

South Texas: A Legacy Landscape for Northern Bobwhite Conservation

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Caesar Kleberg Wildlife Research Institute
Special Publication No. 2
2024

“To those devoid of imagination, a blank spot on a map is a useless waste; to others, the most valuable part.”

Aldo Leopold, *A Sand County Almanac*

ABSTRACT

South Texas is one of the Last Great Places where there is a widespread wild northern bobwhite--hereafter bobwhite--population. This is because South Texas has the habitat that supports this wild population. Of the 20 million acres that make up the South Texas landscape, about half of this land mass, or around 10 to 12 million acres, supports a self-sustaining population of wild bobwhites. This is a key reason why South Texas received designation as a Legacy Landscape for Northern Bobwhite Conservation by the Northern Bobwhite Conservation Initiative in 2014. This designation is not legally binding in ways that designation of critical habitat is legally binding for an endangered species. Nevertheless, being recognized as a legacy landscape for conservation by the largest bobwhite conservation initiative in the world is a way to make people aware of the value of this landscape for a diverse array of wildlife, as well as for humans. This legacy designation highlights how important the South Texas landscape is to an ecologically iconic and highly valued socioeconomic species--the bobwhite--that has suffered population declines of up to 90% across large parts of its geographic range.

In South Texas during the past two decades, every few years gas and oil pipeline, or utility line rights-of-way projects are proposed in designs that are engineered to cut across large--hundreds of thousands or even millions of acres of South Texas--areas of private rangelands where there are few if any paved roads and little or no human settlement. The conservation value of the relatively unfragmented South Texas landscape is seldom of concern to the civil engineers who design pipeline and utility corridors. At the same time, keeping large areas of the South Texas landscape from becoming fragmented is a critical concern for ranchers, hunters, and conservationists who are among the key natural resource stakeholders in this region.

The purpose of this Technical Publication is to make people aware of how important it is to keep the South Texas landscape as unfragmented as possible as we move through the 21st century. The lessons here do not just pertain to bobwhite conservation, but also to thousands of other plants and animals that benefit from the current configuration of the South Texas Landscape. The lessons related to South Texas as a National Legacy Landscape for Northern Bobwhite Conservation also pertain to the people who want to live with--and sustain--not just bobwhites but all these plants and animals. Over time. Forever.

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Introduction and Background

The purpose of designating a Legacy Landscape for Northern Bobwhite Conservation is to recognize and encourage the diverse and often coordinated conservation efforts of many individuals and entities in a region. People deserve recognition when they become involved in successful efforts to conserve vast areas of bobwhite habitat through management practices, or other decisions and actions that provide for long term viability of huntable wild bobwhite populations. Such efforts also result in long-term population sustainability for many other wildlife species that rely on a relatively unfragmented South Texas landscape.

According to the National Bobwhite Technical Committee in 2013, designation as a Legacy Landscape for Northern Bobwhite Conservation is based in large part, on the criterion that an area represents: an extensive area of ecologically contiguous habitat that currently supports and has historically (for a period of decades) supported high densities of, or huntable populations of, wild northern bobwhites. *Ecologically contiguous* is defined as an area with suitable habitat in close enough proximity to allow adequate gene flow throughout the landscape for the species of interest, which in this case is the bobwhite. It does not mean all land within a given area has to support bobwhite populations, but that the landscape in its entirety has supported, and continues to support high numbers of bobwhites over the long term. Huntable or high density is defined as at least a bobwhite per 3 acres averaged over a 10 year or greater period. A legacy landscape can be thought of as a place where people spend serious amounts of time and treasure hunting wild bobwhites. To reach such places, people often travel long distances to hunt bob-

whites. Such places are generally recognized as the last of the best wild bobwhite regions in the U.S. An extensive area is considered a multiple-county area comprised of large-scale and diverse ecological units, multiple soil and water conservation districts and so on. South Texas is one of those places.

The South Texas Landscape

South Texas (Figure 1) encompasses about 20 million acres that are dominated by a diverse variety of rangelands. Soils are predominately deep sands, heavy clay, or exposed limestone ridges, and for the most part are not suitable for row-crop agriculture. These relatively poor soils are actually a blessing in disguise for bobwhites and wildlife conservation because for the past two centuries livestock ranching was pretty much the only economically viable land use for most of South Texas. The Rio Grande Corridor has been lost to agriculture and urban sprawl. Several hundred thousand acres of blackland prairie west of Corpus Christi are farmed for cotton and sorghum. Otherwise, the vast majority of South Texas remains in native rangeland vegetation that supports diverse and abundant populations of wildlife, including a wild self-sustaining bobwhite population.

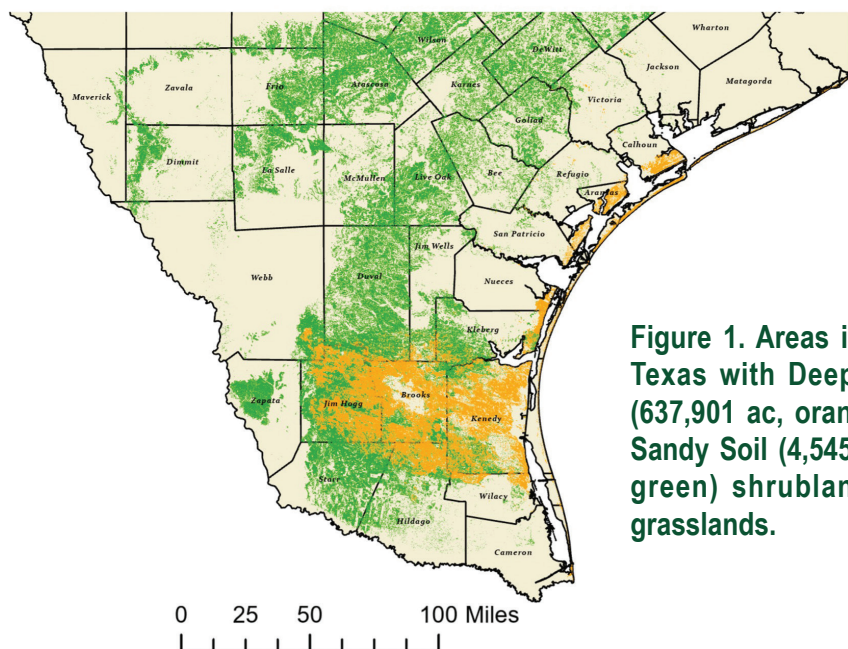


Figure 1. Areas in South Texas with Deep Sands (637,901 ac, orange) and Sandy Soil (4,545,988 ac, green) shrublands and grasslands.

South Texas Land Use and Culture

The livestock ranching community of South Texas has developed a unique culture that has had a profound and positive influence on bobwhite and wildlife conservation in this region. Because property ownerships relate back to large Spanish Land Grants, ranch sizes were, and in many cases still are relatively large (100,000 to > 800,000 acres). Many of these historic large ranches remain intact today. King Ranch and Kenedy Ranch are two prime examples of large South Texas ranches that have persisted for nearly two centuries.

The poor soils and unpredictable rainfall in this semi-arid, subtropical region also meant that large tracts of land are required to develop and sustain economically viable cattle herds. After World War II, oil and gas exploration in South Texas resulted in additional sources of income, allowing many of the large ranches in this region to remain intact and still produce herds of cattle.

Emergence of Fee-Lease Hunting

Starting in the 1970s, a system of fee-leasing for hunting access began to develop in South Texas. Ranch owners realized that along with revenue from cattle, as well as oil and gas, leasing hunter access to game animals could be an additional source of significant income. Today, lease fees from the hunting industry are an important economic driver in the region (Dodd et al. 2013). Hunters typically fly into South Texas on private jets from urban locales such as Houston, Dallas, San Antonio and elsewhere. They readily pay up to \$15.00 per acre per year for hunting leases that range from 1,000 to >50,000 acres in size. Cattle production, by contrast, nets about \$5.00 per acre per year in this region. It is not uncommon for hunters to also purchase grazing rights along with hunting rights so that they, rather than the landowner, make the decisions about how many cattle, if any, are grazed on the pastures that they lease for hunting.

In the current socio-economic situation in South Texas, ranchers have become both motivated and pressured to destock cattle to either restore or maintain nesting cover and other habitat components for bobwhites. The native bunchgrasses that bobwhites prefer for nesting are the same grasses that cattle prefer to eat. While cattle and bobwhites can certainly co-exist, it is not possible to maximize stocking rates and still produce abundant bobwhite numbers for hunting. Thus, over the past 15 or so years, many ranches have either completely destocked, or have dramatically reduced their stocking rates. Some notable examples include King Ranch (> 800,000 acres), Jones Ranch (50,000 acres), Encinitas (30,000 acres) and East Foundation (218,000 acres). There are many, many other South Texas ranches that have done similar levels of destocking because of revenues from the hunting industry.

Bobwhite Habitat Inventory and Rankings

Co-author, Dr. David Diamond, of the Missouri Resource Assessment Partnership, developed an Ecological Systems database for Texas Parks and Wildlife Department. This classification scheme has been tested with more than 14,000 ground-truth points and is therefore extremely reliable. Dr. Diamond used this database to create an inventory of the vegetation types that will support bobwhite populations in South Texas given years of adequate rainfall (Tri et al. 2013). The vegetation inventory data presented here are based on simple area summaries of existing vegetation types classified as habitat categories that will support bobwhites in South Texas. It was done for the counties shown in Figure 1 using the Texas Parks and Wildlife Department Ecological Systems of Texas data layer. This data layer has 295 landscape categories mapped at 30 ft resolution for Texas, which is 9 times the spatial resolution and almost 20 times the thematic resolution (number of types mapped) of the National Land Cover Dataset.

Areas of crop fields, cities and towns, and riparian flood plains were not included in this analysis for obvious reasons; they are not bobwhite habitat. The metrics from Figures 1, 2, and 3, indicate that there are more than 12,100,000 acres of rangeland habitat that will

support wild bobwhites in South Texas. While these maps show there is some fragmentation present, simple visual inspection shows this vegetation is highly connected when the different layers are compiled into one map of South Texas (Figure 4).

Figure 2. Areas in South Texas with Clayey Open Shrublands (4,502,360 ac, green), Shallow Shrublands (1,063,558 ac, brown), and Clayey Disturbance grasslands (1,370,318 ac, orange).

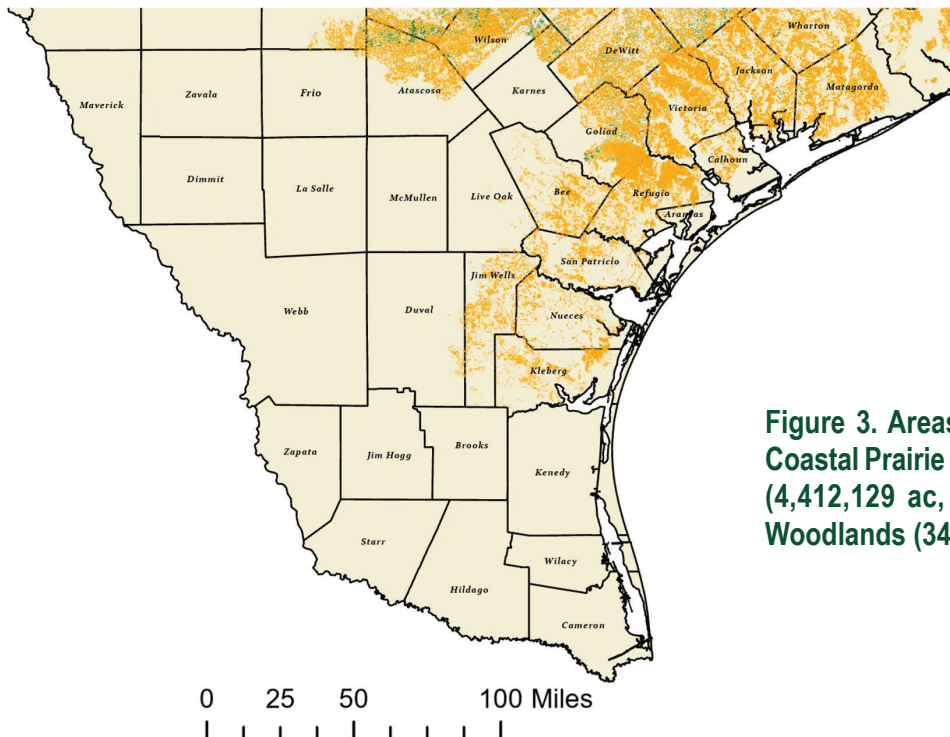
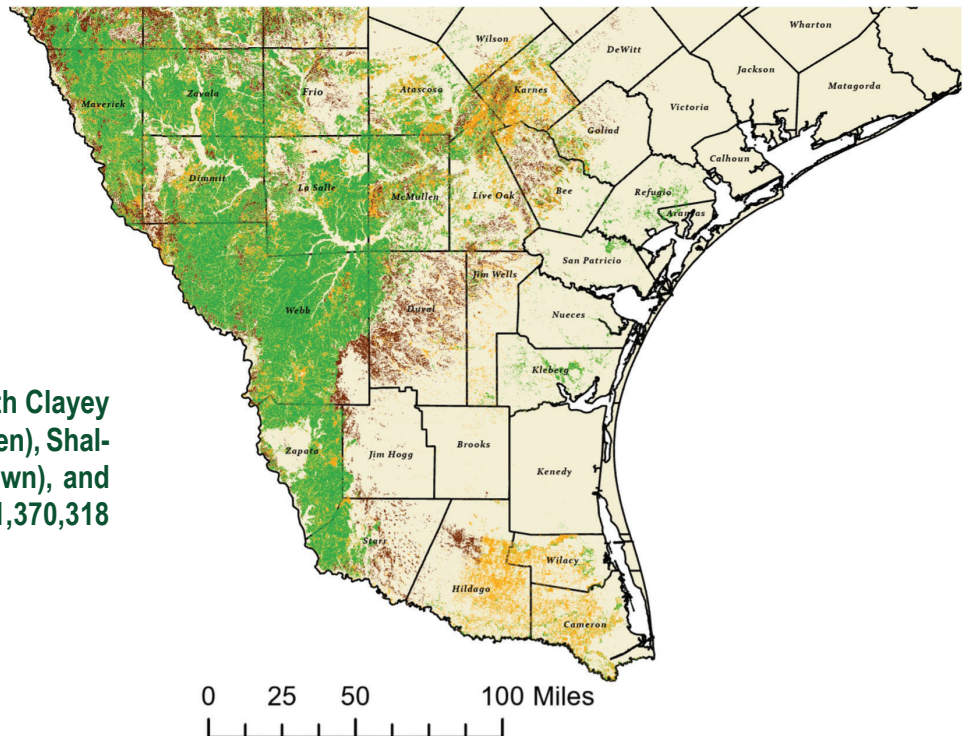


Figure 3. Areas in South Texas with Gulf Coast Coastal Prairie and Post Oak Savanna Grasslands (4,412,129 ac, orange) and Post Oak Savanna Woodlands (347,927 ac, green).

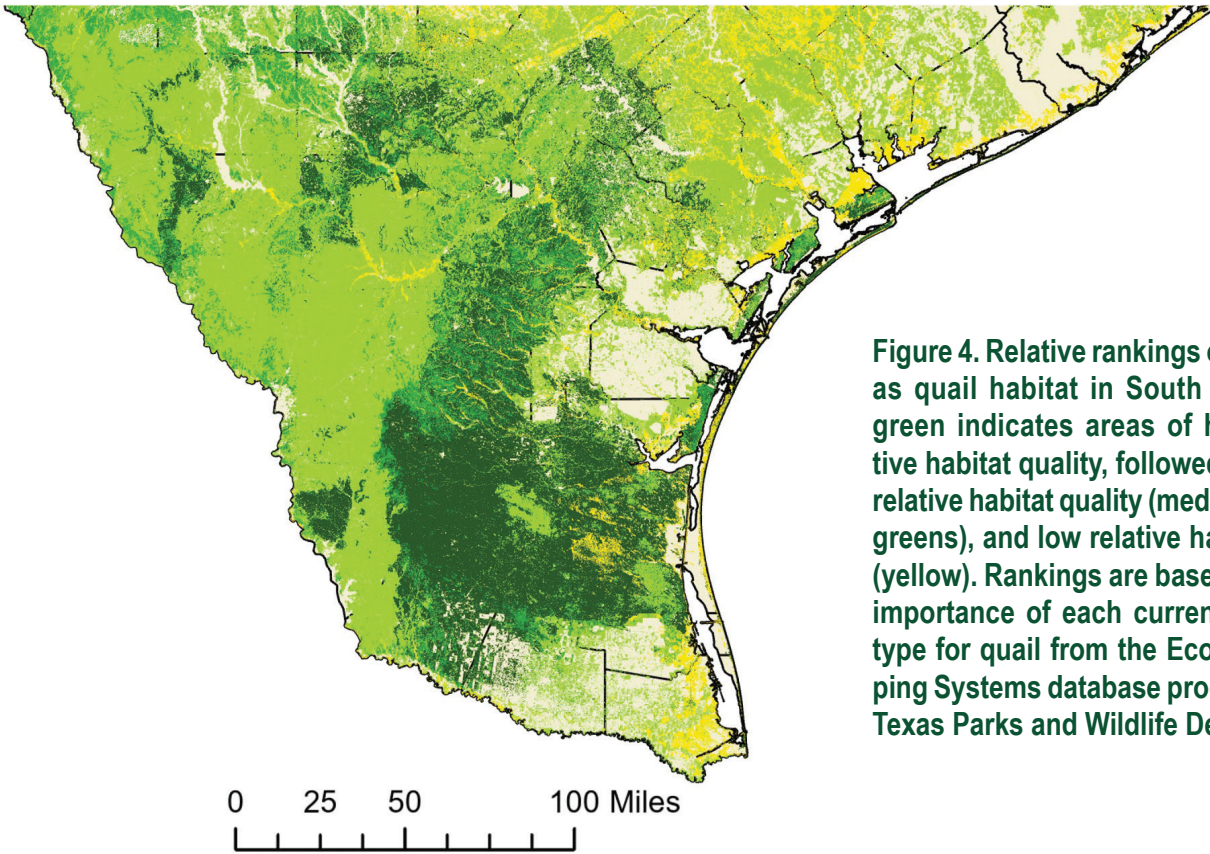


Figure 4. Relative rankings of vegetation as quail habitat in South Texas. Dark green indicates areas of highest relative habitat quality, followed by medium relative habitat quality (medium and light greens), and low relative habitat quality (yellow). Rankings are based on relative importance of each current vegetation type for quail from the Ecological Mapping Systems database produced by the Texas Parks and Wildlife Department.

Importance of Habitat Connectivity

The habitat connectivity shown in Figure 4 is the most likely factor responsible for the genetic data that indicates bobwhites in South Texas are one population. For example, bobwhites in Wilacy County (southeastern South Texas), Dimmit County (western South Texas) and Aransas County (eastern South Texas) all share a great deal of alleles or genetic material. The bobwhite is a 6-ounce bird that only flies short distances to escape danger. Otherwise, bobwhites spend most of their life walking on the ground foraging, roosting, loafing, and looking out for predators. Probably 90% of bobwhites perish within a mile from where they were hatched. Numerous studies of banded and radiomarked bobwhites have documented, however, that some unknown subset (10%, 5%, 1%?) of the bobwhite population make relatively long-distance movements that can be considered dispersal. For example,

both classical banding studies, and contemporary radiotelemetry studies of bobwhites have documented individual movements of more than 50 miles by a small (about 1%) percentage of marked individuals. These long-distance movements by bobwhites are made on foot. Bobwhites only fly--or flush--short distances to escape danger. Thus, having vast areas of interconnected habitat patches across millions of acres of landscape is the only way an individual bobwhite has a chance of successfully making even short-distance, much less long-distance, dispersal movements (Williford et al. 2017). This is why the current configuration of vegetation on the South Texas landscape is a legacy for northern bobwhite conservation. South Texas bobwhites are one large population because of these factors.

Analysis of genetic material from hundreds of hunter-harvested bobwhite wings showed us that the genetic neighborhood for this species in South Texas is about 200,000 acres. This is a staggering discovery for a species with life history events that, for most individuals, play out within a mile or so from where they were hatched. To put this in a real-world context, an individual bobwhite located between Hebbronville and Falfurrias, Texas, could have one parent from near Hebbronville and the other from near Falfurrias, based on DNA. Another way to think about this concept is that one division of King Ranch, which is about 200,000 acres, is one northern bobwhite genetic neighborhood. This is another line of evidence that supports the importance of bobwhite habitat connectivity across the South Texas landscape.

Variation in soils, where some areas are more productive than others with respect to bobwhite production is an important driver of abundance. The areas of South Texas with deep sands are the most productive soils for producing bobwhites because rainfall permeates sandy soils quicker than clay soils, and plants respond quickly to input of moisture (for details on this topic see Lehmann 1984, Chapter 24: Soils). Despite the variation in soil and how this variation influences bobwhite productivity, South Texas is a vast area that can produce and sustain an abundant population of wild bobwhites, given adequate rainfall.

The analysis of habitat for bobwhites in South Texas presented here is considerably larger than the estimated 3,750,000 acre figure published in the 2013 State of the Bobwhite Report (McKenzie et al. 2013). The original 3,750,000 acre figure approximated the ranches owned or leased by people who support the Quail Research Program at CKWRI, and thus should not be considered a complete inventory of bobwhite habitat in South Texas.

The significance of rangeland habitats for bobwhite conservation and how the South Texas landscape fits in this context cannot be overstated. For example, according to the National Bobwhite Conservation Initiative website, (Palmer et al. 2012, www.bringbackbobwhites.org), the Biologist Ranking Information, presented in Table 1 in the National Bobwhite Conservation website), the Texas rangeland habitat type represents the greatest single opportunity for bobwhite habitat restoration at 58 million acres, which is 13% of the total for all habitat types across the National Bobwhite Conservation Initiative range. The vegetation-bobwhite habitat inventory data (12 million acres) represents about 20% of the total area of rangeland habitats that have potential to support, or be restored to support, bobwhites in Texas.



Brian Loflin

Bobwhite abundance (Figure 5) and the number of bobwhites bagged annually varies widely in South Texas. These wild swings in variability in bobwhite abundance and bobwhite hunting success are driven by annual bobwhite production which is a direct function of annual rainfall in South Texas. Rainfall patterns over multiple years (i.e., the rare combination of two or more consecutive years with above-average rainfall) results in spectacular hunting during these population boom seasons. Of course, during periods of extended drought, the opposite happens, and many bobwhite hunting operations cease pursuing bobwhites during such dry times.

Lehmann (1984) documented bobwhite densities ranging from a bobwhite per 0.7 acres to a bobwhite per 15 acres, depending on management actions, habitat conditions and rainfall. Modern distance-sampling techniques using helicopters as a platform have confirmed these density metrics (Schnupp et al. 2013).

A Tradition of Bobwhite Conservation and Science

To be considered a National Landscape for Bobwhite Conservation, the National Bobwhite Technical Committee mandates that the area being considered has a long term (multiple decades) tradition of purposefully implementing, or maintaining, land use practices that support bobwhite habitat conservation (appropriate grazing pressure and stocking rates, forestry systems that maintain extensive areas of high quality grass/forb/shrub ground cover in the understory, and agricultural systems with significant fallowed native grass/forb/shrub components are examples).

The primary document that supports this criterion for being a National Landscape for Bobwhite Conservation is the classic book “Bobwhites in the Rio Grande Plain of Texas” by Val Lehmann (1984). Lehmann was hired by King Ranch as a wildlife biologist in the 1940s and spent four decades collecting and synthesizing information on the bobwhite population and bobwhite management in South Texas. His book contains 18 chapters on management that cover topics such as inventory, brush management, grassland restoration, fire, harvest regulation, and so on.

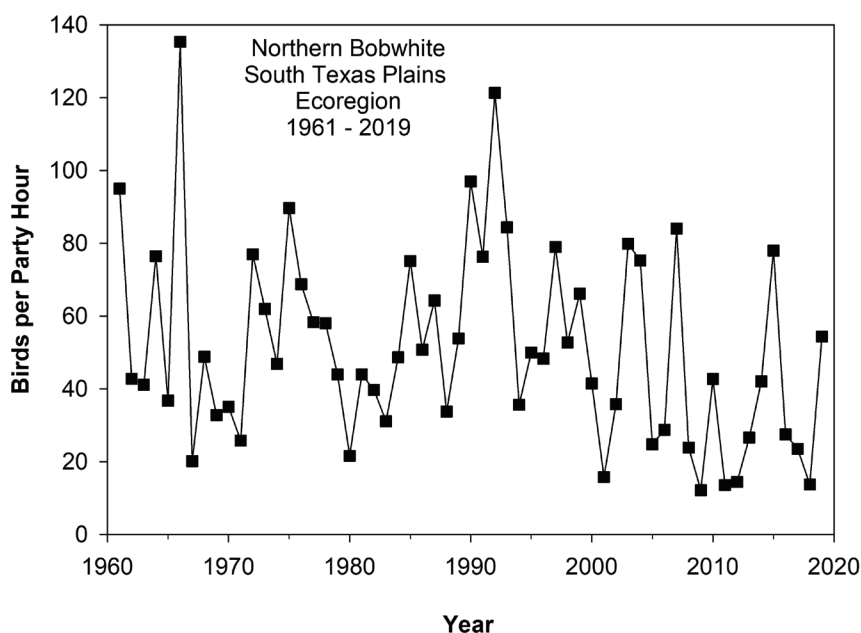


Figure 5. Christmas Bird Count data showing the relative annual abundance of northern bobwhites in South Texas, 1961 to 2019. Note the wide annual variability in abundance showing no evidence of a long-term population decline.

This information was not just gleaned from his activities on King Ranch, but also from information from more than a dozen other ranches in South Texas over the years.

An important outcome of these research activities was Lehmann's conclusion that predator control was a waste of time and money. This was because annual variation in production from favorable precipitation swamped any difference that might accrue from reduction of predators of bobwhites in South Texas. This conclusion was supported and borne out by comparative field experiments (Guthery and Beasom 1977), and sophisticated quantitative systems modeling (Rader et al. 2011). Lehmann's message of the importance of habitat for bobwhite conservation took root and spread throughout South Texas. His book is in the living rooms and-or offices of virtually all South Texas ranches. A legacy indeed.

Following the classic book by Lehmann (1984) the two editions of Beef Brush and Bobwhites by Guthery (1986) and Hernández and Guthery (2012) provide superb additional material that documents concepts and applications of management for bobwhites in South Texas. The first edition of Beef, Brush and Bobwhites is long out of print; many tattered copies were bleached out by sun from years of riding on the dashboards of pickup trucks that travelled around South Texas. The second edition of Beef, Brush and Bobwhites updates facts and perspectives learned over the past two decades, and contains a case-history of Laborcitas Creek Ranch, which is arguably one of the state-of-the-art bobwhite operations in South Texas today. The second edition of Beef, Brush and Bobwhites was recognized with an Outstanding Publication Award from the Texas Chapter of The Wildlife Society.

The chapter on quail management in South Texas by Hernández et al. (2007) and managing a South Texas hunting camp by Howard (2007) also document the legion of habitat management efforts directed at benefiting bobwhites in South Texas. The chapter by Howard (2007) is particularly compelling because only about a third of it pertains to actual bobwhite hunting camp management; the rest of the chapter by Howard (2007) is about habitat and what the crew at the hunting camp does to keep the habitat in shape for bobwhites, even though they lease, but do not own, the 30,000 acres of pastures where they hunt.

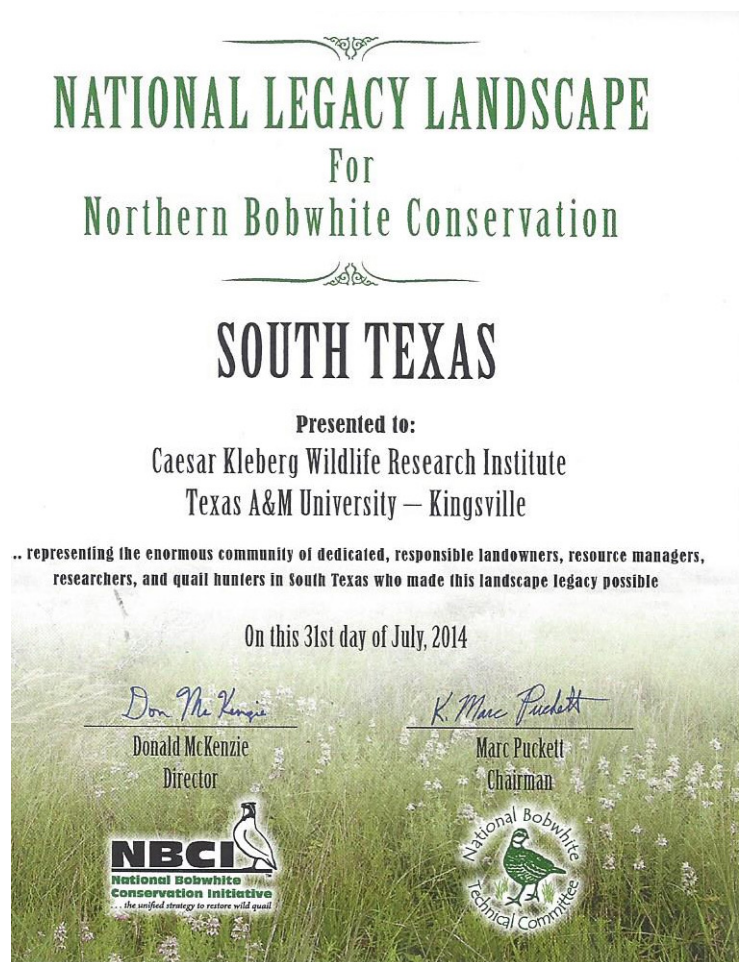


Figure 6. The certificate presented to CKWRI by the National Bobwhite Technical Committee in 2014 declaring South Texas a National Legacy Landscape.

Few people in wildlife conservation, much less the general public, realize that quail research and management have a continuous eight-decade track record in South Texas that spans four generations of researchers. There are unique, dedicated individuals who have careers focused on building a scientific basis for sustaining wild populations of quail. Lehmann was the first-generation quail researcher in South Texas (1940s to 1980s) to do this. He was followed by Guthery (second generation; early 1980s to 1997), then third-generation Hernández (1999 to present) and Brennan (2001 to 2024). A fourth generation of quail research scientists (Drs. Andrea Montalvo and D. Abe Woodard) who work for East Foundation in Hebbronville, Texas, at the time of this writing received their Ph.D.s from the Caesar Kleberg Wildlife Research Institute and the Department of Rangeland and Wildlife Sciences at Texas A&M University – Kingsville. This is a unique and productive academic track record in contemporary wildlife science.

Stakeholder Roles

For an area to be considered for designation as a National Legacy Landscape for Bobwhite Conservation, The National Bobwhite Technical Committee requires that landowners, hunters, leasees, and other stakeholders have demonstrated strong support for bobwhite hunting, management and/or bobwhite research (both financially as well as providing access to land for study) over multiple decades.

The Richard M. Kleberg, Jr. Center for Quail Research at the Caesar Kleberg Wildlife Research Institute (CKWRI) at Texas A&M University – Kingsville is home to the largest research program in the world that is focused on the habitat and population ecology of wild quails. In 2012, the Quail Research Program at CKWRI received the Group Achievement Award from the National Bobwhite Technical Committee. Background and details related to this award can be found at: http://bringbackbobwhites.org/newsroom/factsheets/doc_view/148-2012-nbtc-proceedings

Financial Support

During the past two decades, private individuals interested in quail conservation have donated nearly \$5 million to endowments that support a quail research center, two quail research scientists and three quail graduate students per year.

Annual donations that support our quail research operating expenditures are typically in the range of \$200,000 to more than \$300,000 per year. During the past two decades, we have garnered more than \$10 million in grants and contracts for quail research projects from state and federal resource agencies and private foundations. The first phase of the Quail Associates Program, which is a network of private donors, contributed more than \$700,000 to quail research and related activities, and helped support the publication of more than 50 peer-reviewed publications over a 10-year period (Brennan 2011). The proceedings of the Ninth National Quail Symposium Proceedings contained 61 papers of which 14 (23%) were from the quail research program at the Caesar Kleberg Wildlife Research Institute, far more than any other quail research program.

Study locations for all the research projects mentioned above were on private landholdings in South Texas. Consider, for example, the paper by Tri et al. (2013) that documents the relationship between rainfall and annual bobwhite production in South Texas. The data in the paper by Tri et al. (2013) came from 31 South Texas private ranches in 16 counties who contributed more than 72,000 bobwhite wings over eight years. Extraction of DNA from hundreds of these wings, along with many other quail tissue samples contributed by South Texas bobwhite hunters, formed the basis of our understanding of landscape genetics and gene flow mentioned earlier in this document.

Summary

South Texas was the first region designated as a National Legacy Landscape for Northern Bobwhite Conservation. It is one of three areas to receive such a designation. The Rolling Plains in Texas and the Red Hills of South Georgia and North Florida are the two others.

Compared to most other places in North America, South Texas is a blank spot on a map. Simple inspection of any road map of Texas confirms this observation. Engineers and builders see blank spots on maps as opportunities to fill in those blanks. This is especially true when it comes to selecting sites for pipelines and utility corridors. Engineers see blank spots on maps as the simplest routes to connect one point with another to transfer energy across the landscape. From the standpoint of conservation, this is unfortunate because the blank spots on our maps are often areas of great natural diversity and intrinsic ecological value.

The designation of South Texas as a National Legacy Landscape for Northern Bobwhite Conservation is not legally binding. Nevertheless, this designation as a region of great conservation importance can be used to argue alternatives to proposals that will fragment the landscape and make this blank spot on the map of Texas less blank. For example, rather than creating a new utility line or pipeline corridor de novo across huge areas of rangelands without paved roads or human settlements, why not use existing oil, gas and electric corridors for new energy projects? Bobwhites will never be able to thank people for making these sorts of decisions. But bobwhite hunters will.

Brian Loflin



Dedication

This publication is dedicated to everyone who contributed--in any way--to quail research at the Caesar Kleberg Wildlife Research Institute over the past four decades. Contributions of your treasure and your time have helped us begin to understand how the world around us--especially our world with quail--functions in space and time.

Definitions and Terminology

Like any profession, people in wildlife science use terms and words that are not usually part of day-to-day dialog. Many terms and words used by wildlife scientists have definitions that are fuzzy and often poorly understood. Despite this conundrum, when people talk about wildlife science and conservation they toss around these same terms and words with impunity. For example, “habitat” is one of the most common words in wildlife science, but it is used incorrectly far too frequently. People, for example, often conflate habitat as being something similar among or across groups of species when in fact, habitat is a species-specific concept. The term “unsuitable habitat,” by definition, is an oxymoron. Some arrangement of biotic and abiotic features of the environment are what constitutes habitat for a species. It is ecologically impossible for something to be both habitat and unsuitable at the same time. With this philosophy in mind, the following words and terms in this publication are defined because they are often obscure in every day conversations, or misused when discussing wildlife conservation challenges and issues.

Allele: One of two or more versions of a genetic sequence on a particular region of a chromosome. An individual inherits two alleles for each gene, one from each parent.

Christmas Bird Count: In 1900, Frank Chapman, an ornithologist started a bird count with volunteers in New York. Since then, the Christmas Bird Count has expanded throughout the United States. It is one of the longest continuous bird population monitoring programs in the world.

Contiguous habitat: Two or more patches of landscape that are connected at one or more point(s).

Conservation: Prevention of the wasteful use of a natural resource.

Density: The number of individuals present on a standardized area of landscape, such as birds per acre.

Dispersal: An ecological process whereby movement of an individual or multiple individuals away from the area where they were born to another location to where they will settle and reproduce.

Fragmentation: When parts of a landscape are destroyed and smaller, unconnected areas of that landscape are left behind. This can occur naturally, as a result of natural disturbances such as fire and hurricanes, but it is normally due to human activity.

Gene flow: The transfer of genetic material from one population to another part of that population or to a different population.

Habitat: The place where a wild animal is found. Habitat is a species-specific concept that, wherever possible, should be used in the context of how it supports the annual cycle needs and events in the life history of a species. For example, nesting-habitat, roosting-habitat, foraging habitat, and so on (Block and Brennan 1994) provide the reader with contexts about how habitat components function for a species.

Hunting industry: The economic activities related to hunting, game and fishing pursuits that customers pay to use.

Huntable: A game species with a population large enough to be hunted successfully using fair chase.

Landscape: Specifically different geographic areas characterized by diverse, interacting and connected areas.

Legacy: The long-lasting impact of events, actions, or other activities that took place in the past.

Northern bobwhite and bobwhite: The American Ornithological Society has standardized the common names of birds in North America. There are three species of bobwhites in the genus *Colinus* (Williford et al. 2016). The species of bobwhite native to North America has the most northern geographic distribution of the three species of bobwhites, hence the common name Northern Bobwhite. Past names such as Common Bobwhite or Bobwhite Quail are no longer used and therefore obsolete. The generic term bobwhite(s) is typically used as a convenient shorthand for Northern Bobwhite(s), and if used, should be defined at the beginning of a report or publication.

Population: A group of individuals of the species that occupy the same place at the same time. Typically, individuals within a group defined as a population interbreed (Brennan and Block 2018:685).

Production: In wildlife science, the number of offspring born or hatched from or by a wild species population in a breeding season.

Quail: Small species of Galliformes that are chickens and chicken-like birds. In North America, the New World species of quails are in the family Odontophoridae. The word quail can be used as either singular or plural. The typical use of quails as plural is used for reference to two or more species of quails.

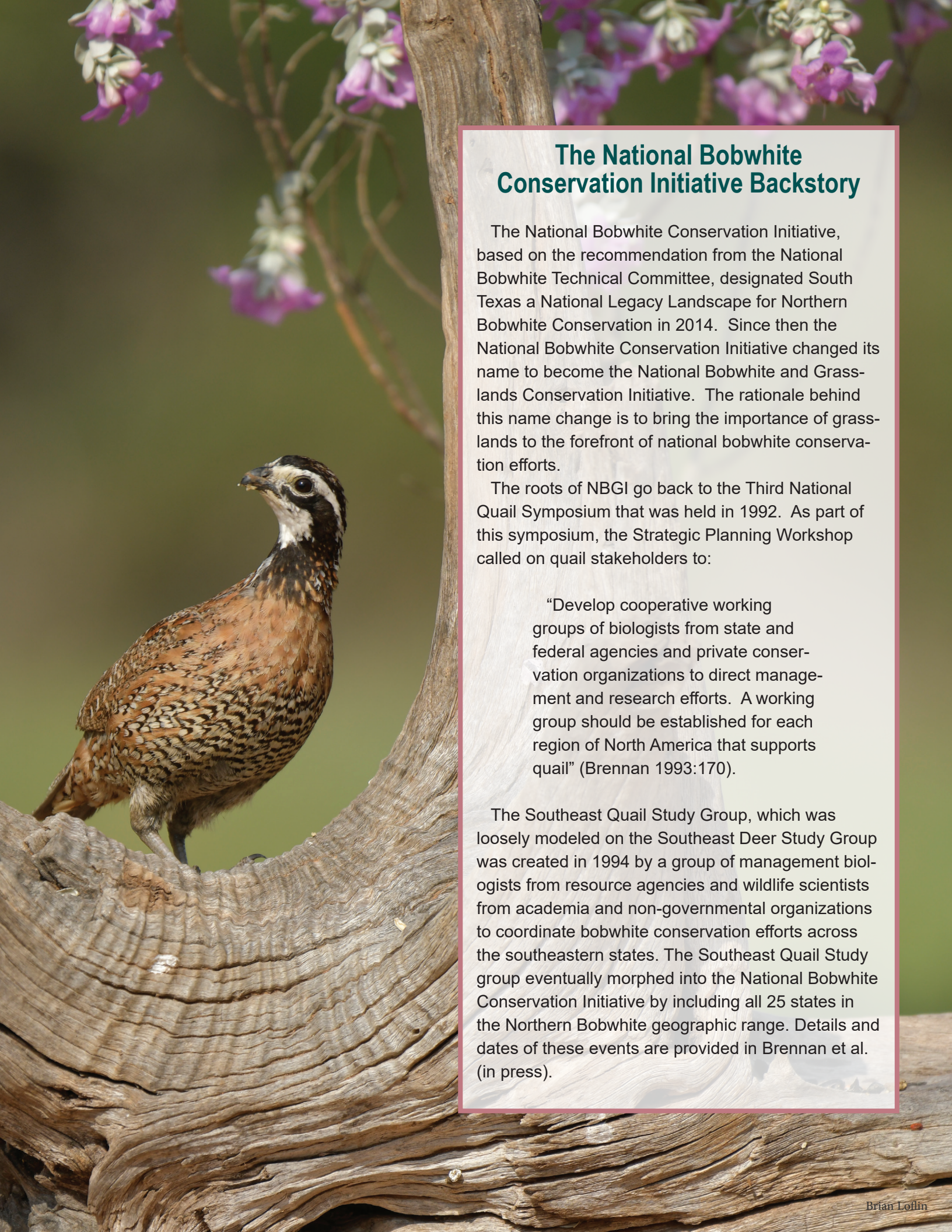
Spanish Land Grant: During the 19th century, Spain and then later Mexico used a system that offered land grants to settlers along the Rio Grande River near the Texas - Mexico border. The grants were given to incentivize colonization of this region.

Sustainable: Maintenance or restoration of the composition, structure, and processes of ecosystems.

Acknowledgments

This publication was supported by The Richard M. Kleberg, Jr. Center for Quail Research and the C.C. Winn Endowed Chair for Quail Research at the Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville.

Editing and creative design: Sandra Rideout-Hanzak, PhD



The National Bobwhite Conservation Initiative Backstory

The National Bobwhite Conservation Initiative, based on the recommendation from the National Bobwhite Technical Committee, designated South Texas a National Legacy Landscape for Northern Bobwhite Conservation in 2014. Since then the National Bobwhite Conservation Initiative changed its name to become the National Bobwhite and Grasslands Conservation Initiative. The rationale behind this name change is to bring the importance of grasslands to the forefront of national bobwhite conservation efforts.

The roots of NBGI go back to the Third National Quail Symposium that was held in 1992. As part of this symposium, the Strategic Planning Workshop called on quail stakeholders to:

“Develop cooperative working groups of biologists from state and federal agencies and private conservation organizations to direct management and research efforts. A working group should be established for each region of North America that supports quail” (Brennan 1993:170).

The Southeast Quail Study Group, which was loosely modeled on the Southeast Deer Study Group was created in 1994 by a group of management biologists from resource agencies and wildlife scientists from academia and non-governmental organizations to coordinate bobwhite conservation efforts across the southeastern states. The Southeast Quail Study group eventually morphed into the National Bobwhite Conservation Initiative by including all 25 states in the Northern Bobwhite geographic range. Details and dates of these events are provided in Brennan et al. (in press).

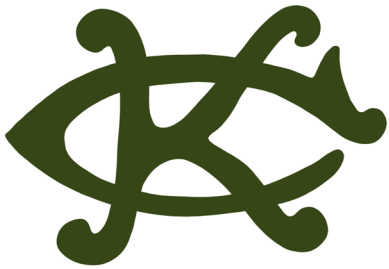
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