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ECOLOGICAL APPROACH TO MANAGING PROBLEMS CAUSED BY URBAN CANADA GEESE

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ABSTRACT: Urban-suburban Canada geese (*Branta canadensis*) create nuisance problems at their foraging sites by littering them with feces. An ecological approach to the problem involves inducing the geese to use alternate foraging sites by reducing the attractiveness of problem sites. This can be accomplished by reducing the forage quality at the nuisance site by not fertilizing and infrequently mowing the lawn or by replacing the lawn with a less palatable grass species or other ground cover. Further, sites can be made less attractive to geese if they are surrounded by tall trees which make it harder for geese to land or take off, and planting bushes and hedges to reduce a goose's ability to watch for approaching predators. Another approach involves relocating roosting areas to more remote sites so that geese have to expend greater time and energy to reach the problem site.

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INTRODUCTION

Canada goose populations have recently been established in many U.S. cities (Chasko and Conover 1988). For the most part, these urban populations have spread because man transplanted urban-adapted geese among cities. Many of these populations have grown to the point that some local residents view these birds as nuisances that foul their backyards, parks, golf courses, and beaches with fecal material.

Urban goose problems are difficult to solve (Conover and Chasko 1985). Hunting usually is not an option because most of these birds are nonmigratory and spend their time in urban areas where hunting does not occur (Conover and Chasko 1985). Although some chemicals show promise as goose repellents (Conover 1985), none currently are registered for that use by the U.S. Environmental Protection Agency and hence cannot be used legally in the U.S.

AN ECOLOGICAL APPROACH

An ecological approach to alleviate urban goose problems may provide a nonlethal management option. Most sites where geese are causing problems are used by the geese as feeding sites. An ecological approach to urban goose problems assumes alternate foraging sites are available. This assumption appears valid for most cities because urban geese forage primarily on the grass in lawns—and lawns are a ubiquitous feature in metropolitan areas.

The idea behind an ecological approach is to make the geese stop using the problem site by making that site less attractive than alternate feeding locations. Geese select foraging sites based on assessment of risks to their safety, food quality, and energetic costs of reaching the site. Conover and Kania (1991) found that urban Canada geese selected foraging sites which provided the greatest visibility so that they could see anything approaching them. Geese avoided small lawns and lawns with hedges, shrubs, or other obstacles large enough to hide a predator. Furthermore, geese avoided sites that required a steep angle of ascent to leave (Conover 1991); that is, geese did not use lawns that were surrounded by tall trees or buildings that might impair the birds' ease in flying away. These results indicate that geese can be discouraged from using a foraging site by planting hedges and bushes and by surrounding the area with tall trees.

Geese also can be discouraged from a using a foraging site by reducing the quality of available food. Conover (1991) found that even hungry Canada geese refused to eat some ground covers such as common periwinkle (*Vinca minor*), Japanese pachysandra (*Pachysandra terminalis*) and English ivy (*Hetaera helix*). This suggests one way to discourage geese from using a foraging site is to replace the lawns with an unpalatable ground cover.

Another approach is not to do away with lawns but to reduce their forage quality. Geese prefer fertilized plants over unfertilized ones (Owen 1975, Owen et al. 1977) and mowed turf plots over ones allowed to grow rank. Young leaves, which are the most nutritious, are easy for a goose to find and harvest in mowed lawns because they protrude above the surrounding trimmed lawn. In contrast, new leaves on rank plants are covered by the mature leaves; harvesting the young leaves is time consuming for the geese. Canada geese have a significant preference for Kentucky bluegrass (*Poa pratensis*) and a significant dislike for tall fescue (*Festuca arundinaceae*) compared to three other cool season grasses: colonial bentgrass (*Agrostis tennis*), perennial ryegrass (*Lolium perenne*), and red fescue (*F. rubra*) (Conover 1991). Kentucky bluegrass is the most common grass in the northeast and occurs at many nuisance goose sites. Hence, replacing the Kentucky bluegrass with a less palatable grass species, such as tall fescue, is an additional way to discourage geese from foraging at a site.

A third component in a goose's selection of foraging sites is the energy required to reach them. Sites that are distant from roosting sites are not as likely to be visited as equivalent sites that are closer. This suggests that goose problems could be alleviated by forcing the geese to move to a more distant roost. While this approach has not been tested with Canada geese, Mott et al. (1992) reduced cormorant activity on catfish ponds by forcing these birds to abandon nearby roosts.

CONCLUSIONS

Many landowners with goose problems find the proposed habitat manipulations unacceptable. Others have considered goose problems serious enough that they have utilized these approaches. As one example, some water companies have eliminated their lawns or stopped mowing them to discourage geese. While changing the landscaping or turf management at nuisance sites is not a panacea for goose problems; it is yet another tool available to wildlife managers and land-

owners trying to cope with a nuisance goose problem.

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