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TRAVEL & OUTDOORS

Can the Bobwhite Quail Be Saved?

Once widely hunted in Texas, the beloved game birds have been dwindling in recent decades. But a West Texas hunter and professor believes he's found a way to save them.

BY **WES FERGUSON**

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A bobwhite quail at Texas Tech's Wildlife Toxicology Laboratory, in Lubbock.

Photograph by Trevor Paulhus

It's a late September morning and opening day for the northern bobwhite quail is still weeks away, but Ronald Kendall is already on the hunt for the once-ubiquitous game bird, known to its aficionados as Gentleman Bob. With the dew still pearling on the grass, Kendall cruises around his 2,200-acre West Texas ranch in an off-road vehicle, his eyes locked on the ground. Suddenly, he mashes the brakes as two bobwhites scurry across the dirt road in front of him. "There are a lot more than those two," says his son, Ron Jr., from the back seat. "Look at the grass move." Bluestem and broomweed jerk and sway as unseen quail scoot through the knee-high weeds. When Kendall lets off the brakes and eases forward, the air explodes with sound and movement as a cluster of quail take off in a burst.

The bobwhites dart to the base of a solitary mesquite tree some thirty yards away, and Kendall climbs from his Polaris to whistle the bobwhite's distinctive call: "Poor...bobwhite! Poor...bob white!" A bird answers, but only once. "He's checking me," says Kendall, a lifelong hunter and professor of environmental toxicology at Texas Tech University. "He told me he's over there, and he wants me to come over. If he were by himself, or he was lost, he'd be talking to me constantly, but they've already got the covey together. They're smart! They counted heads real quick."

The birds quickly regroup in a tight, outward-facing circle—"coveying up," in hunter parlance. After reminding each other to watch for rattlesnakes, the Kendalls wade through the grass and prickly pear toward the lone mesquite. All is

quiet—till, abruptly, it isn't. The bobwhites, flashing their intricate patterns of reddish brown and white and black, erupt from the ground again like a squadron of tiny helicopters. We ponder the staccato beat of their short, powerful wings as they scatter into heavier brush a little farther from danger.



Ron Kendall and one of his hunting dogs.

Photograph by Trevor Paulhus



Medicated grub in the QuailSafe feeder at Kendall's ranch near the town of Jayton.

Photograph by Trevor Paulhus

“You ever hear the sound of them flushing before?” Ron Jr. asks. “It’s the most

thrilling part.”

Kendall whistles a few more times, but the quail are out of range. If this had been during the hunting season, which opens on Saturday and runs through February 23, Kendall would have relied on one or more of his six bird dogs, five Llewellyn setters and an English pointer, to sniff out, and point toward, the quail. Kendall and Ron Jr. would have then moved into shooting position, the safeties off on their 20-gauge shotguns as they crept forward, ready to fire the instant the birds flushed again. With quick reflexes and a little luck, they'd soon have a clean kill and birds in the hand.

Such sightings are becoming increasingly rare. Once widespread from the Atlantic to the Pecos River, an estimated **85 percent** of northern bobwhites have vanished since the sixties. As their numbers have dwindled across their territory, so have the hunters who pursue the bird. In the wake of another hot and dry summer—conditions that tend to drive down quail populations—many quail devotees are expecting lackluster hunts this fall and winter. Before their numbers plummeted, wild quail were one of the most popular game birds in Texas, both for the thrill of the hunt and for their delicate flesh, which tastes less gamy than dove or duck. The Kendalls like to fry them in cracker crumbs for lunch or dinner; for special occasions, they add a raspberry syrup glaze.

THE BOBWHITES DART TO THE BASE OF A SOLITARY MESQUITE TREE SOME THIRTY YARDS AWAY, AND KENDALL CLIMBS FROM HIS POLARIS TO WHISTLE THE BOBWHITE'S DISTINCTIVE CALL: “POOR . . . BOB WHITE! POOR . . . BOB WHITE!”

“It’s amazing how many East Texans have told me that when they were kids, they hunted quail all over,” Kendall said during a recent interview in his office at Texas Tech, where he leads a team of about a dozen graduate-level researchers in the Wildlife Toxicology Laboratory at the Institute of Environmental and Human Health. “Now,” he added, “you have to get almost to Abilene before you start getting into them.” Texas’s **Rolling Plains**, a region of nearly unbroken rangeland

sprawling east of Lubbock and north of Abilene, is one of the bobwhite's last strongholds. Kendall's ranch near the town of Jayton is a particularly vibrant oasis. Kendall is a careful steward of the land, a student and practitioner of the land-management techniques that encourage the mix of brush and grass that quail thrive in. He also attributes his success to a breakthrough in treating one horrifying threat to the little bird: parasitic worms that are literally eating the bobwhites alive. Across their range, bobwhite quail are sick. And in the Rolling Plains, with its relatively robust population, the worms are taking a particularly terrible toll. But Kendall believes he's found a cure.



Ron Jr. on a QuailSafe feeder at Kendall's ranch near Jayton.

Photograph by Trevor Paulhus

There are many theories as to why bobwhite populations have declined so steadily over the past half century. The birds are highly vulnerable to invasive fire ants and other predators like hawks, raccoons, and skunks, whose numbers have exploded now that landowners are less likely to shoot varmints on sight. Pesticides and herbicides have probably taken a toll, too. Far more significantly, quail have lost millions of acres of habitat through the fragmentation of family ranches, encroaching development, and the replacement of native grasses and

forbs with introduced forage such as coastal Bermuda grass, which cows love but quail ignore. But the landscape of the Rolling Plains, home to some of the state's most storied ranches, like the Waggoner and the 6666, still boasts plenty of good quail habitat.

Bobwhite have always been a boom-or-bust species. In years with plenty of rainfall, the birds flourish; during times of drought, their numbers plummet and can take as long as five years to recover. But in recent decades, the good years have generally been less good, and the bad years have generally been worse. And then there was the hunting season of 2010.

Following healthy spring and summer rains across the region, Kendall and other Rolling Plains quail hunters were gearing up for a bumper harvest that autumn. On opening day, however, they found very few birds to shoot at—some hunters estimated that about 90 percent of the quail were gone. They'd just vanished. Hunters were mystified that so many quail could die so unexpectedly. Could some kind of contaminant, pesticide, or previously undiagnosed disease be the culprit?

In 2011, prompted by the disastrous season, two nonprofits—the [Rolling Plains Quail Research Foundation](#) and the Dallas-based [Park Cities Quail Coalition](#), then chaired by the late oilman T. Boone Pickens—donated about \$3 million for the nation's largest study of quail disease. "We faced an existential question as an organization," said Rick Snipes, a Rolling Plains rancher and then president of the research foundation. "Our birds were missing." As conservationists, Snipes and his colleagues felt they had to get to the bottom of the problem. The two groups funded a dozen studies at Texas Tech and a handful of other Texas universities. Kendall soon emerged as one of the most energetic and groundbreaking researchers.



Parasitic eyeworms extracted from a bobwhite.

Photograph by Trevor Paulhus



A quail at Texas Tech's Wildlife Toxicology Laboratory in Lubbock.

Photograph by Trevor Paulhus

Within months, Kendall and his grad students at Tech zeroed in on a gruesome

finding: wild quail in the Rolling Plains were teeming with parasitic worms. In many of the birds he and his team trapped in the wild and then analyzed, dozens, if not hundreds, of threadworms were feeding in an area of the intestine called the cecum. A similar worm had infested the quails' eyes. In severe cases, Kendall could see dozens of white, string-like worms, growing up to half an inch long, wriggling both around and within the birds' eyeballs. It turned out that quail ingest the worms' larvae when they eat insects, particularly grasshoppers and crickets. Within fifteen minutes, the larvae crawl out of the quail's crop (the muscular pouch where birds temporarily store food), up the esophagus and nasal passages, and through glands into the eyes, where they feast on protein-rich blood. The worms remain there, maturing and mating in the eyes, until the host quail becomes so weak it can't escape from predators, or it falls victim to some other malady.

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Some ranchers had reported seeing quail flying into trees and fences, which indicated that worms were blinding them. Hunters were also shooting wild quail that had **empty eye sockets**. Scientists had known about eyeworms in quail since the sixties, but for mysterious reasons, the parasites seemed to have reached epidemic levels. In 2014, Kendall began to publish his findings on eyeworms in peer-reviewed journals, and the media took notice. **"Blood-Sucking Eyeworm Caused Drastic Quail Decline"** was the headline at TexasMonthly.com.

Kendall then set out to find a treatment. This February, after five years of research, he announced that he had developed the first medicated feed specifically devised to kill parasitic worms in wild quail. Kendall's researchers have been testing the medicine, which he calls QuailGuard, both in their lab at Texas Tech and in their "mobile lab," a cargo trailer retrofitted with equipment they can haul to area ranches to non-lethally test quail for worms in the field. Federal patent records show that QuailGuard is a blend of grain and fenbendazole, a drug commonly used to kill worms in dogs, cats, fish, and livestock. "We know it works, and we know it's safe," said Cassie Henry, a PhD

student participating in the studies.



Dr. Aravindan Kalyanasundaram, a post-doctoral research associate at the Wildlife Toxicology Laboratory at Texas Tech University.

Photograph by Trevor Paulhus

For now, it's hard to independently verify the claims of Kendall and his assistants. No one else is conducting major scientific research on parasites in quail in the remote Rolling Plains, and Kendall is withholding the details of his latest studies as he awaits FDA approval for QuailGuard. But over the last three years, Kendall has been using QuailGuard on his property and at a few other pilot ranches, including a ranch owned by Snipes, the former Rolling Plains Quail Research Foundation president. "My results speak for themselves," Snipes said, noting that last spring's "whistle call count," an annual survey of quail in the region, turned up an average of three times more birds on his ranch than on other Rolling Plains ranches. "There's not a cattleman in West Texas who doesn't worm his cattle twice a year, and everybody who keeps dogs does the same thing. All we're doing is giving the landowner an opportunity to do that same thing for his quail. Pretty simple stuff."

The scaled quail—also known as the blue or cottontop, for its distinctive crest—is the second-most common species of quail in Texas. The Gambel’s and Montezuma quail also live in parts of West Texas.

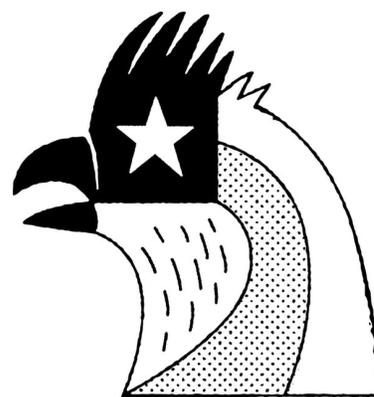


Illustration by Cristopher Delorenzo

Still, there’s no precedent for the widespread medical treatment of game birds in the United States, a source of uncertainty that gives some folks pause (although game-keepers in Scotland have medicated their red grouse for similar parasitic worms since the eighties, with mostly positive results). Kendall hopes to begin selling the feed next year, once his lab can definitively tell the FDA how long the medication remains in the quails’ bodies after they’ve ingested it, a required step for approval. Kendall, whose application to patent QuailGuard is also under review, has additionally partnered with his son, Ron Jr., to manufacture a specialized feeder called QuailSafe, a cage-like contraption with a quail-sized slot that lets bobwhites hop through to partake in the medicated grub, while keeping out the deer and hogs.

The early results from Kendall’s innovations are encouraging, but quail are facing many challenges besides worms, from habitat loss and increasingly extreme wet-and-dry weather cycles to the fact that range fires, which kill parasites, are now suppressed. The effects of climate change on quail haven’t even been studied, though researchers acknowledge that it has likely had an impact. “You take the degradation of habitat into account on top of all those other factors, the invasive species and disease and parasites and so on, and you really start to understand why these little guys have been declining for several decades,” said Amanda Gobeli, who coordinates the [Reversing the Quail Decline Initiative](#), a joint effort of Texas A&M AgriLife Extension and the Texas Parks and Wildlife department.



Kendall out looking for quail at his ranch near the town of Jayton.

Photograph by Trevor Paulhus

Bobwhite quail in Texas are frequently described as the “canary of the prairie” because they serve as a conspicuous barometer of the health of a myriad of wildlife species, including songbirds. Kendall uses a different metaphor: he talks of the Rolling Plains as “the Alamo” for wild quail habitat in North America, where he and others are taking a last stand for a beloved yet beleaguered game bird.

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