A Strategy for Restoring Bobwhite Quail in Navarro County, Texas

For

The Western Navarro Bobwhite Restoration Cooperative

By

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Purpose

Bobwhite quail were once abundant throughout Navarro County and the Blackland Prairie region of Texas. However, over the past 40 years, bobwhite populations within this eco-region have plummeted to the point that now only small, fragmented populations currently exist within areas that provide suitable cover and space. Based on documented reports of bobwhites in Navarro Co. since summer 2001, existing populations in Navarro County are confined to fragmented habitat patches generally associated with well managed native pastureland, fallow fields, and CRP lands located in the western 1/3 of the county.

The bobwhite decline within the Blackland Prairie region over the past 40 years is a result of a combination of many factors, some of which include; continuous and/or overgrazing of livestock, conversion of native pastures and croplands to introduced forages (Coastal bermudagrass), brush control practices, increased size of crop fields, and clean farming practices. All of the factors mentioned above eliminate critical nesting, brooding, thermal, and protective cover that bobwhites need in order to survive. Over the years these land management practices have fragmented the landscape to the point that suitable habitat now only occurs in isolated patches that are either too small to support a self sustaining population, or they are only large enough to support small populations that struggle to persist from year to year.

However, hope is on the horizon for bobwhites in Navarro County. Because the western portion of the county continues to support scattered small populations of bobwhites, there is still a chance to bring their numbers back to what they were 40 years ago. However, time is running out and immediate action is needed to prevent a total extirpation of this species in Navarro County.

Why Are Quail Important for Navarro County?

Placing a definitive value on quail is a difficult task because it can vary depending on personal values that can range from financial gain from hunting leases to simply enhancing aesthetic quality. However, quail also represent an ecological value that benefits entire communities. Therefore, instead of trying to define all of the personal values associated with restoring bobwhites, let's look at the more defined ecological values they represent. As mentioned in previous paragraphs, the bobwhite is a species that requires a healthy and diverse native grassland community in order to meet most of their daily needs for food and cover. In addition, a healthy and viable population needs a significant amount of space in order to persist through tough times and rebound when conditions improve. Therefore, the foundation for a healthy and viable bobwhite population is providing a diverse native grassland community interspersed with woody cover over a relatively large area.

Healthy native grasslands are dynamic systems that support diverse wildlife communities, ranging from microbes and insects up to large mammals. In between there is a dynamic web of interconnected species, including bobwhite quail, that interact with

one another directly and indirectly to maintain ecological balance. It is this diversity and balance that make bobwhites important to Navarro County. If bobwhites are missing from the system, then other parts of the system are missing as well creating imbalance and reduced ecological health. Reductions in ecological health lead to consequences that affect our lives directly. For instance, an overgrazed pasture that provides little or no vegetative cover (un-habitable for bobwhites) will eventually lead to increased soil erosion, thus reducing soil productivity and impacting water quality by washing sediment into our streams, rivers, and reservoirs where we receive our drinking water from. This is just one example but it illustrates the point. Bobwhite quail are not only important to rural landowners for financial or aesthetic reasons, but they represent a system, that when it is healthy will benefit all of the residents of Navarro County.

Restoration Strategy

Strategic Goal #1 – Linking Habitat Together

Since habitat fragmentation is the major limiting factor affecting bobwhites in Navarro County, the first priority in recovering the population is to increase the total amount of usable space by expanding habitat around core habitat fragments, and/or creating habitat corridors between fragments. Linking habitat together in this fashion will create a more or less contiguous block of habitat that will improve gene flow within the population, mitigate any negative affects of predation that could be a result of fragmented habitat, and buffer the population against extremes in weather conditions or other natural disturbances.

Because bobwhite populations can fluctuate dramatically from year to year, there must be enough contiguous, high quality, habitat in place to allow a minimum viable population to persist at its lowest level until conditions improve. In his book *On Bobwhites (*Chapter 40 *Minimum Requirements of Habitat and Population Size, Page 144-146)*, Dr. Fred Guthery describes results that he obtained using a computer population viability model. These analyses theorize that a minimum viable population of between 3,000 and 4,000 bobwhites would need at least 30,000 to 40,000 acres of permanent cover (usable space) to persist at low densities of 1 quail per 10 acres. This would mean that during a really bad year, such as during a severe drought, there must be at least 30,000 acres of contiguous suitable habitat (100% usable space) in place until conditions improve and the population is able to recover to more stable levels. Therefore, the first priority of this initiative is to create at least 30,000 acres, more or less, of contiguous habitat. If this can be accomplished, then the current source populations of bobwhites should respond to the improved habitat conditions and fill un-occupied habitat over time.

In order to produce 30,000 acres of contiguous habitat within the framework of modern farming and ranching practices will require thoughtful planning. Therefore a systematic approach is necessary to reach this ambitious goal. To reach the 30,000 acre goal, the following steps must be taken.

1. Locate and map out core habitat fragments within the designated initiative area to identify key areas for habitat improvement and/or restoration.
2. Begin building a land base to work from by assembling a group of interested landowners and forming an organized landowner cooperative.
    a. The landowner cooperative will be the focal point of the initiative and provide a mechanism to generate enthusiasm and support among producers within the designated initiative area.

Strategic Goal # 2 – Maximizing Usable Space

In the context of bobwhite habitat, usable space is defined as an area that contains all of the necessary habitat components for yearly survival (ie. Food, nesting cover, screening cover, and protective cover). By maximizing the amount of usable space in a given area, one can reasonably expect that area to support the highest possible population. Likewise, reducing the amount of usable space in a given area will lead to lower population levels, and possibly habitat fragmentation.

In order to maximize usable space for bobwhites, it will be necessary to implement land management practices that produce the required vegetative composition and structure to meet the daily and seasonal needs of the birds. Habitat management practices that will be necessary to increase, improve, or maintain usable space within the initiative area will vary depending on factors such as property size, vegetation type, and the current land use. Therefore, it will be necessary for each landowner involved with the initiative to have a comprehensive habitat management plan for their property that emphasizes maximizing usable space. The management plan must be either written or approved by a TPWD biologist to be eligible for participation in the cooperative.

The habitat management plan must identify limiting factors in the habitat and outline appropriate habitat management practices that will eliminate any habitat deficiencies. Habitat management practices addressed in the management plan may include, but are not limited to the following.

1. Establishment of native warm season bunch grasses and seed producing forbs.
    a. Inter-seeding native warm season bunch grasses and forbs on degraded pastureland.
    b. Restoring native warm season bunch grasses and forbs on introduced pastures or hay fields.
    c. Establishing native grass field borders, filter strips, and riparian buffers on croplands.
    d. Pasture deferment

2. Establishment or manipulation of woody cover.
    a. Planting approved native brush species.
    b. Constructing brush piles

c. Brush sculpting – Brush control method designed to create open space in dense brushlands while leaving strips or patches undisturbed to provide cover for wildlife.
d. Half-cutting mesquite – Creates woody cover close to the ground that retains its foliage.

3. Maintaining desired vegetative conditions.
    a. Rotational grazing
    b. Prescribed burning
    c. Strip disking
    d. Prescribed mowing or haying (native grasses)

Strategic Goal #3 – Partnerships and Financial Assistance

In many circumstances, habitat improvement will require a significant financial investment by the landowner. Practices such as constructing cross-fencing, brush control, and re-seeding native grasses are expensive and many landowners may need financial assistance to implement them. Fortunately, there are many government and non-government programs already in place to provide financial assistance for many of the recommended habitat improvement practices outlined above. Existing government programs and non-government organizations that could provide financial and technical support for the initiative are listed below.

Government Programs

1. USDA Farm Bill Programs
    a. Environmental Quality Incentive Program (EQIP)
    b. Wildlife Habitat Incentive Program (WHIP)
    c. Grassland Reserve Program (GRP)
    d. Conservation Reserve Program (CRP)
        i. CP-33 – Field Borders for Upland Birds Program
2. TPWD Programs
    a. Pastures for Upland Birds Program
    b. Upland Gamebird Stamp Funds ?????
3. USFWS Programs
    a. Partners For Fish and Wildlife Program
4. Tarrant Regional Water District
    a. Mill Creek Project

Potential Non-government Partners

1. Texas Wildlife Association
2. Audubon Texas
3. Trinity River Basin Conservation Foundation
4. The Nature Conservancy
5. Quail Forever
6. Quail Unlimited
7. National Wild Turkey Federation

Strategic Alternative

In the event that the initiative reaches the 30,000 acre goal of contiguous suitable habitat, and bobwhite population response does not meet expectations (ie. The population is already below the minimum viable population threshold) no less than 2 years following habitat improvement, then TPWD may consider transplanting wild bobwhites to strategically selected areas within the core initiative area.

In order to qualify for transplanting wild bobwhite's the following criteria must be met.

1. All Initiative cooperators must have a standardized habitat evaluation conducted on their property and a wildlife management plan that is either written or approved by a TPWD biologist.
2. Habitat improvement, and/or maintenance practices outlined in the written wildlife management plan must be completed and habitat response in place for no less than 2 years before transplantation can be considered.
3. All initiative cooperators must report any sightings of bobwhites to their respective TPWD biologist.
    a. Landowners who regularly report seeing or hearing bobwhites may be required to conduct annual call counts to determine population abundance and/or growth.
4. Transplantation of wild bobwhites will only be approved if annual population monitoring reveals that transplanting birds is the only viable means of populating the improved habitat.
5. Transplantation of wild bobwhites will only be approved for contiguous habitat blocks greater than 3,000 acres.