

Mitigating Bird and Small Animal Damage to Agriculture Crops and Bee Yards

Introduction

Wildlife damage is estimated to cost New Brunswick's agricultural industry hundreds of thousands of dollars annually. While the losses caused by large game (deer, moose and bear) are well publicized, birds and small animals can also cause significant losses in a wide range of agricultural commodities.

Birds

In New Brunswick, birds cause yield and quality losses in many crops, from early in the season to the last day of harvest. Mitigation measures for birds can be divided into three main categories: acoustical repellents, visual repellents and physical exclusion. Often more than one of these approaches is required.

1. **Acoustical Repellents** are used to scare birds. There are many different types on the market. Propane fired cannons (*Figure 1*) are common and have been used by farmers for a number of years.

Electronic devices that emit distress or alarm calls can frighten specific species from the area. They are commonly referred to as *wailers*, *squawkers* or *tweeters* (*Figure 2*). Many producers in the province have had success with these devices.

Whistling and/or pyrotechnic pistol cartridges fired near flocks in the air produce the same amount of noise as a propane cannon and work well to scare off flocks.

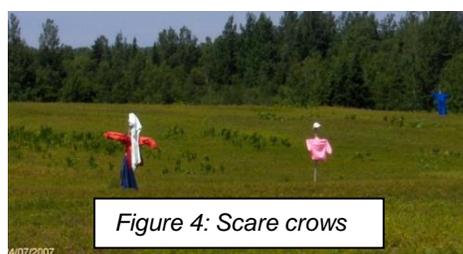
Other noise-making products such as mylar humming lines, air horns, clanging aluminum pie plates and firecrackers can also be used.



Birds become accustomed to blasts and other noises that are too close together or occur at regular intervals. In the case of “bird-bangers,” randomized timing and variation of the direction of the device are important factors in determining its effectiveness.

When considering if acoustical repellents are your best wildlife mitigation approach, it is also important to consider such factors as proximity to neighbours or roadways in order to avoid noise complaints.

2. **Visual Repellents** are normally used in conjunction with acoustical repellents for the greatest success. *Scare eye balloons* (Figure 3) come in different colours, with yellow working the best against blackbirds. The balloons must be suspended above the crop and allowed to move freely in the wind to be effective. *Streamers and flash tape* move in light winds and reflect sunlight. They are available in different colours and are most effective along the crop perimeter areas where the most severe damage typically occurs.



Mirrors that reflect light flashes can be effective on sunny days while *flashing lights* can be used at dawn and dusk. *Scare crows* (Figure 4), *hawk kites* (Figure 5) and *silhouettes* such as *stuffed owls* have limited use. Remember that all devices, both visual and acoustical, will achieve better results if moved around rather than being left in one location.

Falconry uses trained falcons or hawks to scare off other birds. While very effective when the falcon or hawk is in the air over a field, there are differing reports as to whether the effectiveness of this approach lasts when the falcon/hawk is no longer at the site.



3. **Physical Exclusion or netting** (Figures 6 and 7) is the best way to protect a crop. Unfortunately, it is an expensive option and may not be feasible for certain operations. There are two main ways netting can be used to prevent bird damage: by draping it directly over the crop, or fastening it to an overhead structure to totally enclose the crop.



Small Animals

Raccoons and skunks are omnivores, meaning they eat both plant and animal sources of food. In agricultural settings, they can cause damage to crops such as corn, both sweet and field, as well as other vegetables, fruit and turf. Porcupines and beavers are herbivores, meaning they only eat plant material. They too like corn and some other crops, but unlike raccoons and skunks, they can do a great deal of damage to an orchard or tree nursery stock. Beavers are also notorious dam builders and can cause crop loss due to flooding.

Exclusion

The most effective way to mitigate damage from small animals is exclusion. Damage to sweet corn and other crops can be greatly reduced or stopped with the use of electric fencing. The most popular raccoon exclusion is a two-strand electric fence (Figure 8),



Figure 8: Example of electric fencing

but there are other designs available. Any electric fence needs to be kept free of grass and weeds which can reduce the shock, making it less effective. Also, fences need to be properly grounded and energized. Please see *Fencing Options to Mitigate Wildlife Damage* ([link in reference section](#)). These fencing designs are also effective at reducing damage caused by other small animals such as porcupines, skunks and beavers.

Porcupines chew the bark off trees (girdling) and can cause a great deal of damage in orchards and nursery stock. The use of electric fences or metal tree guards at least 70 cm high can be effective exclusionary measures.

Skunks can cause significant damage if they get into a bee yard. Exclusion is the best mitigation option. The fences described above to control small animals or fences used to stop black bears can also be used with some efficacy for skunks. Some beekeepers have also had success by placing their hives on 1m raised platforms, as skunks are not good climbers.

Beavers have front incisor teeth that grow continuously. Their teeth are sharpened by chewing while feeding, girdling and cutting down trees. In an agricultural setting, beavers can do damage to orchard and nursery trees as well as to crops such as field corn or even soybeans. They can also build dams which can cause agricultural land to flood. Control of this animal is difficult as fencing fields is not a practical option. Removing dams, lodges and banking dens may cause them to relocate. If flooding is the problem caused by the beaver, and not direct destruction of trees or crops, the use of a three-log drain or a Clemson beaver pond leveler (Figure 9) might be useful. Trapping during the season may also be an effective option.

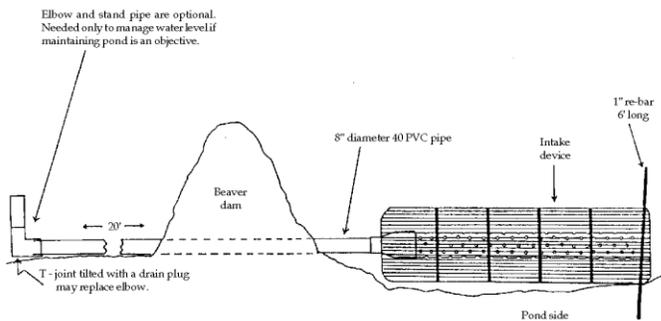


Figure 9: Clemson beaver pond leveler (courtesy Department of Natural Resources)

Trapping and Hunting

Exclusion may not be an option for all growers depending on the reality of the operation. Trapping and hunting are also viable options for protection against small animals. Raccoons, skunks and porcupines can all be caught using box traps or live traps (Figure 10). For best results bait these traps with sardines or tuna. For porcupine issues, use a sponge or towel soaked in salt water as bait.

Under section 34(4) of the [Fish and Wildlife Act](#), the owner or occupant of private land or someone who he



Figure 10: live trap

designates can, following regulations, hunt, trap or snare and remove or relocate any wildlife listed in section 34(5) (see below) if it is causing damage to the property or injury to the owners or occupants of the private land. The owner or occupant can also hire a provincially licensed Nuisance Wildlife Control Officer to help rid the property of the nuisance animals.

Section 34(5) of the Act states: *The wildlife that may be hunted, trapped, snared, removed or relocated under section 34(4) consists of American crow, beaver, black rat, brown-headed cowbird, common grackle, deer mouse, double-crested cormorant, eastern chipmunk, eastern coyote, eastern flying squirrel, European starling, grey squirrel, groundhog, house mouse, house sparrow, long-tailed weasel, meadow jumping mouse, meadow vole, mink, muskrat, northern flying squirrel, Norway rat, porcupine, raccoon, red fox, red squirrel, red-backed vole, red-winged blackbird, rock dove, rock vole, short-tailed weasel, star-nosed mole, striped skunk, varying hare or woodland-jumping mouse.*

References and Resources

<http://www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Publications/Agr/FencingOptionsMitigateWildlifeDamage.pdf>

<http://www.omafra.gov.on.ca/english/engineer/facts/98-035.htm>

<https://onvegetables.files.wordpress.com/2013/06/managing-bird-damage-in-crops-factsheet-final.pdf>

<http://ag.umass.edu/fact-sheets/managing-wildlife-damage-in-maturing-sweet-corn>

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex847](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex847)

<http://novascotia.ca/natr/wildlife/nuisance/skunks.asp>

Should you have any questions contact your local Agriculture Development Officer at the New Brunswick Department of Agriculture, Aquaculture and Fisheries.