Proceedings from the Joint Meeting of

Southeast Quail Study Group & Southeast Partners in Flight

March 24-26, 2009 - Columbia, SC

Southeastern Working Group

Contents

National Bobwhite Technical Committee Chairman's Message:

The Southeast Quail Study Group was started in 1995 by a dedicated group of quail biologists assembled to address the problem of the declining bobwhite population in the Southeast. Since that time, the Southeast Quail Study Group has grown in size and stature, and is now recognized as the national voice of the bobwhite. The strength of the Group has always been unity of purpose of the membership and the ability to form collaborative partnerships to achieve common goals. The 2009 Joint Meeting of the Southeast Quail Study Group and the Partners in Flight Southeastern Working Group represents a continuation and strengthening of a long-standing, productive partnership between the two groups.

During the Southeast Quail Study Group Business Meeting at the Joint SEQSG/SEPIF meeting, the SEQSG Membership voted unanimously to change the name of the Group to the **National Bobwhite Technical Committee (NBTC)**. The process of pursuing a name change for the Group started in 2007 and culminated in the vote held on March 26, 2009. Concurrent with the revision and expansion of the NBCI, the broadening of the SEQSG to include all states in the historical range of bobwhites will strengthen our collective efforts and influence on bobwhite conservation.

With the name change numerous other changes to the group will occur, some major and some relatively minor. Substantive changes to the group bylaws took place immediately with completion of the vote. Revised bylaws will be posted soon on the website and additional changes to the bylaws will occur at the next meeting of the NBTC which will take place **August 3-6, 2010** in Wichita, Kansas.

This change is entirely positive for the group, for the NBCI, and for bobwhite conservation. A part of me is sad to see the passing of the Southeast Quail Study Group, but in reality our membership, reach, and influence has been broader than the Southeast for a number of years. Those of us who were a part of the formation of the Southeast Quail Study Group in 1995 and all members can take pride in knowing that we are part of a group that has remained true to its original purpose and goals, and is now expanding to become an even bigger and more powerful force in bobwhite conservation. As the **National Bobwhite Technical Committee**, we will maintain our focused, problem-solving approach to bobwhite conservation and a working group format for our annual meetings.

I would like to thank our meeting sponsors and the many volunteers from both groups who worked diligently and tirelessly to make the meeting a success. I also want to thank each of you for your participation in the 2009 Joint SEQSG/SEPIF Meeting.

I hope to see you in Wichita in August, 2010!

Sincerely,
Billy Dukes, Chairman
National Bobwhite Technical Committee

Southeast Quail Study Group Honors Stan Stewart

Stan Stewart, Alabama Department of Conservation and Natural Resources, received the 2009 Southeast Quail Study Group (SEQSG) Annual Award for his contributions to the knowledge and management of bobwhite quail in the Southeast. Mr. Stewart was honored with the award at the SEQSG's annual meeting, the first to be held jointly with Southeast Partners in Flight, in Columbia, South Carolina on March 25, 2009.
"It is an honor to receive this award from such a dedicated group of professionals, who know bobwhite conservation is about more than just quail, but also about a quality of life that we don't want to see disappear," Stewart said. "Without a doubt this is a highlight of my career."

Stewart has a Masters Degree in Wildlife Science from Auburn University and a Bachelors Degree in Wildlife Biology from the University of Georgia. He is certified by The Wildlife Society, a professional non-profit scientific and educational association dedicated to excellence in wildlife stewardship.

Since starting his career with the Alabama Department of Conservation and Natural Resources (ADCNR) in1981, Stewart has worked diligently toward the restoration of quail population and habitat improvement in Alabama. Stewart has served as an Administrative Staff Wildlife Biologist in Montgomery since 1990. Prior to Montgomery, Stewart was stationed at the Covington Wildlife Management Area (now the Geneva State Forest).

Stewart was instrumental in the formation of the Alabama Quail Council and has worked closely with the Alabama Cooperative Fish and Wildlife Research Unit to stimulate applied quail research in the state. An active member of the SEQSG Forestry Committee since its inception in 1995, Stewart has also been a featured speaker at several quail workshops and landowner forums throughout Alabama.

In addition to his field work, Stewart has written extensively about quail and land management. His 2005 publication, *Ecology and Management of the Bobwhite Quail in Alabama*, serves as a guidebook for landowners who want to increase the number of quail on their property. The publication provides information on quail taxonomy, distribution, history and status, habitat requirements, habitat management, predation and predator management and hunting. Stewart has also been published in *Quail Unlimited Magazine, Covey Rise,* and *Alabama's Treasured Forests* among other publications.

"Stan is a very knowledgeable quail biologist who understands the little subtleties in habitat management that can make a big difference to quail population," said Corky Pugh, ADCNR Wildlife and Freshwater Fisheries Division Director. "His passion for quail epitomizes the commitment shown by so many of our employees to their given field."

In a nomination letter to the SEQSG Awards Committee, Billy Dukes, Chairman of the Southeast Quail Study Group, praises Stewart as a, "Muddy boots biologist, who represent one of the passionate and unsung heroes of quail management and habitat restoration."

2008 PIF Leadership Award is given to Laurel Moore Barnhill

Each year, Partners in Flight presents awards to those individuals, groups or organizations that have made exceptional contributions to the field of landbird conservation. Awardees are recognized in one of four categories: Leadership, Investigations, Land Stewardship, and Public Awareness. The leadership award honors an individual or group that demonstrates outstanding guidance and direction that contributes, or has contributed to, advancing PIF conservation efforts.

This award recognizes **Laurel Moore Barnhill's** tireless leadership in building multiple partnerships among state, regional, and national bird conservation efforts. She has served as a voice for state-level issues and on-the-ground conservation in groups ranging in scale from Joint Ventures to multi-national committees. Laurel has also been an integral part in bringing together the game and nongame bird conservation community, both in the state-level and multi-state conservation projects. As a state biologist who is actively involved in regional and national groups, Laurel has been able to effectively integrate conservation efforts across multiple scales and administrative boundaries to ensure that sparse conservation funds have been used wisely.

Laurel Moore Barnhill in center. Photo was taken at the North American Conference by USFWS.

State Reports

State Report Alabama

Submitted by: Stan Stewart, Alabama Wildlife & Freshwater Fisheries

Bobwhite Population Status

Alabama breeding bobwhite populations have declined by more than eighty percent since breeding bird surveys were initiated in 1966. A statewide five-year average of approximately 45 whistling males per survey route (1966-1970) has declined to 8 whistling males per route (2001-2005). The dramatic loss of bobwhites is reflected in quail hunting activity and quail harvests. During the 1966-67 hunting season, 92,845 quail hunters hunted 964,456 man-days and harvested 2.77 million quail. In 1980-81, 66,288 quail hunters hunted 509,384 man-days and harvested 1.38 million quail. As of the 2007-08 hunting season, quail hunter numbers are down to 13,500, quail hunting activity to 70,900 man-days, and bobwhite harvest to 340,000. The number of wild versus pen-reared birds in the harvest is undetermined.

Bobwhite Restoration Initiatives

Various habitat initiatives continue on public lands across the state to restore habitat types suitable for bobwhites. The Alabama Division of Wildlife and Freshwater Fisheries initiated a shortleaf pine-bluestem restoration project on the Freedom Hills Wildlife Management Area in the northwest part of the state. This project is restoring a land cover type that was historically prevalent in the region and will benefit a number of declining wildlife species including the bobwhite. A longleaf pine restoration project is underway on the Barbour Wildlife Management Area in southeast Alabama to restore a longleaf pine-bluestem community to benefit bobwhites and other species dependent on fire-maintained habitats. A longleaf pine renovation project is in progress on the Fred T. Stimpson Wildlife Sanctuary in southwest Alabama. Thinnings and prescribed burns are utilized to create stands of open canopy longleaf and native herbaceous groundcovers to provide improved habitat for bobwhites and other wildlife species.

The USDA Forest Service, in cooperation with the Alabama Division of Wildlife and Freshwater Fisheries and other partners such as Quail Unlimited, Alabama Power, and the National Fish and Wildlife Foundation, continues with the Choccolocco Upland Initiative on the Choccolocco Wildlife Management Area and Shoal Creek District of Talladega National Forest. The initiative tailors prescribed fire regimes and forest management practices to enhance bobwhite productivity within a context of longleaf pine restoration and red-cockaded woodpecker management. The Forest Service is engaged in a similar initiative with its Elliotts Creek Quail Area on the Oakmulgee Wildlife Management Area, Oakmulgee District of Talladega National Forest.

A Conservation Reserve Program State Acres for Wildlife (SAFE) project was approved for the Black Prairie region of west Alabama as a joint project with Mississippi. The goal of the project is to restore native grassland habitats for rare, threatened, and declining species that are dependent on native prairie communities within the Blackland Prairie region of Alabama and Mississippi. The objective is to enroll 5,000 acres within three years. Sign-up in Alabama began in June, 2008.

Alabama Wildlife & Freshwater Fisheries held meetings with the Alabama Surface Mining Commission and Alabama Coal Association to explore bobwhite habitat restoration on surface mining reclamation sites. The various companies and organizations represented at the meetings were supportive of the efforts and were interested in experimenting with the inclusion of plant materials that would provide habitat for quail and also meet mining reclamation standards.

Private Lands Outreach

The Alabama Division of Wildlife and Freshwater Fisheries and USDA Natural Resources Conservation Service continue in a cooperative agreement that funds wildlife biologist positions to deliver wildlife technical assistance to landowners who participate in USDA conservation programs. The biologists are employed by ADWFF and located in NRCS offices. Four positions were staffed, but have recently been reduced to three due to a retirement.

State Report Arkansas

Bobwhite Population Status

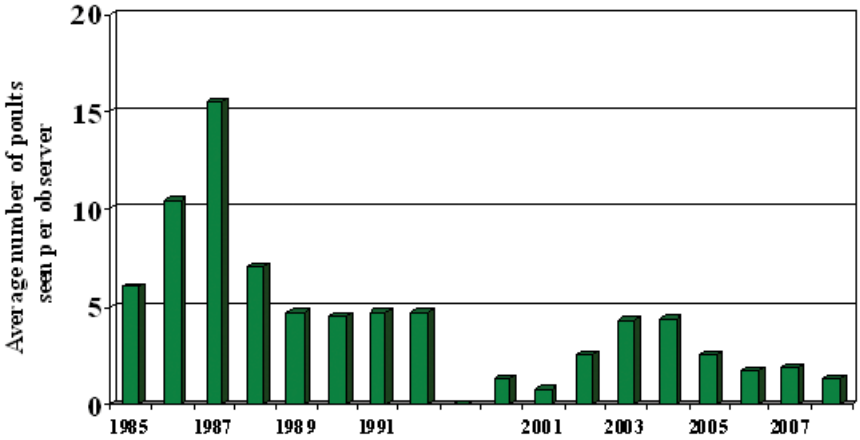
According to Breeding Bird Survey data, northern bobwhite numbers in Arkansas declined by 42 percent during the period of 1966-1980. This rate of decline accelerated to 5 percent annually during the period of 1980-1998.

Currently, the Arkansas Game & Fish Commission continues to monitor population trends annually through quail call counts conducted during late May and quail brood surveys conducted from June 15-August 31. Since the inception of these survey methods in the early 1980's, data from both of these surveys also indicate a precipitous decline in quail numbers in Arkansas (Figure 1 & 2). In 2004, the number of routes was increased to 2 routes per county (150 total routes). The data presented below was derived from only those 57 routes that have been surveyed annually throughout the entire survey period.

The 2008 statewide average of 1.4 quail heard per mile represents a 22% decrease from the 1.8 quail heard per mile during 2007. The 2008 quail call count average is the same as the survey's low point of 1.4 quail heard per mile in 2000. Regionally, during the 2007 survey, the number of quail heard per mile ranged from 0.3 in the Gulf Coastal Plain to 2.5 in the Ouachitas.

The 2008 quail brood surveys indicated a statewide average of 1.3 poults seen per observer. This represents a 32% decrease from the 1.9 poults seen per observer in 2007.

Figure 2. Quail Brood Survey Trend 1985-1992, 2000-2008



Quail Management Initiatives

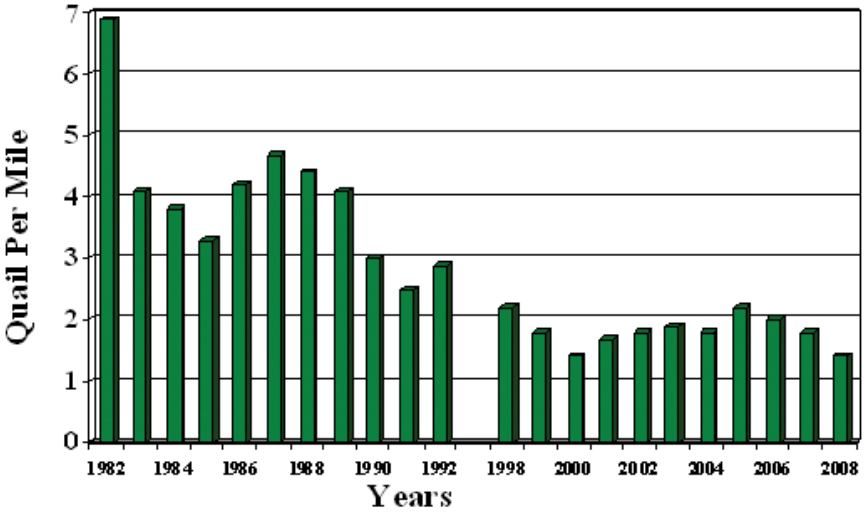
As a result of the approval of the Arkansas Game & Fish Commission's Strategic Quail Management Plan in May 2001 and the subsequent release of the Northern Bobwhite Conservation Initiative (NBCI) in March 2002, the Arkansas Quail Committee has been formed in an attempt to achieve the goals outlined in the two plans. The Arkansas Quail Committee is a coalition of representatives from several organizations including the Arkansas Game & Fish Commission, NRCS, U.S. Forest Service, U.S. Fish & Wildlife Service, Cooperative Extension Service, FSA, Arkansas Forestry Commission, Arkansas Natural Heritage Commission, Quail Unlimited, industrial timber companies, private consultants and academia.

The first action item of the Arkansas Quail Committee has been to initiate the development of 2 quail "focal areas" within each of the three Bird Conservation Regions (BCRs) within the state as outlined in the NBCI. At this time, two focal areas have been identified (one in Searcy Co. and one in Fulton Co.), both of which lie within the Central Hardwoods BCR of northern Arkansas. Each of these focal areas are comprised of relatively contiguous tracts of property each in excess of 17,000 acres.

The two quail focal areas were declared as "Special Project Areas" for the 2003-2008 WHIP sign-ups. Along with the status of "Special Project Area", each focal area received an allocation of up to $100,000 in WHIP funding for each sign-up to provide 75% cost-share on select practices to landowners within the focal areas. In addition, the Arkansas Game & Fish Commission provided the remaining 25% cost-share on those same practices to insure that the landowners did not incur any out-of-pocket expenses. In 2006 we initiated a rental payment of $40/ac for open lands to increase enrollment of this type of land. To date, there have been over 11,000 acres enrolled in WHIP within the Fulton Co. area and over 1,600 acres enrolled within the Searcy Co. area. During the 2007 WHIP sign-up, eight additional landowners in Fulton Co. and one additional landowner in Searcy Co. enrolled in the program. However, many interested landowners did not get in due to a decrease in available WHIP funding.

Initial habitat manipulations began within the two focal areas in October 2003. Meanwhile, members of the Arkansas Quail

Figure 1. Quail Call Count Trend 1982-1992, 1998-2008



Committee have been working to gather baseline data on these two areas pertaining to quail numbers, resident songbird numbers as well as vegetative data in order to document responses to future habitat manipulations.

Two new focal areas were identified and initiated in 2007. Those areas are a 9,700 acre area near Damascus in Central Arkansas and an area near Fort Chaffee consisting of over 160,000 acres. The Damascus area is being funded with WHIP (50%), AGFC (25%), and Southwestern Energy (25%) monies and had 11 total landowners enrolled in the first two years. The Damascus focal area was expanded to around 35,000 acres in its second year. The Fort Chaffee area is being funded by EQUIP and had 5 landowners enroll in the first year. The Fort Chaffee area's focus is on rotational grazing with inclusion of at least one NWSG paddock.

Additionally, members of the Arkansas Quail Committee worked in partnership to develop a Landowner Incentive Program (LIP) proposal that was funded in February 2004 through the U.S. Fish & Wildlife Service. The grant is a partnership between the Arkansas Game & Fish Commission, The Nature Conservancy, Arkansas Forestry Commission and Arkansas Natural Heritage Commission and has establish 2 burn crews that conduct prescribed burns on private lands in Arkansas within 5 pre-determined areas (including the two quail focal areas within the Central Hardwoods BCR). During this past burn season, these two burn crews conducted 16 prescribed burns consisting of 2,002 acres in three focal areas. This brings the to-date total for LIP to 10,184 acres over 58 burns. Burning was somewhat hindered this past year due to adverse weather conditions. In addition to prescribed burns, a landowner workshop was conducted in Fulton County on 9/5/07. Sixty-eight guests from the Interior Highlands focal area attended a day of land management presentations and unfortunately our field portion was rained out in the afternoon. A private landowner prescribed fire workshop was also held in April 19, 2008 at the Batesville Experiment Station. Landowners were introduced to prescribed fire through half day of classroom lecture and activities and a half day of prescribed fire. There were 25 landowners in attendance.

In order to promote the Continuous-CRP practice CP-33, several landowner meetings were held around the state in strategically selected agricultural communities during January and February 2008. Overall, the meetings were well received with attendance averaging about 40 individuals. The approval of CP-33 contracts has been slow due to the extensive coordination required between our agency, NRCS, FSA and the landowners. In addition, once planting season arrived, many landowners are now waiting until after their crops have been harvested this fall to enroll in the program. The AR Quail Committee intends to monitor contracts spatially to identify "clusters" of CP-33 contracts that will serve as focal areas for the Mississippi Alluvial Valley BCR. As of May 2008 more than 5,000 acres have been allocated in Arkansas.

Arkansas has also had a SAFE program approved. Part of that will be CP38E – Native grasslands. There are 9,700 acres of SAFE approved for Arkansas and 4,000 acres will be native grass with the ability to plant up to 5% covey headquarters throughout those whole grass fields. Response for the SAFE practices appears to be very positive, with one county already reporting they have signed up 1,000 acres of grassland.

Research

A research grant received through the NRCS/MSU Bobwhite Restoration Project has provided funding for a combined research project on both the Searcy Co. and Fulton Co. focal areas. The project is titled: "RESPONSE OF NORTHERN BOBWHITE POPULATIONS AND THE ASSOCIATED AVIAN COMMUNITY TO LANDSCAPE-LEVEL MANAGEMENT IN THE CENTRAL HARDWOODS BCR".

This focus of the project is determining the scale (intensity and number of acres) of habitat management required to elicit population-level responses of bobwhites. Bobwhite management on several small (<200 acres) farms scattered throughout the landscape in piecemeal fashion may not produce measurable population-level responses; however, concentrating management efforts to a few well-defined focal landscapes may produce measurable responses. Two privately owned focal landscapes (>15,000 acres each) in north-central Arkansas (Central Hardwoods, BCR 24) will be managed to provide habitat for bobwhites by using early succession field borders around pastures and hay fields, prescribed burning and thinning of forested lands, and restoration of native warm season grasses. This research will assess the extent to which management guidelines specified in the NBCI will create a landscape that will increase productivity and population densities of bobwhites. Specifically, this research will determine 1) the collective response of bobwhite and songbird populations to landscape-level habitat manipulations and 2) determine practice-specific bobwhite use (nesting and brood rearing) of field borders, prescribed burned forests, and prescribed burned and thinned forests.

Data collection is nearing completion with a final report due by October. Initial data shows an increase in quail and songbird use in managed areas.

State Report Florida

Since our last report, we have continued to market the strategies outlined in our Strategic Plan within our own agency as well as with other State and Federal organizations that own and manage lands across Florida. An internal website was created to provide the Florida Fish and Wildlife Conservation Commission (FWC) staff with background and strategic information regarding the plight of northern bobwhites in Florida along with insight associated with ongoing research and management efforts. Across the state, training was conducted with biological staff on distance sampling (covey call counts) to increase the understanding of this survey technique and increase precision of data collections.

In partnership with Tall Timber Research Station (TTRS), efforts continue to refine survey methodologies for low density populations of bobwhites on public lands. This includes refining the detection function associated with distance sampling along with standardization of surveys using stimulation.

Associated with the revision of the Northern Bobwhite Conservation Initiative (NBCI), FWC worked in cooperation with TTRS to help plan and solicit participation for the recently completed habitat assessment workshop.

In addition to the above activities, there are four ongoing projects in Florida that target northern bobwhites. They include the South Florida Quail Project, the Babcock-Webb WMA study, the Upland Ecosystem Restoration Project (UERP) and a series of research projects being conducted by the University of Florida. A brief summary of all of these projects follows.

Chuck McKelvy, FWC

South Florida Quail Project Update

2009 will mark the 6th year of research on private land in central and south Florida. We continue to monitor approximately 120 radio tagged bobwhites on an annual basis. The purpose of the monitoring effort is to track changes in key demographic parameters through time as they relate to environmental and management factors. This winter, we embarked on a pilot study involving bobwhite covey movements in relation to hunting pressure. Furthermore, we are using GPS technology to investigate pointing dog interactions with bobwhite coveys. We acknowledge the support of our private donors and the cooperation with the Florida Fish and Wildlife Conservation Commission.

James A. Martin PhD. Candidate, Tall Timbers Research Station and Land Conservancy/University of Georgia

Managing the harvest of northern bobwhites on the Babcock-Webb Wildlife Management Area in southwest Florida.

The second year of a heuristic approach to regulating the bobwhite harvest on the Babcock-Webb WMA was completed in 2008. The goal of this phase of the bobwhite study was to determine if reducing hunting pressure reduced mortality due to hunting, and subsequently increased over-winter and annual survival rates. Prior research results indicated that annual bobwhite survival rates were excessively low on the WMA and that a major factor contributing to the low survival was harvest rate during the annual quail hunting season. Annual survival rates during 2002 to 2007 varied from about 6% to 12%. Annual harvest rates (including crippling losses) ranged from 33% to 44% during the 6-week hunting season. From 2002 to 2006 hunting was conducted on 4 zones, 2 with limited access and 2 with unlimited access. Harvest rates were significantly higher and survival rates were lower on the zones with unlimited access. In 2007, hunting regulations were modified to establish a quota for the total quail hunt-days permitted on the WMA, and to balance the hunting pressure among the 4 hunt zones so that an approximately equal number of hunt-days occurred on each zone. The quota was based on harvest/hunting pressure data from the previous 3 hunting seasons using the following 3 criteria: (1) the estimated mean pre-hunt population, (2) the mean number of hunt-days, and (3) the mean birds harvested per hunt-day including birds crippled but not retrieved. The objective was to reduce the harvest mortality rate from a 3-year mean of 42.8% to a maximum of 30%. This protocol required a reduction of hunt-days from a 3-year mean of 1168 (2004-06) to 848 (2007). Using the same criteria updated for the period 2005-2007, the quota for 2008 was 832 hunter-days. In both years all hunters who were present at the check station at 8 am the day the quota was filled were allowed to hunt.

The hunting regulation modifications yielded the following results:

2007

(1) The harvest in 2007 was 1051 quail. This was a reduction of 42.9% from the 3-year mean (1843 quail: 2004-06), and a reduction of 38.0% from 2006 (1695 quail).

(2) The number of hunt-days was 876 in 2007. The desired number of hunt-days (848) was exceeded to allow access to all hunters who were at the check station by 0800 the last day of the hunt. Hunt-days in 2007 were 25.0% below the number for the 3-year mean (1168), and 22.5% below the previous year (1130).

(3) The number of birds harvested per hunter-day was 1.2, a reduction of 23.6% from the 3-year mean (1.57) and 20.0% from 2006 (1.50).

(4) The harvest rate, including un-recovered cripples was 39.3% in 2007. This was marginally lower than the 3-year mean, but was 14.6% greater than the harvest rate in 2006 (34.3%). It was disappointingly higher than the desired harvest rate of 30%, particularly in light of the fact that the hunting pressure and harvest objectives met the projected estimates within acceptable limits.

Our post-hunt analysis indicated that the final results for 2007 were seriously affected by a sharp decline in the pre-hunt bobwhite population. The projection for the 2007 harvest mortality rate was based on a projected pre-hunt population of 4442 birds. However, the 2007 post-hunt Lincoln-Peterson analysis indicated that there were only 2634 birds present at the beginning of the 2007 quail hunt, a decline of 40.7% from the 3-year mean. Thus, the most serious shortcoming of the current approach to managing the hunting mortality rate is the method for estimating the pre-hunt population. Had the actual 2007 population approximated the projected population, and had all other parameters remained constant, the 2007 hunting mortality rate would have been 24.2%.

2008

1. The harvest in 2008 was 874 bobwhites.

This was a reduction of 42.2% from the 3-year mean (1513:2004-07), and a reduction of 16.8% from 2007(1051 quail).
2. The number of hunt-days was 849 in 2008, 19 more than the allotted quota, 19.9% fewer than the 3-year mean, and similar to 2007.
3. The number of birds harvested per hunter-day was 1.2, 16.1% less than the 3-year mean, and identical with the previous year.
4. The harvest rate was 28.2% including unrecovered cripples. This marks the first year of the study that the harvest rate fell below the desired 30% level.

Our post-hunt analysis revealed these relevant statistics that produced the desired harvest rate: (a) The population had increased from 2007 by 385 birds (14.6%); (b) the number of hunt-days was slightly fewer; and (c) harvest/hunter day was the same as the previous year.

Looking forward, the research effort will emphasize improving our estimate of the pre-hunt bobwhite population. The fall covey count may have the most to offer in this respect. In 2006 a pilot study was accomplished on one unit of the WMA, and in 2007 the study was extended to include all units. This effort was continued in 2008, with the emphasis being to modify the technique to enhance its suitability specifically for the Babcock-Webb Wildlife Management Area. Results varied widely between 2007 and 2008. A detailed analysis of the covey call counts for those 2 years is currently underway.
Ralph W. Dimmick, University of Florida, Coop Unit

Upland Ecosystem Restoration Project (UERP)

The Upland Ecosystem Restoration Project (UERP) continues to prioritize, design and implement on-the-ground management in an effort to increase populations of northern bobwhites and other grassland obligate species. Long-term research has demonstrated that when habitat is managed to maintain early-successional conditions, bobwhite populations can remain steady or even increase.

To that end, UERP has successfully engaged the State's three primary land management agencies (Division of Forestry, Fish and Wildlife Conservation Commission and Department of Environmental Protection), as well as other publicly-owned lands to address conservation threats (i.e. incompatible fire regime) and changing management philosophy towards increasing populations of declining fire-dependent species.

Increased land management activities have begun on seven UERP focal properties (Three Lakes WMA, Blackwater River State Forest, Jennings State Forest, Apalachicola National Forest, Ocala National Forest, Volusia County and Myakka River State Park) representing approximately 72,000 acres. Management actions on UERP sites calls for increased fire frequencies, appropriate scales and season of fire, timber management, and mechanical treatments to increase the suitability of the ground cover for a suite of species dependent on plant physiognomy and diversity maintained by frequent fire. We anticipate target species will positively respond to habitat changes and management (fire, mechanical and/or chemical). In addition, we are excited to provide exceptional recreation for the public in the near future.
Greg Hagan, Project Coordinator, Tall Timbers Research Station and Land Conservancy

Ongoing Research Projects – University of Florida

Wildlife and habitat responses to prescribed burning, roller chopping, and grazing in Florida rangelands—At more than 100 locations on 40 south Florida ranches, we are examining avian (with an emphasis on quail) and invertebrate population and community, habitat, and forage responses to growing and dormant season prescribed burning, roller-chopping, and grazing. The study will run from 1/2006-12/2009 and is funded by FWC and UF/IFAS. (Emma Willcox, PhD student, and Mary Hobby, MS student)

Northern bobwhite restoration—We are restoring northern bobwhite habitat on ~2200 acres at the Devil's Garden Ranch/ Alico, Inc., translocating wild quail in to the area, and examining habitat restoration techniques and the potential of translocating wild birds to establish or enhance bobwhite populations. The site will ultimately serve as a quail habitat and population demonstration area. The study began in 6/2006 and will continue for at least 3 years. Funding is being provided by Alico, Inc. and UF/IFAS. (Brandon Schad and Robert Hoffman, MS students)

Cattle producers and natural resource agencies in the Southeast: perspectives on wildlife management and conservation behaviors—We are conducting mail and internet surveys of more than 2000 ranchers and natural resource agency personnel from across the Southeast to understand their values, perceptions, and attitudes towards wildlife, private lands management and programs, and barriers to cooperation and program implementation on private lands. Farm Bill and other incentives programs are being emphasized. The project will run from 1/2006-12/2009 and is funded by UF/IFAS and USDA. (Adam Willcox, PhD student) ***Bill Giuliano, University of Florida***

State Report Georgia

I. STATUS

The 1966-2006 USGS Breeding Bird Survey Data show bobwhite populations in Georgia declining at the rate of - 4.2 percent per year. Likewise, Georgia Department of Natural Resources, Wildlife Resources Division (WRD) surveys show both quail hunter numbers and estimated harvest have declined dramatically during this time. In 1966 an estimated 135,000 hunters harvested about 3.3 million quail while in the 2005 – 2006 season an estimated 22,850 hunters harvested 622,123 quail, of which 494,162 (79%) were pen reared and 127,961 (21%) were wild (note: 1966 and 2005 – 2006 estimates derived by different survey techniques). In general, quail populations are very low across the Ridge and Valley, Blue Ridge Mountains, Piedmont and Lower Coastal Plain physiographic provinces; with populations in the Upper Coastal Plain varying from moderate to low with localized high-density populations on properties being managed intensively for quail.

II. MANAGEMENT INITIATIVES

WRD Private Lands Program

Georgia WRD's Private Lands Program (PLP) includes the Bobwhite Quail Initiative (BQI), Forest Stewardship Program (FSP), Forestry

Wildlife Partnership Program (FWP) and Farm Bill cooperative positions. The PLP is currently coordinated and delivered by: 1 program manager, 3 BQI biologists, 2 FSP biologists, 2 Farm Bill cooperative biologists, 1 administrative assistant and 1 secretary. The following provides a summary of accomplishments for bobwhites under each of these programmatic efforts.

Bobwhite Quail Initiative

For 2006-2008 there were 118 Bobwhite Quail Initiative (BQI) Cooperators, with 218 crop fields and 53 forest stands enrolled in the 15 county program area. In total, these Cooperators have established 267 miles of field borders, hedgerows, and filter strips and along with other BQI practices have positively impacted more than 13,354 acres for bobwhites, certain songbirds and various other wildlife. Farm Bill programs and practices are key even within the BQI counties for achieving NBCI restoration objectives. Additionally, BQI wildlife biologists provided technical guidance across 84,695 acres in 2008.

Based on 2008 summer monitoring (incidental observations during habitat compliance checks) bobwhite occurrence averaged 1.6 on BQI treatment fields and 0.2 on control fields. The 2008-bobwhite detection rates were 15% and 60% below the long-term averages for treatments and controls, respectively. Pooled across all years 2003 – 2008, bobwhite occurrence averaged 1.9 (SE=0.13) for treatments and was significantly higher (ANOVA, F=19.1, df=1, P=0.00001) than the 0.5 (SE=0.10) detected for controls. In addition to bobwhites, incidental observations of sparrow species, songbird species and rabbit species were over 300% higher on BQI treatment fields than controls (Table 1).

Table 1. Incidental sightings on BQI habitat treatment fields during summer compliance checks 2003 - 2008

Year	Fields Sampled	Bobwhites Per Fld	Running Avg	Sparrows Per Fld	Songbirds Per Fld	Rabbits Per Fld	Cum. Wildlife
2003	253	2.4	2.4	NA	NA	NA	NA
2004	170	1.5	2.0	NA	NA	NA	NA
2005	93	2.3	2.1	0.5	2.4	0.2	5.4
2006	106	2.0	2.1	1.7	4.4	0.1	8.1
2007	122	1.4	1.9	2.2	4.6	0.1	8.3
2008	181	1.6	1.9	1.8	9.1	0.2	12.6

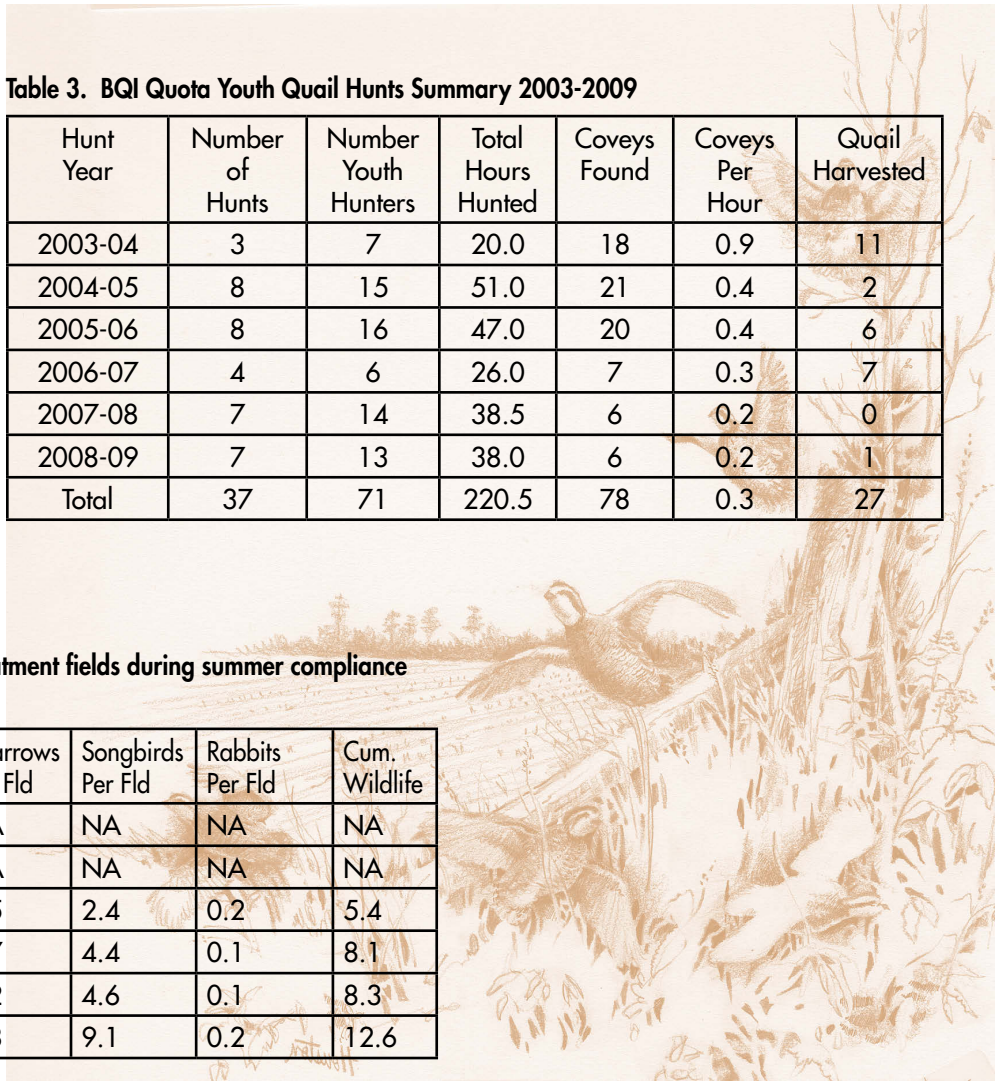
Table 2. Incidental sightings on BQI paired control fields during summer 2003 - 2008

Year	Fields Sampled	Bobwhites Per Fld	Running Avg	Sparrows Per Fld	Songbirds Per Fld	Rabbits Per Fld	Cum. Wildlife
2003	39	1.3	1.3	NA	NA	NA	NA
2004	26	1.0	1.2	NA	NA	NA	NA
2005	30	0.4	0.9	0.0	0.1	0.0	0.5
2006	40	0.3	0.8	0.1	1.3	0.0	1.4
2007	37	0.1	0.6	1.1	2.8	0.1	3.7
2008	56	0.2	0.5	0.2	2.9	0.0	3.3

As in past years, the 2008 - 09 BQI Youth Quota Quail Hunts on volunteer BQI Cooperator farms were popular, successful and highly sought after. A total of 7 hunts were conducted with 13 youth participating, hunting for 38 hours, locating 6 coveys and harvesting 1 bird. Across all years the average covey find rate has been 1 covey per 3 hours of hunting (Table 3). However, it is important to note that these hunts are conducted regardless of weather conditions and hunters may choose to use their own dogs, which can vary greatly in quality. Many of the participating youth had never hunted wild quail before and these hunts have provided exciting, educational and memorable experiences. Many favorable comments and letters of appreciation have been received from both parents and youth.

Table 3. BQI Quota Youth Quail Hunts Summary 2003-2009

Hunt Year	Number of Hunts	Number Youth Hunters	Total Hours Hunted	Coveys Found	Coveys Per Hour	Quail Harvested
2003-04	3	7	20.0	18	0.9	11
2004-05	8	15	51.0	21	0.4	2
2005-06	8	16	47.0	20	0.4	6
2006-07	4	6	26.0	7	0.3	7
2007-08	7	14	38.5	6	0.2	0
2008-09	7	13	38.0	6	0.2	1
Total	37	71	220.5	78	0.3	27



During 2008 BQI biologists made substantial efforts at public outreach relative to bobwhite restoration including BQI and NBCI.

Table 4. BQI Information Education Summary 2000 - 2008

Year	Programs & Present.	Field Day Present.	Total People	Professional Articles/Abs	Popular Articles/ Interviews	TV Spots Videos	Display Booth Man Days
2000	14	2	751	1	2	3	5
2001	6	8	888	1	4	4	10
2002	2	6	1,113	5	5	2	6
2003	17	22	2,738	2	8	4	8
2004	30	11	1,650	4	19	0	7
2005	19	1	961	0	8	0	2
2006	31	3	1,266	2	11	5	2
2007	45	9	2,616	0	10	1	9
2008	68	8	2,251	0	12	1	2.6
Totals	232	70	14,234	15	79	20	51.6

The BQI is primarily funded through the proceeds of an automobile license plate, which is one of three license plates that generate funding for specific WRD programs. The other two wildlife license plates support Non-game Section programs. The first BQI license plate was issued in December 2001 and the current plate issued in 2003. Both versions have featured similar scenes – a white-tailed deer with bobwhites taking flight. The license plate sells for $25.00 and WRD receives $22.00 per plate. During January through November 2008 BQI license plate revenue was $483,750. Sales and revenue have declined substantially as numerous other license plate options have been created. **Georgia's BQI continues to show that bobwhites can be increased on working farm and forestlands. The key ingredients are suitable landscape, adequate funding for landowner incentives and dedicated technical staff for program delivery.**

Bobwhite Technical Team

The WRD formed the Georgia Bobwhite Technical Team (a 13 member multi-organizational task force of state, federal and private partners) in 2003 to work collaboratively with the implementation of state, private and federal programs to achieve NBCI goals and objectives in Georgia. In December 2005 these organizations signed a Memorandum of Agreement pledging support of NBCI and assistance as feasible with implementing NBCI in Georgia. An important step was taken in 2007 with the formation of the first Georgia NBCI Habitat Landowner Cooperative in Floyd County, Northwest Georgia. The WRD, Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), and Georgia Forestry Commission (GFC) collaboratively hosted two public meetings, which were well attended. A field day was conducted on one of the Coop farms in April 2008 with approximately 40 landowners attending. Currently, the Coop has 4 landowners with a total of 1,900 acres enrolled. In the fall of 2008 two Bobwhite Technical Team meetings were conducted to inform members about the NBCI revision process being led by Tall Timbers Research Station; and to interactively select Georgia's NBCI focal areas. Additionally, US Senator Saxby Chambliss (R GA) was recognized by the group for contributions to bobwhite conservation through the Farm Bill, particularly the recent pine tree thinning and burning provisions in CRP. A potentially positive effort catalyzed by the Bobwhite Technical Team meetings was the designation of an approximate 4,000-acre bobwhite focal area on Piedmont National Wildlife Refuge. Baseline monitoring has been conducted using fall covey counts and management practices are being applied to better integrate bobwhite management with that for RCWs. The management practices are designed to maintain open pine savanna with heavy thinning, relatively small burn units and a 2-year burn rotation. This provides one of the few opportunities for long-term management of large landscapes for bobwhites in the Georgia Piedmont and hopefully it will be successful and expanded in the future.

Bobwhite Translocation Policy

In 2006 WRD released a formal bobwhite translocation policy to assist landowners with expediting bobwhite population recovery across large and newly developed habitats. This policy permits the movement of wild quail by a WRD authorized agent from properties with high-density (>1 bird/2acres) bobwhite populations to properties with low-density (<1 bird/5acres) populations. Translocation permits run for up to three years and allow movement of 50 pair per 1,000 acres. Recipients must have least 1,500 acres of contiguous high quality habitat; baseline and post treatment fall covey count monitoring are required; and the release of pen reared quail and quail hunting are prohibited during the translocation period. Currently, two properties have qualified. Both properties have shown very positive results with population recovery being satisfactorily achieved 1-year post release one property thus negating the need for additional translocations.

(Submitted by Reggie Thackston, WRD PLP Manager)

Forest Stewardship, Farm Bill, Forestry For Wildlife Partnership, Southern Pine Beetle Program

Forest Stewardship Program (FSP)

Two FSP biologists reviewed 130 plans representing 28,473 acres; co-wrote 17 plans representing 6,229 acres; and processed nominations for 21 certified stewards representing 6,971 acres. Many other landowners were provided technical guidance; including 26 follow-up site visits

Forestry for Wildlife Partnership Program (FWP)

Georgia Power & Plum Creek received awards for participating in this voluntary annual program that promotes blending wildlife conservation into corporate forestry practices. Together they improved 937,000 acres for wildlife.

Conservation Reserve Program (CRP)
Georgia's increased its enrollment of CRP acres 4.8% this year, to a total of 328,327 CRP acres. A total of 62,051 acres have been enrolled in the CRP Longleaf Pine Practice (CP36); and a total of 3,522 acres of the allotted 5,600 acres have been enrolled in the CP 33 field buffer practice. Spring and fall monitoring show CP 33 treatment fields out performing controls. During 2008 bobwhite fall covey counts were conducted on 31 treatment and 31 control fields; and the average number of coveys per field was significantly greater (p=0.001) for treatments (1.97) than controls (0.61). A CRP SAFE (CP38) proposal was approved for enhancing expiring CP 11, CP3, and CP3A pine stands through thinning, burning, exotic grass control and planting of a nwsg/forb mix. A total of 4,800 acres were allotted and 68 acres have been enrolled. A marketing strategy is being implemented to increase participation. CRP provides $14 million annually to Georgia participants.

Environmental Quality Incentives Program (EQIP)
In 2006 PLP worked with NRCS to create the Sustainable Forest & Wildlife Management EQIP. This practice continues to allow landowners to choose two forest management intensity levels for wildlife and timber, of which one favors bobwhites through heavy thinning and frequent prescribed fire over a 10-year period. 1,364 acres were approved for thinning and 1,302 acres were approved for prescribe burning.

During 2008 three sites of approximately 20 acres each were planted in native warm season grasses as demonstration areas throughout Georgia, in Floyd, Hart, and Thomas Counties. Two field days were conducted at the NRCS Plant Materials Center demonstration site, with future field days tentatively planned for the other sites.

Wildlife Habitat Incentives Program (WHIP)
This program funded prescribe burning 165 acres of longleaf pine and hardwood, longleaf and hardwood tree planting for 261 acres, exotic plant species control and pest management on 2 acres, hedgerow management of 3,000 linear feet (with a minimum width of 30 feet), and 115 acres of upland wildlife habitat management.

Southern Pine Beetle Prevention Program (SPBPP)
This Georgia Forestry Commission funded program provides technical and financial assistance to landowners managing pine, predominantly for timber production purposes. To combat southern pine beetle outbreaks this program promotes healthier forests through more conservation-friendly management practices. During 2008 $154,764 were provided for pre-commercial thinning; $405,384 for release treatments on 10,186 acres and $58,241 for prescribed burning on 10,790 acres, however a majority of the burning was in over-stocked pine stands having less than 30% open-canopy coverage and therefore providing minimal bobwhite benefits. ***(Submitted by Eric Darracq, WRD Sr. Wildlife Biologist with input from Georgia NRCS, FSA, and GFC)***

III. RESEARCH UPDATES

Albany Quail Project

This summer marks the 17th consecutive year of fieldwork by the Albany Quail Project on Quail Plantations in southwest Georgia. This cooperative effort has taken a unique adaptive resource management approach where research results have immediately been applied in the field with results measured by quail density and hunting success. Many aspects of quail ecology, management, and hunting have been studied during this time with radio-transmitters placed on 9,804 wild quail. This science-based approach to management has resulted in quail populations and hunting success at or near record levels on many of the Albany area Plantations over the last decade.

Current research work includes an evaluation of different feeding rates on wild quail survival and hunting success, an evaluation of alternatives to high cost fertilizers for weed field growth, monitoring of cotton rat and hawk populations along with quail demographics, and the data analysis and publication preparation phase of the 7 year predation management project in conjunction with UGA, TTRS, and GA USDA-WS. We are also finishing up Theron Terhune's PhD project on relocation of wild quail in Georgia, which has resulted in several more projects around the southeast to create new population centers of wild quail by restocking. We are also conducting an experiment in Alabama where we are relocating wild quail onto a property that has traditionally released birds in an attempt to establish a wild population there. We also have two ongoing satellite projects where radio-tagged birds are being monitored year round to develop specific management strategies; one in Alabama and one in east Georgia.

Our field staff continues to be active in providing management advice on existing Plantation properties as well as with several large scale projects to develop new quail properties in Georgia, South Carolina, and Alabama. Much of the last year has been spent on coordinating the transition of the Albany Quail Project from Auburn University to being part of the game bird program at Tall Timbers Research Station. This transition was completed in January 2008. ***(Submitted by Clay Sisson, AQP Coordinator)***

Georgia WRD DiLane Wildlife Management Area Fall Covey and Predator Index Surveys

Fall Covey Count
With assistance from many WRD associates, wildlife program students from Ogeechee Technical College, the Albany Quail Project, and Tall Timbers Research Station, 23 listening stations on Di-Lane were surveyed between October 20-21, 2008 and most of the 23 listening stations were resurveyed on October 28, 2008. The surveys resulted in detection of 50 coveys. We heard at least 1 covey at each of the 23 listening stations with as many as 5 coveys being heard at 1 station. Listeners then used bird dogs to flush 10 coveys with an average covey size of 11.1 quail/covey. This data was analyzed using the Tall Timbers Research Station covey call survey formula. The final tally for the 4,462 acres was 107 coveys equaling 2.4 coveys/100 acres surveyed.

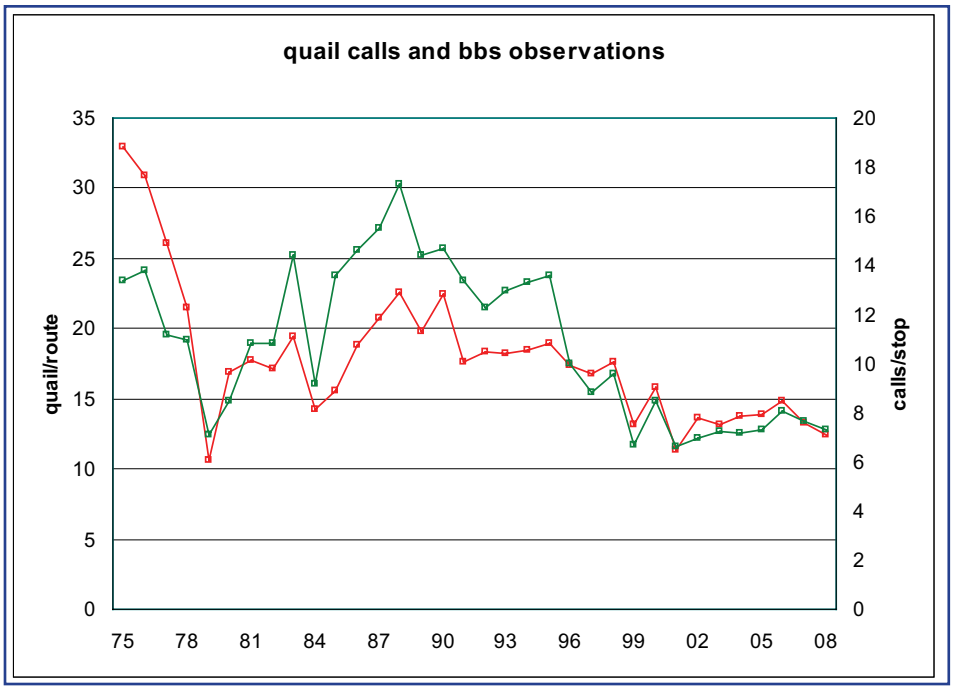
Predator Index Survey
Twenty-five scent post stations were monitored for 5 nights from October 28-30, November 3 & 5, 2008. The results were 79 visits by various mesomammalian predators (not including coyotes). The computed visitation rate for the 125 trap nights (25 sites x 5 nights) was 0.63 (excluding coyotes) and 0.66 (including coyotes). Visitation by species was as follows: 42 fox, 28 raccoon, 4 skunks,

3 bobcats, 1 armadillo, 1 opossum and 4 coyotes. This is considered to be an extremely high visitation index relative to bobwhite management and may be limiting further increases in the DiLane bobwhite population. ***(Submitted by I.B. Parnell, Game Management Region 3, Sr. Wildlife Biologist)***

State Report Illinois

Bobwhite Populations

The Illinois Department of Natural Resources annually collects trend data for bobwhite using 56, 20-mile routes in the 56 counties comprising the primary bobwhite range. Surveys are conducted by 25 district wildlife biologists. In June, observers record bobwhite calls heard in two minutes at 20 stops. Comparing call counts conducted in both 2007 and 2008, calls/stop decreased from 7.8 to 7.3 (6%). This was below the 5-year mean by 3% and was 33% below the mean of 1975-2007.



Habitat Trends

Habitat trends in Illinois are typical of the intensively farmed, eastern Corn Belt. Diversified farming systems, including small grains, hay, pasture and diverted acres, have been largely replaced by continuous corn and soybean production, creating an extreme shortage of undisturbed nest cover, roost cover and brood habitat. The state's primary range consists of 56 counties in west-central and southern Illinois with a total area of 18.7 million acres, about 52 percent of the state.

Illinois' bobwhite range can be further subdivided into three units based on land form and agricultural land use. Farm land in the Western Prairie Forest Unit (22 counties, 7.9 million acres, 78% farmland) is rolling and fairly diverse with farms averaging 65% row crops, 3% small grains, 16% agricultural grasslands (hay, pasture, crp grass) and 12% forest. Bobwhite numbers are low in this region with the average annual harvest/100 acres of farm land declining from 8.5 in 1956-69 to 1.2 from 1997-02 (-86%).

Farm land in the Southern Plain Unit (23 counties, 8.3 million acres, 76% farmland) is less rolling with farms averaging 69% row crops, 9% small grains, 14% agricultural grasslands and 8% forest. Bobwhite numbers were high in this region but have fallen dramatically (-82%) primarily as a result of intensified farming and development adjacent to the city of St. Louis.

The Shawnee Hills Unit (11 counties, 2.5 million acres, 53% farmland) is very rolling with farms averaging 45% row crops, 3% small grains, 31% agricultural grasslands (fescue pasture) and 17% forest. Bobwhite densities were highest in this region with an average annual harvest of 22/100 acres of farm land from 1956-69. That dropped to 2.5/100 acres of farm land (-89%) from 1997-02.

For many years, the Farm Bill program has been the key to large scale grassland habitat restoration for bobwhite in highly agricultural states like Illinois. Grassland suitable for bobwhite nesting and brood rearing is critically short in most of the Illinois range and the bulk of what remains is the product of the Conservation Reserve Program in its various forms. Illinois' bobwhite management units contain nearly 500,000 acres of CRP grasslands. However, most are monotypic stands of cool season grasses in excess of five years old. These fields are in need of renovation to restore annuals and legumes. A bright spot for Illinois has been the widespread adoption of the Bobwhite Buffer practice, CP33. Illinois producers have enrolled 40,829 acres of field borders since October 2004. Monitoring has indicated increased use by bobwhite, pheasant and grassland songbirds.

Management

DNR programs for habitat restoration continue on a small scale compared to USDA programs. In FY08, district wildlife habitat biologists prepared 519 habitat restoration/improvement plans on farms and other rural land for forest (32,295 acres), savanna (713 acres), grassland (24,405 acres), shrubland (4,036 acres), wetland (9,549 acres) and lakes and ponds (164 acres).

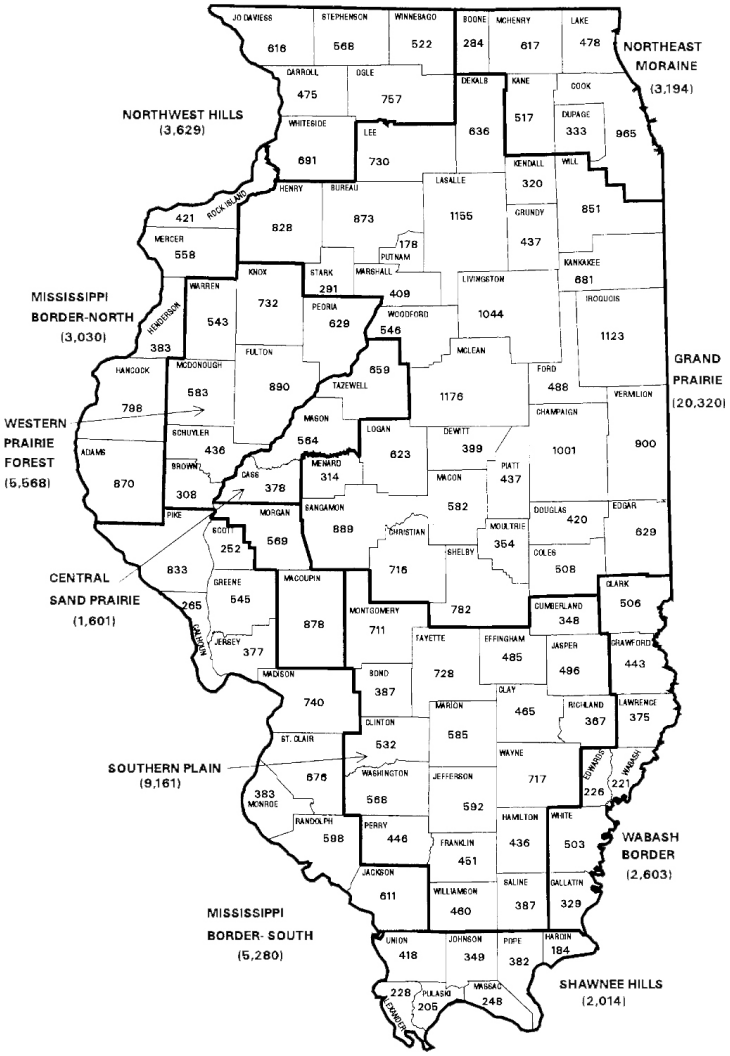
Funding

Revenue for bobwhite habitat management is generated through the sale of the State Habitat Stamp. Roughly 1 million dollars are generated annually. Funds are divided between DNR and private conservation groups. DNR funds are used for land acquisition and to provide habitat restoration materials (seed, seedlings, herbicides) to district wildlife biologists and the Habitat Team. Grants are also made to private conservation groups for bobwhite habitat restoration projects including fescue conversion and crp midcontract management

Current Research

At Southern Illinois University Carbondale, a farm level analysis of bobwhite habitat was conducted and economic impacts to producers of restoring needed habitat components were assessed. Findings indicate that habitat restoration is economically feasible on most farms using existing USDA and State incentive programs. SIUC has also completed the

Wildlife management units in Illinois (square miles in parentheses).



final year of a 3-year study evaluating midcontract management practices (discing, spraying, legume interseeding) on use of old CRP grasslands by bobwhite and other early succession species. Results after two field seasons indicate dramatically increased use of treated areas by adults and broods. A study of regional variation in bobwhite genetics is also underway.

Hunting Regulations

Illinois' bobwhite hunting season begins the first Saturday in November and ends January 8 in the north zone and January 15 in the south zone. Hunting hours are sunrise to sunset with a daily bag limit of eight birds. Opening day in 2008 is November 1.

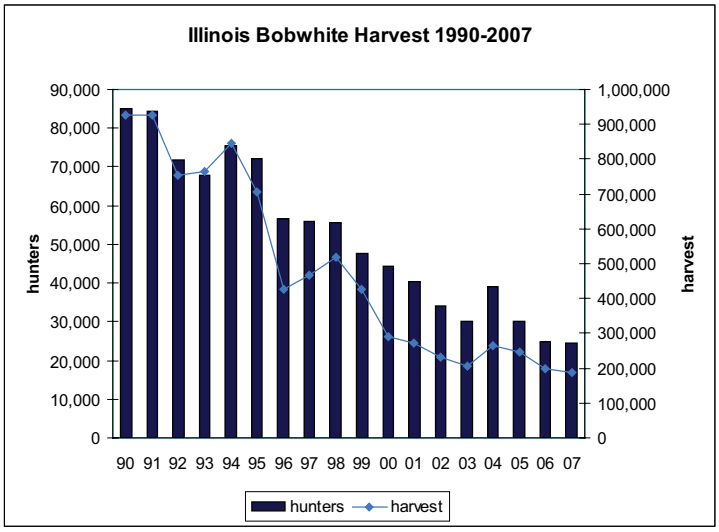
Harvest and Hunters

Illinois uses an annual, random survey of licensed hunters to estimate harvests of bobwhite and other game species. The sample typically consists of 2,000 to 3,000 hunters. Return rates usually run between 60% and 70%. Approximately 290,000 hunting licenses are sold annually. Small game hunters purchase 54% of the licenses. During the 2007-2008 season, 24,546 hunters harvested 187,249 bobwhites, all time lows for participation and harvest. The all time high was in 1956 when 188,000 hunters harvested 2,500,000 birds.

Northern Bobwhite Conservation Initiative-Illinois

A draft statewide habitat restoration plan for bobwhite is complete. An annual harvest goal of 800 to 900 thousand bobwhites by 80,000 hunters was established. Assumptions regarding nest densities, nest success, juvenile survival and annual mortality from hunting and other causes outlined in the national NBCI were adopted. County level agricultural land use (1997-02) was analyzed to develop habitat restoration strategies and goals that appear to be compatible with prevailing land use. Below is a list of strategies and goals for restoring nest cover and brood habitat in the counties comprising the primary range.

1. Enroll 30% percent of the highly erodible cropland in each county in the Conservation Reserve Program emphasizing partial field enrollments (current enrollment 476,865 acres; add 305,059 acres).
2. Annually manage (disk, burn, spray, legume interseeding) 20 to 30% of CRP grasslands (manage 238,097 acres in 56 counties).
3. Increase the enrollment of grass conservation buffers (filter strips, contour grass strips, field borders) to twice the current level (current enrollment 85,125 acres; add 85,125 acres).
4. Enroll 30% of the highly erodible cropland in each county in a short term retirement (3 years) practice that pays the county average soil rental rate for leaving three years of unharvested soil building legumes (enroll 348,095 acres in 56 counties).
5. Establish high quality nest cover on 50% of the county and township roadsides in each of the 56 counties (add 90,868 acres of roadside nest cover).
6. Convert 25% of the permanent pasture in each county to native grasses and forbs (convert 123,167 acres to native grasses and forbs).



7. Pay incentives to delay harvest of hay on 50-foot wide borders of hayfields (add 42,782 acres of nest/brood cover with 25% participation).
8. Conduct timber stand improvement on upland woodlots in each county. Reduce canopy coverage to 50% or less. (add 150,954 acres of nest/brood cover with 10% participation).

Hunter Access Programs

Illinois does not have a hunter access program at this time.

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State Report Indiana

INTRODUCTION

This Indiana Quail Status Report is a compilation of ongoing management and research efforts related to the enhancement of habitats for northern bobwhite quail and the monitoring of their population status throughout the state. Although the bobwhite quail is no longer the most popular game bird in the state of Indiana, Hoosier quail hunters are still one of the more active and vocal hunting constituencies and bobwhite quail management continues to be one of the top priorities of the Division of Fish and Wildlife.

Staff – The Research Unit consists of 5 Research Biologists covering all game species in Indiana. The Farmland Game Research Biologist serves as the Quail Project Leader. The Private Lands Unit consists of 15 District Biologists, responsible for districts containing from 5 to 9 counties, an Urban Wildlife Biologist, 2 Regional Private Lands Supervisors, and the Private Lands Program Manager. The Private Lands Program Manager oversees the development, implementation, and evaluation of the Division's Private Lands Program and serves as the Division's liaison with other IDNR divisions, state and federal agencies, and private conservation organizations that directly impact natural resources management on private lands.

Figure 1. Mean number of northern bobwhite heard at each survey stop within Indiana's 4 bobwhite management regions, 1947-2008.

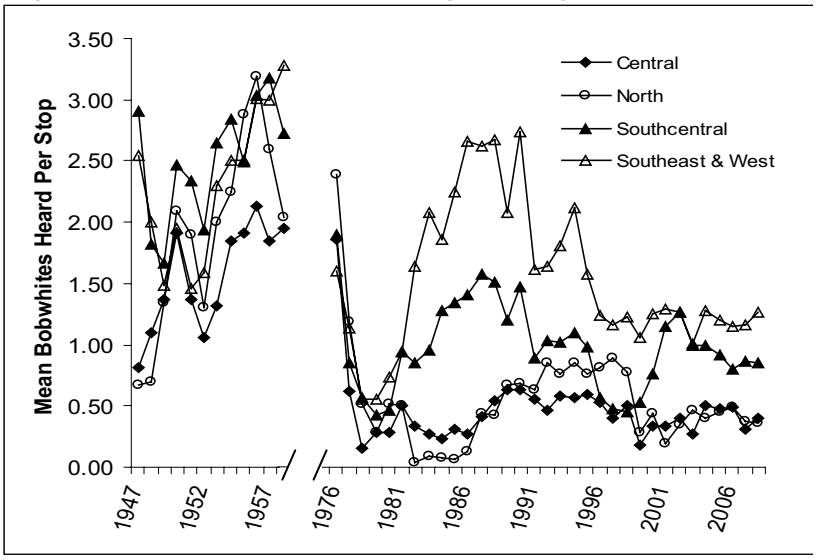
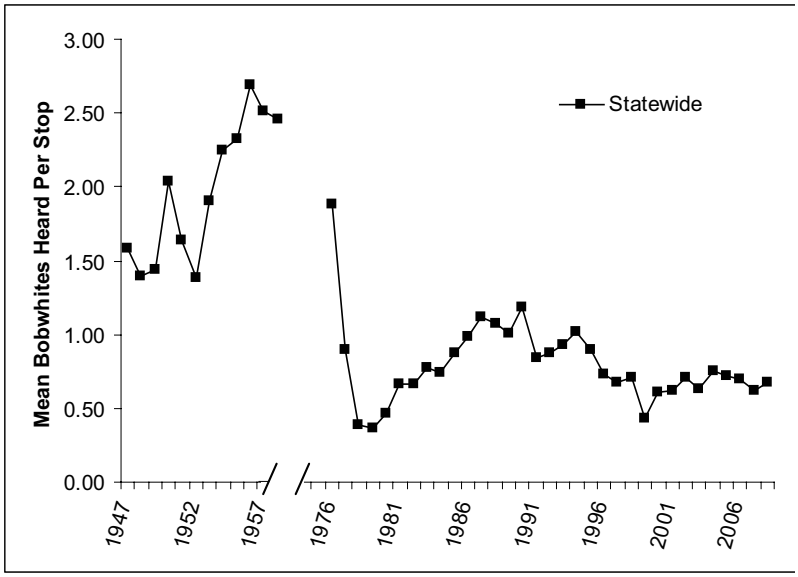


Figure 2. Mean number of northern bobwhite heard at each survey stop statewide, 1947-2008.



STATUS

Population Surveys -Whistle Counts

Road-side counts of whistling bobwhites are conducted each spring to monitor changes in the northern bobwhite population abundance. These counts have been conducted annually since 1947 with a lapse from 1958 to 1976. This report displays data and trends from the 2008 bobwhite whistle count.

In 2008, a total of 81 routes were surveyed in 78 counties between 6 June and 30 June. Observers recorded the number of quail heard whistling during 3 minute periods at 15 different stops along each 15-mile route. During 2007 and 2008, only 79 routes in 76 counties were conducted in both years and data from only these routes were used to draw statistical comparisons between indices of bobwhite abundance. Statewide, the number of bobwhites heard per stop in 2008 ($\bar{x}$= 0.68 ± 0.08) was similar to the number heard per stop in 2006 ($\bar{x}$= 0.62 ± 0.08). Additionally, the number of bobwhites heard per stop in 2008

Table 1. Bobwhite quail whistle count results for 2007 and 2008.

Region	n[a]	Mean Bobwhites Heard Per Survey Stop 2007	2008	% Change	P
Statewide	79	0.62 ± 0.08	0.68 ± 0.08	9.8%	0.16
North	14	0.37 ± 0.25	0.36 ± 0.18	-3.8%	0.84
Central	33	0.31 ± 0.06	0.41 ± 0.07	30.5%	0.04
South-central	13	0.86 ± 0.23	0.85 ± 0.24	-1.8%	0.91
Southeast-west	19	1.16 ± 0.18	1.27 ± 0.18	9.3%	0.40

[a] Includes all routes surveyed in both 2007 and 2008 (includes zero routes).

did not differ (P > 0.10) from the number heard in 2007 (Table 1) within 3 of the 4 physiographic regions of the state (Figure 3); the number of quail heard per stop in the central region had increased significantly (30.5%; P = 0.04). Long-term trend data continues to show that the northern bobwhite population remains near historic lows in all 4 of Indiana's physiographic regions (Figure 1).

Despite the similarities between the 2007 and 2008 statewide breeding populations, and some improvement in the southern regions of the state, Indiana's primary quail range, long-term trend data continues to show that the northern bobwhite population remains well below numbers observed in past decades (Figure 2) and in all 4 of Indiana's physiographic quail management regions (Figure 1).

Harvests -Small Game Harvest Survey

We do not have any current data on harvest and hunter participation. A small game harvest survey is currently being conducted for the 2008-2009 hunting season. The most recent small game harvest survey was conducted following the 2005–2006 hunting season to determine harvest and hunter participation. Estimates derived from this survey were quantitatively compared to estimates from the previous small game harvest survey (2003-2004). These participation rates resulted in a statewide estimate of 19,700 hunters and a harvest estimate of 28,304 northern bobwhites during the 2005–2006 season. In comparison to 2003–2004, the number of northern bobwhite hunters in Indiana decreased 28.1% with a decline in the harvest of 50.3%. Bobwhite hunting continues to be best in the southwest harvest region of the state, while the northeast harvest region is by far the poorest (Figure 4).

The average northern bobwhite hunter in Indiana spent 2.84 days in the field (–12.0% from 2003-2004) and harvested 1.44 bobwhites (–30.9% from 2003–2004) during the 2005–2006 season.

The harvest is directly related to the number of hunters, and a long-term decline in small game hunters (Figure 4) has resulted in record or near-record lows in the number of hunters (Figure 5) and the associated harvests of northern bobwhite (Figure 6), as well as most other small game species in Indiana.

Even though some small gains have been seen of the past couple decades, northern bobwhite populations in Indiana remain extremely low, and habitat loss or lack of quality habitat appears to be the driving force. Things could get worse as the loss of CRP land over the next few years will likely have a detrimental effect on northern bobwhites and other small game species in Indiana. We must create and maintain suitable habitat for all small game species and continue to manage the harvest in the best interest of the species. Without these efforts, small game populations will continue to decline.

Figure 3. Bobwhite Quail Management Regions based on physiographic regions from the USGS.

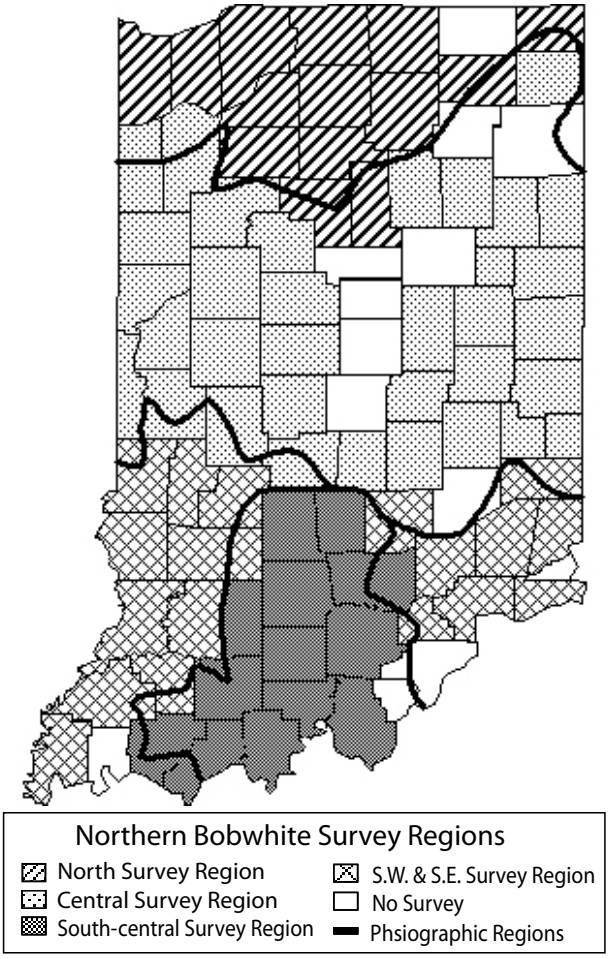


Figure 4. Bobwhite Quail Harvest Regions based on physiographic regions from the USGS

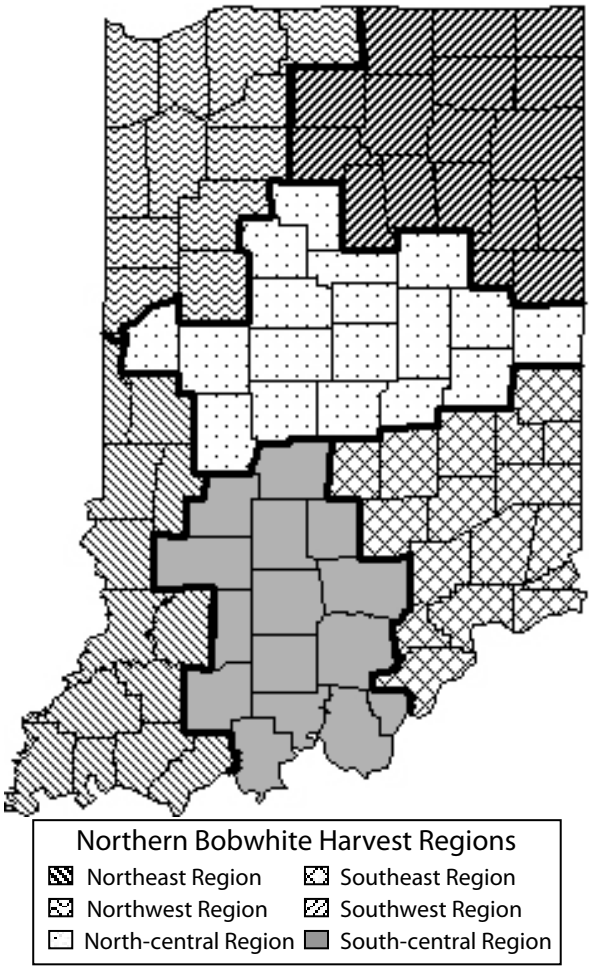


Figure 5. Estimated annual number of small game hunters in Indiana, 1976–2005.

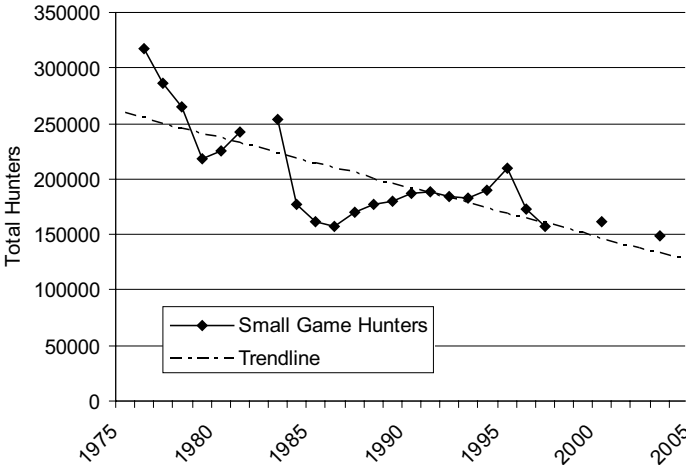
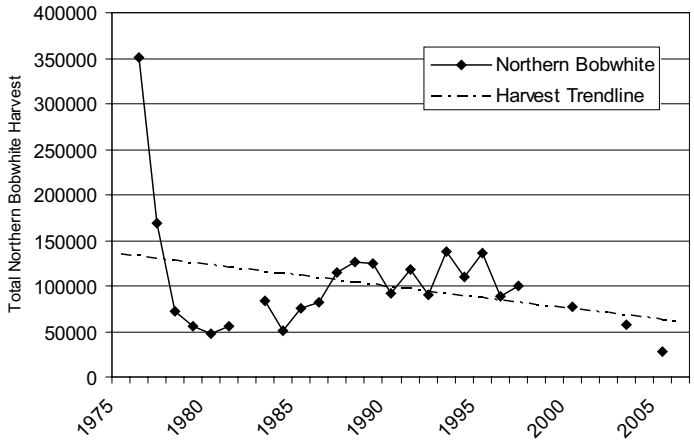


Figure 6. Estimated annual harvest of northern bobwhite in Indiana, 1976–2005.



PRIVATE LAND AND FARM BILL HABITAT PROGRAMS

National Bobwhite Conservation Initiative

In 2004, the Private Lands Unit stepped down the habitat objectives specified in the National Bobwhite Conservation Initiative to specific county level objectives. These county level objectives were then combined to develop district level objectives that were incorporated into each private lands biologist's annual work plans. Each biologist has a specific CRP fescue conversion, CRP mid-contract management, non-CRP fescue conversion, and brood-cover/idle nesting cover habitat development objective for increasing bobwhite quail and pheasant populations.

In order to have a greater impact on these populations, the Private Lands Unit decided to focus our efforts into priority areas. A total of 6 Pheasant Habitat Priority Areas were developed in northern Indiana and 8 Quail Habitat Priority Areas were developed in southern Indiana (Figure 6). Priority areas were selected based on Habitat Suitability Index (HSI) models for bobwhite quail prepared by Mississippi State University, areas of known quail/pheasant populations, interspersion of habitat types, and the potential for results. CRP enrollment incentives, CRP Mid-Contract Management incentives, and increased caps for use of Wildlife Habitat Cost-Share funds and Game Bird Habitat Development Funds were provided in the priority areas to encourage landowner participation. Landowners in priority areas also receive additional points in the USDA WHIP ranking process.

CP-33 (Habitat Buffers for Wildlife)

Beginning in 2006, the Division began CP33 monitoring according to the protocol established by Mississippi State University. A total of 41 pairs of CP33 buffers/control fields were monitored during June using the point count protocol for songbirds and quail. The same pairs were also monitored in October using the covey call protocol. The monitoring protocol will be repeated again this year. As of December 2008, a total of 10,748 acres have been enrolled in CP33 in Indiana.

SAFE (State Acres For Wildlife Enhancement)

Indiana's SAFE program consists of Northern Bobwhite; Henslow's Sparrow; Grasshopper Sparrow/Sedge Wren; and Indiana Bat priority areas. The primary conservation practices that participants may enroll in include; permanent short stature native grasses, permanent wildlife habitat - consisting of blocks or strips of short stature native grasses/forbs and introduced grasses/legumes in equal amounts; rare and declining prairie; rare and declining sedge meadow, wetland restoration (floodplain and non-floodplain) and hardwood tree planting. Indiana began its SAFE Enrollment on May 12, 2008. Indiana was allocated 13,100 acres. As of December 2008, a total of 3,176 acres had been enrolled.

Fescue Conversion through Tier 1 LIP Grant

Beginning in the fall of 2007, Indiana began implementation of a Tier 1 LIP grant directed at reducing fescue and smooth brome monocultures. The program reimburses private landowners 75% of the cost for converting fescue or smooth brome to wildlife friendly grasses, legumes and forbs. To date, a total of $30,000 (approximately one-half of our 2-year allocation) in LIP cost-share has been obligated to fescue/brome conversion projects. Due to heavy spring flooding a number of projects did not get completed. The grant has been extended through July of 2010.

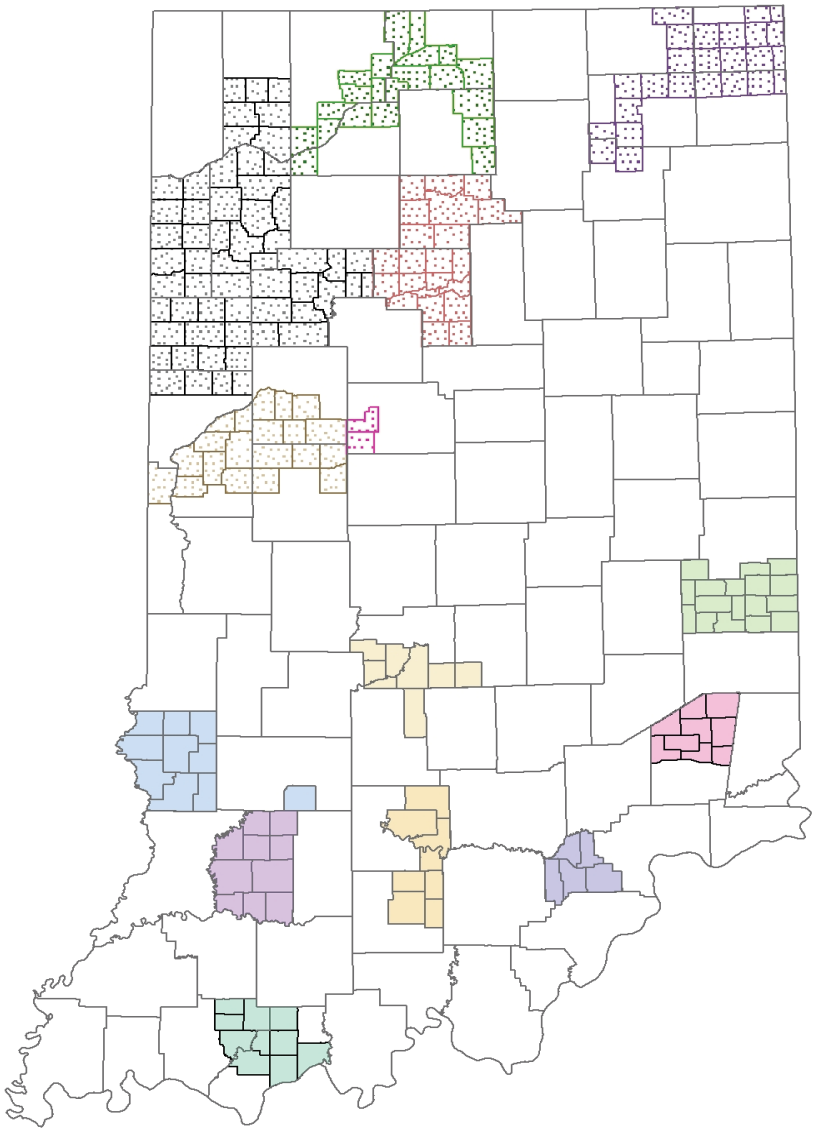
Wheat Stubble Pilot Program

Due to the increased planting of winter wheat this past fall, the Division has began a pilot cost-share project in northwestern Indiana to pay wheat producers to not disturb winter wheat stubble once the grain and straw have been harvested. Throughout most of Indiana, winter wheat is double-cropped to soybeans. Lower annual precipitation rates in northwestern Indiana, however, typically prevent attempts to double-crop. Unfortunately, it is common practice for producers to spray the stubble to control weed growth and then disc it under in the fall. The program's objective is to pay producers not to spray or disturb the stubble in any manner until March of the following year to encourage weed growth and provide brood-rearing, roosting, and winter cover that typically would not be available. As a result of high commodity prices this past summer, most producers opted to double-crop their wheat fields. With commodity prices dropping once again and input costs on the rise, we will continue to test the opportunity to offer cost-share for this practice in the future.

CURRENT NORTHERN BOBWHITE RESEARCH

The IDFW Research Unit has recently begun a radio-telemetry project to examine the impacts of summertime dog training on northern bobwhite productivity and dispersal at Indiana fish and wildlife areas. Not only will the data from this project answer needed

Figure 6. IDFW established 6 Pheasant Habitat Priority Areas in northern Indiana (dotted colors) and 8 Quail Habitat Priority Areas in southern Indiana (solid colors). This map shows the Habitat Priority Areas for 2008-2009.



questions related to the regulation of dog training on our fish and wildlife areas, but will be the first project in Indiana to use radio telemetry to examine nesting, productivity, dispersal, and habitat use by northern bobwhites.

Other research will include a re-evaluation of current whistle count routes, examining changes in abundance within quail priority areas, establishing operational covey-call counts at DNR-owned properties, and using GIS to examine habitat changes across Indiana's northern bobwhite range, specifically in regards to the quail habitat priority areas and Farm Bill programs.

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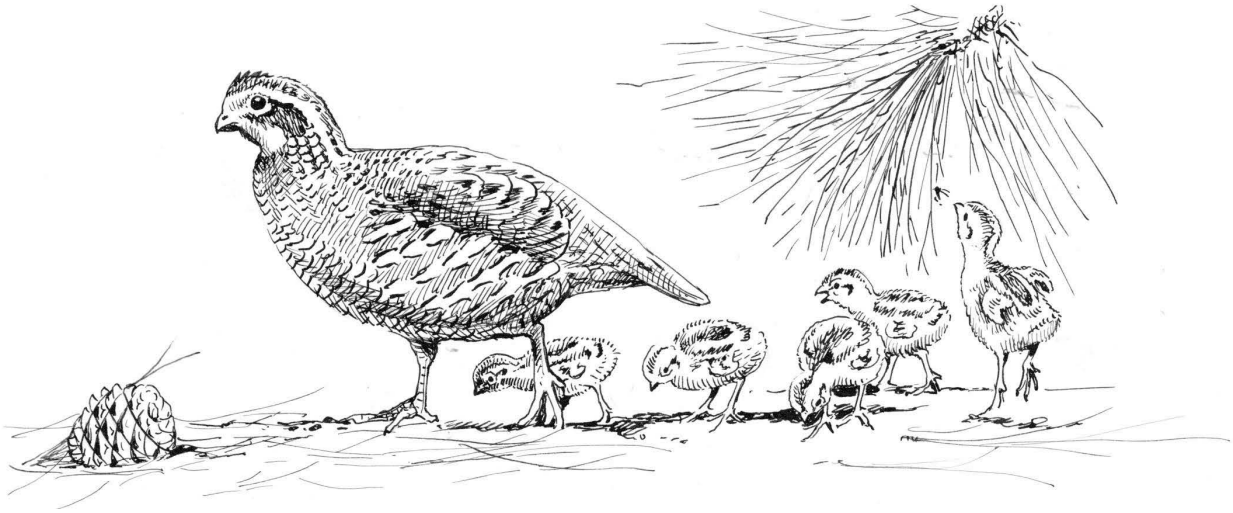


State Report Iowa

Hunting regulations:

Small game hunters are required to have a valid small game hunting license, habitat stamp and hunter safety certificate if born after January 1, 1972 to hunt small game in Iowa. Resident hunting license cost $17.50 and habitat stamp $11.50. Non-resident (+18) small game hunting license are $80.50 plus $11.50 habitat stamp. Non-resident small game licenses (under 18) are $30.50. Hunting licenses are valid until January 10th of each year. No limited season licenses are available. Hunter orange is required to hunt upland game birds. The Iowa DNR does not have a hunter access program.

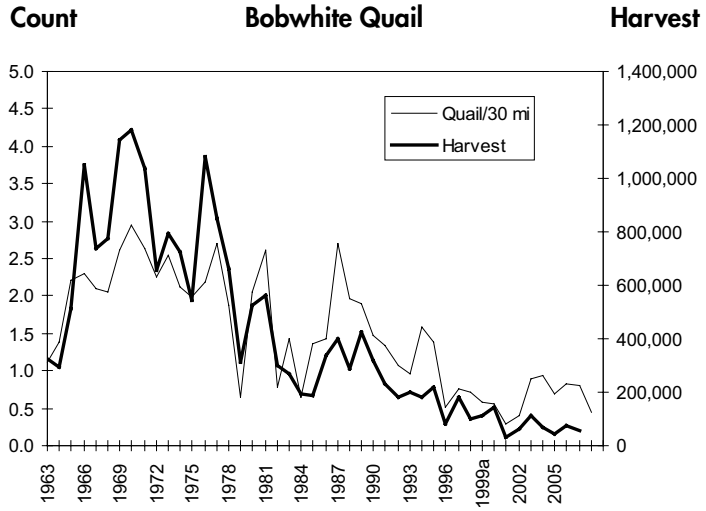
Hunters and harvest:

A random survey of licensed hunters was conducted following the 2007 small game season to determine the size and distribution of Iowa's small game harvest. Survey participants returned 3,416 usable questionnaires for a response rate of 42%. Based on these returns Iowa had 238,033 licensed hunters in 2007-08 and of these 121,105 indicated they hunted small game, a -10% decrease from 2006. Pheasant were the most commonly reported species hunted by small game hunters (90%), while cottontails where the second most sought after species at 26% of small game hunters. Approximately 18,234 quail hunters (8% of licensed hunters, 15% of small game hunters) harvested 54,444 quail during the 2007 quail season. Hunter numbers declined -19% and harvest declined -28% compared to 2006 estimates. Hunter numbers are a new all time low for Iowa, while this past year's harvest was the 3 lowest ever recorded. Quail hunters averaged 7 days a field and harvested 3 birds for the season. Forty-nine percent of the quail harvest occurred in the first 9 days of the 2007 season. Over 90% percent of quail hunters hunted 15 days or less and over 50% hunted 4 days or less. Resident quail hunters accounted for 79% of the total quail harvest.

Species	Season dates	Limits Bag/Poss.	Shooting hours
Pheasant	Last Saturday in October - January 10th	3/12	8:00-4:30
Quail	Last Saturday in October - January 31st	8/16	8:00-4:30
Gray Partridge	2nd Saturday in October – January 31st	8/16	8:00-4:30
Cottontail	September 1st - February 28th	10/20	Sunrise-sunset

Populations and survey methodology:

The Iowa DNR uses an August roadside survey (ARS) to assess its upland game populations. The ARS generates data from 215 30-mile routes on ring-necked pheasants, bobwhite quail, gray partridge, cottontail rabbits, and white-tailed jackrabbits. Counts conducted on cool mornings when the sun is shining, with heavy dew, and no wind yield the most consistent results. All routes are conducted on gravel roads to minimize vehicle traffic. The winter of 2007-08 was the 10th snowiest in 121 yrs of state records, while the first 6 months of 2008 were the wettest in state history. Given this weather combination it should not be surprising quail counts declined 45% when compared to last year. Complete 2008 results are available on the DNR's website at WWW.IOWADNR.GOV



Habitat trends:

CP33 - Iowa enrolled all 20,000 acres of CP33 allocated to her and has received an additional allocation of 5,000 acres. Less than 1,000 acres is left to enroll. Iowa is assisting in the national monitoring effort for CP33, following the guidelines developed by the SEQSG. A summary of the Iowa's CP33 monitoring is shown in the table below.

Current research:

Iowa is wrapping up its last field research study on bobwhite, "Nest success and brood habitat selection of the northern bobwhite in relation to microhabitat and landscape composition on managed and unmanaged landscapes in Southeast Iowa 2003-05, the manuscript has been submitted to JWM. We saw better nest success on the managed area verses the unmanaged area, 50% vs 28%. Ave nest patch size was 12 acres vs 8 acres on the sites – this was not statistically * at P=0.11, but it could be argued it is biologically significant. Successful nests on unmanaged site had an average % forb cover of 38% vs failed nests it averaged 19%. On managed area successful and failed nests had 27% and 36% forb cover respectively. On unmanaged site higher forb diversity seemed to improve odds of nest success in its smaller nest patches. Brood home ranges averaged 53ac vs 82ac on the sites and the difference was significant. The overall average distance from nest site to brood use areas was 300yds. On the managed site broods selected early successional and grass patches that had robel readings of 20-25 inches. We also found edge feathering in ES and grass patches increased brood use in those patches by 3 fold. We had no brood survival information so we could not make statements about how any of the brood variables influenced the fitness (survival) of the broods. In other words edge feathering attracted broods – but did it confer any benefits?

Iowa CP33 monitoring results 2006-08, mean individuals heard.

		N	BOBO	COYE	**DICK**[a]	EABL	**EAKI**	**EAME**	**FISP**	**GRSP**	**INBU**	LOSH	**NOBO**	RPHE	SOSP	**VESP**	WEME
CP33	2006	36	2	65	**74**	8	**15**	**23**	**35**	**14**	**26**	0	**33**	54	31	**14**	12
	2007	36	6	48	**73**	10	**13**	**17**	**34**	**4**	**14**	4	**30**	72	18	**8**	17
	2008	31[b]	2	58	**54**	9	**12**	**18**	**28**	**11**	**23**	2	**3**	45	14	**5**	13
CTRL	2006	37	2	38	**52**	2	**6**	**34**	**18**	**7**	**14**	1	**20**	61	14	**8**	27
	2007	36	0	33	**40**	4	**7**	**23**	**10**	**5**	**10**	0	**19**	61	11	**5**	27
	2008	31	0	29	**27**	2	**5**	**17**	**13**	**3**	**15**	1	**9**	49	10	**8**	17
Overall Mean	CP33		3.3	57.0	**67.0**	9.0	**13.3**	**19.3**	**32.3**	**9.7**	**21.0**	2.0	**22.0**	57.0	21.0	**9.0**	14.0
	CTRL		0.7	33.3	**39.7**	2.7	**6.0**	**24.7**	**13.7**	**5.0**	**13.0**	0.7	**16.0**	57.0	11.7	**7.0**	23.7

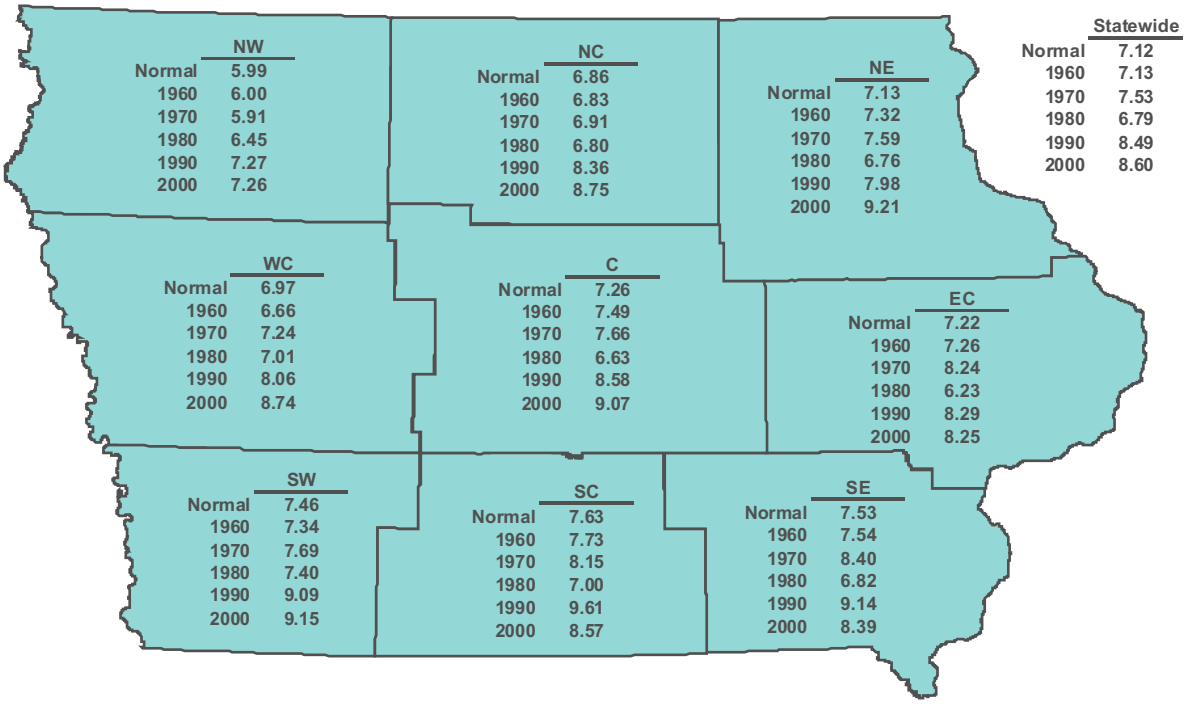
a Bold columns are priority species for BCR 22
b Severe flooding in 2008 left some sites inaccessible

Our second project is a study of the landscape features influencing the decline of bobwhite quail in Iowa. Historical aerial photos (1940's, 1960's, and 1980's) from 45 counties in Iowa's primary quail range have been classified and digitized. This year a graduate student at Iowa State Univ. will begin the process of summarizing changes in macro landscape variables using ArcGIS and spatial software.

Special projects:
We began a special project this fall to look at late season quail harvest on several of our wildlife management areas. Some of our managers are concerned that we may be overharvesting quail on some of our public wildlife areas. We are conducting fall covey call counts and monitoring quail harvest on 2 wildlife areas to monitor populations and timing and level of quail harvest.

Because of the winter and spring weather in Iowa this past year, I've been tasked with developing a restoration plan for pheasant and quail populations in Iowa. This plan will focus on retaining CRP in Iowa as well as look at using CSP to promote small grains and hay crops on working lands. We are also considering liberalizing some of our furbearer seasons and reducing hunting season lengths, bag, and possession limits for pheasant and quail in regions of the state. We will also do a media campaign to show how climate in Iowa has gotten wetter the last 18yrs and it could be detrimental to upland game populations.

Submitted by
Todd R. Bogenschutz
Upland Wildlife Biologist



Average April-May rainfall by decade for Iowa crop reporting regions.
Climate Change?? April/May weather has certainly been wetter than historical patterns since 1990.
a NOAA defines "normal" rainfall as the 30 yr average (1961-90).
b 2000 data is rainfall from 2000-08.

State Report Kansas

In Kansas, bobwhite populations are monitored within 6 management regions (Figure 1). This report provides a brief description of bobwhite population trends in Kansas over the last 30+ years. At the time of this report most of the 2009 surveys conducted by the Kansas Department of Wildlife & Parks (KDWP) had not yet been completed or analyzed. Thus, data from 2008 is the most recent information presented in this report. This report also contains a short update on KDWP's private land programs and farm bill activities.

Production

The KDWP gauges production of bobwhites using a young:adult index derived from the July rural mail carrier survey (RMCS) and from a departmental August roadside survey. The statewide 2008 young:adult ratio was 16.7% above the long-term average from the previous 25 year period (Figure 2). Production was above average in the central and western management regions and slightly less than average in the eastern portions of the state (Figure 3). The eastern 1/3 of the state (especially southeast Kansas) experienced heavy rain during the month of June which likely contributed to the below-average production. This same general area experience even heavier rain and flooding during the previous year.

By backdating broods observed during the August roadside count a frequency distribution was created to illustrate the time when Kansas bobwhite nests hatched during 2008 (Figure 4). The peak hatching period was estimated to be the last 10 days in June and first 10 days in July. The peak of hatch in 2008 was skewed about a week later than the long-term average. This was likely due to few early nests hatching as a result of heavy rain during early June in many parts of the state. The mean brood size during the 2008 observation period was 9.0 which was similar to the previous 20 year mean of 9.3.

Population Trends

The KDWP uses 3 indices to track long-term trends in bobwhite abundance across the state. The RMCS provides the longest dataset and has been run since 1962. The RMCS is conducted during 4 separate observation periods (i.e., January, April, July, and October) and >500 mail carriers currently participate in this voluntary effort. The data they collect are standardized into an index of observations per 100 miles driven. Because the 4 separate indices are highly correlated ($r > 0.85$) only the April RMCS index will be discussed in this report. The April RMCS index shows a long-term decline of northern bobwhites in Kansas at the rate of 4.5% per year since 1962 (Figure 5). The other 2 methods utilized by the KDWP to track bobwhite abundance are hunter harvest estimates and the recently initiated whistle count survey (started in 1998). Both of these indices reveal a similar declining trend on a statewide scale.

The indices to bobwhite abundance have declined in every region of the state since 1962 but the declines have been the most severe in the eastern management regions (Figure 6). These regions have been the most effected by natural succession, woody encroachment into grasslands, conversion of native grassland to tall fescue, and annual burning associated with early intensive stocking of livestock. These land use changes have either not occurred in central and western Kansas or have been much less severe. In fact, bobwhite habitat in far western Kansas has actually increased in recent years as a result of >2 million acres of farmland being converted back to grass either through the CRP program or by landowners switching from agriculture to livestock production. This addition of grassland to the landscape has resulted in an increasing trend in bobwhite abundance in western Kansas over the last decade.

The 2008 April RMCS data revealed a >20% decline in bobwhite abundance from the previous year. This is the second consecutive year that Kansas' breeding quail population has declined sharply. The severe weather events that have hit Kansas over the last couple of years pushed Kansas' 2008 breeding population to all-time lows in the southeastern and northwestern portions of the state. Other parts of the state were not as greatly affected and quail numbers in those regions have remained fairly stable in recent years.

Harvest and Regulations

Prior to the fall 2007 season, the estimated bobwhite harvest in Kansas had remained relatively stable between 600,000 and 700,000 for each of the prior 4 years. However, the statewide harvest declined to 471,000 in 2007 as a result of the record-low bobwhite numbers in the southeast and northwest portions of the state. During the last 5 year period, the greatest annual harvest typically occurs in the southcentral region (105,000-170,000) followed by the Flint Hills region (50,000-120,000), and the southeast region (45,000-115,000) (Figure 6). Lower bird densities and scattered populations are responsible for consistently lower annual harvests in the northeast (35,000-90,000) and northcentral (35,000-95,000) management regions. Many counties in these regions lie at the northern extent of the species' range and populations fluctuate much more erratically due to a more frequent occurrence of severe winter weather. The western management region encompasses the entire western 1/3 of the state and bobwhite populations in the more southerly counties of that region are not as frequently subjected to severe winter conditions. Thus, bobwhite harvest and abundance in the western region as a whole is generally greater than the northeast and northcentral regions. Total harvest in the western region consistently falls in the middle of the pack but there have been some really good hunting opportunities in the southern and southeastern counties of this region in recent years. In fact, harvest in the western management region has increased from 51,000 in 2002 to near 90,000 in recent years.

The structure and timing of Kansas' upland game hunting seasons were modified in 2006. After the second year with the new season (2007) there was still much displeasure amongst Kansas' upland bird hunters. Recently the KDWP commission voted to change the season dates again to more closely align with hunter and landowner preferences. The new season dates will take affect for the 2009 seasons (Table 1).

Translocations and Research

In 2007 the KDWP approved another 3-year (2007-2009) permit for the Ohio Division of Wildlife (ODW) to capture and remove ≤ 250 bobwhite per year from Kansas. The ODW is in the process of trying to re-establish bobwhite populations at several re-claimed coal mine properties across Ohio. The permit issued by KDWP allows them to trap and translocate birds from the Wolf Creek Nuclear Power Operating Facility in east central Kansas.

The facility is a non-hunted property that normally holds high densities of bobwhites. To date, the ODW has removed ~150 birds a year from the property for several consecutive years (except 2007). At the time of this report they were just beginning their trapping efforts for the winter 2008-2009 period. There are currently no bobwhite research projects being conducted in Kansas.

PRIVATE LAND PROGRAMS BENEFITTING QUAIL

KDWP Private Land Programs

The Kansas Department of Wildlife & Parks (KDWP) first instituted a program to provide technical and direct assistance to private landowners in 1973. In a state with approximately 97% of its land in private ownership, the development and continuation of programs that assist private landowners with wildlife habitat improvement are crucial management tools. These programs provide important services and information to landowners, many of which benefit bobwhites. Below is a brief description of the varying private land programs that are currently benefiting bobwhites across Kansas.

Private Lands Habitat Management Programs

The Private Lands Habitat Management Program is the framework of the Upland Game Bird Initiative, Pheasant Initiative, Quail Initiative, Prairie Chicken Initiative and KDWP Wildlife Habitat Improvement Program. This program allows for KDWP Biologists and private landowners to work together in the development of habitat management plans. These plans directly impact wildlife species and habitats specific to the individual plan. Many plans focus on CRP enhancements that include cost sharing on prescribed burning, light disking, food plot establishment, forb/legume interseeding, brush removal, and providing additional SIP (Sign-Up Incentive Payment) or PIP (Practice Incentive Payment) incentives to help increase the enrollment in several Continuous CRP practices. Other plans have been developed to provide cost share for the conversion of farmland to native grass, converting grazing land from cool season grass to warm season grass, hedgerow renovation, wetland development, and deferred grazing on native rangeland. This program also provides the cooperating landowner the availability to loan or rent native grass drills, tree planting machines, weed barrier fabric machines, root plows, drip torches, and portable tanks and sprayers for controlled burns. Since 2004, conservation partners have contributed over $77,000, adding to the nearly $640,000 in contributions from KDWP. In 2008 alone, approximately $105,000 was spent for direct on-the-ground habitat management projects across the state through the Upland Game Bird Habitat Initiative (UGBHI).

Buffer Coordinator Program

Recognizing the importance of buffers (strip habitats) to edge-associated upland birds, KDWP initiated a program to hire temporary employees in the County Conservation District Offices to encourage enrollment of grass buffers into the continuous conservation reserve program (CCRP). This federal, state, and local partnership is similar to the successful program in Iowa. Over $350,000 was available in 2003 from KDWP, an EPA 319 grant, and local contributions. KDWP contributes $150,000 per year. The State Conservation Commission administers the program and NRCS provides a full time coordinator.

USDA Farm Bill Programs

The Kansas Department of Wildlife & Parks has continued to promote wildlife related farm bill programs. The following are examples of those programs promoted by the agency that are of benefit to bobwhites.

Conservation Reserve Program (CRP)

Kansas continues to be one of the national leaders in terms of CRP enrollment. The most recent estimates reveal that >3 million acres in Kansas are currently enrolled in general sign-up CRP. Additionally, there are >85,000 acres enrolled in CCRP practices in Kansas. One of the most popular CCRP practices is conservation practice 33 (CP-33; Habitat buffers for upland birds) which provides cost-share and rental payments to establish grass borders around crop fields. Because the CP-33 program was so popular in Kansas the state was awarded additional acreage during 2 different reallocations (62,500 acres total). By the end of 2008, there were 31,721 acres enrolled in the program. Most of the acreage enrolled in CP-33 is in the eastern 2/3 of the state within Kansas' primary bobwhite range. The KDWP has been monitoring the response of quail and pheasants on a random sample of enrolled acreage and both species have responded positively to the addition of the new habitat.

State Acres for Wildlife Enhancement (SAFE)

A total of 30,100 acres has been allocated to Kansas for the newly created SAFE program. The KDWP's SAFE proposal has been approved and it will focus on creation of bobwhite and pheasant habitat in and around row crop fields throughout the state. The SAFE program will allow enrollment of portions of expiring CRP acreage, center-pivot irrigation corners, and interior strips within fields (e.g. terraces or cross-wind trap strips); up to 20% of the entire field. The practice will allow for some limited grazing and haying that should make it more acceptable to landowners and provide alternative methods to create needed disturbance within mature stands of grass.

Conservation Reserve Enhancement Program

Another quail friendly practice that has been created through a partnership between the state of Kansas and the Farm Service agency is the conservation reserve enhancement program (CREP). Through voluntary enrollment the program will remove up to 20,000 acres of cropland along the Arkansas River in portions or all of the following counties: Barton, Edwards, Finney, Ford, Gray, Hamilton, Kearny, Pawnee, Rice, and Stafford. The enrolled acres will be under contract for 14-15 years and seeded to a mixture of grass and forbs. The primary purposes of this CREP are to improve flow in the Arkansas River and reduce groundwater usage but quail and other upland birds will also benefit.

Wildlife Habitat Incentives Program (WHIP)

Federal WHIP is a voluntary program that provides up to 75% cost-share assistance for establishing and/or improving wildlife habitat on private lands. KDWP district wildlife biologists have continued to deliver most aspects of the Federal Wildlife Habitat Incentives Program (WHIP). This includes program promotion, landowner contact, conservation planning and technical assistance with practice implementation. This continues to be a very successful partnership with the Natural Resources Conservation Service.

Environmental Quality Incentive Program (EQIP)

The Environmental Quality Incentive Program (EQIP) is a voluntary conservation program that promotes agricultural production and environmental quality as compatible goals. EQIP contracts provide incentive payments and cost-shares to landowners for implementing conservation practices on their lands. Although not nearly as involved as in other programs, KDWP Biologists continue to promote EQIP, especially those applications that address wildlife concerns such as grassland health and tree encroachment onto native prairies.

*Landowner Incentive Program (LIP)*This initiative was started in 2006 with a $500,000 grant from the U.S. Fish and Wildlife Service. Targeted areas are the mixed-grass and short-grass prairie ecoregions of Kansas. Landowners receive 75% cost assistance for implementing practices that benefit species in need of conservation (SINC). Seventeen projects, primarily in the Red Hills of southwest Kansas, have been selected for implementation, which will impact 21,129 acres and benefit 18 Species in Need of Conservation (SINC). Common practices include mechanical brush removal, prescribed fire, and native grass planting. Total cost of completing these projects is $677,301. Although designed to benefit SINC species, these projects have also benefited bobwhites

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Table 1. Upland game season dates and bag limits in Kansas, 2008-2009

Season	2008 Dates	2009 Dates	Daily Bag	Open Areas
Prairie chicken (Early)	15 Sep. – 15 Oct.	15 Sep. – 15 Oct.	2(8)a	East of Hwy. 281
Youth Pheasant	25 – 26 Oct.	7-8 Nov.	2(4)	Statewide
Youth Quail	25 – 26 Oct.	7-8 Nov.	4(8)	Statewide
Pheasant	1 Nov. – 31 Jan.	14 Nov. – 31 Jan.	4(16)	Statewide
Bobwhite	8 Nov. – 31 Jan.	14 Nov. 31 Jan.	8(32)	Statewide
Prairie chicken * East and Northwest Units	15 Nov. – 31 Jan.	21 Nov. – 31 Jan.	2(8)	Excludes area south of I-70 & west of hwy. 281
Prairie chicken * Southwest Unit	15 Nov. – 31 Dec.	21 Nov. – 31 Dec.	1(4)	South of I-70 & west of Hwy. 281

*Possession limit in parenthesis

Figure 1. The 6 northern bobwhite management regions in Kansas.

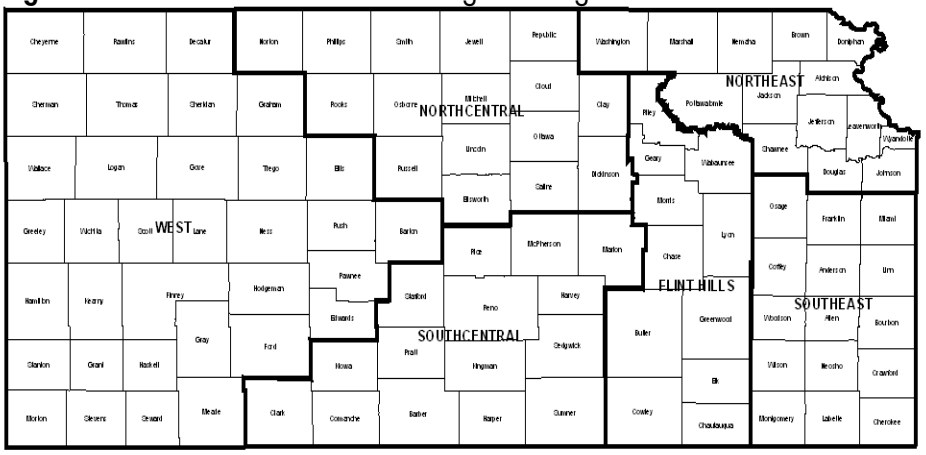


Figure 2. The statewide Kansas northern bobwhite production index (young:adult) derived from the July rural mail carrier survey, 1981-2008.

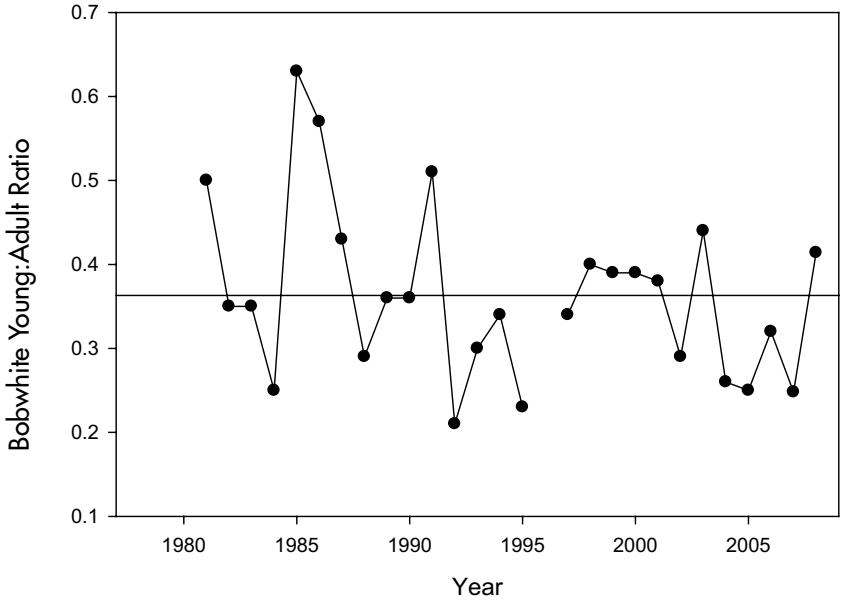


Figure 3. Northern bobwhite production indices (young:adult) derived from the July rural mail carrier survey for each of the 6 small game management regions in Kansas, 1981-2007.

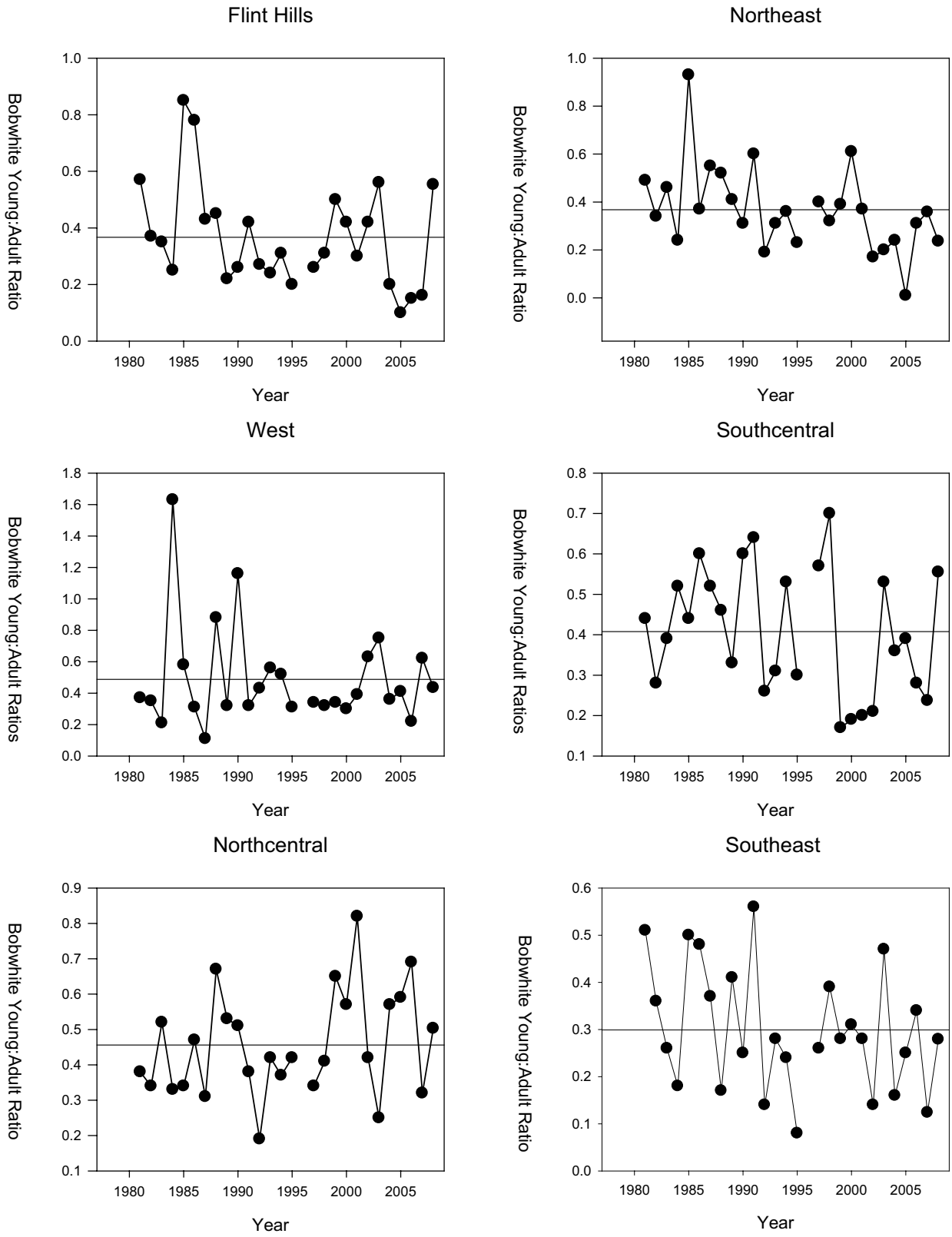


Figure 4. Average bobwhite brood size and estimated frequency distribution of hatching dates in Kansas derived from August roadside counts,2008.

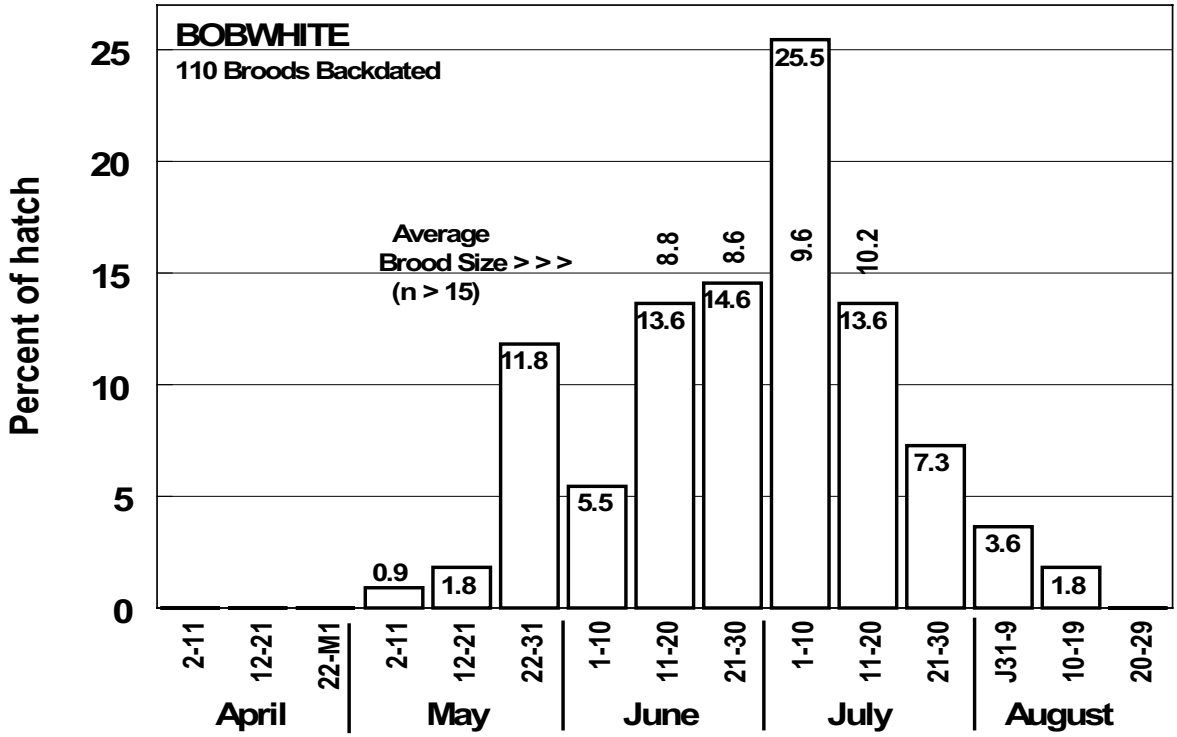


Figure 5. Trends in northern bobwhite abundance in Kansas as indexed by the June whistle count survey (birds/stop; 1998-2007), the April rural mail carrier survey (RMCS) (birds/100 mi. driven; 1963-2007), and estimated hunter harvest (millions; 1962-2007).

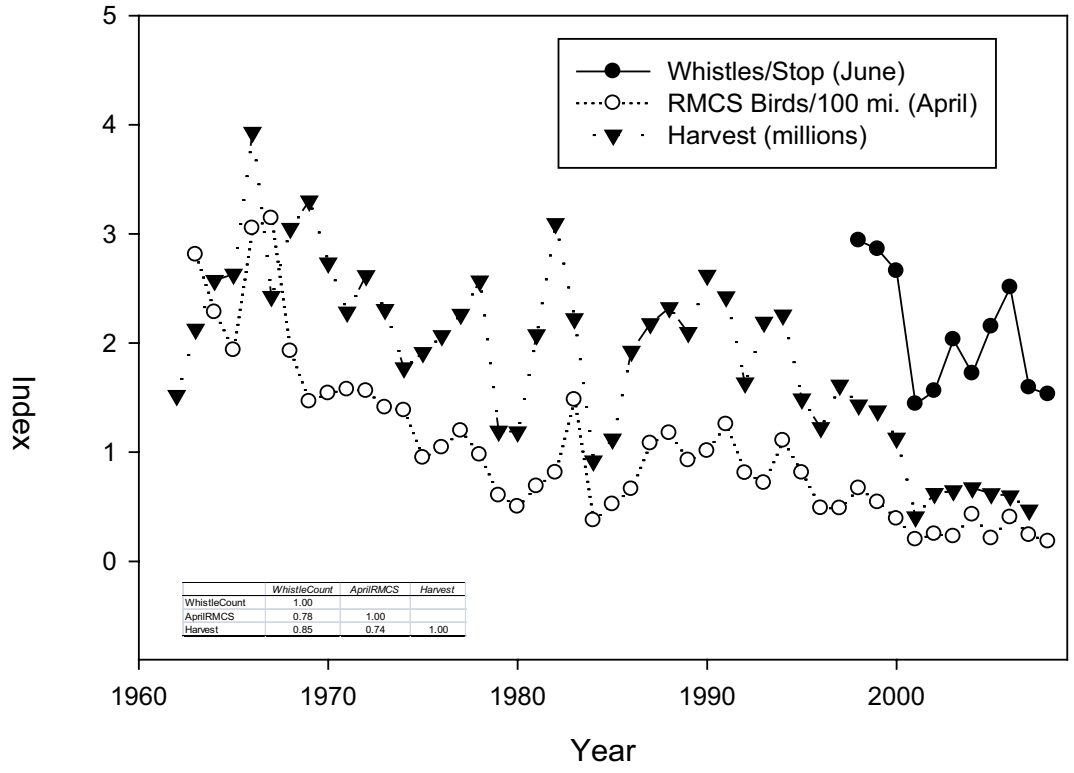
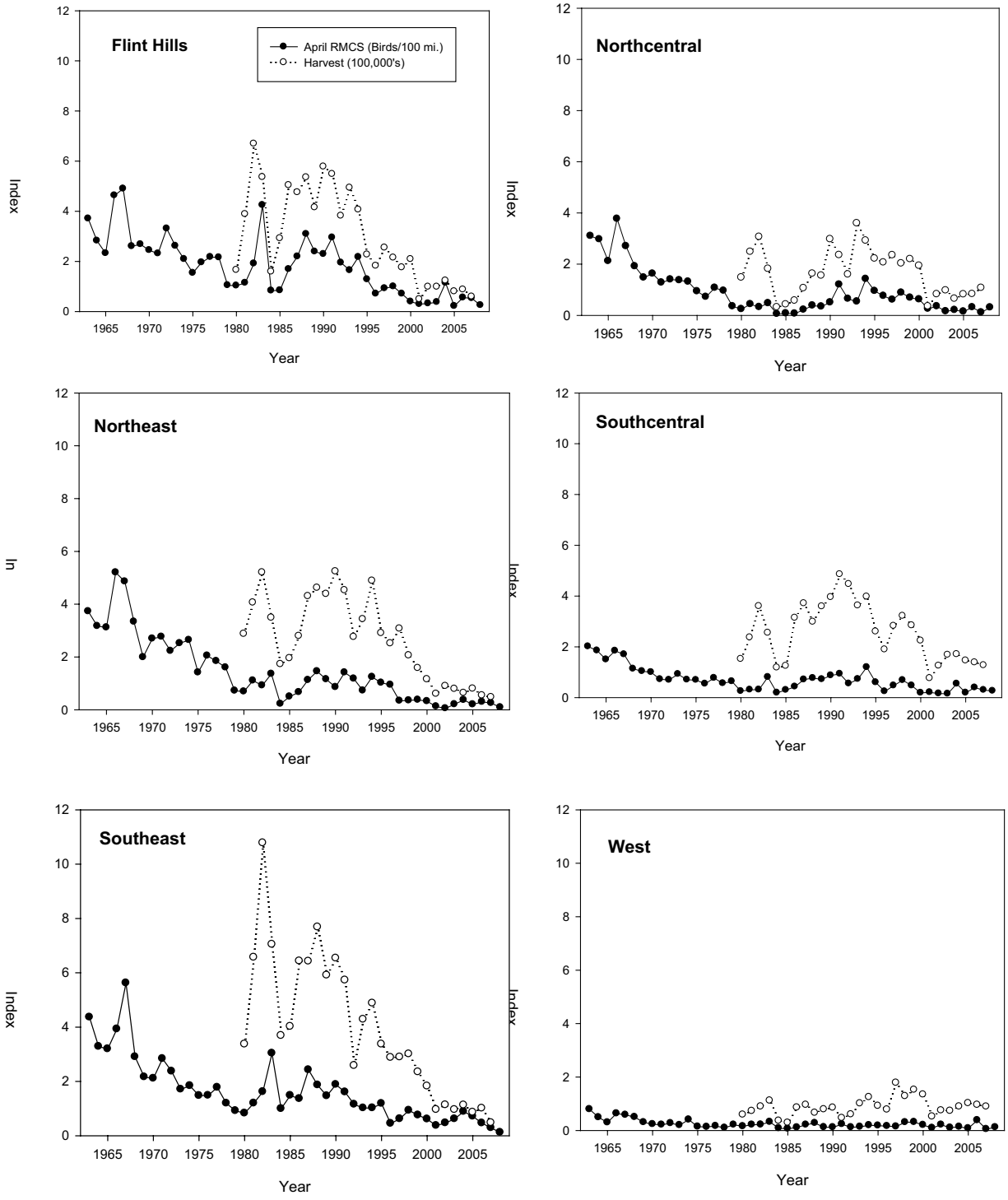


Figure 6. Regional estimates of hunter harvest (100,000's) and indices to bobwhite abundance derived from the April rural mail carrier survey (RMCS; birds/100 mi. driven).



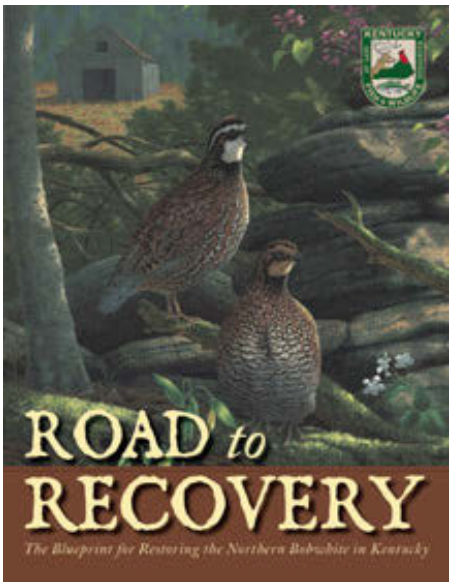
State Report Kentucky

The Kentucky Department of Fish and Wildlife Resources (KDFWR) Small Game program is gearing up for an active year. With help from our Private Lands, Farm Bill, and Public Lands programs we continue to work hard to meet our goals for habitat and bobwhite restoration across the state.

Northern Bobwhite Conservation Initiative
With Kentucky's 10 year bobwhite restoration plan in place it's time to start actively managing habitat within our quail focus areas. A monitoring protocol was created last year and was implemented in 3 of the 8 focus areas. We plan to monitor an additional 3 focus areas in 2009. Focus area specific management plans will be created for at least 3 focus areas this spring. The KDFWR Commission is expressing a genuine interest in small game restoration thanks to the help of Commission Chair Dale Franklin. We are eagerly awaiting word from the Commission as to the amount of funding we will receive for restoration work. We hope to receive up to $1 million/ year over the next few years for habitat improvements.

In December 2008, KDFWR staff and nine of the most prominent experts on northern bobwhites and their management convened in Central City, KY to provide recommendations for more intensive management of Kentucky's largest state-owned wildlife management area (WMA), Peabody WMA. Discussions included valuable insights on habitat management, hunting, specialized management, and research among others. A management plan is currently being developed for the area with work beginning spring 2009.

EQIP Focus Areas
Three EQIP focus areas will be established in conjunction with 3 of our quail focus areas across the state. The primary purpose of the focal area is aimed promoting native grasses in the production system on grazing and haylands. Setbacks from the tree line, edge feathering, and timber stand improvements would also be eligible practices. The scoring system would favor contracts implementing multiple practices. These focal areas could be a huge asset towards advancing habitat in our quail focal areas.



What's New – Programs, Initiatives and Partnerships
Thanks to the on-going partnership with QU, Kentucky drivers now have the opportunity to purchase a quail specialty license plate. Proceeds will be used to benefit bobwhite across the state. The quail artwork featured on both the specialty license plate and the cover of "Road to Recovery"; created by KDFWR staff artist Rick Hill, will soon be available for purchase to the public by visiting our website: www.fw.ky.gov.

KY Prescribed Fire Council
After two meetings involving 20 partners, the KY Prescribed Fire Council became a reality. The organization has a 7-member steering committee according to the adopted by-laws. In addition, the council has 5 working committees which are as follows: training, information and education, research, legislation, and air quality. The first annual meeting is tentatively planned for September. KDFWR has a number of staff engaged in the Council and expect that to expand at the inaugural meeting. The KY Council also was represented at the Coalition of Prescribed Fire Councils inaugural meeting in Tallahassee. The coalition is designed to be an umbrella organization for the state councils to collaborate on national issues.

Quail Unlimited Habitat Team
In 2008, Quail Unlimited, The Kentucky Chapter of the Nature Conservancy, and KDFWR partnered on a Doris Duke Grant to fund a "Habitat Team". The crew began work last spring, primarily focusing on prescribed fire as a CRP mid-contract management practice. An unseasonably wet spring in Kentucky made prescribed burning a challenge; however, the crew was able to successfully burn 1,200 acres in west Kentucky. The team has also been conducting shrub enhancement projects with a skid steer and Marshall Tree Saw. The vision for this team is to be completely self-supporting largely through cost-share payments available through the Farm Bill. In 2009, the crew plans to burn more than 2,000 acres focusing primarily on the Livingston County quail focus areas in west KY.

POWER Program
We are pleased to report that we now have a transmission utility that is putting forward some seed money to sponsor a pilot-test of the POWER Program for doing intentional wildlife habitat work on transmission line rights-of-way in their service area. Big Rivers Electric (http://www.bigrivers.com/) is committing a few thousand dollars in cost-share for the first year to develop the program on some designated transmission lines in their territory. Although we've been working on some isolated habitat demonstration projects on rights-of-way since early 2006, this marks the first commitment of a utility in the state to actually dedicate funds for cost-share to landowners through POWER. Big Rivers would like to see the pilot-test work well and iron out any wrinkles during the first year in order to expand the program in their service territory.

State Report Louisiana

Status

The Louisiana Department of Wildlife and Fisheries conducts a fall whistling survey to develop bobwhite population indices for the 5 general habitat types that encompass the historic range of bobwhites in Louisiana. In 2008, these indices were among the lowest recorded since 1983. Only 6 of the 48 routes recorded a bobwhite response. Weather conditions were poor for production over most of the state. Drought conditions during June and July were followed by excessive rainfall in late summer that was associated with the passage of hurricanes Gustav and Ike. While we expected lower indices, the degree to which they declined was surprising and is not supported by field observations and anecdotal hunter reports. The recording used to elicit a bobwhite response was changed for the 2008 survey and we believe that at least some portion of the declining indices is attributable to the new recording. Some of the survey observers were critical of the new recording and questioned its realism. The recording will be modified prior to the 2009 survey.

Quail Management Initiatives

A CREP project to restore grassland in the Gulf Coastal Prairie was recently approved, but sign-up has not begun. The goal of this project is to restore about 28,000 acres of grassland and shallow water areas in southwest Louisiana.

A SAFE project to restore grassland habitat in the Gulf Coastal Prairie (outside of the CREP area) was developed and approved. The goal of the project is to restore a minimum of 3500 acres of grassland and shallow water areas in certain southwest Louisiana parishes. However, sign-up has been disappointing with only 218 acres enrolled to date. Rising commodity prices and a proposed ethanol plant in the area have probably influenced willingness of producers to enroll.

The Acadiana Grassland Restoration Initiative (AGRI) is a partnership among the LA Department of Wildlife and Fisheries, the Acadiana RC&D Council, the Nature Conservancy and the Atchafalaya Region Chapter of Quail Forever. The AGRI is a 3-part project to address obstacles to grassland establishment in south Louisiana. The AGRI will involve training of natural resource professionals, establishment of demonstration farms, and providing grassland establishment services to private landowners. This project is funded by the State Wildlife Grants Program with matching funds from the AGRI partners. Two demonstration farms have been selected and practices will be installed in the spring of 2009. The first of two grassland establishment and management workshops for natural resource professionals will be held in March 2009 and the second will be in the fall of 2009. The Acadiana RC& D has purchased equipment and has begun offering grassland establishment and management services to area landowners.

The West Gulf Coastal Plain Prescribed Fire Initiative is a partnership among the LA Department of Wildlife and Fisheries, U.S. Fish and Wildlife Service, and the LA Office of Forestry. This project provides funding for prescribed burning on private land. Emphasis is on longleaf pine and shortleaf-oak-hickory forest types, but any low-basal area stands are eligible. Initial burns will be provided without cost to landowners accepted into the program. A management plan will be developed and assistance will be provided to obtain cost-share funding for future scheduled burns through other programs such as WHIP and FLEP. This project is funded by the State Wildlife Grants Program with matching funds from the project partners. Sign-up has just begun and interest appears to be high. A similar project for the portion of Louisiana within the East Gulf Coastal Plan is being developed.

Quail habitat development will be intensified on two Wildlife Management Areas – Alexander State Forest WMA and Sandy Hollow WMA. Increased prescribed burning, midstory removal, disking, and native food plot development will be the primary activities.

State Report Mississippi

Northern Bobwhite Conservation Initiative

Focused implementation of Mississippi's Northern Bobwhite Conservation Initiative step-down plan (MSNBCI) began in 2008. A series of bobwhite habitat management promotional meetings were conducted by the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) in an effort to inform and educate landowners about bobwhite population declines, habitat requirements and management, and availability of technical assistance. Eight focal counties were selected to begin intensively promoting quail habitat and population restoration. The initial focal counties selected include Amite, Marion, Monroe, Panola, Prentiss, Sunflower, Union, and Yazoo. Promotional meetings were held in each of the eight focal counties with a combined attendance of over 350 participants. Mississippi State University Extension Service county offices coordinated and hosted these meetings. The concept of promotional meetings in focal counties was piloted as an initial step towards achieving some of the intermediate, county-level habitat and population goals set forth in the MSNBCI plan. The focal county approach was chosen to focus limited personnel time on intensive promotional work in an effort to develop larger-scale patches of bobwhite habitat. The MDWFP will continue to provide technical assistance to landowners statewide. Many other cooperators have assisted the MDWFP in MSNBCI efforts. Partner agencies and organizations include: Delta Wildlife, Inc.; East Gulf Coastal Plain Joint Venture; Lower Mississippi Valley Joint Venture; Mississippi Department of Agriculture and Commerce; Mississippi Forestry Commission; Mississippi Museum of Natural Science; Mississippi State University, Extension Service; Mississippi State University, Forest and Wildlife Research Center; Mississippi Wildlife Federation; United States Fish and Wildlife Service; USDA-Farm Service Agency; USDA-Natural Resources Conservation Service; USDA-United States Forest Service; and Wildlife Mississippi.

Promotional meetings are set for Marshall and Tippah counties in early 2009, with additional counties to be added later. In Marshall County, the MDWFP

Private Lands Habitat Program has made contact with several landowners who have a quail interest. These landowners account for more than 5,000 acres in the southwestern porting of the county. With the help of the MDWFP and other agencies, these landowners have implemented more than 2,500 acres of habitat management practices including native grass establishment and management, oak savanna restoration, timber thinning, herbicide applications, and prescribed fire. Habitat management practice will continue and bobwhite response will be monitored.

Private Lands

The MDWFP Private Lands Habitat Program conducted more than 100 private lands site visits during July 2008 – December 2008. While most of these site visits were for wildlife interests other than quail, habitat recommendations made by biologists for other upland game species have the potential to benefit quail. The MDWFP Small Game Program conducted 16 private lands site visits during July 2008 – December 2008, with most of these site visits pertaining to quail. The Small Game Program also responded to over 100 requests for technical assistance via phone, e-mail, or informational packets.

Mississippi's Landowner Incentive Program (LIP) provides cost-share funds to help landowners restore and enhance native prairie and longleaf pine ecosystems. During 2008, LIP projects reverted (planting) 374 acres to longleaf pine across six southern counties. Three projects restored 540 acres of native prairie in the northeast section of the State. MDWFP biologists provide technical guidance on all projects and help retain contractors to conduct necessary work. Since 2005, LIP funds have helped revert 834 acres to longleaf pine, enhance 72 acres of longleaf with prescribed fire, and revert 983 acres to native warm-season grasses. Information provided by Russ Walsh, Mississippi LIP Coordinator.

The North Central Mississippi RC&D was recently awarded a Conservation Innovation Grant (CIG) by USDA-Natural Resources Conservation Service (NRCS). Funds from the CIG will be used to promote the use of native warm-season grass forages for grazing and haying in a 14 county focal area in North Mississippi. The CIG was co-authored by the MDWFP and would not have been possible without partnerships with the Mississippi Soil and Water Conservation Commission, National Wild Turkey Federation, Quail Unlimited, and the Desoto County Soil and Water Conservation District. Information provided by John Gruchy, CIG project liaison for the MDWFP.

The Strawberry Plains Audubon Center in Holly Springs, MS has been awarded one of the first ever Toyota Innovation Grants from the National Audubon Society. Funds from the Toyota Grant will be used to promote conservation practices including native grassland establishment and management to improve water quality and wildlife habitat in the upper Coldwater River watershed. Partners in the grant include the Mississippi NRCS and the MDWFP.

The Bear Creek Chapter of Quail Forever was awarded funds from the Tennessee Valley Authority to establish native grasses to improve water quality and wildlife habitat. The MDWFP Private Lands Habitat Program will provide technical guidance for the project.

Public Lands

MDWFP Small Game Program staff provided habitat management technical guidance and funding, primarily for quail, on state and federal public lands. During the first half of 2009 fiscal year, 12 public lands site visits were made relative to small game habitat management.

Charles Ray Nix (formerly Hamer) Wildlife Management Area is a state-owned WMA in Panola County, Mississippi. This WMA is currently undergoing intensive habitat management activities to benefit quail and other wildlife. In 2007, old hay fields were treated with herbicide to eradicate bermudagrass and fescue. Agricultural fields were removed from a farm lease, and about a third (400 acres) of former row crop fields were planted to native warm-season grasses (NWSG) in June 2008. Another 400 acres of NWSG will be planted in 2009. A forest management plan is being developed to improve structure and composition of upland hardwood forests on the area. Prescribed fire has already been reintroduced to these upland forest stands and will continue to be a part of the forest management strategy. Upland forest thinning began in September 2008. About 600 acres of upland forest are scheduled to be thinned by summer, 2009. At present, about 140 acres of upland and riparian forest have been managed to improve composition and structure with selective stem injection treatments. Several other wildlife management areas around the state are targeted for future upland wildlife habitat enhancement projects.

Cooperation with Federal Agencies

The MDWFP participated in the Mississippi Natural Resources Conservation Service (NRCS) State Technical Committee. The MDWFP also provided technical assistance to federal agencies in the implementation of federal Farm Bill Programs at the county and state levels.

In 2007, the USDA-Farm Service Agency (FSA) announced the Safe Acres for Wildlife Enhancement initiative (SAFE) under the Conservation Reserve Program (CRP). SAFE was designed to address the habitat needs of endangered, threatened or high-priority fish and wildlife species. Two grassland CP38 practices were developed for Mississippi. A CP38 – Bobwhite Quail Habitat practice was developed to increase grassland wildlife habitat in row crop agricultural systems and to complement CP33 – Habitat Buffers for Upland Birds. The practice consists of establishing native grasses, wildflowers, and shrubs to provide critical habitat for bobwhites and other grassland wildlife. There are 29 counties throughout Central and North Mississippi that are eligible for this practice: Alcorn, Benton, Bolivar, Chickasaw, Clay, Coahoma, Desoto, Hinds, Holmes, Humphreys, Lee, Leflore, Lowndes, Madison, Marshall, Monroe, Noxubee, Panola, Pontotoc, Prentiss, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tippah, Tunica, Union, and Yazoo. There are 2,950 acres available for enrollment in the CP38 – Bobwhite Quail Habitat practice. As of January, 2009, about 2,000 acres have been committed to the Bobwhite Quail Habitat practice.

The CP38 – Black Belt Prairie practice was jointly developed with Alabama to restore native prairie grasses and wildflowers in row crop agricultural systems. The Black Belt Prairie region of Mississippi is one of the most degraded ecosystems in the state, with less than 1% of native prairie remaining. Prairie restoration will enhance habitat for a number of grassland wildlife

species, including bobwhite quail, grassland songbirds, pollinator insects such as butterflies, deer, turkey, and other game and non-game wildlife. There are 9 counties in the Black Belt Prairie region of Mississippi that are eligible for this practice: Chickasaw, Clay, Kemper, Lee, Lowndes, Monroe, Noxubee, Oktibbeha, and Pontotoc. There are 2,500 acres available for enrollment in the CP38 – Black Belt Prairie practice in Mississippi. As of January, 2009, about 400 acres have been committed to the Black Belt Prairie practice.

The MDWFP is working with FSA and NRCS to promote and deliver CP33 and CP38. Mississippi State University and the MDWFP are continuing to cooperate to fulfill monitoring requirements for both practices.

Cooperation with Non-Governmental Organizations

The MDWFP continues to cooperate with NGOs to implement wildlife habitat projects. The MDWFP cooperated with Quail Forever, Golden Triangle Chapter (QF-GT), State Chapter National Wild Turkey Federation (NWTF-MS), and other cooperators to implement a 250-acre pine grassland and old field habitat enhancement project on Noxubee National Wildlife Refuge. Approximately 233 acres of thinned, upland pine forest was treated with selective herbicide to control hardwood brush in October, 2008. Approximately 70 acres of old fields are being treated to eradicate bahiagrass and tall fescue and release native grasses and forbs. Funding is being provided by QF-GT, NWTF-MS, US Fish and Wildlife Service grants, and BASF, Corporation grants. The MDWFP is providing technical advice on the project.

Small Game Program personnel from the MDWFP continued to participate in Mississippi's Prescribed Fire Council (formed in 2007), including service on the steering committee. Information on Mississippi's Prescribed Fire Council can be found at www.msfirecouncil.org.

The MDWFP Small Game Program coordinates the Mississippi Bobwhite Task Force. This group meets at least once per year and is composed of state, federal, and private agencies and organizations. The Bobwhite Task Force met in November 2008 with Theron Terhune and Bill Palmer of Tall Timbers Research Station for a "Biologist Ranking Information Workshop." This workshop was designed to gather input from biologists on what areas of Mississippi have the greatest potential for long-term bobwhite conservation for use in Northern Bobwhite Conservation Initiative and other strategic plans.

Cooperation with Mississippi State University, Forest and Wildlife Research Center

The MDWFP continues to cooperate with Mississippi State University to monitor bird populations on agricultural fields enrolled in CRP, CP33 – Habitat Buffers for Upland Birds. The third year of mandatory monitoring was completed in 2008. CP33 buffer habitats provided positive benefits to bobwhites and several high-priority breeding songbird species. There was considerable variation in populations among years, but breeding male bobwhite density (Figure 1) and covey density (Figure 2) was greater at CP33 sites compared to control sites in all years measured. Bobwhite male density was about 6 times greater at CP33 sites than control sites over the three years of monitoring. Covey density was more than 2 times greater at CP33 sites than control sites over the three years compared. Data analyses were conducted by Kristine Evans and Lindsey Singleton.

The MDWFP also funds a cooperative research associate position through Mississippi State University. Previously, this position focused on supporting quail research and management activities. In 2008, responsibilities of this position were expanded to support all aspects of the MDWFP Small Game Program. Lindsey Singleton was hired as a research associate in January, 2008 to assist the MDWFP in this position.

Monitoring and Surveys

During 2008, breeding season quail call counts were conducted on public lands to gain more information on bobwhite population trends and relative abundance. Public lands with upland habitat management potential were selected for monitoring efforts. This will be especially useful to monitor long-term population changes in response to future management decisions. A total of 18 public lands were surveyed during June-July, 2008. The overall average count was about a half bird per point sampled. Sites ranged from a low of 0 to a high of almost 2 birds heard per survey point (Table 1).

The MDWFP continues to conduct a volunteer quail hunter survey (wild birds only). During the 2007 – 2008 hunting season, data were received on 130 wild quail hunts representing 55 private land hunts, 75 public land hunts, and 400 hours of hunting. Hunting party size was generally 1 hunter and averaged about 3 hours of hunting. Hunters flushed 0.24 coveys per hour and bagged 0.15 birds per hour. Survey participants again perceived quail populations to be less than the previous season.

Outreach and Education

The MDWFP hosted two bobwhite quail habitat field days in October, 2008. Private Lands Habitat Program and Small Game Program personnel also gave technical presentations on bobwhite quail and early successional habitat management at County Forestry Association, Quail Unlimited, and other meetings.

The MDWFP continues to support local chapters of Quail Forever and Quail Unlimited. Currently, there are 4 Quail Forever chapters and 2 Quail Unlimited chapters in Mississippi. These chapters serve as valuable grassroots proponents of quail conservation, and the MDWFP is committed to supporting local chapters of these organizations by providing technical guidance on habitat management and other projects.

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Site	Number of Points Sampled	Mean Count
Bienville WMA	17	0.00
Caney Creek WMA	47	0.02
Caston Creek WMA	28	0.82
Charles Ray Nix WMA	20	0.05
Chickasaw WMA	35	0.00
Choctaw WMA	54	0.26
Copiah County WMA	25	0.52
Divide Section WMA	12	0.08
Hell Creek WMA	22	1.95
John W. Starr Memorial Forest WMA	9	0.43
Leaf River WMA	20	0.10
Marion County WMA	44	1.80
Mason Creek WMA	35	0.51
Noxubee NWR	30	0.63
Red Creek WMA	19	0.79
Theodore A. Mars, Jr. Memorial WMA	6	0.50
Tallahala WMA	33	0.30
Ward Bayou WMA	4	0.75

Table 1. Year 2008 breeding season quail call count results for public lands with upland habitat management potential in Mississippi.

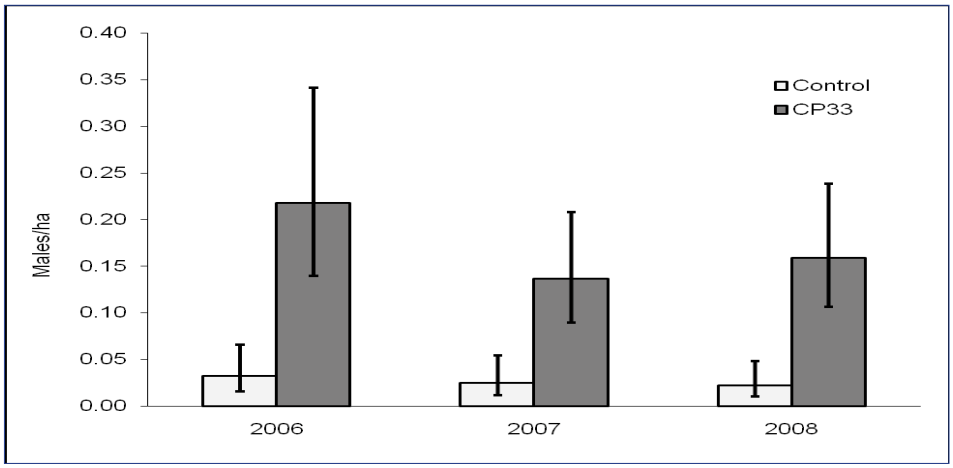


Figure 1. Northern bobwhite breeding season density (95% CI) for CP33 and non-CP33 (control) sites in Mississippi, 2006-2008.

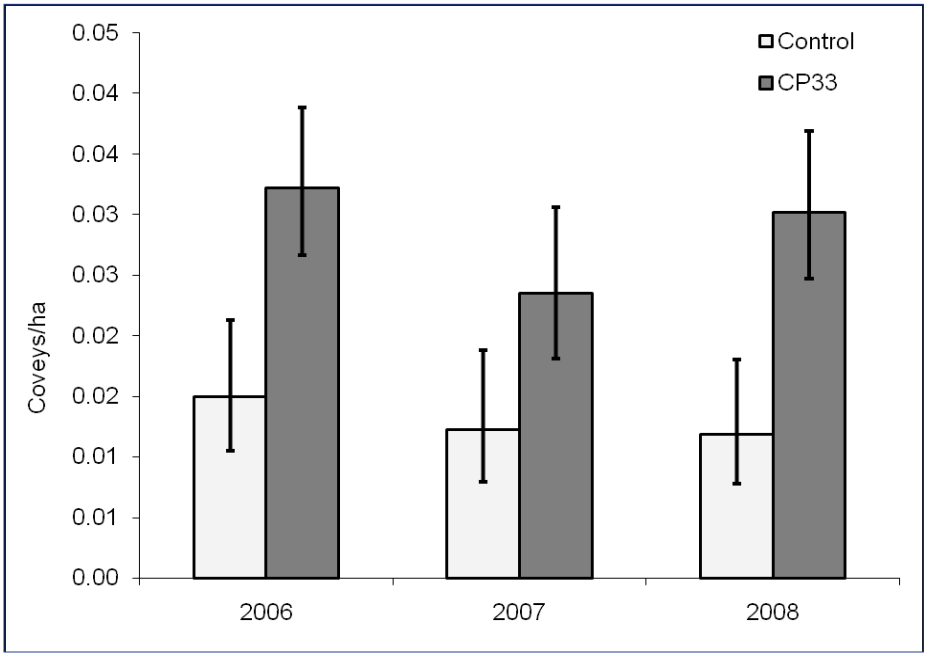


Figure 2. Northern bobwhite covey density (95% CI) for CP33 and non-CP33 (control) sites in Mississippi, 2006-2007.

Missouri Department of conservation Strategic Guidance for Northern Bobwhite Recovery 2008 Report

INTRODUCTION

In May 2003, Director John Hoskins signed the Strategic Guidance for Northern Bobwhite Recovery for the restoration and enhancement of quail populations in Missouri. The goal of the plan is to reverse the downward trend in bobwhite abundance and bobwhite-related recreation in Missouri. The statewide plan identified four primary goals and was further supported by development of regional quail plans. The four statewide goals are:

- Improve statewide bobwhite population
- Improve bobwhite populations statewide on conservation areas
- Expand interest among Missourians in seeing and hearing bobwhite
- Increase statewide recreation related to bobwhite and associated species

While northern bobwhites are the primary focus, the recovery plan will benefit numerous wildlife species, reduce soil and water erosion, improve water quality, and provide greater outdoor recreational opportunities for Missourians. Likewise, other Department initiatives such as the Greater Prairie Chicken Recovery Plan, Comprehensive Wildlife Strategy and Conservation Opportunity Areas are helping restore quail habitat on private and public lands. The Strategic Guidance for Northern Bobwhite Recovery will also help the Department achieve several goals identified within the Department's strategic plan – The Next Generation of Conservation:

- Conserving Plants, Animals and Their Habitats
- Protecting Clean and Healthy Waters
- Promoting Healthy Trees and Forests
- Preserving Missouri's Outdoor Recreation Heritage
- Teaching Missourians About Fish, Forest and Wildlife Resources
- Helping Private Landowners Advance Conservation
- Serving Nature and You on Conservation Areas

The Next Generation of Conservation is the Department's strategic, long-term plan that was developed with stakeholder input from private landowners, farmers, conservation organizations, and rural and urban leaders. The plan will help guide how the Missouri Department of Conservation provides public services to all Missourians to benefit fish, forest and wildlife in future years. The Strategic Guidance for Northern Bobwhite Recovery is an essential part of this long-term plan.

NORTHERN BOBWHITE CONSERVATION INITIATIVE UPDATE

Missouri's efforts to increase northern bobwhite numbers and other wildlife species with similar habitat needs are a part of a national initiative. The Northern Bobwhite Conservation Initiative (NBCI) was organized to develop population and habitat objectives in each of the 15 Bird Conservation Regions where northern bobwhite occur. The NBCI is a coordinated and cooperative approach for integrating the needs of quail into other bird management plans such as Partners in Flight and the North America Bird Conservation Initiative.

The NBCI was designed by the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) and the Southeast Quail Study Group Technical Committee to restore declining quail populations to 1980 levels. After six years as a regional initiative, the NBCI has become a strong nationwide conservation effort involving numerous agencies and organizations. In 2007, the SEAFWA began a search for a permanent home for the NBCI, and in early 2008 an agreement was signed between the SEAFWA and University of Tennessee to move the NBCI to Knoxville. As part of the administrative change, the NBCI will grow into a national initiative that will cover the entire northern bobwhite range. These two administrative changes will provide greater stability for the program and additional opportunities for growth and development.

The past year was a significant year for quail habitat restoration efforts in Missouri. In early 2008, Scott County was recognized as the first county in the nation to achieve its NBCI habitat goal by creating over 7,000 acres of quail friendly habitat in an intensively row cropped landscape. Scott County farmers, quail hunters and citizens are noticing more quail in areas where field borders have been established. For their efforts, the Scott County Farm Service Agency, Natural Resource Conservation Service, Soil and Water Conservation District and Missouri Department of Conservation staffs received the NBCI Group Achievement award for assisting private landowners with quail habitat restoration efforts. In 2007, the Missouri Department of Conservation received the NBCI Group Achievement Award for the Department's effort toward implementation of the NBCI plan and other accomplishments related to Farm Bill programs.

In September 2008, a second Missouri county was recognized for achieving goals identified in the NBCI. Over the past six years, landowners in Cass County have created over 15,000 acres of quail friendly habitat on agricultural lands by establishing native grass field borders, converting cool-season grass fields to native warm-season grasses and completing miles of edge feathering and shrub plantings. In addition, landowners are actively managing CRP grasslands and other early successional habitats with prescribed fire, light disking and herbicide treatments. Cass County's success would not have been possible if it were not for dedicated Department staff, enthusiastic landowners, assistance from Quail Unlimited and support from the Cass County Soil and Water Conservation District, Farm Service Agency and Natural Resource Conservation Service.

"In the 1980's my farm harbored ten coveys, but then over the years of stagnant habitat management it declined to just two, now since I have begun to work on intensive habitat management and disturbance I have noticed eight coveys again this fall."

Tom Lampe, Cass County landowner

Other Missouri counties are approaching habitat goals identified in the NBCI. Carroll, Caldwell, Mississippi, Pemiscot, Dunklin, and New Madrid Counties are close to their habitat goals because of devoted landowners, MDC staff and conservation partners working to restore quail and grassland bird habitat.

Landowners in Mississippi, Pemiscot, Dunklin and New Madrid Counties have established miles of native grass field borders in this row crop dominated landscape through conservation programs

such as CP-33 and the Conservation Security Program. Already, landowners and biologists are reporting more quail and pheasants along newly established native grass field borders and other wildlife friendly practices.

In Carroll and Caldwell counties, Department staff have been working closely with USDA staff to encourage mid-contract management (prescribed burning, light disking and herbicide treatments) on existing CRP grass fields. Landowners are also edge feathering, planting covey headquarters, spraying invasive plants and planting food plots to improve CRP grasslands and early successional habitats for bobwhite quail. Department biologists feel low growing woody cover is a critical habitat component missing from most of Missouri. Over the past few years, several miles of edge feathering have been completed in Carroll and Caldwell counties. Farmers are also enrolling crop field borders into the popular CP-33 and CP-38 programs. In parts of Carroll and Caldwell counties where habitat improvements have occurred landowners are seeing and hearing more quail.

PUBLIC LAND ACCOMPLISHMENTS

As a part of the Strategic Guidance for Northern Bobwhite Recovery, the Department is working to improve quail and grassland bird habitat on conservation areas throughout the state. Each year, quail and grassland bird projects receive high priority for funding during the Department's annual budget development. In fiscal year 2008, which runs from July 2007 to June 2008, Department work teams accomplished over 96,000 acres of quail friendly habitat on public land. Most of the work was completed in old fields, grasslands, prairies, savannas, glades and woodlands. Altogether, a total of 193,300 acres of habitat work and area management on conservation areas in fiscal year 2008.

Department staff also work with about 360 permittee farmers by renting approximately 68,000 acres of cropland, hay land and grassland on conservation areas. Permittee farmers are also helping the Department by establishing food plots, light disking and conducting other habitat management practices as a part of their farming contract with the Department.

Department staff are using a variety of management practices to improve habitat conditions on conservation areas. For example, prescribed fire and strip disking are being used to open bare ground and promote seed producing plants for brooding habitat. In recent years, work teams have been conducting prescribed burns almost year round, with an emphasis on summer and fall prescribed burns to improve future brooding habitat for northern bobwhite. Fall and winter are preferred times to conduct light disking in old fields and rank grass fields.

Biologists are also using managed grazing to improve brooding cover for quail and grassland birds on some conservation areas. Work teams are planting food plots and overseeding native wildflowers and legumes in warm-season grass fields to create even more brood cover for quail. We are enhancing woody and shrubby cover by creating brush piles, edge feathering and planting shrubs. Since 2005, the Department has completed a total of 467 miles of edge development and enhancement on conservation areas. This would be almost the same distance as driving back and forth on I-70 from Kansas City to Saint Louis!

In addition to Department efforts, the United States Forest Service (USFS) is also working to restore habitat for upland wildlife species including northern bobwhite. Through a cooperative agreement with the USFS, Department of Conservation and National Wild Turkey Federation 40 acres of old fields dominated by fescue and undesirable trees were converted to native warm-season grasses in the Houston/Rolla/Cedar Creek District. Staff also completed 312 acres of glade and savanna improvement by thinning cedars and undesirable hardwoods. In the Ava District, staff removed about 120 acres of cedar from glades and open woodlands. In the future, the sites will be included in prescribed burns aimed at restoring these natural communities.

QUAIL EMPHASIS AREAS

Nineteen conservation areas have also been identified as Quail Emphasis Areas (see map). Quail Emphasis Areas total 67,000 acres and are located in each region. The purpose of areas with these designations is to demonstrate good quail habitat management and to provide a quality quail hunting experience. Quail Emphasis Areas were selected based on existing habitat qualities, public demand, and size of the area. To learn more about Quail Emphasis Areas visit mdc.mo.gov/hunt/gamebird/qea.htm.

In fiscal year 2008, staff completed at least 12,000 acres of habitat work on these nineteen conservation areas. These areas are intensively managed with prescribed burning, light disking, food plots, natural community restoration, woody cover enhancement and invasive plant control. Last year, over 1,800 acres of invasive vegetation such as tall fescue, smooth brome and sericea lespedeza were sprayed with herbicides to control these invasive plants and to improve brooding cover for quail. Invasive plants often grow too thick for bobwhite quail to move through, and suppress desirable native grasses and legumes.

In 2008, the Department received conservation grants from SportsDOG Brand and the National Wild Turkey Federation Superfund to purchase herbicides to control invasive cool-season grasses on Quail Emphasis Areas. With the grants, Department staff were able to purchase six, 30 gallon containers of glyphosate that will be used in 2008 and 2009 to treat approximately 600 acres of habitat. Several Quail Emphasis Areas also received grants from the Conservation Heritage Foundation for small habitat projects such as woodland restoration, invasive plant control, native grass and wildflower seed and contracted edge feathering. Conservation grants play a critical role in enhancing district work team budgets each year.

Staff have also spent considerable time improving low growing woody cover on these areas by edge feathering, planting shrubs, constructing brush piles and thinning out undesirable trees in woodlands and old fields. Low growing woody cover is an essential habitat component for northern bobwhite that is used year round. In fact, biologists recommend 20 percent of a covey's home range should be in low growing woody cover or two acres for every ten acres of habitat. In 2008, biologists completed about 54 miles of woody edge enhancement and development on Quail Emphasis Areas.

In recent years, the Department has increased natural community restoration efforts on many conservation areas. Wildlife and Forestry Divisions are working together to restore natural communities such as woodlands, savannas and glades. Restoration often involves removing woody vegetation, controlling invasive species and reintroducing prescribed fire. On Quail Emphasis Areas, over 11,000 acres of woodland (pictured to the right) have been identified for restoration. For example, Wildlife and Forestry staff at Whetstone Creek Conservation Area are currently marking several hundred acres of woodland for future thinning projects. Eventually, these restored habitats will become high quality upland game habitat for quail, wild turkey and other species.

Work teams on Quail Emphasis Area are monitoring quail and songbird responses to intensive management efforts by conducting spring and fall surveys. Surveys the past couple years have shown stable quail numbers on the areas despite unfavorable weather conditions. This shows quail's ability to withstand poor weather conditions if favorable habitat is available.

In 2007 and 2008 devastating ice storms covered most of the state at some point. To make matters worse, severe flooding and heavy rains during the summers of 2007 and 2008 likely affected nesting success of quail and many other ground nesting birds. Fortunately, quail will attempt to re-nest a second and third time. By early November, many quail hunters on conservation areas and private land reported seeing young quail – a good indication of a late season hatch. Despite the poor nesting conditions, Department staff have also received favorable reports from private landowners who conducted fall whistle counts.

PRIVATE LAND ACHIEVEMENTS

In 2008, the Conservation Department and partners continued to assist private landowners by providing technical and financial assistance for their habitat projects. Through the Missouri Department of Conservation Landowner Cost Share Program over $1 million was allocated to Missouri landowners in 2008, of which, approximately $558,000 funded quail and grassland bird friendly practices, impacting several thousand acres of private land for northern bobwhite. Cost share dollars are commonly used to establish native grasses, eradicate invasive vegetation, prescribed burning, shrub plantings and woody cover enhancement.

The National Wild Turkey Federation Superfund Grant continues to provide critical funding habitat projects on private and public land that benefit wild turkey. This program provides over $100,000 annually for native warm-season grass drills, herbicide, seed, or hire habitat contractors. In many cases these projects also benefit northern bobwhite and other upland wildlife.

The United States Fish and Wildlife Service's, "Partners Program" is also helping restore habitat such as woodlands, savannas, prairies and glades for threatened or endangered species on private land, especially in targeted landscapes such as grassland Conservation Opportunity Areas and Grassland Coalition Focus Areas. Through this cost share program, habitat work completed for threatened or endangered species will also benefit quail and other wildlife.

In 2008, Private Land Services Division finished work on the Bobwhite Quail Challenge Grant. Through this program, the Department has provided $190,000 in funds to Quail Forever, Quail Unlimited and the National Wild Turkey Federation. With matching funds from each conservation group, the program will provide approximately $380,000 of habitat work to Missouri landowners interested in creating early successional and natural community habitats that will benefit northern bobwhite. Over the next few years, these organizations will work with Department staff to administer the Bobwhite Challenge Grant funds to landowners throughout the state. The Bobwhite Quail Challenge Grant was approved by the Conservation Commission in May 2007 and was endorsed by the Quail and Grassland Bird Leadership Council.

The Missouri Department of Conservation continued to fund the Conservation Equipment Grant Program which provided small loans to Soil and Water Conservation Districts and conservation groups to purchase small equipment such as native warm-season grass drills, sprayers and prescribed burn equipment. The small grant program enables the organization to rent the equipment to private landowners who need it to implement certain habitat practices such as establishing native warm-season grasses, conducting prescribed burns and spraying invasive vegetation.

Over a three day hunt in December we moved 14 coveys on three different farms. We averaged over one covey per hour. The best hunt was six coveys in less than three hours. While the three farms were different, the key was each landowner has done an excellent job of managing native grass fields or field borders and have established covey headquarters for escape cover. In fact, 13 of the 14 coveys were in or very close to shrub thickets or edge feathering.

Aaron P. Jeffries, Upland Game Coordinator

PRIVATE LAND QUAIL FOCUS AREAS

In 2008, Department staff completed a review of the private land Quail Focus Areas. The purpose of the review was to establish focus area names, set measurable goals and redefine boundaries to better reflect where landowners have shown an interest in bobwhite quail management. The purpose of establishing Quail Focus Areas was to show landscape improvement in quail densities and to promote quail and grassland bird conservation. Today we have 34 private land Quail Focus Areas located throughout the state. Most focus areas are about 30,000 acres in size but some of are even larger because of widespread landowner interest in restoring quail habitat.

Quail Focus Areas were identified where landowners were already managing for quail, near conservation areas with good quail habitat, and/or where conservation partners have expressed an interest in quail management. Department staff are focusing extra attention to these targeted landscapes to show a widespread improvement in quail densities. The plan is for Department staff and conservation partners to target landowners within these focus areas by marketing quail management and then providing technical and financial assistance to interested landowners. In the meantime, biologists continue to provide technical and financial assistance to landowners outside of focus areas to help these landowners meet their resource objectives.

Department staff and conservation partners

continue to host workshops and field days in these focus areas to show landowners high quality habitat and how to implement the practices on their own or put them in contact with a contractor who can do the work for them. Some focus areas are providing landowners with signs (shown to the right) to promote their work and the Quail Focus Area. Outreach and Education staff are assisting field staff by developing marketing materials for each focus area. Biologists are also assisting landowners with fall whistle counts and bird monitoring to determine the effectiveness of their habitat work. Department staff report that landowners within focus areas are observing more quail in these targeted landscapes with major habitat improvements.

FARM BILL PROGRAMS

Still today, the Federal Farm Bill remains the single most important source of financial assistance for landowners interested in restoring wildlife habitat on private land. Several Farm Bill programs allow for quail and grassland bird habitat restoration and protection on private lands. Missouri continues to be a national leader in wildlife habitat restoration, especially bobwhite quail, through the Federal Farm Bill programs. This would not have been possible if it were not for the strong partnership between the Missouri Natural Resource Conservation Service, Farm Service Agency and Missouri Department of Conservation.

The Conservation Reserve Program and Conservation Reserve Enhancement Program (CREP) continue to be the more popular practices for bobwhite quail habitat restoration in Missouri. For example, targeted CRP practices like CP-33 and CP-38 are benefiting bobwhite quail and grassland birds on private land. Currently, Missouri has the third highest enrolled acres in CP-33 in the nation, and Cass, Scott, Saline, Audrain and Andrew Counties have the highest acres enrolled in the state. In recent months the sign-up has increased due to revised soil rental rates. Over 30,000 acres of the Missouri's 32,600-acre allocation have been enrolled.

Sign-up is underway for the CP-38 – SAFE practice which will bring an additional 19,200 acres of quail friendly habitat to Missouri. Most eligible acreage are located in targeted landscapes such as greater prairie chicken recovery areas and sand prairies in the bootheel. The remaining acres will be allocated for quail friendly practices. The initial allocation of 6,250 acres in the quail practice was used by December and an additional 3,000 acres was recently added to the bobwhite practice.

Through Conservation Reserve Enhancement Program over 25,000 acres of quail friendly habitat was seeded and established to native warm-season grasses in 2008. While parts of 79 counties were eligible for CREP, a significant amount of the acres enrolled occurred in west-central, northeast and north-central Missouri. In fact, several thousand acres were established in Cass County in 2008. These additional acres helped Cass County become only the second county in the nation to achieve its NBCI habitat goal. As a part of the CREP program, native vegetation and mid-contract management will be required on most practices.

In 2007, Private Land Services worked with the Farm Services Agency and Natural Resource Conservation Service to require mid-contract management on new CP-21, CP-29 and CP-30 contracts over five acres. Mid-contract management was not previously required on these continuous CRP practices. As a result, management of these filter strips and buffers will provide better habitat for quail throughout the length of the contract. The Department's strong partnership with both agencies has helped further enhance these CRP practices for northern bobwhite.

The Natural Resource Conservation Service held statewide sign-ups for both the Wildlife Habitat Incentives Program (WHIP) and Environmental Quality Incentives Program (EQIP). Both programs have been instrumental in helping landowners restore natural communities like prairie, glade, woodland and savanna, and to create early successional habitats for quail and other wildlife species. In 2008, a record $1.4 million in cost share was allocated to new WHIP contracts in Missouri. Many of these contracts will benefit bobwhite and grassland birds such as greater prairie chickens. Existing WHIP and EQIP contracts, from previous sign ups, accounted for an additional 16,665 acres of quail and grassland bird habitat in 2008. These existing contracts are often 3 to 10 years in length and provide adequate time for the cooperator to complete planned practices such as edge feathering, native grass establishment, natural community restoration and invasive plant control.

The Conservation Security Program (CSP) continues to benefit production landowners and bobwhite quail. In 2008 the Natural Resource Conservation Service held a signup in the Lower Missouri Crooked Watershed, as a result, 44% of the accepted contracted agreed to establish native grass and wildflower field borders and shrubby cover on cropland, pastureland or hayland for bobwhite quail. In many cases participants agreed to convert 10% of their land into quail friendly habitat. Biologist estimate 275 acres of native grass field borders will eventually be established in the Lower Crooked River watershed as a result of CSP. Since 2005, ten watersheds in Missouri have participated CSP. These long-term contracts have resulted in several thousands of acres of quail friendly habitat on working lands. Most notably have been native grass field border and shrubby cover establishment in the Missouri bootheel. In fact, CSP was the reason why Scott County has been recognized as the first county in the nation to achieve its NBCI habitat goals. The results more than speak for themselves. Landowners and hunters in southeast Missouri are reporting a significant increase in bobwhite numbers.

HABITAT MANAGEMENT FOR GREATER PRAIRIE CHICKEN RECOVERY DIRECTLY BENEFITS NORTHERN BOBWHITE

In Grassland Coalition Focus Areas the Department and numerous conservation partners are working to improve private and public land for greater prairie chickens and grassland wildlife. Department staff and conservation partners continue to work with private landowners in grassland focus areas by providing technical and financial assistance for both quail and grassland bird practices such as native warm-season grass establishment, managed grazing, deferred grazing for nesting and tree removal from prairie vistas.

In grassland focus areas, Department work teams are restoring and re-establishing tallgrass prairie, removing undesirable trees and invasive plants and using managed grazing to improve habitat conditions on

conservation areas. In many cases habitat accomplishments made for the greater prairie chicken benefit northern bobwhite. In fact, managers with conservation areas in southwestern Missouri Grassland Coalition Focus Areas have reported quail densities equal to those on many Quail Emphasis Areas. Private landowners completing habitat projects for greater prairie chickens and grassland birds have also noticed a positive response by bobwhites.

In 2008, Department staff and conservation partners began a greater prairie chicken trapping and translocation project to restore populations in parts of the state with suitable habitat. In March and April, male prairie chickens were trapped from the Smokey Hill Bombing Range and private land in central Kansas and relocated to favorable habitat in the Marmaton and Wah'Kon-Tah Conservation Opportunity Area in west-central Missouri. A second trapping was completed in August to move hens and broods to Missouri. By late fall some of the male chickens had moved several miles from the release sites, while many of the hens and broods tended to stay closer to the release site. As expected, radio collared birds have also been lost to predators and other unknown factors. The surviving birds are currently being monitored by Department staff to determine the effectiveness of the restoration.

In the Grand River Grassland Conservation Opportunity Area in northwest Missouri, Department staff captured 12 males and 9 female greater prairie chickens on the Nature Conservancy's Dunn Ranch. The captured birds were weighed, banded and radio collared with a transmitter. For the past year, Department staff have been tracking the habitat uses of the collared birds to determine preferred nesting and brooding sites. This study has helped shed light on the daily activities of these remarkable grassland birds.

DEPARTMENT TRAINING

In 2008, Department staff participated in workshops and training sessions devoted to quail habitat management. These classes provided resource professionals the latest information on research projects and effective habitat management techniques for natural communities and early successional habitats.

The Missouri Quail and Grassland Bird Technical Committee have played a critical role in advancing quail and grassland bird conservation in our state since 2003. The committee was formed to develop marketing strategies, staff training classes, habitat reviews and future initiatives related to quail and grassland bird conservation. The committee meets periodically and is made up of representatives from the Missouri Department of Conservation, Natural Resource Conservation Service, University of Missouri and United States Forest Service. Each year the technical committee hosts workshops for staff such as Quail 101, 201 and 301 and the Quail Emphasis Area Field Appraisals.

The following are members of the Quail and Grassland Bird Technical Committee: Beth Cole (MDC), Bill White (MDC), Bob Pierce (UMC), Brent Vandeloecht (MDC), Bryan Gragg (MDC), Chris Hamilton (NRCS), Dave Hoover (MDC), Jamie Barton (MDC), Jeff Powelson (MDC), John Dwyer (UMC), Justin Gailey (MDC), Karen Hudson (MDC), Keith Wollard (MDC), Kleiden Frost (USFS), Larry Heggemann (MDC), Lee Metcalf (MDC), Lisa Potter (MDC), Scott Sudkamp (MDC), Tom Dailey (MDC), and Tony Elliott (MDC). Thank you for your support and expertise in quail and grassland bird conservation.

In February, staff participated in several quail and grassland bird training sessions. In early February, Protection Division participated in a quail habitat training session during their annual Wildlife Code review. The training highlighted initial results from the radio-collared quail project at Davisdale and Locust Creek Conservation Areas and current regulations on captive-reared quail. Later in the month, over 60 biologists participated in a quail and greater prairie chicken management workshop at the Missouri Natural Resource Conference. The course highlighted prairie reconstruction and management, woodland restoration and management, patch burn grazing for quail and grassland birds, and bird monitoring results. A noticeable theme at the workshop was the value of natural community restoration and management for quail and greater prairie chickens and how much of the work done for prairie chickens and grassland birds is benefiting northern bobwhite.

In March, the first Quail 301 class was held in Jefferson City. Over 80 biologists participated in the two day class which covered a variety of topics from habitat management, research highlights, revised quail hunting regulations, and how to effectively market a private land Quail Focus Area. Information was also gathered from staff on future training and marketing needs.

In June, two Quail 201 courses were held for Department staff and conservation partners. The first was held at Thomas Hill Reservoir Wildlife Management Area and the second at the White River Trace Conservation, both areas are designated Quail Emphasis Areas. Over 50 Department staff attended the classes which provided training on quail habitat requirements, management, budgeting, and how to develop a long-term plan. Over the past two years, six Quail 201 classes have been held for Department staff and conservation partners.

Wildlife Division biologists, Lee Hughes and Mike Leahy, hosted a woodland management and restoration workshop at Bennett Springs State Park to train 25 resource professionals on woodland identification, restoration, management and wildlife value including northern bobwhite. The workshop included tours of woodland communities on the Lead Mine Conservation Area and Bennett Spring Natural Area.

In 2008, Wildlife Division completed Quail Emphasis Area Field Appraisals on Bunch Hollow, Poosey, William White, Bois D'Arc, Bonanza, Henry Sever and Davisdale Conservation Areas. Despite an abundance of chiggers and ticks, biologists enjoyed the opportunity to discuss habitat conditions and management options. The purpose of the review is to evaluate habitat conditions and management for quail on each Quail Emphasis Area.

RESEARCH AND MONITORING

Resource Science Division continues to monitor quail and songbird densities on 60 crop fields with CP-33 buffers and 60 unbuffered crop fields as a part of the national CP-33 monitoring project. Nationwide, CP-33 monitoring has shown a positive response by bobwhite and several songbirds on established CP-33 buffers around crop fields compared to crop fields

without buffers. Many of the field borders are at least two years old and are finally providing favorable habitat for northern bobwhite.

Resource Science and Private Land Services staffs have initiated a case study to determine the effectiveness of having several farms with quality quail habitat close together compared to being scattered across the landscape. The Knox County Quail Focus Area (in central Knox County) and Sweet Springs Quail Focus Area (in southwest Saline County) were chosen because several landowners have restored significant acres of quail friendly habitat. Areas outside the focus areas, where little quality habitat remains, were chosen as control sites. Department staff are conducting fall whistle counts in the targeted area and outside the focus area to determine quail densities.

Resource Science Division and the University of Missouri's Food and Policy Research Institute (FAPRI) completed a farm-level economic analysis of participation in CP-33. Landowners from Ralls, Carroll, and Bates counties enrolled in CP-33 participated as panelists for a representative farm. Using real world yields, prices, operational costs, and soil rental rates within a sophisticated computer model, the economics were modeled for a 10-year period through the study. The information produced through the study will be used to demonstrate the cost-benefits of participating in the CP-33 program on a statewide scale.

Wildlife Division and Resource Science staff are completing a three year telemetry study on bobwhite quail on the Davisdale Conservation Area in Howard County and Locust Creek Conservation in Sullivan County. This informative study provided timely data on the preferred habitat types for bobwhite for nesting, brooding, roosting and escaped cover throughout the year. Information from this study has been share with private landowners and biologists at several workshops, conferences and national meetings.

In 2008, Quail Unlimited funded a similar telemetry study in Andrew, Cass and Osage Counties on private land. The goal of the study is to determine the habitat types used and behaviors of quail on private land, which is actively being managed for quail. By early November, several birds have been trapped and fitted with radio collars.

The birds are currently being tracked by Department staff, Quail Unlimited members and private landowners. Early reports from Andrew County indicate the radio collared birds rarely venture very far from edge feathering or native shrub thickets and are using recently disturbed areas in CRP fields, idle or planted food plots, unharvested crop fields and CP-33 field borders.

In Osage County the birds are staying in a small area and are moving between several small, weedy old fields and open woodlands where the landowner recently completed both wildlife stand improvement and a prescribed burn. Observations from the Davisdale and Locust Creek telemetry study and Osage and Andrew County study have helped reinforce results of past studies and what biologists have been recommending to landowners – lots of bare ground and shrubby cover.

REACHING OUT TO MISSOURIANS

An important part of Missouri's quail plan is outreach efforts related to improving habitat and outdoor recreation. Each year, Department staff use a variety of media outlets, landowner workshops, field days and special events to promote quail habitat management, upland game hunting and outdoor recreation.

In particular, Department staff and conservation partners annually host special hunts for youth, disabled hunters and women. These special events provided novice and experienced hunters an opportunity to learn more about upland game hunting, hunter safety and the basic habitat requirements of northern bobwhite.

In 2008, staff held several landowner workshops and field days to promote quail habitat management. Each year, biologists host workshops on Quail Emphasis Areas or private farms where landowners have done considerable work for northern bobwhite. In some counties private land conservationists have worked closely with one or two landowners to create demonstration farms for future landowner workshops. These field days and demo farms provide an opportunity for other landowners to observe good habitat management practices and for department staff to meet with landowners. In many cases, workshops were hosted in private land Quail Focus Areas to spark landowner interest in quail management.

In 2004, a Quail and Grassland Bird Leadership Council was formed to increase awareness and support for quail and grassland bird recovery efforts. In 2008 the Council was expanded to include representatives from the Missouri Cattlemen's Association, Missouri Soybean Association, Farm Service Agency and Natural Resource Conservation Service. In April 2008, the Council met to hear reports from quail biologists on recent habitat accomplishments, bird monitoring results and marketing efforts. Don McKenzie, NBCI Coordinator, also attended the meeting and provided an update on the current status of the NBCI. Other special guests included Scott County conservation partners who received the NBCI Group Achievement Award for their outstanding effort to restore quail habitat in Scott County.

In October, the Council met in Cole Camp Missouri near Hi Lonesome Prairie and Mora Conservation Areas. The fall meeting highlighted the importance of targeted efforts and strong conservation partnerships. The Greater Prairie Chicken Recovery Plan and Master Naturalist programs were highlighted during the evening dinner. The Benton County Cattlemen's Association cooked an incredible dinner for all those who attended. Over 40 people, including Cole Camp Community leaders attended the informative evening meeting.

The second day included a field trip to Hi Lonesome Prairie and Mora Conservation Areas where council members saw the value of greater prairie chicken management for bobwhite quail and grassland wildlife. Hi Lonesome Prairie Conservation Area is a popular destination for birdwatchers and naturalists. The area is managed primarily with patch burn grazing which has created excellent habitat for greater prairie chickens and bobwhite quail.

The Council, made up of agricultural and conservation groups, farmers and upland bird hunters, has played a role in the creation of the youth quail and pheasant seasons, creation of the Bobwhite Quail Challenge Grant, increased public and private land management efforts, endorsement of staff training programs, and provided recommendations to USDA on the

CP-33 and CP-38 programs.

In June 2008, twenty-four high school students participated in the annual Quail Academy at the University of Central Missouri in Warrensburg. Sponsored by Quail Unlimited, the week long course provides high school students a unique opportunity to learn about quail and grassland birds, leadership skills, hunter safety, sporting clays, and a great chance to have fun and meet new people. Department staff assisted with the workshop by hosting a field trip at the Turkey Kearn Memorial Conservation Area and teaching the eager students about quail biology and habitat management at the University of Central Missouri Shooting Range and Education Center.

In August, Quail Unlimited held their national convention in Springfield, Missouri. The past two years the event was held in the greater Kansas City area. Department of Conservation biologists Beth Cole and Aaron Jeffries were guest speakers at this year's convention and provided updates on the CP-33 monitoring project and other quail research projects, respectively. Earlier in the year, Quail Unlimited held their annual state chapter meeting in Jefferson City at the Runge Nature Center. Again, Department staff provided important updates to Quail Unlimited members on recent efforts to restore quail and grassland bird habitat in Missouri.

In June, the University of Missouri, Department of Conservation, and the Missouri Soybean Association hosted a bobwhite quail and native plant field day at the Bradford Farm Research and Extension Center in Columbia. Over 150 people attended the field day which included several wagon tours of quail habitat demonstrations and agriculture research plots on the farm. This year's workshop also included presentations from Tom Dailey and Bob Pierce on the latest in quail management. Special thanks to the Missouri Cattlemen's Association for providing hamburgers for all the hungry participants.

Over the years, the University's Bradford farm has been a popular destination for other conservation groups and organizations. Last summer, Quail Forever held part of their annual state meeting at Bradford Farm. Chapter members were treated to a guided tour of the farm. The evening event also included a presentation by Quail Forever CEO, Howard Vincent on the new Farm Bill. Howard discussed the benefits of special conservation programs such as CP-33 and the new SAFE (CP-38) practices. He also spoke about the need to develop more partnerships and how quail recovery cannot be achieved in just a few years but that with our joint efforts, we will see increases in the state.

In recent years, over 5,000 people have participated in educational programs and field days at Bradford Farm including landowners, agribusinesses, governmental agencies, Future Farmers of America Chapters, and other youth groups. Quail and grassland bird management and monitoring are an important part of the educational goals of Bradford Farm.

Bradford Quail Focus Area and Bradford Research and Extension Center

For many years, the Bradford Research and Extension Center (BREC) near Columbia has been an active participant in promoting quail habitat management. BREC holds several habitat field tours each year that showcase different quail habitat management practices such as edge feathering, shrub plantings, perennial food plots, native grass burning and disking techniques, as well as CP33 habitat buffers. BREC is involved in more than just quail habitat practices. They have also installed practices such as native grass plantings in diversion channels, alternative forages of native grasses and forbs, invasive species control, and wildlife friendly biofuel mixes that demonstrate to landowners that applying these practices is not only economically feasible and helps to protect natural resources, but can also provide quality habitat for quail and other species of wildlife at the same time. This year, in addition to the habitat management practices, BREC trapped 4 adult male quail and attached radio transmitters to track their movements on the farm. The radioed quail were almost exclusively found using the perennial food plots, weedy fields that had recently been burned or disked and within woody draws that had been managed to provide a shrubby understory. During the Bobwhite Quail and Native Plant Field Day, at least 150 landowners had the opportunity to see first-hand where quail were located on the farm when telemetry locations were found during the tour. Also for the first time this year, Fall Whistle Counts were conducted in October to monitor the quail population trends on BREC. The surveys proved that quail habitat management works. The density estimate was 0.44 quail per acre. This is equivalent to approximately 38 coveys on BREC and the surrounding landscape. This estimate far outreaches the goal set for the entire Bradford Focus Area of 1 quail per 15 acres.

MARKETING AND OUTREACH

In 2008, Outreach and Education Division assisted field staff by providing a variety of outreach materials related to quail and grassland birds. For example, every issue of the Missouri Conservationist in 2008 had an article or news item on habitat management, Quail Emphasis Areas, Quail Focus Areas or landowner success stories related to quail or grassland birds.

Outreach and Education staff are also helping field staff by developing new marketing resources related to private land Quail Focus Areas, grassland Conservation Opportunity Areas and quail habitat management. Staff are using the popular website YouTube to promote quail hunting and habitat management techniques. Several quail hunting and habitat management videos have been posted on this popular. YouTube videos on private land habitat management can be found at http://www.youtube.com/user/MOlandowner and about quail hunting at http://www.youtube.com/user/MOhunting.

In December, Department staff completed work on a blog devoted to quail hunting and habitat management. The "Missouri Quail Recovery – Habitat is the Key!" blog can be found at http://morequail.blogspot.com. Special thanks to Outreach and Education staff Matt Seek, Syd Hime, Bonnie Chasteen, Kipp Woods, Karen Hudson and many others for their expertise and artistic eye with recent quail and grassland bird marketing efforts.

The November 2008 issue of the *Missouri Conservationist* included an outstanding story by Jim Low on how Jeff Churan has turned his farm in northwest Missouri into a quail factory. The story highlights the steps Jeff has taken over the years to improve his property for northern bobwhite and his family. Jeff has used a variety of habitat

practices including prescribed burning, food plots, covey headquarters and edge feathering to improve his property for quail. His work and dedication helped Churan win the 2006 Adopt-A-Covey Award from Quail Unlimited. However, the proof is in the birds. "In 1998, hunters were finding a covey every 40 to 60 minutes. During the 2005-2006 season, they averaged one covey every 24 minutes. On one hunt, they moved nine coveys in 3.5 hours."

Available to quail enthusiast is the new reference, *Quail Friendly Plants of the Midwest*. This informative book was written and published by the University of Missouri Extension in cooperation with the Department of Conservation. This plant identification book features 56 plants used by quail. The book includes color pictures, plant characteristics and quail habitat needs. Special thanks to Rob Chapman, Scott Sudkamp and Bob Pierce for developing this helpful and user-friendly guide.

Many other conservation groups are also helping promote quail and grassland bird conservation by publishing stories and habitat management articles. In 2008, articles on quail habitat management or editorials by Department biologists Tom Dailey, Aaron Jeffries or Bill White appeared in the *Covey Rise, Quail Forever* and *Quail Unlimited* magazines. Department biologists frequently contribute stories to these three magazines devoted to quail conservation.

Today, other conservation partners and organizations also include information on quail and grassland bird habitat management and conservation efforts. The Missouri Prairie Foundation (MPF) magazine and website includes a habitat management section by Richard Datema, MPF's field manager. This advice column on land management provides landowners tips and recommendations on how to manage their prairie or grasslands for wildlife. *Progressive Farmer* has also devoted a webpage to quail habitat management.

Department staff also broke new ground in 2008 with a quail habitat management article in *MO Beef*, the Missouri Cattlemen's Association magazine. The article highlighted quail habitat needs and ways to maintain quality cover for quail and wildlife in grazing systems. MFA also published two articles about private land Quail Focus Areas and habitat management in *Today's Farmer.* The articles in MFA's magazine have helped market the Department's private land Quail Focus Areas. MFA's popular Agronomy Guide also includes a section on quail habitat management and useful herbicides. The *Agronomy Guide* is available at all MFA farm supply stores. Private Land Services has also started work on placing quail habitat advertisements in farming and rural magazines to promote practices such as CP-33 and CP-38. The hope is to increase landowner interest in these popular and economical habitat practices.

In October, the National Wild Turkey Federation shot a three day fall turkey hunt on private land in central Missouri where extensive habitat work has been done for quail. The past couple years, the landowner has established native grass field borders, edge feathered, and restored woodlands and glades to improve habitat for bobwhites. As a result of the landowner's work, wild turkeys have also responded. The past two spring seasons a dozen gobblers have been harvested from this 350 acre oasis for wildlife.

During the three day production, NWTF staff filmed a successful fall hunt with the landowner's son and footage on how quail habitat management benefits wild turkey. The habitat video highlighted how to maintain diverse old field habitats with light disking and prescribed burning and how to restore woodlands and glades by thinning out undesirable trees and introducing prescribed fire. The National Wild Turkey Federation will feature the story and video in their magazine and "Get in the Game" TV series this spring. The landowners success and NWTF's interest in future videos reinforces the point that habitat management for northern bobwhite is beneficial to many other species.

Once again, MDC's Lee Metcalf and Matt Seek teamed up to create the "Your Key to Quail Habitat 2008" calendar. Similar to the Department's Natural Events Calendar, the quail calendar has quail and grassland bird art work and timely habitat management hints and life history traits of quail and grassland birds. The 2009 "Your Key to Quail Habitat" calendar is free and available at your local Department office. This year 15,000 copies were printed and are currently being distributed to landowners.

The *Covey Headquarters Newsletter* continues to provide quail enthusiasts the latest information on quail habitat management, conservation program updates and landowner success stories. Since 2002, staff from the Northwest Region have published the quarterly newsletter which is entirely devoted to bobwhites. Today, the *Covey Headquarters Newsletter* has over 10,000 subscribers.

State Report Missouri

QUAIL ABUNDANCE

Conservation Agents and Protection Division volunteers conducted roadside counts of bobwhite quail from August 1-15 in 107 of Missouri's 114 counties. Clay, Jackson, St. Louis, and St. Charles counties are not included because they are high density urban areas near Kansas City and St. Louis. Newton and Greene counties in the southwest portion of the state were dropped from the analysis due to outliers in the data. Worth County in the northwest region was not included because the survey route was not run due to water over the roadway. Surveyors count the number of quail observed while driving ≤ 20 miles per hour along permanent 30-mile gravel road routes. Participants are instructed to conduct counts beginning at sunrise on clear, dewy mornings with light winds to increase chances that bobwhite will be near roadsides. These observations are used to provide an index of quail abundance across the landscape. Because only a small portion of each county is sampled, the index best represents quail population trends at large scales, such as statewide and multi-county blocks such as the zoogeographic region. The statewide long-term trend of the index closely follows other statewide indices of abundance including the North American Breeding Bird Survey (BBS) and Missouri quail harvest estimates. The roadside survey routes are run almost entirely through private land, so the quail index is a reflection of conditions on Missouri's private lands.

This year's statewide index of 2.9 quail per 30 mile route is 12% below last year's index of 3.3. This is 17% below the 5-year average (2003-2007) and 25% below the 10-year average (1998-2007) (Table 1). Production appeared to be low this year, with the statewide average chick count at 0.8, 45% below last year's count. Total quail counts were variable among zoogeographic regions with counts being highest in the Northeastern Riverbreaks (4.9), followed by the Ozark Plateau (3.2) and the Western Prairie (3.0). Counts were lowest in the Northern and Eastern Ozark Border (0.7) and the Mississippi Lowland (0.9) (Table 1). Statewide long-term trends (1983-2008) are shown in Figure 2 and trends by zoogeographic region are shown in Figure 3. Both figures illustrate a long-term downward trend in bobwhite populations.

Weather conditions over the past year may have negatively impacted bobwhite this year. Temperatures in February and March were colder than average statewide, a period when food is scarce for adult birds. The southwest and Ozark portions of the state experienced significant ice storms in December and February. The same region also had severe weather spawning 33 tornados and flash flooding on January 7-8. Overall, statewide, temperatures ranged from 2-8 degrees above average in December and January but precipitation was about 48% above average. February through May had cooler than normal temperatures and precipitation that ranged from 27% to 130% above normal (NOAA Midwestern Regional Climate Center). Precipitation continued to remain above normal throughout the summer, resulting in localized flooding events in many regions of the state. The cool, wet spring could have resulted in a negative impact on nesting and chick survival. Such events can destroy nests and cause chicks to die from hypothermia because their feathers are not developed enough to insulate the birds at a young age. Bobwhites are fairly prolific and populations can quickly recover from losses due to weather if habitat conditions are good.

Habitat conditions in Missouri vary from good to poor throughout the state. Over-grazed, fescue-dominated pastures, loss of native grass stands, removal of low growing, dense woody cover, and increased commodity prices have all led to losses in preferred bobwhite habitat. Many programs are in place to assist private landowners in improving bobwhite habitat on their property, including the USDA Conservation Reserve Program (CRP), Conservation Buffers for Upland Birds (CP 33), MDC programs, and habitat programs from organizations including Quail Unlimited and Quail and Pheasants Forever.

TABLE 1. Average number of quail counted per 30-mile route by Conservation Agents along 107 routes during August 1-15, 2008.

Zoogeographic Region[1]	# of Routes In 2008	Quail counted 2008	Quail counted 2007	Long Term Average 1983-2007	% CHANGE from Long-Term Average	% CHANGE 2007 to 2008
Northwest Prairie	11	2.82	5.73	7.87	-27.2%	-50.8%
Northern Riverbreaks	10	2.40	5.20	7.84	-33.7%	-53.8%
Northeast Riverbreaks	20	4.95	3.26	9.59	-66.0%	51.8%
Western Prairie	12	3.08	3.25	15.50	-79.0%	-5.2%
Western Ozark Border	11	2.45	2.85	6.88	-58.5%	-14.0%
Ozark Plateau	24	3.17	2.92	2.98	-1.9%	8.6%
Northern & Eastern Ozark Border	12	0.67	1.92	2.77	-30.7%	-65.1%
Mississippi Lowlands	7	0.86	1.43	5.73	-75.0%	-39.9%
Statewide	107	2.88	3.30	7.21	-54.2%	-12.7%

[1]See Figure 1

FIGURE 1. Zoogeographic regions of Missouri.

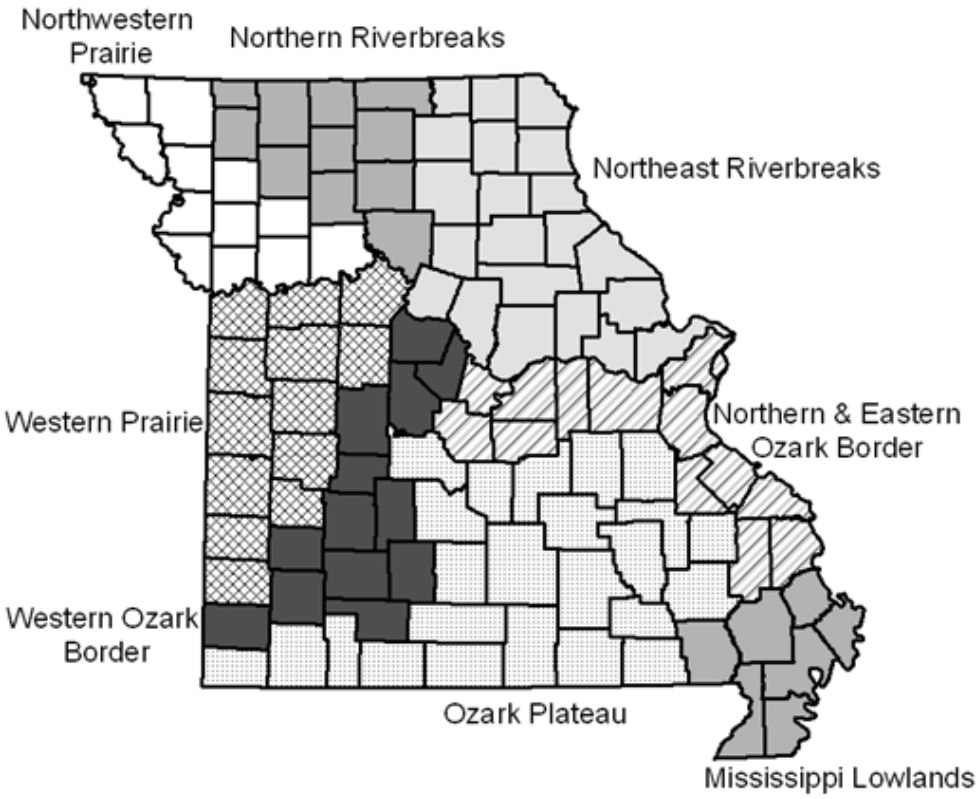


FIGURE 2. Statewide average number of quail counted per route from 1983-2008.

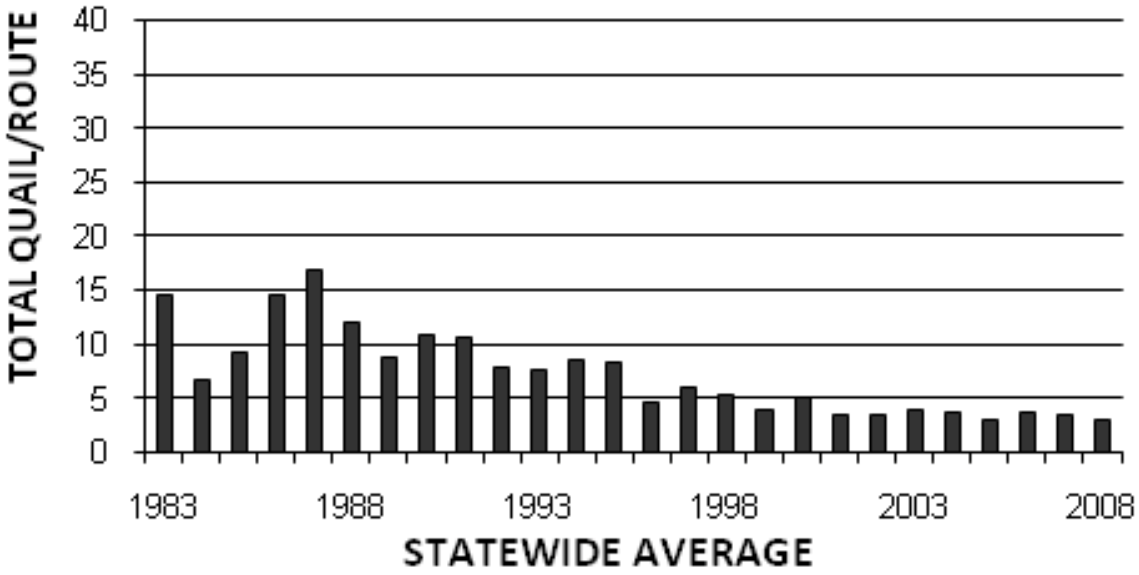
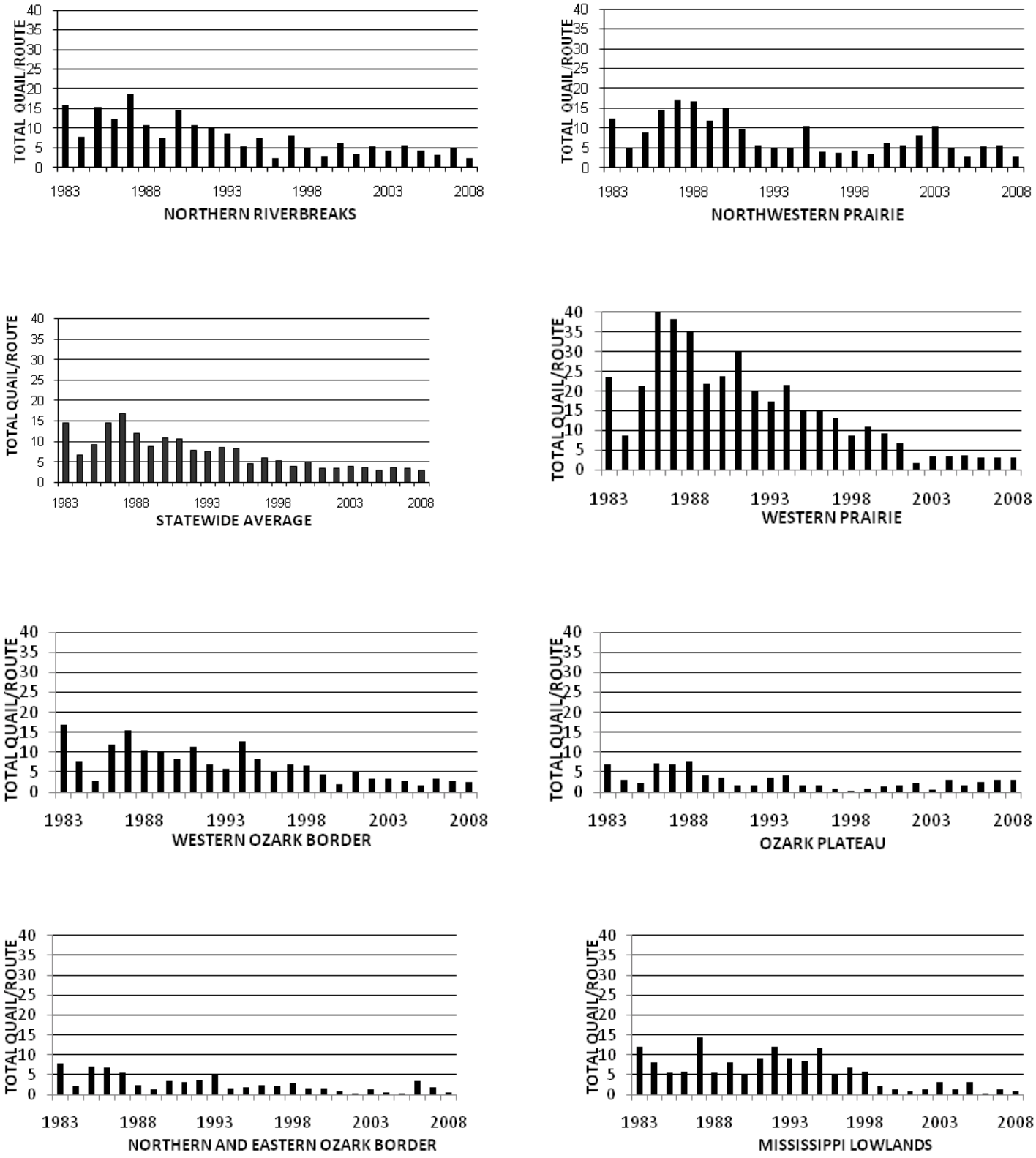


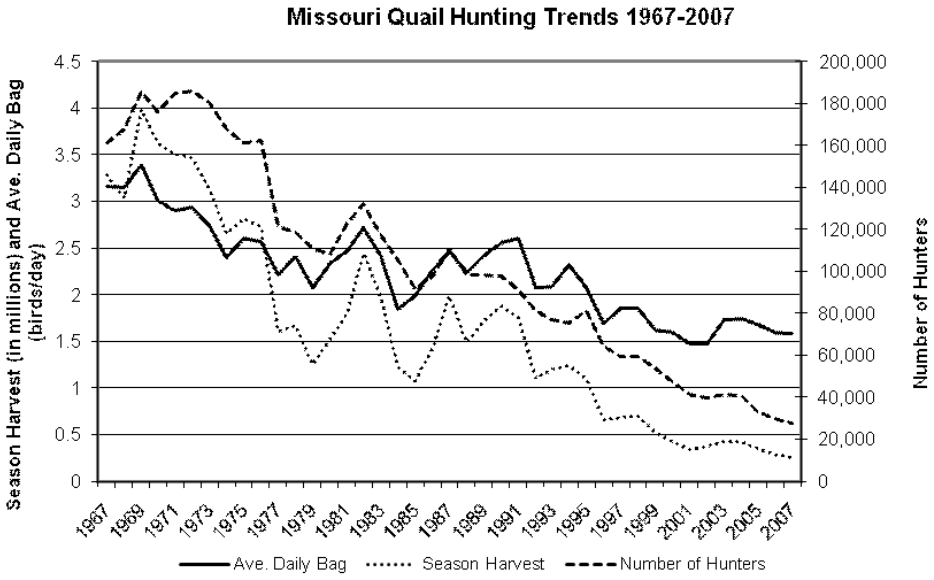
FIGURE 3. Mean quail per 30-mile route by zoogeographic region from 1983-2008.



2007 HUNTING SEASON

MDC collects harvest information from a post-season mail survey of a random sample of Missouri small game permit holders to estimate hunting activity at regional and statewide scales. The 2007 season (November 1, 2007 to January 15, 2008) again showed a decrease in both the number of quail hunters and quail harvest. The number of quail hunters during the 2007 season was 27,830, which was 7.6% lower than the 30,119 hunters from the 2006 season. The total number of birds harvested in 2007 was 258,448, an 11.5% decrease from the 2006 season when hunters harvested 292,080 birds (Figure 4). While the number of hunters and birds harvested continue to decline, the number of birds bagged per day (a statewide index of hunting success) remains relatively stable. The number of birds bagged per day was 1.58 in 2007 compared to 1.59 in 2006. The Western Ozark region had the highest number of birds bagged per day with 1.95, followed by the Northern Riverbreaks region with 1.86 in 2007. In the 2007 season, quail hunters averaged 5.87 days afield and had a season average bag of 9.29 birds. Overall hunters spent 163,364 total days afield in 2007.

FIGURE 4. Missouri quail hunting trends from 1967-2007. Hunting season bag in millions and daily bag (birds/day) are combined on the left axis. The right axis shows the number of hunters per year.



Beth Cole, Agricultural Wildlife Ecologist
Missouri Department of Conservation

State Report
North Carolina

Bobwhite Status

Northern bobwhite quail (Colinus virginianus) populations have declined significantly throughout the southeastern United States over the last several decades, and North Carolina's quail population has mirrored this trend. Although there have been minor annual fluctuations in the state, both quail call count survey results and avid hunter survey results over the last decade indicate that quail abundance may be stabilizing at a low level consistent with limited available habitat on the Coastal Plain, but populations in the Piedmont and Mountains continue to decline.

Cooperative Upland Habitat Restoration and Enhancement Program (CURE)

Bird species that require early succession habitats are among the most imperiled species in the eastern United States and within North Carolina. Bobwhite quail have become the "flagship species" among this group that also includes numerous high priority songbirds. In response to these population declines, the Commission approved and funded "small game implementation strategies" presented by the Division of Wildlife Management on August 30, 2000. During the following year, the Division made necessary personnel assignments and developed a program to accomplish the nine objectives approved by the Commission. Initially, Cooperative Upland habitat Restoration and Enhancement (CURE Phase I) program work was focused in 3 cooperatives located in the northern Coastal Plain (Halifax and Northampton Counties), southern Coastal Plain (Robeson County), and the western Piedmont (Iredell County).

CURE Phase II began January 1, 2007. Under CURE II, focus in the western Piedmont shifted from the Iredell cooperative to the promotion of native warm season grasses (NWSG) over a larger area. The other original CURE I cooperatives remain a vital part of CURE II. Today, following the same principles established in 2000, we are using the CURE program to implement whole farm management plans designed to increase populations of bobwhite quail, songbirds, and other wildlife which depend upon early succession habitats. Currently, private landowners have 13,263 acres

enrolled in the CURE II program and are actively managing 1,152 acres.

The Division did not stop with habitat management on the private cooperatives, and additional programs have been developed to enhance and expand CURE. Portions of four state-owned Game Lands totaling 21,456 acres have been designated Game Lands CURE areas and are intensively managed for bobwhite quail and songbirds. NCWRC has established a position to work with the U.S. Fish and Wildlife Service's Landowner Incentives Program (LIP) and manage longleaf pine habitats to mimic natural fire-maintained ecosystems in 4 southeastern North Carolina counties (Bladen, Cumberland, Duplin, and Sampson). Landowners owning a combined 24,050 acres have 3,096 acres enrolled under LIP management. NCWRC has obtained 2 grants from the North Carolina Department of Justice to implement early succession habitat improvements on corporate farms operated by Murphy-Brown, LLC and other private corporations on over 7,000 acres in Bladen County. Finally, NCWRC has entered into a cooperative agreement with the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) to establish biologist positions in each of North Carolina's three Regional NRCS offices. These biologists are in positions to influence Federally-regulated wildlife habitat policy and management on agricultural lands throughout the entire state.

The Division is monitoring bobwhite quail, songbirds, and vegetation response to management on each CURE area (private and Game Lands) to provide a measure of the success of our efforts. The CURE Program is the first step towards recovery of wild bobwhite quail and declining populations of songbirds and other wildlife dependent upon grass/shrub habitats. North Carolina's initiative has received national recognition for providing an example of implementation of the national bobwhite recovery plan called for in the "Northern Bobwhite Conservation Initiative". Furthermore, other focal species such as high priority songbirds are benefiting from habitat enhancements.

Funding for CURE II expires on December 31, 2009. Commission staff are currently proposing an expansion of CURE into a Phase III to run from January 1, 2010 through December 31, 2014. Our staff recommendation would increase acreages managed under CURE while maintaining personnel hired to implement earlier efforts. We would also continue to expand Corporate partnerships and fund three positions to work with the NRCS. This option would allow our staff to effectively monitor the efforts of our habitat enhancement in each of the focal areas and provide flexibility to expand Corporate CURE to involve additional partners. We would attempt to provide limited small game hunting opportunities on managed areas and provide sportsmen a return on the investment of CURE dollars over the last 9 years. Hunting opportunities could maintain the interest and support of sportsmen and be critical to the future of small game management in North Carolina. All of these efforts will be necessary to have any reasonable chance of positively influencing landscape scale populations of quail, rabbits, and focal songbird species. We must point out that even our best case option alone will not restore quail to 1980 levels (recommended by the NBCI) across the state of North Carolina or even within focal areas. However, we believe these efforts can increase populations of some focal species on a local basis depending on the specific area.

Results of Biological Monitoring for CURE Programs (2008-2009)

To evaluate the impacts of CURE on the Northern Bobwhite, we conducted spring calling male surveys, fall covey counts, and a fall evaluation of useable habitat. The 2008-2009 season represents the seventh year of post-treatment surveys for the CURE private cooperatives and the sixth year for the CURE Game Lands.

On coastal private cooperatives, quail populations appeared to peak (~2x baseline counts) in 2005-2006 and then decreased through 2008. Surveys on the Rowland cooperative in 2005 provided the highest fall covey counts (5.6 coveys heard/listening points) and largest population trend (+0.9 coveys heard/listening point/year). Benthall cooperative quail surveys have been variable and comparatively lower (2.1 coveys heard/listening points). Both Rowland and Benthall experienced slight increases in covey numbers in 2008, primarily from greater numbers heard at habitats established during CURE II. No coveys were heard on any of the new warm season grass contracts established within the Piedmont focal area in 2007 or 2008. During the original CURE I phase, the Turnersburg cooperative quail trends declined similar to regional references, and quail did not appear to benefit from habitat improvements at the landscape scale.

Quail counts were initially very low and have steadily increased on all CURE Game Land areas. Suggs Mill Pond (~0.9 coveys heard/listening point) counts in 2008 were the highest since surveys were initiated. Quail counts on all CURE game lands are equal to or higher than baseline numbers from 2001-2002.

Useable habitat surveys show that the combined affect of both wintering and breeding habitats on CURE areas appeared to be the best indicator of quail population responses. CURE management on private cooperatives have been largely successful converting cropland (which provides cover only in the summer months) into habitat which is available to quail year-round, almost doubling the amount of available winter quail habitat (~4-6% of the landscape). CURE Game Land quail populations have responded slower given that it takes longer to establish early successional habitat in forested landscapes.

In the spring 2007, bird surveys on the private cooperatives were changed to meet the needs of CURE II. Methodology changes included the development of control sites for the private cooperatives, standardization of survey point locations, refinement of focal songbird lists, and the combination of breeding quail/focal songbird surveys. These survey modifications were made to improve our ability to measure future biological responses to CURE management and were retained during 2008 sampling.

2008 North Carolina Breeding Quail Survey

The North Carolina Wildlife Resources Commission conducts an annual bobwhite call count survey during the peak of breeding season. The 2008 survey results are presented below.

Twenty four routes were completed in June, 2008 using a standard protocol: 21 listening stations per route, stations spaced 1 mile apart, 3 minute listening period.

There were 9 routes in the Coastal Plain, 11

in the Piedmont, and 4 in the Mountains.

The average number of quail heard per route in 2008 was 13.57 birds, or 0.64 quail/listening station. The mean has been similar over the past 10 years.

Quail abundance declined from east to west as expected given land use patterns. The average number of quail heard/route was 28.11 in the Coastal Plain, 2.27 in the Piedmont, and 0.25 in the Mountains.

One Coastal Plain route in particular stood out for high numbers of quail. The route, named Washington/Hyde 1986, contained the most quail of any route: 74 birds were heard at 21 stops for an average of 3.52 quail/listening station. This route has consistently contained the most quail of any route over the past 10 years.

The bright spot is that populations have been relatively stable over the past 10 years in the Coastal Plain. The bad news, especially for the Piedmont and Mountain regions, is that populations continue to decline. While the declines are slight relative to the past, they are declining consistently. It is conceivable that quail will disappear from most routes in the Piedmont and Mountains over the next few years.

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State Report Oklahoma

Status

Quail Populations in Oklahoma have declined 1.3 percent annually since 1966 according to the breeding bird survey. However, quail populations in portions of the Western part of Oklahoma have remained stable since 1966.

Roadside surveys during the fall of 2008 decreased 20% over the previous year and 61% below the previous 18-year average. Our annual roadside counts suggested the 2007-2008 quail season would be a down year but the ample cover interfered with seeing birds on the surveys. Although many sportsmen and biologist from across the state reported seeing more birds than they had the year before. The season seemed to be a little better in 2008 than it was in 2006 and 2007. Due to the rainfall that we had in the spring and summer there was plenty of vegetation for the birds to utilize. Since 2006 and 2007 was a down year we would not expect a huge boom in population because recruitment was low going into the 2008 nesting season.

The estimated number of quail hunters that hunted the 2007-2008 season was 28,602 which is down 17% from 2006. Quail hunters hunted on average 5.61 day during the 2007-2008 season and averaged 2.63 birds in the bag. Oklahoma's estimated quail harvest for the 2007-2008 season was 380,847 birds which was down 34% from the previous season (579,436).

Focal Area Restoration of Quail Habitat

The Oklahoma Department of Wildlife Conservation (ODWC) and the Natural Resource Conservation Service (NRCS) have developed the Quail Habitat Restoration Initiative (QHRI) to advance quail restoration efforts. The QHRI will operate under the Environmental Quality Incentive Program to provide cost-share and incentive payments to landowners willing to restore and manage quail habitat. Restoration efforts will center on focal areas that have been identified as having a high potential for eliciting population growth and expansion.

QHRI Details: Landowners who enroll in the EQIP-QHRI will have the opportunity to receive cost-share assistance on a variety of practices traditionally offered through EQIP such as brush management, prescribed burning, and prescribed grazing. In addition, landowners may qualify for incentives for implementing a patch-burn-graze system, reducing annual burning to a 3-year rotation, implementing a new grazing system, and for doing upland wildlife habitat management.

Technical Assistance: All applicants received some measure of technical assistance depending on the attributes of their property and how they were ranked. Through the ranking process we were able to fund 20 applicants affecting approximately 19,000 acres in Oklahoma. Total EQIP dollars allocated for FY 2008: $437,386. This combined with the totals in 2007 we have been able to spend $1,016,285 on 48,443 acres.

Continued Outreach: Through continued contact with landowners within the focus areas we hope to find landowners that are willing to implement a habitat management program that will benefit northern bobwhite quail. We will provide at minimum technical assistance and if a landowner feels that they would like financial assistance we have a tool available to assist them. In, addition a minimum of one public outreach effort per focus area and through continued "door-knocking" we hope to have as many contacts this year as we did last year.

Management Activities

Technical Assistance: During 2008 ODWC has offered technical assistance to over 234 private landowners that incorporate over 168,000 acres. This is a little above the previous 5 year average which is 100 landowners and 100,000 acres.

Equipment Rental: With help from the National Wild Turkey Federation, Quail Unlimited, Charles Blankenship (Big John Tree Spade Company) and private donations, the Department has some specialized equipment for habitat enhancements. The Department has two tree spades with support equipment and one roller chopper that are available for landowners to use for wildlife habitat enhancement projects. The equipment can be rented for a small fee that is used to defray maintenance costs.

Wildlife Habitat Improvement Program (ODWC): Annually the ODWC provides on average $90,000 in cost-share to Oklahoma landowners for improving wildlife habitat. Funds administered are

specific to quail, deer, turkey, prairie chickens, waterfowl and pheasant. Biologists are currently developing management plans for 150 applications for this year's allocation.

Landowner Incentive Program (LIP): The ODWC received a LIP grant to provide cost-share incentives to landowners in Western Oklahoma to address habitat restoration for species of special concern. Restoring habitat for Bell's Vireo, Bewick's Wren and Lesser Prairie Chickens will have a positive effect on Northern Bobwhite populations. To date there is no activity but the current allocation is $200,000.

Wildlife Habitat Incentive Program (WHIP): Since July of 2003 the ODWC has served as a Technical Service Provider for the NRCS's WHIP. Four technicians with ODWC provide the project rankings, management plans and conducts status reviews as part of the agreement. This year's appropriation for the WHIP in Oklahoma totaled $1,001,441 with preliminary funding of 81 projects. Oklahoma's annual appropriation for WHIP consistently ranks in the top three nationally. Since its inception, WHIP has provided 733 Oklahoma landowners with financial assistance totaling over $6 million. However, to date the remaining un-funded applications total more than $3.8 million.

Buffers for Upland Birds (CP-33): Buffers remain a hard sell to Oklahoma farmers. With the current grazing restrictions wheat farmers are unwilling to sign up for a program that mandates fencing. After reallocation Oklahoma has been allotted 2,000 acres. To date just over 1112 acres of CP-33 has been contracted in Oklahoma this is an increase of over 500 acres.

CRP-SAFE: The Oklahoma Dept. of Wildlife Conservation and USFWS wrote a proposal to install 15,100 acres of cropland back to native brushy habitat. This project is located in Northwest Oklahoma and has a Bobwhite Quail emphasis. We have been able to get 817 acres enrolled and think that once the crops are removed from the fields that we will get more people to sign up due to high fuel prices.

State Report
South Carolina

STATUS

South Carolina's quail population has declined dramatically over the past 40 years as a result of large-scale changes in land use and the resultant habitat loss and degradation. Between 1952 and 2008, pine plantation acreage in South Carolina increased from approximately 200,000 acres to approximately 3.1 million acres. Urban sprawl and changes in farming practices have also reduced habitat availability and suitability. USFWS Breeding Bird Survey results indicate an approximate decline of 4.8% annually in bobwhite quail abundance in South Carolina from 1966-2005. Private lands and Wildlife Management Area (WMA) lands under intensive quail management support good to excellent quail populations.

Efforts are underway to establish a Grassland Birds Initiative to achieve greater private land participation in the establishment, enhancement and maintenance of early succession habitat. Bobwhite quail habitat and population goals from the Northern Bobwhite Conservation Initiative (NBCI) are being incorporated into state planning efforts, as well as regional bird conservation efforts such as the South Atlantic Migratory Bird Initiative (SAMBI), a regional bird conservation initiative being conducted through the Atlantic Coast Joint Venture.

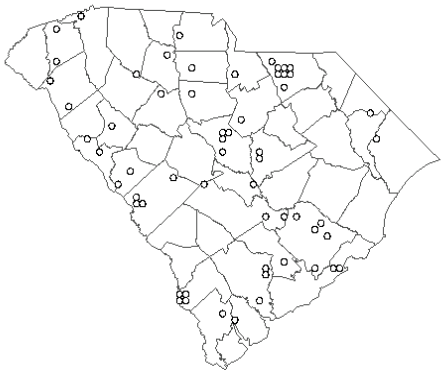
HABITAT IMPROVEMENT

SCDNR offers small game management technical assistance to private landowners through the Small Game Project. Eight management plans were written by Project staff during the past year covering over 21,170 acres. Select properties in the Wildlife Management Area (WMA) program are intensively managed for quail. Habitat enhancement for quail on WMA's consists of the standard practices of annual plantings, prescribed burning, strip disking, timber thinning, and creation of forest openings. Herbicide application for the control of invasive sod-forming grasses and understory hardwoods is being utilized on several areas.

SEASONS AND BAG LIMITS

Quail season in South Carolina runs from the Monday before Thanksgiving Day through March 1. Bag limit is 12 birds per day.

SURVEYS



Bobwhite Quail Whistling Cock Survey

This survey has been conducted for the past 30 years, producing reliable trend data that parallels field observations and the USFWS Breeding Bird Survey. Sixty-five permanent routes are established statewide, and survey routes (5.5 miles) are conducted on one morning between June 15 and July 10 each year. The average number of calling males during the 2008 survey (62 routes with usable information) was 8.6 per route, an increase of 7.5 percent from the previous year.

Quail Brood Sighting Survey

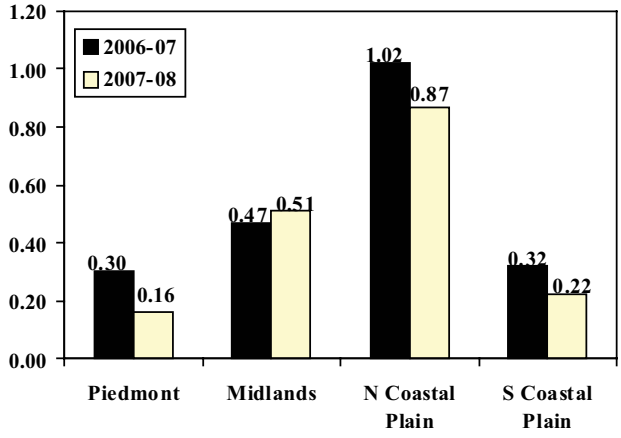
A sighting survey for quail broods is conducted in conjunction with an annual Turkey Brood Sighting Survey. All quail observed by field personnel from July 1 to August 27 are recorded. From these sighting, an annual index of productivity (juveniles/adult) is calculated. Statewide, the ratio of juveniles to adults in the 2008 survey was 3.7:1, higher than in 2007.

Quail Hunter Survey

Quail hunters are contacted prior to the season and provided with a hunting diary, data sheet, wing tags, and return envelopes. Hunters are asked to provide up to 10 wings for calculating a productivity index (juveniles/adult). Hunters are asked to provide information on hunt locations, hours hunted, flush rates and harvest rates.

The coveys per hour index decreased slightly from 0.59 coveys per hour in 2006-07 to 0.58 coveys per hour in 2007-08. Quail hunters participating in the survey bagged 0.33 birds/hour in 2007-08.

Coveys per hour index by region for the 2006-07 and 2007-08 seasons



Fall Covey Counts

Fall covey counts were conducted on 10 WMA's during October and November, 2008. Preliminary fall covey counts in South Carolina indicated the following: (1) Inexperienced observers could be easily trained to utilize the technique; (2) Average time of first call was 25 minutes before official sunrise; (3) Active calling by coveys ceases after approximately 10 minutes; (4) Playback of recorded covey calls failed to elicit response outside of the peak calling period; and (5) Calling rates remain consistently high until at least the third week of November. Fall covey counts will again be conducted on select WMA's during 2009.

CP-33 Monitoring

SCDNR staff have completed the three year national monitoring of CP-33 buffers on 40 treatment farms and paired controls throughout the upper coastal plain of South Carolina. Vegetation sampling was conducted on treatment sites for the past two years. Target species included northern bobwhite, eastern kingbird, eastern meadowlark, field sparrow, indigo bunting, and painted bunting. Monitoring was conducted by existing DNR Wildlife Section staff. CP-33 was successfully implemented in South Carolina, with approximately 6100 acres enrolled in habitat buffers throughout the state.

EDUCATIONAL PROGRAMS AND TECHNICAL ASSISTANCE

For the past 22 years, the Small Game Project has conducted annual wild quail management seminars for private landowners, land managers, and natural resource professionals. Over 1300 people have participated in this highly-successful seminar series which combines classroom instruction with field demonstrations.

AGRICULTURAL LIAISON ACTIVITIES

Small Game Project staff continues to work with NRCS and other USDA agencies to incorporate quail-friendly practices into farm conservation plans. Three Farm Bill cost-share biologists were hired in June 2006 to provide private lands technical assistance and program delivery. These positions are supervised by the SCDNR Small Game Project and are housed in NRCS offices in the upper coastal plain of South Carolina. Each biologist is responsible for a 7-9 county area. In the past year, these Farm Bill biologists have conducted 74 site visits and provided habitat enhancement recommendations for over 46,582 acres in South Carolina.

FOCUS AREA INITIATIVES

Since October 2004, Project staff and partners have been successful in establishing a 16,000-acre public land (USFS)/private land habitat enhancement cooperative entitled Indian Creek Wildlife Habitat Restoration Initiative (Initiative). National forest lands within the Initiative boundary are slated for woodland savannah restoration through selective thinning and prescribed burning, including growing season burns. WHIP funds, along with National Forest Foundation and Fish and Wildlife Services' Partners in Wildlife funds have been utilized for habitat enhancement on private lands within the project boundary. Answer the Call funds have been utilized on national forest lands. Approximately 16 landowners (3800± acres) participate in the Initiative and management plans have been written for each landowner. This innovative partnership includes representatives from the USDA Forest Service, USDA NRCS, SCDNR, Quail Unlimited (State and Newberry Chapter), National Wild Turkey Federation, Clemson Cooperative Extension Service, Newberry Soil & Water Conservation District, and the East Piedmont Resource Conservation and Development Council as well as private landowners. The Initiative received two awards in 2008 on behalf of work conducted in the Initiative area: the South Carolina Wildlife Federation's Wildlife Conservation Award and the national John McGuire Award. The Initiative was notified in January 2009 that it has been awarded the Two Chiefs' Partnership Award for one

of the four Group Award Winners.

Another special WHIP project is underway at Clemson University's Pee Dee Research and Education Center (REC). This area is comprised of 2800 acres, and has traditionally been used for research on production agriculture technology. The Center has shifted emphasis to an agroecology focus, and habitat improvements for northern bobwhite and other species are being implemented through the WHIP program.

A third focus area for quail and grassland bird habitat enhancement has been established on Wildlife Management Area lands in the Upper Coastal Plain. The area is comprised of approximately 7000 acres in 3 tracts. The project is designed to demonstrate effective quail and grassland bird habitat enhancement techniques on working agricultural and silvicultural landscapes. Management practices to date have consisted of pine thinning, prescribed burning, native warm season grass establishment, field border establishment, and Bermuda grass eradication. Quail and grassland bird populations are monitored

annually through breeding season counts and quail are also monitored through fall covey counts and hunter success.

South Carolina's SAFE acreage (2,300 acres) was allocated to a three-county area in the lower coastal plain. Quail and grassland songbirds are the primary focus of the SAFE initiative, which will target whole-field retirement and establishment of native warm season grasses. A landowner meeting was held in December to provide information on SAFE and efforts are being made to enroll landowners in this program.

RESEARCH PROJECTS

Two research projects examining the effectiveness of selected Farm Bill practices and the resultant population responses of northern bobwhite and other species have been completed under the USDA-NRCS/ MSU Bobwhite Restoration Project.
One project was conducted in the upper coastal plain at the Pee Dee REC, and another project was conducted in the lower coastal plain on a private plantation. Both projects were conducted through Clemson University.

NBCI STATE PLANNING MEETING

South Carolina held a NBCI Revision Meeting on December 4, 2008 in Columbia, SC. Twenty-six participants representing SC Department of Natural Resources, Farm Service Agency, US Fish & Wildlife Service, Department of the Army-Fort Jackson, Conservation Districts, Natural Resources Conservation Service, USDA Forest Service, SC Forestry Commission, Clemson Cooperative Extension Service, Tall Timbers and a private consultant identified opportunities and obstacles for bobwhite habitat restoration for the state based on expert biological and landscape knowledge. This landscape planning and conservation design workshop was conducted as part of the comprehensive NBCI revision.

SEQSG/SEPIF JOINT MEETING

SCDNR will host the 2009 SEQSG/SEPIF Joint Meeting March 24-26.

Submitted by Judy Barnes
Small Game Project

State Report Tennessee

2007-08 HUNTING SEASON SUMMARY

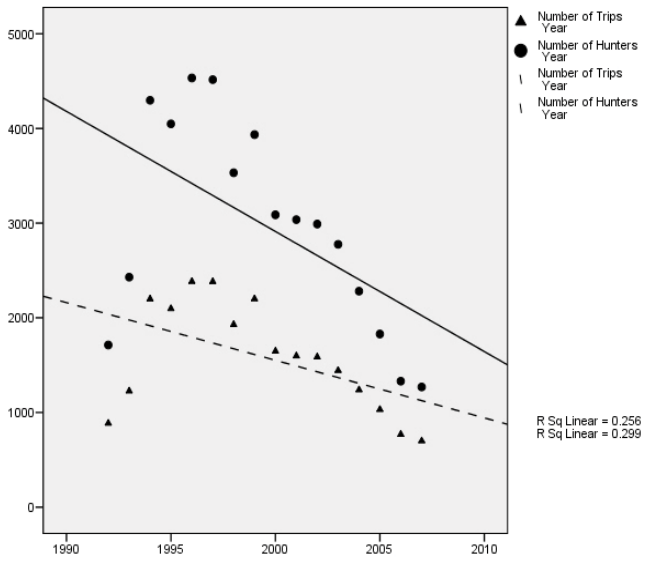
This year, 68 hunters (18% decrease from last year) submitted usable data in time for analysis, reporting their success on 700 quail hunting trips. TWRA Avid Hunter survey data indicates that statewide quail hunting success was unchanged (1.00 in 2007-08 vs. 1.08 2006-07) based on covey flushes per hour. Harvest rates decreased 32 % from 1.04 to 0.79 quail harvested per hunter day.

The 16-year trend in Avid Hunter Survey data for quail indicates 4 important relationships. The number of active quail hunters in the data and the number of trips that they take for quail does shows a significant trend (Figure 1). The number of coveys flushed by survey participants also has a significant trend (Figure 2) as does the number of quail harvested per hunter day which is significantly downward in trend (Figure 3).

Approximately 87% of the trips and 92% of quail harvested occurred on private land. Flush rates were higher on private lands than on public lands. Overall success on private lands was substantially higher based on flushes per party hour, harvest per party hour and trip. Typically, success on private lands is much higher, as most public lands hunted for quail receive more hunting pressure when compared to private lands.

Average covey sizes reported indicate that the stable optimum covey size of 10-11 birds/covey was typically seen on most hunts. This is in contrast to 2005-06 when covey sizes were below stable optimum size but comparable to 2006-07.

Figure 1



QUAIL AND NATIVE GRASSES MANAGEMENT AND RESEARCH

Surveys

An internet based hunter harvest and activity survey was piloted with the 2007-2008 seasons. The survey involves a randomly selected sample of license holders and included harvest activity collection for quail, rabbits, ruffed grouse, woodcock, doves, squirrels, crows, raccoon/opossum, and bullfrogs. The report of this initial pilot survey which is being implemented for the 2008-09 seasons is attached.

TWRA completed monitoring 40 pairs of fields in the CP33 bird monitoring project.

NBCI and Joint Venture Planning

The statewide quail biologist served on the technical committee of 3 Joint Ventures during the year. He assisted with preparation of an implementation plan for the East Gulf Coastal Plain JV which received official approval from the U. S. Fish and Wildlife Service, as did the Appalachian JV. He assisted the GIS coordinator of the Central Hardwoods JV in a project to assign land classes to the Tennessee landscape so that bird conservation programs could be better implemented on the soil and geological capability of lands to produce desired habitat conditions.

Catoosa WMA Savannah Project

Through a recent NFWF/Quail Unlimited grant, TWRA will be intensifying the management of it's current 2,000-acre savannah on the Catoosa Wildlife Management Area on the Cumberland Plateau, and will expand the savannah to a total encompassing 6,000 acres. Habitat practices to be employed are roller chopping, prescribed burning, timber harvest, and a monitoring protocol system established to collect baseline information and measure wildlife response. Restoration of this area to prime quail

Figure 2

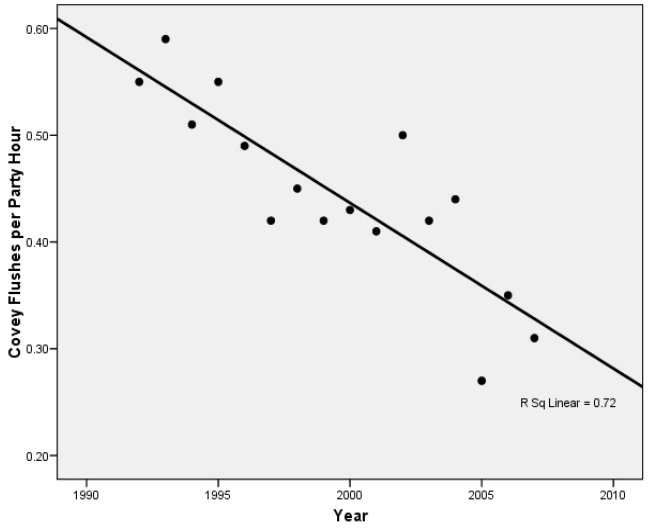
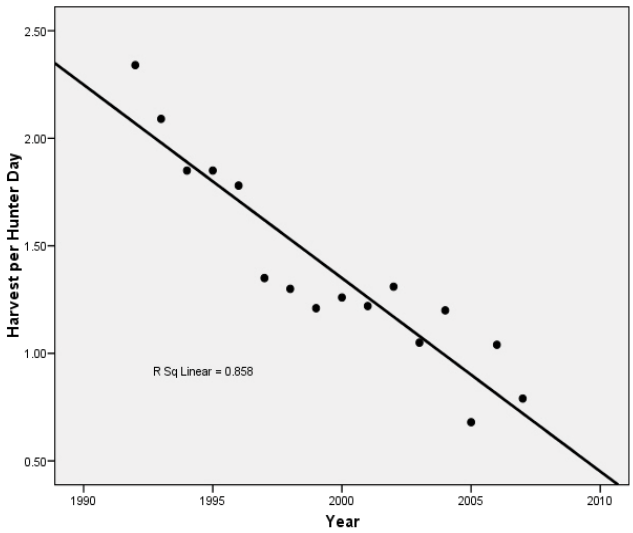


Figure 3



habitat is expected to take up to 2 years to complete. Graduate student Seth Berrioz at the University of Tennessee is conducting a study of bird and habitat response and is comparing Catoosa with savannah restoration sites at Land Between the Lakes and on Daniel Boone National Forest in Kentucky. His work is directed by Dr. Pat Keyser at UT.

Center for Native Grasslands Management

Tennessee Wildlife Resources Agency continues to support the Center and it's activities. The statewide quail biologist received an adjunct faculty appointment from UT Department of Forest, Fisheries and Wildlife to facilitate direct cooperation with research projects of agency interest.

FARM BILL/PRIVATE LANDS PROGRAMS

New Private Lands Biologists

On June 16th, 2007, four new TWRA private lands wildlife biologists began working out of NRCS offices, providing technical assistance to landowners and helping deliver USDA and TWRA conservation programs. The first year for these positions was extremely busy and successful. The four biologists collectively fielded 1,432 technical assistance requests, made 563 farm visits, calibrated 62 native grass seed drills or spray rigs, conducted 24 prescribed burns (totaling 495 acres), and produced 480 different wildlife management plans that included 22,275 actual planned practice acres, in addition to other miscellaneous duties. As a result, Tennessee received twice as much WHIP (Wildlife Habitat Incentives Program) funding as ever before – over $1 million. They also enrolled approximately 87 more miles of CP33 "Bobwhite Buffers" in the Conservation Reserve Program (CRP), 2,124 acres of EQIP (Environmental Quality Incentives Program) native grasses, some 75 miles of fencing to exclude livestock from streams, began planning hundreds of acres in the new CRP "SAFE Bobwhite Habitat Restoration" practice, and contracted various wetlands practices. There were many more habitat achievements using TWRA's Farm Wildlife Habitat Program and Landowner Incentives Program with the assistance of several TWRA regional small game biologists.

New CRP-SAFE Practices

In mid-2008, USDA approved several new SAFE (State Acres For wildlife Enhancement) practices for Tennessee. A total of 6,000 acres were allocated for a CP38E Bobwhite Habitat Restoration practice in 20 middle and west Tennessee counties; 600 acres were allocated to the CP38C Bottomland Hardwood Restoration practice in west Tennessee counties, and 500 acres were allocated to three statewide CP38B Wetlands For Wildlife practices: Shallow Water Areas, Wetland Restoration, and Wetland Restoration-Nonfloodplain.

CP33

Only a few hundred acres remain before Tennessee reaches their cap of 5,000 CP33 acres. Fall 2008 concluded the 3-year monitoring of 40 CP33 and paired control fields.

Habitat Website

For more information on cost-share and technical assistance available to help improve wildlife habitat and whole farm conservation, visit www.TWRAprivatelands.org. We are working to upgrade this website in the near future to add more information of value to landowners wanting to improve habitat for wildlife on their property.

Results from Online Game Harvest Survey 2007-2008

Roger D. Applegate
Wildlife Management Division
Samatha Edd
Information Technology Division

Introduction

Hunter harvest surveys are used to provide indicators of constituent use of wildlife resources and as an index to population trend for many wildlife species, especially small game species. Typically hunters/harvest is measured with mail questionnaires or telephone surveys. These methods have worked reasonably well, but suffer from low response rates, high cost, and problems with obtaining an adequate and statistically valid sample.

The sampling aspect is particularly critical because samples are often not drawn randomly. For example, until states began using automated licensing systems, the sample frame consisted of paper licenses that were often stored in file boxes and drawers and required extensive manual handling in order to draw samples and prepare mailing lists or telephone call lists. Sample selection was not random because of the cumbersome nature of the sampling frame; therefore, selection rules that were not necessarily systematic, had to be applied. Since automation, sampling

issues are more easily handled, but there are still issues of high cost of postage, printing, labor, and telephone service, as well as lowered response rates. Because the telephone has been used increasingly as a marketing/sales tool, telephone surveys have suffered most from decreased response rates. Increasing sample sizes to compensate for lowered response rates only serves to increase the cost when the sample frame is large.

In Tennessee, Field Bag Checks must compete with other management and enforcement activities that take place during longer and overlapping hunting seasons. Avid Hunter Surveys also suffer decreased participation from a shrinking small game hunter base and potential biases because of the avidity of the participants. The reasons for lack of participation, aside from lowered numbers of participants, are unknown, but likely due to a number of social and psychological factors.

To maintain, and even expand survey capabilities, new tools are needed. The combination of online license sales and availability of the internet offer possibilities. The availability of studies and management experience in this arena is building over time as states begin applying new communications technology to the survey toolbox.

As a result of these issues, we developed an internet based questionnaire survey to estimate harvest and participation of Tennessee hunters.

Sampling Frame and Procedure

A random sample of 2,337 of Type 01, 02, and 04 license (Hunting and Fishing Combination, Junior Hunt/Fish/Trap, and Annual Sportsman, respectively) purchasers was selected from the license database on 30 June 2007. A Hunter Cooperator Diary and introductory letter was mailed to each of the selected licensees in early August. In mid-February 2008 a letter was sent to each selected licensee providing them with an internet link, login and password for completing a survey online. Two additional reminder mailings were made to induce participation. The option to receive a paper survey by mail was offered in the follow-up mailings to allow participation of those licensees not able to access the internet.

Analysis

Harvest, participation and success statistics are calculated as:
Estimated harvest:

(1)

$$H = h\left(\frac{N}{n}\right)$$

where H = harvest estimate
h = harvest reported by survey respondents
N = number of active hunters
n = number of survey respondents

Following the above notation, the variance of the estimate is determined by:

$$s^2 = \frac{\sum\left(h_1 - \bar{h}\right)^2}{n-1}$$

A confidence interval for the estimate is calculated from:

$$H \pm t_{(1-\alpha/2)} s^2$$

The number of active versus inactive hunters per class of game is determined by:

(2)

$$N = Pxa$$

where N = number of active hunters
P = number of licenses that were sold
a = percent of hunters in the survey that actually hunted for a particular species

Results

There were 47 undeliverable diaries and 67 undeliverable letters and reminders leaving a total usable sample of 2,223 licensees. The web survey received 458 responses and paper surveys resulting in an additional 29 responses for a total response rate of 22% (21% internet, 1% paper).

There were sufficient samples to estimate harvest of mourning dove, collared dove, bobwhite, ruffed grouse, crow, rabbits, squirrels, bullfrog, raccoon, and opossum. There were insufficient samples for woodcock and snipe (1 hunter each). Estimated harvest and estimated total hunters by species are shown in Table 1. Table 2 provides mean bag and mean days hunted for all species except raccoon and opossum.

Because raccoon/opossum hunters may be training or running dogs rather than hunting, we asked them to supply numbers of animals treed as well as harvested and the number of dogs used in their training or hunting trips. These are reported in Table 3. We also asked this group whether they hunted on public land and only 4 of 20 (20%) reported that they did.

Our estimates indicate that the top 4 hunting activities were dove, squirrel, and rabbit, and crow hunting (Table 4). It is important to note that in this survey cannot discern whether crows were hunted intentionally as game or incidentally to hunting other game or for damage purposes. The treeing of raccoons by raccoon dog hunters/trainers is quite high and the number of raccoon hunters equals the number of quail hunters. Bullfrog hunting was far more important than imagined based on this survey.

The highest harvest rate (harvest/day) was for doves followed by crows as second (Table 5). Dove harvest rate was higher on WMA than on lease fields.

Caution is urged in assigning too much importance to a single year survey. The value in this survey will be in repeating it on an annual basis to establish a statistically valid trend. Results of this survey are presented as a matter of record and to establish how this survey can be conducted and used for future trend analysis.

Recommendations

We believe this survey was successful in providing an indication of the potential of this procedure to obtain data from our constituents. We recommend duplicating this survey for the 2008-09 hunting season and increasing the sample to approximately 15% of license holders at the time of survey initiation in late June or early July. This sample should also include license Types 166, 167, 70-74, and lifetime license Types 402-405. Some questions may need to be added or refined in order to better estimate activities. Crow hunters, for example, need to be asked whether they hunted crows as a game species or whether they hunted incidentally to other species or for damage.

Consideration should also be given to expanding the survey to trappers and big game hunters. A separate spring survey should be considered for spring squirrel and turkey hunting in the near future.

Table 1. Estimates of harvest and number of active hunters for small game species for the 2007-08 season.

Species	Estimated Harvest	95% CI	Active Hunters
Doves	1,314,325	1,299,055-1,339,505	64,976
Doves WMA	71,434	70,084-94,284	6,645
Doves Leased Fields	21,096	20,536-28,796	5,907
Collared Doves	30,051	30,050-30,051	4,061
Quail	159,155	158,185-179,745	14,767
Grouse	6,645	6,165-9,125	6,645
Crows	190,736	189,536-209,796	18,828
Rabbits	268,602	264,522-276,452	45,040
Cottontail	246,492	242,862-253,812	
Swamp	22,110	21,950-22,930	
Squirrels	679,983	673,983-690,923	80,481
Gray	527,233	522,553-535,653	
Fox	136,325	135,525-138,915	
Red	16,425	16,375-16,885	
Bullfrog	117,124	112,244-135,744	9,968
Raccoon			14,767
Treed	186,228	182,618-206,508	
Harvested	52,505	50,535-57,275	
Opossum			3,323
Treed	29,907	19,767-58,047	
Harvested	1,662	572-3,752	

Table 2. Mean days hunted and bag for small game species for the 2007-08 season.

Species	N	Mean Bag	Standard Deviation	Mean Days	Standard Deviation
Doves	79	20.2	22.1	3.3	3.1
Doves WMA	8	10.8	14.5	1.9	0.6
Doves Leased Fields	7	3.6	4.5	1.3	0.5
Collared Doves	5	7.4	10.4	3.3	3.1
Quail	18	10.8	19.7	6.1	6.9
Grouse	8	1.0	1.8	6.8	5.9
Crows	23	10.1	20.7	4.1	4.5
Rabbits	55	6.0	6.9	4.5	3.5
Cottontails		5.5	6.8		
Swamp Rabbit		0.5	1.2		
Squirrels	98	8.5	12.3	4.7	5.2
Gray		6.6	9.3		
Fox		1.7	4.5		
Red		0.2	1.3		
Bullfrog	12	11.8	10.8	3.6	3.1

Table 3. Mean number of dogs used, days hunter, and raccoons and opossums treed and harvested during 2007-08 season.

Species	N	Number of Dogs	SD	Days	SD	Treed	SD	Harvested	SD
Raccoon	19	1.3	0.9	10.2	11.0	12.0	17.3	3.4	3.0
Opossum	4	0.5	0.6	18.8	20.5	9.0	12.0	0.5	1.0

Table 4. Rankings of hunting activity based on species hunted and number of participants during the 2007-08 season.

Rank	Species	Harvest	Rank	Species	Number Hunters
1	Dove	1,314,325	1	Squirrel	80,481
2	Squirrels	679,983	2	Dove	64,976
3	Rabbits	268,602	3	Rabbits	45,040
4	Crow	190,736	4	Crow	18,828
5	Raccoon	186,228*	5	Raccoon	14,767
6	Quail	159,155	5	Quail	14,767
7	Bullfrog	117,124	6	Bullfrog	9,968

*number of raccoons treed by hunters/trainers; number killed 52,505

Table 5. Harvest rates of game species during the 2007-08 season

Species	Harvest/Day	
Dove	6.14	
Dove WMA		5.71
Dove Lease Field		2.76
Collared Dove	2.76	
Quail	1.60	
Grouse	0.15	
Crow	4.58	
Rabbits	1.34	
Cottontail		1.23
Swamp Rabbit		0.11
Squirrels	1.82	
Gray		1.41
Fox		0.36
Red		0.04
Bullfrog	0.49	
Raccoon		
Treed	1.17	
Harvested	0.33	
Opossum		
Treed	0.48	
Harvested	0.03	

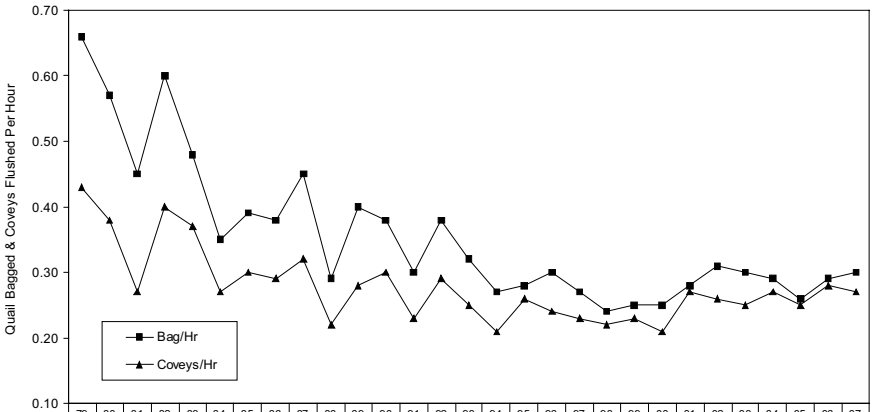
State Report Virginia

Introduction:
During the period of November 1st 2007 through August 31st 2008, annual quail (*n* = 3), rabbit (*n* = 2) and squirrel (*n* = 2) surveys were conducted. These included the Quail Wing Hunter Cooperator Survey, the June Breeding Quail Call Count and Roadside Rabbit Survey and the August Rural Mail Carrier Roadside Survey for quail, rabbit and squirrel. These surveys are the primary means by which trends in the populations of these animals are monitored by VDGIF. In addition, the U.S. Fish and Wildlife Service conducted 55 breeding bird survey routes in Virginia. This data is reported as a supplement to, and comparison for, VDGIF collected data.

U.S. Fish and Wildlife Service Breeding Bird Survey
Trend analysis for 55 USFWS BBS routes conducted in Virginia from 1966 through 2007 indicate that Virginia's quail population is declining at a rate of -4.2 % annually. The national rate of decline is -3.0 %. Surrounding states are experiencing rates of declines as follows: Kentucky -2.6 %, Maryland -5.1%, North Carolina -4.5%, Pennsylvania -7.5%, Tennessee - 3.99 %, and West Virginia -11.7%. Looking at other states in the southeast with active quail management plans; Georgia's quail population is declining at -4.4% annually, Missouri's at -2.6% and South Carolina's at -4.9%. And three states that are widely known as having healthy quail populations – Texas, Oklahoma and Kansas, are experiencing rates of decline of -2.3 %, -1.5 % and -1.6 %, respectively. This data suggests Virginia is in the mid-range of states experiencing quail decline and no state is immune.

Quail Hunter Cooperator Survey
The 2007 – 2008 Quail Hunter Cooperator Survey had 60 participants, reporting the results of 598 hunts, resulting in a ratio of 9.7 hunts per cooperator (compared to 10.2 hunts per cooperator in 2006 – 2007). Hunters flushed 984 coveys and bagged 1,112 quail. The Tidewater and East Piedmont regions accounted for 86% of the coveys flushed. Statewide quail hunter success was similar to the previous season. The number of quail bagged per hunter hour was 0.30, up 4 % from last year. The number of coveys flushed per hunter hour was 0.27, down 4% from last year. Regionally, hunter success (coveys flushed per hunter hour) was 0.39 (+13%) in Tidewater, 0.21 (-13%) in the East Piedmont, 0.16 (-34%) in the West Piedmont, and 0.38 (+3%) in the Northern region. The harvest was again too low in the Central and Southwest mountains to analyze. Comparing the first 5 seasons of the survey data to the last 5 seasons (1977 – 1982 versus 2003 to 2008), coveys flushed per hunter hour has declined by 33%. Comparing data from the last 5 seasons (2003 – 2008) versus the entire 31 year survey period, the coveys flushed per hunter hour was 7% below the long term average. In quail hunter terms, this means that in the late 70s it took an average of 2.5 hours to flush one covey of quail. Today it takes an average of 4 hours for a quail hunter to find one covey.

VIRGINIA QUAIL HUNTER COOPERATOR SUCCESS 1979-80 TO 2007-2008



	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07
Bag/Hr	0.66	0.57	0.45	0.60	0.48	0.35	0.39	0.38	0.45	0.29	0.40	0.38	0.30	0.38	0.32	0.27	0.28	0.30	0.27	0.24	0.25	0.25	0.28	0.31	0.30	0.29	0.26	0.29	0.30
Coveys/Hr	0.43	0.38	0.27	0.40	0.37	0.27	0.30	0.29	0.32	0.22	0.28	0.30	0.23	0.29	0.25	0.21	0.26	0.24	0.23	0.22	0.23	0.21	0.27	0.26	0.25	0.27	0.25	0.28	0.27

Figure 1. Quail bagged and coveys flushed per hunter hour by Virginia quail hunter cooperators, 1979 1980 to 2007-2008.

2008 QUAIL CALL COUNTS
Quail call counts were conducted by Department personnel, cooperating agency employees, and volunteers during June 2008. A total of 114 routes were surveyed during 2008. Counts began at sunrise and observers recorded the number of "bob white" calls heard during a 2-minute period at 10 stops approximately one mile apart. The number of individual quail heard calling at each stop was also recorded. The number of rabbits seen at and between stops was noted on the data sheet. Rabbits were also counted along an additional 11-mile route that was driven non-stop after the quail portion of the route was completed. Statewide, an average of 13 quail calls and 3.3 quail was heard per route and 4.1 rabbits were seen per route. Comparing only those routes that were surveyed during both 2007 and 2008 (n = 114), there was a decrease in the number of individual quail heard (-24%) and a decrease in the number of listening stops at which quail were heard (-9%).

2008 Rural Mail Carrier Survey (Quail only for this report)
Rural mail carrier survey materials were mailed to 505 postmasters with 3,113 rural routes. Postmasters distributed one survey card and instruction sheet to each of their rural carriers. The survey period for 2008 was August 4 – 8 (5 days). No counts were made on days of poor weather. Mail carriers recorded the number of adult and juvenile quail. Population indices for each category were calculated as the number of animals seen per 100 miles of mail route surveyed. During 2008, 1,064 mail carriers participated in the survey. They recorded 879 total quail, 664 adult quail and 215 juvenile quail. An average of 0.34 quail was observed per 100 miles traveled. Compared to the previous year, statewide population indices increased for quail (+ 3%). Regionally, quail population indices were highest in the Tidewater region and lowest in the Southwest Mountain region.

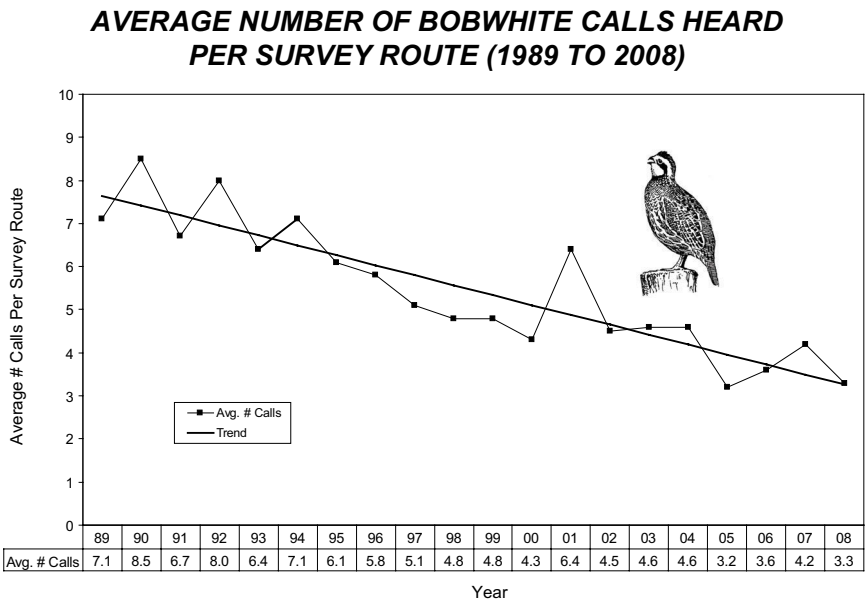


Figure 2. Average number of bobwhites heard per survey route in Virginia, 1989-2008.

Quail Conservation Initiatives

Since the July 2008 SEQSG meeting, the Quail Action Plan (QAP) has been completed as a draft and has been thoroughly reviewed by many. The QAP was originally scheduled for adoption in October 2008. Due to other pressing matters, the adoption was rescheduled for February 27th, 2009 (hopefully by the time of the March SEQSG meeting, it will have been officially adopted). We are planning to add sections on predator management and trapper recruitment. Once finalized, we will develop and print a professional document including all signed partners under our Virginia Quail Council. No new funding has been forthcoming at this time. Virginia, as well as many other states, is undergoing budget shortfalls. We are working in every way possible to secure new funding sources. In addition, we have begun work on every possible aspect of the QAP that can be accomplished at low or no cost. Some of the bigger accomplishments in 2008 were:

Our new web site is up and running www.dgif.virginia.gov/quail/ and on our home page www.dgif.virginia.gov you will find the quail Icon and quail at the top of the page. We are attempting to offer a comprehensive quail web site that is easily updated.

Organized and held 2 meetings of the Virginia Quail Council. These meetings have been well received. The last meeting in December was attended by 45 conservationists representing 22 different conservation organizations. The VQC is a forum for like minded conservationists to discuss collaborative projects and form sub-committees to address each topic. Fifteen sub-committees were formed at the December meeting.

Completed a comprehensive survey of 5000 (2,400 useable returned) landowners in 5 geographic regions of Virginia. The survey has been helpful in identifying why landowners do not participate in cost-share programs (16% did, 84% did not. Copies available upon request).

Conducted 4 wildlife rallies in conjunction with NRCS, FSA and DOF staff in 4 key geographic regions of the state.

Began developing quail habitat demonstration areas on 4 wildlife management areas.

Developed comprehensive quail management guidebooks and pre-loaded USB drives for all DGIF Regional Staff.

Articles covering the QAP and Hunting Preserves (including Hunting Preserve Trail map) in October and February issues of Virginia Wildlife.

Research:

In addition to population surveys, we continue our research on oak savanna establishment. Herbicide applications and baseline vegetation data were collected this summer.

Are collecting quail gastrointestinal tracts for use by the University of Georgia and Virginia Tech in analyzing quail diseases in the Southeast.

Are in discussions with several entities including Virginia Tech, Department of Mines, Minerals and Energy, the Conservation Management Institute and others for the potential of conducting wild quail trap and transfer monitoring on reclaimed mining lands in Southwest Virginia.

Marc Puckett was the principal investigator, and is the Small Game Project Leader for the Virginia Department of Game and Inland Fisheries.

Gary Norman is the Small Game, Furbearer, Turkey and Grouse projects supervisor and has been instrumental in developing our Quail Action Plan.

Jay Howell is the data analyst for the Virginia Department of Game and Inland Fisheries. His expertise made this report possible.

POSTER PAPERS/ PRESENTATIONS

Bird Education Alliance for Conservation Interface with PIF

Joni Ellis, Bird Education Alliance for Conservation

Abstract: Education and communications is essential to achieving conservation success but they have not received adequate attention to date. In spring 2008, BEAC offered to serve as the PIF Education and Communications Working Group. This leadership, coordination of activities, and essential participation in PIF Implementation and Science Committees' activities has shown to be greatly beneficial thus far. Additionally, outreach at the North American Association for Environmental Education Conference, National Association for Interpreters Workshop, and National Gatherings for Bird Educators has increased the involvement and buy-in of educators in BEAC, and, thereby, the PIF Working Group.

In 2009, strong leadership of education and communications for PIF will be even more essential. The TriNational Assessment report will be completed, and a communications team's involvement in the design of the report and preparation of a communications strategy must be facilitated. Over one-third of the needs in the McAllen Needs Assessment relate to education, outreach, and communications. In the first year of its implementation, much must be accomplished to lay a foundation for successfully addressing needs. PIF has an unprecedented opportunity to draw attention to the importance of landbird conservation with its 20th anniversary in 2010, which requires appropriate communications planning and strategizing. Get familiar with this new partnership by attending this session.

A Bird's-eye View of Climate Change

Robert J. Cooper, Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA 30602
Kirk W. Stodola, Michael J. Conroy

Abstract: Songbirds have shown some of the earliest measured effects of climate change through geographic range shifts and other phenomena. However, the consequences of continued climatic change on birds and other biota remain largely unknown. The Breeding Bird Survey is a well-known means for assessing species response to large-scale changes; however, it may exist at too coarse a scale to assess the consequences of climate change. Consequently, we advocate a multi-scaled approach towards assessing the effects of climate change on birds through investigating bird community shifts, species-specific demographic responses, and experimentation to test plausible mechanistic responses to climatic changes. This approach builds on our previous work at the Coweeta Hydrology Lab LTER, North Carolina, where over the last six years we have used elevational gradients as a surrogate for climatic variability. Because food resources peak earlier at low elevations, Black-throated Blue Warblers nest when food abundance is low (i.e., mis-timed breeding). Consequently, we find a shorter breeding season, decreased food provisioning to nests, and decreased weights of young. These results suggest a mechanism by which long-distance migrant bird populations are declining in the Southern Appalachians, but without long-term data and experimentation this is just speculation. We advocate a long-term monitoring program that focuses on using elevational gradients as described above. First, a broader community approach would feature surveys along elevation and latitude gradients throughout the Southern Appalachians. Second, demographic work and experimentation would focus on select species as indicators of climate change effects in order to investigate mechanisms for population changes.

Tracking Bobwhite Restoration Success: A Proposal From The SEQSG Ad Hoc Committee on "Defining NBCI Success"

Mark Gudlin, Tennessee Wildlife Resources Agency, P.O. Box 40747, Nashville, TN 37204
Roger Applegate, Tennessee Wildlife Resources Agency, Ellington Agricultural Center, PO Box 40747, Nashville, TN 37204

Abstract: At the request of the SEQSG Steering Committee, an Ad Hoc Committee was formed in December 2008 to address the issues surrounding how to define and determine what an "NBCI Success" is. This issue was prompted by Missouri's declaration this past year to have had two "NBCI Successes", one in Scott County and one in Cass County. As discussion amongst SEQSG members ensued, it was realized that this topic was much more complex than it appeared on the surface.

The purpose of identifying and subsequently publicizing quail population successes attributable to the NBCI is to help continue and increase the momentum for quail habitat and population restoration across the bobwhite range, promote necessary policy, and help ensure continued funding. Specifically, this is accomplished by 1) identifying legitimate bobwhite restoration successes by recognizing scientifically-based examples that demonstrate such success can be achieved, 2) adding these successes to the database of general knowledge in order that others might use and replicate such approaches so success can be repeated, and 3) giving hope to quail enthusiasts and the general public that the NBCI goal of restoring bobwhites across the species' range can be achieved if enough effort, manpower and funding are dedicated to the restoration and maintenance of ample quality habitat through sound land use practices and government programs and policies.

Ecoregional Partnerships for Sustaining Bird Populations in the Atlantic Coast Joint Venture: The South Atlantic Migratory Bird Initiative

Craig Watson, Atlantic Coast Joint Venture, U.S. Fish & Wildlife Service
Tim Jones, Andrew Milliken

Abstract: The Atlantic Coast Joint Venture's (ACJV) first ecoregional partnership and planning effort began in 1999 with the initiation of the South Atlantic Migratory Bird Initiative (SAMBI). The initiative has been extremely successful, with State Working groups and regional coordination key to its success. Over $38 million in grants have been awarded to SAMBI partners, conserving over 225,000 acres at over 80 project sites, with partners contributing over $176 million in grant funds. The South Atlantic is under extreme threat of commercial, industrial, and residential development, however, much of the remaining habitats can be conserved. The ACJV is approaching this challenge through Strategic Habitat Conservation, partnering with Auburn and North Carolina State Universities to implement a landscape conservation design project across the SAMBI planning area to develop models and Decision Support Tools to sustain bird populations within the ecoregion.

New Tools for Managers to Learn From Point Count Data

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Abstract: A number of increasingly popular approaches to management, such as Strategic Habitat Conservation and Adaptive Resource Management, require that monitoring data are regularly analyzed to inform management decisions. However, due to the specialized knowledge required to analyze modern monitoring data, data are often only analyzed (and thus only inform management) in erratic and irregular intervals. We describe new computer software, abundanceR, that allows managers to evaluate simple management questions while accounting for imperfect detection using time-removal methods. Users import monitoring data directly from the USGS Bird Point Count Database, select target species, group monitoring points based on management questions, and are provided with group-specific estimates of abundance and associated confidence intervals based on results from multiple competing models. As abundanceR uses program MARK for all estimation, it also formats data from the USGS Bird Point Count Database for direct input into program MARK. abundanceR is currently under going testing by National Wildlife Refuge biologists in the Midwest with anticipated release to all interested users in late 2009.

Habitat Use by Marsh Birds Within the Changing Physical and Legal Landscapes of the Northern Gulf Coast of the United States

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Abstract: Tidal marsh continues to disappear from the southern coasts of the United States. Local and state land-use regulations can dictate the level of anthropogenic impacts on these environments. The ecology of marsh birds that inhabit this ecotype, species such as the Clapper Rail (Rallus longirostris), Least Bittern (Ixobrychus exilis), and Seaside Sparrow (Ammodramus maritimus) remains largely unknown. We used standardized marsh bird surveys and GIS to examine the spatial distributions of these marsh bird species at several locations in Mississippi and Alabama. Across our study systems, we found marsh bird occupancy correlated with landscape features measured at various spatial scales. Application of ecological tracers in the form of stable isotopes provides further insight into the trophic and reproductive ecology of Clapper Rails from several spatially distinct locations in Mississippi. For Clapper Rails, evidence suggests that diet and reproductive success may vary both within and between estuarine systems and can be linked to hydrologic conditions. Applying several reproductive metrics we will discuss possible relationships between ecotype, trophic interactions, habitat use, population demographics and the potential impacts of sea level rise and anthropogenic development. Synthesis of this information will not only further our understanding of the ecology of tidal communities, but will also contribute to law makers' ability to make strategic policy choices that protect these estuarine ecosystems.

Above Ground Foraging and Occupancy by Swainson's Warblers in Flooded Habitat

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Abstract: The Swainson's Warbler (Limnothlypis swainsonii), a species of conservation concern in the southeastern U.S. We have conducted a demographic study of Swainson's Warblers occupying bottomland hardwood forest at the White River National Wildlife Refuge (WRNWR) since 2005. During the early spring of 2008, excessive rainfall led to above average flows on the White River and extreme flooding of the WRNWR including our study area in the spring. From 2005 to 2007, we detected a mean of 43 male Swainson's Warblers at our study site. During the flood of 2008, surveys revealed the presence of only 25 males, of which, 10 defended territories over completely-flooded ground. We felt that the retention and survival of these birds over inundated habitat was unlikely as Swainson's Warblers have been categorized as obligate ground foragers, using leaf lifting to search for insects. However, we witnessed birds employing previously unreported foraging behaviors and feeding from novel substrates. These included feeding off flotsam, gleaning insects from tree limbs, and searching for insects by lifting leaves from hanging leaf clusters and loose bark along tree limbs during the flood. We found a reduced return rate of birds (0.36, n = 47 birds). Return rates of Swainson's Warblers in our study site were 0.53 (n = 40) in 2005-06 and 0.58 (n = 43) in 2006-07. This is the first report of Swainson's Warblers occupying and foraging in flooded habitat, and these data suggest this species may have more flexibility in their exploitation of flooded habitats.

Analysis of Grassland Bird Trends Over 12 Years at Fort Campbell Military Reservation (Kentucky-Tennessee)

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Abstract: Fort Campbell Military Reservation is a 42,000-ha U.S. Army base located on the Kentucky-Tennessee state line and is listed as a Globally Important Bird Area by the American Bird Conservancy. Fort Campbell has maintained an estimated 10,000 ha of native grasslands and oak savannas. Military exercises at Fort Campbell require open lands to facilitate training activities for the 101st Airborne Division's troops. Grasslands provide ideal conditions for training because the grasslands are durable, provide great visibility, and can be effectively managed with the use of fire. The habitat conditions that provide suitable conditions for training activities also coincidentally provide excellent conditions for grassland birds. Between 100 and 200 point counts were conducted annually over 12 years resulting in over 1500 point counts and 27,339 bird records. We examined the distribution, diversity, and conservation implications for seven high priority grassland bird species including Northern Bobwhite, Dickcissel, Henslow's, Grasshopper, Field, Lark, and Bachman's Sparrows. Where possible, we also compared the population trends within Fort Campbell to regional Breeding Bird Survey (BBS) population trends in the Central Hardwoods Bird Conservation Region (CHBCR). At Fort Campbell, Bachman's Sparrows are present but rare, while there are no records of Bachman's Sparrow on the BBS in Tennessee and only 2 records in Kentucky. Henslow's Sparrows were first detected at Fort Campbell in 1995, and have since increased in the CHBCR. Northern Bobwhite have declined at Fort Campbell while they decreased by 3.2% annually in the CHBCR.

Integrated Management: Using Precision Agriculture Technology to Optimize Conservation and Profitability in Agricultural Landscapes

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Abstract: USDA Farm Bill conservation programs provide landowner incentives to remove marginal lands from agricultural production and reestablish them to natural vegetation (e.g., native grasses, trees, etc.). However, removal of arable land from production imposes an opportunity cost associated with loss in revenue from commodities that otherwise would have been produced. Strategic implementation of conservation programs is essential to optimize environmental and economic benefits. We used precision agriculture tools (i.e., yield monitors, AgLeader and GIS software) to develop spatially explicit profit surfaces for soybean production fields in the Black Belt Prairie region of Mississippi. We identified field regions where profitability under Continuous Conservation Reserve Program Conservation Practice 33 (CP-33), Habitat Buffers for Upland Birds, exceeded that under commodity production. Using spatial queries in ArcGIS we compared profit surfaces for whole field agricultural production and alternative CP-33 enrollments (30, 60, 90, 120 ft) to spatially illustrate the economic advantages of strategic CP-33 establishment. Whole field profitability increased 69.52% ($2840.32 - $4814.80) with a 120 ft CP-33 buffer, 60.83% ($2840.32 – $4568.21) with a 90 ft CP-33 buffer, 47.22% ($2840.32 – $4181.53) with a 60 ft CP-33 buffer, and 28.54% ($2840.32 - $3651.02) with a 30 ft CP-33 buffer. Our results suggest profitability and conservation objectives can be optimized in working agricultural landscapes by using precision agriculture technology to facilitate strategic conservation program enrollment.

Bachman's Sparrow Populations, Nesting Ecology, and Habitat Use in Oak Savannas at Fort Campbell, Tennessee-Kentucky

Emily Hockman, University of Tennessee
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Abstract: Bachman's Sparrow is a high priority species for conservation attention in the Southeast because of declining populations and loss of pine savanna ecosystems. The northern range of the species, however, extends from Pennsylvania to Illinois, where this species occupies oak savannas. Bachman's Sparrow populations have decreased an average of 1.6 % from 1966 to 2007, according to the Breeding Bird Survey. Fort Campbell contains remnant patches of oak savanna that support a breeding population of Bachman's Sparrows. Large tracts of savannas maintained at Fort Campbell by accidental and prescribed fires provide habitat for not only Bachman's Sparrow, but other high-priority grassland species as well. This poster summarizes our knowledge about Bachman's Sparrow population size, reproductive success, and specific habitat requirements at Fort Campbell. Our long-term goal is to develop a conservation strategy to sustain and enhance populations of this high-priority species at Fort Campbell.

The Status of Swallow-tailed Kites in Arkansas

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Abstract: The northern Swallow-tailed Kite (Elanoides forficatus forficatus) formerly bred in areas of at least 17 states from Florida and the Southeast coastal plain west to central Texas and north to Minnesota. As the result of a drastic reduction in breeding range, the population now breeds in portions of only seven southeastern states. The most recent documented case of nesting Swallow-tailed Kites in Arkansas was in 1890 and the species was assumed extirpated from the state in the late 1940s. Based on an increase in reported sightings, particularly around the White River National Wildlife Refuge, we initiated a study in 2001 to determine the status of the Swallow-tailed Kite in Arkansas. In 2002, we documented the first nesting attempt by Swallow-tailed Kites in the state in over 100 years. Since then we have located four additional nests, all of which failed before fledging any chicks, with two reaching the nestling stage. We quantified nest site characteristics and found that kites selected super-emergent oaks (Quercus spp.) approximately 500 m from the forest edge as nest sites. All nests were located within a relatively small area on the refuge approximately 3.7 km in diameter, indicating relatively strong site fidelity. The cluster of nests in the White River National Wildlife Refuge is approximately 370 km north of the closest known nesting kites in Louisiana, representing a substantial extension in the current known breeding range of the northern Swallow-tailed Kite.

Citizen Science for Swallow-tailed Kites: Integrating Citizen Science & Research

Jennifer McCarthey, College of Charleston
Tera Baird, Dr. Maria Whitehead

Abstract: Citizen Science strives to involve residents in wildlife resource management at the local level while contributing to the regional management of a species. It incorporates public education and outreach with scientific data collection in a cost-effective manner. The Citizen Science for Swallow-tailed Kites program uses sightings reported by citizens to monitor Swallow-tailed kite populations and contribute to research project and planning efforts. This program spans the breeding range of the northern sub species of Swallow-tailed Kite, Elanoides forficatus forficatus. Data collected from this effort is being used in the resource based study, "Macro-arthropod Use and Availability for Swallow-tailed Kites in four human-managed habitats in the coastal plain of South Carolina." This study assesses macro-arthropod resource availability during the Swallow-tailed Kite breeding and post-breeding season in four managed habitats across four study areas: pasture/hayfields, fallow fields, row crop, and managed impoundments, determines foraging site fidelity among years by analyzing citizen-science database during 2007-2009, and compares and analyzes landscape qualities of reported foraging sites reported in 2007-2009. At the end of this study, the integration of citizen science with field research will provide valuable management recommendations and assist land trusts in preserving high quality foraging habitats adjacent to bottomland hardwood forests used for nesting in South Carolina.

Northern Bobwhite (Colinus virginianus) Response to the Wildlife Habitat Incentive Program (WHIP) in Fulton County, Arkansas

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Abstract: In an effort to reverse the decline of Northern Bobwhite (Colinus virginianus) and grassland-associated songbirds, the Northern Bobwhite Conservation Initiative (NBCI) was established with specific population goals. One approach toward accomplishing this goal is enrollment of landowners in the Wildlife Habitat Incentives Program (WHIP) to support the implementation of management practices favoring quail such as prescribed burning. To monitor results of this program in Fulton County, Arkansas, we captured and radio-collared 53 quail using call-back trapping and night-lighting techniques. We then monitored brood-rearing adults during 2-hour tracking sessions to document habitat use. We collected vegetation data at brood-rearing sites including: percentage estimates of bare ground, forbs, grasses, overhead cover, and woody vegetation using a 1-m2 frame, as well as vegetation height, and Robel readings to determine density and structure. Also, distance to escape cover was recorded. In addition, we compared insect abundance and species composition accessible to nesting adults and foraging chicks on managed and unmanaged lands. Of the 53 quail (45 males, 8 females), 26 and 27 birds were captured on managed and unmanaged lands, respectively. We recorded a nest hatch success of 58% (7 of 12). We, also, found birds rearing broods on managed lands during 18 (46%) tracking sessions, and on unmanaged lands 21 of 39 (54%) sessions. Preliminary evaluation of data suggest conditions created using prescribed fire and fescue eradication practices showed more retention of brood-rearing birds than other management practices or conditions on unmanaged lands.

Designing Sustainable Landscapes: Avian Communities, Predicted Landscapes and Decision Support Tools of the Future

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Abstract: A collaborative effort among researchers at the Center for Biodiversity and Spatial Information Center at North Carolina State University, the USGS Cooperative Fish and Wildlife Research Units of Alabama and North Carolina along with the Atlantic Coast Joint Venture are developing an approach to landscape conservation design in the South Atlantic Migratory Bird Initiative region that is based on predicted changes to land cover and the avian populations they support. Landscape changes over the next 100 years will be predicted considering climate change, urban growth and succession of plant communities using a variety of modeling techniques including SLEUTH, VDDT and TELSA. Fifteen avian habitat guilds will be represented by a select suite of species that are the best indicators of key ecological drivers of a given habitat guild. Those species will have habitat priority maps developed using the Southeastern Regional Gap Analysis data as the basis with other ecological drivers as identified through a series of structured decision workshops conducted throughout the region. Habitat priority maps will be developed for future landscape conditions based on likely conservation and emission scenarios. The result will be a series of data sets that can be used to evaluate conservation actions and their effect on future avian populations. This project is expected to yield protocols that utilize Strategic Habitat Conservation and can then be applied throughout the eastern United States as regional GAP data sets become available.

The South Carolina Safe Harbor and Landowner Incentive Programs: Promoting Habitat Maintenance and Restoration for the Red-Cockaded Woodpecker and Other Southern Pine Ecosystem-Associated Species on Private Lands

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Abstract: Since its introduction in 1998, the South Carolina Red-cockaded Woodpecker Safe Harbor program, administered by the South Carolina Department of Natural Resources (SCDNR), has grown to include 114 enrollees and 297 Red-cockaded Woodpecker groups, with properties enrolled throughout the South Carolina Coastal Plain and Sandhills regions. The program's success stems from flexibility the Endangered Species Act (ESA) offers: in exchange for voluntary habitat maintenance and enhancement, landowners are exempted from ESA restrictions for any Red-cockaded Woodpecker groups that move onto their property in the future as a result of those habitat improvements. Landowner compliance is monitored by the use of an annual report completed by each landowner and annual site inspections by SCDNR biologists. The SCDNR also administers the South Carolina Landowner Incentive Program (LIP), a cost-share program available to landowners enrolled in the Red-cockaded Woodpecker Safe Harbor program. The program provides financial compensation to landowners for implementing management activities that benefit Red-cockaded Woodpeckers and associated species at risk in the longleaf pine ecosystem. Management practices include prescribed burning, mechanical and chemical understory control, and longleaf pine establishment. Since the introduction of LIP in September 2006, 66 landowners have been enrolled, over $300,000 reimbursed, and almost 17,000 acres impacted. This program, in combination with Safe Harbor, promotes continued and proactive management on the part of private landowners for Red-cockaded Woodpeckers and other species associated with southern pine ecosystems in South Carolina.

Flood-Associated Habitat Changes Affect Occupancy by Swainson's Warblers

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Abstract: Understanding factors that influence changes in habitat occupancy of Neotropical migrant birds is important related to potential management decisions, particularly for species of conservation concern. One such species, the Swainson's Warbler (Limnothlypis swainsonii), is associated with bottomland hardwood forests in the southeastern U.S. Because these warblers nest in the shrub layer and forage in leaf litter, they may be negatively influenced by flooding. In 2004, we repeated song-broadcast surveys and vegetation sampling at 42 locations that were occupied by Swainson's warblers in 2000 or 2001 at four study sites in Arkansas. Only nine of 42 previously occupied locations (21%) remained occupied over the 3–4 years since the original surveys. Occupancy changes were associated with decreases in depth and cover of leaf litter and shrub cover, and increases in cover of bare ground and forbs. These habitat and occupancy changes were related to flooding events that occurred between sample periods at three of four study sites. Future conservation efforts for this species should focus on relatively high elevation areas in bottomland hardwood forests that are typically free from the effects of periodic flooding.

Habitat Ecology of Two Grassland Birds During the Breeding Season in South Florida

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James Martin, William Palmer, John Carroll

Abstract: Avian species associated with grassland and savanna ecosystems are experiencing some of the steepest population declines of all North American passerines. Within the Southeastern United States, the dry prairie of south Florida constitutes one of the largest remaining native grasslands. Over the last century, this ecosystem has experienced severe declines to both its extent and quality. However, little research exists quantifying the effect of fragmentation and advanced plant succession on members the dry prairie's breeding bird community. Therefore, during 2005 and 2006 we used fixed-distance point counts to investigate the influence of patch size and habitat characteristics on dry prairie's avian community. We limited the scope of our study to 2 common, yet regionally declining species: Bachman's sparrow (Aimophila aestivalis) and Eastern meadowlark (Sturnella magna). We surveyed birds at 235 points within 30 patches during 2005, and 228 points within 46 patches during 2006. We used an information theoretic approach to examine candidate models that explained abundance of Bachman's sparrows and occurrence of Eastern meadowlarks. Although we observed temporal variation of the most influential model variables, our results suggest that both species exhibited preferences for prairies with low-density herbaceous layers, < 35% saw palmetto (Serona repens), and high proportions of bunch grasses. Eastern meadowlarks exhibited some degree of area sensitivity, while Bachman's sparrows seemed more influenced by landscape connectivity than patch size. Conclusions from this research are that conditions for some breeding birds can be improved by managing with natural fire-return intervals, and promoting connectivity between large blocks of prairie.

Target Mist-netting in the Program MARK Era

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Abstract: Data collected from passive mist netting is not yet yielding survival estimates for species that occur at low densities. Data collected from MAP stations conducted in southeastern states suggested only 36 species were monitored adequately. Target netting can improve capture rates for uncommon species and has been used extensively in recent years. For example, we frequently catch ≥8 adult male Bachman's Sparrows (Aimophila aestivalis) each morning using target netting techniques, but the largest single-day number we have caught using passive netting techniques is 3. We describe field procedures that can be used to make target netting more amenable to the analytical tools available for analyzing mark-recapture data. For example, target netting can be tailored to fit the assumptions of the Cormack-Jolly-Seber model by (1) generating random points for a study area and (2) visiting random points and attempting to net the first individual detected near the point. Two years of sampling conducted in 2007 and 2008 suggested 5-15 Bachman's Sparrows could be captured each morning using these procedures with an average capture rate of 0.63 individuals per netting attempt. We netted 50 males in 2007 and 45 males in 2008 with a 0.53 recapture rate in 2008. We also have tested methods based on Pollock's robust design and will report on these. We believe these approaches offer great promise in improving survival estimates for uncommon species and also may be used efficiently for many territorial songbirds.

Red-cockaded Woodpecker Management on Sand Hills State Forest

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C. Brian Davis

Abstract: Sand Hills State Forest comprises 46,000 acres mostly in Chesterfield County SC, and is part of the Secondary Core recovery population of red-cockaded woodpeckers (Picoides borealis) in the Sandhills region. In 1992, the population of RCW's on the forest was 36 groups and it has expanded to 64 groups today due to partnership and management efforts. In 1993, the South Carolina Forestry Commission teamed up with the South Carolina Department of Natural Resources to intensively manage for Red-cockaded Woodpeckers on Sand Hills State Forest. Previous management by the Forestry Commission involved marking cavity trees and some use of prescribed fire and mid-story control within the cluster areas. With the new partnership, RCWs were banded, artificial cavities installed and nests checked for nest and fledging success. In addition to traditional timber harvests, a Pine Straw Enhancement program was initiated in 1998. The goals are to improve woodpecker habitat by removing the mid-story through chemical and manual means and generate much needed revenue to sustain the forest. Contractors bid on areas to rake pine straw and as part of their contract agree to chemically treat and manually remove all hardwood species in the stand. Pine straw raking is one of the most economically viable industries in the county, generating a large portion of the 25% of forest products revenue that is given to the county school district. The combination of management efforts has benefited both the County of Chesterfield and the Red-cockaded Woodpeckers alike.

Landscape Ecosystem Classification Correlates of Winter Grassland Sparrow Habitat in Utility Rights of Way

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Abstract: Novel opportunities for surrogate grassland habitat management exist in utility rights-of-way (ROWs) for a variety of early-successional avifauna including overwintering grassland sparrows. ROWs are common features of the landscape and are kept in a long-term early successional state through regular disturbance such as mowing and burning. While grassland bird density and diversity are strongly linked to vegetative composition in habitats managed over the long-term, vegetative composition and structure itself is dependent on a host of abiotic environmental factors such as topography and environmental exposure. Determining how these factors might affect winter sparrow diversity and abundance may be critical in facilitating conservation efforts. We conducted fixed area flush surveys in ROWs to determine whether wintering grassland sparrow diversity and density was a function of habitat area and /or other salient habitat features on the predominantly forested landscape of the Savannah River Site (SRS) in western South Carolina. We detected 199 grassland sparrows, including 47 Henslow's (Ammodramus henslowii), 44 Grasshopper (A. savannarum) and 108 Bachman's Sparrows (Aimophila aestivalis), over the four years of sampling. Sparrow diversity and densities were positively related to three measures of ROW area and landform index (LFI). A positive relationship to site exposure suggests that patch area may be proximate in grassland sparrow density during winter, and that other factors, such as abiotic conditions driving vegetative composition may be more explanatory.

Effects of Forest Management on Swainson's Warblers

Carolina Roa, Arkansas State University
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Abstract: Most bottomland hardwood forests in the Mississippi Alluvial Valley are currently even-aged as a consequence of past management practices. The Swainson's Warbler (Limnothlypis swainsonii) is an uncommon Neotropical migrant that breeds in these forests and is a species of conservation priority throughout the Southeast. Past reports indicated that this species was primarily associated with mature forests; however, recent studies have shown that this species breeds under a variety of management regimes. We collected data on the density of Swainson's Warblers (SWWAs) and vegetation characteristics from 2005 to 2007 in the White River National Wildlife Refuge (WRNWR) and the Saint Francis National Forest (SFNF), Arkansas. We also gathered information about the history of management of each stand, and used GIS layers from each site to estimate the area and the forest type. The mean density of SWWA was higher in SFNF (0.28 males/ha; 1–5 birds/stand) than in WRNWR (0.02 males/ha; 1–20 birds/stand). We analyzed data from stands used by SWWA (290–775, N = 7 ha and 1–81, N = 43 ha in WRNWR and SFNF, respectively). The management in the WRNWR has been primarily thinning and on average, the stands have not been managed in the past 35 years. In the SFNF the management included clear-cutting, thinning, prescribed burning and controlling invasive species. Some stands supporting SWWAs have not been managed for more than 50 years and others, managed in the past year. Preliminary results suggest that more frequent forest management may support greater densities of SWWAs.

Proximate Causes of Population Trends in Migratory Landbirds and Implications for Southeastern Species and Climate Change

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Abstract: We examined the importance of productivity, recruitment, and adult apparent survival in driving BCR-scale spatial variation in 12-yr (1992-2003) MAPS population trends for 28 species of Nearctic-Neotropical migratory landbirds. We assessed MAPS population trends (lambda) and adult survival and recruitment rates using reverse-time and "transient" Cormack-Jolly-Seber mark-recapture models, and indexed productivity by the ratio of young to adult birds in MAPS constant-effort data. We found that productivity had strong effects on recruitment and lambda for only 9 species, while recruitment had strong effects on lambda for 25 species, thereby implicating first-year survival as the driver for lambda for at least 16 species. Adult survival had a strong effect on lambda for 9 species and appeared to act alone for 3, along with first year survival for 4, and along with both first-year survival and productivity for 2 species. Species for which first-year survival was important in driving lambda tended to have stronger negative trends, species for which adult survival was important tended to have weaker negative trends, and species for which productivity was important tended to have stable or positive trends. These results indicate that (1) enhancing survival, especially first-year survival, may be the most important conservation strategy for slowing declines and achieving stable populations of migratory landbirds, (2) enhancing productivity may be necessary to recover populations whose declines have been arrested, and (3) relationships between landbird vital rates and weather and habitat characteristics on the wintering grounds must be determined. We discuss implications for southeastern landbirds and climate change.

Age-structure in a Declining Habitat: Do Older Birds Always Reflect Better Habitat

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Abstract: Theoretical models of habitat selection suggest that individuals of higher quality select the highest quality habitat. Consequently, age structure is often viewed as an indicator of habitat quality where older individuals occupy areas of highest quality. However, for species with high site fidelity this pattern may not hold when habitat quality changes. For many Nearctic-Neotropical migrant species habitat assessment may occur during the first breeding season, as many older individuals are extremely site-faithful. As habitat changes in quality, first-year breeding adults may assess habitat differently than returning adults that are tied to an area due to past breeding experience. Consequently, as habitat quality declines first-year breeding individuals may choose to settle elsewhere, while older individuals are faithful to that habitat. Thus, the age structure of a population in habitat that is degrading may be older than in habitat that is stable or improving. We provide evidence of this from a population of Black-throated Blue Warblers in an area where habitat quality has been affected by the gradual loss of a preferred nest substrate, the Eastern Hemlock, due to the introduced Woolly Adelgid.

A Closing Window for Bachman's Sparrow in Georgia Piedmont Clear Cuts

Timothy Keyes, Georgia Department of Natural Resources
Nathan Klaus

Abstract: Breeding and wintering Bachman's sparrows were surveyed using point counts and playback in 49 regenerating clear-cuts in the Georgia Piedmont between 2005-2006. Regenerating stands were divided by size and age. "Small" stands were less than 100 acres while "large" stands were greater than 100 acres. Stands 0-2 years post-planting were considered "young", while stands 3-5 years post planting were considered "old". Bachman's Sparrows were located in 10 stands, but were only found in one "small" site (a 96 acre stand) and in only one "old". The rest were all on sites larger than 100 acres and younger than 3 years old. Based on the increased efficiency and intensity of pine production the temporal window of suitable habitat for Bachman's Sparrow (and other early successional species) is closing. The days of regenerating stands of loblolly pine maintaining Bachman's Sparrow to 7 years post-planting appear to be over in the Georgia Piedmont, and 3-year-old stands often had already achieved canopy closure. Stands with breeding season Bachman's Sparrows were revisited in winter to determine if territories were defended year round, as they were in well-maintained pine savanna habitat. Only one Bachman's sparrow was located during the winter surveys, suggesting that they are at least less territorial on regenerating pine stands than in pine savanna, if they remain there at all in winter. Through follow up banding studies we hope to address the questions of site fidelity in young stands.

Dabbling Duck and Shorebird use of Managed Impoundments and Tidal Marshes in Coastal South Carolina

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Abstract: Coastal wetland impoundments in South Carolina are managed primarily for wintering waterfowl (Anseriformes). Currently, we do not understand the role managed impoundments play in coastal ecosystems, especially relative to habitat needs of migratory shorebirds (Charadriiformes). Many stopover sites significantly important for feeding and resting of migratory shorebirds have declined in quality and quantity. To examine the role of managed and tidal marshes in this ecosystem, we 1) compared abundance of dabbling ducks and shorebirds in impoundments and tidal marshes during winter and migration; 2) classified behaviors of teal and yellowlegs in impoundments and tidal marshes; and 3) determined food habits of teal and yellowlegs in managed impoundments. Study sites included two impoundments and two tidal marshes within both Nemours Wildlife Foundation and ACE Basin NWR, South Carolina. We used scan sampling and time-activity budget data to estimate abundance of birds and percentage of time in different behaviors. We used a zero-inflated Poisson regression model to detect differences in abundance between habitats, based on season, tide, and interactions among variables. Shorebirds were always more abundant in tidal marshes than impoundments. However, they were more abundant in impoundments during migration than during winter, and in 2008 than 2007, reflecting improved shorebird management. Dabblers were more abundant in impoundments than tidal marshes, regardless of season or tide. Birds spent most of their time foraging (41-87%) in both habitats. We recommend supplementing current impoundment management (i.e., prescribed burns, late fall flooding) with slow, springtime drawdowns, and leaving sheet-water on impoundments through May for shorebirds.

Bird Strikes at Commercial Buildings in Atlanta

Timothy Keyes, Georgia Department of Natural Resources
Lee Sexton

Abstract: During the fall of 2005, 53 commercial buildings in Atlanta Georgia were selected and monitored for bird strikes over 73 mornings from August 2nd to October 13th. Four hundred and eighty strikes of 59 species were found. The majority were migrants particularly warblers (Parulinae). Ruby-throated Hummingbird (Archilochus colubris), Tennessee warblers (Vermivora peregrina) and Ovenbirds (Seiurus aurocapillus) made up 40% of the strikes. While all selected buildings had some bird mortality, there were significant positive relationships between strikes and percent glass on the building; presence of interior facing corners; percentage night-lighting at the building, and estimates of insect abundance at the building. Over 50% of the strikes were found near reflective glass windows. Since strikes increased with increasing percentage of night-lighting at a given building a "Citywide lights-out" program that encourages buildings managers to decrease night lighting in their buildings during peak migration periods is suggested.

Ivory-billed Woodpecker Search Efforts in South Carolina 2006-2008

Laurel Moore Barnhill, South Carolina Department of Natural Resources, P. O. Box 167, Columbia, SC 29202
Matthew Moskwik

Abstract: Search efforts to find an Ivory-billed Woodpecker in South Carolina occurred in winter and early spring of 2006, 2007, and 2008. Activities were coordinated by a partnership of 16 organizations and agencies, known as the South Carolina Ivory-billed Woodpecker Working Group. Search areas were targeted based on historical evidence, recent encounters, forest metrics, and available habitat. Significant attention was given to Congaree National Park in the Congaree River Basin, but searches also occurred in the Santee (Francis Marion National Forest), Lower Pee Dee, and Little Pee Dee River Basins (Marsh Furniture WMA, Woodbury WMA, Little Pee Dee Heritage Preserve, and Cook Farm Tract). Methods and techniques evolved from active transect searches to a combination of active searches, stationary watches, and double knock playback sessions using a 400-meter grid system. Over the last three years, a total of 10,505 hours were spent by three 4-person full-time field crews and 113 volunteers searching for sight and/or sound and physical evidence of woodpeckers. In addition, RECONYX™ cameras captured over 3.6 million images and ARUs recorded 3530 hours of acoustic data. Habitat and effort data were collected in Congaree National Park for 500m2 patches and recorded to populate a rangewide occupancy model. After three years of searching, no definitive evidence of the Ivory-billed Woodpecker's existence in South Carolina was found. However, multiple inconclusive kent-like calls, double knocks, and sightings were reported by the official search effort, as well as by independent searchers in each survey year.

Factors Influencing Vegetation and Avian Species Response to Oak Savanna Restoration in the Mid-South

S. A. Barrioz, Center for Native Grassland Management and Department of Forestry, Wildlife, and Fisheries, The University of Tennessee, Knoxville, TN
P. D. Keyser, D. A. Buehler, C. A. Harper

Abstract: Oak savannas are among the most imperiled ecosystems in the United States as a result of land-use conversion, incompatible silviculture, and disrupted fire regimes. Consequently, associated vegetation and avian communities are also in decline. Restoration of savanna communities may be an important strategy for conserving early successional bird species. We evaluated savanna restoration strategies through a meta-analysis of nine case studies in Tennessee and Kentucky. Specifically, we looked at factors influencing vegetation and avian response following mechanical overstory thinning and fire. We measured grass, forb, legume, woody understory, midstory, and overstory cover, leaf litter, slope, and aspect. We also conducted point counts to assess breeding bird use of the sites. Cover was analyzed using hierarchical linear regression. Point count data were analyzed using correlations and Program DISTANCE. Total grass cover was influenced by basal area ($P = 0.003$). Total forb cover was influenced by total basal area ($P= 0.003$) and slope ($P= 0.045$). Our case studies differed ($P < 0.05$) for key measures, presumably due to treatment effects, but responses to disturbance factors and micro-site did not, indicating these influences may be consistent across the region. Shrub/scrub and forest bird species occurrence were highly correlated ($P < 0.01$) with overstory canopy cover, total grass coverage, and total leaf litter coverage, but in opposite directions. No grassland obligate bird species were observed on any of our sites. Based on our results, canopy reduction and growing-season burns may both be critical to restoration of savannas in the region.

Committee Reports

Southeast Quail Study Group Steering Committee Meeting Minutes

OPENING COMMENTS

Meeting was called to order by Chairman Billy Dukes at 8:10 a.m. SEQSG members present were Dave Godwin (Past Chair), Tom Dailey (Secretary-Treasurer, Chair Elect), Dave Howell (Steering Committee-QU), Mark Smith (Steering Committee), Jim Wooley (Steering Committee-QF), Jim Pitman (Steering Committee), Don McKenzie (NBCI Coordinator), and Bill White (Ag Policy Committee Chair). Bill Palmer (NBCI revision coordinator) was present mid-morning and Pat Keyser (Univ. Tennessee) attended in afternoon. Other attendees for portions of the meeting included Nathan Stricker (Research Committee Chair), Jerry Davis (USFS-Arkansas), Chuck Kowaleski (Ag Policy Committee Vice Chairman), Pete Heard (NRCS Agriculture Wildlife Conservation Center [AWCC]) and Phillip Barbour (NRCS AWCC).

Chairman Dukes presented proposed Agenda for the meeting and asked for discussion. Chairman Dukes indicated Pat Keyser will not be present until afternoon, so will change UT discussion to afternoon. No other Agenda exceptions brought up.

Chairman Dukes presented minutes from the summer 2008 SEQSG Steering Committee meeting in Lafayette, LA and asked for discussion. No exceptions noted. Dave Godwin made a motion for approval and Jim Pitman seconded. The Steering Committee unanimously approved the minutes as submitted.

MEMBERSHIP AND TREASURY REPORT

Treasurer Tom Dailey reported that the SEQSG currently has 115 paid members and a treasury balance of $6,829.37. A copy of the Membership and Treasury Report was distributed. Dave Godwin made a motion for approval and Jim Pitman seconded. Steering Committee unanimously approved the Membership and Treasury Report as submitted.

Chairman Dukes pointed out that both annual meetings in Oklahoma and Louisiana returned some funding to the SEQSG. Final proceeds from Oklahoma did not come in until after the meeting in LA. Expenditures for web site services ($490.03) have been above average because of information updates (e.g., steering committee changes and SC annual meeting announcement) and travel to NBCI transition meetings at AFWA and NAWNRC ($991.95). Chairman Dukes reported that travel funding requests for some members to attend the SC annual meeting ($1739.32) were covered from SC annual meeting budget.

Don McKenzie asked for discussion about travel. Members agreed travel spending is an appropriate and necessary expenditure of SEQSG funds. Chairman Dukes created a "request for travel form." Mark Smith wondered if there should be specific limits on meals. Several members suggested there should be nothing formal. Guidance from Chairman Dukes for all travel spending is to "be reasonable."

ANNUAL SEQSG MEETING UPDATE

Meeting co-chair Dukes reported >170 had registered, with about half from SEPIF. Sixty percent of registrations came in after pre-registration deadline—this made meeting planning difficult. Dukes indicated the importance of seed money (typically $2,000) and solicitation from sponsors, and suggested we should seek national sponsorship for future meetings.

Next annual meeting was discussed. Godwin suggested we consider a permanent switch to spring timing and that the timing is right because we are out of cycle now. Discussion ensued about timing of meeting relative to AFWA and NAWNRC. Consensus was both are of equal importance so no spring/summer advantage. Bylaws state early August. Attendance is thought to be good in summer. General agreement to stick with late summer timing. Chairman Dukes suggested we identify annual meeting sites/dates at least 2 years out.

Action item: Jim Pitman will provide official KDWP response to August 2010 meeting.

STEERING COMMITTEE MEETINGS

Should we hold steering committee meetings before or after NBCI Board meetings?

Action item: Steering Committee needs to decide site/timing of fall & late-winter Steering Committee meetings.

TRANSITION OF SEQSG FROM SEAFWA TO NATIONAL INITIATIVE

Bylaws

Chairman Dukes reviewed the background on name change, including approval on renaming process at Lafayette SEQSG business meeting, approval of 'National Bobwhite Technical Committee' by steering committee (after considerable discussion via email and conference calls) and submission of bylaw proposed change for up/down vote on March 26. Goal is for this name change to be first step in expansion from 15-20 states to 28-30 states (range wide). Discussion of voting ensued. Chairman Dukes noted that although registration included $15 dues, this does not provide membership (voting rights) to SEPIF members that have not previously attended SEQSG meetings (Laurel Barnhill & Catherine Rideout are regular attendees and thus they are eligible to vote). Godwin reported that 6 absentee email ballots were submitted. Because a quorum of 40 is needed, we need to remind members who will not attend the business meeting that absentee ballots are available at the registration desk. Will add absentee votes to 'show-of-hands' for official tally.

Bylaws will undergo comprehensive revision prior to 2010 annual meeting to reflect new relationships with NBCI Management Board, University of Tennessee, and regional associations and other issues (e.g., committee structure).

Logos

Name change means logos, letter head, web site, etc., need to be updated. Mark Smith has logo art work prototype in development at Auburn. Chairman Dukes prefers to keep the SEQSG logo-bird intact for now, while changing the words around it. Is UT name on NBCI logo? If McKenzie runs into impasse at UT, then let Dukes know, and will proceed on different path. Do we need 1 or 2 logos—NBCI, NBTC or NBCI/NBTC?

Action item: PRIE Committee & Mark Smith & Don McKenzie (UT staff) work to develop potential logos for Steering Committee approval.

Committee Structure Issues

Chairman Dukes discussed the need to consider changing committee structure, with some changes immediately and others in bylaw revision for 2010 annual meeting.

Ag Policy/Cropland: Cropland

Management committee is not very active and Bill White indicated Crop & Agricultural policy committees met jointly in Lafayette. Chairman Dukes will direct the two committees (Bill White & Mark Gudlin chairs) to consider that Ag policy committee absorb Cropland committee.

Western/Eastern Grassland Committee: some previous discussion about dividing Grassland Committee into western and eastern entities. Although east and west issues are very different, we've traditionally had only a few western participants (even after inviting Range Society members to SEQSG annual meeting in OK), so unless there's strong movement from western states, agreed best to maintain one Grassland Committee.

Potential New Committees: Don McKenzie proposed we consider new committees—mine lands and prescribed fire. Any new committee will compete for participants from current committees; but, there is a bona fide need to focus more attention on mine lands and prescribed fire. Consider such changes prior to 2010 meeting.

Renaming of Committees: Assuming 'National Bobwhite Technical Committee' is approved, need to consider renaming committees as subcommittee, working group (popular), action group, etc. Include this change in 2010 bylaws revision.

Committee elections: For 2010 we need to think of effective date for committee elections. Need for current officers at a minimum to serve out their commitment; need some natural progression to new structure.

NBCI REVISION UPDATE

Chairman Dukes introduced Bill Palmer who arrived about 0900 to report on NBCI revision. Dr. Palmer and Tall Timbers Research Station (TTRS) staff have been working on behalf of SEQSG/NBCI to update NBCI plan. Nathan Stricker (Research Committee) was also present for this discussion.

Biologists Ranking Information (BRI) Process/Meetings

Bill Palmer reported that Theron Terhune, TTRS NBCI Planner, had conducted 11 workshops, with more planned for next 45 days (e.g., NC, TX, mid-Atlantic). There have been about 300 participants across the 11 state workshops. Remaining major states scheduled for completion by mid-May.

Work with fringe states will be done via web meeting (no schedule given). McKenzie suggested Bill Palmer & Theron make every effort to engage every one of the fringe states, even if only with one person. Pointed out that 1 person per state got us a long way after the first NBCI, and we can't afford to neglect any state. Chairman Dukes asked Bill Palmer to have Theron work with Steering Committee if there are fringe states that need prodding to get involved.

Requests for mapping products are already coming in from the 11 states—Bill Palmer asked that we discourage states from seeking the data until analyses are completed so that Theron's progress is not thwarted.

Chairman Dukes asked about states' next step, state coordinators revising their original data. Bill indicated that states will be able to edit their data but this will require web-based revision program which isn't available yet. Theron will do this—maybe in April—haven't figured this out yet.

This led Bill Palmer to address product timeline. 'Significant product' by fall AFWA meeting for NBCI Board, but there will be other products following this.

Bill Palmer reviewed steps that will follow BRI process. Noted they are wrestling with several questions: How to present data for final NBCI format? What will be the NBCI management process for handling these decisions? What plan elements will be included? One example of questions to be answered—for BRI data—how will opportunities & constraints be adjusted across state boundaries? Another key question—what rules will be used to calibrate the model across habitat types? For example, pasture land rates out as medium quality habitat relative to cropland, but huge acreage of rangeland brings up questions about how to handle it. Could use the NBCI Scientific/Editorial Committee (13 members) to wrestle in the weeds (different ways to look at the data, which one is most appropriate?). Bill indicated that Nathan Stricker and Research Committee will be discussing these matters today. Guidance settled on:

1. TTRS & NBCI Scientific/Editorial Committee produces briefs on questions, issues and options. Bill indicated this will take place this summer.
2. Steering Committee reviews and sends to members for review.
3. Steering Committee makes final decisions and will have to decide how to present the plan.

Action item: Be ready to present major products to the NBCI management board in September at AFWA.

NBCI Database—Quail Numbers

A dozen states have answered Bill's request for population monitoring databases. These data will be essential for developing past, present and future population density goals. Density will become the main unit of measure for the NBCI—is a testable number, with some basis for comparison.

McKenzie—shouldn't Research Committee be closely involved? Bill Palmer—yes, Nathan already thinking about this and they will discuss in Research Committee—focusing on monitoring, population data, techniques, etc. Also discussing NBCI 'success' criteria; product of this will inform Bill/Theron's process.

Chairman Dukes—will the population data be a snap shot in time, or some longer-term data base. Bill Palmer—want a long-term repository and system (internet based) for data entry and/or transfer. Will be easy for all state biologists to enter data in standard database with standard methodology and forms. Will also be great public relations tool, especially when combined with a website that people can click on to see habitat work going on, and to track habitat accomplishments.

There will be opportunity to revisit and update snapshots of quail population every 5-10 years at state level. Chairman Dukes—at focal area scale too?

Nathan Stricker—Tom Will and staff are developing PIF species long-term population data base; good for Research Committee and Bill Palmer to discuss with them.

NBCI Database—Habitat

Chuck Kowaleski suggested the database identify required management practices; can we link this with USDA? Bill White—can we link with USDA state technical committees? Don McKenzie—How will the GIS database handle management practices?

Bill Palmer—after we figure out how to use BRI, we have these land uses, and prescribed practices; we will need feedback from committees—'how data are presented has all kinds of political implications.' Steering committee needs to make decisions in these instances. Have facts—how facts are presented is the key.

Future Financial/Personnel Needs

Bill Palmer—TTRS should have Theron through June 2010 with current NFWF (and Southern Company grant) funding. Would like to keep Theron at TTRS on various programs. Need to consider long-term funding to support NBCI GIS platform—server and the analyst position—this is a strategy question. Don McKenzie—this is a discussion item.

NBCI AT NAWNRC

Don McKenzie—the details of the NBCI reception have been covered in previous emails sent to the Steering Committee and SEQSG members. About 55 attended the reception—many state agency directors plus >15 new faces; very positive feedback.

Mark Smith—should we do another NBCI reception at AFWA, or wait until NAWRC in Wisconsin in March 2010 and do big roll-out of all the rest of the NBCI/SEQSG developments, including the revision, logos, etc.? Consensus was to wait until NAWRC.

Quail Unlimited—Don McKenzie reported that QU expanded NBCI awards geographically to create 4 awards: local, regional, state, and multistate-national; Dave Howell reviewed the award winners for 2009.

NBCI COORDINATOR CONTRACT

Don McKenzie reported that a meeting with WMI management, Pat Keyser, Dan Forster and John Gassett resulted in a 6-month renewal of his contract through September 2009.

NBCI TRANSITION

Management Board

Don McKenzie—at NAWNRC the transition board met and Don was pleased to report that all action items from fall meeting had been done or major progress was made. Some of the key state representatives attended (e.g., Dave Graham and Dave Scott, OH; Joe Kramer, KS; Mark Whitney, GA; Greg Wathen, TN). A visitor and potential member was NWTF's Robert Abernethy. Don will submit detailed minutes from the meeting.

Chairman Dukes—after AFWA 2008 transition board meeting the prevailing attitude about management board membership was "pay-to-play." We might want to rethink this qualification, perhaps with a hybrid board that includes pay-to-play membership plus *value-added members*. Also need to decide the model for board membership; for example do we select specific people or whoever is in a specific position. The steering committee needs to identify a smaller working management board/executive board before September 2009 AFWA.

Don McKenzie—planned obsolescence of management board; they are open to the idea—they would decide their own fate in 4-5 years; but we need higher level support body (directors, agency admin, etc.).

Fringe states and international participation was discussed. Don was surprised no one from Nebraska attended the management board meeting. We need to ensure fringe states are participating. For example, New Mexico has bobwhites and would also provide a link to WAFWA. For the future we need to consider Mexico and Canada (i.e., "International Bobwhite Technical Committee").

Fate of SEQSG TC

Don McKenzie—severing relationship with SEAFWA comes at a price; perhaps add MAFWA & NEAFWA; Chuck Kowaleski—very important to do this, but on other hand, participation of state agency staff on steering committee provides input, and financial contributions by states provides a link.

Mark Smith—we could have SEAFWA, AFWA, etc., seats on steering committee. Chairman Dukes—on the other hand, we are trying to unify now and in near future, and such positions might not be appropriate. Also, in reality we have no official sanction with SEAFWA because the Directors restructured committees and deleted most species-specific committees.

NBCI MARKETING

SEQSG Web

Chairman Dukes—handed out a web document prepared by Don McKenzie from a meeting in Missouri with Elsa Gallagher (PRIE committee), Aaron Jeffries (PRIE), Bill White and Tom Dailey. Various issues discussed, including problems with MSU list serve, QU web link duplication, etc.

Mark Smith—suggest a combined site for the NBCI and the NBTC with several pages (annual meeting, NBCI, NBTC, management board, etc). Don McKenzie—UT can easily keep the list serve and will start working on web with them in April; Don believes we need OUTREACH staff member in a couple of years to work on web information.

Chairman Dukes—general agreement for a single-source web page.

Chairman Dukes—status of current SEQSG web site. Because UT-based web site could take months to develop, we need to update the current web site to reflect changes made this week and in the near future.

Action Item—Task PRIE committee to complete the web site outline and to meet with UT staff to communicate our needs (Don suggested Elsa &/or Aaron might need travel money).

Marketing Plan for NBCI

Chairman Dukes asked what else should we be doing for marketing? How can we get media attention? At a minimum, outdoor writer annual meetings (e.g., this summer). In past we had Ray Evans and NBCI display at national natural resource meetings.

Chairman Dukes suggested the need for a marketing plan for the release of the NBCI revision and for the change from SEQSG to NBTC; discussed the charge for PRIE to include new logo (NBCI, NBTC and/or combined NBCI-NBTC), creation of NBCI brochure, marketing plan and perhaps update of Bobwhite Basics brochure. Dave Howell (QU) indicated he has begun revision of Bobwhite Basics working with the PRIE Committee and assisted by Erik Bartholomew (Oklahoma). Price per 1,000 and request for orders should be circulated by late summer/early fall.

Marketing/Information Transfer Opportunity for NBCI via NRCS

Pete Heard, NRCS—NRCS put $1.5 mil into MSU (Wes Burger) bobwhite restoration project. Each project demonstrated restoration. How can NBCI use this effort to further the cause? Marketing? Information transfer? Perhaps the success stories from these projects could be a focus of NBCI

marketing and/or education. For sage grouse restoration project NRCS has funded the creation of a restoration library. Pete is putting a couple hundred thousand in a fish/wildlife information system with Bill Holman as the lead (Pete also mentioned a $1 million figure for projects this year but that RFPs won't be issued, instead using cooperative education service). Perhaps quail restoration information can be part of this system. A priority for USDA is that NRCS field staff be able to use these wildlife information sources.

NBCI AT UNIVERSITY OF TENNESSEE

Pat Keyser (UT)—that Don McKenzie is now an adjunct faculty member with an office. Don has linked with various UT specialists including grant writers and web services. UT sees relationship with NBCI as a contract with 35 states and other organizations and that their plan is to collect (and administer) at least $5,000 from each entity for base support; relying on each state's quail coordinator to facilitate funding; SEAFWA states already in—these funds will be used beginning July 1, 2009.

Pat Keyser reported that NFWF proposal is pending; previous dean committed $50,000 and new dean also supports this effort.

NBCI Funding

Don McKenzie discussed his plan to obtain commitment of $5,000 from each state this spring. Several members reiterated the importance of trying to get commitment before fiscal year changes on June 30th for many agencies. Whereas with SEAFWA Dan Forster used to facilitate commitment by SE states, we now have to do this ourselves. Among SE states, Alabama not committed; Mark Smith suggested the Alabama Quail Trail might be able to provide funding.

Beginning April 1st, NBCI is funded at $100,000 via $50,000 from SEAFWA carry-over and $50,000 of new UT money. Recall that UT does not charge overhead on state contributions to the NBCI.

Don McKenzie—How long do states have to pay in? Until quail are restored.

Quail Unlimited, Dave Howell—not sure if QU's new leadership is willing to pay $150,000 (what they paid over past 3 years).

Action item: Don McKenzie work with Pat Keyser to prepare UT letter to request state funding. Funding request to include letter, NBCI prospectus and contract.

Future NBCI Identity and Structure

Don McKenzie showed NBCI slide show presented at NAWNRC meeting.

Chairman Dukes started the discussion asking: What is NBCI? Who owns NBCI? Who manages NBCI? What is role of NBTC (SEQSG)?

Don McKenzie—still in major transition—next step is full development of NBCI identity, services and products at UT.

Dave Godwin reflected on current (NBCI revision at TTRA) and past projects and participants (Burger, Palmer, Guthery, CKWRI, etc.) and concluded the transition to a permanent home, UT, was inevitable as NBCI matured. At same time, participation by non-UT entities is important to future success. Pat Keyser agreed NBCI has to maintain strong non-UT partnerships.

Chairman Dukes—how do we establish NBCI identity and ownership? Agreement that service of UT is needed to handle these issues, particularly legal issues (e.g., service mark). Such a step is necessary, but has to be done with sensitivity to our existing partners. Both Jim Wooley (QF) and Dave Howell expressed support for unique NBCI identity.

Action Item: McKenzie will explore the steps necessary to secure a service mark for the NBCI.

NFWF GRANT UPDATE

Background

Chairman Dukes introduced Don McKenzie as PI for the Eastern Grassland Bird Initiative (EGBI) proposal. In collaboration with Pat Keyser, David Pashley, Laurel Barnhill, and Billy Dukes, a mini business plan for a NBCI-based EGBI was submitted last fall for NFWF funding consideration. If fully funded (contributions from NFWF, private donors such as Southern Company, etc.) the EGBI could receive as much as $1.5 million per year. By end of March we should know if the draft business plan is approved, and if so, a final proposal needs to be completed this spring. Most of the funding will be spent to build capacity and infrastructure for the NBCI at the University of Tennessee to carry out the mission of bobwhite restoration.

Staff Positions

Chairman Dukes handed out a EGBI staff summary and asked for discussion of positions to be created during the 1st year of funding, 2010.

Don McKenzie indicated the plan's 1st/2nd priorities were for coordinators of NBCI/EGBI outreach and NBCI/EGBI monitoring. Dave Godwin seconded these priorities. McKenzie's 3rd priority is Eastern Native Grasslands Alliance (ENGA) director.

Discussion ensued over various approaches/positions. A grant coordinator was also popular, but Pay Keyser believes UT can provide assistance and guidance in this area. Pat Keyser indicated the connectivity among EGBI, NBCI and University of Tennessee Center for Native Grasslands Management (CNGM). Chairman Dukes pointed to the connectivity among other entities, PIF, ABC, QU, WMI, SEPIF, etc. General concern is that limitation to sustainability/growth of EGBI could be requirement for matching funds/in-kind services.

In summary, Chairman Dukes and the group agreed to the following staff priorities:

1. NBCI Science Coordinator (dual role as Assistant NBCI Coordinator and Monitoring Coordinator—to work with the NBTC Research Committee on monitoring and data bases);
2. ENGA Director (to work with the CNGM and the NBTC Grazing Lands Committee);
3. NBCI Ag Liaison (to work with the NBTC Ag Policy Committee)
4. CNGM Research Associate (to conduct NWSG research and extension for the CNGM);
5. NBCI Forestry Coordinator (to work with the NBTC Forestry Committee).

Next step is working with SEPIF. Don will talk with Laurel.

AD HOC COMMITTEE TO DEFINE NBCI SUCCESS

Mark Gudlin, chair of the ad hoc committee, shared the draft report. The report's recommendations will be shared in the general meeting session. Don McKenzie expressed concern about NBCI appearing to claim non-NBCI success. It was suggested that the recommendations be shared with all members and feedback solicited.

SEQSG COMMITTEE ISSUES

Ag policy committee: Does chair Bill White serve until next meeting, August 2010?

Yes, then vice chairman Chuck Kowaleski takes over. Bill White indicated new NRCS chief Dave White liked SEQSG suggestions for definitions of agricultural lands for WHIP—this is very important to future quail restoration.

Research Committee: Nathan Stricker replaced Shane Wellendorf as chairman following last year's meeting. They will elect vice chair this week. No follow-up from Shane from last year's meeting. NBCI revision will be main subject this week.

TREASURER AUDIT

Per bylaws, 3 steering committee members, Chairman Dukes, Mark Smith and Dave Godwin, inspected the income/expense ledger and account information. All transactions were found to be in agreement.

ADJOURNMENT

Chairman Dukes thanked all members of the Steering Committee for their attendance and active participation.

Chairman Dukes adjourned the meeting at 5:00 p.m.

Defining NBCI Success

"Defining NBCI Success" Ad Hoc Committee Report, May 6, 2009
Mark Gudlin, Tennessee Wildlife Resources Agency, Chair

At the request of the SEQSG Steering Committee, an Ad Hoc Committee was formed in December 2008 to address the issues surrounding how to define and determine what an "NBCI Success" is. This issue was prompted by Missouri's declaration this past year to have had two "NBCI Successes", one in Scott County and one in Cass County. As discussion amongst SEQSG members ensued, it was realized that this topic was much more complex than it appeared on the surface.

A presentation on "Tracking Bobwhite Restoration Success: A Proposal From The SEQSG Ad Hoc Committee on "Defining NBCI Success" was given at the SEQSG/SEPIF joint meeting in Columbia, SC on March 26, 2009. An abstract on the presentation and proposal was included for inclusion in the meeting proceedings. An update on the proposal progress was also given to the SEQSG Steering Committee at that meeting.

Since the meeting, the draft proposal was posted on the SEPIF website with a request for comments. Due to technical difficulties, the proposal has still not been posted on the SEQSG (now NBTC) website. Hopefully this will be accomplished soon and comments sought from the general membership. Then the Committee will need to communicate again for final proposal to the NBTC Steering Committee.

Committee members include:
Chair: Mark Gudlin, Tennessee Wildlife Resources Agency
Vice-Chair: Roger Applegate, Tennessee Wildlife Resources Agency
Todd Bogenschutz, Iowa Dept. of Natural Resources
Wes Burger, Mississippi State University
Dave Howell, Quail Unlimited
Aaron Jeffries, Missouri Dept. of Conservation
Scott Klinger Pennsylvania Game Commission
Chuck Kowaleski, Texas Parks and Wildlife Department
John Morgan, Kentucky Dept. of Fish and Wildlife Resources
Marc Puckett, Virginia Dept. of Game and Inland Fisheries
Mark Smith, Auburn University
Nathan Stricker, Ohio DNR – Division of Wildlife
Reggie Thackston, Georgia Dept. of Natural Resources

Ag Policy Committee Report

Action Items

1. Ag Policy Committee will draft a biomass biofuels management and harvest BMP for quail. It will be reviewed by both Forestry and Grassland committees and be used to address policy issues in biofuels.

2. A subcommittee with at least one member from Ag Policy, Forestry and Grassland committees, SEPIF and other related NGOs will be formed to develop a prescribed burn multi-state Cooperative Conservation Partnership Initiative (CCPI) proposal. The proposal will be finalized by November 1, 2009, and be ready for a 2010 RFP.

3. The Ag Policy Committee will submit a multi-state CCPI proposal designed to address quail habitat needs in states with NBCI high priority quail focus counties. States and NGOs will be solicited to determine interest and ability to match.

4. A letter will be sent to FSA asking them to expedite transfer of acres between SAFE practices within an individual state. The letter will also ask them to allow individual states to transfer acres between CCRP practices which have state allocations (CP23, 23A, 31, 33, 36, 37 and 38) in order to allow full use of allocated acres to address priority resource concerns.

5. A letter will be sent to the NRCS Chief requesting that he direct states to consider expedited EQIP project areas similar to those used in Montana and Texas in order to address America's declining natural grassland habitats with a focus on prescribed fire and grazing management.

6. The CP33 analysis letter sent to FSA in 2008 will be resent.

7. The Ag Policy Committee recommends the Steering Committee form an ad hoc committee for energy issues and climate exchange/carbon credits once federal legislation is developed for the latter.

8. Information on integrating pollinator habitat and quail habitat efforts in Farm Bill programs will be sent to the entire Ag Policy Committee.

Bill White, Ag Policy Subcommittee Co-Chair
Missouri Department of Conservation
573-522-4115
Bill.white@mdc.mo.gov

Forestry Committee Report

The first segment of the meeting was conducted jointly with the Ag Policy Committee. Reggie Thackston, Forestry Committee Chair and Bill White, Ag Policy Committee Chair called the meeting to order. David Hoge provided an update on CRP pine provisions and SAFE. The thinning option that was adopted did not include a SIP, because land already enrolled in CRP is not eligible for a SIP. However, rental payments can be paid in the year when thinning occurs. Pre-commercial thinning and prescribed burning will receive cost-share assistance. There are 144,000 under SAFE contract and 9 states have quail related SAFE projects. No response to the letter sent to FSA Administrator John Johnson requesting inclusion of thinning and burning in the CRP pine thinning practice was received, but it appears that the SEQSG's request was taken into account. There was a general discussion regarding biofuels and impacts on quail habitat. It was agreed that BMPs for biofuel production are needed. The Forestry and Agricultural Policy Committees then adjourned their joint meetings and proceeded to meet separately.

There were a total of 21 people present representing 7 state wildlife agencies, 2 federal agencies and 1 non-profit. Nominations were solicited for the Forestry Committee Vice-chair. Fred Kimmel, LA Dept. of Wildlife and Fisheries was nominated and agreed to serve. Fred also agreed to serve as Secretary and to keep the meeting minutes.
There was discussion of problems associated with establishment of LLP on sites were Bermuda grass is established. CP-36 has a three-year establishment time and effective Bermuda grass control makes meeting this requirement difficult since the grass should be killed before LLP is planted. It was suggested that each state work through their state FSA office to request a change in the order of treatments to better reflect the needs of LLP establishment. There is a need for an assessment of the scope of this problem and a protocol for LLP establishment/Bermuda grass control. Reggie agreed to do an informal assessment of the problem in GA and other states may participate as well.

There was concern about pine establishment under EQIP. The primary concern was that it not become another FIP or have results similar to the 1985 Farm Bill CRP with high density plantings. States and others should provide comments to FSA by April 17 to ensure that wildlife receives full consideration. It was pointed out that each individual comment is tallied separately.

There was considerable discussion regarding prescribed burning issues. It was pointed out that state forest assessments are underway and wildlife agencies need to be involved and be advocates for prescribed burning. The scope of fire on public land was discussed. On some tracts the problem seems to be burn units that are too large and fires that burn too clean. There is a lack of data regarding the impacts on bobwhites, but anecdotal evidence indicates negative impacts. Projects are under way in GA and LA to reduce burn unit size on tracts of public land and attempt to monitor quail response. It was pointed out that on at least some national forests, there is a trend toward dirty burns – leaving unburned areas, rather than reigniting them.

The committee developed the following job description for the Forestry Committee liaison position.

1. Monitors forest management policy across bobwhite range and advises

2. NBCI coordinator and forest committee chair of needed action.

3. Serves as a liaison with state and federal conservation agencies, forest industry, and appropriate NGOs to further the NBCI.

4. Monitors ongoing research and work with I&E committee on the development and dissemination of information relative to the enhancement of forested systems for bobwhites.

5. Monitors opportunities for grant funding relative to forest management (thin, burn, invasive control) and pursues as appropriate.

6. Maintains frequent contact with state wildlife agency directors to promote agency involvement with the NBCI.

7. Performs other duties as needed.

Submitted by Fred Kimmel, Vice-Chair, April 13, 2009.

Grasslands and Grazing Committee Report

Rollins convened meeting and each attendee introduced themselves.

Past activities were briefly addressed including the Society of Range Management Grazing and Bobwhite Workshop and the grazing schools conducted in TN and one planned for Alabama.
Activity quickly moved to the committee charges.

Regionally specific BMPs for conversion.
Discussion began by determining if the work had already been done through Craig Harper's publication at UT. Although many agreed it was fairly comprehensive, some gaps would still need to be filled. The group ultimately decided to create a set of "how-to's" that address conversion of fescue, Bahia, and Bermuda grass. Additionally, establishment "how-to's" would be created that included the planting process. That should include Switchgrass, imazipic tolerant NWSG, and Gama grass. The following were assigned to a subcommittee to complete draft documents by September 1: John Gruchy, Clint Borum, and Matthew Irvin.

Regionally specific BMPs for grassland mgt
Similar documents would be made for the management of established NWSGs. A discussion was directed towards the need to make regional explicit fact sheets that included all disturbance options or disturbance option sheets that covered all regions. The group agreed that a regionally specific sheet that included all of the management options was the most appropriate particular if the audience is the landowner. Borum noted that TN NRCS has a Prescribed Fire Mgt tool that outputs fact sheets based on information provided by a landowner. He said he would share that website with the group. Ultimately, the group broke the NBCI range into 4 parts and identified a subcommittee to create drafts. Southwest – Russel Stevens, Midwest – Steve Clubine, Deep South – Jeff Thurmond, Mid-South – John Morgan.

Economics of grazing
Discussion was focused on the importance of economics towards moving NBCI goals forward in the pasture and rangeland system. Keyser and Rollins will spearhead an effort through their respective networks

to build enterprise strategies in Bermuda and fescue systems. Case studies similar to what Burger presented should be created in the grazing system as a future goal. Creating a clear economically derived tool to show producers the opportunity costs of converting to NWSG is an essential for producers. Oklahoma State has some of those tools place in the rangeland system. Drought and current and future costs of nitrogen and phosphorous provide a tremendous opportunity for a paradigm shift.

Develop a plan to better integrate with ag groups and professionals

Discussion included comments about starting with NRCS as the primary "in" to those groups including mention of local EQIP working groups. Keyser noted how "they" are not the problem. It's the wildlife biologist's challenge to become more comfortable and familiar with the producers world and find the niche for bobwhite in that system in the producer's terms. Getting involved with the Cattlemen's Association is an obvious need. Rollins asked each participate to brainstorm some bullet points from their perspective (i.e., state agency, NGO, extension) to share with the committee. The collection of bullets can then be used to begin the formulation of a plan.

Investigate Carbon credits

As a whole, the group had little expertise in this arena. Rollins has had some experience with selling carbon credits with respect to reduced stocking rates. Over time, this may become a much more lucrative endeavor if the US follows the EU model. Another opportunity may exist in the conversion of tame pastures to native pastures given the potential gain in underground biomass.

Other Business

Keyser nominated John Gruchy as vice chair for the committee. Clint Borum seconded the nomination. Gruchy was unopposed and assumed the vice chair position.

The committee discussed the attributes of a grassland/grazing specialist for the NBCI and generated the following attributes:

Strong background in agronomy (including grazing) and wildlife

Ability to collaborate with a diversity of groups

Speak and relate to the cattle producer

Knowledge of Farm Bill programs

Understand the economics of farm/ranch mgt

Strong communicator including written (popular) and verbal

Has a cowboy hat and a bird dog

Action items to accomplish

• Develop/disseminate BMPs for converting tame pastures to NWSG on regional basis.

• Develop/disseminate BMPs (e.g., disturbance regimes) that are optimal for quail and appropriate for various regions/ BCRs.

• Facilitate greater application of prescribed burning through training, outreach, and expansion of prescribed burn associations.

• Compile economics of grazing NWSGs vs. tame pastures in today's fuel/fertilizer paradigms on a regional basis.

• Investigate potential of carbon credits to enhance economics of reduced stocking rates.

• Seek better integration of biologists with Extension agronomists, AFGC members.

• Investigate efficacy of monitoring programs on various Farm Bill programs (beyond CP-33).

• Develop a comprehensive assessment of landowner attitudes toward quail management and grassland bird conservation in different regions. This objective should be centered around determining the kinds of incentives and policies (economic and otherwise) that will promote quail habitat improvement and conservation.

• Use existing wildlife management associations and cooperatives as models for cooperative quail management efforts on the landscape scale.

NBCI
Public Relations, Information & Education Committee Report

Louisiana Meeting Re-cap

Elsa Gallagher re-capped discussions held at last year's SEQSG to include discussion about reproducing (or not) the Bobwhite Basics brochure.

SEQSG or the new National Bobwhite Technical Committee (NBTC) and the NBCI

The group discussed the changes needed to facilitate the move from a regional plan to a national plan – and the changes needed to move this group from the SEQSG to the NaBoTC.

Website development was targeted more than once in this discussion.

Marketing Plan

The group discussed several items of interest as it relates to the marketing of the NBCI. The priority item discussed was the website. In preparation for this meeting, myself, Mark Smith & Aaron Jeffries (Don as well) had worked on a draft website. Subsequent to the meeting in S.C. Mark Smith worked out a detailed outline for the website including some content. The committee reviewed, commented, and discussed this draft website. Mark worked on the changes as agreed upon in committee, and Don McKenzie will take this website template to UT for his meeting in April.

I provided the marketing plan developed for the NBCI during the first years. The group critiqued the marketing plan, added several items and gave the draft to Don McKenzie for use in his discussion of marketing with UT.

A logo is being designed by a specialist at Auburn. This logo should be complete by late spring. If the logo is not acceptable, UT staff would be willing to design one.

➢ What is the "brand" that we want to market? The NBCI? The NBCI at UT? The SEQSG?

- What are our audiences? We have many audiences. Why? What do we want to accomplish by reaching these audiences? Answer: The NBCI – it's National.

➢ Priorities: What is on our M&C wish list; which of those are our M&C priorities? Website first.

➢ Logos, letterhead: They are capable of and willing to design new logos for us, if we want
- New letterhead and business cards will be needed, maybe for both the NBCI and the SEQSG.
- UT logo could/should be incorporated into NBCI/SEQSG materials? **In informational publications, maybe a line at the bottom, UT, home of the NBCI.**

Website Development
Group Discussion
Website plan: PRI&E needs to provide detailed outline of desired website: structure, # pages, types and amount of content, etc.
DONE
Developing the website in two or three phases, starting basic expandable website running.
IT staff need examples of websites we'd like to pattern ourselves after. Will send that info to UT.
We will have to provide pictures & content.
Working

Other Discussion:

State Success Stories
The committee is working to develop a template for state success stories. We will work in concert with Theron and Mark Gudlin so that this success story template can also be used for the website and documenting NBCI success.

UT Meeting
April or May meeting to be scheduled, Elsa and Mark can attend.

Outdoor Writers Association of America
The committee discussed and did not come to consensus on the attendance at the Michigan OWAA meeting.

Bobwhite Basics
Eric Bartholomew will assist in the review and update of the Bobwhite Basics brochure – to be completed this summer. Dave Howell is the primary on this project.

Research Committee Report

1) A subcommittee was formed to review existing monitoring protocols (from CP33, Tall Timbers) for use in range-wide monitoring of bobwhites and associated grassland dependent species. Monitoring will also have application to tracking NBCI success. The subcommittee will include Nathan Stricker, Wes Burger, Kristine Evans, Roger Applegate, James Martin, and Rob Chapman.

2) The committee received updates from several people about the NBCI revision workshops, population data surveys, and CP33 monitoring. More detailed presentations were delivered elsewhere during the meeting and so details are not provided in this report.

3) We discussed the role of the NBTC in the Quail Symposium. Recommendations were provided to Tom Dailey, and included: A) NBTC should host the Quail Symposium, B) should serve as repository for past and future proceedings, and C) should provide staff capacity for managing editor.

4) The committee discussed the need for a staff person to the Research Committee. Instead of developing a job description, the group developed a list of functions that one or more staff could address for the research committee. This list includes:

--Identification of research needs pertinent to bobwhite conservation.
--Develop grant support for research about populations at rangewide and local scales.
--Serve as science director for NBTC and NBCI.
--Maintain database of past and current research.
--Manage data repository for habitat improvement and population monitoring that result from NBCI efforts.
--Update quail ProCite database/ bibliography.
--Serve as a technical resource for state agencies and NGO's.
--Work as part of the "Success" review team.
--Create capacity to address research needs in agricultural economics and human dimensions to support bobwhite conservation.

5) There was discussion about habitat/ population monitoring for determining NBCI success.

It was generally felt that the NBCI provides goals at broad spatial extents (e.g. state, BCR, or statexBCR) but that it would be helpful if these goals were presented as target densities. States should be encouraged to develop projects at scales within those listed above (county or 10 sq. mi. grid cell, compatible with NBCI revision) with the objective of restoring bobwhite target densities. This approach reduces need to establish size limits on NBCI sanctioned projects and eliminates the need for baseline (pre-project) population surveillance.

An election was held and Theron Terhune, Tall Timbers, was elected vice chair.

Nathan Stricker
Chair

Southeast Quail Study Group Business Meeting Minutes

Southeast Quail Study Group Chairman Billy Dukes called the business meeting to order at 3:04 p.m.

Committee reports were presented by SEQSG Standing Committees prior to the business meeting. Chair Bill White reported for the Ag Policy Committee. Research Committee Chair Nathan Stricker reported that Theron Terhune was elected as Vice-Chair. PRIE Committee member Mark Smith reported for Chair Elsa Gallagher. Cropland Committee member Mark Gudlin reported for Chair Mike Hansbrough. Grassland/ Grazing Committee Chair Dale Rollins reported that John Gruchy was elected Vice-Chair. For the Forestry Committee, Fred Kimmel, newly elected Vice-Chair, reported for Chair Reggie Thackston. Committee reports will be available as part of the meeting Proceedings.

Chairman Dukes acknowledged his SCDNR colleagues, particularly meeting co-chair, Laurel Barnhill, for the great job they did making this year's joint SEQSG-SEPIF meeting a success. Sponsors were also acknowledged for their critical contributions to the meeting's success.

Chairman Dukes provided an overview of the activities and actions of the SEQSG Steering Committee. Items of particular importance included the work done with the NBCI management board at the annual meetings of the Association of Fish & Wildlife Agencies and the North American Wildlife and Natural Resources Conference; two SEQSG letters to FSA regarding agricultural policy; progress made by the ad hoc "Defining NBCI Success" committee; a proposed bylaws revision changing the name of the Southeast Quail Study Group to the National Bobwhite Technical Committee; the selection of Stan Stewart for the 2009 SEQSG Annual Award and the SEQSG receiving the 2009 Stan Adams Current Achievement Award for Partnerships from the National Association of State Foresters for our work in the Forests in the Farm Bill Coalition.

Tom Dailey, SEQSG Chair-Elect and Secretary-Treasurer, presented the Treasury Report. As of the steering committee meeting on March 24, 2009, there were 115 paid members and a treasury balance of $6,829.37. Dailey noted that treasury documents had been audited by three Steering Committee members as prescribed in the SEQSG bylaws.

Chairman Dukes introduced the proposed change in SEQSG bylaws submitted to membership February 24, 2009. Chair-Elect Tom Dailey reviewed the justification for each change. In summary, the bylaw revision reflects the end of our relationship with the SEAFWA, and the beginning of our expansion to a range-wide initiative via a name change from the Southeast Quail Study Group to the National Bobwhite Technical Committee. Dailey noted that these changes are just the 1st phase of comprehensive bylaw revisions that will be considered for the August 2010 annual meeting. The final bylaw revision will reflect our affiliations with the NBCI Management Board, the University of Tennessee and regional associations (e.g., SEAFWA, MAFWA, NEAFWA, WAFWA).

The Chairman asked for a motion to bring the proposal to the floor for a vote. A motion was made from Roger Applegate to "approve the bylaw revision as posted on February 24, 2009," and Dave Howell seconded. The floor was opened for discussion. The only discussion item revolved around justification for excluding the masked bobwhite from the bylaws and NBCI in general. With no further discussion Chairman Dukes put the question to a vote. Thirty members voted for the change, and zero voted against the change. Dave Godwin, Nominating and Elections Committee Chairman, then reported the results of absentee voting, with 33 members voting for the change and zero voting against the change. The 63 votes cast exceed the specified quorum of 40. The bylaw change passes.

Other items presented for information included our intention to hold the next annual meeting in Kansas in August 2010, and perhaps in Virginia in August 2011.

Chairman Dukes thanked the Committee Chairs, newly elected Vice Chairs and membership for their dedication to the Group and to bobwhite conservation. He urged all members to be actively engaged in NBTC Committees throughout the year.

Chairman Dukes adjourned the meeting at 4:14 p.m.

National Bobwhite Technical Committee Meeting
August 3-6, 2010
Wichita, KS

Please mark your calendars for the first meeting of the National Bobwhite Technical Committee (NBTC). The meeting will be held from August 3-6, 2010 at the Hyatt Regency in downtown Wichita, KS. The meeting with begin on the evening of August 3 with a welcome reception and conclude on August 6 with a field trip through the Flint Hills. The Flint Hills are the largest remaining tract of tallgrass prairie in North America. A registration form and more detailed meeting information will be provided in the coming months. We look forward to having you in Kansas!

Sincerely,

Jim Pitman
Small Game Coordinator
Kansas Dept. of Wildlife & Parks
(620)-342-0658
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