Reducing Waterfowl-Related Cropland Damage

Habitat Extension Bulletin No. 59

Loss of crops to waterfowl has been a problem virtually since man first began agricultural activities. In the early part of this century, damage by waterfowl (ducks, geese, swans, and cranes) was not a major problem, as most landowners were willing to accept these losses. However, with farm and ranch economies on the decline, fewer landowners seem willing to tolerate crop damage. While waterfowl damage to croplands is minimal on a national scale, it can be substantial in local areas.

The Wyoming Game and Fish Department has worked to minimize losses by developing damage prevention, control, and compensation to assist landowners. Department personnel are available to offer assistance and/or advice to landowners on how to reduce waterfowl damage to property.

Description of the problem

The principal crops affected by waterfowl include wheat, barley, oats, and corn, but damage to lettuce, rice, alfalfa, and soybeans has also been documented. These cash crops can be impacted by waterfowl in a number of ways. Consumption of grain is a major source of waterfowl damage. However, waterfowl also knock seed from mature heads, increasing the loss to the producer. Contamination of grain occurs when waterfowl defecate, and additional grain is lost through trampling. Soil compaction can result from large flocks of waterfowl using a field for a sustained period, resulting in reduced water infiltration, reduced soil aeration, and decreased crop yield.

Department warden installs a fuse rope.

In Wyoming, there are two major periods during which crop damage by waterfowl is possible. The first occurs from mid-August to late September, during the small grain harvest. Most of this damage occurs when inclement weather delays all or part of the grain harvest or when windrowed grain with a high moisture level is left lying in the field. The longer the delay in harvesting or picking up windrowed crops, the greater the likelihood of damage by waterfowl, as ducks and geese tend to congregate in areas where harvest is slow.

The second period of crop damage occurs during corn harvest in November. Corn can be harvested only after a hard freeze, and if mild weather delays freezing, corn in the field may be vulnerable to migrating waterfowl. Severe weather such as deep snow may also prevent harvest of corn crops. Corn heads left unpicked can be knocked from their stalks by geese and ducks and then consumed, resulting in substantial crop damage.

Proposed solutions (prevention and control)

There is a major difference between prevention and control measures. Prevention addresses the cause, while control addresses only the symptom. Thus, if both options are available, implementation of prevention is encouraged.

Prevention

Two aspects of waterfowl damage prevention should be addressed. The first relates to farming practices associated with crop production and the second to the types of crops

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Ducks and geese often pick corn kernels off the cob while it is still on the plant. Notice the web-footed tracks in the snow between the rows. Canada geese (below) congregate in huge flocks around some refuges. These large groups can damage winter crops by trampling them into the mud.

planted.

Farming practices: In the spring, waterfowl "hot spots" such as fields near woody areas, marshes, or large bodies of water that attract waterfowl should be planted early to facilitate early fall harvesting.

Once harvest begins, it should proceed as rapidly as possible to minimize grain exposure to migrating waterfowl. If fields cannot be completely harvested in a short time, it may be desirable to wait until the whole field can be harvested. Studies indicate that waterfowl will avoid uncut fields of ripe grain, preferring to feed on these field edges. However, waterfowl will invade partially cut fields to feed.

Grain crops should be combined rather than windrowed to remove grain immediately and thus limit grain exposure to depredating waterfowl. Grain driers, coupled with combining, offer an effective substitute to field drying and should be considered when reduction of waterfowl depredation is a goal.

Harvested fields should be left unplowed to provide alternative foods for waterfowl in the area. Waterfowl will use these harvested areas more readily than uncut fields, resulting in reduced losses to standing crops.

Crop alternatives

Where possible, early ripening crops should be substituted for others more susceptible to waterfowl damage. Winter wheat is one such crop. It can be harvested in late summer, long before migrating waterfowl move through the area, to effectively reduce conflicts between landowners and waterfowl.

Another advantage of winter wheat is its ability to tolerate waterfowl grazing during late winter months when other sprouting crops can be seriously damaged by grazing waterfowl. Studies indicate that waterfowl grazing on winter wheat during February and March does not reduce wheat production. In fact, moderate waterfowl grazing actually increases wheat yield.

Another prevention alternative is planting a less commercially valuable, but more attractive

waterfowl "lure crop" such as millet. The strategy is to divert birds away from more valuable cash crops to minimize financial losses. Lure crops can be effective in drawing birds from nearby fields, thus minimizing crop losses on private lands around the country.

Finally, in areas that are continually susceptible to depredation by waterfowl, traditional grain crops may have to be replaced with forage crops.

Control measures

Once waterfowl begin using a field and establishing feeding patterns, control measures must be implemented as birds become increasingly hard to move. Since most waterfowl feed in the morning and evening, fields should be monitored during these times. Immediate action should be taken when birds start using these areas.

A number of devices can be used to scare waterfowl from agricultural lands. While the effectiveness of these devices varies, studies indicate that a combination of two or more scare devices dramatically increases effectiveness.

Perhaps most obvious of all deterrent methods, and yet one often overlooked, is hunting. Hunting these impacted fields during waterfowl season helps minimize crop damage.

Although a federal permit is not required to scare or harass depredating waterfowl, killing waterfowl out of season is illegal. Waterfowl are protected under the Migratory Bird Treaty Act of 1918 and can only be taken out of season with a special kill permit issued by the federal government.

Scarecrows, one of the most common devices used to deter waterfowl, are most effective if they are in place before birds begin to utilize an area. They are fairly easy to construct, and can be fashioned in a relatively short time. A scarecrow that moves in the wind is much more effective, so lightweight materials should be used to construct the arms and legs of the scarecrow. Scarecrows should be placed at a density of one per five acres and moved every two to three days to prevent waterfowl habituation.

Firearms are useful and effective scare devices for dispersing waterfowl. Shots should be fired in the air near waterfowl concentrations to move them from fields. The main disadvantages of firearms are cost of ammunition and the field time required to keep waterfowl out of impacted areas.

Cracker shell explosives are similar to firearms and used in a similar manner. These charges, fired from a 12-gauge shotgun, are designed to explode in the air over the heads of depredating waterfowl.

Fuse-rope offers an advantage over other types of explosives in reduced field time required by personnel. Fuse-rope is braided around firecrackers, soaked in saltpeter, and hung from a

The report of a Zon gun is really a substantial explosion. Waterfowl unaccustomed to the blast are easily frightened by it, but ducks and geese can get used to the noise if they are exposed to it regularly. Like most other scare tactics, the Zon gun works best when used in moderation during critical periods.

tree or stake near the selected field. Once lit, fuse-rope will burn slowly, periodically setting off the firecrackers and thus spooking waterfowl from the area.

Probably the most effective of the pyrotechnic devices is the propane exploder or "zon gun." These devices use propane, butane, or acetylene gas which slowly leaks into the chamber of the gun and then is ignited at a pre-set time, causing an explosion which frightens waterfowl. Zon guns can be adjusted to fire once every 10 to 20 minutes, and should be placed in a ratio of one gun per 50 acres of cropland. To avoid conditioning waterfowl to the devices, zon gun locations should be changed every two to three days.

Deterrent flags can be interspersed throughout a field to discourage waterfowl use. They are easy to construct and are the cheapest and most effective of all devices currently used to control waterfowl damage. Studies indicate black is the most effective flag color, and that flags used in conjunction with propane exploders provide the best determent.

Deterrent flags should be staggered between windrows at a density of one flag per five acres in non-damaged fields, and one flag per acre in fields experiencing waterfowl damage.

Chemical repellents sprayed directly on target crops have been effective in minimizing damage by making crops unpalatable to waterfowl. However, this technique is not widely used due to its high cost and manpower requirements.

The use of dogs to keep waterfowl out of fields has proven effective in some cases. Dogs should be tethered to prevent free-roaming over a large area but tied in a location that allows high visibility.

Finally, any object that moves with the wind and produces an unnatural noise can be useful in deterring waterfowl. A landowner may wish to experiment with various devices to determine which ones are most effective in his area.

Where to find help

In each of the seven state districts administered by the Wyoming Game and Fish Department, there is a damage control warden whose sole responsibility is to provide landowners with advice on prevention and control of wildlife damage. Consult these experts for help. Devices such as cracker shells and zon guns are available from the Game and Fish Department district offices for use during periods of waterfowl depredation.

In addition to the damage control warden, each district has one supervisor, one enforcement specialist, and an average of seven wardens who spend a portion of their time working with landowners on damage problems. Contact your district office for more information about reducing waterfowl-caused crop damage.

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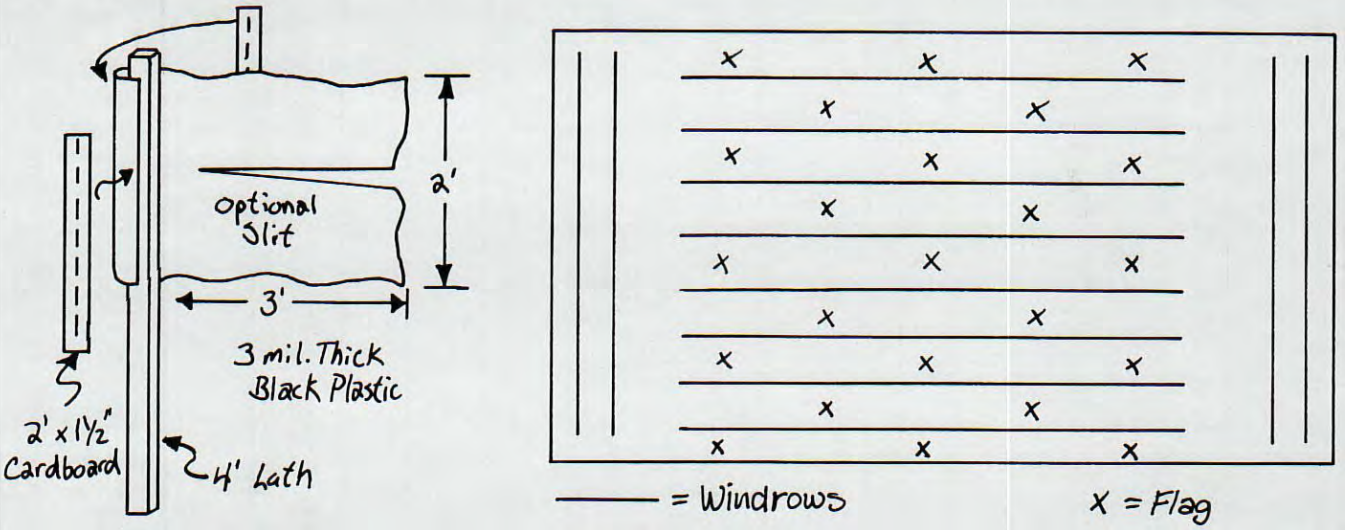
This publication is one in a series of habitat extension bulletins produced by the Wyoming Game and Fish Department. Call 1-800-842-1934 for additional information or assistance.



Deterrent flag design, construction and field distribution. In constructing flags use a 4-foot wooden stake, a 3-foot x 2-foot piece of 3 mil. thick black plastic, and cardboard strips to reinforce the attachment of the plastic to the wooden stake. Place flags in field as indicated by Xs.

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Reprinted March 1999