

No More Free Lunch

Don't let forage freeloaders consume your profits.

Story by
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Like hungry shirttail relatives, deer are often the uninvited guests who clean out your larder.

If you rely on forage to feed your cattle and your forage stores are located in an area accessible to creatures other than your livestock, it is highly likely you have been selected as the designated meal ticket by the local deer population.

A 1998 nationwide survey of agricultural producers in the United States revealed 80% of those who reported back had experienced wildlife damage to their crops, and 53% said depredation exceeded their tolerance. Conservative estimates of nationwide agricultural losses due to wildlife soared as high as \$2 billion, with white-tailed and mule deer causing more damage to agricultural crops than all other species combined. Considering the rise in forage production costs since the turn of the century, experts now estimate that the total forage dollars

lost to wildlife is considerably higher than it was in 1998.

In Montana alone, best current estimates are that wildlife consumes 3.27 million animal units of forage annually at a base cost of \$15.10 per unit. This adds up to \$49.3 million dollars in forage, with \$31.5 million of that consumed on private land.

One University of Montana study establishes the average monetary loss in the state attributed to consumption of forage by big game at \$5,616 per landowner.

Carolyn Nistler, associate wildlife specialist with Montana State University (MSU), works closely with ranchers and farmers to mitigate wildlife-related forage losses. She emphasizes that everyone's situation is different, and solutions will vary dramatically from ranch to ranch.

"It all depends on how you regard the wildlife," she says, adding that for a growing number of non-ranching landowners, forage loss to deer is not a problem. "For instance, people from out of state buying ranches for recreational purposes might be doing all kinds of things to attract wildlife, while their ranching neighbor next door might be doing exactly the opposite."

Nistler notes that livestock producers today have options of responding to ungulate-related forage losses in ways that were not

available to their predecessors.

Researchers conclude that the most effective method of deterring deer is one or more systems tailored to your specific problem. Deer are highly adaptive creatures — as seen by their population explosion in suburban areas — and will eventually adjust to deterrents that don't deliver what they promise.

Repellents

Odors. For short-term control in small areas, some repellents have proven to be quite effective, but most experts agree that their ability to deter deer diminishes as they become accustomed to the odor.

"If you are going to use repellents successfully you should alternate between different types," says Cathy Hutton, manager of Plants of the Wild, a major supplier of native plants in the Northwest. She works every day with ranchers involved in restoration and reclamation projects and has found that repellents are labor-intensive. To maintain their maximum effectiveness, repellents must be reapplied after each rainfall.

Another potential problem for beef producers who use repellents at feeding stations is that cattle, too, can be put off by odors.

Noisemakers and flashers. One Montana rancher claims some

Feeding & Feedstuffs

success in controlling deer damage to haystacks by placing next to the food source a movement-activated talking fish he purchased through a television advertisement. Others chose more conventional sound makers such as screamers and canons. Like with odor repellents, deer have an uncanny way of adapting to these systems and quickly learn to ignore auditory irritants.

Nistler points out that while repellents can be effective in keeping deer out of smaller areas, they lose their practicality on larger tracts.

"When you are dealing with hundreds of acres, you are either looking at a harvest management plan or physical exclusion. Those are your only two practical options," she says.

Harvest management

One of the most popular of these new responses is one that involves integrating wildlife into the overall ranch economy by generating an income stream from their presence on the property.

"There are a lot of ranchers who are now either outfitting or leasing to



Deer are capable of squeezing through the narrowest of openings when the food looks good.



An MSU study indicates a 6-ft. woven-wire fence is the best line of defense against hungry deer.

PHOTOS COURTESY OF MONTANA STATE UNIVERSITY

hunters or in some ways deriving value from the wildlife,” Nistler says. “In those cases they usually don’t mind feeding them.”

She adds that one of the major drawbacks in focusing totally on the paid trophy hunt is that those paying want to shoot a buck and are not interested in does and fawns. “Harvesting a buck doesn’t do much to reduce your overall population,” she says, adding that some ranchers require a hunter to harvest a doe prior to shooting a buck as part of their harvest strategy.

Even in states that still have general, bucks-only hunting seasons, most allow special season permit holders to take does. Often this also applies to adolescents accompanied by adults and bow and black powder hunters.

Exclusion

Most researchers will agree that the most effective way to prevent deer predation on cropland is fencing. Nistler advises ranchers interested in investing in a fence to first crunch the numbers. “You should start with some type of cost analysis because some of these fences can be real costly, and you need to make sure you are protecting enough forage to offset the cost of the fence,” she says. “That is going to depend on the density of the animals you have in the area as well as the cropland you are protecting and how much forage you are producing.”

A proper analysis of a deer population’s effect on an alfalfa stand would include the estimated number of deer grazing multiplied by an average of 8 pounds (lb.) of alfalfa per night consumed or damaged, multiplied by number of nights a crop is exposed. For example, 50 deer feeding on a 250-acre field for 90 nights during the growing season would be expected to negatively affect 36,000 lb. of forage. At \$100 per ton in replacement costs, 18 tons of alfalfa hay would translate into \$1,800 worth of alfalfa per year lost to deer damage.

To calculate whether or not this annual loss justifies the building of a deer fence, the distance around the 250-acre alfalfa field must first be determined — in this case 2.5 miles. With the average cost of materials to build an 8-foot (ft.) woven-wire deer fence with treated posts at \$4,500 per mile, the total exclusion cost — not including labor — adds up to \$11,250.

If alfalfa prices remained stable, a rancher could expect to pay for his fence in 6.5 years. Because the fence has a projected lifespan of 30 years, he can expect to see an additional return of \$42,300 during the life of the fence.

Nistler points out that the cost of a conventional deer-proof fence can run as high as \$10,000 per mile. Even at \$4,500 per mile, the cash outlay on materials is substantial. In an effort to reduce that up-front cost to the rancher, researchers at MSU have designed and evaluated four versions of a deer fence that modifies an existing standard four-strand barbed-wire fence. To test the effectiveness of each version, four

separate fenced enclosures were built and baited with high-quality hay bales.

All four versions use 3/8-inch (in.) rebar to extend the height of the existing posts to 6 ft. Nistler notes that while 8-ft. fences are recommended for keeping deer in an enclosed area, MSU researchers have found that properly strung 6-ft. fences are tall enough to prevent deer from entering an enclosed area.

The first version of the test added a single strand of 12-gauge high-tensile wire between each existing wire and between the bottom wire and the ground. Three strands of 12-gauge high-tensile wire were added above existing wire to bring the fence height to a total of 6 ft.

In Version 2, the bottom four strands of high-tensile wire were electrified with at least 4,000 volts of electricity.

In Version 3, instead of adding strands of 12-gauge high-tensile wire to the lower section, 47-in. woven wire was placed at ground level over the barbed wire. Three strands of 12-gauge high-tensile wire was strung on the upper section to bring the total height to 6 ft.

Version 4 used 39-in. woven wire for the lower section and 32-in. woven wire

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strung on the upper section. Unlike the other three designs, this version does not offer, to particularly determined deer, an opportunity to squeeze between wires.

While all four designs deterred some deer encroachments, only Version 4 was 100% effective in preventing deer from accessing the bales of hay. Material costs of

Version 1 through Version 4 were \$1,300, \$1,500, \$2,600 and \$3,500 per mile, respectively.

Behavior modification

One relatively new development in the area of forage damage control is the use of exclusion through behavior modification.

“We have had very good luck with the new, high-voltage, low-impedance setups,” says James Parkhurst, wildlife specialist with the Virginia Cooperative Extension. He adds that the cost runs around \$1 per foot.

Rather than creating what would be considered an impenetrable barrier,

If a deer consumes or damages an average of 8 pounds (lb.) of alfalfa per night, 50 deer feeding on a 250-acre field for 90 nights during the growing season would be expected to negatively affect 36,000 lb. of forage. At \$100 per ton in replacement costs, 18 tons of alfalfa hay would translate into \$1,800 per year worth of alfalfa lost to deer damage.

Parkhurst and his fellow researchers have used portable electric fences to condition troublesome deer. This has allowed them to protect particularly vulnerable areas at times when predation is greatest. “The advantage of this system to ranchers is its portability,” he says. “Unless you stack your hay in the same location year after year, permanent deer fencing isn’t practical.”

Peanut butter surprise.

Conditioning involves the use of an electric fence and bait — most often peanut butter — to teach deer to avoid specific areas. Current is supplied by a high-voltage charger, which provides regularly timed pulses of one minute followed by approximately a second with no current. The most effective chargers emit shocks of 4,000 volts or greater. To entice the deer into touching the hot wire, aluminum foil tabs are attached to the fence and smeared with peanut butter.

Parkhurst recommends up to seven wires approximately 1 ft. apart, but he has had success with as few as one to two when the baiting program is strictly followed and conditions are right.

Milo Richmond, a scientist with New York Cooperative Fish and Wildlife Research Unit, has also had good results by hanging pieces of cloth sprayed with deer repellent every 4 ft. along the length of an electric fence.

The baited or odor deterrent electric fences are most effective when they are set up well in advance of any real need to keep the deer out. For example, erect and activate the system before you begin to store hay in a particular area. “Your success will be far greater than if you wait until the deer have become accustomed to feeding there,” Parkhurst says. “The key is to catch them early when there is very little incentive for them to enter the restricted area.”