractive to nesting geese.
- Three-foot long sections of rebar make good stakes and can easily be concealed with ornamental plants, if desired.
- Do not leave any openings in the barrier or the geese will walk through the opening.
- Keep the strands tight. If the line is allowed to sag (as is common with fishing line), the geese will walk through or over it.



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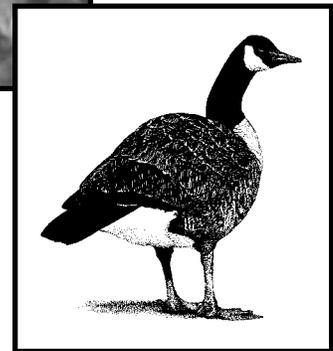
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Division of Wildlife

MECHANICAL SCARE DEVICES (HAZING)



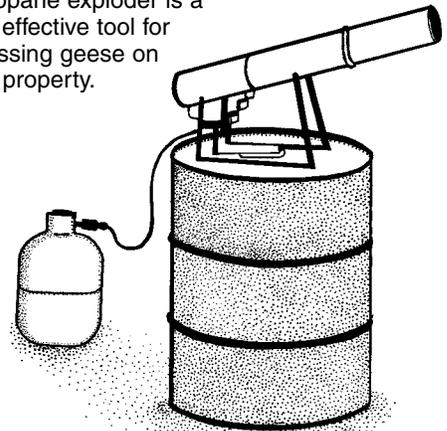
USING NOISE TO YOUR ADVANTAGE

Birds react to unfamiliar sounds. Almost any loud, foreign sound will startle, and repel geese and other waterfowl. Birds do learn to ignore sounds that have proven harmless, especially if they are used often and for long periods of time. Prior to initiating a harassment program in urban areas, consult state, county and local authorities regarding noise ordinances.

In addition to products specifically designed to scare birds, many ordinary appliances found around the home can be used. Mechanical scare devices include, but are not limited to:

- leaf blowers
- electronic alarms
- air horns
- sirens
- alarm or distress calls

A propane exploder is a very effective tool for harassing geese on your property.



Mechanical Scare Devices

PROPER PREPARATION AND DIVERSITY ARE THE KEYS TO SUCCESS

The keys to successful bird harassment are timing, persistence, organization, and diversity. Geese and other waterfowl are much more likely to leave an area that they have occupied briefly, than one which they have become fully accustomed. It is imperative to begin scare tactics as soon as **the geese arrive on your property in February and March**. Once geese have started actively nesting almost nothing will work to drive them off your property.

Proper organization is also important when starting a frightening program. The more diverse the techniques used, and the more easily the operation can be changed, the more effective it will be. Once initiated, the program must be persistently applied as necessary each day, until success is achieved.

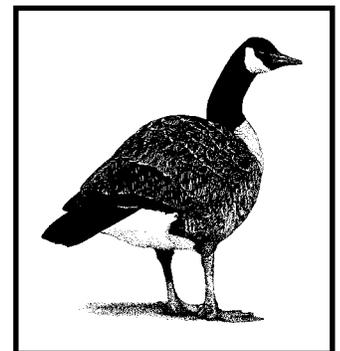
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USE THAT YANKEE INGENUITY

- ☛ Don't be afraid to experiment with different types of noise-makers
- ☛ Sirens wired to movement-sensing devices are effective for harassing geese as soon as they arrive
- ☛ Most importantly, BE PERSISTENT!!!



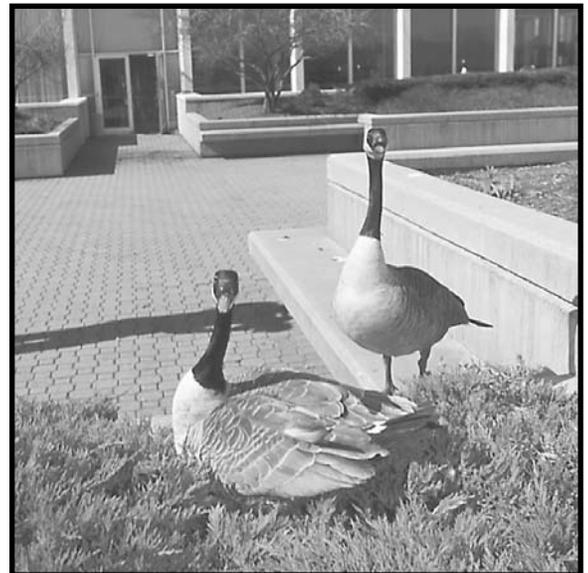
HABITAT MODIFICATION



KEEP OFF THE GRASS

Land management is by far the most successful deterrent to goose conflicts. Geese can be discouraged from using an area by making the pond and surrounding area unattractive.

Geese are grazers and rely on grass for the majority of their diet. Geese can be discouraged from using these grass areas by the following methods: 1.) Reduce or eliminate fertilizer applications to the surrounding grass area to make the grass less tasty and nutritious to the geese. 2.) Plant grass species that are less tasty, such as tall fescue (has a bitter taste). 3.) Seed surrounding areas to natural prairie grasses or other tall vegetation. 4.) Above all, **do not allow anyone to feed the geese.**



Habitat Modification

MISCELLANEOUS MODIFICATIONS

- *Pond aerators should be shut off in the winter. Allow the pond to freeze. Open water only encourages geese to stay and is an attractant to other geese.*
- *Geese tend to stay away from areas with brushy edges or thick cover that hides predators. Dense plantings around feeding areas and tall trees in flight paths will deter geese from using these areas*

KEEP GEESE IN THE POND

Geese generally will not use a pond if they cannot easily fly in to it, swim in it, or walk out of it. Placing ornamental grasses or a row of densely planted shrubs around the edge of a pond is pleasing to the eye and will effectively deter geese from coming on shore. Replacing grass areas around ponds with unpalatable ground-covers (e.g., periwinkle, Japanese pachysandra and English Ivy) can also be a good deterrent. Construct new ponds with an 18-24" inch vertical bank at the water's edge.

Discourage geese from using existing ponds by vertically straightening the banks. Placing large boulders or rip-rap along the edge of a pond makes it more difficult, but not impossible for geese to enter and exit the water.

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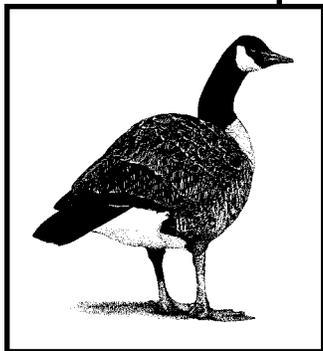
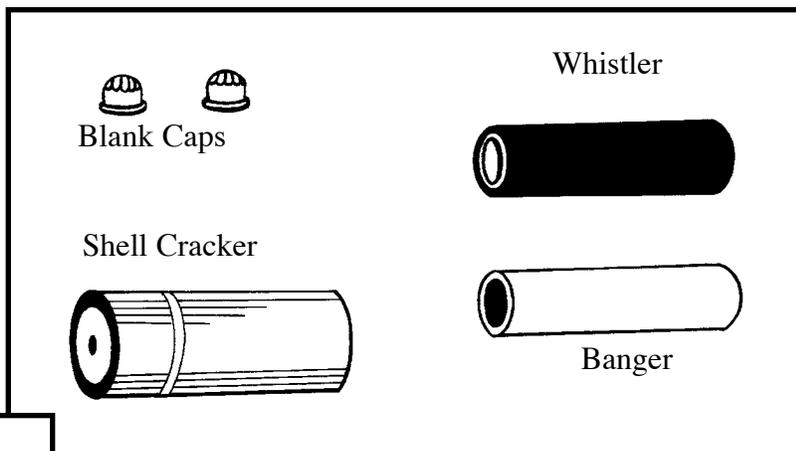
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Division of Wildlife

PYROTECHNICS



WHAT ARE PYROTECHNICS?

Pyrotechnics are specialized fireworks that are shot out of a 12-gauge shotgun or a starter's pistol. There are three basic types of pyrotechnics: screamers, bangers, and shell crackers.

For best results, begin harassment early in the season (Feb./Mar.) and during dusk or early evening when the birds begin to congregate in numbers. Harassment at this time will disperse the birds before they roost for the night and become accustomed to the area. **Pyrotechnics will only work prior to nesting and again after young geese have learned to fly.** Using pyrotechnics between those times will not drive the geese away.

Do not overuse pyrotechnics because wildlife can become accustomed to the persistent noise. It is advised to wait until several birds are present before using pyrotechnics. Many times congregated birds must be harassed for several days, even weeks, before any results will be seen. Be persistent and you will succeed.

Obey local laws and noise ordinances. It is advised to contact local law enforcement officials before using pyrotechnics.

TYPES OF PYROTECHNICS

Screamers and bangers are shot out of a starter's pistol and travel about 75 to 100 feet. Screamers are like bottle rockets, producing a high shrill and leaving a trail of smoke. Bangers produce a loud bang equivalent to a 60mm firecracker.

Shell crackers are shot out of a 12-gauge shotgun and travel about 200 feet before exploding. It is advised that an inexpensive single-shot shotgun that breaks and loads at the breech be used. This is to allow for inspection of the barrel after each shot (shell crackers can lodge in the barrel) and ease of cleaning after use as shell crackers leave corrosive residue in the barrel. It is also important that an open choke (improved cylinder or less) be used as opposed to a tight choke (full or modified). This will ensure there is no restriction when the shell cracker exits the barrel.



Pyrotechnics

SAFETY

- 1.) Always wear safety eye glasses and hearing protection when using pyrotechnics.
- 2.) Check the firearm barrel for blockage after each shot. It is advised to run a cleaning rod with a bore brush through the shotgun barrel after every fifth shot when using shell crackers.
- 3.) Be aware of possible fire hazards. Never fire pyrotechnics where smoldering debris may fall in dry grass or on building roofs. Keep a fire extinguisher handy at all times.
- 4.) Never fire pyrotechnics into strong winds. Be aware of wind direction and use it to your advantage.
- 5.) Pyrotechnics should be launched from a 45 degree angle to the horizon.
- 6.) If you do not hear or see the pyrotechnic explode, do not look down either end of the firearm. Keep the barrel pointed in a safe direction and be prepared for a delayed firing. Wait at least one minute. If the pyrotechnic does not explode, keep the barrel pointed in a safe direction and then eject the shell from the gun. Follow the manufacturer's recommendation for disposing of the unfired shell (i.e., water deluge).
- 7.) While using pyrotechnics at airports, never fire pyrotechnics in a manner that debris might fall on runways and taxiways and possibly be ingested by jet engines.
- 8.) Abide by local laws and inform law enforcement officials before using pyrotechnics.

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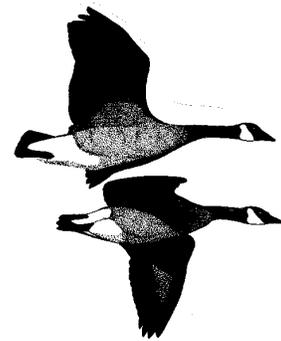
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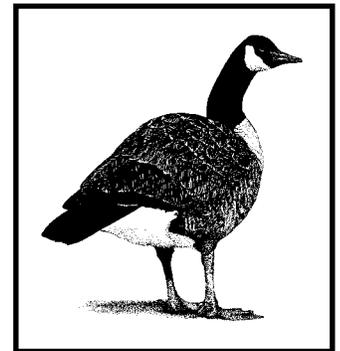
SPECIAL POINTS OF INTEREST

- *ALWAYS make SAFETY your number one priority*
- *DO NOT aim pyrotechnics directly at the geese*
- *Be considerate of your neighbors when using pyrotechnics*
- *When combined with legal hunting, pyrotechnics work extremely well*



Division of Wildlife

BIOLOGICAL CONTROLS



DOGS CAN BE MAN'S BEST FRIEND IN MANAGING GEESE

Almost any obedient breed of dog, when trained, can be used to discourage Canada geese; however, border collies seem to be the breed of choice. Humans have enlisted the assistance of border collies for centuries. Most commonly noted for their ability to herd livestock, they have also been known to assist the physically challenged, to serve as sled dogs, participate in competitive sports and simply serve as human companions. A border collie's natural herding instinct, along with some command training, make it particularly useful for discouraging Canada geese from areas with ponds including golf courses, apartment complexes, and industrial parks.

In herding, border collies circle and stalk the object of interest. Border collies work to discourage geese by simply keeping the birds on the run and/or in the water until they become frustrated and leave the area. It is best to use dogs to discourage geese *before and/or after the nesting season* (before March 15th or after eggs have hatched). Once geese are actively nesting almost nothing will work to drive them off your property.

Border collies are widely available on both the sheepdog and pet market. Some border collies are not suited for the rigors of field trials. These dogs make good goose dogs, as well as a good pet for someone who wants to own and care for the dog. There are organizations set up to place these border collies into situations where they can be useful.



Biological Controls

PROPER USE OF BORDER COLLIES

Several golf courses and public parks have used border collies quite successfully. Below are a couple of tips which have been found to be most successful: 1.) Start working with dogs very early in the spring before goose pairs have arrived (Feb. & Mar.). Go out four to five times per day to chase the geese away, and also go out at dusk when some geese may try to return to roost. 2.) Most geese leave after three or four weeks of harassment; however, if geese start nesting, almost nothing will drive them away. 3.) It is important to chase new goose arrivals frequently and persistently at least once a day. 4.) The dogs can clear a golf course of geese while golfers are there, since it requires less than 60 seconds of interference. Usually, the geese see the dog and start honking – signaling others to fly. 5.) Dogs are trained to commands and will respond to more than one person, although they tend to be one-person dogs. 6.) Border collies need to work. If left alone, the collies become hyperactive and may dig in the lawn and chew flowers. Therefore, we do not recommend you purchase one of these dogs unless you are able to properly care for them. Some rental services are available.

MUTE SWANS - NOT A GOOD IDEA

Mute swans are sometimes used to repel Canada geese; however, the Division of Wildlife strongly advises AGAINST this technique for the following reasons: 1.) Mute swans are an exotic/non-native species that will cause conflicts with our native trumpeter swans. Mute swans do escape, turn feral, and drive out native ducks and geese from their natural habitat. Therefore, mute swans should never be used as goose deterrents. 2.) Swans, when actively nesting, are extremely aggressive towards humans, more so than Canada geese. In fact, the only two instances of human fatalities attributed to waterfowl in the United States were caused by mute swans. 3.) Swans seem to be very aggressive towards ducks, however swans are not always effective against larger species like Canada geese. 4.) Mute swans must be pinioned to prevent their escape; therefore, the excess food not eaten by the swans and an aerated pond in the winter makes your property even more attractive to geese.



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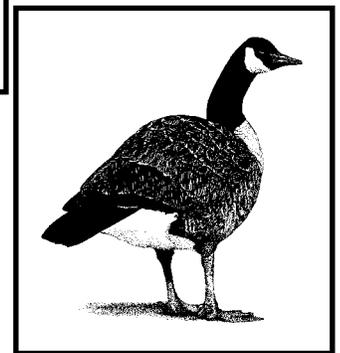
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LASERS



Lasers provide a new goose harassment tool which can be used in urban areas without disturbing your neighbors. If done correctly and at the right time, geese are scared by the laser beam, and quickly leave an area when harassed with a laser. The lasers are only effective at night. Lasers are not effective against geese that are actively nesting, on goslings that cannot fly, or on adult geese that are molting and cannot fly. If you have geese on your property that are actively nesting, lasers should not be used from the period that the first egg is laid up until goslings are able to fly (usually from March 15 – August 1). In several studies conducted by USDA Wildlife Services and the Division of Wildlife, the geese never grew accustomed to the laser and always responded immediately. The average harassment time needed before the geese left the area generally decreased with more frequent use of the laser.

Location

Laser harassment is most effective at sites that are used only at night. If the geese are using an area both during the day and evening, laser harassment at night will need to be combined with daytime harassment to cause the geese to leave the area during daylight hours. Small ponds or lakes (<20 ac.) are well-suited to laser harassment. Lasers are not as effective on larger lakes because the harassed birds will often just fly to the other end of the lake. However, if the person conducting the harassment is persistent and relocates so that the laser can reach the birds, the geese will eventually leave the area. Complete access around the lake's perimeter is also helpful so that the person conducting the harassment can get to the birds wherever they are located. The size of the roosting area will be a factor in determining the strength of the laser required. If the roosting area is a small 1/4-acre pond, a small laser pointer from an office supply store may work; however, if the roosting area is large, a laser capable of reaching 100 yards may be necessary. Some people have had success with the \$40 lasers that are sold at hardware stores for hanging pictures on a level plane.



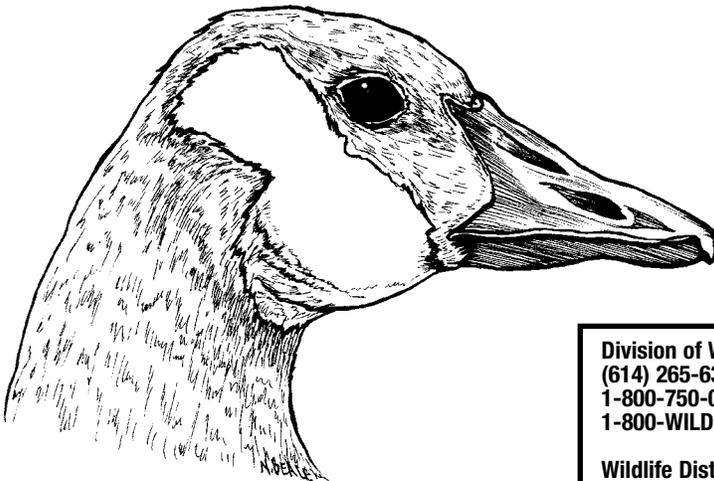
Lasers

Technique

When harassing the geese, start by directing the laser at a point several yards away from the geese, and slowly move the beam towards the geese. The geese see the beam moving toward them and usually take flight before the beam reaches them. If the beam needs to be directed towards the geese, aim it at their chests or sides and not at their eyes. This will avoid possible disorientation of the geese and any possible eye damage. Be aware of any people or houses that are behind the harassment areas so that they are not subjected to the beam reflecting off of the water.

Points to Consider

- Bright ambient lighting near the roosting area will decrease the effectiveness of the laser, and if it is bright enough, may render the laser ineffective.
- The laser is not effective on areas where people feed the geese. The lasers will cause the geese to leave temporarily, but they will return if food is available.
- Lasers are most effective in areas where geese are not exposed to a lot of disturbance.
- No type of harassment or hazing (including the use of a laser) will make geese leave an area if they are actively nesting (have eggs), or if they cannot fly.
- With any method of harassment, being consistent and persistent with the techniques is critical to success.



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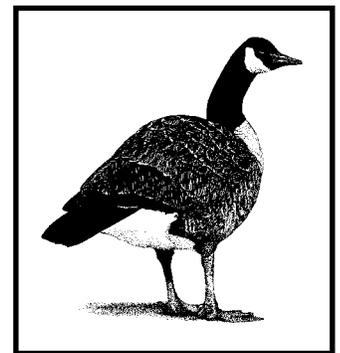
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CHEMICAL REPELLENTS



TYPES OF REPELLENTS

Two types of chemicals are currently registered with the U.S. Environmental Protection Agency as goose repellents: methyl anthranilate (MA) and anthraquinone (AQ). Both chemicals were originally designed to be sprayed on grass, thus making the grass unpalatable to geese. In recent years, however, MA has also been used as an aerosol to chase geese away.

MA is a naturally occurring nontoxic, biodegradable food ingredient found in concord grapes and orange blossoms. It has been used as a fragrance and flavoring in many consumer products, such as grape bubble gum and is less toxic than table salt. Two MA-based repellents found in the marketplace are ReJeXiT and Repel.

AQ is a naturally occurring compound found in a wide variety of plants and is virtually odorless. The compound is harmless to wildlife and humans, and it persists in all weather conditions (rain, snow, ice). Flight Control is the only AQ-based repellent currently on the market.

FOR BEST RESULTS, FOLLOW THE DIRECTIONS

All chemical repellents have specific instructions on the label which explain the proper application techniques and directions. It is extremely important to follow the label directions so that the repellents will work properly. In general terms, for turf application MA or AQ is mixed with water at the specified dilution rate and applied to grass areas where the birds are feeding. When geese feed on the treated grass, the repellent causes a strong reaction in the geese, thus causing them to avoid the treated grass. When used as an aerosol, MA is poured into a thermal fogger which is taken upwind of the geese and started. The fog will drift onto the geese, and the vaporized MA irritates the birds' mucous linings causing them to leave the area.



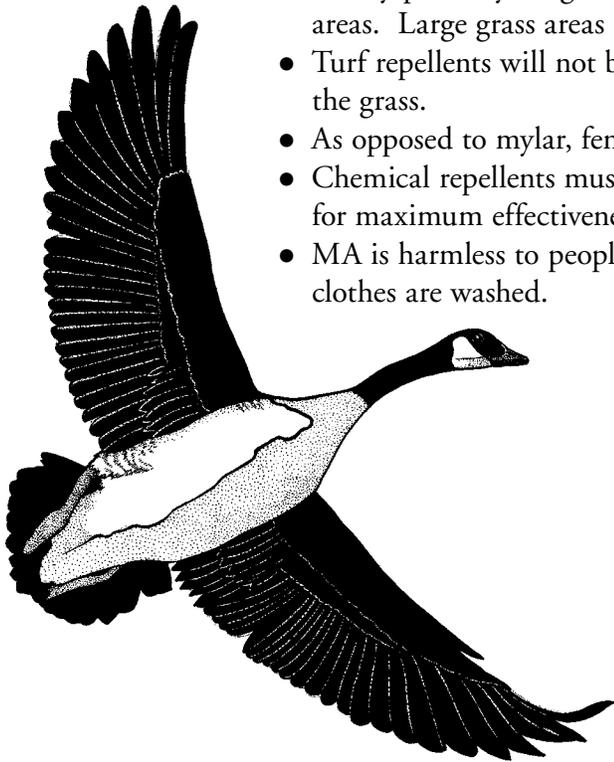
Chemical Repellents

Timing the application of chemical repellents is critical for maximum effectiveness. Turf repellents will not be effective against geese that are actively nesting (i.e., sitting on eggs). In addition, turf repellents will be more effective if used before geese have developed a strong habit of feeding on the grass in an area.

POINTS TO CONSIDER

Effectiveness of the turf repellents varies for each conflict situation. The type of repellent, timing of application, frequency of application, size of the area, number of geese present, and use or non-use of other harassment techniques all contribute to success or failure.

- Turf repellents tend to be expensive, and they must be applied more than once.
- You will need to reapply sprays after each mowing or rainfall, depending on the product.
- Fogging may have to be used repeatedly during the first couple of days until the birds clear the area.
- If only part of your grass area is treated, geese will continue to feed in untreated areas. Large grass areas may not be practical for application.
- Turf repellents will not be effective on areas where geese are present, but not eating, the grass.
- As opposed to mylar, fences, grids, etc., chemical repellents are nearly invisible.
- Chemical repellents must be used in conjunction with other harassment techniques for maximum effectiveness, not as a stand-alone measure.
- MA is harmless to people, but it will give your clothing a grape smell until the clothes are washed.



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