



Where Have All the Quail Gone?

The Texas Quail Conservation Initiative: A Proactive Approach to Restoring Quail Populations By Improving Wildlife Habitat



TEXAS **QUAIL** INITIATIVE
Texans Improving Habitat for Native Wildlife

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As private land holdings become smaller, wildlife habitats become increasingly fragmented.



TPWD

Do you remember “the good old days?”

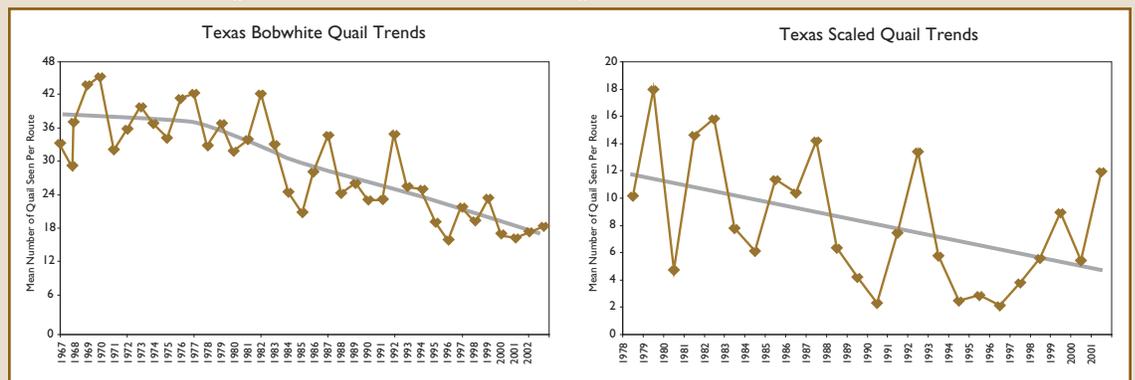
Do you remember when quail were a common sight? You could hear bobwhites whistling in the spring. You and your dogs could move 30 coveys a day. Do you remember when we had quail... where now we have concrete?

So what happened to the quail? It’s a question resource managers hear repeatedly. Many of us remember quail as common birds. Today, in many areas of the state, quail populations are declining or restricted in their distribution (Figure 1). Quail populations can fluctuate wildly and are sometimes referred to as having “boom or bust” population swings. But such short-term population changes do not reflect the long-term downward trend of Texas quail. Since 1980, bobwhite populations in Texas have declined at a rate of about 5.6% per year. Scaled quail populations have declined at a rate of about 2.9% per year. These numbers add up – or down to be more correct to a 75% loss in bobwhites and a 66% loss in scaled quail. Many reasons are cited for these declines, but the evidence seems to point to changes in the quantity and quality of habitat as the leading cause.

(Figure 2 on page 2). If this trend continues, everyone loses. These animals rely on the same types of habitats and environmental processes that provide Texans with revenue, places to live and recreate, water to drink, and clean air to breathe. Simply stated, maintaining a healthy Texas lifestyle means maintaining healthy wildlife habitats.

Actions are needed to halt, and hopefully reverse the declines in quail and associated grassland bird species. The Texas Quail Initiative is a strategy for managing habitat and restoring quail populations in Texas. The plan calls for Texans to pull together as hunters, landowners, conservation groups, agencies, and researchers to identify, modify, and adopt practices and mindsets that will preserve Texas’ quail legacy for future generations.

Quail serve as a “canary in the coal mine” for a number of other species, including the Texas tortoise and Eastern Meadowlark, whose populations have also declined dramatically over the past 30 years



▲ FIGURE 1: **Texas Bobwhite (1967 – 2003) and Scaled Quail (1978 – 2001) Trends** Statewide populations trends for bobwhite (Sauer 1999) and scaled quail (Perez 2003). There are no reliable estimates of Gambel’s and Montezuma quail population trends.

WHY ARE QUAIL IMPORTANT TO TEXAS AND TEXANS?

When one thinks of quail, hunting typically comes to mind. But you do not necessarily have to be following a pair of pointing dogs to appreciate quail. The “bob-white” call rekindles fond memories for many Texans.

Texas is one of only four states – Arizona, California, and New Mexico are the others – that can boast of having four species of quail. Bobwhite and scaled or “blue” quail are the most common species in Texas. They are ecologically, economically, and culturally important components of the Texas landscape (Figures 3 & 4 on pages 3 & 4). The Montezuma and Gambel’s quail are found in only a few areas of the state because they have very specific habitat needs (Figures 5 & 6 on page 5).

Aside from their aesthetic appeal, there are significant reasons for conserving quail and their habitats. Stable bobwhite and scaled quail populations are an indication of healthy rangeland and forest ecosystems. It is in the best interest of all Texans to maintain the integrity of these ecosystems, considering the valuable services they provide (Table 1 on page 9). The challenge lies in how to conserve this natural diversity while meeting the needs of society.

In some cases, access fees for quail hunting may generate as much money as grazing leases. One segment of hunters – Texas Quail Unlimited members – spent an average of \$10,354 in pursuit of quail in 1999, and 65% of those expenditures were made in the destination – i.e., rural – counties where they hunted. As wild quail have become increasingly rare in many other states, dedicated quail hunters have flocked to Texas. Sales of the non-resident five-day license required to hunt quail have increased by 263% since it became available in 1987.

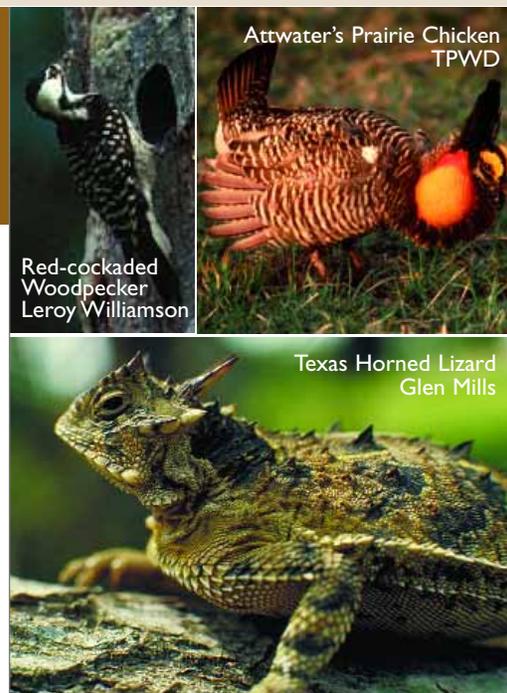


FIGURE 2

Many species (such as those listed below) rely on the same habitat types that quail use. The following species are all considered to be declining due to habitat loss.

Short-eared Owl	Eastern Meadowlark
Common Nighthawk	Painted Bunting
Eastern Kingbird	Chuck-wills Widow
Loggerhead Shrike	Red-cockaded Woodpecker*
Brown Thrasher	Brown-headed Nuthatch
Blue-winged Warbler	Bachman's Sparrow
Prairie Warbler	Lesser Prairie Chicken
Eastern Towhee	Attwater's Prairie Chicken*
American Tree Sparrow	Northern Harrier
Field Sparrow	Texas Horned Lizard
Savannah Sparrow	Texas Tortoise
Grasshopper Sparrow	Prairie Dog
Henslow's Sparrow	Black-footed Ferret*
Dickcissel	

*Endangered

FIGURE 3

Northern Bobwhite

Colinus virginianus



Identification: Bobwhites are the most popular and abundant quail found in Texas. Both sexes have a mottled brownish back and wings. Cocks have a white throat and face, while hens have a buff-colored throat and forehead stripe. Their familiar call says “bob-white”.



Habitat:

Mixed brush and grassland habitat types are most characteristic of the species. Brushy rangeland interspersed with bunchgrasses and cactus, stream courses and flood plains dotted with croplands offer prime habitat. In eastern portions of its Texas range, areas that are burned frequently (every 3 to 5 years) are important. In drier portions of its Texas range, grazing and brush management become important management tools. Distribution shown in red.

WHAT HAPPENED TO ALL THE QUAIL?

Although culprits such as roadrunners, raccoons, cattle egrets, skunks, hawks, weather, and especially fire ants are often blamed for the demise of quail, **the fundamental reason for declining quail numbers is loss of habitat.** While predation can certainly influence quail populations, impacts of predation increase as areas of habitat get smaller and are separated by longer distances. Local populations of quail on these islands of habitat are too few in number and too far from other quail to withstand catastrophic events such as floods, snow and ice, drought, etc. Therefore, isolated populations of quail have a greater possibility of becoming locally extinct.

Of course, these changes did not happen overnight. For more than a century, the lands that quail historically occupied in Texas have been drastically altered by human actions such as fire suppression, changing farming practices, timber and rangeland management practices, and human population growth.

Natural Fire: Keeping Open Spaces Open

One of the most powerful natural forces that influences quail habitat is fire. Invasive species like Eastern Red Cedar, Ashe Juniper, Mesquite and other fire-intolerant hardwoods were historically kept out of uplands by periodic fires. Nevertheless, it is ingrained in humans that fire is bad. Recollections of Smokey Bear and wildfires foster a fear of prescribed burning. Long-term suppression of fire led to the conversion of open lands to dense brush, woodlands, or forest. The planned use of fire – “prescribed burning” – can be a useful and inexpensive tool for bobwhite management, considering that bobwhites will not thrive in areas where the proportion of brush-woodland-forest exceeds 50 percent of available cover. One of the challenges resource managers face is the conservation of fire-dependent ecosystems in the face of ever-increasing urbanization and land fragmentation.

Croplands and Timber: From Tenant Farmers and Handsaws to Monster Machines

Since 1945, the tenant farming system (sharecropping) was likely responsible for the highest densities of bobwhite on record in east Texas. This was an accidental by-product of basic farming techniques, which left behind a “crazy-quilt” pattern of ideal quail habitat. Eventually, advances in farm machinery and forestry practices favored larger patches of uniform crops and discouraged much of the cover (protective vegetation) most often used by bobwhite (Figure 7 on page 10). However, the times are again changing for quail in many of these areas. Land managers are

increasingly interested in agricultural practices that sustain the well-being of wildlife populations. Further, landowner incentives through federal and state programs are becoming more wildlife friendly. For a comprehensive list of these programs and opportunities, see page 18 of this publication.

Rangeland Habitats: Cattle – Another Tool in the Box

Ranching is very much a part of Texas culture. Grazing can be a double-edged sword when managing rangelands for quail. When the right amount of grazing is combined with adequate rainfall, a quail bonanza can be produced. Too much grazing – along with too little rainfall and too much hot weather – can be devastating to quail production. Accordingly, the landowner interested in maintaining good quail habitat should incorporate a stocking rate that is flexible, depending on annual weather conditions. Deliberately “understocking” is a good drought-management strategy to protect structured cover for quail.

When rangeland soils are disturbed, varieties of plants that are favorable to quail respond. Quail relish seeds from species such as croton and western ragweed, which are among the first types of plants to emerge after a disturbance. Grazing can encourage the growth of such quail-preferred plants.

Grazing can also be used to promote a desirable habitat structure for quail at ground level. Quail like areas with some bare ground, however, long-term overgrazing changes the composition, species diversity, and structure of vegetation by eliminating tall bunchgrasses. Lack of adequate, suitable, quality nesting cover is the most widespread limiting factor in quail production across most of Texas. Overall, grazing management has implications for quail, either positive or negative; it is up to the land manager to determine which.

Rangeland Habitats: Beneficial Brush

Good quail habitat is characterized by a mixture of brush and grassland. But in some cases, much money and effort have been expended on large-scale brush removal to increase grass production for livestock. Landscapes with too little brush are usually devoid of quail. But selective brush control can be one of the most beneficial tools for improving quail habitat.

Attitudes towards brush in Texas have evolved from brush *eradication* from the 1940s through the 1960s, to brush *control* during the 1970s, and then to brush *management* during the 1980s and 1990s. More recently, the philosophy of brush *sculpting* has been promoted to instill the idea of planned, selective control of brush, with considerations for wildlife and livestock.

FIGURE 4

Scaled Quail

Callipepla squamata



Photos: TPWD

Identification: Scaled quail (often called “blue quail” in Texas) have a bluish gray coloration over most of their body. Scaled quail are known for their habit of running from danger rather than flying. They are found in the western one-third of Texas. The name “scaled quail” stems from the scale-like feathers on the breast. The “cotton-top” (white crest) is also a distinguishing characteristic of this species. The sexes look similar; however, hens tend to have faint, brown streaks running vertically down their throat.



Habitat:

Scaled quail are usually found in semiarid rangelands characterized by a mixture of shrubs, grass, and bare ground. Mesquite, prickly pear, and sparse grasses are common habitat components. Distribution shown in red.

FIGURE 5

Montezuma Quail

Cyrtonyx montezumae

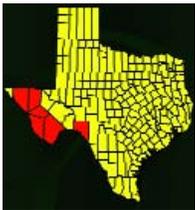


TPWD

Identification: Cocks have a striking “clown face” pattern of white patches separated by black streaks, black breast and undersides, white or cinnamon-colored spots on their flanks, and a grayish-

brown back and wings. Hens have a cinnamon body coloration with black flecks, and a whitish chin and throat.

Habitat:



The Montezuma quail routinely digs for its food, which consists of small bulbs and tubers. Montezuma quail inhabit the pine, oak, and juniper grasslands of southwest Texas.

While considered a game bird in Texas, there is no open season for Montezuma quail in Texas. Distribution shown in red.

FIGURE 6

Gambel's Quail

Callipepla gambelii



Photos: TPWD

Identification: Black, teardrop-shaped plume, but no scale pattern on their abdomen. Cocks have a rusty crown and a black forehead, throat, and abdomen. Hens have a smaller plume and no

black throat or abdomen, but may have brown streaks on their underside.

Habitat:



Birds of the desert, Gambel's are associated with brushy drainages along the Rio Grande from the Big Bend region to El Paso. Mesquite, acacia, and mimosa species

are used for cover and feeding sites. Gambel's quail are often seen on the ground and roost in trees.

Improved Grasses: Decreasing Diversity

Large areas of Texas' rangelands have been converted to various species of exotic grasses to increase forage for cattle production (Figure 7 on page 10). In different parts of Texas, these may include Bermudagrass, Bahiagrass, Tall Fescue, Old World Bluestems, Buffel Grass, or Lovegrass. Such forage species are sometimes referred to as tame or improved pastures... but they are not “improved” when it comes to quail. These pastures are monocultures – one species – and do not contain the diversity of plants nor the structure necessary to provide the habitat that quail need to survive. For example, Bermudagrass is a thick sod-forming grass that limits quail travel, and offers limited opportunity for nesting bobwhite hens. Some species like Weeping Lovegrass and Buffel Grass – introduced bunchgrasses from Africa – provide limited nesting cover, especially during drought years, but can reduce overall plant diversity and make finding food more difficult for quail.

Habitat Fragmentation: Shrinking Space

Land fragmentation is the division of rural lands into ever-smaller parcels. Fragmentation poses a serious threat to wildlife habitat. In general, as landholdings become smaller than 500 acres, property owners tend to convert native rangeland to improved pasture. The intensity of use on such areas usually increases, as landowners have historically had to maintain some degree of “ag use” to maintain an open-space or ad valorem valuation. Note: Open-Space Valuation can now be maintained by managing for wildlife, including quail (see the TPWD Web site http://www.tpwd.state.tx.us/conserves/private_lands/agricultural_land). Fragmentation rates increase with Texas' growing population. In the process, usable space for quail is lost.

Bobwhites and other upland game birds are more vulnerable to harvest, predation, and ultimately, local extinction in fragmented landscapes. Recent research has modeled the viability of bobwhite populations subject to weather catastrophes and harvest. In Texas, fragments of habitat must be large enough to sustain at least 700 bobwhites. Based on reported quail densities for good habitat in Texas, a minimum of 3,500 to 7,000 acres would be necessary to maintain a viable population. This doesn't mean that a landowner must control an acreage of this size, but that a suitable landscape encompassing a sizeable area will be needed to ensure quail survival. Landowners with small- and medium-sized acreages can work cooperatively to manage for a landscape suitable for quail. Such wildlife management associations or cooperatives can increase the acreage suitable for quail and keep populations from becoming isolated (Table 2 on page 18).

USABLE SPACE

The Blueprint for Quail Habitat



Robert Perez

Mesquite – mixed brush grasslands in South Texas can provide a high degree of usable space for bobwhites.

For many, many decades in Texas, people took a passive approach to quail management. The basic philosophy was “When it rains, we’ll have quail. When it don’t, we won’t.” Precipitation is certainly an important factor that influences Texas quail, especially in the semi-arid and arid parts of the state. However, as the stakes are raised for quail, we need to pay attention to keeping habitat components intact and on the ground so that we can maximize the positive impacts of precipitation when it finally does occur.

Although quail can be found in a variety of habitats, their structural requirements remain relatively constant. The primary reason for declining quail populations is a large-scale reduction in the amount of quail habitat, or more specifically, the amount of permanent cover needed for day-to-day survival (i.e., usable space). Usable space is the amount of land in suitable permanent cover. As a general rule, the more usable space there is on any property, the more quail there will be.

Woody cover is the foundation of usable space and is essential to bobwhites for protection from predators year-round. Such cover provides thermal relief from cold winds in winter and high temperatures during summer. The amount, distribution and height of woody cover determine its contribution to usable space. If there is too much brush, it deducts from usable space because bobwhites are not adapted to live in dense woodlands. If there is too little woody cover, space becomes unusable because it is not safe to travel between loafing areas.



Properly managed prairies and forests can provide excellent habitat for bobwhites.



Generally, brush heights between 3 and 10 feet are best for quail. Some species that provide excellent cover within this height range include Lotebush, Sand Plum, Skunkbush Sumac, Dewberry, Blackbrush, Shinnery Oak, and Mesquite. Suitable “coverts” (in other words “quail houses”) should be distributed across the landscape. The Huggins 50:50 Rule provides guidance on the proper amount and distribution of woody cover: “A bobwhite should never be more than 50 yards from a clump of brush 50 feet in diameter.” Another rule of thumb holds that you should be able to throw a softball from one covert to the next.

Given the foundation – woody cover – the next concern in usable space management is ground cover. Ideally, ground cover should be maintained as tall as the top of a Wellington boot, but not much taller than your knee. Perennial, warm-season bunchgrasses like Little Bluestem are the backbone of ground cover because they stay intact during winter better than forbs. For bobwhites, about 300 basketball-sized bunchgrass clumps per acre is a benchmark for providing suitable ground and nesting cover.

The goal of quail management is to maximize the amount of usable space on any management area. Some powerful methods for increasing usable space include:

- reduced grazing pressure if ground cover is too low,
- increased grazing pressure if ground cover is too tall and dense,
- reduced amounts of woody cover if there is too much, and
- increased amounts of woody cover if there is too little.

The last practice (planting woody cover) is especially expensive and time-consuming, so it is best to carefully manage existing woody cover. Another expensive but effective practice is converting farm fields and tame pastures to mixtures of native perennial bunchgrasses and woody cover.

Conversely, modifying suitable permanent cover that already exists (where bobwhites are already present) is of relatively little value in increasing bobwhite abundance. Such practices might include creating more edge, planting food plots, and putting out waterers or feeders.

WHAT IS GOOD QUAIL HABITAT?

Tips for Quail Management



Prescribed fire, proper grazing and brush management are important tools used to create and maintain good quail habitat.

The structure of habitat needed to sustain quail is well documented.

Although the types of plants used by quail change across the different regions of Texas, the structure of the habitat, which provides nesting, overhead screening, loafing, and roosting cover, remains the same.

Nesting Cover: It's All About the Grass

Bunchgrasses used for nesting are typically the diameter of a basketball or pie plate and are greater than 8 inches tall. Some key species include Little Bluestem, Switchgrass, Tobosa, and others. The bunchgrasses that quail need for nesting are often highly preferred by cattle for forage. These native bunchgrasses are one of the most limited resources for Texas quail. On rangelands, lack of native bunchgrasses can be a result of poor grazing management, drought, or the introduction of exotic grasses.

- Introduced exotic grasses such as Old World Bluestem, Bermudagrass, and Bahiagrass do not provide the essential nesting cover required by quail and even reduce useable space. Reducing/removing exotic grasses and restoring a diversity of plant species will play a significant role in restoring quail populations on parts of the Texas landscape.
- Cattle should be deferred from rangelands whenever native bunchgrasses are reduced to less than 200 clumps per acre and/or are less than 8 inches tall.

- When bunchgrasses exceed 500 clumps per acre, prescribed grazing and/or burning can be used to maintain usable space.
- In forested environments, a lack of nesting cover can be attributed to closed canopies and the removal of fire. Forests should be thinned whenever the canopy cover exceed 50% and 50-75% of the understory should be burned annually in small, patchy mosaics.
- Clean-farming practices, which utilize every square foot of land, remove weeds and insects important to quail survival. Buffer strips composed of native grasses and forbs as well as fallow fields can mitigate some of the impacts in a farming landscape.

Screening Cover: Bashful Birds

Screening cover with bare ground or very short ground cover is important to quail. Nest sites are typically located within 50-60 feet of openings such as fields, disked strips, or roads. The reason for this is that newly-hatched quail chicks cannot fly and need some bare ground to move around. In addition to bare ground, quail chicks need an overstory of weeds and grasses to screen them from predators. This overhead screening cover is typically made up of a mixture of tall bunchgrasses and forbs (broad-leafed weeds) such as Croton, Ragweed, Sunflower, Broomweed, Partridge Pea, and others. One attribute common to these species is that in dense clumps they provide a closed canopy above quail and bare ground underneath. Forbs attract insects, which provide protein for incubating adults and young chicks. In fall and winter, forbs provide the majority of seeds eaten by quail. Other food sources include green vegetation, the fruit and mast of woody plants, and seeds from some grasses.

Woody Cover: Quail Need a Place to Loaf Around

Other than nesting and screening cover, quail need woody cover for protection from predators and adverse weather, and for loafing during non-feeding periods. Loafing coverts typically consist of brush cover at least 50 feet in diameter that is dense above (to provide protection from hawks) yet open at ground level (to permit detection of ground-dwelling predators). Depending on the region of the state, loafing coverts may be thickets of plum, sumac, sandsage, yaupon, wild grape, granjeno, lotebush, dewberry, shinnery oak, sandsage, brasil, yucca, and taller growing forms of prickly pear. The one exception to the above “rules-of-thumb” would be Gambel’s quail, which typically prefer denser woody cover and fewer bunch grasses.

Putting it All Together: Interspersion, Interspersion, and Interspersion

Once these three cover types (nesting, screening, and loafing) are provided, most other needs for quail will also be met. Quail are not migratory and generally spend their entire lives within a relatively small home range. Therefore, it is important to provide all of the essential cover types needed by quail within close proximity to one another (evenly interspersed). A good rule of thumb is to provide all the necessary cover types needed by quail on every acre of land. A mosaic of habitat types ranging from bare ground to woody cover can be created with the creative use of fire, disking, brush management, and proper grazing. These management practices can also increase the diversity and abundance of many other grassland and scrub species.

TABLE I

Management for quail is management for sustainable ecosystems. Healthy, functioning systems support a rich diversity of life, which work together to maintain the earth’s natural life-support systems. Here are just a few of these ‘free’ ecosystem services.

- | | | |
|---------------------------------|---|--------------------------|
| • Purification of air and water | • Detoxification of pollutants | • Genetic diversity |
| • Nutrient storage and cycling | • Contribution to climate stabilization | • Recreation and tourism |
| • Soil formation and protection | | |

Economic benefits of quail on the Texas landscape include:

- revenue to landowners via hunting leases;
- rural economic development to communities through ecotourism;
- impacts on rural real estate values.

WHAT CAN BE DONE?

THE TEXAS QUAIL CONSERVATION INITIATIVE

The decline of bobwhites has become so serious that the directors of the Southeastern Association of Fish and Wildlife Agencies charged the Southeast Quail Study Group to draft a large-scale recovery plan. The Northern Bobwhite Conservation Initiative (NBCI) (<http://seqsg.qu.org/seqsg>) was completed in March 2002. The NBCI currently encompasses 22 states, and will expand to cover portions of perhaps as many as 16 additional states within the historic range of the bobwhite. The NBCI has facilitated the development of several “step-down” state plans, including the Texas Quail Conservation Initiative (TQCI). The TQCI takes a proactive approach that fosters partnership and cooperation among various state, federal and private entities to initially halt, and then reverse scaled quail and bobwhite declines within areas of remaining habitat. The TQCI also pays considerable attention to scaled quail and will eventually include efforts aimed at conserving Gambel’s and Montezuma quails.

The TQCI (Figure 8 on page 11) is designed to coordinate quail efforts in Texas based on the best available science, policy, and stewardship. The TQCI is a collaborative effort among state and federal agencies, universities, non-governmental organizations, and private citizens to promote the restoration of wild quail in Texas. The Texas Quail Council – a group of community leaders concerned for the future of quail – governs the TQCI. The Council has the charge of making quail management and policy recommendations to the Texas Parks and Wildlife Commission, as well as other agencies that have the ability and influence to impact (either positively or negatively) quail habitat in Texas. A Technical Committee of biologists, researchers, and managers provide science-based management information for restoring quail populations to the Council.

The magnitude of the quail restoration effort in Texas is enormous! For example, in order for Texas to meet the recovery standards of the National Bobwhite Conservation Initiative, improvement of quail habitat will have to occur on somewhere between 40 million and 100 million acres of land. It will require policy shifts to provide economic and cultural incentives for people to implement, and maintain, quail management activities on their land.

“Efforts from a broad coalition of stakeholders will be required in order to achieve the objectives outlined in this plan. This plan identifies the key stakeholders and desirable outcomes.”

-Vernon Bevill, Program Director
Small Game and Habitat
Assessment Program

FIGURE 7
Much of the native grassland habitats of Texas have been converted to improved pastures or cropland (Wilkins et al 2003).

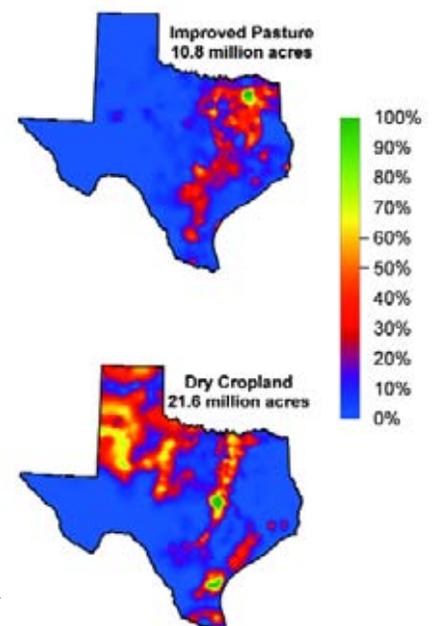
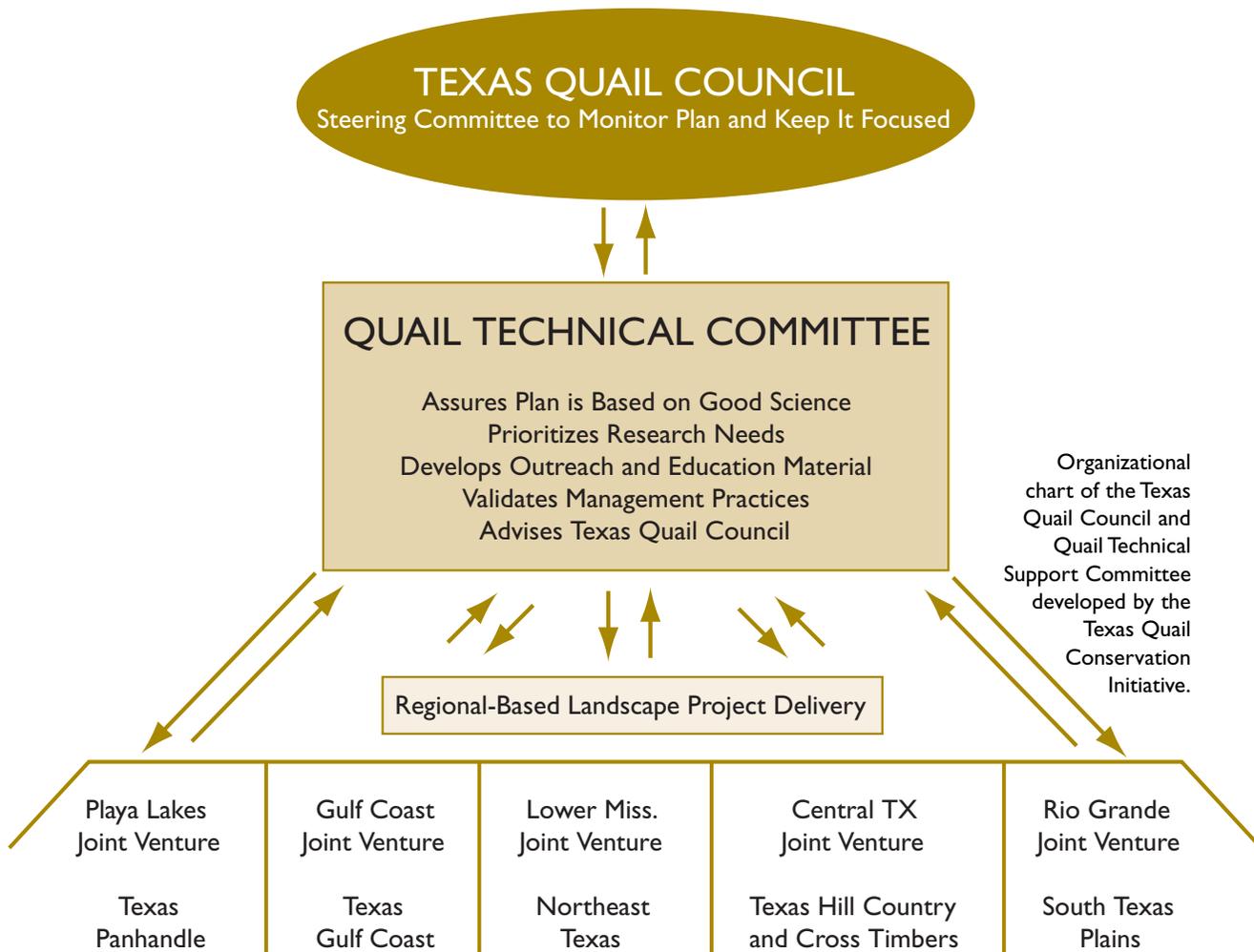


FIGURE 8

The primary objectives of the TQCI are to:

- Inform the general public about the plight of quail in Texas
- Ensure the initiative will be based on the best available knowledge and science
- Create suitable habitat for quail and other grassland bird species
- Stabilize quail populations within 10 years
- Develop a coordinated, uniform conservation effort to conserve Texas grasslands and the species that live in these systems
- Develop partnerships as appropriate
- Provide private and public landowners in Texas incentives and information to better manage their properties for grassland birds



TAKING ACTION – WHAT WE'RE DOING

Any journey, no matter how long, begins with a first step. With the TQCI, we have designed a three-step program to begin implementation.

Step One: Improve quail habitat on a network of public wildlife areas throughout the state of Texas.

While more than 90% of Texas is private land, public wildlife areas can serve as powerful tools to demonstrate quail management and stewardship. Providing economical examples and demonstrations of how grazing, timber management, prescribed fire, and brush management on public lands is useful for promoting quail management on private lands.

Step Two: Promote Landowner Incentive, Technical Guidance and Cooperative Management Efforts to enhance quail and grassland bird habitat.

The most recent federal Farm Bill legislation provides private landowner incentives for quail and wildlife management on an unprecedented scale. The Environmental Quality Improvement Program – EQIP, run by the USDA Natural Resources Conservation Service – has already had a positive impact on more than 60,000 acres of quail habitat in Texas. The USDA Farm Services Agency recently announced the Upland Habitat Buffers Program (CP33) that allows up to 20,000 acres of crop field edges to either be planted in native vegetation or allowed to regenerate naturally. Both of these programs provide incentive payments to landowners and cost-share arrangements for improving ranch and farm land for bobwhite quail. And this is just the beginning... Audubon Texas has developed a statewide program to promote the cooperative management of habitat for quail and grassland bird conservation. To date, Audubon Texas has received commitments from landowners and land managers who have influence



Date Rollins

“Habitat management is nine-tenths of bobwhite management.”

- Fred Guthery
Beef, Brush and Bobwhites



In his book, *Game Management*, Aldo Leopold wrote that wildlife “can be restored with the same tools that had heretofore destroyed it – fire, axe, cow, gun, and plow.”

over more than 400,000 acres in Texas. To learn more or to enroll your property, visit Audubon Texas at <http://www.tx.audubon.org/>.

Private lands are the key to restoring quail populations in Texas. Providing educational opportunities and technical assistance for willing landowners to address the ecological and economic consequences of various management alternatives must and will be emphasized. Educational efforts should also be aimed at youth and the general public to promote acceptance and understanding by an ever-increasing urban population.

Step Three: Build quail management into Joint Venture initiatives to create “all bird” conservation efforts in Texas.

Joint Ventures are essentially mega-wildlife co-ops among state, federal and private organizations. Much of Texas is covered by three Joint Ventures, and the entire state will soon be covered with the addition of two more Joint Ventures currently being formed. Quail and grassland bird conservation are currently, or will be in the immediate future, a central feature of all Joint Ventures in Texas.

IMPLEMENTATION: East vs. West – the I-35 Quandary

Quail abundance varies as one moves across Texas. Areas in East Texas – e.g., Pineywoods, Blackland Prairies – have suffered the most severe declines in bobwhites, while areas further west – e.g., Rolling Plains – or south – Rio Grande Plains – have enjoyed relatively more stable bobwhite populations. As of 2003, bobwhite populations west and south of a line from Fort Worth to Corpus Christi remain in decent shape, while abundance east of that line has decreased greatly in the past 25 years. These trends mirror various land use trends – e.g., greater prevalence of tame pastures like Bermudagrass in East and Central Texas, and greater habitat fragmentation – caused by increasing human population growth. Rangelands, which contain more native plant communities attractive to bobwhites, are the major land use in the western and southern areas of Texas; therefore restoration strategies must also vary in different regions. Major changes will be required to restore bobwhite populations in East Texas, but more minor “tweaking” of management strategies – e.g., reduced stocking rates or selective brush control – will permit good quail numbers in areas further west.

The East Texas Strategy

Changing land uses over the past 40 years have been the main culprit involved in the quail decline in East Texas. Tame pasture grasses like Bermudagrass and Bahiagrass render landscapes mostly unusable for bobwhites. Concurrently, habitat fragmentation has been severe, forcing bobwhites into smaller and smaller places on the landscape. This trend makes quail more vulnerable to their natural enemies – e.g., various predators. Components of a restoration plan for East Texas should include:

- Restoration of native plant communities including native, warm-season grasses like Little Bluestem and diverse forbs through programs similar to the Pastures for Upland Birds program (Table 2 on page 18);
- Increase landowner awareness of bobwhite needs and how those needs are impacted by traditional agricultural practices;
- Development of landowner-based quail management cooperatives, where landowners join forces to manage for quail habitat beyond a small-plot basis;
- Form partnerships with groups such as the U.S. Forest Service and Nature Conservancy, and encourage conservation easement holdings to facilitate bobwhite population recovery in these areas;
- Encourage non-traditional forest management practices modeled after the South Georgia and North Florida quail hunting plantations, (www.talltimbers.org) such as uneven-aged management and single-tree selection harvest methods that maintain southern pine stands in an open, park-like structure with less than 50% tree canopy cover;
- Increase use of prescribed fire at the landscape scale.



Ron Mize



Robert Perez

Forests with a high density of trees and undergrowth and exotic grasses like Bermuda do not provide usable habitat for quail.



Texas Brigades

“A true conservationist is a man who knows that the world is not given by his fathers but borrowed from his children.”

- John James Audubon

“It is imperative that we move beyond a passive management philosophy that considers quail an accidental by-product of livestock operations and other land uses. We need to move forward with a philosophy that strives to sustain populations of wild quail based on the best available science, policies, and stewardship.”

- Leonard A. Brennan
*Chairman of the Texas Quail
Technical Support Committee*

West and South Texas Strategy

The prevailing land use in these areas is livestock grazing. Landholdings are relatively large, and while quail management cooperatives are useful, they are not as necessary in this region as in areas further east.

Management strategies are more extensive, and should address tempering livestock stocking rates in these regions to ensure sufficient nesting cover, as well as brush control practices to provide adequate loafing and escape cover. Flexible stocking rates are especially important during droughts.

Components of a restoration strategy for these regions should address:

- Increased landowner awareness of quail needs and how they are impacted by traditional agricultural practices;
- Fine-tuning of grazing practices to ensure a desirable mixture of nesting cover and forbs for food;
- Fine-tuning of brush control practices to incorporate the philosophy of brush sculpting – i.e., the planned, selective control of brush to enhance quail habitat;
- Development of landowner-friendly monitoring systems to permit tracking of quail abundance over time.



Robert Perez

West and South Texas are drought-prone regions of the state. If cattle stocking rates are not greatly reduced during dry spells, overgrazing can occur.

CALL TO ACTION: WHAT TEXANS CAN DO

Private Landowners

Private landowners hold the key to restoring quail populations. Landowners should become students of quail habitat needs, and aware of how their management practices affect quail habitat, either good or bad.

What you can do:

- Contact your county TPWD biologists to learn how to modify grazing and brush control practices to make them more quail-friendly (www.tpwd.state.tx.us/consERVE/wildlife_management);
- Become a student of quail. Obtain and read quail-related literature (page 20)
- Attend quail-related educational programs such as “Quail Appreciation Days”;
- Contact your local county Extension agent for programs in your area;
- Visit with neighboring landowners about the possibility of initiating a quail cooperative;
- Learn how to monitor quail population trends on your property;
- Enroll your property in the Texas Quail Index (www.teamquail.tamu.edu), a 5-year demonstration effort by Texas Cooperative Extension;
- Apply for various Farm Bill incentive programs to enhance quail and wildlife habitat on your land (Table 2 on page 18).

Quail Hunters

Hunters affect quail happenings directly, via harvest rates, and indirectly, by creating demand for quail hunting. Hunters should:

- Introduce new colleagues – especially youth – to quail hunting;
- Work with landowners to promote adoption of habitat management practices;
- Join groups like Quail Unlimited, Texas Wildlife Association, and others that promote good quail management practices;
- Support and assist with efforts to demonstrate good quail management efforts;
- Educate yourself about quail management and the role of hunting in conservation; then serve as an ambassador to others!



Dale Rollins



Texas Brigades



Dale Rollins



TPWD

“Appreciating quail means more than just enjoying the bobwhite’s whistle on a summer day or a covey’s flush in December. Appreciation in this sense means to judge with heightened awareness. Do you appreciate the dilemmas faced on a daily basis by quail?”

- Dale Rollins
Texas Cooperative
Extension Service

Outdoor Enthusiasts

Remember, if a management practice is quail-friendly, it’s likely benefiting a suite of other species such as the Red-cockaded Woodpecker, Texas horned lizard and Lesser Prairie Chicken. Do your part to ensure that Texas landscapes are managed for a wide diversity of native wildlife.

- Buy a hunting license – even if you may not hunt – funds generated are used in all TPWD conservation programs;
- Promote sustainable, nature-based tourism efforts that provide an income incentive to manage and conserve habitat;
- Join groups like Audubon Texas, the Texas Master Naturalist program and Texas Wildlife Association, that cultivate an appreciation for all wildlife;
- Support educational efforts like the Bobwhite Brigade to instill future leaders with knowledge about quail habitat;
- Support and assist quail habitat management and demonstration efforts.

TABLE 2**Partial listing of landowner resources available in Texas.**

State Programs	PURPOSE	TYPE OF ASSISTANCE	APPLICATION/ CONTACTS
Private Lands and Public Hunting Program	Management assistance to conserve & develop wildlife populations	Technical	Texas Parks and Wildlife
Private Lands Initiative	Voluntary enhancement of wildlife habitat	Technical and Financial	Texas Parks and Wildlife
Pastures for Upland Birds	Conversion of bermudagrass pastures to native grasses and forbs	Technical and Financial	Texas Parks and Wildlife
Texas Quail Index	Large-scale, long-term demonstration to evaluate indices of quail abundance. Goal is to develop practical management strategies to optimize quail populations.	Technical	Texas Cooperative Extension http://teamquail.tamu.edu
Best Management Practices	Improve water quality, etc. through agricultural best management practices	Technical and Financial	Soil and Water Conservation Districts
Forest Land Enhancement Program	To promote sustainable forestry: pine/hardwood reforestation, wildlife habitat enhancement, soil and water protection	Technical and Financial	Texas Forest Service
Federal Programs			
Conservation Reserve Program	Management to reduce soil erosion, improve water quality and wildlife habitat	Technical and Financial	Farm Service Agency
Continuous Conservation Reserve Program	Buffers, wind breaks, filter strips, field borders to improve air and water quality	Technical and Financial	Farm Service Agency
Grasslands Reserve Program	Prevent conversion of productive grazing or haying operation to other purposes	Purchase of Development rights	FSA or NCRS
Environmental Quality Incentive Program	Conservation program for farmers/ranchers for soil, water, and related natural resources including wildlife	Technical and Financial	Natural Resource Conservation Service
Wildlife Habitat Incentive Program	Develop and improve fish & wildlife habitat areas, targeted species, specific practices	Technical and Financial	Natural Resource Conservation Service
Cooperative Conservation Initiative	Supports efforts to restore natural resources and establish or expand wildlife habitat	Financial	US Fish and Wildlife Service
Private Stewardship Program Grants	Benefits to species listed, proposed, candidate for listing under ESA	Technical and Financial	US Fish and Wildlife Service
Partners for Fish & Wildlife Program	Restore, enhance, manage habitat; re-establishment of critical natural communities	Technical and Financial	US Fish and Wildlife Service
USFWS Private Stewardship grants	Conservation efforts that benefit species listed as endangered or threatened under the Endangered Species Act, candidate species, or other at-risk species	Technical and Financial	US Fish and Wildlife Service
Non-government Organizations			
Audubon Texas	The Audubon Texas Quail Initiative focuses on restoring mixed grassland habitat essential to the survival of Northern Bobwhite and Scaled Quail	Technical	www.tx.audubon.org
Texas Wildlife Association	Dedicated to the conservation, management, and enhancement of wildlife and wildlife habitat particularly on private lands	Technical	www.texas-wildlife.org
The Nature Conservancy	To preserve the plants, animals and natural communities that represent the diversity of life on earth	Technical	www.texas-wildlife.org

THE TEXAS QUAIL CONSERVATION INITIATIVE
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Upwind Downwind by John P. Cowan
Signed by the Artist and Governor Rick Perry

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*National Quail Symposium proceedings I through V available from Tall Timbers Research Station:
<http://www.talltimbers.org/info/pubcategories.html>

Websites

TeamQuail

<http://teamquail.tamu.edu>

Texas Parks & Wildlife Department

<http://www.tpwd.state.tx.us>

Caesar Kleberg Wildlife Research Institute

<http://www.ckwri.tamuk.edu>

Quail Unlimited

<http://www.qu.org>

Texas Brigades Youth Wildlife Leadership Program

<http://www.texasbrigades.org>

Audubon Texas

<http://www.tx.audubon.org>

Southeast Quail Study Group

<http://seqsg.qu.org/seqsg>

Land Fragmentation and Changing Land Use

<http://landinfo.tamu.edu>

Bollenbach Chair in Wildlife Ecology

<http://bollenbachchair.okstate.edu>

Texas Wildlife Association

<http://www.texas-wildlife.org>

Forming Wildlife Cooperatives

http://www.tpwd.state.tx.us/consERVE/pdf/72wildlife_co-op.pdf

Private Lands Enhancement

http://www.tpwd.state.tx.us/consERVE/private_landS

Nature Tourism

<http://www.tpwd.state.tx.us/nature/tourism/#landowner>

Texas Cooperative Extension Service

<http://texasextension.tamu.edu>

Texas Natural Resource Server

<http://texnat.tamu.edu>

Texas Forest Service

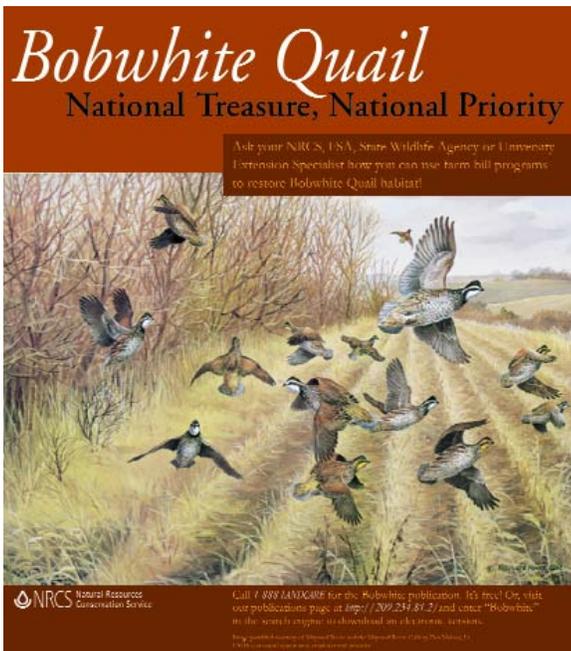
<http://txforestservice.tamu.edu>

Texas Master Naturalist Program

<http://masternaturalist.tamu.edu>

The Nature Conservancy

<http://nature.org/wherewework/northamerica/states/texas>



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