

Urging Geese to Go— NOW!



By Philip C. Whitford

PHOTOGRAPH: GETTY IMAGES

Expanding urban Canada goose populations have taken over parks, golf courses, sports fields and corporate parks. Preference for short, highly fertilized grass and ponds attract geese to these environs (Smith et al. 1999), making them difficult to disperse and keep away.

Other geese join them, numbers quickly swell, decimating grasses, fouling the waters and covering everything with droppings. The question becomes, "What can one do to get rid of the geese?"

Canada geese are protected by international treaties. Yet many nonlethal control options exist. A review of those options is presented in "Managing Canada Geese in Urban Environments" Smith, et al. (1999). A short summary is presented here, along with options for egg/nest destruction and lethal removal of geese, all methods that may prove helpful for turfgrass managers.

Canada geese are creatures whose lives are dominated by learned traditions and instinctive annual behavior patterns. Goslings learn where to be at each season from their parents, returning to where they hatched; nested; brooded young, or molted flight feathers in past years. Being gregarious, resident geese attract migrants in fall. These same migrants then return yearly once they have established a tradition of proper-

ty use for any given activity but especially past nest sites and territories. Removing such geese requires that you must break them of past traditions and make them establish new ones.

What does all this mean in terms of scaring geese away and keeping geese away? Zero tolerance is the only option for long-term success.

When geese first arrive on unfamiliar grounds they are edgy and easily spooked. Chased off early after arrival, they seldom return. If allowed to stay, they begin creating traditions of property use, raise four to six goslings per pair, and deposit 1.5 pounds of droppings per day per goose — droppings that will mar your well-kept turf.

All animals, including Canada geese, are driven by internal clocks that determine daily and seasonal behaviors. To disperse urban geese, you need to understand these seasonal changes to minimize cost and maximize benefit from dispersal efforts.

Physically removing geese

Goose roundups — removing geese from a property to be killed or relocated — can only be done during the late June flightless period. The cost in Ohio in 2004 was about \$25 per bird removed, plus \$400 or more in set-up and transportation costs. This is a great option to use to remove final

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Zero tolerance is the only option for long-term success.

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birds from properties after harassment and alarm call use, the only options 100 percent effective at removing specific problem geese.

Alarm call playback following removal prevents new geese colonization and maintains a goose-free area with minimal effort thereafter.

Lethal removal and translocation permits must be obtained from a state's Department of Natural Resources (DNR) and can only be granted after demonstrating that several methods to scare geese or reduce property attractiveness to them have been tried.

Special urban hunting seasons also help reduce goose numbers, where legal and conditions will permit such. Golf courses and parks are encouraged to permit restricted morning hunting to eliminate problem geese.

Reducing recruitment

Egg addling (oiling or shaking eggs to prevent them from hatching) requires permits from state and federal wildlife authorities, and may reduce local populations over time.

Putting obstacles, large sticks or rocks in the nest to prevent further egg laying and incubation also proved very effective. We found 100 percent success nest abandonment and prevention of recruitment in our study (Whitford 2004).

Turf attractiveness for geese is reduced by mowing and fertilizing less often. Six-inch grass is far lower in protein and higher in fiber than 1-inch to 3-inch grass. Geese avoid eating it, if possible.

Aversion chemical sprays exist which make grasses unpalatable to geese. While effective, the sprays' relatively high cost, frequent reapplication and personnel to apply them make them cost effective only for small areas.

The Hershey (Pa.) Corp. planted dense, tall prairie grasses and flowers on its new campus. Geese become nervous about predators when they can't see at least 10 meters around themselves and avoid such areas. Geese have not colonized the area.

A 30-foot width of tall grasses/dense flowers, or shrubs around ponds also can be effective.

Techniques for dispersal

Visual scaring devices: Plastic flags/bags on stakes blow in the wind, reflective tape strung around ponds and on fences, eyespot balloons and/or kites mounted on long poles, scarecrows and flashing strobe lights all have shown limited success.

The newest visual scaring devices are lasers (Blackwell, et al. 2002) or spotlights used to disturb geese night roosting on ponds. These are highly effective at moving geese off night roosts

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The Alarm/Alert Goosebuster call playback successfully disperses geese and prevents re-colonization of areas.

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but have little effect at moving geese from areas of daylight occupation.

Trained dogs: Dogs, falcons, swans and radio-controlled planes and boats all can be successful at removing transient geese, residents and migrants as long as they are available on demand on short notice. They all require specially trained personnel and often a major investment or commitment to continued control efforts. Geese quickly learn "dog schedules" if not varied daily.

Noise-making devices: Air horns, fireworks, carbide cannons, whistle bombs, and "cracker shells" generally show good short-term results with transient geese in agricultural field. Such approaches are suited primarily for rural use, but may be effective goose deterrents on turf farms.

Alarm/alert calls: Alarm and Alert call-playback units are among the most recent sound production devices applied to goose problems. Alarm and Alert Calls on the Goosebuster (Bird-X Inc.) were recorded under natural conditions and are part of the normal species communication of giant Canada geese (Whitford 1987).

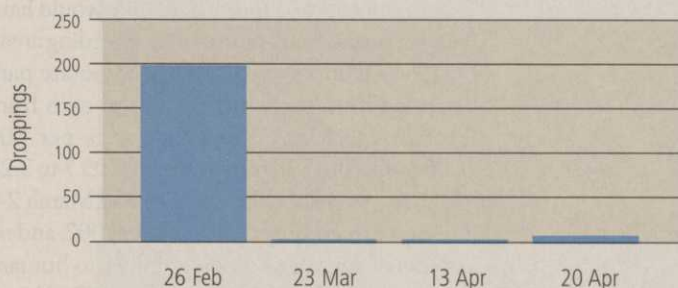
These calls elicit instinctive alert or escape responses from geese hearing them. Use of Alarm/Alert call playback evidenced successful dispersal of geese (when coupled with human harassment effort), and is the only system on the market that prevents re-colonization of areas following resident goose dispersal without further employee time demands and effort. (Whitford 2004). In that study, success at removal of geese was based on reduction in goose use hours per day, reduction in goose aggression/injury complaints, and dropping counts per 100 meter of sidewalk on a 60-acre corporate park in Dayton, Ohio, with ponds, soccer and baseball fields, and six buildings. About 85 to 100 resident geese were present on the main campus and another 80 to 140 on the adjacent properties at the start of the study.

Records indicated 43 to 45 active nests annually for the previous five years on the primary campus. Alarm and alert used for this study were digitally altered and played back in random call sequence patterns to reduce potential for habituation. Call playback and goose harassment (one person chasing geese on foot until they left the property) started Feb. 26, 2002, and only call playback was used May 14 to Aug. 15.

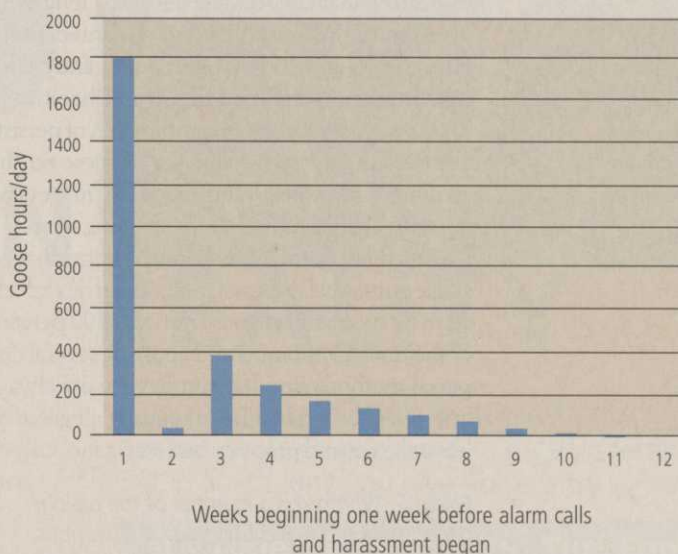
The study (see charts at right) began after breeding territories were established by geese

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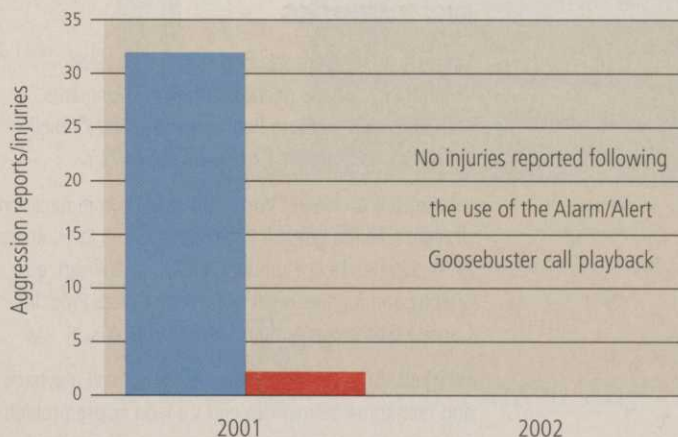
Droppings per 100-meter sidewalk



Estimated goose hours on study site per day



Goose aggression to humans (blue), human injuries (red) 2001 vs 2002



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that had nested there previously, so geese were more reluctant to disperse than they would have been in summer, fall or from non-breeding areas.

Goose hours per day on the corporate park dropped from more than 1,800 to zero from February to May. Goose droppings per 100 meters of walks fell from a mean of 195.7 to 3.28 per 100 meters between Feb. 26 and March 24. Nesting success dropped to zero in 2002, and no reports of goose aggression or injury to humans occurred, vs. 32 and 2, respectively, in 2001.

Study methods successfully eliminated all geese from the property and geese stayed away eight months after the last use of call playback, indicating that they had developed a long term aversion to the area. New sod replanted annually in 2000 and 2001 around ponds and building entrances remained dense and healthy in 2002 with geese gone. A combination of persistent pursuit and zero tolerance of geese on the grounds was considered essential in getting geese to abandon the site for the long term.

As a final comment, it should be noted that no single non-lethal dispersal method can be expected to be successful at goose removal 100 percent of the time. Combining and applying several dispersal methods simultaneously virtually always improves the probability of getting all geese to leave the desired property and stay gone.

Phillip C. Whitford is a member of the biology department at Capital University in Columbus, Ohio. He received his bachelor of science and master's degrees in wildlife management at the University of Wisconsin-Stevens Point and a Ph.D. in biology (animal behavior) at Wisconsin-

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Milwaukee. He has held the Geist Endowed Chair/Professor of Biology at Capital University since 1993 and is in his 24th year of Canada goose vocal/visual communication and behavioral research. He acknowledges that he has gained research and technical development financial support from Bird-X Inc. and receives royalties from the sales of the Goosebuster unit sold by the company in exchange for call copyright licensure and continued advisory services.

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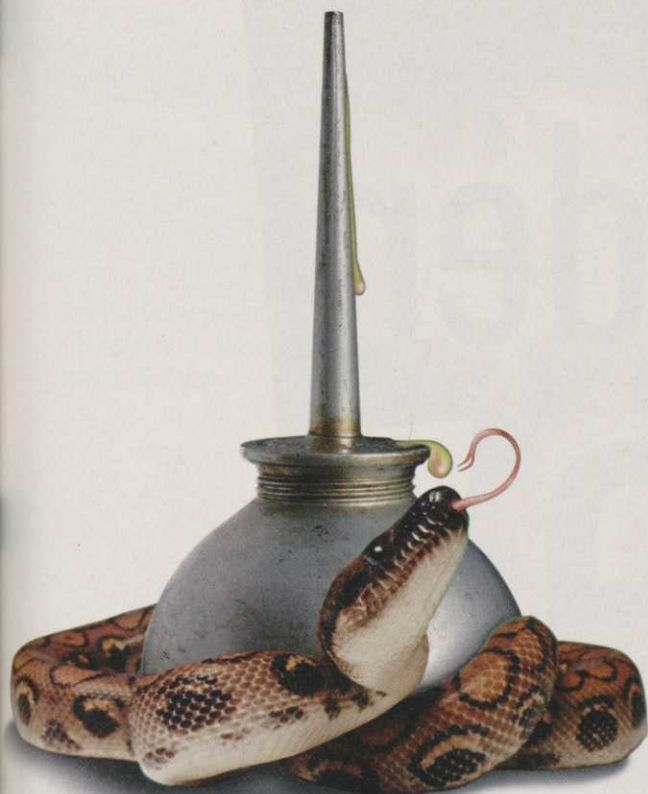
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Under Fire

By Anthony Pioppi,
Contributing Editor

Superintendents burn turf to preserve native vegetation and encourage wildlife

Tony Kalina is a fan of Aldo Leopold, the father of wildlife ecology, whose 1949 book, "A Sand County Almanac," is a literary landmark in the subject of conservation.

Leopold and others documented the beauty, vitality and eradication of the prairie, writing on such subjects as prairie grasses that reached up to the head of a rider atop his horse.

Kalina grew in Prairie Landing Golf Club, an upscale daily-fee course near Chicago

that opened in 1994. He remained as superintendent, trying to put into practice the management tools to preserve and foster the prairie.

Kalina burned on his course for the first time two years after it opened in an effort to maintain the prairie grasses by keeping out unwanted plants such as weeds.

"Fire is a tool of prairie management. It's a necessity," Kalina says. "Some plants thrive on it."

From the east side of Chicago to the Kansas Sand Hills to a 6-mile-long piece of land in the

"A land ethic ... reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity." — Aldo Leopold

Fire is a tool of prairie management at Prairie Landing Golf Club.

Long Island Sound, fire is an oft-utilized tool of the trade and one that is becoming more common as a way to preserve native vegetation and at the same time encourage wildlife.

Kalina goes by the one-third rule, meaning he burns one-third of his grasslands a season. The two-year break between burnings allows the turf time to rejuvenate, in part by using the soot from the previous burn as fertilizer.

At Prairie Dunes Country Club in Hutchinson, Kan., Superintendent Stan George — the “dean of controlled burning,” in the words of one superintendent — has been holding off the march of undesired wooded vegetation such as dogwood, honeylocust and volunteer cottonwoods for more than a decade. Fire is also used to control wild plum bushes in native areas but not eliminate them. Fire also knocks back cool-season grasses that compete with desirable warm-season grasses such as sand lovegrass and switchgrass.

“It also gets rid of the aging population and encourages new growth,” George says of the turf.

George points out that wildfires scorched the prairie every two to five years prior to human expansion. That

stopped when mankind came west and settled. From 1937 to 1993 the prairie within George’s course was untouched by fire. As a result, nonindigenous species such as cottonwood thrived, and as humans moved deeper into the prairie, they brought plants with them that dominated the environment to the detriment of the natural vegetation.

“It was starting to go from Prairie Dunes to Dogwood Dunes,” George says of the vegetation invasion.

Burning off the thatch and matt gives ground-nesting animals more opportunity to call Prairie Dunes home. Since he first started using fire, George says there has been a noticeable increase in the amount of wildlife present on the course. He points out that small burrowing animals such as mice have flourished, which has led to a larger hawk population.

At Fishers Island Club in Fishers Island, N.Y., the undergrowth appears to be retaking the golf course right before one’s eyes. Cherry trees and gnarly thickets of vines and thorns seemingly are poised at the course’s edge waiting for a chance to advance.

Tennis courts that once existed behind the 18th green are now sub-

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Under Fire

Burning off thatch and matt has been good for the population of ground-nesting animals at Prairie Dunes Country Club.



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merged in an area classified as wetlands by the state of New York.

"I swear by it," says Superintendent Donnie Beck, who has been burning for nearly a decade. "If I could, I would burn the entire course. The grass comes back better."

Beck is forbidden to burn close to the shoreline of the seaside layout because of environmental reasons. Because of nervous members, Beck is also restricted from burning on much of the outside of the course. Burning is restricted to areas buffered by the shore or fairways.

What some players at Fishers and other courses have come to realize is that areas with tall grasses such as blue-stem fescue are easier to hit out of after being burned off because the thick layers of duff and leaf mold are eliminated, leaving the wispy grasses behind.

Politics plays a large role in getting the go-ahead to burn from members at private clubs. George says invariable member complaints range from being unable to find balls hit into scorched areas to soot-stained shoes, socks and pants. Kalina deals with the same gripes.

George says a compromise was reached over time and he does not burn large tracks of the course on a yearly basis. Some seasons he just ignites small out-of-play areas and other times he refrains from lighting up at all.

The original tallgrass prairie comprised an area from northern Indiana to Texas to Saskatchewan, about one-third of the country. Grasses that dominated were big bluestem, Indian grass and prairie cord grass or rip gut in wetter ground. Other prairie grasses included little bluestem, prairie dropseed, porcupine grass, sideoats grama and needlegrass. The true prairie held about 150 kinds of grasses, although no more than 10 were dominant in their special niches.

George attended a class through the Kansas State extension service to learn burning techniques. Kalina learned from a contractor, who lit and managed the fires at his course. Beck was taught by his predecessor.

Not coincidentally, all three superintendents also participate in controlled burns off the property. At various points around Fishers Island, fire is used to hold back scrub brush. George participates in burns at the nearby Sand Hills State Park, which encompasses more than 1,100 acres, most of it Kansas grasslands.

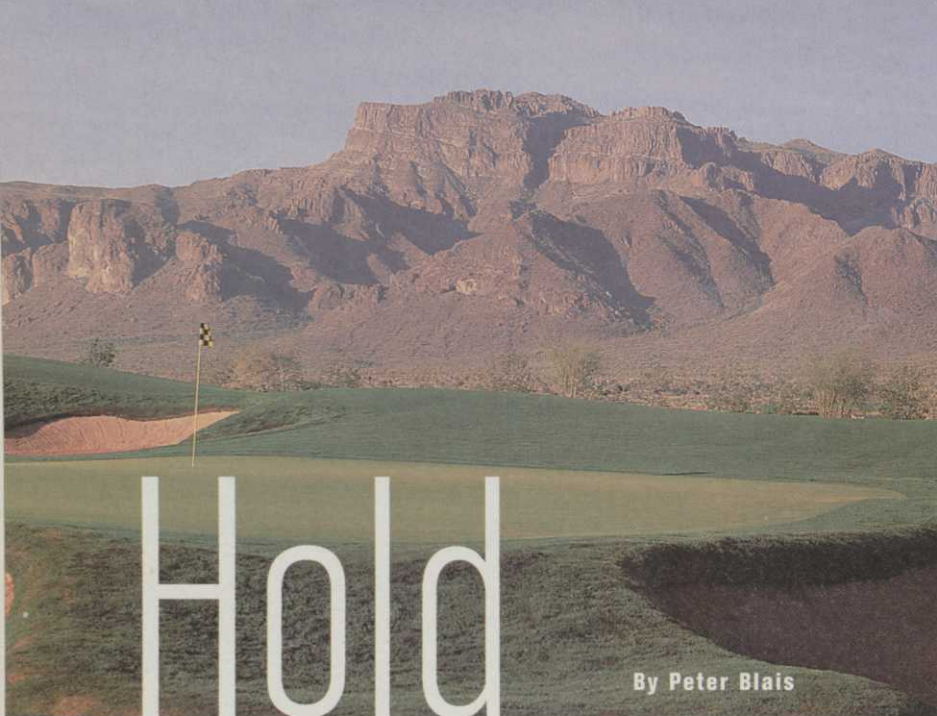
Kalina, in a role that would have surely made Leopold proud, is a volunteer member of the West Chicago Prairie Stewardship Group. Although municipal employees do the actual burning, Kalina and others maintain fire breaks, clear debris and monitor the fire during burns at the more than 300 acres of 10,000-year-old prairie. ■

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Hold

By Peter Blais

Water

Some superintendents are irrigating less during overseeding — and getting good results

With irrigation water becoming increasingly expensive, superintendents are seeking ways to limit their water use, even during overseeding. Dale Miller has managed Sunbelt courses from California to North Carolina for the past 25 years, often working for management companies such as American Golf, ClubCorp and Evergreen Alliance while supervising as many as 60 courses at a time as a regional manager. He is currently director of agronomy of the four courses at PGA Village in Port St. Lucie, Fla., and has developed programs he estimates can save as much as 50 percent of the water traditionally used when overseeding greens and fairways.

One method that has worked well throughout the South begins in the sum-

mer with occasional light verticutting right through the warmest months to keep the ground open and receptive in anticipation of actual overseeding in early fall. A couple of weeks prior to overseeding, Miller suggests backing off to as little as 25 percent of normal watering in preparation for actual overseeding. He continues his application of plant growth regulators to the bermudagrass up to that time and performs a final light verticutting.

"Bermudagrass needs much less water in late summer and early fall as the physiology is shutting down the grass due to less light, lower sun angle and decreased intensity," Miller says. "The evapotranspiration (ET) rate that time of year is also much less than at other times."

When overseeding, Miller advises applying seed at rates roughly 10 percent higher than the recommended rates

to account for slow germination and increased traffic, since play and routine maintenance can continue throughout all but the one or two days seed is actually being spread. Golf cars are allowed on the course and regular mowing frequencies continue. The additional golfer and maintenance traffic helps push seed down into the soil, where it has the best chance to survive. The less downtime also means more revenue.

Miller, who took the position at PGA Village this summer, says the facility has traditionally closed its courses for 10 to 12 days for overseeding during some of the best possible weather. With his overseeding method, he anticipates closing the courses for no more than two days.

Once the seed is spread, Miller continues the lower watering levels for a week to 10 days. Less water means less seed floating in the thatch layer (where it has little chance to establish itself as a healthy plant) and more seed finding its way into the soil (where it can set down roots and begin drawing needed nutrients from the ground). Player traffic and mowing helps work the seed into the ground.

Once the first seeds begin germinating, the rest will soon follow, Miller says. "At that point you go back to slightly increased irrigation rates for that time of year to fully germinate the seed," he adds. "It takes just three to five days to fully germinate. You may have to hit potential hot spots with a little extra water. But overall you will be in good shape. Greens under this program should get hand-watering in addition to normal watering on mounds and collars, where germination is notoriously difficult to [begin]."

Since the seed has already absorbed some moisture prior to beginning the higher watering rates, Miller irrigates only at night throughout the overseeding process. This saves additional water compared to courses that use larger amounts and must irrigate during the day to put down sufficient liquid. Cutting heights are raised slightly and golf cars are restricted to cart paths for a couple of

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