The silver bullet to bringing back pheasant populations is w

Habitat Manipulation to Reduce Predation on Pheasants

Story By Aaron A. Kuehl
Photos Courtesy Pheasants Forever, Inc.

Pheasants and other grassland bird populations have experienced precipitous declines. Land managers and private landowners search for the "silver bullet" to restore bird populations on their property.

A plethora of so-called solutions have been proposed to bolster pheasant populations including stocking and predator control. State natural resources agencies and groups such as Pheasants Forever continue to promote habitat, especially reproductive cover, as the only solution with any merit (proven time and time again by the evidence). Not only is undisturbed grassland habitat critical to reproduction of pheasant populations, if used correctly it can reduce mortality by reducing the efficiency of predators.

The simple fact is that predators kill pheasants.

On average, pheasants have roughly 50-60 percent nest success (hatch at least one chick), while the remaining nests are unsuccessful. Predators destroy three-quarters of those unsuccessful nests. It's no surprise that predators often are the target (pun intended) of bird hunters and conservationists.

A lot of effort has been made to reduce predation (through nesting season trapping and predator exclusion

ell-managed habitat.

Approximately 50 percent of pheasant nests successfully hatch one chick. Improving the odds involves managing habitat for pheasants while reducing the suitability of the habitat for predators.

(Photo by Adele Hodde.)

fencing) on waterfowl with a great deal of success. These methods are widely known as predator control. The drawbacks are that they are expensive, intensive and must occur during the 100-day nesting season to be effective, and most trappers strongly object to this type of activity. Further, because of the different life histories between pheasants and waterfowl, the same benefits from predator control for pheasant populations don't occur.

Predation management is an emerging land management practice which uses habitat management to affect the effect of predators on target species. The basic concept is to increase the suitability of the habitat for target species (pheasants) while at the same time reducing the suitability of that same habitat for their key predators. So, how does a land manager or private landowner do that?

No matter what you've heard....size matters

Many existing conservation farm programs seek to protect highly sensitive acres (along a stream or field edge) and give landowners an option to enroll 30-120 feet into a program. Wider is better. Under ideal conditions, a fox can smell a duck nest at well over 100 feet. Fortunately for pheasant enthusiasts, their nests aren't so smelly. However, a Minnesota study found pheasant nests in linear habitat (such as buffers) increased one percent for every foot in width up to 60 feet.

Size matters in blocks, too. Predator activity is much higher along grassland edges (the outer 100 feet) than in the core (middle), but too much core and nesting density of pheasants drops off. The trick is to find the balance that increases suitability for pheasants, but not their key predators. One study suggests that clusters of 40-80 acre blocks may be ideal.

Shape up

Partially due to the importance of edge and core, the shape of habitat also is important to reducing mortality caused by predators. Long, linear patches have more edge and are more likely to be encountered by foraging predators. Concave corners provide more edge than a simple box-shaped patch. Between 80 and 90 percent of predator activity going into a block of grass occurs at the corners—more corners mean more predator doorways into nesting cover.

To drive the point home, a circle has no corners and the highest core-to-edge ratio for its size. If predators only entered at corners, and only circular habitat was planted, there would be a lot of hungry and dizzy predators and, of course, more pheasants.

Composition

Habitat suitability differs between species of wildlife.

Many species share attractions or avoidances to a particular habitat type. The predation management trick with habitat composition is to remove those habitat features that are more beneficial to key predators than they are to the

Factors to consider when creating suitable pheasant habitat include size, shape, vegetative composition, arrangement and management practices employed.

target wildlife. In some cases, you even may remove a habitat feature that is beneficial to the target species during part of its life cycle if the species will move to it temporally (i.e. winter cover).

Since nesting cover is the most limiting factor affecting pheasants and many other ground-nesting birds, we want to focus on improving that habitat first.

The easiest way to manage your grasslands to reduce predation is to remove predator habitat, such as rock piles, old buildings, den trees and large brush piles. Large trees can act as perch sites for avian predators, and potentially as den sites for raccoons. They also can provide a seed source that leads to an annual problem with woody encroachment.

Diverse grasslands (abundant forbs/flowers) provide great brood cover as well as nesting cover for pheasants. They also provide more bare ground, making easier ground movements for

Prescribed fire does improve pheasant nest cover, but needs to occur outside of the peak nesting season.

Increasing grassland bird populations entails removing predator habitat, such as den trees and large trees where avian predators can perch.

the birds while still providing aerial cover. The additional insects might increase other prey species, which can buffer target species from predators since most predators are opportunistic.

Arrangement

Location, location, location.

Public wildlife lands are only a small fraction of the landscape. Often public land managers are pressured to provide multiple recreational opportunities on those limited areas so small patchworks of habitats are knitted together on each tract. This often results in suitable predator habitat being placed immediately adjacent to nesting cover.

The private landowner is no different, often desiring many types of hunting opportunities on his or her ground. It is critical that land managers and landowners not only consider the habitat on their ground, but also on the adjacent properties.

Predators travel road ditches, drainage ditches and other linear features, just like we use roads. A block of habitat with several narrow features may be drawing predators from nearby landscapes. Sometimes, isolated patches of habitat see higher nesting successes, although they often have lower densities. Strips of habitat located near a large habitat block may be predator smorgasbords.

Management

Prescribed fire improves nesting cover for pheasants.

The timing of your burn influences the suitability of habitat for birds and

has a role in predation management. Don't burn all the grass at once, leaveing no refuge for pheasants. Without a refuge, the birds will be exposed, not only to predators, but also the elements. Don't burn your winter cover in the fall and don't burn all your nesting cover in the peak of your nesting season (May-June).

If small rodents or snakes are a problem, a ring fire can reduce the problem. Also, by reducing the snake/rodent population the amount of time larger predators prey on those species, and the birds, can be reduced. Of course, fire also can be used to set back woody encroachment and eliminate future avian predator perch sites.

Predators

Not all predators are created equal.

Avian predators (hawks, owls) often are accused by hunters of killing a lot of pheasants, but their impact is relatively small. Hunters are in the field during the daylight hours of fall during migration, when numerous avian predators are overhead. What aren't seen are the nocturnal predators (fox, raccoon, coyote, skunk) that destroy the nests during the spring.

Among the predators destroying pheasant nests are nocturnal predators, such as raccoons, coyotes, skunks and foxes.

(Photo courtesy Roger Hill)

Among the mammalian predators, the fox is the worst—preying on both nests and adult birds. Stealthy predators, they have been known to flush a hen mallard from her nest and wait, killing her when she returns and, only then, caching the eggs. Raccoons are a significant predator near wood-lines, but not in large expanses of grass.

One of the most interesting predators are coyotes. Coyotes don't care much for foxes and keep them out of their territory, so a landscape with coyotes doesn't have as many foxes. Studies have found double the nest success (ducks) in a landscape with coyotes compared with a similar landscape without. Fewer predators (coyote home ranges are larger than foxes) means more pheasants. Also, coyotes are less efficient predators on birds than foxes. Evidence suggests that coyotes actually indirectly benefit grassland bird populations.

Stocking

Don't do it, no matter the newest scheme.

Stocking doesn't increase populations (the evidence is overwhelming); if it did, why do it every year? It amounts to an expensive predator feeding program where not only are you feeding the enemy, you're teaching it to hunt your favorite bird and giving them a reason to search it out.

Finally, should any birds somehow survive, there is concern about breeding inferior game bird genetics into a wild population. Even if you win, you lose.

The Silver Bullet

If you want to reduce the impact of predators on your local pheasant or quail population, manage your habitat to increase the suitability for your target species while decreasing the suitability for their key predators. It is not about predator control.

For those of you looking for the silver bullet to bringing back your pheasant populations, here it is…HABITAT, well managed, of the right size, shape, composition and arrangement.

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