



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF FISH AND WILDLIFE
AQUATIC RESOURCES EDUCATION CENTER
4876 HAY POINT LANDING ROAD
SMYRNA, DE 19977
(302) 653 - 2882

OFFICE OF THE
DIRECTOR

Nuisance Canada Goose Control

Dear Sir/Madam:

Enclosed is a package of information on methods of controlling nuisance resident Canada geese. In the past, the Delaware Division of Fish and Wildlife moved large numbers of these birds annually as requested by landowners. Initially the birds were moved to southern states which requested them. When those locations became unavailable because of an over supply of resident geese in the south, the Division moved them to southern Delaware. Unfortunately, because of Delaware's small size, the Division was not able to move these birds in state far enough to preclude many of them returning to the capture sites. Those that did not return usually moved away from the release sites and caused problems at new locations. The Delaware Division of Fish and Wildlife discontinued its roundups and releasing of birds in Delaware in 1997.

Controlling nuisance resident geese can be a difficult and expensive activity once a flock has become established. It is much better to initiate control measures when the flock is small (2-3 pairs). Canada geese are protected by Federal regulations and a permit is required for any activity which involves touching the birds or their nests or eggs. Two pamphlets are enclosed, one from New York State DEC, and one from the US Dept. of Agriculture-Animal Damage Control detailing methods used to control or eliminate nuisance goose problems. The following points need to be emphasized:

1. DO NOT FEED RESIDENT GEESE OR OTHER WATERFOWL. This creates a bird feeder effect and will attract more geese over time. Feeding is not good nutritionally for the birds which are normally grass eaters in the spring and summer. It also causes local concentrations of birds which may increase susceptibility to avian disease outbreaks.
2. Egg shaking is an effective way to control reproduction. The permits are readily available and the procedure is easy to do. Delaware Division of Fish and Wildlife personnel will provide assistance in obtaining the permit and instructing landowners on egg shaking techniques. Egg shaking will stop production if it is done consistently to all nests in the area, but it will not remove adult birds already present. Natural

Delaware's good nature depends on you!

attrition will remove adults over time; but resident geese live up to 20 years. It is therefore recommended that egg shaking be combined with other techniques.

3. Fencing is an excellent method of excluding geese from small areas, as is the use of chemical sprays. Fencing is less effective on large areas, and sprays are very expensive. Two spray products are currently licensed for use in goose control. They are ReJeXiT AG-36 ® and Flight Control ® . Both are expensive and require that grass be left uncut after application. ReJeXiT ® can wash off in a rain while Flight Control ® is more persistent. The Division can advise as to sources of both products.
4. Scare devices include noise makers, balloons, mylar tape, flags and border collies. All work some of the time but none work all the time. Border collies trained to herd geese are effective but require continued use. This can be expensive. Scare devices may drive geese away initially, but they do not solve the problem; and the birds learn to ignore them eventually. The birds can be temporarily moved from one location but will then move elsewhere where they may also be a problem. If the scare devices are removed the birds will probably return.
5. Population reduction by lethal means may be advisable in some cases. This can take two forms. The preferred method is through sport hunting. Delaware has a resident Canada goose season from September 1-15 each year with a 5 bird daily bag. It is highly recommended that this season be used where possible to remove excess geese. In locations where this cannot be done because of legal or safety considerations, it may be advisable for the landowner to acquire a Federal permit to round up and euthanize excess nuisance birds. The landowner can then contract with a private contractor to do the roundup. Euthanized birds will be processed at the landowner's expense and donated to Delaware's Food for the Hungry Program. The landowner will have to document that non-lethal control methods have been tried and have been ineffective in order to qualify for this permit.

Nuisance Canada goose control usually involves several control measures in combination. It is important to make the area as unattractive as possible to the birds and to then control reproduction of those that remain. This is best done when populations are small. The absolute first step in controlling Canada geese is to eliminate feeding by the public.



New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources
and
U.S. Department of Agriculture
Animal and Plant Health Inspection Service



When Geese Become a Problem

March 1999

Canada geese are a valuable natural resource that provide recreation and enjoyment to bird watchers, hunters, and the public. The sight of the distinctive V-formation of a flock of Canada geese always brings a special thrill. Their calls herald the changing seasons. But in recent years, flocks of local-nesting or "resident" geese have become year-round inhabitants of our parks, waterways, residential areas, and golf courses, where they can cause significant problems.

In suburban areas throughout New York State, expanses of short grass, abundant lakes and ponds, lack of natural predators, limited hunting, and supplemental feeding have created an explosion in resident goose numbers. While most people find a few geese acceptable, problems develop as local flocks grow and the droppings become excessive (a goose produces a pound of droppings per day). Problems include over-grazed lawns, accumulations of droppings and feathers on play areas and walkways, nutrient loading to ponds, public health concerns at beaches and drinking water supplies, aggressive behavior by nesting birds, and safety hazards near roads and airports.

This booklet describes the most effective methods available to discourage geese from settling on your property and to reduce problems with geese that have already become established on a site. **For more information, contact any of the agency offices listed at the end of this booklet.**

Population Growth

In the early 1900s, only a handful of Canada geese nested in the wild in New York State. These geese were descendants of captive birds released by private individuals in the Lower Hudson Valley and on Long Island. Local flocks grew rapidly and spread to other areas. During the 1950s and 1960s, game farm geese were released by the State Conservation Department on wildlife management areas in upstate New York (north and west of Albany).

By the mid 1990s, the New York State population had grown to more than 120,000 birds, with nesting documented all across the state. The estimated number of geese breeding in New York doubled between 1989 and 1998.

Legal Status

All Canada geese, including resident flocks, are protected by Federal and State laws and regulations. In New York, management responsibility for Canada geese is shared by the U.S. Fish and Wildlife Service (USFWS), U.S. Department of Agriculture (USDA), and the New York State Department of Environmental Conservation (DEC). It is illegal to hunt, kill, sell, purchase, or possess migratory birds or their parts (feathers, nests, eggs, etc.) except as permitted by regulations adopted by USFWS and DEC. Special permits are required for some of the control methods discussed in this booklet.

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

Control techniques described in this booklet include only those that have the best chance for success based on past experience. Other methods may work, and new techniques will undoubtedly be developed in the future. We welcome reports on the effectiveness of any goose control measures that you employ.

Discontinue Feeding

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

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

Supplemental feeding should be stopped as a first step in any control program. Wild geese are very capable of finding other foods and will survive without handouts from humans. Some success in reducing goose feeding may be achieved through simple public education, such as posting of signs. DEC can provide examples of "don't feed the geese" signs to help implement this technique. Further reduction of feeding may require adoption and enforcement

of local ordinances with penalties such as fines or "community service" (cleaning up droppings, for example) for violations.

Allow Hunting

Hunting in suburban areas is often limited by lack of open spaces and local ordinances prohibiting discharge of firearms. Where feasible, however, hunting can help slow the growth of resident goose flocks. Hunting removes some birds and discourages others from returning to problem areas. It also increases the effectiveness of noisemakers, because geese will learn that loud noises may be a real threat to their survival.

Canada goose hunting is permitted in most areas of New York State during September, when very few migratory geese from Canada are present. Hunting is allowed also in some areas later in fall and winter, but regulations tend to be more restrictive to protect migratory geese that may be in the state at that time.

To hunt waterfowl, a person must have a New York State hunting license (which requires a hunter safety course), a federal Migratory Bird Hunting Stamp, and be registered in New York's Harvest Information Program. Hunters should check local laws regarding discharge of firearms. Landowners concerned about potential conflicts can easily limit the number of hunters and times they allow hunting on their property. For more information about goose hunting regulations or setting up a controlled hunt, contact DEC.

Modify Habitat

Geese are grazing birds that prefer short, green grass or other herbaceous vegetation for feeding. Well-manicured lawns and newly seeded areas provide excellent habitat for these grazing birds.

Wherever possible, let grass or other vegetation grow to its full height (10-14") around water bodies so that it is less attractive to

One very effective visual deterrent for geese is Mylar tape that reflects sunlight to produce a flashing effect. When a breeze causes the tape to move, it pulsates and produces a humming sound that repels birds. This product comes in 1/2"-6" widths. To discourage geese from walking up onto lawns from water, string the tape along the water's edge. To ensure maximum reflection and noise production, leave some slack in the tape and twist the material as you string it from stake to stake.

Another visual scaring technique is the placement of flagging or balloons on poles (6' or taller) or other objects in and around an area to be protected. Flagging can be made of 3-6' strips of 1" colored plastic tape or 2' x 2' pieces of orange construction flagging. Bird-scaring balloons, 30" diameter, with large eye-spots and helium filled, are sold at some garden or party supply stores. Numerous flags or balloons may be needed to protect each acre of open lawn. These materials should be located where they will not become entangled in tree branches or power lines. They also may be subject to theft or vandalism in areas open to the public. If geese become acclimated, frequent relocation of the materials is recommended.

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

Use Noisemakers

Geese may be discouraged from an area through the use of various noisemakers or pyrotechnics. Shell crackers are special shells fired from a 12-gauge shotgun that project a firecracker up to 100 yards. Other devices, such as screamer sirens, bird-bangers, and whistle bombs, are fired into the air from a hand-held starter pistol or flare pistol. These devices generally have a range of 25-30 yards.

Automatic exploders that ignite propane gas to produce loud explosions at timed intervals are effective for migrant geese in agricultural fields, but are not suitable for residential or public areas.

Noisemakers work best as preventive measures before geese establish a habit of using an area and where the birds are too confined to simply move away from the noise. At sites with a history of frequent use by geese and people, the birds may become acclimated in 1-2 weeks. Noise devices are often not effective for moving nesting geese.

Before using any of these techniques, check with local law enforcement agencies (police) about noise control ordinances, fire safety codes, or restrictions on possession and discharge of firearms. Obtain special permits if necessary. In some areas, starter pistols are considered a handgun, and their possession and use may be regulated. Federal and state permits are not necessary to harass geese with these techniques, as long as the birds are not physically harmed.

Where discharge of firearms is allowed, occasional shooting of geese can increase the effectiveness of noisemakers, as geese associate the sound with a real threat. Special Federal and State permits are needed to shoot geese except during established hunting seasons.

Apply Repellents

The U.S. Environmental Protection Agency and DEC have approved the use of one product, ReJeXiT®, as a goose repellent on lawns. Geese will avoid feeding on treated lawns because they dislike the taste. However, geese may still walk across treated areas to get to adjacent untreated areas.

The active ingredient in ReJeXiT® is methyl anthranilate (MA), which is a human-safe food flavoring derived from grapes. The material is available at some garden supply centers and costs about \$125 per acre per application. Several applications per year are usually necessary. Therefore, it is most practical and cost-effective for homeowners with only small areas of lawn to protect. For best results, follow directions on product labels; if too dilute, it won't work, if too concentrated, it can kill the grass.

Geese removed from problem areas can be processed and donated to charities for use as food. If properly handled by a licensed poultry processor, goose meat is a healthy and well-received source of food for needy people. However, this method is very controversial. Media interest, protests and legal challenges from animal rights activists can be expected.

Relocation of geese is not an option at this time. In the past, DEC captured and transported thousands of geese from problem areas and shipped the birds to other states that wanted to establish their own resident goose populations. Opportunities for out-of-state transfers have been virtually exhausted as resident goose flocks now occur throughout the United States and Canada. In some states, problem geese are relocated to public hunting areas to reduce the likelihood of the birds returning. In New York State, there are no known areas where problem geese from other areas would be welcome.

Relocation of geese is also less effective than permanent removal. Banding studies have shown that many relocated geese return to their initial capture locations by the following summer. Some have returned to New York State from as far away as Maine, South Carolina and Oklahoma. Geese taken short distances (less than 50 miles) may return soon after they are able to fly. Adult geese are most likely to return, whereas goslings moved without parent birds will often join a local flock and remain in the release area. Birds that don't return may seek out areas similar to where they were captured, and may cause problems there too.

Many wildlife and animal health professionals are concerned that relocating problem wildlife increases the risk that diseases may be spread to wildlife or domestic stock in other areas.

Not Recommended

For almost every method that has been tried to alleviate problems caused by geese, there has been success and failure. However, some methods were not recommended in this

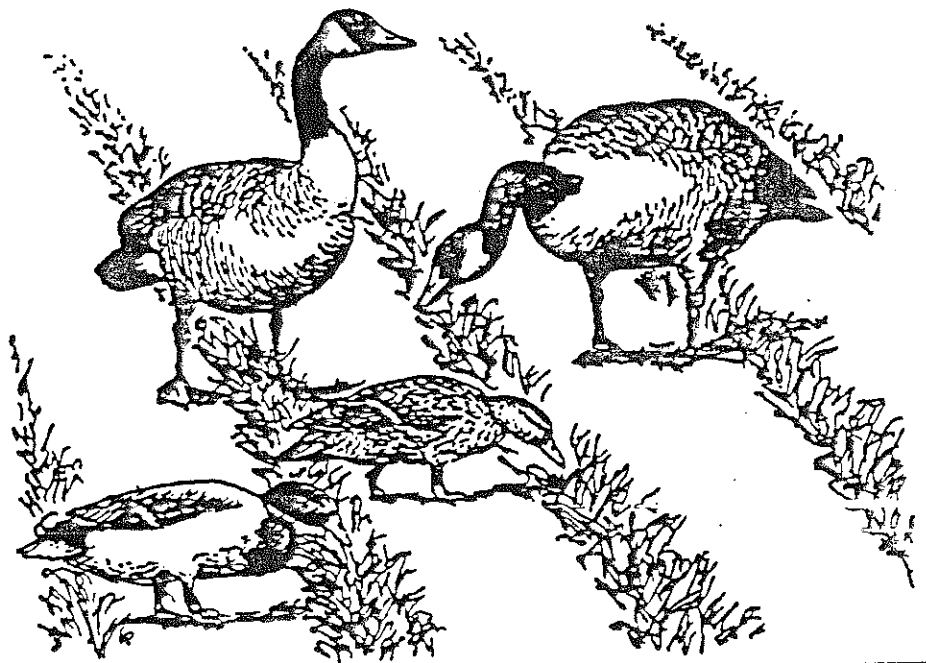
document for various reasons. These include: use of swans (real ones create other problems; fake ones don't work); bird distress call's (effective for some bird species, but not proven for geese); scarecrows or dead goose decoys (ineffective for resident geese); use of trained birds of prey to chase geese (labor-intensive, generally not available); sterilization (very labor-intensive for surgery, no chemical contraceptives available in the foreseeable future); fountains or aerators in ponds (not effective, may even attract geese); introduction of predators (already present where habitat is suitable, but none take only geese); disease (impossible to control and protect other animals); and use of poisons (illegal).

"Community-based" Goose Management

Simply chasing geese from one place to another does not address the underlying problem of too many geese, and may simply transfer the problem from one property owner to another. This is not an effective strategy for communities with widespread goose problems. Therefore, DEC and USDA encourage local governments and landowners to work together to implement comprehensive management programs that include a variety of techniques. Control measures will be most effective if coordinated among nearby sites in a community.

While some measures can be tried at little or no cost, others are more costly and beyond the means of some property owners. In these instances, local governments may want to sponsor goose control throughout a community, similar to other animal control work. This could include posting "no feeding" areas, installing fences, spraying repellent, handling dogs, egg treatment, and removal of geese. This way, the cost of goose management would be shared by all the residents of a community, including those who benefit from the geese as well as those who may experience problems. Although Federal and State agencies can provide technical advice, we do not have the resources to provide goose control programs at the local level.

Fig. 1. Geese, ducks, and other waterfowl may damage crops by feeding in fields.



Damage Prevention and Control Methods

Habitat Modification

- Vertically straighten pond banks.
- Allow ponds to freeze in winter.
- Eliminate vegetation (nesting/escape cover) in and around ponds.
- Reduce or eliminate fertilizer use around ponds.

Exclusion

- Install fence around ponds, gardens, and yards.
- Install overhead grids or netting on ponds, reservoirs, and fish raceways.

Cultural Methods

- Change the timing of planting and harvesting of vulnerable crops.
- Produce winter grains instead of spring grains.
- Use grain dryers to allow earlier harvest of high-moisture grain.

- Plant crops uniformly in spring.
- Delay fall plowing as long as possible.
- Use less-preferred plant species in parks, cemeteries, and lawns.
- Plant trees and shrubs to block flight path.
- Provide lure crops.
- Field baiting.
- Frightening**
 - Flags.
 - Mylar tape.
 - Balloons.
 - Scarecrows.
 - Water spray devices.
 - Automatic exploders.
 - Pyrotechnics.
 - Recorded distress calls.
 - Dogs.

Live Capture

- Walk-in funnel trap.
- Rocket/cannon nets.
- Spring-powered nets.
- Net launchers.
- Alpha-chloralose.

Repellents

- None are currently registered.

Toxicants

- None are currently registered.

Shooting

- Hunting is the preferred method of reducing localized populations, where safe and legal. Hunting has a strong repellent effect.
- Killing under special permit is advised only in extreme situations.

Other Methods

- Destruction of nests and eggs helps to slow down local population growth.

PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1981

Cooperative Extension Division
Institute of Agriculture and Natural Resources
University of Nebraska, Lincoln
United States Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control
Great Plains Agricultural Council
Wildlife Committee

Damage and Damage Identification

Goose problems in urban and suburban areas are primarily caused by giant Canada geese, which are probably the most adaptable of all waterfowl. If left undisturbed, these geese will readily establish nesting territories on ponds in residential yards, golf courses, condominium complexes, city parks, or on farms. Most people will readily welcome a pair of geese on a pond. They can soon turn from pet to pest, however. A pair of geese can, in 5 to 7 years, easily become 50 to 100 birds that are fouling ponds and surrounding yards and damaging landscaping, gardens, and golf courses. Defense of nests or young by geese and swans can result in injuries to people who come too close.

Migrant waterfowl damage agricultural crops in northern and central North America. In the spring, waterfowl graze and trample crops such as soybeans, sunflowers, and cereal grains. In autumn, swathed grains are vulnerable to damage by ducks, coots, geese, and cranes through feeding, trampling, and fouling. Young alfalfa is susceptible to damage by grazing waterfowl. Geese sometimes damage standing crops such as corn, soybeans, and wheat. In southern agricultural areas, overwintering waterfowl can cause problems in rice, lettuce, and winter wheat.

Mergansers, mallards, and black ducks cause problems at some aquaculture facilities by feeding on fish fry and fingerlings. Common eiders and black and surf scoters cause problems when they feed in commercial blue mussel and razor clam beds. For more information, see Bird Damage at Aquaculture Facilities.

Legal Status

In the United States, migratory birds, including most waterfowl, as well as their nests and eggs, are federally protected (50 CFR 10.12) by the Migratory Bird Treaty Act (MBTA) (16 USC. 703-

Table 1. Members of the families Anatidae (ducks, geese, and swans), Rallidae (coots and rails), and Gruidae (cranes) occurring in the United States listed as endangered in the Code of Federal Regulations, Title 50, Sec. 17.11, 10-1-92 edition.

ANATIDAE:

- Laysan duck (*Anas kaysanensis*)
- Hawaiian duck (*Anas wyvilliana*)
- Aleutian Canada goose (*Branta canadensis leucopareia*)
- Hawaiian goose (*Nesochen sandvicensis*)

RALLIDAE:

- Hawaiian coot (*Fulica americana alai*)
- California clapper rail (*Rallus longirostris obsoletus*)
- Light-footed clapper rail (*Rallus longirostris levipes*)
- Yuma clapper rail (*Rallus longirostris yumanensis*)
- Hawaiian moorhen (*Galimula chloropus sandvicensis*)

GRUIDAE:

- Mississippi sandhill crane (*Grus canadensis pulla*)
- Whooping crane (*Grus americana*)

711). A complete list of all migratory birds protected by the MBTA can be found in 50 CFR 10.13. Also, all states protect most waterfowl. Exotic and feral waterfowl species including mute swans, greylag geese, muscovy ducks, and Pekin ducks are not protected by the MBTA, but may be protected by state law or local ordinance.

Persons wishing to take any migratory bird outside of the legal hunting season must first secure a federal permit from the US Fish and Wildlife Service (USFWS), and in some cases a state permit. "Take" means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12). "A federal permit is not required to merely scare or herd depredating migratory birds other than endangered or threatened species or bald or golden eagles" (50 CFR 21.43a).

Three species and one subspecies of waterfowl that occur in the United States are listed as endangered in 50 CFR 17.11, October 1, 1992 edition (Table 1). In addition, five subspecies of rails, and one species and one subspecies of crane are listed.

Contact personnel from your local USDA-APHIS-ADC office for information on obtaining a federal permit to take migratory birds.

"Landowners, sharecroppers, tenants, or their employees or agents actually engaged in the production of rice in Louisiana may, without a permit, shoot purple gallinules (*Lonorhis martinica*) when found committing or about to commit serious depredations to growing rice crops on the premises owned or occupied by such persons . . . between May 1 and August 15 in any year." (50 CFR 21.45).

Damage Prevention and Control Methods

Waterfowl can be difficult to disperse once they become established on a pond or feeding site. Promptness and persistence are the keys to success when attempting to repel nuisance or depredating waterfowl. Frightening devices and repellents should be in place before the damage starts to prevent the birds from becoming acclimated to the site.

where conditions permit, the protection of winter grains instead of spring grains may help eliminate waterfowl damage. Winter grains can normally be straight combined in July and August, long before migrating waterfowl arrive in the area. Admittedly, a winter grain's rosette of leaves is vulnerable to grazing and puddling damage by waterfowl in both the fall and spring. Research, however, has shown that light grazing of the winter rosette can actually increase stooling and grain yield.

Conduct spring planting in as short a time as possible. This may reduce the length of time that area crops are vulnerable in the fall and allow harvesting in the shortest time possible. Delay fall plowing as long as possible in areas where waterfowl damage standing or swathed grains. Waterfowl can be encouraged to feed in the stubble, a way from unharvested crops, by using harvested fields as field-baiting sites (see Alternate Food Sources below).

Recent research indicates that geese prefer certain grass species over others for food. Bluegrass (*Poa* spp.) is one of the most preferred, and tall fescue (*Festuca arundinaceae*) is one of the least preferred. Plant tall fescue instead of bluegrass to reduce goose grazing in golf courses, parks, or cemeteries. Plant trees to interfere with the birds' flight paths and plant shrubs to reduce the birds' on-ground visibility.

Alternate Food Sources. Waterfowl damage to crops can be reduced by providing alternate food sources in the form of lure crops or direct feeding. For maximum benefit, an established and well-organized program should be in place.

Lure crops are typically grains that are used to attract and hold waterfowl, thereby protecting other crop areas. Two general strategies are used in establishing lure crop areas: (1) seeding selected areas known to have a high incidence of waterfowl damage with the specific intent of allowing the birds to utilize the lure crop; (2) allowing the birds to select a lure crop field and then paying the landowner for the resulting loss.

most subject to waterfowl damage. Plant at the normal rate when using good quality seed. Increase the normal planting rate by a factor of 1.5 to 2 when using commodity grain or out-of-date seed to offset reduced germination rates. Do not allow any hunting or harassment of waterfowl in the lure crop area until all crops are harvested and the damage season is over.

Field baiting involves scattering grain in previously harvested fields or at natural waterfowl feeding and/or loafing areas to attract and hold waterfowl away from unharvested fields. Studies in North Dakota indicate that the most effective diversion of waterfowl occurs when the bait is made available within 2 to 3 days of the birds' first feeding in an area. There are no set rules about the amount or type of bait to use. Make enough bait available to ensure that none of the birds go away hungry. If the birds cannot get enough to eat at the baiting site, they will go elsewhere. The bait grain should be something the birds are familiar with and prefer. The same material that is grown in the field should work well. Do not allow any harassment of waterfowl in the area of the baited field until all crops are harvested and the damage season is over.

Surplus grain to conduct these feeding programs can be obtained from the Commodity Credit Corporation (CCC). People interested in obtaining CCC grain for use in waterfowl damage abatement programs should contact personnel from their local US Fish and Wildlife Service regional office. CCC surplus grain may only be used for the direct feeding of depredating waterfowl or for seeding waterfowl feeding areas. It may not be used to replace grain lost to depredating waterfowl.

Regardless of the method used (lure crop or field baiting), it may be necessary to initially scare or herd the waterfowl away from the surrounding fields. Once the birds have habituated to the feeding site, and damage has stopped, repelling efforts can be reduced.

feeding be stopped and all grain be removed at least 10 days before hunting waterfowl within the zone of influence of the baited area (50 CFR 20.211).

Frightening

Waterfowl may be repelled by almost any large foreign object or mechanical noise-making device placed in a field. The length of time frightening devices are effective depends on the nature, number, and variety of devices used. Move frightening devices every 2 to 3 days and use them in varying combinations to improve efficacy and prevent habituation. Repellents should be in place before the start of the damage season to prevent waterfowl from establishing a use pattern.

Visual repellents such as flags, balloons, and scarecrows are normally used at one per 3 to 5 acres (1.2 to 2 ha) before waterfowl become accustomed to loafing or feeding in the area. After the birds become accustomed to using an area, one or more per acre (0.4 ha) may be necessary. Visual repellents should be reinforced with audio repellents such as automatic exploders, pyrotechnics, or distress calls for optimum results.

All applicable state and local laws must be observed when using frightening devices. Pay particular attention to laws governing the making of loud noises, discharging of firearms, use of pyrotechnics, and use of free-running dogs. Also consider the possible reaction of neighbors.

Flags for repelling waterfowl can be made with 4-foot (1.2-m) laths and 6 x 30-inch (15 x 76-cm) strips of 3-mil safety orange plastic or red and silver mylar ribbon (Fig. 2). Tests conducted at Audubon National Wildlife Refuge indicate that black flags are not effective. Place flags so they are visible by waterfowl from all points in a field. Waterfowl will land in an area where flags are not visible. Once the birds land in a field with flags and begin feeding, the flags' effectiveness may be lost.

dry grass or weeds. Refer to Bird Dispersal Techniques for additional information.

Recorded distress calls have been used to repel several species of nuisance birds. Canada goose distress call tapes are not commercially available as of this writing. Individuals have made their own Canada goose distress call recordings and have successfully repelled nuisance geese.

Dogs trained to chase waterfowl have been used to protect golf courses and grain fields. Depending on the location and situation, dogs can be free running, on slip-wires, tethered, or under the control of a handler.

Live Capture

Local concentrations of problem waterfowl can be reduced by live trapping. The final disposition of trapped birds should be agreed upon in advance by all relevant state and federal agencies. The trapping method to use will depend on the type of birds

and the location of the problem. Secure a federal permit before carrying out live capture activity (50 CFR 21.41a).

Walk-in funnel traps (Fig. 3) are the most effective traps for capturing Canada geese in late June or early July, when the adult birds are molting and have lost the ability to fly, and the goslings have not yet fledged. The traps also work well for feral ducks and geese in parks and similar locations.

Set up the trap next to a lake or pond being frequented by the birds. When possible, place the trap in the area where the geese normally walk in and out of the water. In situations where there is no lake or pond, place the trap in a large open area.

Construct a walk-in funnel trap using the following, or similar materials:

1. 100 to 200 feet (30 to 60 m) of 3-foot (1-m) poultry wire (for the trap wings).
2. 60 to 80 feet (18 to 24 m) of 5-foot (1.5-m) woven-wire fencing (for the holding pen).

3. 200 to 300 steel fence posts to support the fencing.

4. Netting to cover the top of the holding pen if the geese are to be held several hours or overnight.

Once the trap is constructed, herd the geese into it using boats, and/or people walking on land. The exact number of boats and people needed depends on the size of the area and the number of geese. Gasoline-powered boats are not recommended because they are too noisy. Canoes, rowboats, or boats with electric trolling motors work best. Surround the geese on three sides, leaving the only avenue of escape towards and into the trap. Once in position, slowly and quietly drive the geese into the trap opening (Fig. 4) and into the holding pen. From there, load the birds into suitable transport equipment (such as turkey crates and covered pickup trucks) for final disposition. When handling birds, wear eye protection and long-sleeved shirts to avoid getting hit, scratched, or pecked.

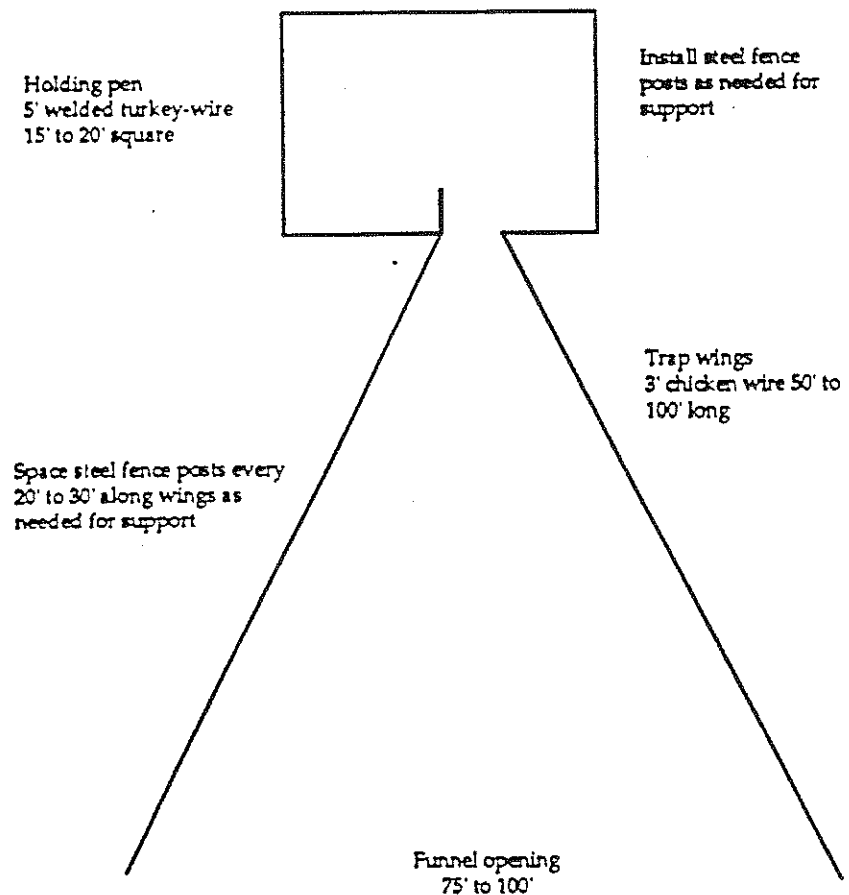


Fig. 3. Layout for walk-in funnel trap to capture flightless geese. Canada geese can be herded into a walk-in funnel trap during the flightless period for capture and relocation.

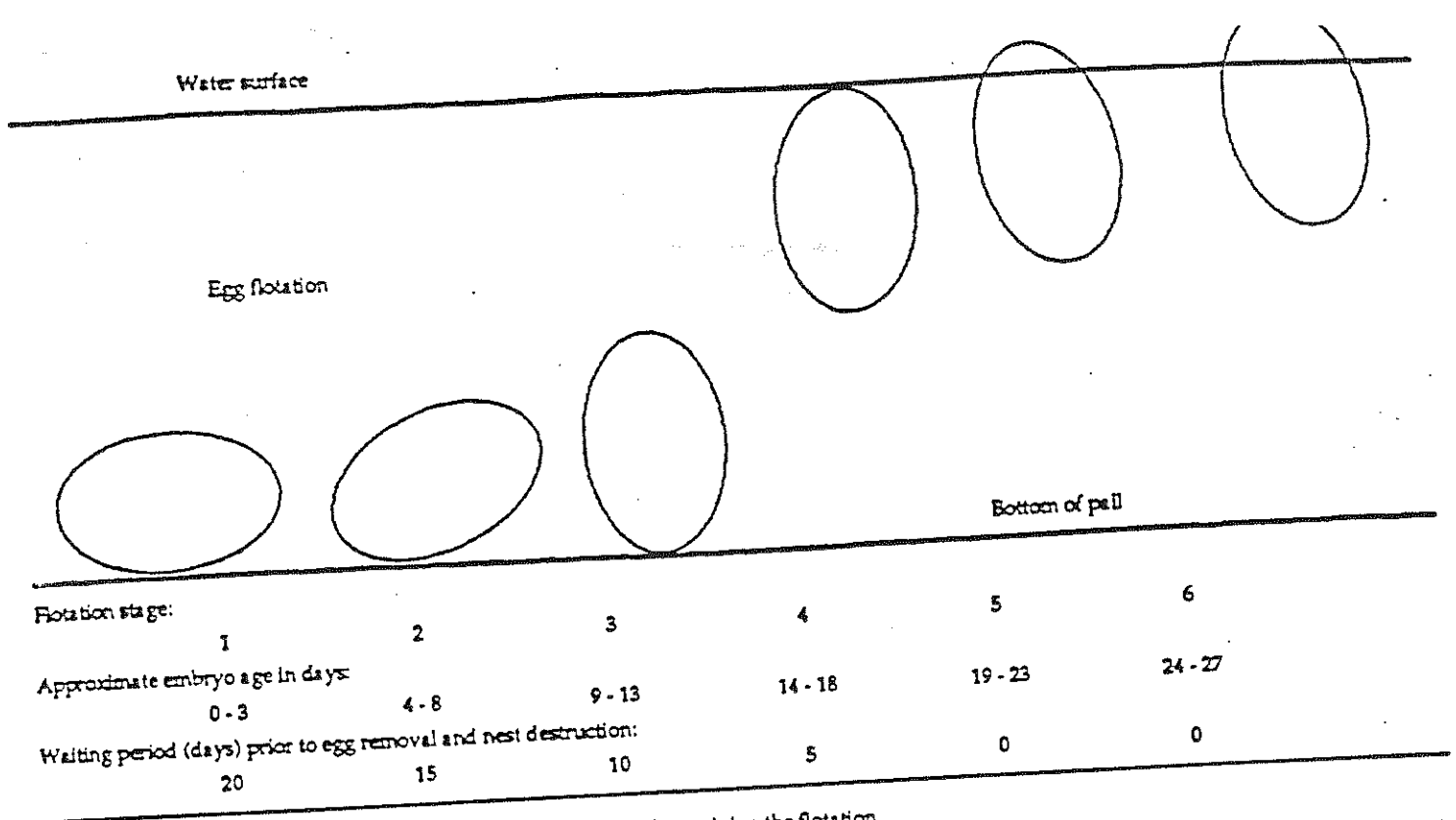


Fig. 5. Age embryos by placing 3 or 4 eggs in a pail of water and determining the flotation.

Toxicants

There are no toxicants currently registered with EPA for controlling waterfowl.

Shooting

Hunting, where safe and legal, is the preferred method of reducing local populations of problem waterfowl. Hunting has a strong repellent effect as well. State wildlife management agencies can provide information on current waterfowl hunting regulations.

In situations involving real and direct threats to human health and safety, such as geese around an airport, it may be possible to obtain a permit from the US Fish and Wildlife Service to kill migratory game birds. "Such birds may only be killed by shooting with a shotgun not larger than No. 10 gauge fired from the shoulder, and only on or over the threatened area or areas" (50 CFR 21.42a). Such permits are generally issued only when the use of nonlethal control methods is not practical or possible. A solid rationale as to why nonlethal methods will not

work and why the birds must be removed is generally required before a permit to kill migratory game birds is issued.

Other Methods

The growth of local waterfowl populations can be effectively slowed by destroying nests and eggs. This method is especially effective with nuisance Canada geese. Secure a federal permit before carrying out this activity (50 CFR 21.41a).

Render eggs nonproductive by vigorously shaking them as soon as possible after the full clutch is laid and incubation begins. The longer incubation continues, the more difficult it becomes to destroy the embryo by shaking. It is safe to assume that the clutch is complete and incubation has started if the eggs feel warm. In situations where the start of incubation is unknown, eggs can be aged using the flotation method (Fig. 5).

Eggs in flotation stage 6 may be on the verge of hatching. If pipping has started, the eggs should not be shaken,

as shaking will probably only accelerate hatching. Also, the US Fish and Wildlife Service, Region 3 Law Enforcement, has taken the position that a pipped egg contains a live bird, not an embryo. Live birds may not be killed under authority of an egg destruction permit.

After shaking the eggs, return them to the nest, and allow the birds to incubate for at least 3 weeks. The eggs and nest should not be destroyed immediately after shaking. Doing so may cause the geese to renest. Usually geese will not attempt to renest if they have been incubating eggs for more than 3 weeks. Remove all nest materials and eggs from the area after the appropriate waiting period. The nest and eggs must be removed to discourage continuation of the nesting effort and defense of the nest territory.

Most nest/egg destruction permits do not authorize possession of waterfowl nests or eggs. Therefore, all eggs and nest materials collected under authority of such a permit must be disposed of immediately.

DON'T FEED THE WATERFOWL

The following are steps to take in reducing problems caused by nuisance populations of residential waterfowl:

1. Stop all feeding of ducks and geese, even if it means drafting an ordinance for a fine in persistent violations.
2. Construct signs explaining the problems caused by feeding the birds.
3. Explain that feeding contributes to artificial population levels above the level the area would normally support. This results in nuisance complaints, fouling the area, damage to turf, decreased water quality, and costly management efforts.
4. Relocation of waterfowl generally provides only temporary relief from the problem. New birds soon arrive on the scene and take over areas from where other birds were removed. Other forms of control ~~must~~ be used after a removal effort to keep the cleared areas from being reinvaded. This would include harassment, construction of fences, landscaping and other habitat modifications.
5. In many cases feeding concentrates birds in areas with limited water supply and limited habitat for birds. This contributes to increased risk of the birds, usually harmful. Birds are subject to increased predation (even by pet cats and dogs), loss from disease, oil spills, severe weather related stress, and botulism outbreaks caused by poor water quality from large concentrations of birds and uneaten food decaying in the water. Young geese fed low protein food (bread, popcorn, etc.) develop deformed wings and they lose the ability to fly throughout life.
6. Eliminate all domestic waterfowl from the area. This includes white Peking ducks, muscovy ducks, emperor geese, etc. These birds act as live decoys which attract wild birds. The presence of domestic birds encourages feeding for humane reasons, as well as attracting well meaning members of the public to the area with additional handouts. In either event the wild birds soon learn to join in on the handouts, becoming quite bold and very much a nuisance.
7. Very few residential areas allow the keeping of domestic poultry, ducks or geese in back yards. Therefore, it is difficult to understand the logic of feeding wild birds or domestic water fowl in residential areas which results in the creation of similar problems with droppings and smell. Wild birds may actually cause more problems by splitting neighborhoods with distinct groups lining up to get rid of problems associated with wild population that are not involved in domestic populations. Wild birds are protected by state and federal laws, often thought of as endangered and very hard to move due to strong public reaction to sportsman groups, animal protection groups and other well meaning people.
- 8: Discontinuation of feeding generally reduces the problem with a few bird remaining to be enjoyed by the public. Rarely does every bird leave the area which is often a concern of supporters of feeding. Birds will not starve if feeding is stopped during warmer months or if feeding is stopped during the winter if birds have not been encouraged to depend on it during the warmer months.

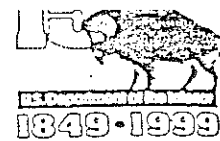
FOR FURTHER INFORMATION CONTACT:

USDA-APHIS-ADC
2530 RIVA RD., SUITE 312
ANNAPOLIS, MD 21401

PHONE: 410-269-0057
FAX: 410-269-0258
1-800-442-0708 (MD ONLY)



United States Department of the Interior



FISH AND WILDLIFE SERVICE
MIGRATORY BIRD PERMIT OFFICE
Post Office Box 779
Hadley, Massachusetts 01035-0779

Enclosed is information you recently requested from this office with regard to obtaining a Federal permit from the U.S. Fish and Wildlife Service.

FORMS:

- (X) Form 3-200-13 - Application
- (X) Supplemental Application Requirements

REGULATIONS:

- (X) 50 CFR 10 "General Provisions"
- (X) 50 CFR 13 "General Permit Procedures" - See 13.11, 13.12
- () 50 CFR 14 "Importation, Exportation and Transportation of Wildlife
See 14.31, 14.32, 14.33
- () 50 CFR 17 "Endangered and Threatened Wildlife and Plants"
- () 50 CFR 20 "Migratory Bird Hunting" - See 20.36
- (X) 50 CFR 21 "Migratory Bird Permits"

Refer to 21.41 for specific information on type of permit you are requesting.

- () 50 CFR 22 "Eagle Permits" - See 22.21, 22.22
- () 50 CFR 23 "Endangered Species Convention"

FEES:

THERE IS A \$25.00 PROCESSING FEE FOR MIGRATORY BIRD PERMITS AND RENEWALS. CHECKS MUST BE MADE PAYABLE TO THE "U.S. FISH AND WILDLIFE SERVICE". ONLY FEDERAL, STATE AND LOCAL GOVERNMENT AND/OR INDIVIDUALS OR INSTITUTIONS UNDER CONTRACT TO SUCH AGENCIES ARE EXEMPT FROM PERMIT FEES. NOTE: ALL OTHER APPLICANTS MUST SUBMIT THE \$25.00 PROCESSING FEE.

PLEASE RETAIN THE ATTACHED FEDERAL REGULATIONS (50 CFR'S) FOR FUTURE REFERENCE. AS OUR SUPPLY OF REGULATIONS IS LIMITED, WE WILL NOT BE SENDING ADDITIONAL COPIES IF/WHEN YOUR PERMIT IS ISSUED.



FEDERAL FISH AND WILDLIFE LICENSE/PERMIT APPLICATION FORM

Type of Activity:
Depredation

SEND TO:
Fish and Wildlife Service
Attn: Bird and Eagle Permit Office
Box 779
Ft. Snelling, MA 01035-0779
Phone: (413) 253-8643 Fax: (413) 253-8424

COMPLETE IF APPLYING AS AN INDIVIDUAL

Name:			
Street address:			3. County:
City, State, Zip Code:			
Date of Birth:	6. Social Security no.:	7. Occupation:	
List any business, agency, organizational, or institutional affiliation associated with the wildlife to be covered by this license or permit:			
Home telephone number:	10. Work telephone number:	11. Fax Number:	12. E-mail address:

COMPLETE IF APPLYING AS A BUSINESS, CORPORATION, PUBLIC AGENCY OR INSTITUTION

Name of business, agency or institution:			2. Tax identification no.:
Street address:			4. County:
City, State, Zip Code:			
Describe the type of business, agency, or institution:			
Name and title of person responsible for permit (president, principal officer, director, etc.):			
Home telephone number:	9. Work telephone number:	10. Fax number:	11. E-mail address:

ALL APPLICANTS COMPLETE

Do you currently have or have you had any Federal Fish and Wildlife License Permit? Yes No

If yes, list license or permit numbers:

Have you obtained any required state or foreign government approval to conduct the activity you propose? Yes No Not required

If yes, provide a copy of the license or permit.

Enclose check or money order payable to the U.S. FISH AND WILDLIFE SERVICE in the amount of \$25
Institutions which qualify under 50 CFR 13.11(d)(3) may be exempt from fees.

ATTACHMENTS: Complete the additional pages of this application. Application will not be considered complete without these pages.
Incomplete applications may be returned.

CERTIFICATION: I hereby certify that I have read and am familiar with the regulations contained in Title 50, Part 13, of the Code of Federal Regulations and the other applicable parts in subchapter B of Chapter I of Title 50, and I further certify that the information submitted in this application for a license or permit is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.

Signature (in ink) of applicant or person responsible for permit in Block A or B	7. Date:
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Information Sheet

Depredation 50 CFR 21.41

In order to expedite the processing of your application for a Depredation Permit, make sure you include the following information with your completed Fish and Wildlife License/Permit Application, Form 3-200-13.

1. Briefly describe the activity for which requested permit is needed.
2. List the species of migratory birds involved. Indicate the estimated number involved for each species.
3. Describe the specific damage being caused and how long has the problem occurred. Explain any health hazards that are involved, and provide a copy of a letter from your local or state Health Department substantiating the health hazards.
4. Give an estimate of the economic cost suffered as a result of the migratory bird depredation.
5. Outline the non-lethal control techniques or actions that have been utilized to control or eliminate the problem. How long and how often have you used these particular methods?
6. Supply the names of all parties that would be actively involved in this depredation control activity. Include any commercial companies you may have contacted if they will be conducting the actual depredation control activities. Include information on the type, registration number, and brief description of any aircraft used for depredation activities, if applicable.
7. List the exact location where the depredation control activity will be conducted.
8. Identify the location where records will be kept.
9. Indicate if you have contacted the Wildlife Services office within the Department of Agriculture. Give the date contacted, name and title of person, and their recommended action or provide a copy of the Migratory Bird Damage Project Report (ADC Form 37).

603-223-6832 (NH)

207-622-8263 (ME)

804-739-7739 (VA)

518-477-4837 (NY)

717-728-0400 (PA)

413-253-2403 (MA, CT, RI)

410-269-0057 (DE, MD, DC)

304-636-1785 (WV)

908-735-5654 (NJ)

802-828-4467 (VT)

10. Supply a copy of your State license authorizing requested authority, if applicable.
11. List the telephone number, including area code, where you can be reached between 8:00 a.m. and 4:30 p.m.
12. Applications for Depredation management at airports must specify if a current Wildlife Hazard Management Plan has been approved by the FAA. Please send us a copy of the Plan.

There is a \$25 processing fee payable to the U.S. Fish and Wildlife Service in check or money order for this permit. Institutions which qualify under 50 CFR 13.11(d)(3) may be exempt from fees.

The public reporting burden for these reporting requirements is estimated to be 1 hour, including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms. Comments regarding the burden estimate or any other aspect of the reporting requirement(s) should be directed to the Service Information Collection Clearance Officer, MS 224 ARLSQ, Fish and Wildlife Service, Washington, D.C. 20240, or the Office of Management and Budget, Attention: Desk Officer for the Department of the Interior, Washington, D.C. 20503.

An agency may not conduct and a person is not required to respond to a collection of information unless a currently valid OMB control number is displayed.

PLEASE ANSWER THESE ON A SEPARATE PIECE OF PAPER.

Secretary by the local board, for which services he shall receive such compensation as the city council or commissioners of the respective cities or towns may determine. (16 Del. Laws, c. 345, §§ 1, 2, 14; Code 1915, §§ 745, 762; 29 Del. Laws, c. 49, § 1; Code 1935, §§ 753, 768; 16 Del. C. 1953, § 302; 70 Del. Laws, c. 186, § 1.)

§ 303. General powers; quarantine regulations.

Each local board of health may make orders and regulations concerning:

- (1) The place and mode of quarantine;
- (2) The examination and purification of vessels, boats and other craft not under quarantine;
- (3) The treatment of vessels, articles or persons thereof;
- (4) The regulation of intercourse with infected places;
- (5) The apprehension, separation and treatment of emigrants and other persons who shall have been exposed to any infectious or contagious disease; and
- (6) Regulating and prohibiting or preventing all communication or intercourse with all houses, tenements and places and the persons occupying the same in which there shall be any person who shall have been exposed to such contagious or infectious disease. (16 Del. Laws, c. 345, § 12; Code 1915, § 754; Code 1935, § 762; 16 Del. C. 1953, § 303.)

§ 304. Public laundries and washhouses; supervision, inspection and regulation; violations and penalties.

(a) The local boards of health of the respective towns and cities of this State (where such towns and cities have local boards of health) shall supervise all public laundries and public washhouses within such towns and cities and shall not permit the employment by any public laundry or public washhouse of any person suffering with an infectious or contagious disease. The local board shall not allow any person to sleep in such public laundry or public washhouse, or in any room adjoining and opening into such public laundry or public washhouse. Every room in such laundry or washhouse that is used for the purpose of washing or drying clothes shall be properly ventilated and drained and shall be used for no purposes other than those specified. The floors of all rooms in public laundries or public washhouses used for the purpose of washing clothes, shall be made of cement or other mineral substance, and shall be so arranged as to be easily drained.

(b) The local board of any town or city within the State shall upon request of any citizen in such town or city inspect or cause to be inspected any public laundry or public washhouse, and if the same is found in an unsanitary condition shall direct the owner thereof to make the same in a sanitary condition. Upon the owner's failure to do so, the local board shall cause the place to be closed and shall post a notice upon the front door thereof and the place shall not be reopened until the owner or manager thereof receives a certificate from the local board certifying that the place has been put in a sanitary condition.

(c) A public laundry or public washhouse within the meaning of this section shall be any place within any town or city of this State now or hereafter

required by the laws of the State to be licensed for the conduct of its business or any branch thereof. Nothing in this section shall apply to the laundering or washing of clothes in any private residence or hotel.

(d) Whoever violates this section shall for each offense be fined not less than \$50 nor more than \$100. Every day during which such violation shall be persisted in after notice from the local board in any town or city of the State shall constitute a separate offense. (16 Del. Laws, c. 345, § 3; 18 Del. Laws, c. 33, § 1; 22 Del. Laws, c. 328, §§ 1, 2; Code 1915, § 746; 28 Del. Laws, c. 59, § 1; Code 1935, § 754; 43 Del. Laws, c. 91, § 1; 16 Del. C. 1953, § 304; 70 Del. Laws, c. 186, § 1.)

§ 305. Cleansing or closing unfit dwellings; recovery of expenses.

(a) Any local board of health when satisfied after an examination that any cellar, room, tenement or building within its jurisdiction occupied as a dwelling place has become, by reason of the number of occupants or want of cleanliness or other cause, unfit for such purpose, and a cause of nuisance or sickness to the occupants or the public may direct the owner or owners, or occupants thereof, to have the premises properly cleansed, or if it see fit, may require the occupants to remove or quit the premises within such time as the local board deems reasonable.

(b) If the person or persons so notified neglect or refuse to comply with the direction of the local board, it may cause the premises to be properly cleansed at the expense of the owners or may remove the occupants forcibly and close up the premises. The premises shall not again be occupied as a dwelling place without permission, in writing, of the local board. If such owner or owners refuse to pay the expenses incident to the execution of such orders, the treasurer of the local board, or the city council, or town commissioners, shall recover the same with interest and costs from the person who ought to have paid the same, as debts of like amount are recoverable. (16 Del. Laws, c. 345, § 4; Code 1915, § 747; Code 1935, § 755; 16 Del. C. 1953, § 305.)

§ 306. Cleansing diseased places; recovery of expenses.

Each local board of health may in case of the prevalence or of reasonable ground to apprehend the prevalence of malignant disease within its jurisdiction direct especially the cleaning of houses, cellars, yards, docks or other such places as the local board shall consider requisite or prudent for the preservation of the public health or for the mitigation of disease. If such direction shall not be observed and fulfilled within the time prescribed, by the person or persons to whom the directions were given, the local board shall order an officer of the local board, or some other person or persons to carry the same into effect, and the expense thereof shall be paid by the person or persons to whom the direction was given unless the local board shall otherwise order. If payment of the expense shall not be made on demand, the treasurer of the local board, city council or town commissioners shall pay the same and shall recover the same with interest and costs from the person who ought to have paid the same, as debts of like amount are recoverable. (16 Del. Laws, c. 345, § 8; Code 1915, § 750; Code 1935, § 758; 16 Del. C. 1953, § 306.)

Cross references. — As to contagious diseases generally, see Chapter 5 of this title.

307. Neglected privy well; penalty.

If any owner, agent or tenant of any property in any town or city suffers the privy well thereon to be so full that any 2 members of the local board of health declare the same to be a nuisance, such owner, the owner's agent and tenant in possession or any of them shall be responsible and after notice unless such privy is cleansed within one week after such notice shall for every offense be fined not less than \$1 nor more than \$20, with costs of suit, and stand committed to the county jail until the same be paid or until discharged by law. (16 Del. Laws, c. 345, § 10; 18 Del. Laws, c. 33, § 3; Code 1915, § 752; Code 1935, § 760; 16 Del. C. 1953, § 307; 70 Del. Laws, c. 186, § 1.)

Cross references. — As to cesspools, privy wells and drainage systems generally, see Chapter 15 of this title.

§ 308. Slaughterhouse; use as nuisance; penalty.

Whoever uses a slaughterhouse or place belonging thereto within a city or town limits, after the local board of health has pronounced the same noisome or having used such slaughterhouse shall not on the requirement of the local board immediately and effectually cleanse the same shall be fined not less than \$15 nor more than \$25, with costs of suit, and stand committed to the county jail till the same be paid or until discharged by law. (16 Del. Laws, c. 345, § 11; 18 Del. Laws, c. 33, § 4; Code 1915, § 753; Code 1935, § 761; 16 Del. C. 1953, § 308.)

§ 309. Placing or maintaining offensive matters in public places; penalty.

Whoever casts into any street, lane or alley or suffers to run or be washed from any slaughterhouse, stable, privy, yard or place in his or her possession into any street, lane or alley of any city or town having a local board of health any blood, garbage, carrion, dead animal, dung, filth or noisome or offensive matter, or whoever suffers any skins, rags or other matter to be in a noisome or offensive state within or upon property in the person's possession within the city or town limits or deposits in any of its lots, streets, lanes or alleys or near any dwelling house any contents of any slaughterhouse or stable or any matter in a noisome state, or having deposited or put such offensive substances in such places shall not immediately remove the same on the requirement of the local board shall be fined not less than \$5 nor more than \$20, with costs of suit, and stand committed to the county jail till the same be paid or until discharged by law. (16 Del. Laws, c. 345, § 9; 18 Del. Laws, c. 33, § 2; Code 1915, § 751; Code 1935, § 759; 16 Del. C. 1953, § 309; 70 Del. Laws, c. 186, § 1.)

Cross references. — As to refuse and garbage generally, see Chapter 17 of this title.

§ 310. Abatement of nuisances.

(a) Each local board of health may direct:

(1) That any noisome matter whether vegetable, animal or otherwise within the boundaries of its respective city or town or within 1 mile thereof or any vessel then having or having recently had any contagious disease on board which according to the opinion of the local board may be the occasion of sickness or ill health be removed or remedied by the person to whom the same belongs, or in whose possession, or upon whose property it is;

(2) That any place in such city or town or within 1 mile of the boundaries thereof being in such filthy or noxious state that according to the opinion of the local board it may be the occasion of sickness or ill health be cleansed by such persons to whom the same belongs, or in whose possession it is;

(3) That any reservoir of stagnant water or other nuisance or unwholesome thing in such city or town, or within 1 mile of the boundaries thereof which according to the opinion of the local board may be the occasion of sickness or ill health, be abated, removed or remedied by the person to whom the same belongs or in whose possession or on whose property it is; and

(4) It may remove any hogpens in such city or town which in the opinion of the local board it is deemed necessary or conducive to public health to remove.

(b) If it appears to the local board that any of the nuisances mentioned in this section are caused or produced by any person or persons other than those on whose premises the nuisances exist or that the nuisance or nuisances are caused or produced by water or filthy noisome or unwholesome matter flowing or running from the premises of any other person or persons or from premises which may be in that person's or those persons' occupation, the local board shall then give directions to cleanse, remove, abate or remedy the same to the person or persons causing or producing such nuisance or nuisances or to the person or persons from whose premises or from premises which may be in that person's or those persons' occupation the same shall flow or run.

(c) Where the Secretary of Health and Social Services determines, in accordance with Chapter 16 of Title 24, that a public nuisance exists, the Secretary shall have all the powers granted by this chapter to local boards of health. The Secretary may also apply to a court under §§ 311, 312 and any other sections of this title to enter the premise and remove health hazards, and to do any other act permitted a local board of health, so long as such act is consonant with the provisions and intent of said Chapter 16 of Title 24. (16 Del. Laws, c. 345, § 3; 18 Del. Laws, c. 33, § 1; 22 Del. Laws, c. 328, §§ 1, 2; Code 1915, § 746; 28 Del. Laws, c. 59, § 1; Code 1935, § 754; 16 Del. C. 1953, § 310; 68 Del. Laws, c. 134, § 2; 70 Del. Laws, c. 186, § 1.)

Cross references. — As to certain acts relative to garbage being declared nuisances, see § 1703 of this title.

Nuisance defined. — A nuisance may be anything which essentially interferes with the enjoyment of life or property; a nuisance is public when it affects the rights to which every

citizen is entitled. *Murden v. Commissioners of Town of Lewes*, Del. Super., 96 A. 506 (1915), *aff'd*, Del. Supr., 108 A. 74 (1919).

An otherwise lawful business or activity which causes the emission of noxious or offensive smells to such an extent as substantially to impair the reasonable comfort and enjoyment

of adjacent occupants, may constitute a nuisance. *Cain v. Roggero*, Del. Ch., 38 A.2d 735 (1944).

Duty to abate nuisances. — The imperative obligation rests on the government of every city, promptly, to abate or remove all nuisances by which the public health may be affected. *Liebig Mfg. Co. v. Wales*, Del. Ch., 34 A. 902 (1896).

Power to suppress nuisance must be summarily exercised. — The authority of the General Assembly to confer, upon municipal bodies or officers, powers for the protection of the public health and the suppression of nuisances is well settled; and such powers must be summarily exercised in order to accomplish their object. To allow an alleged nuisance to remain until it has been decided by a court, after deliberate trial, to be a nuisance, would

defeat the purpose of such sections as this. In such cases private rights must be held subordinate to the public welfare. *Liebig Mfg. Co. v. Wales*, Del. Ch., 34 A. 902 (1896).

But board may act at its peril if abatement involves destruction of property. — Although a local board of health possesses the power to summarily abate nuisances, which are, or may be, detrimental to the public health and, if the abatement should involve the deprivation or destruction of property, the owner would be deprived of property by due process of law within the meaning of the Constitution; yet the adjudication by the board of the fact of nuisance would not protect it as would the judgment of the court, and in all cases it would act at its peril. *Liebig Mfg. Co. v. Wales*, Del. Ch., 34 A. 902 (1896).

§ 311. Entry for destruction or removal of nuisances.

Whenever a local board of health thinks it necessary for the preservation of the lives and health of the citizens to enter a place, building or vessel within its jurisdiction for the purpose of examining into and destroying, removing or preventing any nuisance, source of filth or cause of sickness and is refused such entry, any member of the local board may make complaint, under oath, to any justice of the peace of the county, stating the facts of the case as far as the board member has knowledge thereof. Such justice of the peace shall thereupon issue a warrant directed to the sheriff or any constable of the county commanding the sheriff or constable to take sufficient aid and being accompanied by 2 or more members of the local board, between the hours of sunrise and sunset, repair to the place where such nuisance, source of filth or cause of disease may exist and destroy, remove or prevent the same, under the direction of such members of the local board. (16 Del. Laws, c. 345, § 6; Code 1915, § 748; Code 1935, § 756; 16 Del. C. 1953, § 311; 70 Del Laws, c. 186, § 1.)

§ 312. Removal of infected persons; taking possession of condemned premises.

Any justice of the peace, on application under oath, showing cause therefor by a local board of health or any authorized member thereof shall issue a warrant, under the justice of the peace's own hand, directed to the sheriff or any constable of the sheriff's or constables own county requiring the sheriff or constable, under the direction of the local board, to remove any person or persons infected with contagious disease or to take possession of condemned houses or lodgings. (16 Del. Laws, c. 345, § 7; Code 1915, § 749; Code 1935, § 757; 16 Del. C. 1953, § 312; 70 Del Laws, c. 186, § 1.)

Cross references. — As to contagious diseases generally, see Chapter 5 of this title.

Complaint must be made by board or member thereof. — The record of the justice

must show that the party who made the complaint was a member of the board of health, authorized to act for the board. *Johnson v. State*, Del. Super., 43 A. 256 (1895).

§ 313. Care of persons having infectious or contagious disease.

The local board of health may procure suitable places for the reception of persons under quarantine and persons sick with the Asiatic or malignant cholera or any other malignant of infectious or contagious disease. In all cases where sick persons cannot otherwise be provided for, the local board may procure for them proper medical and other attendance and necessaries. (16 Del. Laws, c. 345, § 13; Code 1915, § 755; Code 1935, § 763; 16 Del. C. 1953, § 313.)

Cross references. — As to contagious diseases generally, see Chapter 5 of this title.

§ 314. Common carriers; submission to regulations and examination of health officers; penalty for false statements.

(a) Whenever quarantine is declared, all railroads, steamboats or other common carriers and the owners, consignees or assignees of any railroad, steamboat or other vehicle used for the transportation of passengers, baggage or freight, shall submit to:

(1) Any rules or regulations imposed by any board of health or health officer;

(2) Any examination required by the board of health or health officer;

(3) Any examination required by the health authorities respecting any circumstance or event touching the health of the crew, operatives or passengers, and the sanitary condition of the baggage and freight.

(b) Any owner, consignee or assignee or other person interested, who makes any unfounded statement or declaration respecting the points under examination shall be subject to the penalties provided in § 317 of this title. (16 Del. Laws, c. 345, § 19; 22 Del. Laws, c. 328, § 5; Code 1915, § 758; 33 Del. Laws, c. 57, § 4; 34 Del. Laws, c. 69, § 1; Code 1935, § 764; 16 Del. C. 1953, § 314.)

§ 315. Temporary structures for isolation purposes; disinfection of property.

The State Board of Health or any local board of health may erect any temporary wooden buildings or field hospitals necessary for the isolation or protection of persons or freight supposed to be infected and may employ nurses, physicians and laborers sufficient to operate the same properly and sufficient police to guard the same. The board of health may cause the disinfection, renovation or complete destruction of bedding, clothing or other property belonging to corporations or individuals, when such action seems to the board necessary or a reasonable precaution against the spread of contagious or infectious diseases. (16 Del. Laws, c. 345, § 20; 22 Del. Laws, c. 328, § 6; Code 1915, § 759; 33 Del. Laws, c. 57, § 4; 34 Del. Laws, c. 69, § 1; Code 1935, § 765; 16 Del. C. 1953, § 315.)

Revisor's note. — The State Board of Health referred to in this section was abolished, effective June 22, 1995, by the repeal of Article XII of the Delaware Constitution pursuant to 69 Del. Laws, c. 385, and 70 Del. Laws, c. 115. Pursuant to 70 Del. Laws, c. 147, some of

Shed

Continued From Page 1

ties are required to be at least 48 inches high.

In applying for the permit at the county administration buildings in both counties, buyers will be made aware of the setback and fencing. The setback requirements differ in each county, and in Kent County, the setbacks depend upon the zoning district where it is located. Sheds larger than 216 square feet require a foundation.

When the property owner is cited for an incorrectly placed shed, the buyer has to hunt the seller down to correct the problem. If it is a setback issue which cannot be resolved by moving the shed, the property owner must pay \$200 to apply for a variance.

Mr. McKenna said while property owners have been held responsible for illegally placed sheds and swimming pools, self-

ers in Kent County will soon be held liable.

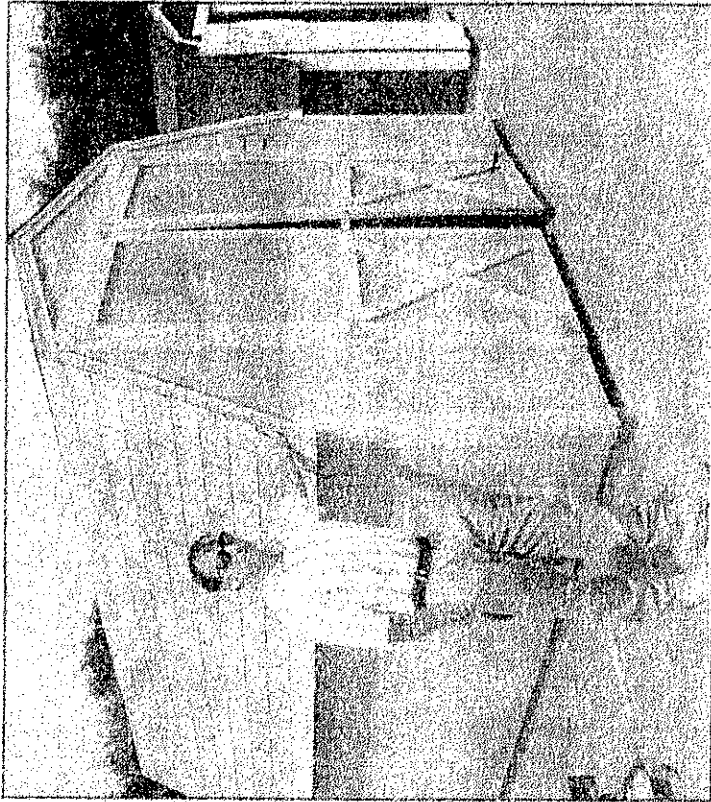
Kent County has amended its building code to state that buyers will be held liable for placing a shed structure on a property without the required building permit. Mr. McKenna said the county will begin enforcing the amendment within the next few months.

"We will be sending a letter to every business that sells sheds in Kent County, letting them know what our intentions are, and give them a copy of the amendment," Mr. McKenna said, adding that companies found to be in violation will be given one warning and subsequent offenses will result in a criminal summons and a mandatory appearance in Magistrate Court.

The minimum fine will be \$100, he said.

He said Kent County will send similar letters to fencing and swimming pool companies.

Charles Holmes can be reached at 644-6320 or at carlosh@newszap.com.



Staff photo/Carlos Holmes

Patrick S. McKenna, Kent County senior code constable, says reputable companies will let know customers know they need a building permit to erect a shed.

Counties want to shed light on building code violations

By Carlos Holmes

Assistant editor

DOWNSTATE — Some property owners in Kent and Sussex counties who have put in a new shed or swimming pool may be breaking the law.

Building code laws in both counties require that building permits be obtained before placing or building new sheds and swimming pools. However, according to officials in both counties, some people fail to do so, causing them problems later.

Patrick S. McKenna, Kent County senior code constable, has seen many sheds that have been placed without a building permit and have not received a final inspection. He said a common misconception involves the placement of prebuilt portable sheds.

"Some people say that the company told them that portable sheds don't need a building permit," Mr. McKenna said. "That is absolutely wrong."

Mr. McKenna said reputable shed sellers make it clear that a building permit must be obtained. But he noted that some companies want to make a quick sale and say nothing of the permit requirement.

Robert N. Betts, Sussex County constable, said buyers should beware of sellers who do not mention the permit.

"People should verify with the seller who will be responsible for getting the building permit for the structure," Mr. Betts said. "That will save a lot of trouble."

McKenna said fences are the biggest problem with swimming pools, which in both counties.

My neighbors burn trash in barrels regularly. Is this legal? What types of air pollutants are we and our children being exposed to?

Burning trash in burn barrels is illegal. Since 1968, Delaware has prohibited the burning of trash by individual property owners, and by commercial, industrial, and governmental facilities. Since burn barrels operate at relatively low temperatures—typically 400 to 500 degrees Fahrenheit—inefficient combustion occurs. This leads to very high levels of particulate matter, carbon monoxide, and other toxic chemicals. Indeed, burning trash in burn barrels—especially products such as plastics, rubber, and other synthetic materials—generates extremely toxic air pollutants.

An EPA study has also shown that trash/garbage burning emits "furans" and other deadly chemicals (such as dioxin) and "heavy metals" such as lead, cadmium, chromium, etc., some of which are known to cause structural damage in the heart and associated muscle tissue in both adults and fetuses.

Burning your trash/garbage in burning barrels emits cancer-causing tars and releases acid vapors which can damage lung tissue.

Are there any penalties for burning trash and/or leaves?

YES! Penalties range from a simple warning with a copy of the regulations to fines from \$50 to \$500 dollars plus a criminal record for more serious violators.

How can I report illegal open burning?

Enforcement officials are on duty 24 hours a day, and people can report illegal activity by calling 1-800-662-8802. Cellular phone users can call this toll-free number: #DNR.

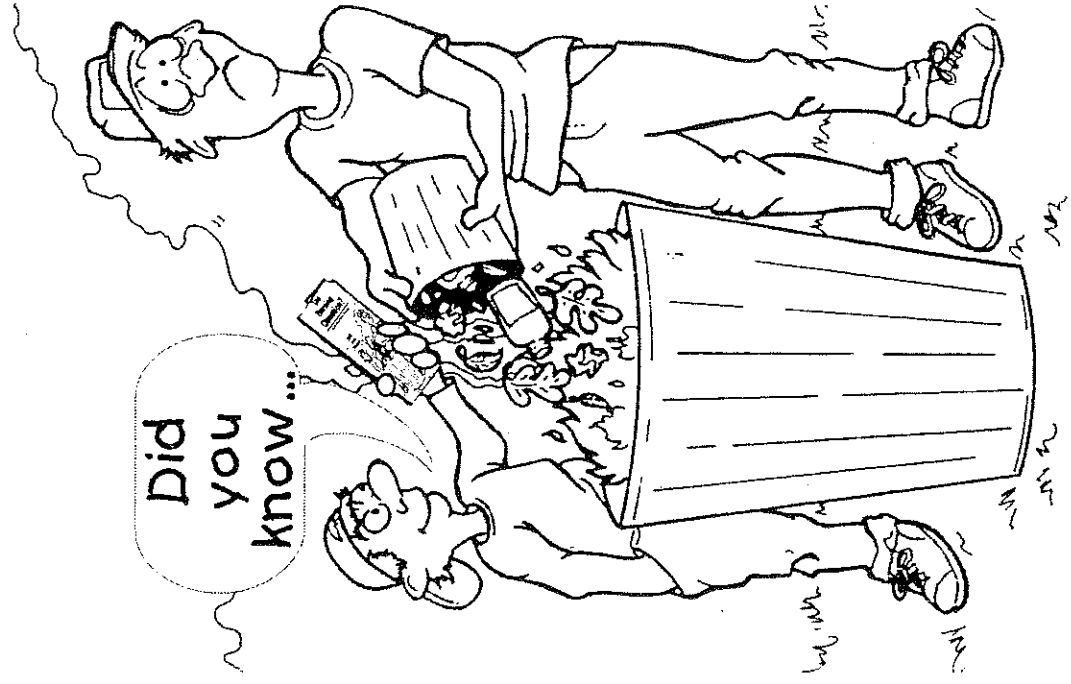
The Burning Question?

Facts About Open Burning

For additional information, contact:

Department of Natural Resources and
Environmental Control
Division of Air and Waste Management
Air Quality Management Section
89 Kings Highway
P.O. Box 1401
Dover, DE 19903
(302) 739-4791

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...but is open burning?

Open burning is defined in the Delaware Regulations Governing the Control of Air Pollution as, "Any outdoor fire or outdoor smoke producing process from which the products of combustion are emitted directly into the ambient air..." Open burning is typically conducted using burn barrels, screened pits, backyard incinerators, and just plain "piling up" of refuse, trash, yard trimmings or leaves.

Why is open burning of trash and leaves regulated?

There are several important reasons why Delaware regulates open burning.

First, many harmful chemicals are produced and released into the air when trash and leaves are burned. Some of these chemicals are toxic to people, animals, and plants. In addition, some of these chemicals react with nitrogen oxides in the air to produce ozone—especially during hot, sunny weather. This ground-level ozone contributes to smog, haze, and reduced visibility; and is a respiratory irritant that is particularly dangerous to children and the elderly. It can cause serious eye irritation and is one of the main air pollutants that damage crops and natural vegetation. Ozone is also a powerful oxidizing agent that causes bleaching and deterioration of many textiles and building materials.

Second, outdoor burning often exposes surrounding property to fire hazard.

Third, outdoor burning often subjects neighboring residents to nuisance conditions of smoke and odor that infringe on their right to enjoy or use their property, and their right to breathe clean air.

Finally, in order to meet the air quality goals of the federal Clean Air Act Amendments of 1990, it became necessary to more tightly restrict open burning. In Kent and New Castle Counties, where the ozone problem is classified as severe, it became necessary to ban all types of outdoor burning, except campfires and cooking fires, during the months of June, July, and August.

I have been burning my leaves for years. Is this legal? What types of air pollutants are emitted from burning leaves?

The burning of leaves has been prohibited statewide since February 2, 1995. The purpose of the prohibition is to lower your exposure to toxic and cancer-causing chemicals. The burning of leaves produces a considerable amount of airborne particulate matter, carbon monoxide, and at least seven known carcinogens. One of the most notorious carcinogens is benz[a]pyrene, a polycyclic aromatic hydrocarbon. Benz[a]pyrene is believed to be a major factor in lung cancer caused by cigarette smoke. It is also formed when leaves are burned. Like the secondhand smoke from cigarettes, benz[a]pyrene from leaf burning endangers us all.

What is particulate matter, and why is it a health concern?

The visible smoke from leaf burning is composed of tiny particles that contain toxic pollutants. If inhaled, these microscopic particles can reach deep into the lungs and remain there for months or even years. Breathing particulate matter increases the chances of respiratory infection, and causes other problems such as coughing, wheezing, chest pain, and shortness of breath. Particulate matter can also trigger asthma attacks in some people.

What is carbon monoxide, and what are its health effects?

Carbon monoxide is a colorless, odorless gas which prevents oxygen from being absorbed by the blood and lungs. Carbon monoxide can be especially dangerous for young children with immature lungs, the elderly, and people with chronic heart conditions or lung diseases.

Okay, I can't burn my leaves. How am I suppose to dispose of them?

Composting is one of the best alternatives. It is very easy to compost leaves, yard trimmings, and certain food scraps. When properly composted, these

wastes can be turned into natural additives for use on lawns and gardens, and for use as potting soil for house plants. Finished compost can improve soil texture, increase the ability of the soil to absorb air and water, suppress weed growth, decrease erosion, and reduce the need to apply commercial soil additives.

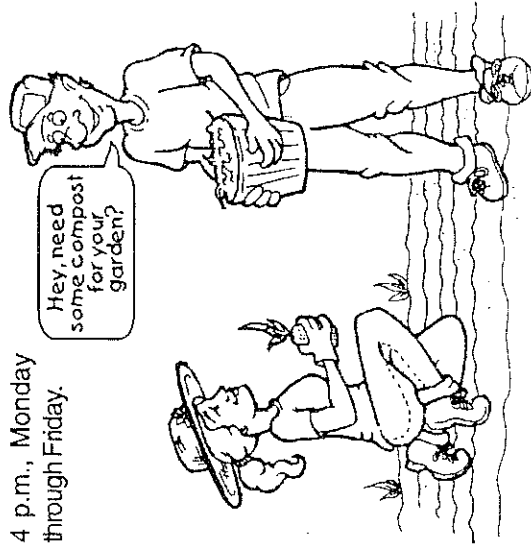
If composting is not feasible, try shredding or mulching. Landfilling at a licensed landfill is an acceptable alternative. Contact your waste hauler for specifics on leaf pickup availability and pricing. You can also take your leaves to a Delaware Solid Waste Authority (DSWA) Collection Station.

What materials can I compost?

It is fine to compost not only leaves, but other materials, such as grass clippings, manure, coffee grounds, and vegetable and fruit peelings. You should not compost meat, grease, or dairy products because they can cause potent odors and attract pests.

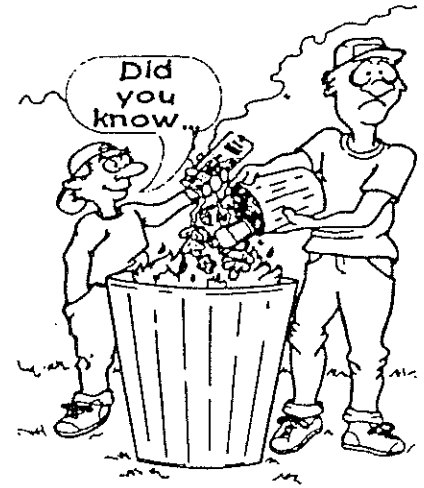
How can I learn more about composting and DSWA Collection Stations?

For information about composting, call Helen Waite of the Delaware Composting Association at (302) 422-4544 or DSWA at the number below. For more information about disposal options and costs, contact the DSWA's Citizens' Response Line at 1-800-404-7080 from 8:30 a.m. to 4 p.m., Monday through Friday.



The HOMEOWNERS Guide to

OPEN BURNING



What is legal?(Statewide)

- Burning of cut or fallen branches, limbs, or shrubbery from your residence; cooking fires; or campfires.

What is illegal?(Statewide)

- Burning fallen leaves, trash or garbage, grass, tree stumps, or other materials not listed above.¹

How does illegal open burning harm the environment?

- Emits toxic chemicals into the air we breathe. Rain eventually washes these toxic chemicals onto our land and into our waterways.
- Forms 'bad' ozone (smog) which can degrade building materials and damage crops and other vegetation.
- Contributes to acid rain. Acid rain causes fish kills, plant and property damage.

What can air pollution from burning do to your health?

- Can cause cancer, heart and lung damage and has been linked to Sudden Infant Death Syndrome (SIDS).
- Increase your chances of catching colds, the flu, and other diseases.
- Can trigger asthma attacks and other respiratory problems, and eye irritation.

What should you do with your household trash, garbage and leaves?

- Recycle glass, plastics, aluminum, used motor oil, and other recyclable materials at the recycle igloos nearest you. Take your non-recyclable trash to a licensed landfill.
- Start a compost pile. You can compost most organic material including leaves, grass clippings and vegetables, etc. The compost will provide excellent nutrients for gardens.
- See your waste hauler or town manager about leaf collection, if you can't compost them.

¹In Kent and New Castle Counties during June, July, and August (the ozone season), there is an additional restriction against all open burning, except for campfires and cooking fires.