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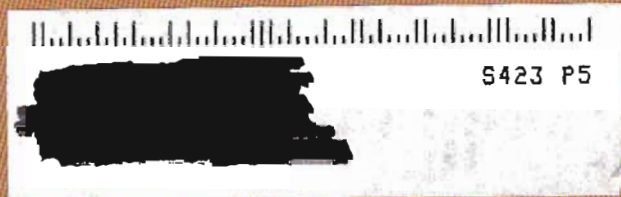
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The Ways And Means Of Mearns Quail Management

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*Photo by Pat O'Brien,
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The

management of
Mearns
quail
requires

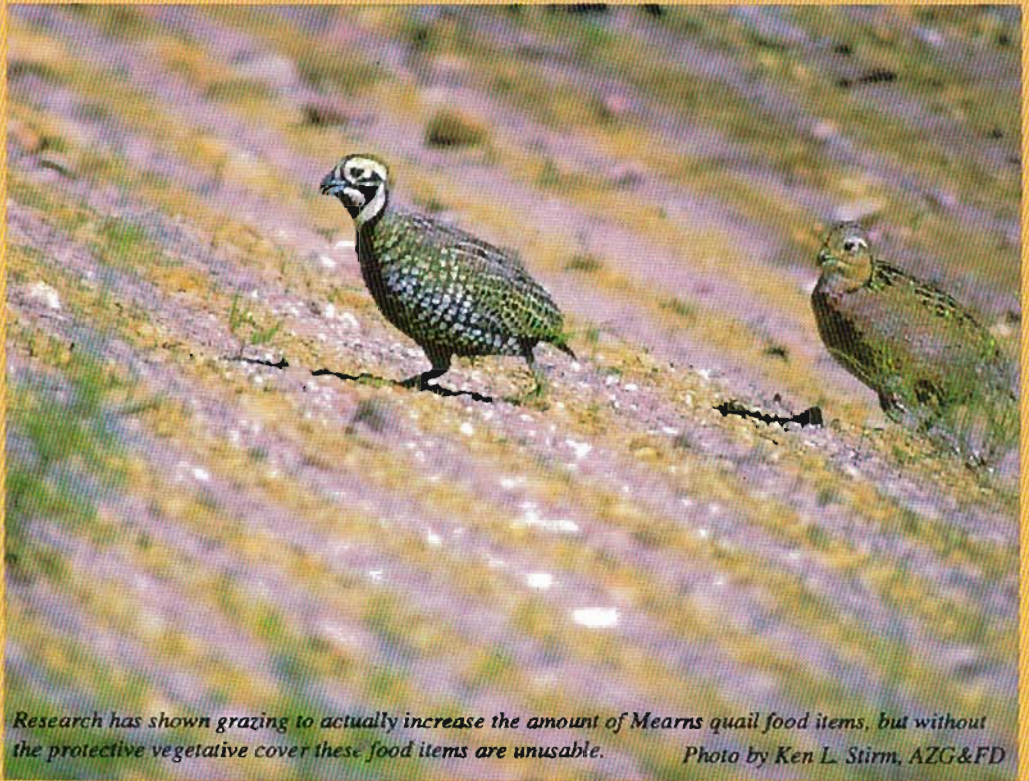
control over two things—summer precipitation and grazing levels on public land. The former is impossible and the latter more difficult.

Mearns (Fool, Harlequin, or more correctly, Montezuma) quail are by far Arizona's most unique quail species. They are present in most of the mountain ranges in northwestern Mexico, southeastern Arizona, southwestern New Mexico and southwestern Texas. The range of Mearns quail overlaps almost entirely with the evergreen oak woodlands, and their habitat is best described as an

open woodland consisting of evergreen oaks and junipers. A good perennial grass understory is essential, as is a tree cover greater than 20 percent. Mearns rarely venture farther than 45 yards from the edge of the trees and are frequently found in association with clumps of catclaw mimosa.

At night, the quail roost on the ground in tall grass, huddling close to conserve heat. The roost site varies each evening, but is generally near a canyon bottom or small drainage. As the morning air begins to warm, the covey will leave the roost site and begin feeding in a close group. Foraging generally begins low in the slope in the morning and progresses uphill during the morning. Crops are generally full by late afternoon when the quail will work their way back down to the base of the slope.

Mearns quail feed exclusively on the ground using their long curved claws to scratch and dig for bulbs and tubers. Their annual diet is basically 50-75 per-



Research has shown grazing to actually increase the amount of Mearns quail food items, but without the protective vegetative cover these food items are unusable. Photo by Ken L. Stirm, AZG&FD

cent bulbs from Oxalis and flat sedge (nut grass); the remainder is made up of seeds and insects. Acorns become important during years they are produced but can not be relied on annually. Mearns are able to procure enough moisture in the foods they eat and are not dependent on free water.

The maintenance of good grass cover is extremely important to this quail species. This important habitat requirement is related to the defensive behavior it found most successful during its run through the evolutionary gauntlet. Mearns are known for their habit of holding extremely tight in cover when approached. This behavior earned them the nickname "fool quail." It is not uncommon to nearly step on these cryptic birds before they blast out of the oak leaf litter and remind you where your heart is. This has led some to suggest that snowshoes should be allowed as a legal method of take. Removing too much cover removes this bird's primary defense mechanism and thus decreases survival.

All of Mearns' important food items grow and set seed with the help of the summer rains. This annual flush of food and cover must sustain them until the following summer. Herein lies the problem—most Mearns habitat is managed by the U.S. Forest Service under their mandate for multiple use. One of many users of National Forest lands is the rancher who relies on the annual production of forage to feed and clothe his family. Un-

Mearns quail are as beautiful in plumage as they are unique in habits.



Underground tubers from Wood Soreel (*Oxalis spp.*) (left) and Nut Grass (*Cyperinus spp.*) (below) make up a majority of the Mearns' annual diet.

Since most of the Mearns' food lies below ground, grazing does not remove Mearns' food, but the lack of cover makes it inaccessible.

Photos by
Jim Heffelfinger, AZG&FD



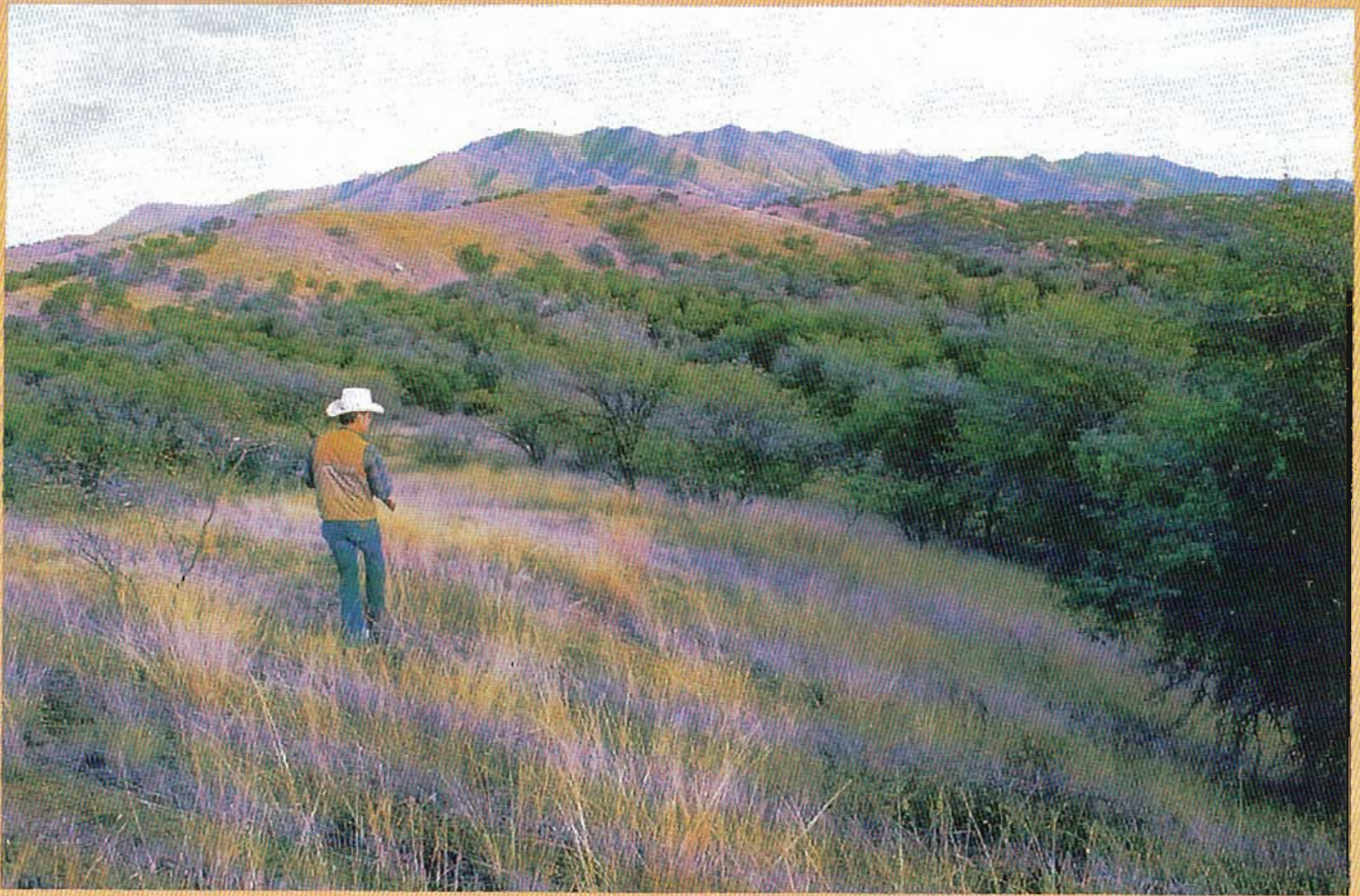
der moderate grazing and "average rainfall" (if there was such a thing in the Southwest) Mearns quail have adequate cover to escape the feathered *blitzkrieg* perpetrated by hungry avian attackers. It is during dry years or on overgrazed allotments that our feathered friends have inadequate protection from talons and low temperatures. Since most of their diet is below ground, overgrazing does not generally remove their food source. In fact, heavy grazing actually increases the amount of Mearns food available, but without adequate cover they can't utilize those food resources. Research has shown that Mearns do not occur in areas where grass utilization by cattle exceeds 50 percent despite the presence of abundant food items. As a result, you will not find Mearns in heavily grazed areas; they either perish or move to suitable habitat.

Managing for the Mearns is not a simple matter of disturbing the soil, distributing waterers, half-cutting and planting food plots like we can do for his cousin, the Bobwhite. Good Mearns quail management is really as simple as good cattle management. If you practice proper range management to maintain the health and integrity of the grass species you will succeed in providing the required elements for abundant Mearns, given the summer storms play their part. What is proper range management? The old axiom taught in range management classes, "*take half and leave half,*" not only assures the continued vigor of range plants but also assures Mearns will have the cover they need.

Precipitation patterns in the Southwest are often described as "boom-bust" cycles. We all look like great Mearns quail managers until we head into another inevitable dry spell. When you have only six inches of grass growth from the meager summer rains, "*leave half*" is not enough to protect most

quail until the next breeding season. What are we as quail managers to do? Require the rancher to remove all cattle from his Forest Service allotment and find other means of income until the summer rains return in two years? Hard question. This is the crux of the problems facing Mearns quail managers in the Southwest, and there is no easy way out. We can hold meetings and workshops and field trips and more meetings but the bottom line is proper range management and flexibility in grazing plans to eliminate range destruction during dry years. Improved range monitoring would help in some cases, but USFS Range Staff personnel are already taxed to the limit with only a few employees overseeing vast acreage. Grazing is a useful tool for bobwhite managers in the Southeast because it removes rank, herbaceous cover which improves quail mobility and lets the sunlight pull forbs out of the soil's dormant seed bank. The oak woodland habitat occupied by the Mearns is driven by a completely different rainfall regime. Tools that are used successfully in one system do not always transfer to a different system. The carburetor in my Chevrolet pickup truck works great, but if I tried to use it in a Ford it would fail miserably.

As with most small game species, research has shown that hunter-caused mortality does not affect



More and more hunters each year are accepting the challenge of hunting this unique quail species in its steep habitat.

Photo by Bob Miles, AZG&FD

the annual population fluctuations of this game bird. The oak overstory provides effective protection for the birds from a quick follow-up shot (or even a first shot in my case). On a Mearns covey rise, you generally have just enough time to raise your gun and say "Dang!... I wasn't ready." You also are rarely able to see where the singles sift back into the grass. The rough topography of Mearns habitat is also effective in reducing the hunt pressure to a relatively small group of serious hunters. If you want to hunt in this country, you would be well-advised to practice shooting your shotgun with one hand because you'll need the other to hang onto a tree trunk on the steep-sided canyon. Many hunters begin hunting Mearns because of the increased challenge offered by these strenuous hunting conditions.

In southeastern Arizona, Mearns quail population fluctuations are highly correlated with the amount of summer (June-September) precipitation falling in their oak woodland habitat. Some hunters have expressed concern that having daily bag limits at the same level as scaled and Gambel's quail (15) is too high.

Information gathered at the most intensively hunted areas in Arizona shows that the average bag (birds/day) is 2.7. Hunters averaged over two hours

per bird in the last five years. Out of 1,130 hunter-days recorded at wing barrels from 1988-93, only six (0.5 percent) resulted in a limit of birds. It is obvious that lowering the daily bag limit on only one of three quail species hunted in southern Arizona would force the Arizona Game and Fish Department to require hunters leave one fully-feathered wing attached to all quail as evidence of legality.

During years of abundant summer rainfall and high quail densities, hunters' recreational opportunity would be limited unnecessarily by reduced bag limits. In dry years with low quail densities and small covey sizes, birds are exceedingly difficult to locate because of their habit of holding tight. Also, the law of diminishing returns comes into play—in poor years many hunters pursue other small game that are more abundant and provide more recreation per unit of time expended (students of energetics call this foraging efficiency).

It is time we stop and listen to what our feathered friends are trying to teach us. In the Madrean woodlands of the southwestern United States and northwestern Mexico, the Mearns quail is merely an indicator species of the quality of that habitat. To manage for Mearns quail is to manage for a healthy ecosystem.

