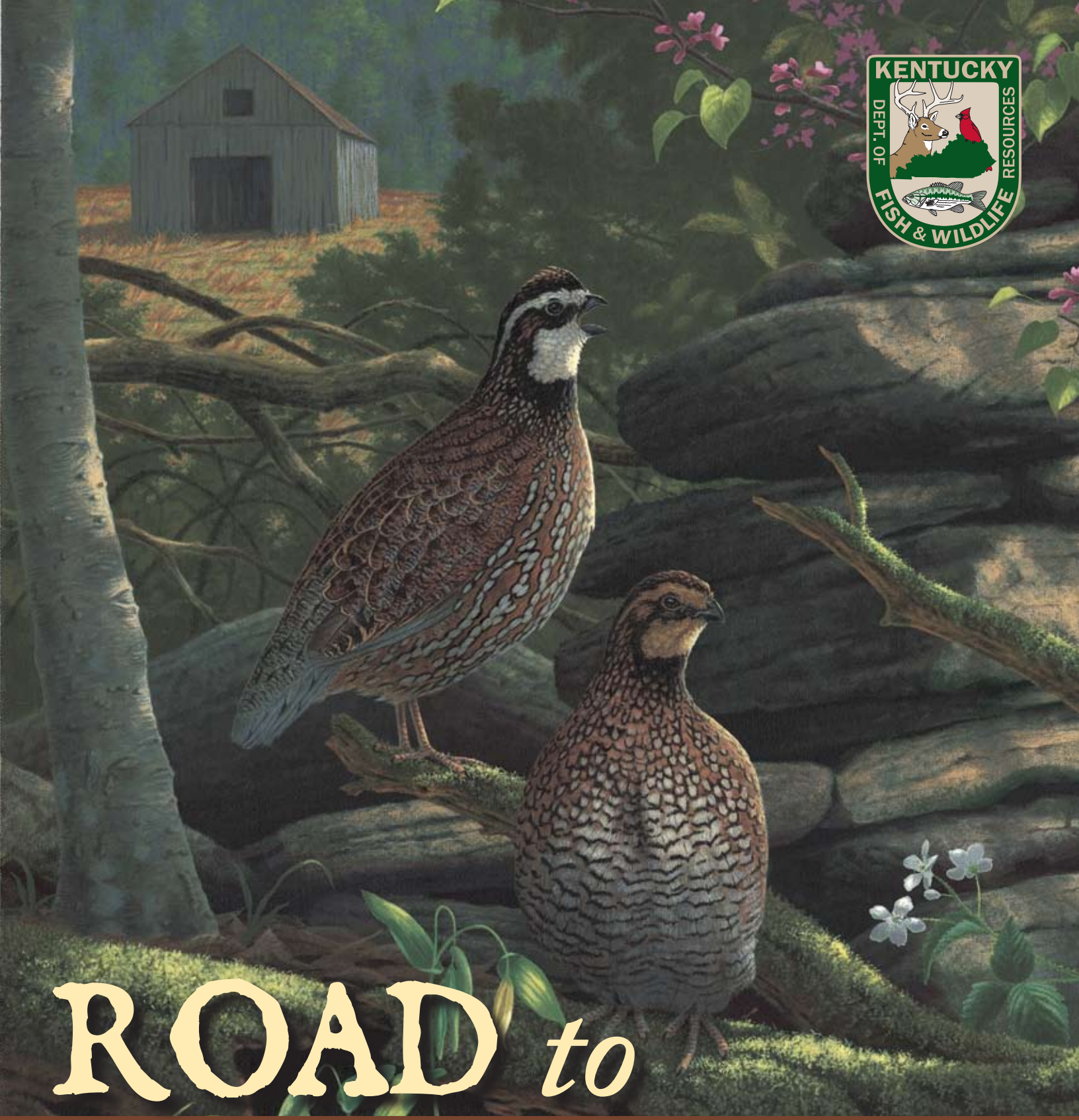

ROAD *to* RECOVERY

The Blueprint for Restoring the Northern Bobwhite in Kentucky

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VEGETATION MANAGEMENT ASSOCIATION OF KENTUCKY

Note: An endorsing partner supports the need, goals, and challenges for quail restoration. They do not necessarily support all of the strategies within the plan.

ROAD *to* RECOVERY

The Blueprint for Restoring the Northern Bobwhite in Kentucky

by

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EXECUTIVE SUMMARY

"It is our task in our time and in our generation, to hand down undiminished to those who come after us, as was handed down to us by those who went before, the natural wealth and beauty which is ours."

– John F. Kennedy

THE NORTHERN BOBWHITE was once a prominent feature of Kentucky's rural landscape. Its popularity as a gamebird and attractive appearance made it a favorite to the hunter and non-hunter alike. The bobwhite's historic prosperity was tied to an agricultural system focused on the small family farm, but today's land use patterns have decimated the bird's numbers to all-time lows.

Small, dynamic farms of yesteryear included livestock, vegetables, row crops, and tobacco creating a landscape perfectly suited for bobwhites. Crop fields were small in size, rotated annually, and periodically left fallow. Brushy fencerows and weeds were common features, and mowing for appearance was not a consideration. Yet, as the nation grew, the antiquated agricultural system would not support the burgeoning populace. Agriculture had to change.

The Industrial Revolution spawned enormous advancements in agriculture. Mechanization, herbicides, insecticides, and genetic engineering all dramatically increased crop production and efficiency. These changes were required to feed the masses, but they came at a cost, particularly for the bobwhite.

In addition to changes in row crop agriculture, Kentucky's native grasslands were converted to non-native cool season grasses. Extensive row cropping and intensive grazing subjected soils to severe erosion. KY-31 tall fescue was designed to stabilize the soil and serve as forage for livestock. By 1960, fescue became the dominant grass in the Bluegrass State. Although it did accomplish its immediate objectives, it was later found to be infected with an endophyte fungus that negatively affects livestock. Fescue's sod forming nature made it detrimental to wildlife. It hinders plant diversity and bare ground availability, making it unsuitable habitat for bobwhites.

A century of change in agriculture and the expansion of the human population have taken their toll on the bobwhite. Today, the gamebird is the number one common bird in decline according to the Audubon Society. Bobwhites have been extirpated in the northern expanses of the species' historic range. Even some populations in the Deep South, once considered a bobwhite bastion, have been reduced by 90%. In Kentucky, over 67% of the population has been lost since 1960. It's time to restore this great gamebird!

Previous efforts to restore quail were futile, because they failed to address the limiting factor – widespread, suitable habitat. Therefore, the Southeast Quail Study Group created the Northern Bobwhite Conservation Initiative (NBCI). The NBCI's restoration plan is founded on a desired future condition of range-wide habitat enhancements that will stabilize and recover the nation's dwindling northern bobwhite resource.

The following blueprint outlines specific strategies to implement the NBCI in Kentucky. The strategies address bobwhite restoration opportunities in agriculture, development, and mine reclamation. Core values to the effort have been identified as the "P's for success": people, partnerships, pinpoint, and patience. In ten years, we hope to stabilize the statewide bobwhite population, increase bobwhite populations in focus areas on public and private land, increase statewide recreation related to bobwhite, and generate $7.5 million in outside funding for bobwhite restoration.

What lies before us is likely the last effort to restore the northern bobwhite. Remnant populations exist and the current landowners remember what it was like to have quail. Success will not only be measured by bobwhites, because a host of other wildlife species will benefit. Gains can be made for water quality and quantity, carbon sequestration, and air quality as well. A growing society drove the decline of the bobwhite, but that same society can invest in conservation and restore to commonplace the thunderous bobwhite covey rise.

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"Today's problems cannot be solved if we still think the way we thought when we created them."

– Albert Einstein

THE NORTHERN BOBWHITE (*Colinus virginianus*) was once a staple of Kentucky's rural landscape. Their nature of holding for dogs and thunderous covey rise made them a revered gamebird, but their melodious "bob-white" whistle and attractive appearance made them aesthetically appealing to the hunter and non-hunter alike.

Although quail may have been declining for over a century, the late 1960's and early 1970's still offered strong quail hunting in Kentucky. Rural landowners could routinely encounter a covey of quail on their land through the bobwhite's song or flush. Little did they know that the slow decline continued as small, incremental habitat changes eroded the number of birds. Brutal winters in 1977 and 1978 caused catastrophic quail losses accelerating the population decline. The reality of the bobwhite's plight was brought to the forefront. Marginal and scattered habitat made it impossible for bobwhite to rebound to the levels that many had become familiar. The next 25 years resulted in further habitat degradation and fragmentation, and the spiral downward continued.

Quail habitat was once (post-settlement to the mid-20th century) a by-product of typical farming. Kentucky was dominated by small family farms. Field sizes were relatively small and crop rotations, including a fallow year, were common. Farms were diverse operations with row crops, vegetables, tobacco, and livestock. Mowing for appearance was not a consideration, so annual weeds, brambles, and shrubs were abundant. Small farms were adjacent to other small farms, so habitat was widespread. The dynamic landscape created quail habitat at a scale that likely exceeded the pre-colonial era.

The Industrial Revolution spawned enormous change throughout the 20th Century. Perhaps some of the most important advancements for society were those made in agriculture. As the human population grew, the need to feed the masses obviously grew as well. Increased demands for production caused farm operations to become much more specialized with many farms focusing on row crops or livestock, but rarely both. Without modern

technologies today, nearly every available acre in the United States would likely be farmed. Thankfully, technologies were developed like machinery, genetically enhanced crops, no-till practices, fertilizers, and herbicides, so people can enjoy the forests and rural lands of America.

Modern agriculture did come at a cost though, especially for quail. Increasing productivity and efficiency are the driving forces behind advancement. Crop yields have been increased by minimizing or eliminating competition from other plants and controlling insects. Farms and fields have increased in size to improve efficiency. Fallow field rotations are gone, and in some instances, fields are double-cropped. Ironically, the human agricultural practices that once increased the prominence of quail, now are a major vector of their decline.

Despite the extensive changes in row crop production, the single biggest factor in the quail decline was the introduction of tall fescue to Kentucky's grasslands. In pre-colonial times, 12 million acres of the state were comprised of native prairies and savannahs. Early settlers converted the majority of those acres to cropland or subjected them to extensive overgrazing. By

the 1930's, the once prominent native grasses were virtually eliminated, and soil erosion was rampant across the state. The University of Kentucky was hard at work on a grass that could stabilize the soil and sustain high grazing and haying pressure. The answer proved to be a non-native, cool season grass named KY-31 tall fescue. By 1960, tall fescue was the dominant grass across the state. Today, the aggressive grass is found in yards, ditches, and fields where it was never planted.

Tall fescue did its job of stemming soil erosion and sustaining extraordinary grazing pressure. However, it brought with it a host of other problems. From a livestock standpoint, nearly all KY-31 is infected with a fungus. The fungus produces chemicals that give fescue toxic qualities. Reduced weight gains, reduced reproductive success, and elevated body temperatures are negative side effects of fescue as forage. From the quail perspective, fescue forms a heavy sod. The sod impedes the growth of wildflowers and legumes which offer seed sources for quail and serve as host plants for insects that are critical summer foods. Furthermore, quail are light-footed and weak scratchers making bare ground an important habitat component. Thick-matted vegetation disrupts movement and feeding, and from the perspective of a bumble bee-sized quail chick, it is impenetrable.

Kentucky is not alone in its' habitat crisis. Across much of the bobwhite's range, populations are facing long-term declines. This truth is supported by the Audubon Society's list of Common Birds in Decline that identifies the northern bobwhite as the number one declining common species. Their data showed an 82% range-wide population reduction over the last 40 years. Some states have lost more than 90% of their quail. Some states have lost all of them. Kentucky has lost about 2/3rds of the quail population since 1960. Subsequently, wild quail hunting in Kentucky is on the verge of collapse. A reoccurrence of the 1977 and 1978 winters could be the death knell for bobwhite in the Commonwealth. The time has come to restore this great gamebird!

ROAD TO RECOVERY

The Directors of the Southeastern Association of Fish and Wildlife Agencies charged the Southeast Quail Study Group (SEQSG) to develop a range-wide restoration plan. More than 50 biologists from 22 state agencies, with support from various federal agencies, universities, and non-government organizations, drafted the blueprint for quail restoration. The plan was completed in 2002 and titled "The Northern Bobwhite Conservation Initiative"(NBCI). The habitat-based plan identifies the lack of nesting and brood rearing habitat as the primary habitat problem.

The Bluegrass State has tried its hand at quail restoration multiple times over the last 90 years. Extensive land clearing and a harsh winter in 1917 caused the quail population to crash, and the first restocking efforts were considered. Since quail were not available in the U.S., 96 quail were imported from Mexico. Only 3 individuals survived in captivity, so it was concluded that importing birds adapted to the Mexican climate was not feasible. However, by 1930, roughly 100,000 Mexican quail had been imported and released in the Commonwealth. In 1932, the purchase of Mexican quail was abandoned, and native birds were being propagated in captivity for release. By 1946, the Kentucky Department of Fish and Wildlife Resources (KDFWR) had its' own game farm and released 3.5 million birds through 1989.

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

– Aldo Leopold, *A Sand County Almanac*, 1949

Tall fescue/USDA-NRCS PLANTS Database

Quail at the Department's Game Farm.

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."

– Margaret Mead

Despite all of these efforts, the quail population continued to plummet, because the true reason for decline was never remedied – lack of widespread, suitable habitat.

Restoring habitat across a 25.9 million acre state is a tremendous challenge, particularly when over 90% of the land is owned by private individuals. Hence, quail restoration is more about people than wildlife. Landowners will have to change their view of the land. The manicured landscape devoid of bunch grasses, annual forbs, legumes, brambles, native shrubs, and bare ground cannot sustain bobwhites for future generations. Farmers and land managers must be compensated for providing environmental benefits for society that include quail habitat.

Afforded the appropriate habitat, quail have the propensity to repopulate themselves. They have large clutches, averaging roughly 14 eggs, and are capable of producing multiple clutches per year. Thriving big game species, including wild turkeys, do not have the reproductive potential of quail. Time remains to change the course for the bobwhite. Birds continue to exist across Kentucky, so expensive relocations are not required. More importantly, the environment is on the minds of Americans. Water quality and quantity, global warming, and renewable energies are standard media fodder. Landowners are more conscious of the environment than they have been in decades, and quail can benefit from that awareness.

Initial strides in quail restoration will be based on a single factor – funding. Today, there are more opportunities to fund quail-friendly habitat practices than ever before. Cost-share and financial incentives through state and federal programs are in place to get landowners started. Although adjustments must be made, the Farm Bill continues to build a legacy as one of the greatest conservation initiatives the world has ever seen. Opportunities also exist on expansive areas being reclaimed from mining activities. Millions of dollars are spent revegetating minelands and progress can be made to enhance that investment.

THE BLUEPRINT

The following 10-year plan will provide explicit strategies to address the quail dilemma in Kentucky. The document is designed to "step down" the NBCI to the state and local level. It includes input from all levels of KDFWR's Wildlife Division. Several themes will reveal themselves as keys for success. For simplicity, we will refer to these as the "P's for success": people, partnerships, pinpoint, and patience.

First, as was highlighted previously, quail restoration is more about people than wildlife. We must reach out and communicate to people in ways we have never done before. Biologists must enhance their communication skills and become better salesmen and women. Agencies must learn to market conservation.

Second, we must rely on strong partnerships. KDFWR is an organization of roughly 500 employees attempting to guide the habitat management of an entire state. Thankfully, a host of strong partners exist. An incredible network of non-government organizations support conservation, and we have allies within our federal counterparts. Existing partnerships must be strengthened, but that will not be enough. We must branch out and reach groups that we have not typically engaged. Agricultural and energy groups, organizations, and agencies are some of the most obvious new partners. Many others exist.

Finally, we must pinpoint our effort and show patience. In today's fast paced world, patience is hard to find. Information is often at one's fingertips and on-demand results are expected. It could take roughly 20 years to restore a century of habitat destruction and rebuild the population across the state. Therefore, we must pinpoint our efforts. We will target areas, approximately 10,000 to 30,000 acres in size, which are well-distributed across the state. Bobwhite

focus areas were selected based upon staff input, potential for a positive quail response, and county rankings defined by the Kentucky step-down model. A focused approach will accomplish three critical needs: 1) prove that quail can be restored, 2) minimize time required to show success, and 3) provide a platform to sell more quail habitat across the state.

OUR CHARGE

What lies before us is likely the final effort to restore northern bobwhite. The NBCI has created incredible momentum across the country to restore the once common gamebird. Farm Bill conservation practices specifically for quail have been established, the SEQSG on behalf of the NBCI were invited to address those present at the White House Conference for Cooperative Conservation, and perhaps most importantly, the majority of rural landowners remember what it was like to have quail. It is highly improbable that a point in the future would lend itself to a bobwhite range-wide restoration. A more feasible future would be a plan to prevent extinction after extensive extirpations have already occurred.

To avoid that future, we must share our enthusiasm and ideals regarding the conservation of natural resources with the public. Marketing and effective salesmanship are foreign to biologists and government agencies. These tactics were not necessary for previous wildlife success stories, but they will be paramount now. White-tailed deer, wild turkey, otter, and elk among countless other wildlife species were successfully restored by relocating individuals to existing habitat and protecting them from exploitation. Those habitats fit the prevailing land use patterns of the future, and relocated wildlife populations subsequently thrived.

There is little parallel for bobwhite restoration. Quail habitat must be created and maintained by communities of people, and that habitat does not currently fit the prevailing land use patterns. Relocations are not warranted, because source populations exist and habitat is not in place to justify it. To be successful, Leopold's land ethic must be engrained in the minds of landowners; in no uncertain terms, we are planning a revolution of the land management doctrine.

Ultimately, this endeavor should be viewed as much greater than quail. Although public perception may show quail as the benefactor, habitat enhancements will also benefit a host of declining songbirds and other grassland associated wildlife. Bobwhites are a charismatic species and have recreational economic value. Therefore, they are a strong icon to serve a greater purpose. Changing the mindset of landowners will have far reaching effects for the environment. Gains can be made for water quality and quantity, air quality, and carbon sequestration. However, what could be greater than landowners seeing themselves as stewards of the land as opposed to rulers of the land?

"A land ethic ... reflects the existence of an ecological conscience, and this is turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity."

– Aldo Leopold

KENTUCKY NORTHERN BOBWHITE CONSERVATION INITIATIVE

Technical Quail Plan Goals

GOAL 1:
Stabilize bobwhite populations statewide

GOAL 2:
Increase bobwhite populations in focus areas

GOAL 3:
Increase bobwhite populations on focal wildlife management areas

GOAL 4:
Increase statewide recreation related to bobwhite

GOAL 5:
Generate funding mechanisms to support bobwhite restoration

GOAL 1
Stabilize bobwhite populations statewide

CHALLENGE 1:
Enhance row crop operations

Row crop production has become cleaner and larger scaled over the last several decades. Waste grains have also been minimized through more efficient machinery. Fallow fielding has been abandoned and many fields are double cropped. Farm Bill conservation practices can improve the row crop system.

STRATEGIES:

1. Create a flex-fallow program through EQIP or CSP.
2. Create quail bundles of practices in EQIP and WHIP.
3. Maximize CSP enhancement payments for bobwhite habitat.
4. Promote CP-33 in high priority counties.
5. Adjust planting rates and mixes for Farm Bill practices to benefit quail including grassed waterways, riparian buffers, and filter strips.
6. Promote edge feathering and fencrerow rejuvenation through WHIP and EQIP.
7. Hire a Farm Bill coordinator that can fully address shortfalls and needs in Farm Bill programs.
8. Insure CRP mid-contract management practices are implemented and provide support for that process.
9. Promote contour conservation buffers in high priority counties.
10. Create a quail friendly CP-38 including whole field and buffer practices.
11. Establish a program to purchase standing crops located against field buffers.
12. Promote CREP sign-up, support cover establishment, and facilitate mid-contract management.

ASSESSMENT:

All strategies should be employed in 10 years.

CHALLENGE 2:
Augment mine reclamation projects

Reclaimed coal mine lands provide a non-traditional opportunity for quail habitat. Current mine reclamation practices could be improved through seed mixes, shrub plantings, and habitat design.

STRATEGIES:

1. Amend regulatory language to be more quail-friendly.
2. Promote fish and wildlife and grazing post-mine land uses when not following RAM 124.
3. Provide technical assistance to mine companies that desire wildlife-oriented reclamation.
4. Recognize companies that reclaim ground in a wildlife-friendly manner through the media and local community.
5. Investigate methods to lower seed costs associated with native plant mixes.
6. Educate inspectors on the attributes of quail habitat on reclaimed mine lands.
7. Enhance bond released sites for quail habitat.
8. Work with the Appalachian Mountain Joint Venture to maximize benefits and resources.
9. Hire a biologist to actively support mine reclamation.

ASSESSMENT:

In 10 years, enhance 10,000 acres of mine reclamation projects for early successional wildlife, and renovate 10,000 acres of bond released lands for early successional wildlife.

CHALLENGE 3:
Revolutionize grazing operations

Livestock owners across the Commonwealth almost exclusively rely on fescue as forage. Cattle rotations are minimal and forage production is rarely maximized. Farm Bill conservation practices can be used to change Kentucky's grazing system.

STRATEGIES:

1. Research the history of no-till agriculture and employ the same strategies to change Kentucky's pasture system.
2. Proactively work with the University of Kentucky Cooperative Extension to endorse native forages.
3. Use EQIP as a funding tool to convert 25% of pasture systems to native forages.
4. Target native grasses in haylands as the first-step towards changing the perception of native forages.
5. Use EQIP to fund deferment acres for wildlife habitat.
6. Support GRP as important Farm Bill program worthy of funding.

7. Use EQIP to offset hay costs as native forages establish.
8. Use HIP as an incentive to establish native forage haylands.
9. Establish field borders on pasture/haylands through Continuous CRP.
10. Promote edge feathering and fencerow rejuvenation through WHIP and EQIP.
11. Establish rental payments for pasture/haylands that are converted to native grasses for forage.
12. Promote CREP sign-up, support cover establishment, and facilitate mid-contract management.

ASSESSMENT:
Employ 8 strategies in 10 years.

CHALLENGE 4:
Spawn participation in cost-share programs, particularly those designed for quail

There are more opportunities to fund quail habitat than any time in history. Landowners are not fully taking advantage of federal and state programs. Therefore, they must be informed and educated on the economic and environmental benefits of government programs.

STRATEGIES:
1. Adjust CP-33 rental payments to 120% of the soil rental rate to be equitable with other continuous practices.
2. Locate a KDFWR private lands or Farm Bill biologist in high priority USDA county offices.
3. Use HIP dollars to fund gaps or provide incentives for Farm Bill programs.
4. Use HIP dollars to get landowners comfortable with cost-share programs through the government to encourage future enrollment in larger programs.
5. Hire more private lands staff through NGO partnerships.
6. Monitor county soil rental rates to insure they are competitive.
7. Improve communication between Farm Bill and private lands biologists.
8. Conduct field days or training session for NRCS and FSA staff regarding the importance of early successional habitat management.

ASSESSMENT:
All strategies should be employed in 10 years.

CHALLENGE 5:
Amplify prescribed burning across the landscape

Fire was once a driving ecological force in Kentucky. Native Americans readily used fire to clear land for hunting and agriculture. Prescribed fire is one of the most beneficial management tools available, yet it is not a prominent management practice.

STRATEGIES:
1. Critically evaluate the use of prescribed burning in Kentucky.
2. Establish habitat teams to assist with prescribed burning.
3. Host a roundtable meeting to initiate a State Fire Council.
4. Encourage prescribed fire on other state-owned lands.
5. Maintain the presence of prescribed fire on private lands until its use becomes more widely accepted.
6. Create right-to-burn legislation that includes liability protection.
7. Evaluate the patch-burn grazing potential in Kentucky.
8. Become familiar and actively engaged in the air quality regulatory process.

ASSESSMENT:
All strategies should be employed in 10 years.

CHALLENGE 6:
Establish Kentucky-based quail research

Although bobwhite quail have been extensively studied, little research has occurred pertaining to the Kentucky landscape. Moderate to small farms, recreational farms, and reclaimed mine lands create a dynamic and unique landscape. There is much to learn about quail in Kentucky.

STRATEGIES:
1. Conduct genetic analyses to measure genetic diversity and identify presence/absence of meta-populations.
2. Create multi-year research project on Peabody Wildlife Management Area to identify habitat use, hunting effects, productivity, and hunter coverage of the area.
3. Participate in a multi-state research project on bobwhite modeled after the Appalachian Cooperative Grouse Research Project.
4. Research management practices on east Kentucky reclaimed coal mine lands including fertilizer experiments and forb and shrub establishment.
5. Evaluate population response to private lands focus area considering landscape metrics.

ASSESSMENT:
Employ 3 strategies in 10 years.

CHALLENGE 7:
Generate public interest and awareness about bobwhite

The majority of the public is not aware of the severity of the quail decline. Nor, do they understand the reasons driving the decline, the basic habitat requirements of the gamebird, or management practices needed to restore them.

STRATEGIES:
1. Create a campaign to end "recreational mowing" across the state.
2. Step-up marketing efforts aimed at quail restoration.
   - 2.1 Install tailgate "billboards" on Department trucks.
   - 2.2 Write magazine articles in targeted wildlife and farm publications.
   - 2.3 Enhance Wildlife Division newsletter.
   - 2.4 Promote Habitat Improvement Program promotions through baseball hats, t-shirts, and decals using new logo.
   - 2.5 Produce bobwhite 5" x 6" magnets.
   - 2.6 Print bobwhite art by Rick Hill.
   - 2.7 Create quail specialty license plate.
   - 2.8 Generate awareness through "Ken-

tucky Afield" television program.
2.9 Enhance Department website.
2.10 Utilize the Department's Salato Wildlife Education Center.
2.11 Utilize CEPL's to deliver bobwhite programs into high school FFA and 4-H programs.
2.12 Ensure that habitat teams are highly visible.
2.13 Include bobwhite information/brochure through seed program.
2.14 Create regional displays that can be used as educational tools.
2.15 Maintain Department booths at large events: Kentucky State Fair, National Farm Machinery Show.
2.16 Create lobbying card.
2.17 Target national media outlets.
2.18 Incorporate quail education in CEPL program.
3. Establish a brochure that outlines the quail decline and need for recovery.
4. Expand the "Habitat How-To" series to include a bobwhite "How-To".
5. Produce DVD emphasizing quail management approaches.
6. Prioritize distribution of QU food plot seed at spring field days.
7. Create an online course and exam focusing on quail management practices. Completion required to receive QU food plot seed.
8. Erect signage on WMAs and highly visible private properties to demonstrate quail habitat.
9. Continue to work cooperatively with other agencies and organizations hosting agriculturally-driven field days.
10. Work with FFA on an "Adopt a Farm for Wildlife" program.
11. Establish a short-course that focuses on early successional habitat management and hands-on training for landowners.

ASSESSMENT:
Employ a minimum of 20 strategies in 10 years.

CHALLENGE 8:
Supply landowners the equipment to establish and manage quail habitat

Many landowners across Kentucky own land, but lack the farm equipment or specialized tools needed to create and manage quail habitat.

STRATEGIES:
1. Evaluate landowner need and increase loaner equipment base to meet that need through HIP.
2. Expand the habitat team concept.
3. Promote a private industry to meet the management needs of landowners.
4. Promote landowner cooperatives enabling neighbors to pool equipment resources.
5. Re-establish Division of Conservation equipment program designed to rent equipment to landowners.

ASSESSMENT:
Employ 4 strategies within 10 years.

CHALLENGE 9:
Involve non-hunting groups and the public

Quail management and restoration is obviously focused on the quail-specific user groups that are often comprised of the hunting public. However, targeting non-hunting user groups who share an interest in songbirds and other wildlife can be an effective approach.

STRATEGIES:
1. Reach out to groups that have similar interests in habitat conservation like Audubon and the Sierra Club.
2. Highlight multi-species benefits of quail management efforts using WMA demonstration signage.
3. Write articles in media that non-hunting users frequent.
4. Locate Watchable Wildlife sites where quail habitat is actively managed.
5. Present quail restoration at local meetings of non-consumptive groups and highlight benefits to other wildlife and the environment.
6. Encourage non-hunting conservation groups to generate funds through banquet systems.
7. Persuade non-hunting individuals with an interest in wildlife and fisheries conservation to purchase a hunting and fishing license.
8. Educate landowners that hunt without a license on their land to purchase a hunt-

ing license to support fish and wildlife conservation.

ASSESSMENT:
Employ all strategies within 5 years.

CHALLENGE 10:
Provide additional training for staff

Many Department employees are unfamiliar with quail habitat and the strategies to restore it. With so few staff to cover the state, it's imperative that all field staff can communicate the basic message.

STRATEGIES:
1. Conduct training on WMAs to educate staff on quail habitat and restoration goals.
2. Train private lands and farm bill biologists to become better communicators and sales people.
3. Train private lands and farm bill biologists to become more familiar with the agricultural business and the values of producers.
4. Use the Wildlife Division Tidbits and Commissioner's Newsletter to keep staff current on progress of restoration efforts.
5. Create an annual quail and habitat-based summary of new research abstracts.
6. Encourage wildlife staff to be involved in regional workshops and meetings to advance their knowledge base and gain new ideas from peers.
7. Ensure field staff are stocked with information materials designed for public information related to quail restoration (i.e., brochures, lobby card).

ASSESSMENT:
Employ all strategies within 3 years.

CHALLENGE 11:
Build relationships with partners

The crux of quail restoration will be founded on partnerships. Existing partnerships with non-government organizations (NGO) and fellow agencies must be enhanced. Personal relationships will be the key to landscape level change, so countless new partnerships must be forged to meet the objective.

STRATEGIES:
1. Create NGO partner cooperative positions.
2. Create NGO partner projects.
3. Build a technical plan endorsement list including NGOs, government agencies, and businesses.
4. Identify local champions and network in a manner similar to the Hunter Education framework.
5. Engage large (500+ acres) public and private landowners (individuals and businesses) for quail restoration management activities and recognize their achievements.
6. Identify agricultural, landowner, and conservation-based organizations and establish common interest to forge formal partnerships.
7. Establish a distribution list of partners and facilitate regular communication through email, newsletters, and other media.
8. Host a luncheon of restoration plan partners and the Governor to formally kick-off bobwhite restoration.
9. Work with Joint Ventures for coordinated efforts across state lines.

ASSESSMENT:
Employ all strategies over a 10 year period; generating 25 partner agencies and organizations.

CHALLENGE 12:
Design or plan developments in an environmentally-sensitive manner

In many circumstances, for every acre of quail habitat restored, an acre is destroyed. Easements, development plans, and public rights-of ways are essential components to protect the future of bobwhite. To stabilize the statewide population, development must be carefully planned and critical habitats must be protected.

STRATEGIES:
1. Establish a state-funded conservation easement program.
2. Promote Farm Bill easement programs around west Kentucky urban areas such as Bowling Green, Paducah, and Owensboro.
3. Work with city and county planners to minimize the continual division of agricultural properties that provide environmental services, wildlife, and aesthetics.
4. Continue to encourage the Promoting Our Wildlife and Energy Resources program for enhanced transmission lines for electricity and gas.
5. Work with the Department of Transportation to reform the management of highway rights-of-way through restoration of native plants. Consider approaching the Adopt-A-Highway program as a mechanism to install the restoration.
6. Identify critical corridors across the state.

ASSESSMENT:
Employ 3 strategies over 10 years.

GOAL 1 OVERALL ASSESSMENT:

Utilize mail carrier, hunter cooperator, and breeding bird survey data to measure population stability.

GOAL 2
Increase bobwhite populations in focus areas

CHALLENGE 1:
Adequately support focus areas

For a successful focused approach, funding and manpower must be secured. A focus area will not be established until a dedicated biologist and habitat team is in place. A formal public ceremony will take place at the start of each focus area.

STRATEGIES:

1. Prioritize focus areas to fund as money becomes available.
   - 1.1 Livingston County
   - 1.2 Hart County
   - 1.3 Sinking Creek (Breckinridge Co.)
2. Hire biologist positions to digitize focus area and write management plan.
3. Commission local farmer figure to promote quail restoration in focus areas.
4. Create habitat teams in focus areas to accomplish management goals.
5. Focus state and federal cost-share programs.
   - 5.1 Use HIP dollars to alleviate 25% landowner contribution for WHIP in focus areas.
   - 5.2 Promote CP-33 and consider bonus payments.
   - 5.3 Generate additional points in WHIP and EQIP ranking tools for focus areas.
   - 5.4 Promote CP-21 and 29 in focus areas.
   - 5.5 Encourage participation in General CRP.
   - 5.6 Utilize programs like USFWS Partners for Fish and Wildlife, NGO, and grant funds for habitat improvement.
6. Prioritize equipment loans towards landowners in the focus areas.

ASSESSMENT:

Employ all strategies in 2 focus areas in 5 years. Initiate all focus areas in 8 years.

CHALLENGE 2:
Generate landowner interest

Many farmers and landowners may be unaware of a focus area encompassing their property. It is important to educate the public on our focus area approach, programs, management strategies, and funding sources. Local staff should also be included and be knowledgeable on current issues.

STRATEGIES:

1. Host local gatherings to advertise and gain support including a free barbeque and entertainment highlighting the significance of their rural community.
2. Create mailings, press releases, newspaper ads, magazine articles etc.
3. Educate DCs and CEDs in focus area county offices.
4. Utilize existing field days and habitat demonstrations.
5. Target high school FFA and 4-H programs.
6. Establish relationship with local farm co-ops.
7. Locate Farm Bill biologist in the county office.
8. Include county extension staff, soil and water conservation staff, and RC&D Coordinators.

ASSESSMENT:

Employ 5 strategies on 2 focus areas in 5 years. Employ a minimum of 5 strategies in 10 years on remaining focus areas.

CHALLENGE 3:
Lack of monitoring

Monitoring is essential to determine the level of success within a focus area. Density estimates will be needed to measure the magnitude of effect in the focal area, but indices can also be utilized for comparison with statewide trends.

STRATEGIES:

1. Create point counts (generating a density estimate) designed to capture all bird response.
2. Establish whistle count survey routes.
3. Establish fall covey count surveys to measure localized treatment effects.
4. Investigate feasibility of Forward Looking Infrared (FLIR) surveys.
5. Create Breeding Bird Survey routes.

ASSESSMENT:

Employ monitoring plan in 1 year for two focal areas. Employ monitoring plan by year 6 for remaining area.

GOAL 2 OVERALL ASSESSMENT:

Utilize monitoring data (at least 5 years) to measure success on 2 focus areas. Success will be defined by at least a two-fold increase in the focus area's quail population.

GOAL 3
Increase bobwhite populations on focal wildlife management areas

CHALLENGE 1:
Renovate public wildlife management areas (WMA)

Kentucky has over 1.5 million acres of public land available for hunting and wildlife-related recreation. However, many of these areas cannot sustain abundant quail populations. KDFWR can manage some WMAs specifically for early successional grassland wildlife.

STRATEGIES:

1. Select one focal area per region to devote time and resources toward quail management. Prioritize areas to target as resources become available.
   - 1.1 Peabody WMA
   - 1.2 Straight Creek Focus Area
   - 1.3 Clay WMA
   - 1.4 Bluegrass Army Depot
   - 1.5 West Kentucky WMA
2. Create quail management plan on targeted WMAs.
3. Increase forest management on public lands.

ASSESSMENT:

Create WMA management plans in 2 years. Implement plans over the following 8 years.

CHALLENGE 2:
Increase focal WMA staff

Many public lands WMAs around the state are under staffed. Existing staff do not have time to implement proper quail management on these areas.

STRATEGIES:

1. Evaluate current workloads to meet quail management objectives.
   - 1.1 Hire seasonal technicians
   - 1.2 Hire permanent employees
2. Contract projects to private entities.
3. Create regional or statewide public land habitat teams.

ASSESSMENT:

Employ a minimum of 2 strategies on 3 focal WMAs in 5 years. Employ 2 strategies on remaining WMAs in 10 years.

CHALLENGE 3:
Purchase necessary equipment

Many WMAs lack the necessary equipment needed to implement quail management. Specialized equipment can increase the efficiency and effectiveness of management practices.

STRATEGIES:

1. Identify equipment shortcomings of focal WMAs.
2. Increase equipment inventory based on individual needs of focal WMAs.
3. Encourage renting of specialty equipment.
4. Contract projects to private entities.
5. Purchase regional or statewide equipment that rotates between WMAs.
6. Work with KDFWR Engineering Division to have access to equipment not in use.
7. Increase NGO or agency partnerships.

ASSESSMENT:

Employ all strategies within 3 years.

CHALLENGE 4:
Control hunting pressure on WMAs

Excessive hunting pressure may increase quail winter mortality and suppress populations on WMAs. Hunter numbers tend to be extremely high on public lands and habitat availability is not adequately expansive. Therefore, coveys can be decimated over the course of a season.

STRATEGIES:

1. Limit hunter numbers based on "first-come, first-served" approach.
2. Create mandatory check stations for small game.
3. Close or refuge portions of WMAs.
4. Limit areas to quota hunts.
5. Close hunting on public areas at 2:00 PM.
6. Shorten seasons on public lands.
7. Increase law enforcement presence on targeted WMAs.
8. Evaluate effectiveness and social acceptance of control measures.

ASSESSMENT:

Employ a unique hunting framework on each focal WMA within 3 years. Summarize social and biological impacts to controlled hunting in 5 years.

CHALLENGE 5:
Enhance habitat on surrounding private property

Quail population management can require thousands of acres. Minimum viable populations (MVP) are believed to be sustained by a minimum of 5,000 acres of suitable habitat. West Kentucky and Clay WMAs are marginal in size with respect to the MVP. Targeting private lands surrounding the WMAs will provide significantly more acres to support a population.

GOAL 4
Increase statewide recreation related to bobwhite

STRATEGIES:
1. Establish a buffer around the WMA based on an estimate of quail home range size or average dispersal distance.
2. Create a landowner list through the county PVA office.
3. Private or public lands staff proactively target landowners on the list for technical guidance.
4. Public lands staff provide direct habitat management support on these areas for specialized practices (i.e., prescribed burning, fencerow rejuvenation, native grass establishment).
5. Focus Farm Bill programs in the area through advertisement, higher points in the ranking process, and conservation priority area status.

ASSESSMENT:
Employ all strategies within 3 years.

CHALLENGE 6:
Lack of monitoring
***See focus area monitoring under Goal 2.**

ASSESSMENT:
Employ monitoring plan on all focal WMAs in 1 year.

GOAL 3 OVERALL ASSESSMENT:
Use monitoring data to measure success. Success will be defined in each WMA management plan.

CHALLENGE 1:
Provide positive hunting experiences

As fewer sportsmen and women participate in quail hunting, the need arises for positive hunting experiences. The objective will be to renew interest in veteran bird hunters and recruit new participants in quail hunting.

STRATEGIES:
1. Secure more public land containing suitable quail habitat to increase hunting opportunities.
2. Establish a quail youth season prior to the regular quail season.
3. Host WMA youth or mentor hunts as a recruitment tool.
4. Mirror the dove field lease program for mentor or youth quail hunts. More sites would be needed because hunts should be limited to a single party of 4 with no more than 3 hunts/farm.
5. Host celebrity quail hunts featuring country music artists, NASCAR drivers, and other prominent figures.
6. Create quota hunts on select WMAs.

ASSESSMENT:
Employ all strategies within 5 years.

CHALLENGE 2:
Renew aesthetic interest in quail

People are losing interest in quail, because they are not as prominent in the landscape. We must revitalize the image of the bobwhite and generate broad-based interest.

STRATEGIES:
1. Create quail festival(s) including activities such as quail calling contests.
2. Designate a city as the "Quail Capital of Kentucky".
3. Design a landowner cooperator quail whistle count survey to get landowners more connected to quail and management on their land.
4. Encourage the Governor to create "bobwhite week" and host festivities at Salato Center.
5. Incorporate working quail dogs into conservation camps.

ASSESSMENT:
Employ all strategies within 5 years.

GOAL 4 OVERALL ASSESSMENT:
Modify 5 year hunting participation survey to specifically address quail participation, create a new quail hunter survey, or assess hunter cooperator participation rates as an indicator of change.

GOAL 5
Generate funding mechanisms to support bobwhite restoration

CHALLENGE 1:
Garner funding for quail restoration

Quail restoration and management is expensive. Restoring habitat requires initial investments coupled with long-term maintenance expenses. It will be critical to secure funding sources to help offset the costs.

STRATEGIES:

1. Establish a QU specialty license plate.
2. Pursue federal and private grants.
3. Provide Kentucky elk permits, buck tags, and turkey tags as auction items for NGO partners.
4. Create a habitat stamp.
5. Revitalize the Kentucky Business Conservation Partnership program to build positive relationships with corporations that could ultimately lead to financial support.
6. Raffle celebrity quail hunt spots through NGO partners.
7. Work with Joint Ventures to generate funding.

ASSESSMENT:

All strategies should be employed in 5 years.

CHALLENGE 2:
Compile project list for potential philanthropists

Many organizations have charitable funding in place, but they are unaware of projects and their priority. Projects should cover a broad spectrum of costs and be well distributed across the state, so donors can support local needs within their budget.

STRATEGIES:

1. Create prioritized, focal WMA project lists.
2. Create prioritized, focus area project lists.
3. Create prioritized, research project lists.
4. Create prioritized, Salato Wildlife Education Center project lists.

ASSESSMENT:

All strategies should be employed within 1 year.

GOAL 5 OVERALL ASSESSMENT:

Secure a minimum of $7.5 million in outside funding within 10 years.

COUNTY PRIORITY MODEL SUMMARY

"I recognize the right and duty of this generation to develop and use our natural resources, but I do not recognize the right to waste them, or to rob by wasteful use, the generations that come after us."

– Theodore Roosevelt, speech, Washington, D.C., 1900

ONE OF THE core principles of Kentucky's bobwhite restoration plan is pinpoint, which is a reference to targeted efforts for generating a quail response with the least amount of effort. Therefore, we created a mechanism to utilize available spatial data, quail population data, and field personnel's expertise to build a decision support tool (i.e., model). The county was selected as the unit of spatial scale, because it is widely understood among the public and many data sets are limited to the county level. Ultimately, we hoped to identify a maximum of 10% of the state's acreage as "High Potential" for quail restoration.

To construct our model, Kentucky was broken into two regions: west and east Kentucky (Map 2 and Map 3). The Eastern Kentucky Coalfield physiographic region is markedly unique from the rest of the Commonwealth. The region is typified by large, forest blocks fragmented by minelands, whereas the western and central portions of the state are dominated by agriculture (row crops, pasture, and haylands) and woodlots. Therefore, modeling quail habitat potential requires different parameters relative to physiographic regions.

A priori targets were identified in the west and east regions. For the west region, target areas had "high" quail populations, were predominately production farms on marginally productive soil, and had high occurrences of Conservation Reserve Program (CRP) contracts. In the east region, we targeted reclaimed mine ground with "high" quail populations and KDFWR management authority with public access. Despite the disparities between the east and west regions, some data sets were utilized in both models. Shared data sets included staff surveys, State Wildlife Action Plan (SWAP) priority areas, and annual mail carrier data.

A core component to the modeling process was capturing the expertise of biologists in the field and incorporating that information through county scores. KDFWR private lands staff are familiar with habitat suitability, landowner values, and landowner capabilities in their assigned counties. They also have knowledge regarding the quality of service being provided by U.S. Department of Agriculture (USDA) county offices. In many circumstances, District Conservationists (DC) are the key to getting farmers involved in conservation programs.

To capture field staff input in a standardized form for the model, we polled KDFWR private lands biologists and farm bill biologists across the state. They were asked questions ranging from the level of wildlife interest in local USDA offices to local landowners interests and abilities to implement wildlife habitat improvements on their property (Appendix). Each survey participant was also prompted to provide an overall county rating based on the complete set of survey questions. Responses were limited to three categories (good, fair, and poor; high, moderate, and low) and assigned a numerical value (3, 2, and 1, respectively). Counties that included information from multiple biologists were averaged to obtain an overall county rating and an overall USDA rating. High scores represented more preferred counties. The USDA county rating (limited to the west model) was a weighted average of scores from the following survey questions: DC wildlife interest (double weighted), DC influence in the community, and the NRCS and FSA relationship.

The other data sets shared by the east and west models were SWAP priority areas and quail mail carrier data. SWAP priority areas were also scored on a county framework. This score was produced by intersecting SWAP priority areas and county, then taking the highest priority tier within the county. The scores were then incorporated into the model with Tier I counties being most preferred. Quail mail carrier data values were averaged at the county level from the 2001 to 2006 surveys. The mail carrier survey is the best index of quail populations across the state with roughly 800 participants annually.

UNIQUE WEST KENTUCKY MODEL DATASETS

Agricultural data was heavily relied upon during the modeling process for west Kentucky. Farm Bill programs, particularly CRP, will play a critical role in quail restoration. Marginal soils, production farmer proportions, and the presence of a USDA county office were recognized as important variables as well.

CRP conservation practices most likely to foster high quail densities were identified and summed. Selected practices included CP-1, 2,

"A thing is right only when it tends to preserve the integrity, stability and beauty of the community; and the community includes the soil, water, fauna and flora, as well as the people."

– Aldo Leopold, A Sand County Almanac, 1949

25, and 33 (introduced grasses, native grasses, rare and declining habitat, and upland bird habitat buffers respectively). Counties with the highest acreage totals received the highest scores within the model. Additional emphasis to the dataset was accomplished by double weighting.

Marginally productive soils were important, because lower yields on marginal soils make retirement programs more attractive. To distinguish between highly and moderately productive soils that dominate the county, a corn yield index was employed. It was based on a Jenk's Natural Break of corn planted for all purposes measured as yield/acre multiplied by 1000's of acres planted (National Agricultural Statistic Service, 2002 census data. Natural breaks methodology ranked data from the most productive (score 5) to least productive (score 1) acreage. In an effort to target less productive soils, scores were modified to assign marginally productive acreage the higher scores in the model (5 to 2, 4 to 5, 3 to 4, 2 to 3, 1 to 1). The 1 score categorized by the natural breaks technique was left as 1, because all counties were included in the west model. Therefore, east counties with limited agriculture and poor corn yields would not be targeted.

Finally, using AgStats from the National Agricultural Statistic Service (2002 census data), we determined the percent of farmers in a county that were principle operators (i.e., production farmers). Principle operators are farmers that rely on farming as their primary method of income. Counties with higher proportions of principle operators were targeted. Production farmers are best served by local USDA staff, so the last variable in the model was the presence of a USDA county office. Counties home to a USDA office were scored 1, whereas counties without an office were scored 0.

UNIQUE EAST KENTUCKY MODEL DATASETS

East Kentucky is dominated by a forested landscape making the preponderance of acreage not suitable for widespread quail restoration efforts. Limited agriculture in the region hinders restoration potential as well. Yet, coal mining has provided a non-traditional opportunity to benefit bobwhite in the Bluegrass State. The challenge in the east model was to identify active mine sites and reclaimed mine lands through existing spatial information.

Land cover data (U.S. Geological Survey, 2001 Landcover Data) was utilized to identify mining activities in each county. Shrub, grass, and barren land cover classifications were targeted. The proportion of shrub and grass in a county were summed and double weighted to key on reclaimed mine grounds. Barren lands were included to consider active or newly reclaimed mine sites. For consistency between the east and west, we treated CRP and reclaimed mine grounds (summed proportions of grass and shrubs in the county) as critical in each model by double weighting each variable.

Finding reclaimed mine ground was only a piece of the puzzle. Much of the eastern portion of the state is privately owned or leased by large landholding companies. To enhance reclaimed mine grounds, it's imperative to have access and management potential on the acreages. Therefore, we included lands with KDFWR management and access agreements in the model. Counties containing this land were scored 5 if they contained agreement lands and 1 if agreement lands were absent.

BRINGING THE DATA TOGETHER

Once the data were geographically brought into ArcMap, the data were categorized into 5 "natural breaks". Using the Jenk's Natural Breaks method, classes are based on natural groupings inherent in the data. ArcMap identifies break points by picking the class breaks that best group similar values and maximize the differences between classes. Five breaks were selected, because the number of counties (120)

was better divided through this classification. For the western counties, the natural breaks were done on the statewide dataset. For the eastern counties, only the eastern counties were used for the natural breaks. To get a visual representation of the summed chosen layers, the transparency was set to 85% using an ascending white to black scale. The overall effect yielded darker shades being more important.

After the layers were finalized for eastern and western Kentucky, they were combined into a single score for the eastern and western counties. The general approach was to assign the highest "natural breaks" category 5 points then downward 4, 3, 2, and 1 (except for the corn index in the west model). For all of the final plan layers, the higher natural break category was valued more highly.

The final two models (Table 1 and Table 2) identified a total of 14 high priority counties across the state (Map 2 and 3) totaling 4,074,112 acres (3,558,988 west, 515,123 east). Although our a priori goal was selection of 10% of Kentucky as high priority, the final model revealed 15.75% of the state (25,859,783 total acres in Kentucky) in that category. However, within high priority counties, many acres are unsuitable (heavily forested or developed), so the final acreage is much closer to the 10% goal.

Variable	Description	Score Range	Source
Mail Carrier	Quail mail carrier survey; mean from 2001-2006	5 to 1	KDFWR
CRP	Sum of CP-1,2,25, and 33 acres (double weighted)	5 to 1	USDA
Corn index	Index of soil productivity; corn planted for all purposes as yield/acre *1000's of acres planted	5 to 1	USDA
Farmers	Percent of farmers as principle operator	5 to 1	USDA
County Rating	KDFWR field staff rating on county's overall potential for quail restoration	5 to 1	KDFWR
USDA Rating	KDFWR field staff rating of USDA county's effectiveness and wildlife interest	5 to 1	KDFWR
SWAP	Intersection of SWAP priority areas and county layers; taking the highest priority level	5 to 1	KDFWR
NRCS office	Presence or absence of a NRCS service center	1 or 0	USDA

Table 1. West Kentucky quail restoration county priority model variables, descriptions, score range, and data source.

Variable	Description	Score Range	Source
Mail Carrier	Quail mail carrier survey; mean from 2001-2006	5 to 1	KDFWR
County Rating	KDFWR field staff rating on county's overall potential for quail restoration	5 to 1	KDFWR
SWAP	Intersection of SWAP priority areas and county layers; taking the highest priority level	5 to 1	KDFWR
Grass and Shrub	Sum of grass and shrub land cover in the county, expressed as a percent (double weighted)	5 to 1	USGS
Barren	Proportion of barren land cover in the county	5 to 1	USGS
Access	KDFWR access and management agreements on reclaimed mine grounds	5 or 1	KDFWR

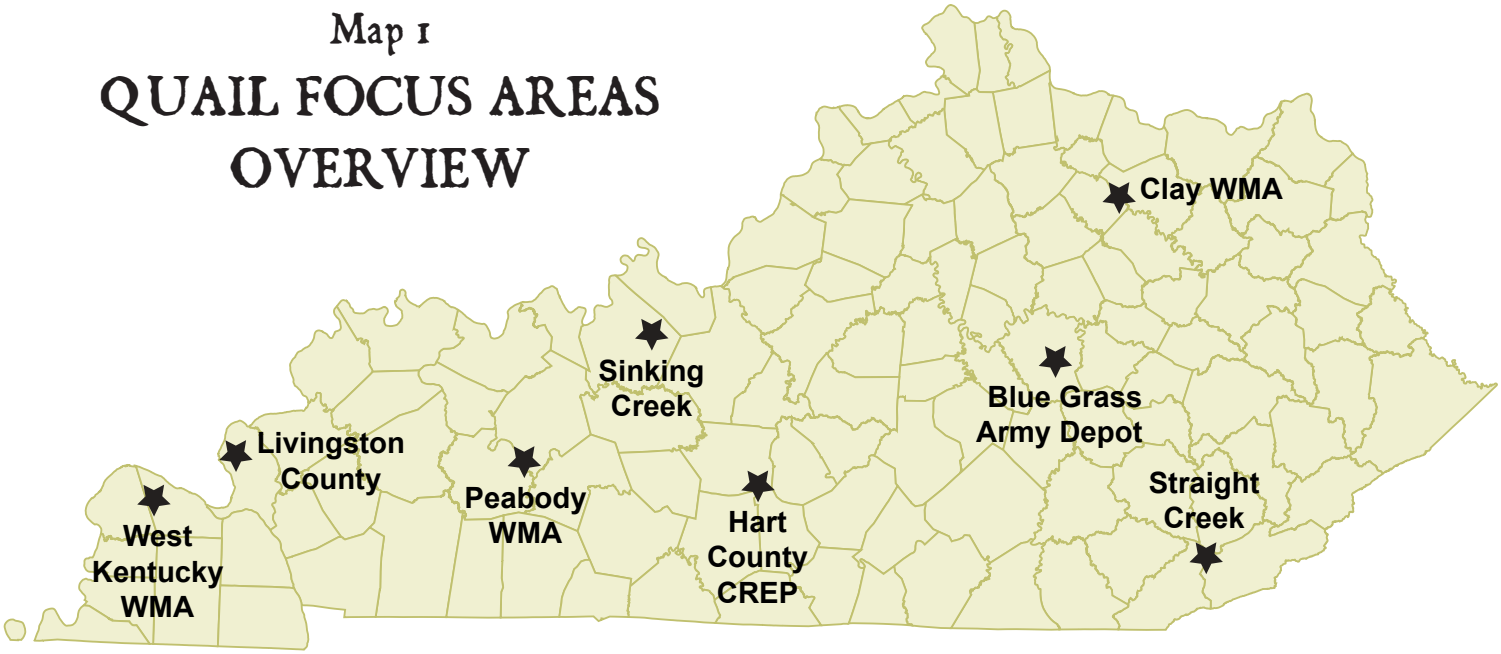
Table 2. East Kentucky quail restoration county priority model variables, descriptions, score range, and data source.

"If we learn, finally, that what we need to "manage" is not the land so much as ourselves in the land, we will have turned the history of American land-use on its head."

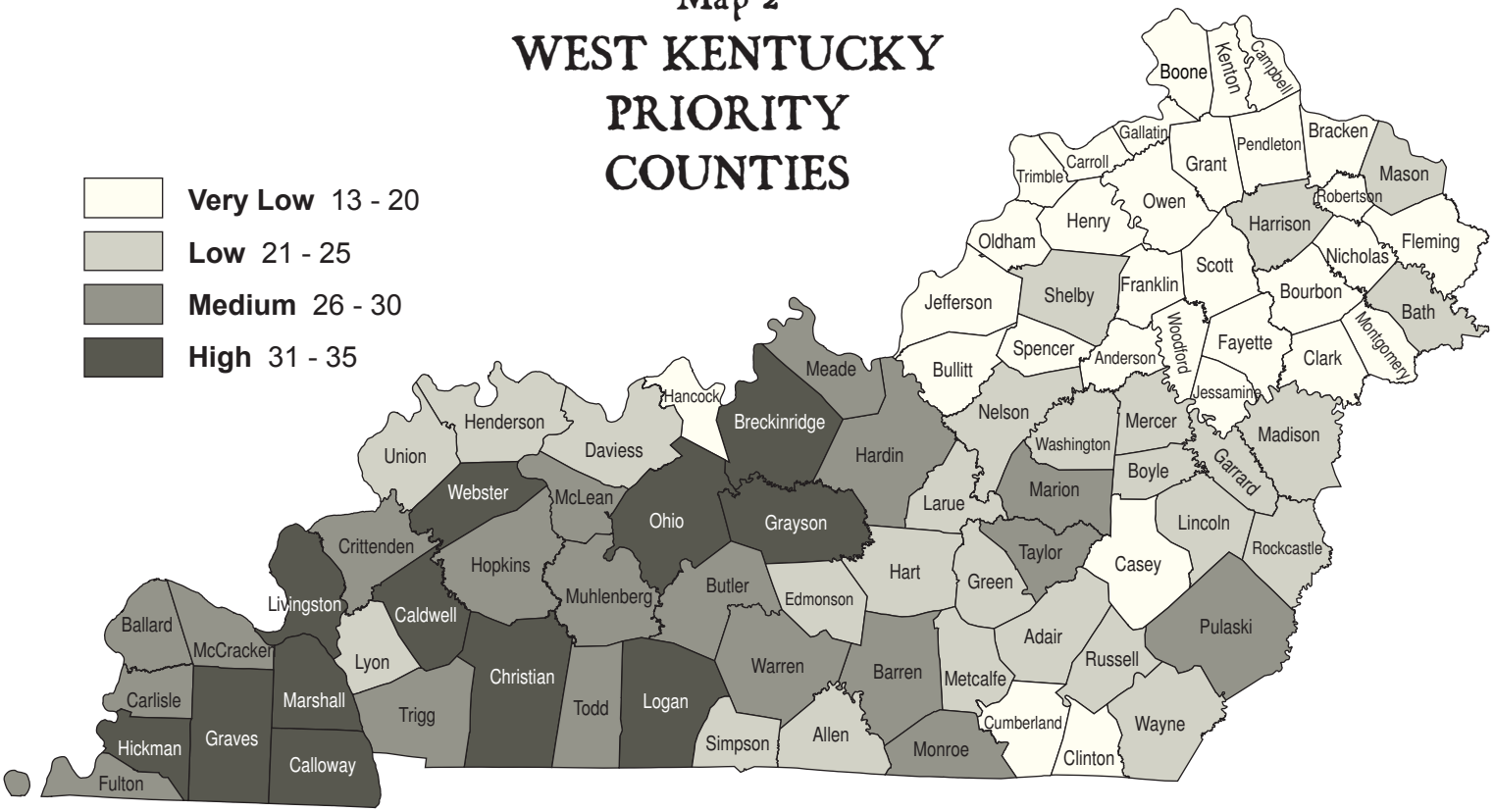
– Gaylord Nelson, Founder of Earth Day

MAPS / APPENDIX

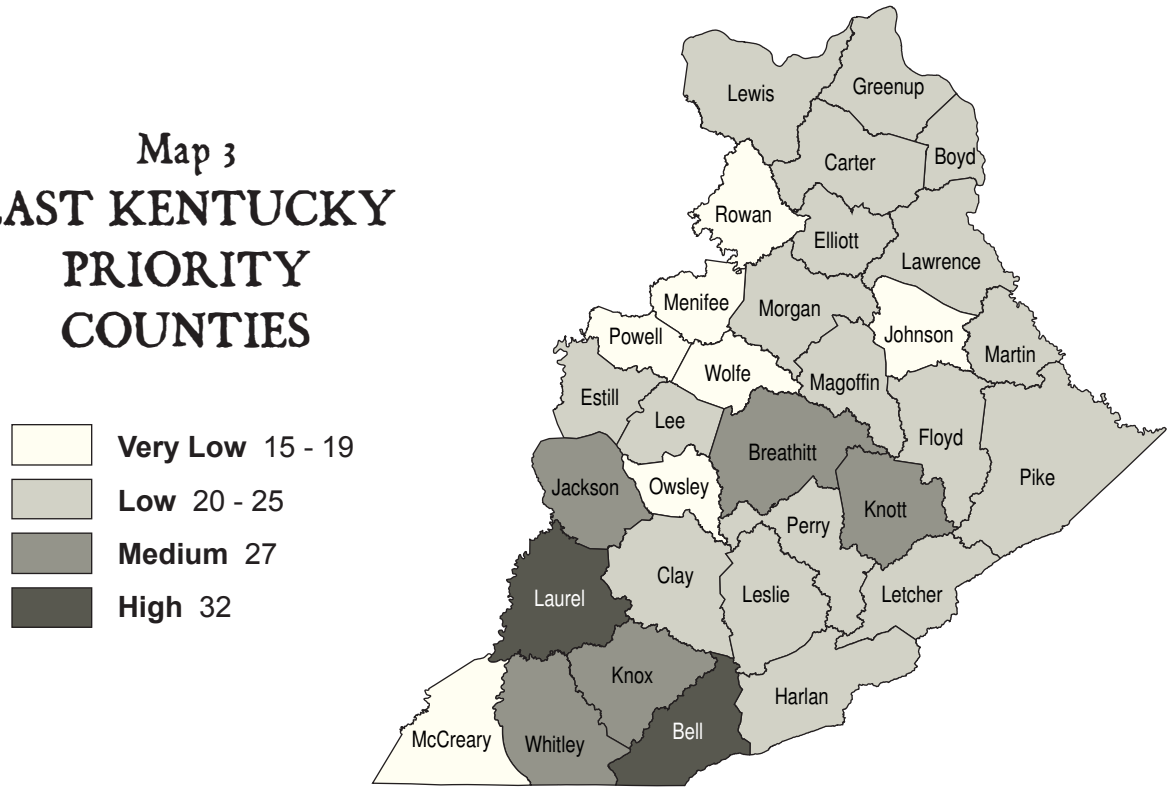
Map 1
QUAIL FOCUS AREAS OVERVIEW



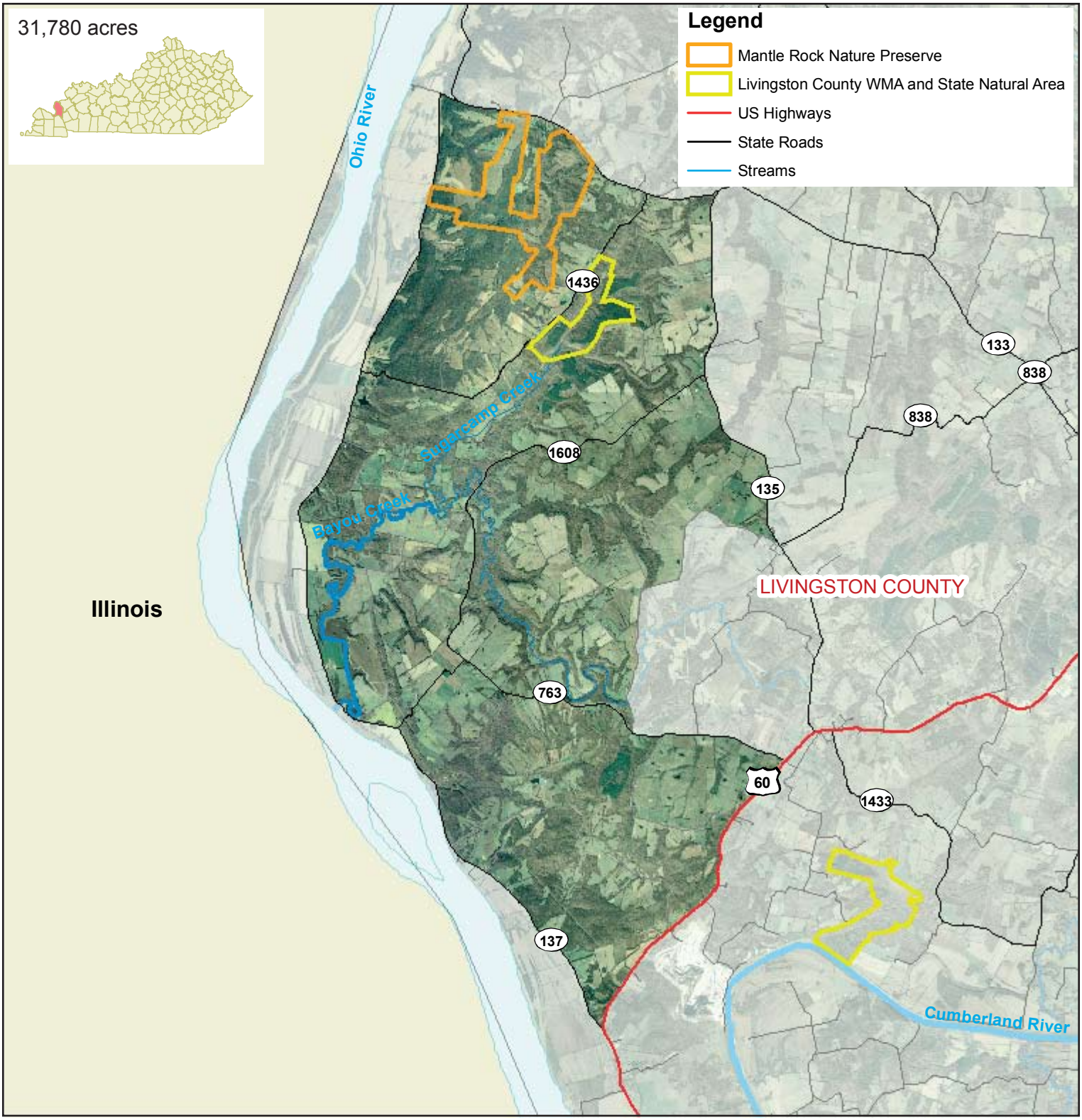
Map 2
WEST KENTUCKY PRIORITY COUNTIES



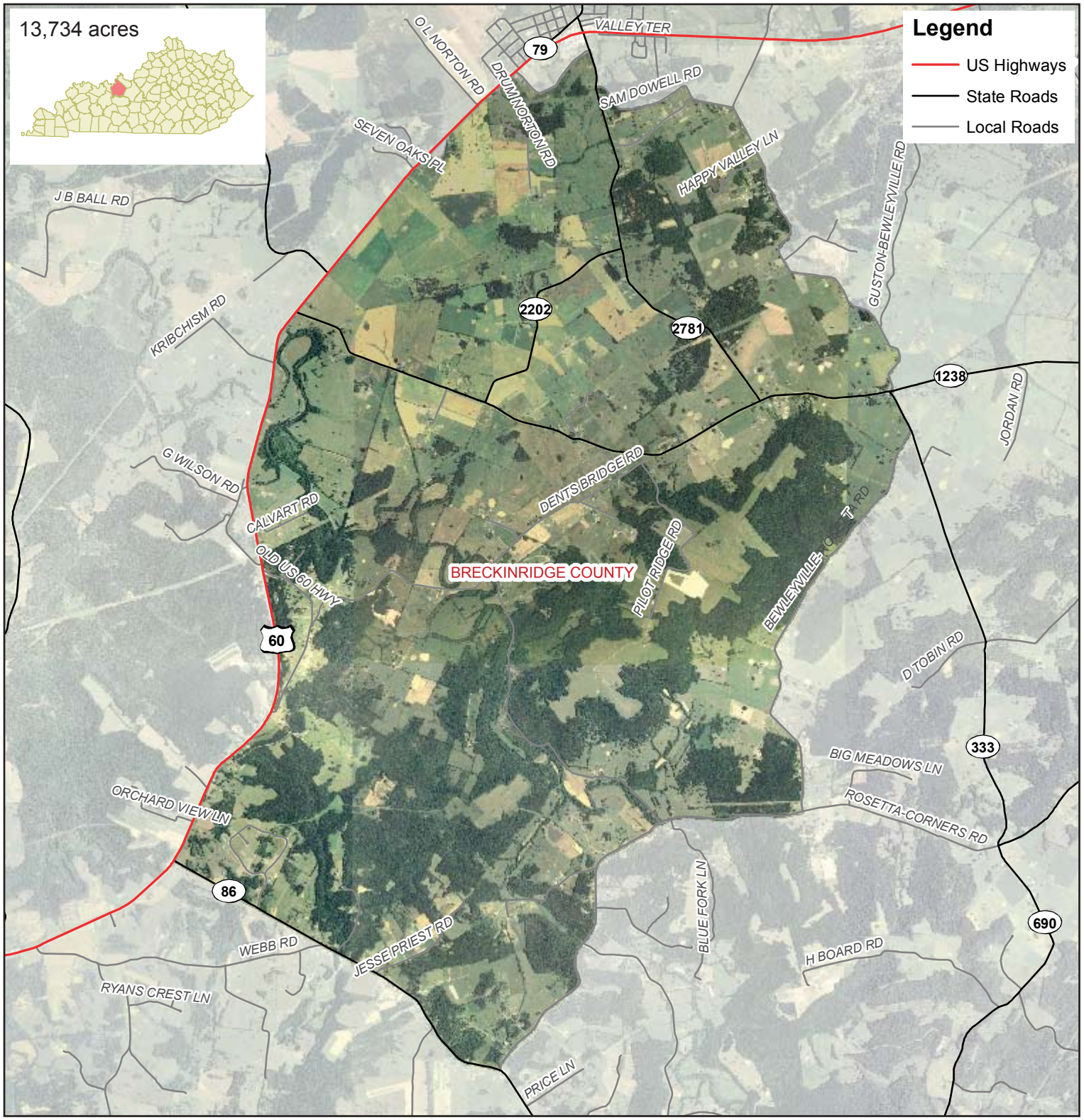
Map 3
EAST KENTUCKY PRIORITY COUNTIES



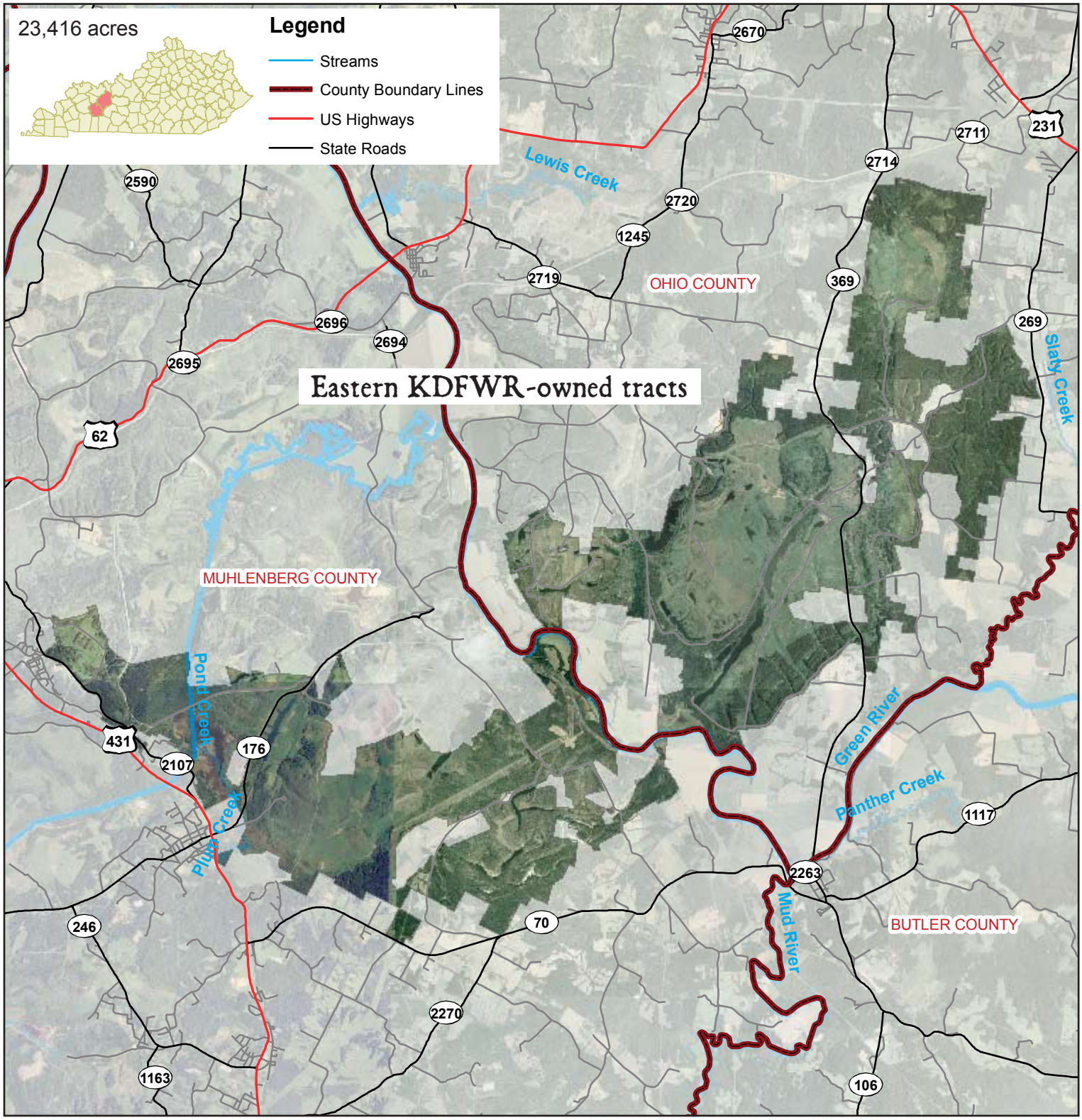
Map 4 LIVINGSTON COUNTY QUAIL FOCUS AREA



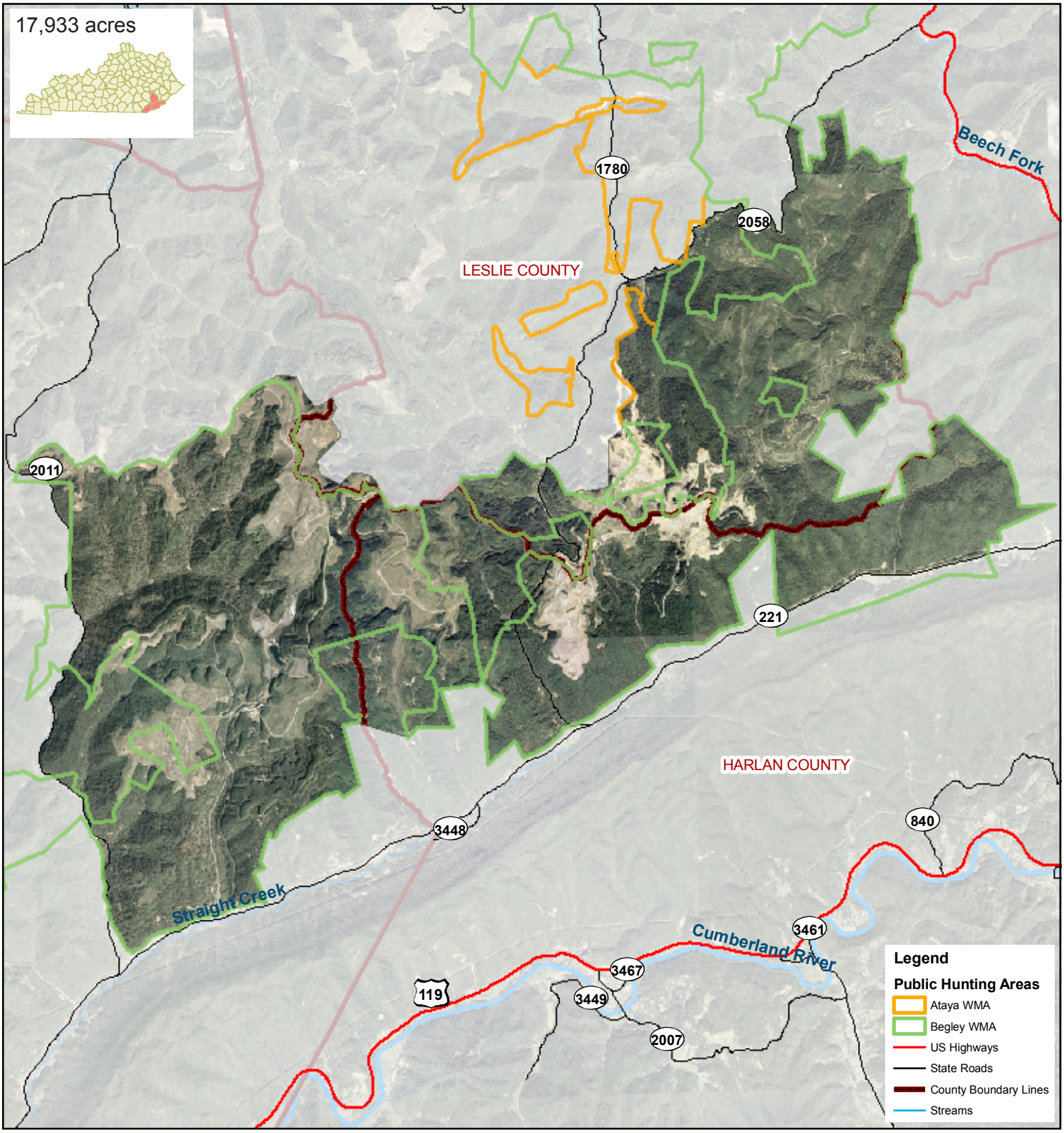
Map 6 SINKING CREEK QUAIL FOCUS AREA



Map 7 PEABODY WMA QUAIL FOCUS AREA



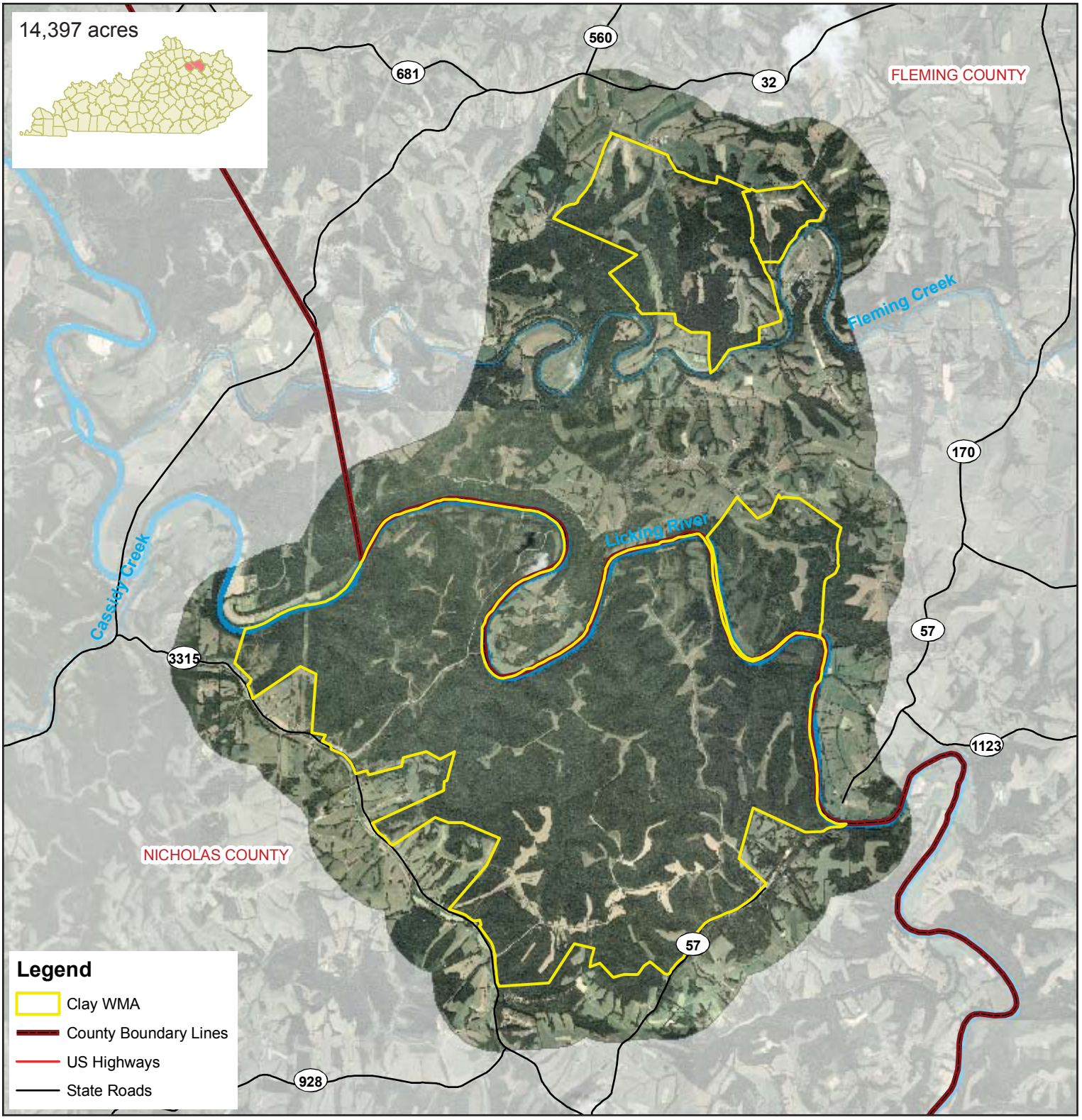
Map 8 STRAIGHT CREEK QUAIL FOCUS AREA



0 1 2 3 4 Miles

1:82,000

Map 9 CLAY WMA QUAIL FOCUS AREA

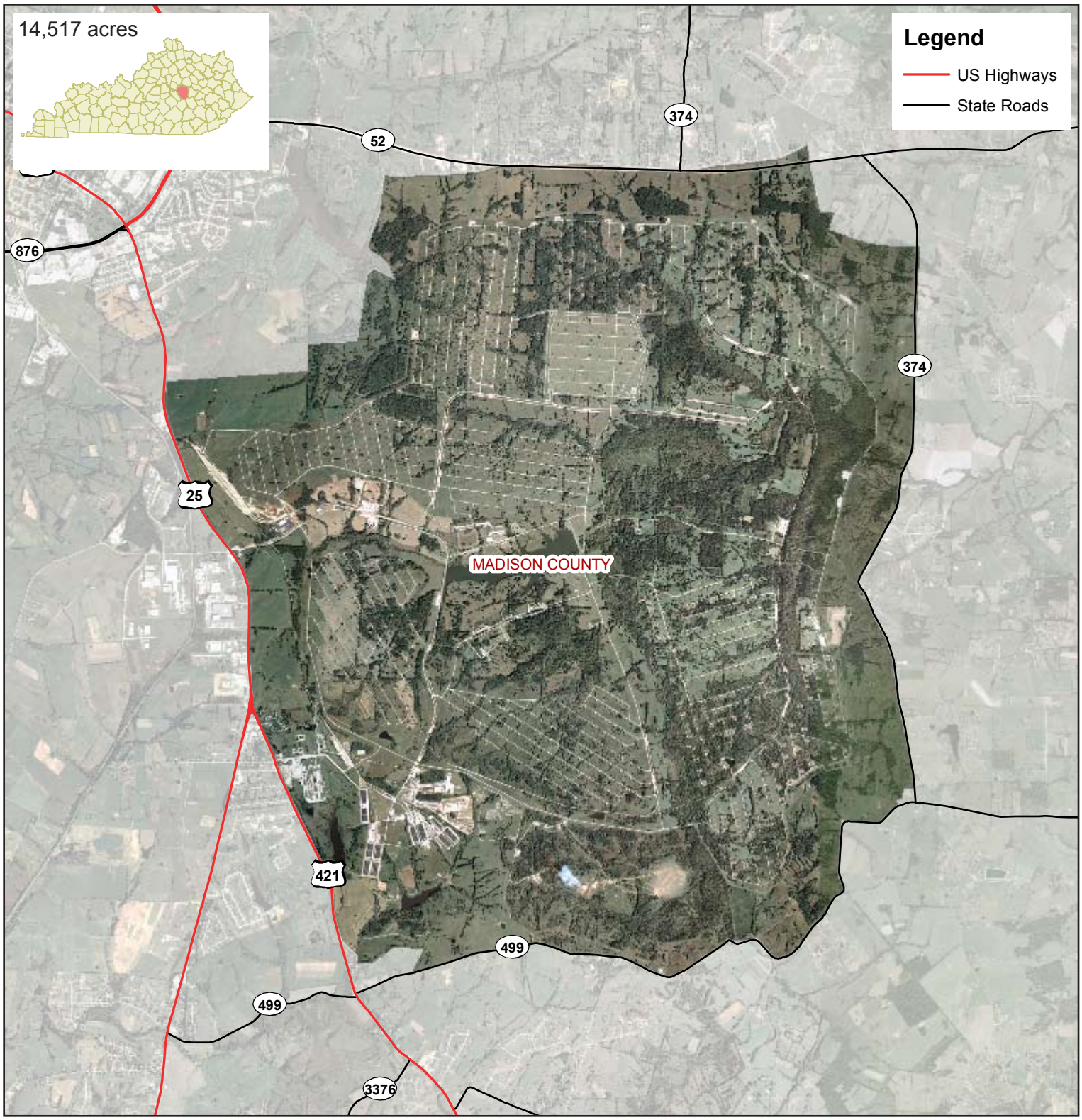


N
W E
S

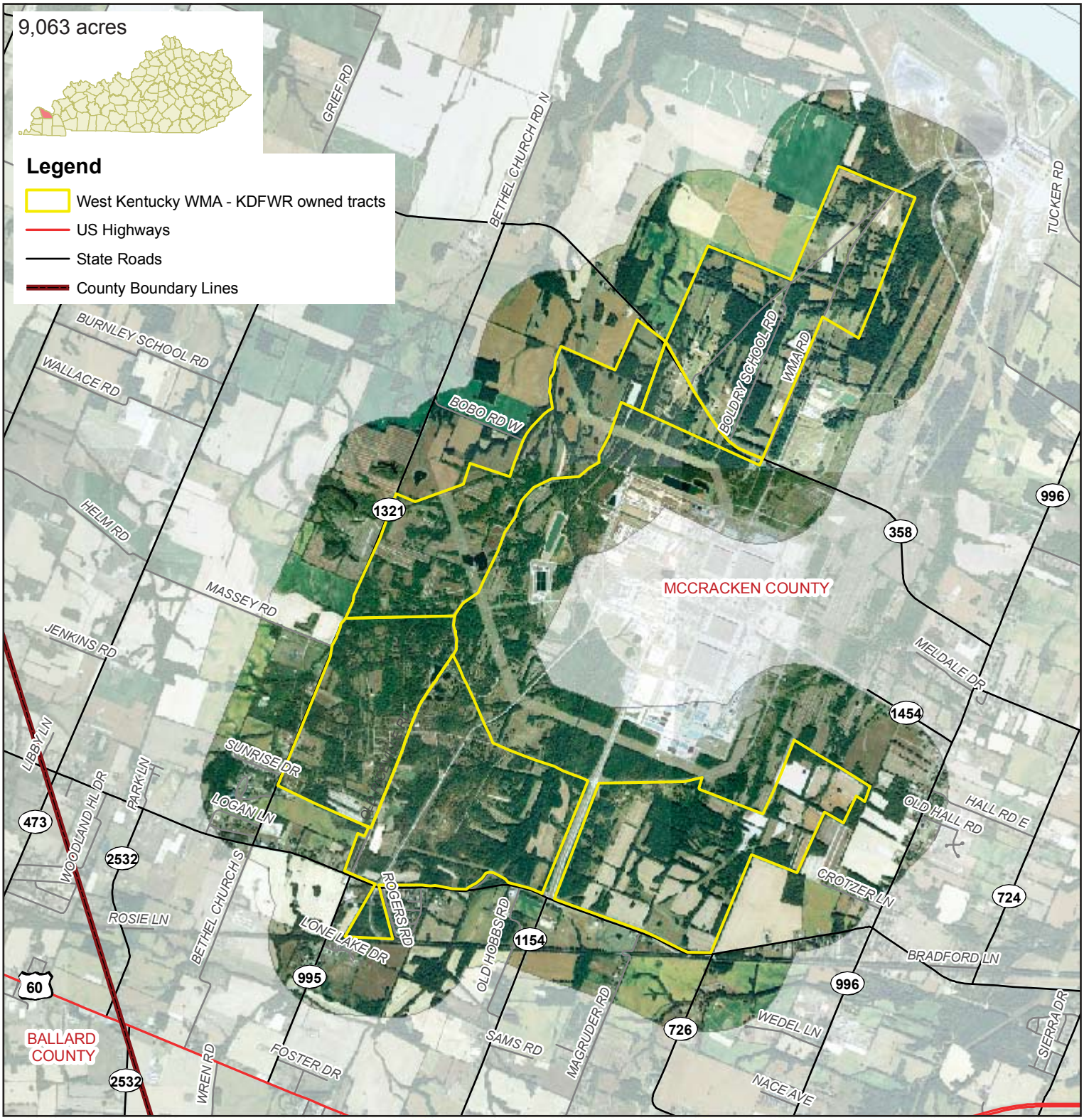
0 0.5 1 1.5 2 Miles

1:60,000

Map 10 BLUE GRASS ARMY DEPOT QUAIL FOCUS AREA



Map 11 WEST KENTUCKY WMA QUAIL FOCUS AREA



QUAIL PLAN ASSESSMENT TIMELINE

1 YEAR

Lack of monitoring: Employ monitoring plan in 1 year for 2 focal areas. Employ monitoring plan by year 6 for remaining 2 areas.

Employ monitoring plan on all focal WMA's in 1 year.

Compile project list for potential philanthropists: All strategies should be employed within 1 year.

2 YEARS

Renovate public wildlife management areas (WMA): Create WMA management plans in 2 years. Implement plans over the following 8 years.

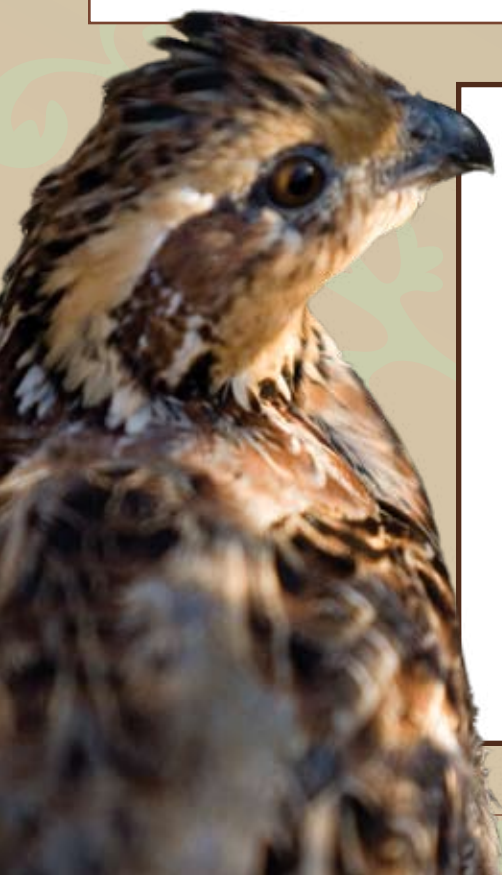
3 YEARS

Provide additional training for staff: Employ all strategies within 3 years.

Purchase necessary equipment: Employ all strategies within 3 years.

Control hunting pressure on WMA's: Employ a unique hunting framework on each focal WMA within 3 years. Summarize social and biological impacts to controlled hunting in 5 years.

Enhance habitat on surrounding private property: Employ all strategies within 3 years.



5 YEARS

Involve non-hunting groups and the public: Employ all strategies within 5 years.

Adequately support focus areas: Employ all strategies in 2 focus areas in 5 years. Initiate all focus areas in 8 years.

Generate landowner interest: Employ 5 strategies on 2 focus areas in 5 years. Employ a minimum of 5 strategies in 10 years on remaining focus areas.

Increase focal WMA staff: Employ a minimum of 2 strategies on 3 focal WMAs in 5 years. Employ 2 strategies on remaining WMAs in 10 years.

Provide positive hunting experiences: Employ all strategies within 5 years.

Control hunting pressure on WMA's: Summarize social and biological impacts to controlled hunting in 5 years.
Provide positive hunting experiences: Employ all strategies within 5 years.

Renew aesthetic interest in quail: Employ all strategies within 5 years.

Garner funding for quail restoration: All strategies should be employed in 5 years.

6 YEARS

Lack of monitoring: Employ monitoring plan by year 6 for remaining area.

8 YEARS

Adequately support focus areas: Initiate remaining focus areas in 8 years.

10 YEARS

Enhance Row Crop Operations: All strategies should be employed in 10 years.

Augment mine reclamation projects: Enhance 10,000 acres of mine reclamation projects for early successional wildlife. Renovate 10,000 acres of bond released lands for early successional wildlife.

Revolutionize Grazing Operations: Employ 8 strategies in 10 years.

Spawn participation in cost-share programs, particularly those designed for quail: All strategies should be employed in 10 years.

Amplify prescribed burning across the landscape: All strategies should be employed in 10 years.

Establish Kentucky-based quail research: Employ 3 strategies in 10 years.

Generate public interest and awareness about bobwhite: Employ a minimum of 20 strategies over 10 years.

Supply landowners the equipment to establish and manage quail habitat: Employ 4 strategies within10 years.

Build relationships with partners: Employ all strategies over a 10 year period; generating 25 partner agencies and organizations.

Design or plan developments in an environmentally-sensitive manner: Employ 3 strategies over 10 years.

Generate landowner interest: Employ a minimum of 5 strategies in 10 years on remaining focus areas.

Increase focal WMA staff: Employ 2 strategies on remaining WMA's in 10 years.

COUNTY RATING SURVEY

Name: **County:**

1. Rate the technical ability of FSA officials in this county.
   High Moderate Low

2. Rate the level of wildlife interest of FSA officials in this county.
   High Moderate Low

3. How well does the District Conservationist (DC) of this county communicate with/influence the farming community?
   High Moderate Low

4. Rate the level of wildlife interest of the DC for this county.
   High Moderate Low

5. How well do FSA & NRCS offices work together in this county?
   Good Fair Poor

6. Rate the level of landowner interest concerning wildlife habitat work in this county.
   High Moderate Low

7. Rate the level of landowner ability to perform habitat work in this county (equipment availability etc.).
   High Moderate Low

8. Rate the level of landowner interest towards Bobwhite Quail in this county.
   High Moderate Low

9. Overall, how would you rate this county?
   High (potential) Moderate Low No (potential)

ACRONYM GLOSSARY

CED: County Executive Director
CEPL: Conservation Education Program Leader
Co-op: Cooperative
CP-1: Conservation Practice 1 – Introduced Grass and Legumes
CP-2: Conservation Practice 2 – Native Grass
CP-21: Conservation Practice 21- Filter Strips
CP-25: Conservation Practice 25 – Rare and Declining Habitats
CP-29: Conservation Practice 29- Marginal Pastureland Wildlife Habitat Buffer
CP-33: Conservation Practice 33- Habitat Buffers for Upland Birds
CP-38: Conservation Practice 38- State Acres for Wildlife Enhancement
CREP: Conservation Reserve Enhancement Program
CRP: Conservation Reserve Program
CSP: Conservation Securities Program
DC: District Conservationist
DVD: Digital Video Disk
EQIP: Environmental Quality Incentive Program
FFA: Future Farmers of America
FLIR: Forward Looking Infrared
FSA: Farm Service Agency
GIS: Geographic Information Systems
GRP: Grassland Reserve Program
HIP: Habitat Improvement Program
KDFWR: Kentucky Department of Fish and Wildlife Resources
MVP: Minimum Viable Population
NASCAR: National Association for Stock Car Auto Racing
NBCI: Northern Bobwhite Conservation Initiative
NGO: Non Government Organization
NRCS: Natural Resources Conservation Service
PVA: Property Valuation Administrator
QU: Quail Unlimited
RAM 124: Reclamation Advisory Memorandum 124
RC&D: Resource Conservation and Development
SEQSG: Southeast Quail Study Group
SWAP: State Wildlife Action Plan
USDA: United States Department of Agriculture
USGS: United States Geological Survey
USFWS: United States Fish and Wildlife Service
WHIP: Wildlife Habitat Incentive Program
WMA: Wildlife Management Area

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Finally, we would like to take this opportunity to recognize the landowners of Kentucky. Over the last 20 years, KDFWR has worked with over 12,000 landowners owning more than 2 million acres of land. Obviously we cannot recognize individuals by name, but they are and will be the backbone of bobwhite restoration. Many of these individuals have been or will become the champions for the cause in their local communities. Communities of people will bring back bobwhite. It's really that simple. We look forward to working with them and their neighbors as this plan becomes reality on the ground.

"It's not too late at all. You just do not yet know what you are capable of."

– Mahatma Gandhi

WHERE HAVE ALL the quail gone? They fell in the wake of modern agriculture, development, and society's desire for the manicured landscape. Row crop practices are much "cleaner" and larger-scaled. Small fields, weeds, bugs, and brambles are few and far between, and shrublands have matured to forestlands. Kentucky's native grasslands have been transformed to a sea of fescue while the mower decimates thousands of acres of potential habitat annually. The plight of quail is not the fault of the farmer, but that of human advancement. Farming has adapted to meet the demands of society. Society can adapt farming and land management through an investment in conservation creating a better future for themselves and bobwhites.

Habitat is ROUGH around the Edges

Kentucky UNBRIDLED SPIRIT