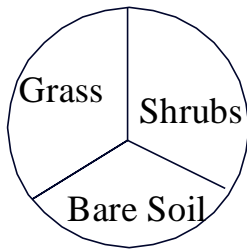




THE COVEY HEADQUARTERS

Volume 18 Issue 2 Summer 2019

This newsletter is aimed at cooperators and sports-people in Missouri to provide information on restoring quail. This is a joint effort of the Missouri Department of Conservation, USDA-Natural Resources Conservation Service, and University of Missouri Extension. If you would like to be removed from this mailing list, go to http://mdc.mo.gov/user_mailman_register to unsubscribe. If you have suggestions for future articles, please contact jeff.powelson@mdc.mo.gov



The name of this newsletter is taken from an old concept....that a quail covey operates from a headquarters (shrubby cover). If the rest of the covey's habitat needs are nearby, a covey should be present. We are encouraging landowners to manage their quail habitat according to this concept. Use **shrubs** as the cornerstone for your quail management efforts. Manage for a **diverse grass, broadleaf weed and legume mixture and provide bare ground** with row crops, food plots or light disking **right next to** the shrubby area.

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If you currently receive the newsletter by e-mail, there is no reason to contact us. You will continue to receive it. We thank all of our readers! Especially the ones that have been here from the start!

Did you know???

In 2018, a total of 29,652 acres on 41 select conservation areas were managed specifically to benefit quail. In addition, another 39,457 acres were managed on Department owned lands with practices that would benefit quail and other small-game species, such as rabbits and squirrels.

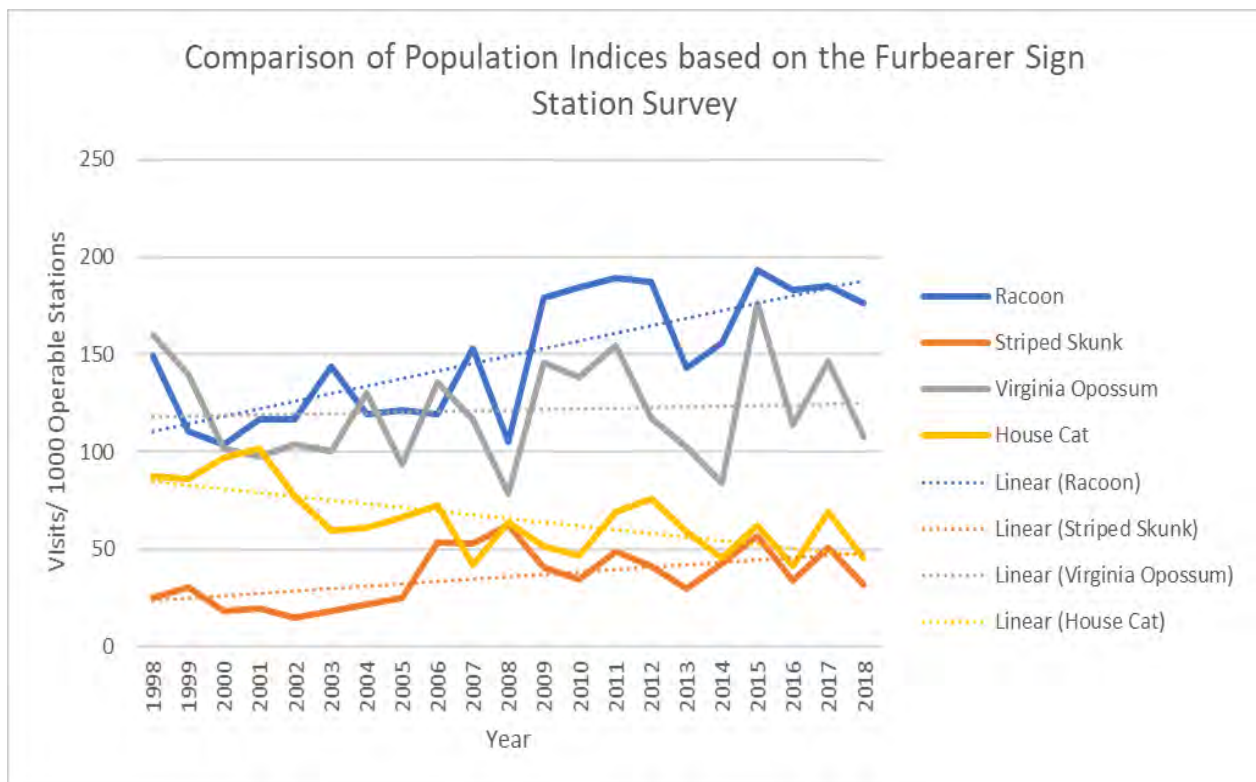
Predation and quail management revisited

By David Hoover, Small Game Coordinator, Missouri Department of Conservation

Bobwhite quail are resilient little birds that face many obstacles in their quest to reproduce. Poor habitat, weather and predation are the most influential of these obstacles. This is probably not new information to most readers, but a deeper dive into the controversial topic of predation may reveal a few things often overlooked in our pursuit to help the “prince” of game birds.

Predation is often the number one reason mentioned as the cause for the quail decline, and for good reason. Many meso-mammal (medium size furbearers) nest predator populations have steadily risen over the past several decades (Figure 1) and 60 to 80% of the quail in a given population may die as the result of predation over the course of a year. Furthermore, a recent study in the southeastern U.S. showed a 10% increase in nest success and 43% increase in chicks produced on sites where meso-mammal nest predators were intensively trapped and removed during the quail breeding season. At first glance, given this information, it is easy to see why many focus the blame of declining quail populations on predation.

Figure 1: Trends in select meso-mammal populations since 1998.



However, whether you are a biologist, a landowner managing intensively for quail, or someone just wanting to see and hear quail on your property, it is important to put all the information you gather into proper context. Predators have always played a dominating role in quail mortality, even when habitat

conditions were excellent across the entire quail range. But what about the study mentioned above? That study did a very good job of quantifying the impacts of nest predators on quail within their study area and provided solid empirical data that should not be ignored. But how we use this information is critical. To use the information from this, or similar studies, to justify the indiscriminate removal of meso-mammal nest predators to reverse the quail decline would be to ignore several important facts.

For instance, the properties in the study had “maxed out” habitat, and many of the sites had quail densities at or above 1 quail/ac. **before** instituting the intensive trapping! To put this in perspective, a 100-acre farm with a quail population of 1 bird/ac. could have as many as 7-10 coveys in the fall; a density that I am confident most any manager or landowner would be proud to have. In addition, the intensity of trapping necessary to achieve the study results required 4 full-time trappers; an intensity level that most of us could or would not sustain, let alone be able to afford financially! And let’s not forget that the trapping was conducted during the spring and summer breeding season - **not** legal in Missouri and many other states.

So, if the removal of meso-mammal nest predators is not the answer to reversing the quail decline, what is? Well, it’s what biologists have been saying for decades now, habitat! But as I stated earlier, we cannot overlook the effects of predation. So how can we in Missouri utilize all this information in our efforts to reverse the quail decline?

Well, for starters we must first recognize and accept that quail are shrub obligate species that will utilize virtually any upland habitat type that meets their needs – essentially any structurally diverse herbaceous plant community with ample space at the ground level for adults and chicks to move and forage AND with adequate protective cover (i.e., woody cover). Grasslands, savannas and open woodlands (~ less than 40-50% canopy cover) can all provide these habitat requirements. Forests do not – quail do not do well in **or** near forested habitats (~ greater than 50% canopy cover). But many meso-mammal nest predators do! Agricultural landscapes, obviously, can also provide good quail habitat, but quail friendly ag. landscapes have been greatly reduced as the once brushy fencerows have given way to mature tree rows (good nest predator habitat) or have been eliminated entirely. In addition, nesting and brood-rearing cover once abundant has all but disappeared save CRP grassland plantings scattered about.

There are copious studies supporting the focus on habitat development as the way to improve quail populations. One such study is the recently completed SW MO quail study (which you have read about in previous issues of this newsletter). One of the components of the study looked at raccoon movement patterns between open grassland and more traditionally managed (fragmented) sites. Bottomline is that GPS collared raccoons utilized habitat on the study sites much differently. On the more open grassland sites (which had some trees, but mostly lower growing shrubby cover) the raccoon’s travel patterns brought them in close proximity to only ~27% of nesting quail, while on the traditional managed sites raccoon travel patterns brought them in close proximity to ~50% of nesting quail.

Take home points from the SW MO study, and many other studies from around the quail range, is that the greater the habitat fragmentation by mature trees (think fence lines with mature trees, forested draws, late-successional old fields, etc.) or percentage of forested habitat in the landscape the less suitable it is for quail and the better it is for meso-mammal nest predators – and yes, the less suitable that habitat is for many of the other shrub/grassland obligate species benefiting from quail management focused on native plant community restoration.

So, as biologists and landowners wanting more quail, we have a responsibility to understand the full impacts of predation on quail as well as the duty to ensure we utilize that information appropriately. So, if you would be happy with a quail population of 1 bird/2 ac., and possibly as high as 1 bird/ac., then the

only way to get there is to first create and maintain quality habitat. We can address both the habitat and predator issues head on by implementing the appropriate management practices in the appropriate landscapes, but we must be purposeful in our actions and with sustained effort.

Free Private Land Care DVD

The Missouri Department of Conservation has a limited supply of *Private Land Care* DVD's This DVD includes information on how to improve wildlife habitat on your land. Topics include light disking/herbicide spraying, how to plant food plots, important plants for quail, quail habitat components, broadcast sprayer/seeder calibration, covey headquarter shrub planting, eradicating fescue and sericea lespedeza, building an ephemeral pool, and edge feathering. If you would like this free DVD, please send an email to publications.staff@mdc.mo.gov



New Coordinator to Bolster Conservation Outreach Across Missouri

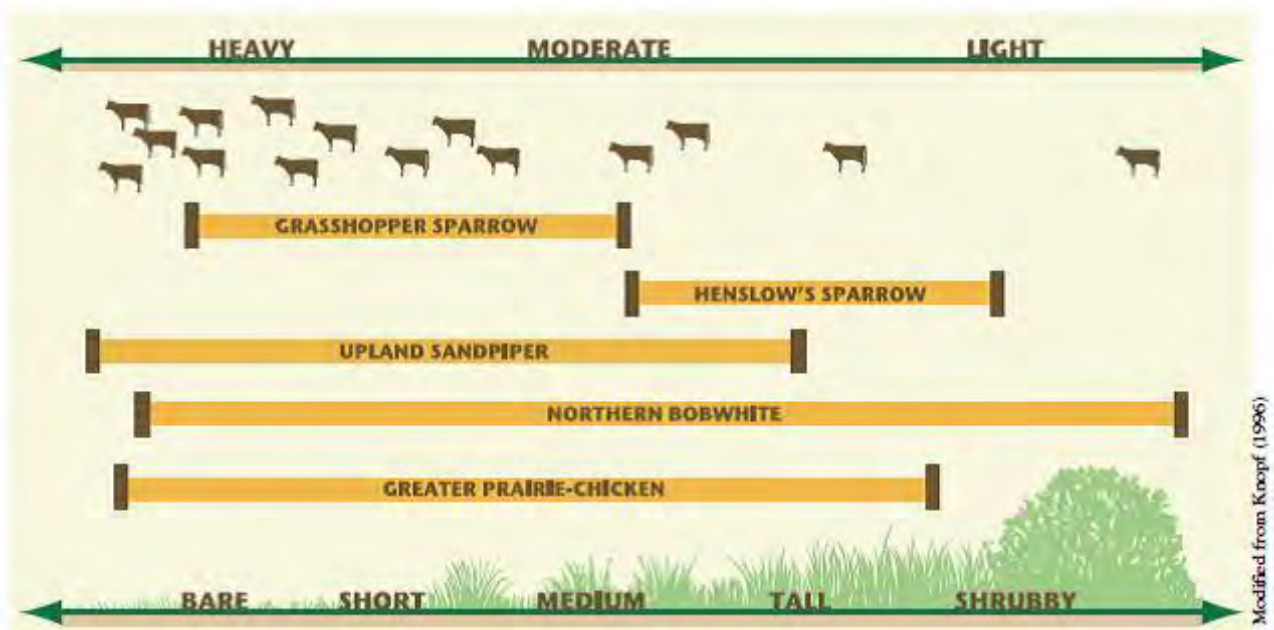
Pheasants Forever, Quail Forever, and its partners are pleased to announce the hiring of Kim Cole as our Missouri Outreach Coordinator. Kim will promote USDA programs and conservation practices to historically underserved landowners, as well as providing training and support for conservation outreach events hosted by Missouri's Quail Forever and Pheasants Forever chapters and their partners.

The Outreach Coordinator is a brand new position in Missouri and has been made possible thanks to partnerships with and support from the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) and Quail Forever and Pheasants Forever chapters in Missouri. "Working with our partners at the NRCS and the Missouri Department of Conservation, our Missouri Farm Bill Biologists interact daily with landowners who are making a living off the land and protecting their soil, water, and wildlife resources while doing so," remarked Casey Bergthold, Pheasants Forever & Quail Forever's State Coordinator in Missouri. "Kim's job is to help spread the word by sharing these conservation success stories with landowners who may not realize what great assistance is available."

Kim joined the Missouri Quail Forever team in April and has been in the field helping our staff, partners, and chapters promote the hard work we do every day to engage our citizens with conservation and get habitat on the ground. To learn more about conservation outreach efforts in Missouri, contact Kim at kcole@quailforever.org or (573) 356-0298.

Fighting Back – A Bobwhite Quail Film

See the link to the feature video (5.5 minutes) about quail hunting and management in Missouri - <https://youtu.be/BI9rd5nd2ZM>



Quail and other grassland birds require a wide variety of plant heights and densities ranging from bare ground to tall grasses and shrubs as noted in the diagram above. One method used to produce this structural diversity in grasslands is called patch burn grazing. Patch burn grazing mimics the historical interaction of two ecological processes that shaped native prairies – fire and grazing. Each year a third of the pasture is burned. The lush regrowth focuses grazing within the burned area. The burned unit shifts from year to year, providing varied structure throughout the managed area. To learn more about patch burn grazing visit - http://efotg.sc.gov.usda.gov/references/public/MO/Patch_Burn_Grazing_IS_9-04.pdf

USDA Reopens Continuous CRP Signup

USDA's Farm Service Agency (FSA) began accept applications on June 3, 2019, for certain practices under the continuous Conservation Reserve Program (CRP) signup and will offer extensions for expiring CRP contracts. The 2018 Farm Bill reauthorized CRP, one of the country's largest conservation programs.

FSA stopped accepting applications last fall for the continuous CRP signup when 2014 Farm Bill authority expired. Since passage of the 2018 Farm Bill last December, FSA has carefully analyzed the language and determined that a limited signup prioritizing water-quality practices furthers conservation goals and makes sense for producers as FSA works to fully implement the program.

This year's signup will include such practices as grassed waterways, filter strips, riparian buffers, wetland restoration and others. Continuous signup enrollment contracts are 10 to 15 years in duration. Soil rental rates will be set at 90 percent of the existing rates. Incentive payments will not be offered for these contracts. FSA will open a CRP general signup in December 2019 and a CRP Grasslands signup later.

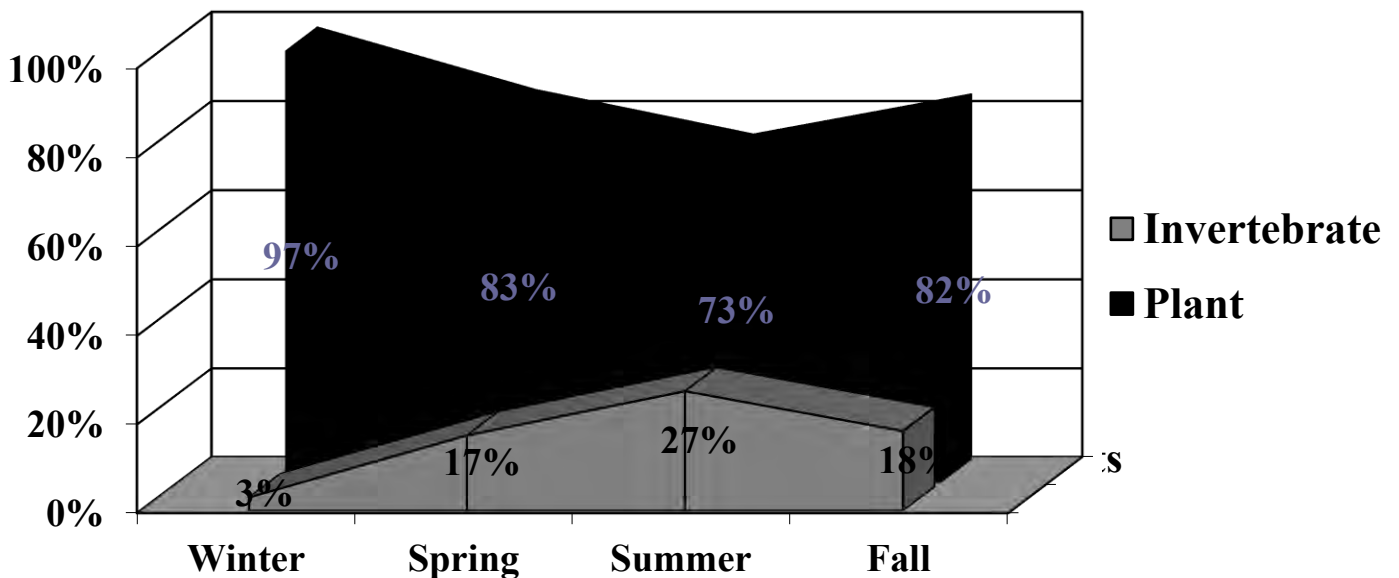
Bobwhite Quail Brood Biology

The greatest mortality of quail occurs in the first four weeks after hatch. This is a critical period which often determines whether the fall population will be a bumper crop or less than desired. Quail have only a few requirements, but these are a must! Chicks need freedom of movement at ground level, overhead concealment cover, and a diverse assortment of green plants or plant parts within pecking height – which for a baby quail is only about two inches. The ground cover must be very open with only 30-50% vegetative cover. This means as much as 70% can be bare ground as long as there is a nice overhead canopy for protection from above.



The low-growing green plant material attracts insects, which compose almost the entire diet of quail up to three weeks of age. Bare ground is critical as the baby chicks must be able to maneuver and catch insects. Recently burned grasslands, disturbed fields, weedy strips, legume plantings, and fallow food plots make great brooding sites. This cover must be near midday loafing areas which is typically woody cover thickets or stands of taller vegetative plants like sunflowers.

The graph below is a general representation of how quail diet changes through the season. Notice the heavy insect requirements in the summer. Quail chicks require 80-95% insects during their first few weeks of life. Commonly eaten insects include beetles, leafhoppers, spiders, grasshoppers, ants, crickets, stinkbugs, flies, and snails.



Mow newly seeded pollinator plots now

If your pollinator plot is in its first growing season, now is the time to see if weed control is necessary. A canopy of broadleaf weeds can shade out the newly sprouted wildflowers, which can lead to a stand failure. Mow any patches of weeds that threaten to do this. Set your mower just above the wildflowers – about 8 inches. A shredder/bush hog works best as it will not bury the new wildflowers with a layer of plant material like a sickle bar mower will. Good weed control the first year will ensure the wildflowers will thrive and provide great pollinator and brood habitat for quail.



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