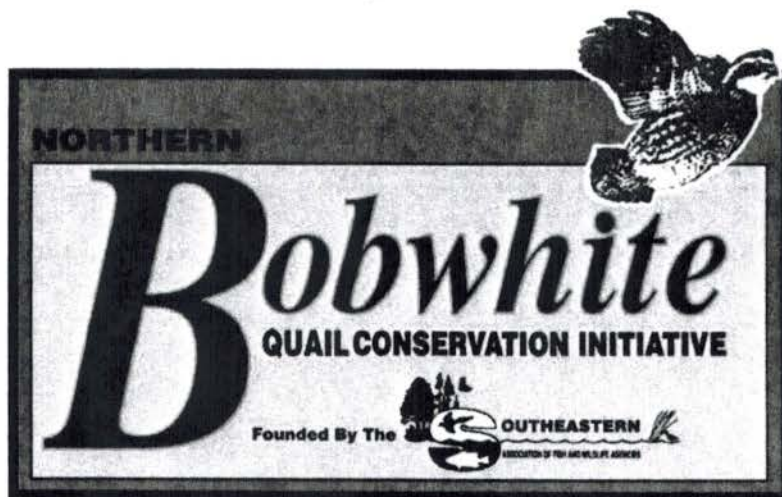


Proceedings of the 10th Annual
SOUTHEAST QUAIL STUDY GROUP MEETING

August 2-5, 2004
Winrock International
Morriton, Arkansas



Hosted by:



Special thanks to the following Quail Unlimited Chapters for their generous contributions and assistance:

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The Tackle Box
Tracker (Radio Location Systems)
Tri County Farm and Ranch Supply

Proceedings compiled and edited by:

Brad Carner
Tukey/Quail Program Coordinator
Arkansas Game and Fish Commission

Table of Contents

Meeting Agenda-----	1
SEQSG Chairman's Address and Charge to Committees-----	4
Business Meeting Minutes-----	8
Cropland Management Committee Report-----	11
Forestry Committee Report-----	15
Research Committee Report-----	17
Public Relations, Information and Education Committee-----	19
State Reports	
Alabama-----	23
Arkansas-----	25
Colorado-----	28
Delaware-----	31
Florida-----	34
Georgia-----	36
Iowa-----	40
Kansas-----	42
Louisiana-----	61
Maine-----	64
Maryland-----	65
Massachusetts-----	67
Michigan-----	70
Mississippi-----	80
Missouri-----	82
New York-----	84
North Carolina-----	86
Oklahoma-----	92
South Carolina-----	94
South Dakota-----	96
Tennessee-----	97
Texas-----	100
Virginia-----	103
Program Abstracts-----	107
Poster Abstracts-----	120

Program and Agenda

Monday, 2 August

12:00-6:00 p.m. Registration at Winrock

6:00-??? p.m. Social at Winrock

Tuesday, 3 August

7:00-8:00 a.m. Breakfast at Winrock

8:00 a.m. – 5:00 p.m. Registration at Winrock

8:00-8:10 a.m. **Welcome and Housekeeping** – Brad Carner,
Turkey & Quail Program Coordinator, Arkansas Game and Fish
Commission

8:10-8:20 a.m. **Opening Remarks** – Donny Harris, Chief, Wildlife Management
Division, Arkansas Game and Fish Commission

8:20-8:40 a.m. **Welcome and Charge to SEQSG Committees** –
Reggie Thackston, Chairman, SEQSG Steering Committee

8:40-9:00 a.m. **NBCI Update** – Breck Carmichael, NBCI Coordinator

9:00-9:30 a.m. **An Introduction to Joint Ventures and Bird Conservation
Regions** – Jim Neal, U.S. Fish and Wildlife Service

9:30-9:45 a.m. **Oak Woodlands Restoration in Arkansas** –
Martin Blaney, Arkansas Game and Fish Commission

9:45-10:00 a.m. **Arkansas Quail Initiative Update** – Brad Carner, Arkansas Game
and Fish Commission

10:00-10:15 a.m. Break

10:15-11:45 a.m. **Pine/Bluestem Ecology & Northern Bobwhite Population
Response and Habitat Use in Restored Pine/Bluestem
Landscapes** – Ron Masters, Tall Timbers Research Station

11:45 a.m.-12:45 p.m. Lunch at Winrock

12:45-5:00 p.m. Field Trip – Pine/Bluestem Restoration Area of Ouachita National
Forest near Waldron, AR

5:00-8:00 p.m. Dinner/Entertainment at J. Perry Mikles/Blue Mountain Field Trial Area – hosted by Booneville Chamber of Commerce

9:00-??? p.m. Social at Winrock

Wednesday, 4 August

7:00-8:00 a.m. Breakfast at Winrock

8:00 a.m.-5:00 p.m. Registration at Winrock

8:00-8:20 a.m. **Lower Mississippi Valley Joint Venture Planning Activities in the West Gulf Coastal Plain –**
Randy Wilson, U.S. Fish & Wildlife Service

8:20-8:50 a.m. **Development of Landscape-Level Habitat Models for Prioritizing Conservation Investment in the Central Hardwoods, SE Gulf Coastal Plain and LMAV BCRs & NRCS RFP Update –** Wes Burger, Mississippi State University

8:50-9:45 a.m. **SEQSG/PIF Joint Initiative Update** (open discussion) –
Don McKenzie, Wildlife Management Institute & Laurel Moore Barnhill, U.S. Forest Service

9:45-10:00 a.m. Break

10:00 a.m.-12:00 p.m. Committee Meetings

12:00-1:00 p.m. Lunch at Winrock

1:00-3:00 p.m. Committee Meetings

3:00-3:15 p.m. Break

3:15-5:15 p.m. Committee Meetings

6:00-8:00 p.m. Dinner/Awards Banquet at Winrock – Richard Davies, Director, Arkansas Dept. of Parks & Tourism

8:00-9:30 p.m. Poster Session/Social at Winrock

Thursday, 5 August

7:00-8:00 a.m. Breakfast at Winrock

8:00-10:15 a.m. Committee Reports

10:15-10:30 a.m.	Break
10:30-11:30 a.m.	SEQSG Business Meeting
11:30-11:45 a.m.	Concluding Remarks/Adjourn

Southeast Quail Study Group 10th Annual Meeting Chairman's Address and Charge To Committees

Good morning and on behalf of the Southeast Quail Study Group (SEQSG) Steering Committee welcome to this our 10th Annual Meeting and 9th year of existence as a working Group. On behalf of the Group I extend sincere appreciation to all associates with the Arkansas Game and Fish Commission, and to the meeting sponsors, for your commitment and efforts in hosting this meeting. I know from my communications with Brad Carner and others that a great deal of forethought and resources have gone into planning and setting up this meeting in order to make it as enjoyable and productive as possible. It is already evident that your efforts have been well spent and we are set for another great annual meeting.

I've had the pleasure and good fortune to attend all 10 of the SEQSG annual meetings and I always look forward to the meeting with great anticipation. Obviously, it is a time when we share information, fine tune existing strategies and develop new ones directed at improving the landscape for bobwhites and other grassland-forb dependent wildlife. But it is also a great time of fellowship as we visit with old friends and welcome new comers into the fold. As I look at the crowd this morning I see a number of old timers like me who attended that first meeting in South Carolina. I thank you for what you have done, are doing and I am confident will continue to do, for the betterment of bobwhites and the SEQSG. I am also encouraged to see many new faces and especially welcome you. For as we all know from biology 101, recruitment is critical and there is strength in numbers. Of course for us old timers annual survival is important too!

Partnerships or collaborative efforts are sometimes overused buzzwords these days, but in fact they can be instrumental and necessary for making things happen. As I said last year, we must continue to build on the common ground that we share with professionals in the songbird, cropland, grazing land and forestry communities. I appreciate our long-standing alliances and relationships with Quail Unlimited, United States Department of Agriculture (USDA), Wildlife Management Institute, International Association of Fish and Wildlife Agencies, and others; and I welcome our more recent efforts with groups like Partners In Flight (PIF).

A great example during the past year of a partnership effort was the development and support of the Continuous Conservation Reserve Program Bobwhite Buffers Proposal. We were gratified to see the number and diversity of supporters for this proposal and we all are still anxiously waiting to see if this all-important initiative is going to come to fruition. Likewise, I am very excited about our ongoing efforts with PIF to develop a joint proposal for a Farm Bill conservation initiative. Don and Breck initiated this proposal that if accepted will provide a producer friendly approach for the improvement of grasslands, croplands, and forestlands for bobwhites, grassland-forb songbirds and many other wildlife species. Like the Bobwhite Buffers Proposal this has the potential to be a win-win scenario for the resource, producers and everyone involved. You'll be hearing much more about the proposal as this meeting unfolds.

I am a firm believer in the old cliché that success brings success and before I get into the standing committee charges I want to quickly look back at the past year and highlight some accomplishments. As you would expect, many of these are the continuation of projects that were discussed at our meeting last year.

1) This past year began the implementation of the NBCI Marketing Strategy. This all encompassing marketing plan must continue to play an important role for promoting NBCI at all levels. Relative to marketing, a Bobwhite Quail National Treasure - National Priority poster was developed that encourages producers to ask about quail friendly Farm Bill practices. These were

produced by the Natural Resources Conservation Service (NRCS) and hopefully have been, or soon will be, placed in all of the USDA Farm Service Centers and other natural resource organization offices.

2) Of course, QU continues to work as a strong partner with SEQSG. This past year we met in Edgefield and followed up on the establishment of an NBCI Habitat Fund that will be used to promote and support the implementation of NBCI. D.J. Case & Associates, a natural resource consulting firm, was hired to assist with the development of a marketing strategy to effectively solicit donations for the Fund. We are very appreciative of QU's continued commitment to moving this concept and NBCI forward.

3) Yet another important event was the continuation of the MOU between the NRCS, Mississippi State University, QU and Southeast Association of Fish and Wildlife Agencies (SEAFWA) for the purpose of funding research projects to evaluate the effectiveness of Farm Bill conservation programs and practices at meeting NBCI goals. As SEQSG Chair, I serve on the Technical Review Committee that evaluated and ranked research proposals for funding under this agreement. It was uplifting to see the number and quality of the project proposals. Many were excellent relative to our need for additional science based knowledge in bobwhite restoration. Pete Heard, Ed Hackett and Wes Burger deserve a big thank you for their efforts in the development and administration of this grant process.

4) I also consider it encouraging and of vital importance that our Group's efforts are held in high regard by the SEAFWA Directors. Last fall, Breck Carmichael, Don McKenzie and others were instrumental in pulling together a joint meeting between the Directors and the NRCS State Conservationists at the annual SEAFWA Conference. It was so well received that this year the Directors took the initiative to come to us and request a similar meeting at the upcoming SEAFWA Conference. However, this year they want to broaden the attendance at the meeting to include a variety of both public and private conservation groups. This can only bode well for our efforts at garnering and sustaining broad based support for bobwhites.

6) These are just a few of the easily recognized accomplishments during the past year that show the effectiveness of the SEQSG and provide optimism for moving forward with NBCI. Much harder to document, but of the utmost importance, are the day-to-day accomplishments and success stories by a myriad of wildlife biologists, researchers, land managers and others with a commitment to habitat management for bobwhites, songbirds and other wildlife. For as we all know, it is down on the farm and out on the land where the rubber meets the road.

One person who has worked tirelessly over the past 18 months to move NBCI forward is Breck Carmichael. Breck needs no introduction to this Group as he served as the Group's founder, first Steering Committee Chairman, Agricultural Policy Committee Chairman and until June 16th served as the first NBCI coordinator. In June, Breck was promoted to Deputy Director of the South Carolina Department of Natural Resources Wildlife and Freshwater Fisheries Division. It was a promotion for Breck and a move that he could not postpone. But from my conversations with him I know that it was a bitter/sweet decision as he was, and still is fully dedicated to the implementation of NBCI. Even in the relatively short time that he served as NBCI Coordinator Breck worked tirelessly and made many strides toward getting NBCI off the table and onto the ground. You will be hearing more about Breck's accomplishments in his presentation later this morning. Please join me in thanking Breck for his efforts and in wishing him well in his new position.

Relative to filling the NBCI position, members of the Steering Committee interviewed four candidates yesterday. Just like before, they were all excellent and highly qualified

professionals and it made for a very difficult decision on our part. However, the good news is that we couldn't go wrong. After careful consideration, the Steering Committee came to consensus and we have made a recommendation to the SEAFWA Directors for their approval. As soon as the recommendation is approved the selection will be announced to the membership. We are hopeful that the candidate can begin work on September 1st.

With these thoughts as a backdrop I now want to deliver the charge to the standing committees. I begin by re-iterating that the SEQSG is truly about working committees. This is what separates us from being just another technical meeting. We are about working committees that have the primary function of developing strategies and implementing plans of action to facilitate bobwhite restoration, and now more specifically move toward fulfilling NBCI goals. It is this focus that makes us effective at putting habitat on the ground and keeps us in high standing with SEAFWA Directors. In this regard I charge the committees as follows:

The Agricultural Policy Committee, chaired by Dan Figert, must continue to focus on working with USDA conservation programs and practices to make sure that wherever possible quail friendly practices are applied to solve other natural resource concerns. We currently face challenges with the structure and implementation of existing programs like the Conservation Reserve Program, Grassland Reserve Program and Conservation Security Program and we must be gearing up to work on the development on the 2007 Farm Bill. In short this committee and the rest of us must continue to follow conservation programs and practices from the White House to the farmhouse.

Last year we voted as a Group to multiply the Habitat Implementation Committee into two committees, the Cropland Management Committee, Chaired by Dave Hoover and the Grassland/Grazing Land Committee, Chaired by Robert Chapman. In addition to their ongoing tasks relative to NBCI implementation, these committees need to focus on their respective portions of the joint SEQSG/PIF Farm Bill proposal. Additionally, the Grassland/Grazing Land committee should continue efforts to develop strategies for integrating native warm season grasses into rotational grazing systems and gain acceptance for these practices by forage specialists and agronomists.

For the past two years, Mark Whitney chaired the Forestry Committee, but Mark was recently promoted to a Georgia WRD Game Management Section regional supervisor position, which necessitates his passing the baton for the Chair position. Billy Dukes has graciously agreed to serve as interim Chair and oversee the process of selecting a new Forestry Committee Chair, Billy not excluded. This is a very important committee as a significant portion of our potential for grassland-forb habitat and bobwhite restoration occurs on forestlands and depends on the proper application of silvicultural practices. If you have interest and expertise in managing forested habitats then I encourage you to attend this committee meeting. The Forestry Committee needs to focus on development of the forestry section of the joint SEQSG/PIF Farm Bill proposal as well as follow-up on ongoing actions with the US Forest Service and the American Forestry and Pulpwood Association.

The Research Committee, chaired by Tom Dailey, should focus on developing a standardized approach to monitoring and reporting conservation practices directed at achieving NBCI habitat and population goals. Additionally they should serve as a clearinghouse for research results that provide new and pertinent information relative to NBCI implementation, for example criteria for selecting focus areas, and funnel this information to the Group through the appropriate committees. Another topic of increasing public and professional interest, particularly

in the deep Southeast, is the potential impacts of stocking wild quail into fragmented habitats. I have requested that the Research Committee develop a position statement relative to this issue.

The Public Relations Information and Education Committee, Chaired by Robert Perez has in place an excellent Marketing Strategy for NBCI and must continue to promote its implementation. Robert in coordination with the NBCI Coordinator continues to serve as point man for SEQSG updates in QU Magazine. I appreciate his efforts in that regard and I am sure he would welcome our input.

The Funding Committee, chaired by Dave Howell, has played an important role in generating funding for the SEQSG. This has become even more critical as budget cuts have occurred in many of our own organizations. Additionally, I suggest that the funding committee work with the PRIE committee to evaluate the possibility of developing and pursuing a grant to pay for the NBCI Habitat Fund Marketing Strategy.

I also want to encourage the committee chairs to get together and compare notes on agenda topics. There often is overlap with certain topics or issues and this can provide an opportunity for committees to work concomitantly and synergistically. In general, I urge all committees to use NBCI as the litmus test relative to where they spend their time and effort. NBCI is our flagship and we must continue to stay focused on meeting the goals and objectives outlined in the plan.

There is a tremendous amount of work that goes on behind the scene with each of these committees and without the committees the SEQSG would cease to exist. I want to extend a big thank you to all of our standing committee chairmen and committee members for the excellent work that is being accomplished.

Finally, we have the Steering Committee. As current chairman I can't say enough about the quality and dedication of the folks on this committee. All are dedicated professionals who are always more than willing to go the extra mile to work on SEQSG business, in addition to their real jobs.

We have two positions being vacated this year as their terms expire. Mark Gudlin will rotate off as past Chair, I will move to the past chair position and Steve DeMaso will move to the Chair position, which vacates the Chair-elect position. Jeff Sole will rotate out of the private entity position. Both Mark and Jeff have made strong contributions to the Steering Committee and the Group at large and I thank them for their efforts. Fortunately, we have an excellent slate of candidates who have agreed to offer their services to the Group through these positions. If you haven't voted please be sure to do so before the end of the social tomorrow evening. Lets give Mark, Jeff and the current candidates a hand to show our appreciation.

I close by saying it is my pleasure and privilege to have served as Chairman during the past two years. It is a rewarding task and is really an easy task when you have dedicated folks like you all doing the work. Keep on keeping on!

Reggie Thackston, Chair SEQSG Steering Committee, August 3, 2004

Minutes
Southeast Quail Study Group Business Meeting
5 August 2004
Morrilton, Arkansas

Submitted By:
Steve DeMaso, Chairman-Elect of the SEQSG
26 August 2004

Meeting called to order at 10:30AM by Chairman Thackston

- Thackston welcomed and congratulated Dave Godwin, Chair-Elect and Clay Sisson, NGO to the SEQSG Steering Committee.
- Thackston welcomed and congratulated Mark Smith and Billy Dukes as Chairs of the Research and Forestry Committees.
- Thackston thanked Mark Gudlin and Jeff Sole for their dedication and service to the SEQSG and the Steering Committee.
- An audit was completed at the Steering Committee meeting at Jekyll Island. No audit was necessary at this meeting.
- Quail Unlimited is looking for magazine articles for their magazine. Reprints from State Agency magazines are welcome.
- QU is promoting the development of NBCI Funds at the National and State levels.

Financial report

- DeMaso provided a financial report covering 02/06/04 to 07/23/04, which showed an opening balance of \$11,311.15 with total cash inflow of \$85.00 and a total cash outflow of -\$9,505.90 leaving a balance of \$1,890.25. A hard copy of the detailed report is included in the meeting minutes file.

Membership report

- DeMaso reported that 153 members had registered and paid dues for the annual meeting, with about 40 of those being Arkansas Game and Fish Commission employees.

Audit report

- An audit was completed at the Steering Committee meeting at Jekyll Island. No audit was necessary at this meeting.

QU NBCI Award

- Dave Howell gave an update on the formation of a "QU NBCI Award" to be awarded annually by Quail Unlimited.
- One award will be given in 2005 to either an individual, a landowner, a state agency, or a federal agency. The initial award presentation will be given at the 2006 North American Conference.
- Nominations will be solicited the SEQSG and the SEQSG PRIE Committee.

NBCI Coordinator Report

Annual Goals and Accomplishments

- Increase the visibility of and raise awareness of the goals of the NBCI (marketing), especially with USDA and the agricultural community.
- Establish a bobwhite/grassland bird Joint Venture Focus Area.
- Work with willing "fringe states" to develop bobwhite habitat and population goals to include in the NBCI plan.
- Develop a relationship with the timber industry and encourage cooperation in achievement of NBCI habitat goals.
- Develop a database to monitor, compile and summarize bobwhite habitat development projects at the local, state and regional levels.
- Develop a popularized version of the NBCI plan.

Other Accomplishments Towards Project Objectives

- Represent, promote and act on behalf of the NBCI and the SEQSG at national regional and state meetings.
- Track and disseminate up-to-date information regarding relevant federal and state habitat conservation programs and policies to state, federal and non-government bobwhite advocates.
- Develop grant proposals for large-scale bobwhite quail/grassland-forb habitat projects.
- Submit written monthly and annual activity reports and administer the project budget.

Bylaw Change

- A bylaw change was recommended by Reggie Thackston to make the selection of Committee Chairs consistent among Committees. The following wording was proposed to be voted on by the membership at the Business Meeting.

"When a standing committee Chair resigns the Steering Committee Past Chair shall coordinate the nomination and election of a replacement Chair. Nominations shall be solicited from the standing committee members and a new chair elected by simple majority vote of the standing committee. The name of the newly elected Chair will then be forwarded to the Steering Committee for approval."

- The change was unanimously approved by the membership.

NBCI/QU Habitat Fund – D. J. Case and Associates

- Dave Howell reviewed the NBCI Marketing and Funding Strategy prepared by D. J. Case and Associates. Steering Committee members should send their comments to David Case and cc Dave Howell and Roger Wells.

- The PRIE Committee is also working on this issue.

Southeast Partners in Amphibian and Reptile Conservation (SEPARC)

- The Steering Committee discussed the SEPARC proposal. Each Steering Committee was given a copy to review and provide Luke Fedewa <LFedewa@gf.state.az.us> with additional comments if they desire.

Miscellaneous Items

- Another "Private Lands Forum" will be held at the SEAFWA Conference in South Carolina. Agency Directors and the heads of FSA, Extension, Soil and Water Conservation Districts, NRCS, NWTF, Etc. will be invited to participate.
- In coming Chairman Steve DeMaso gave some remarks and concluded the meeting.

Meeting adjourned at 10:45AM.

CROPLAND MANAGEMENT COMMITTEE REPORT

Minutes 08/04/04

David Hoover, Chairman

Cropland Management Committee attendees included: Jeff Powelson (MO), Larry Heggemann (MO), Brad Simpson (KS) Chris Baumann (GA), Bill Jones (DE), Tim White (TN), Laurel Moore Barnhill (SC), Catherine Rideout (AR) and myself.

Reggie Thackston, Chairman SEQSG Steering Committee, charged the Cropland Management Committee to: **Draft a white paper focusing on the cropland flexible fallowing option of the joint SEQSG/PIF Farm Bill Initiative proposal.** The entire committee time was spent discussing this issue. Below is the draft white paper developed from the committee meeting and correspondence during the two months that followed.

Cropland Flexible Fallow White Paper (DRAFT)

Compiled by
SEQSG, Cropland Management Committee

Purpose

The purpose of this white paper is to describe and advocate the implementation of a Cropland Flexible Fallow program as a major new private-land initiative through the Farm Bill, for the mutual benefit of northern bobwhite quail and priority grassland/early-successional species of North American songbirds.

Abstract

Areas which are intensely cropped usually lack suitable habitat to support bobwhite quail and many grassland/early-successional songbird populations. Ground nesting birds are usually the most vulnerable because the diverse grassland, forb and shrub components needed to sustain breeding populations are lacking. Currently, producers have few options under the present Farm Bill to remove isolated and/or "marginal" lands from crop production without entering into long-term contracts. The Cropland Flexible Fallow program is an effort to expand on old set-aside and existing conservation programs to integrate early-successional wildlife habitat into intensively cropped areas. This program could benefit producers in many ways by providing a mechanism to idle non-productive crop acres without loss of income. The Cropland Flexible Fallow program could be used in conjunction with practices within the existing Conservation Reserve Program (CRP), Environmental Quality Incentive Program (EQIP) and Wildlife Habitat Incentive Program (WHIP) to provide all aspects of bobwhite quail and many grassland/early-successional songbird habitat requirements. The program would fit well with the Conservation Securities Program (CSP). Funding should be obtained by diverting monies from present USDA subsidy programs to provide a stable funding source, shielding it from budgetary whims.

Background, Description of on-the-ground issue, Findings

Wildlife Concern: Areas which are intensely cropped usually lack suitable habitat to support wildlife populations, especially bobwhite quail and many grassland/early-successional songbirds. In some areas, intensive cropping virtually eliminates all habitat for wildlife, especially where large agricultural fields are clean tilled. Ground nesting birds are usually the most vulnerable because the diverse grassland, forb and shrub components needed to sustain breeding populations are lacking. The addition of fallowed crop acres in these settings would increase habitat diversity, especially nesting, brood rearing and winter habitat. Extensive cropping also adds to nutrient loading, increased soil erosion and more pesticide use. Past experience shows that this leads to a significant decline in the overall health of the watersheds in which they occur. During the past 50 years, loss of habitat from agricultural crop production, over utilization of pasture and haylands, planting of exotic grasses, encroachment of undesirable woody species and urban development has diminished or eliminated native grassland and early-successional habitat throughout much of the Midwestern and Southeastern states. Since 1980, both migratory songbird and game bird populations' dependent upon grassland and early-successional habitats have experienced steeper, more consistent and more widespread population declines than any other avian guild in North America. Listed below are some of the grassland/early-successional bird species whose populations are in decline and could be positively affected by an increase in the establishment of early-successional habitat by way of fallowed crop acres.

Priority Species in Decline	
Greater Prairie Chicken	Henslow's Sparrow
Dickcissel	Bewick's Wren
Prairie Warbler	Bachman's Sparrow
Northern Harrier	Grasshopper Sparrow
Short-eared Owl	Red-cockaded Woodpecker
Field Sparrow	Northern Bobwhite Quail
Bobolink	Sedge Wren
Savannah Sparrow	Loggerhead Shrike

Ag. Economic Problem: Currently, producers have few options under the present Farm Bill to remove isolated and/or "marginal" lands from crop production without entering into long-term contracts. Current programs require a long-term commitment or permanent easements which compensate for lost production but do not allow short term flexibility. This lack of a short term, easily implemented land idling program hinders producers from improving their economic situation by continuing to farm unproductive acres.

Another concern is that poor land productivity encourages landowners to divert agricultural land to other, more economically attractive, uses such as home and industrial sites. Providing alternative income from these lands may help reduce the amount of land being converted to non agricultural uses.

Description of policy issue:

Past and Present Programs: The Farm Services Agency's Acreage Conservation Reserve Program of the 1980s was used extensively to idle cropland to control commodity production. This annual set-aside program required farmers to idle a certain percentage of their acres to be eligible for subsidy payments. Producers used it primarily to idle unproductive lands and usually located the set-aside on the same fields from year to year. Because of the annual time frame, many areas were kept tilled or mowed frequently to reduce weed problems. This added to the cost of idling the land and provided little wildlife benefit. The Cropland Flexible Fallow idea is an effort to expand on old set-aside and existing conservation programs to integrate early-successional wildlife habitat into intensively cropped areas.

The CRP has provided significant benefits to several species of wildlife, particularly in the Great Plains and upper Midwest. However, CRP is a long-term, 10-15 year program that requires the establishment of a permanent grass cover. Most CRP contracts older than 3-5 years provide little in the way of early-successional habitat, unless intensively managed, because they become dominated by thick monoculture stands of grass. The Cropland Flexible Fallow program would provide an intermediate land idling option (3 years) to landowners while also providing an important habitat component missing on much of today's agricultural landscape.

The EQIP and WHIP are longer term programs, 5-10 years, which require extensive planning and adoption of multiple practices in order to be competitive. While both of these programs provide wildlife benefits, neither offer the potential early-successional habitat benefits or short-term management flexibility on intensively cropped acres that the Cropland Flexible Fallow program could provide.

Potential Producer Benefits: Implementing a Cropland Flexible Fallow program could benefit producers in many ways. It would provide a mechanism to idle non-productive lands without loss of income. It could be used by producers to improve cash flow and be utilized by USDA to support farms outside regular subsidy payment programs. Income from the program may reduce the need to convert poor cropland to other uses such as homesites. It would also give producers using precision farming methods options on how to use lands they identify as non productive or not efficient to farm. It would also provide another management option for reducing pesticide use and nutrient runoff.

Potential wildlife and natural resource benefits: Existing conservation programs under the Farm Bill have the potential to provide quality habitat for ground nesting birds if managed correctly, but lack the early-successional habitat benefits a Cropland Flexible Fallow program could provide. This program would add early-successional habitat to intensively cropped areas, providing excellent brood rearing and wintering habitat for bobwhite quail and many of the declining grassland/early-successional songbirds.

The Cropland Flexible Fallow program could be used in conjunction with practices in CRP, EQIP and WHIP to provide all aspects of bobwhite quail and many grassland/early-successional songbird habitat requirements while maximizing on-farm income.

Program Structure: A Cropland Flexible Fallow program would fit well with the Conservation Securities Program (CSP). It would allow producers to qualify for programs and reach higher

water quality and wildlife management goals. An example would be using fallowed acres under the Cropland Flexible Fallow program to meet wildlife habitat goals to move from Tier I to Tier II or III under CSP.

Funding for this program should be obtained by diverting it from present USDA subsidy programs. Without this type of financial backing impacts would be minimal and continued funding would be subject to budgetary whims.

Additional Points:

Not outlined in the paper, but points the committee thought needed to be included in a final "working" version of the program included: 1) The focus of the practice should be on whole field or block enrollment rather than strips; 2) Natural regeneration should be the primary option for cover establishment, but will allow planting of annual/biennial cereal grains for erosion in sensitive areas; 3) Program should be nationwide; 4) Noxious weeds and/or woody encroachment controlled by spot application of approved chemical/mechanical methods. Mowing would not be an option; 5) A three year program, but discussed a 10 year time frame with fallow areas being rotated at least once during the 10 years; 6) Annual rental payments based on soil rental rates with eligibility requirements same as CRP.

SEQSG FORESTRY COMMITTEE REPORT

Billy Dukes, Committee Chairman, SCDNR

DukesB@dnr.sc.gov

Billy Dukes, acting as Chairman at the request of Steering Committee Chairman Thackston, opened the meeting with introductions around the room, and gave a brief history of the Forestry Committee. Past-chairman, Mark Whitney, has taken a new assignment with Georgia DNR and resigned chairmanship of the committee. In the past, Forestry Committee meetings have been sparsely attended. As a result, Forestry Committee and Ag Policy Committee meetings have been held jointly at times (2002 and 2003). The last independent meeting of the Forestry Committee took place at the Omni Bayfront in Corpus Christi, Texas in 2001. Billy stressed the need for active participation from the SEQSG membership in the Forestry Committee, and also stressed that stability within Forestry Committee membership is necessary to gain and maintain momentum. Past work of the Committee has included review of FLEP for southeastern states, review of National Forest management plans, and development of BCR-level NBCI implementation plans for forest lands (begun in 2002; unfinished to date).

As the first order of business, Dukes asked for nominations from the floor for new Committee Chairman. Following a quick nomination and vote, Dukes was nominated and approved for the position.

In reviewing the charge of the committee, two tasks are clear: 1) focus on working with US Forest Service and forestry industry to promote practices for the establishment of quality grassland-forb habitat and elicit their approval for NBCI (Thackston, 2003); and, 2) devise implementation strategies for achieving habitat enhancement and population goals for forest lands as set forth in the NBCI.

An additional charge, issued during the general session, was to "flesh out" a legislative proposal for a Family Forestland Savanna Restoration practice proposed as part of a SEQSG/PIF Joint Grassland/Shrubland Initiative. Initial discussions regarding this task centered around identifying common ground between PIF interests and SEQSG interests. All agreed that the proposed practice has significant benefits to many species and is worth pursuing. Issues identified early in the process included cost-share rates, maintenance of the practice, and duration of contracts. Another issue revolved around the use of the term "savanna", as opposed to "open woodlands" or some other terms ("woodland savanna complexes" was suggested). The primary concern was that use of the term savanna implies extremely open woodlands which may not be acceptable to the average family forestland owner. Ultimately it was decided that the practice specifications would define the characteristics of the woodlands entered into the practice. Additional discussion centered around defining the criteria for the desired condition in terms of basal area, percent sunlight, crown canopy, or vegetative understory. Shortcomings of each approach were noted, and while no consensus was reached, it was agreed that the desired condition should be described as it relates to specific management practices. It was stated and agreed upon that the proposed practice relates to open canopy forestry and that the issues of wildlife populations, ecosystem restoration, and forest health should be highlighted in all briefs, papers and correspondence related to the proposed practice. It was also stated and agreed upon

that acceptance of the practice by state forestry agencies will be absolutely essential in insuring success of the proposal. Private forest landowners and forest industry are also important stakeholders in the process. The proposed practice could deal with afforestation, reforestation or intermediate stand treatments. Most agreed that mid-rotation treatments should likely be the focus of the practice.

Regarding the charge to the Committee concerning the legislative proposal, David Pashley (American Bird Conservancy/PIF) stated the Committee likely does not have the expertise necessary to deal with issues and wording of policy. He suggested that what was needed at this time is a background paper on the biological need for the proposed practice. The background paper would focus on the problem, solution, and desired condition (of forest lands), and would precede any efforts towards drafting of legislative language. David also suggested as the title of the document "Proposal for the Restoration of the Health of American Private Forests" and suggested use of the term "Wildlife Woodlands" to describe the practice. It was also noted that priorities are changing among forest landowners with a shift towards wildlife and wildlife-associated recreation. Drafting teams were formed to work on various portions of the document.

Ways to involve USFS partners in ecosystem restoration and habitat enhancement on a meaningful scale was also discussed. Larry Hedrick (USFS) stated that there are various levels of planning (Forest Plan vs. Project Level Plan) for USFS management activities. He stressed that state agency biologists need to be heavily involved at the project planning level, and need to maintain constant contact with USFS partners within their respective states. Larry also mentioned that an MOU currently is in place between SEAFWA and USFS regarding management of USFS lands in the Southeast.

The Committee resumed work begun in 2002 on development of BCR-level implementation strategies for achieving NBCI habitat and population goals on forest lands. Dukes handed out a draft of implementation strategies for the Southeastern Coastal Plain (BCR 27). Candidates to draft for similar implementation strategies were identified for the following BCR's: BCR 21 – Oaks and Prairies; BCR 24 – Central Hardwoods; BCR 25 – West Gulf Coastal Plain/Ouachitas; BCR 26 – Mississippi Alluvial Valley; BCR 29 – Piedmont; BCR 30 – Northeast/Mid-Atlantic Coast; BCR 31 – Peninsular Florida; BCR 37 – Gulf Coast Prairies. Individuals selected to draft implementation strategies came from within the Forestry Committee or the general SEQSG membership. These individuals will be contacted by the Forestry Committee chairman, provided sample recommendations from BCR 27, and asked to complete the task for their selected BCR or recommend someone else for the task.

Stan Stewart (AL) raised a concern over CRP thinning standards which require a minimum of 200 residual trees per acre following thinning. Most agreed that 100 trees/acre was a much better target throughout most of the Southeast. It was decided that this issue should be presented to the Ag Policy Committee for further review and possible action seeking change in the national standard.

There being no further business to discuss, the meeting adjourned at approximately 4:30 p.m.

RESEARCH COMMITTEE REPORT

Submitted by Thomas V. Dailey, Research Committee Chair

The research committee had a productive meeting that included the following agenda items: (1) SEQSG Chairman's charge to our committee; (2) progress of the USDA-NRCS/MSU Bobwhite Restoration Project (Wes Burger); (3) Approaches for defining focus areas; (4) Approaches for designing evaluation of focus areas and NBCI; (5) Research questions regarding translocation of wild quail; (6) Upcoming meetings; and (7) election of research committee chairperson for 2004-2005.

USDA-NRCS/MSU Bobwhite Restoration Project: Wes Burger reported on the timeline for grant awards and funding. Wes indicated that full funding of the project is dependent on congressional appropriation. The committee recommended that the steering committee send a letter thanking USDA for this critical research support for NBCI. The restoration project contains many of the research committee priorities identified during the past two meetings, including evaluation of effects of habitat restoration on bobwhites, and use of human dimensions information to improve adoption of state and federal habitat programs by landowners.

Criteria for focus areas: Focal area approaches in the Central Hardwoods BCR (Wes Burger), Texas (Jason Hardin), Georgia (Reggie Thackston), Missouri (Tom Dailey) and Arkansas (Brad Carner) were discussed. Focus area size is about 5,000 acres in North Carolina, Arkansas, and Texas, and Georgia targets areas containing 2,000 acres, and gives priority to select portions of the state. Criteria for selecting focus areas include a known degree of quail habitat suitability, and willingness by landowners to implement quail habitat restoration. Regarding landowner cooperation, Missouri has just completed a survey of attitudes of CRP contract holders, and plans to test some human dimensions approaches for identifying focus areas. During 2002-04, the committee identified human dimensions research as a priority for supporting implementation of NBCI. There is also a continued need to develop habitat suitability models for songbirds.

Translocation: We discussed translocation of wild quail as an approach to complement habitat restoration. Bill Palmer agreed to prepare a white paper on the research and biological considerations of translocating northern bobwhites to re-establish populations.

Approaches for evaluation:

Estimates of habitat created, quail hunter activity, and quail and songbird abundance will provide key measurements of success/failure of NBCI. The NBCI is confusing when identifying the appropriate measures of quail abundance. On one hand the plan identifies density of coveys as the population goal; however, it also states that: "The Breeding Bird Survey provides the best available long-term trend information, as well as a benchmark for the recovery goal." The research committee suggests that the covey density goal is an appropriate goal because quail enthusiasts can relate to this concept, but that state and regional measurements of density are not feasible.

Abundance measurements will need to be made at multiple spatial scales, with North American BBS and/or state roadside surveys ultimately providing long-term evaluation at state or BCR scales. These surveys might not detect change in quail abundance for many years, and thus, more intensive sampling is needed immediately. A more intensive, modified BBS (quail and select songbirds), would be appropriate. Further, fall covey call counts could be used at a smaller scale, and recent testing of distance sampling at Tall Timbers increases the area sampled by this approach. Shane Wellendorf and Bill Palmer agreed to provide updated protocol for these approaches on their web site, and Mark Smith agreed to coordinate development of protocol for measurement of quail abundance. The committee recognized the need for further testing of the veracity of all of these abundance indices.

For measurement of hunter activity it has been recognized for several years that NBCI will require more standardization among states. Most importantly, hunting measurements must separate wild and pen-raised quail. To date, only the Georgia DNR has made this change. Sampling of hunting of wild quail must be designed so that variance can be estimated. A universal measure of hunting activity is average daily bag.

Upcoming meetings: 2006 will be a busy year for researchers with Quail VI held in Georgia in June, and SEQSG held in Alabama in August.

Research Chairperson Election: Committee members voted unanimously for Mark Smith, Mississippi State University as next chairperson; we recommend SEQSG steering committee approve the committee's selection of Mark.

PUBLIC RELATIONS, INFORMATION AND EDUCATION (PRIE) COMMITTEE REPORT – 2004

Committee members in attendance: Robert Perez (Chair), Rick Chastain, Jerry W. Davis, Bill Whitman, Elsa Gallagher, Sally Benjamin, David Howell, David Pashley and Mark Gudlin

The PRIE committee received its charge from Chairman Thackston, to continue the QU newsletter and to work with the Funding Committee to get a grant(s) to help pay the marketing firm, D.J. Case & Associates that has been hired to help develop a strategy to generate funds for the QU National Habitat Fund.

The committee chair made opening remarks and the beginning of the PRIE committee work session and then reviewed the past years accomplishments and action items from the last meeting. The group then began discussion on where to go from here and came up with the following ideas:

- Update the NBCI power point presentation on the website
- Try to put an article in the NWTF magazine
- Develop a tracking tool for how many articles/interviews/newspapers are done across the states? (may or may not be necessary)
- Find out how FSA newsletters work and put articles in this medium to go straight to the source
- Jerry Davis volunteered to work with Robert Perez to write a success story article on the Pine/bluestem restoration project in the Ouachita Natl. Forest.
- Image database- explore possibility of linking with PIF and/or Nature Serve to directly reach a list and photos of grassland and scrub/savannah species of concern.

Dave Howell addressed the committee regarding the draft bid of 84K from D.J. Case and Associates to update the Marketing strategy and to set up the NBCI funding campaign.

Marketing Strategy: The bid includes 60 telephone interviews with our target audiences to gather information to update the strategy that will include (among other things) a fact book, marketing objectives and Action plans/Campaigns. It is important to note that the development of a slogan/logo is not included in the bid, nor is any funding to initiate a campaign. These funds will need to be raised separately.

NBCI Funding campaign: the Marketing strategy and funding campaign are closely linked. Phase One – the bid includes some hard products (prospectus, etc.) with which to approach foundations and other potential donors. Phase two (not included in the bid) would include a second draft of the prospectus, prospect lists, customized proposals/pitches etc.

The PRIE committee is asked to provide input and assistance to find a match (a grant and a match) to implement the marketing strategy and NBCI habitat fund.

Popularized Version of the NBCI:

A partial draft of the popular version was passed around the room. Over the course of the past year the committee had great difficulty achieving this task. Biologists are not typically trained in the writing style necessary to complete such a task and so there remains a significant amount of work to be done on the draft. Turnover and small membership in the PRIE committee continues to be a problem.

Once we have a final draft, Dave Howell said he could take it to the same company that did the quail article reprint and get an estimate. He said we should also check on the possibility of WMI covering layout and initial printing costs.

The draft needs more information, including a recommending readings list, for more information section, etc.

Dave Howell suggested putting in a map of US with color shading showing declines. Robert Perez knows the source of the maps and can secure a high res file and permission to use the graphic.

Dave also suggested a map that somehow illustrates the # of coveys needed.

Elsa Gallagher mentioned that she had information regarding the percent change of farm size in her state and this may be something to pursue for the range.

An individual named Drue DeBerry with the American Forest Foundation put together a joint PIF and State "ecosystem" leaflet. We may want to emulate this process.

PRBO conservation sciences, Mason County, California – Ellie Cohen may be a person to contact about approaching foundations jointly with other groups that have an interest in birds.

Dave Pashley (PIF) gave the group some advice about approaching foundations based on his fundraising experience:

Each foundation is different, its helpful to have the prospectus but only if it is coupled with contact, good to approach them through someone they already know who is also influential.

Pashley- Ecological health and biodiversity is the goal of all our groups and this is appealing to the general public.

Pashley took a look at the PIF continental plan and listed all species that are sympatric with bobwhite with a score of 4 or 5. Perez has the list.

It was suggested that we begin to e-mail state quail coordinators with quarterly updates on NBCI info. And come up with an annual summary.

Perez asked for volunteers to write missing sections from the Popularized Version.

Steve DeMaso volunteered to write section III

Mark Gudlin has already submitted a section but said he would continue to work with Perez

Although there are still missing sections, no one volunteered to tackle any of them.

Perez pointed out the need to find a way to recruit new and stable membership to the committee. And to approach the steering committee for assistance in perhaps asking states to explore assigning someone from their respective I&E departments who has an interest and would be willing to dedicate some time to the cause.

Meeting was adjourned with the following action items for the year:

- Final draft of the popular version of the NBCI by the spring steering committee meeting in Texas
- Work with Dave Howell and the Fundraising committee toward finding funding sources for the marketing firm
- Capture video of President Bush announcing Bobwhite Buffers for use in NBCI video
- Convince TPWD to film some interviews with steering committee while they are in Texas so we can use video snippets on website and possibly in video productions
- Work with Sally Benjamin with FSA to get NBCI articles in FSA newsletters
- Write an article for QU mag on success stories including the Ouachita Natl. forest
- SEQSG website- add a page with links to other sites (PIF, Nature serve) that showcase sympatric declining species along with a few pics of some of these birds. Janet Rush (USGS Albuquerque) is the contact person with PIF.
- Send an article to state quail coordinators to put in SWCD newsletters in counties. (Missouri marketing research indicates Missouri producers read them)
- Encourage states to send an I&E specialist to the SEQSG. Find a person committed to join the group. If budgets are short for this person states can step up with travel funds to send experts to the PRIE committee.
- Encourage states to add a question on hunter opinion surveys about NBCI awareness
- Suggest that committee chairs attend the Spring Steering committee meeting if possible

State Reports

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
ALABAMA

Management Initiatives/Private Lands Outreach

Various actions to address bobwhite restoration within the state continue to expand and gain momentum. As an outgrowth of a collaborative attempt to create a Bobwhite Initiative, the Alabama Wildlife Federation along with conservation partners including Quail Unlimited, Alabama Quail Hunters, Alabama Department of Conservation and Natural Resources, USDA Forest Service and Natural Resources Conservation Service launched the Alabama Quail Trail to promote and further the goals of quail hunting, quail conservation and quail research in the state. One of the objectives is to highlight an increase of bobwhite numbers and associated quail hunting as an opportunity for rural economic development. It is estimated that the current loss of quail hunting opportunity and quail hunters compared to 1970 translates to an annual revenue loss of \$135 million. A Forest Landowner Enhancement Program grant was acquired to design a bobwhite/early succession wildlife training curriculum for state/federal agency and private natural resource professionals, and to develop an early succession wildlife reference handbook/guide suitable for use by landowners.

The Choccolocco Upland Initiative is a cooperative project of USDA Forest Service, Quail Unlimited and Alabama Department of Conservation and Natural Resources to restore and manage montane longleaf pine forests, the red-cockaded woodpecker, northern bobwhites and other associated wildlife on the Shoal Creek District of Talladega National Forest and Choccolocco Wildlife Management Area. The initiative tailors prescribed fire regimes and other management practices to favor bobwhite productivity within the context of longleaf pine and red-cockaded woodpecker management. The project area continues to grow as additional funding is acquired.

USDA Natural Resources Conservation Service and Alabama Department of Conservation and Natural Resources are cooperating on the delivery of farm conservation programs through financial and technical assistance. The two agencies entered into an agreement that funds three new ADCNR wildlife biologist positions located in NRCS offices to provide wildlife technical assistance needed for the delivery of USDA conservation programs to landowners.

Research Activities

**ECOLOGY OF NORTHERN BOBWHITES IN THE LONGLEAF PINE ECOSYSTEM
MANAGED WITH GROWING SEASON BURNS**

Southern pinelands have traditionally been managed with prescribed fire in late winter (i.e. February or March). Burning at this time has received favor due to consistent burn conditions, little effect on nesting birds, and minimal time of reduced cover for wildlife. Recent research suggests that fires during spring and summer months (i.e. growing season burns) may also provide positive effects on native flora and fauna of the longleaf pine (*Pinus palustris*)

ecosystem, especially endangered species. Little research has addressed the potential ramifications of growing season burns on other game and nongame wildlife species. Considering the economic importance of northern bobwhites (*Colinus virginianus*) in the southeast, research should address whether sustainable populations can be maintained in landscapes managed with growing season burns.

Conecuh National Forest (CNF; 31E 7' latitude, 86E 37' longitude) is located in the southeastern Coastal Plain of Alabama and consists of approximately 42,000 acres of native longleaf pine. The U. S. Forest Service manages a majority of these lands for the endangered Red-cockaded Woodpecker, gopher tortoise, and to maintain healthy longleaf pine communities. Stands typically are burned triennially, and growing season burns occur between April and June. Little is known of the fire mediated habitat characteristics that influence northern bobwhite vital rates (mortality, fecundity, immigration, emigration) in longleaf pine ecosystem. Researchers from the Alabama Cooperative Fish and Wildlife Research Unit at Auburn University (T. H. Folk and J. B. Grand) have initiated a 3-year radio telemetry study to investigate bobwhite population dynamics in longleaf communities managed with growing season fires. Approximately 100 birds will be radio marked annually and vital rates will be estimated among and within stands of differing burn history (i.e. stands burned last year, 2 years prior, and 3 years prior). Research will also evaluate differences in structure and composition of understory vegetation in longleaf pine stands. Information gained will determine if stable northern bobwhite populations can be maintained in longleaf pine stands managed with growing season burns. Knowledge will also be gained relating to landscape level management for northern bobwhites. This research will better help public land managers in the southeast meet competing management objectives. This project is now in its third and final year.

THE ALABAMA QUAIL MANAGEMENT PROJECT

A new quail management project, located in east-central Alabama, modeled after and in association with the Albany Quail Management Project (Auburn University School of Forestry and Wildlife Sciences, H. L. Stribling and D. C. Sisson) will investigate the application of current bobwhite management techniques to Alabama habitats.

An initial 3 year radio telemetry investigation of the ecology and management of wild bobwhites will be conducted on quail plantations located in Macon and Bullock Counties, Alabama. On all study sites 50 birds will be radio-tagged each spring and fall, and monitored year-round for the duration of the study. Differential habitat use, home range size, survival, and reproductive effort will be determined. Fall covey counts and hunting records will be used to track population levels and compare them to habitat conditions.

The research information acquired will be used to guide management practices that will increase bobwhite populations in Alabama landscapes, and stimulate renewed optimism for wild quail management in the state. This project is currently entering its third year.

Stan Stewart, Wildlife Biologist, Alabama Wildlife & Freshwater Fisheries Division

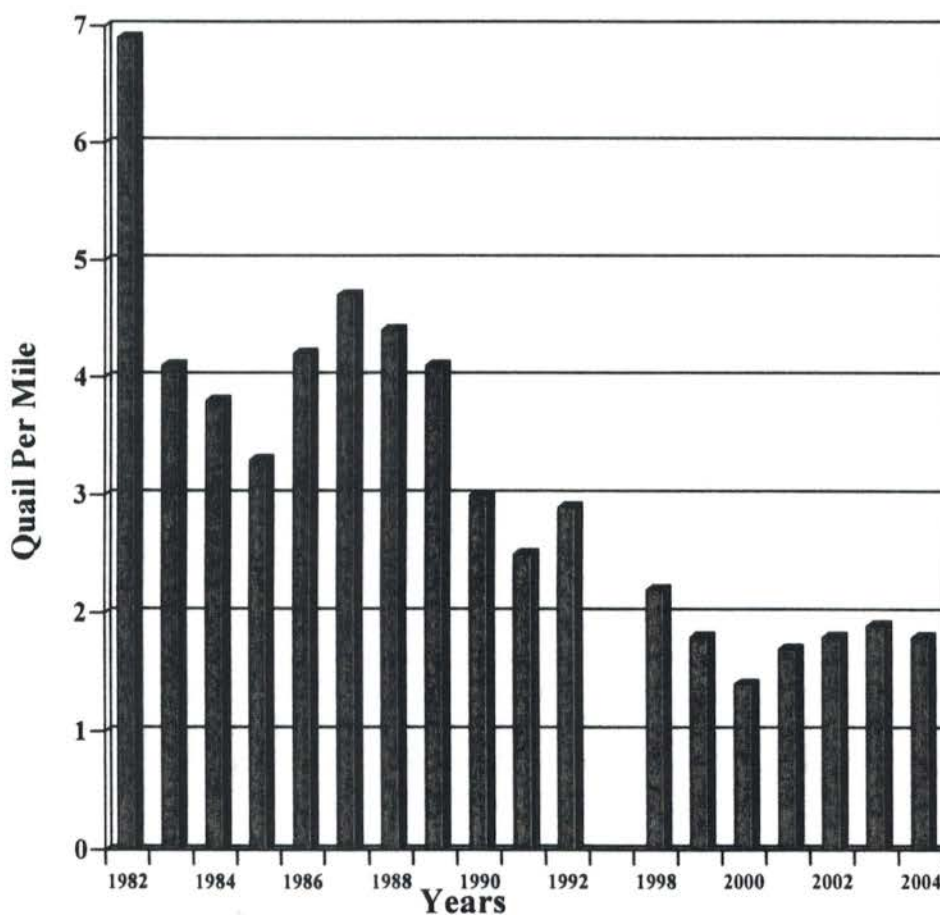
2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
ARKANSAS

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.

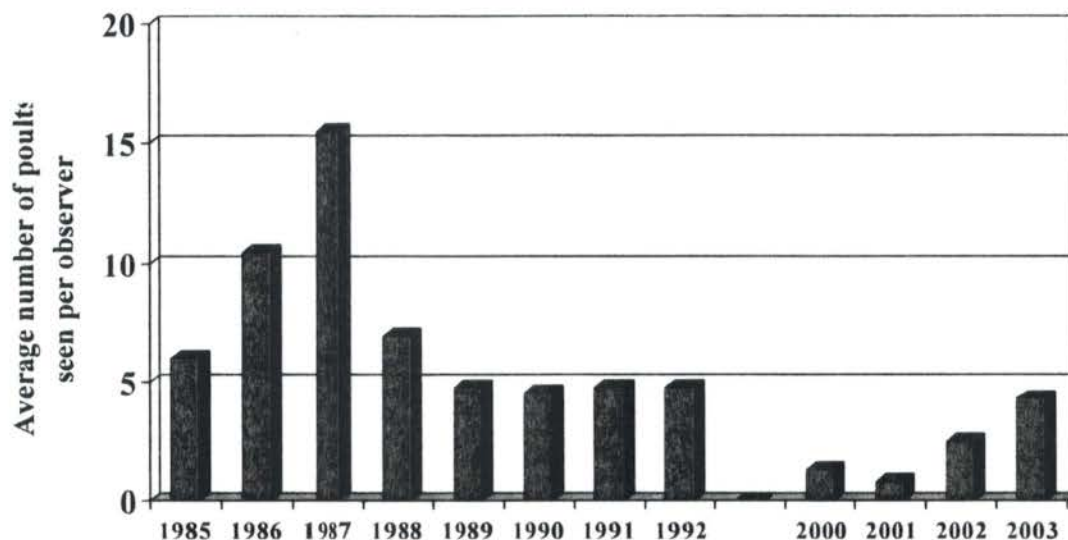
Currently, the Arkansas Game & Fish Commission continues to monitor population trends annually through quail call counts conducted during late May and quail brood surveys conducted from June 15-August 31. Since the inception of these survey methods in the early 1980's, data from both of these surveys also indicate a precipitous decline in quail numbers in Arkansas (Figure 1 & 2).

Figure 1. Quail Call Count Trend 1982-1992, 1998-2004



For the past 5 years, quail call counts have reported <2 quail heard per mile. The 2003 statewide average of 1.8 quail heard per mile represents a very slight decrease from the 2003 statewide average of 1.9 quail per mile. However, the 2004 quail call counts remain above the survey's low point of 1.4 quail per mile in 2000. Regionally, during the 2004 survey, the number of quail heard per mile ranged from 0.7 in the Gulf Coastal Plain to 2.8 in the Ouachitas.

Figure 2. Quail Brood Survey Trend 1985-1992, 2000-2003



The 2003 quail brood surveys indicated a statewide average of 4.3 poults seen per observer. This represents a 72% increase from the 2002 avg. of 2.5 poults per observer. Regionally, the number of poults seen per observer ranged from 1.7 in the Delta to 12.0 in the Ouachitas.

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 and 2004 WHIP sign-ups. Along with the status of "Special Project Area", each focal area received an allocation of \$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. To date, there have been over 3,000 acres enrolled in WHIP within the Fulton Co. area and over 1,100 acres enrolled within the Searcy Co. area.

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

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 will establish 2 burn crews that will conduct prescribed burns on private lands in Arkansas within 5 pre-determined areas (including the two quail focal areas within the Central Hardwoods BCR).

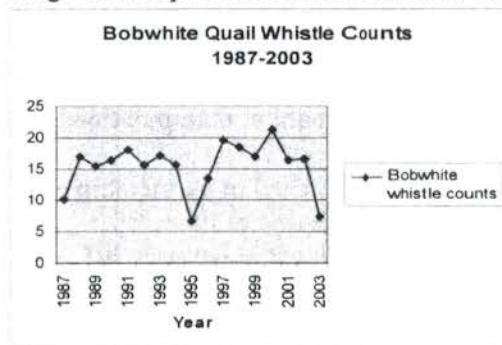
Research

No on-going research at this time.

2004 SOUTHEAST QUAIL STUDY GROUP STATE REPORT COLORADO

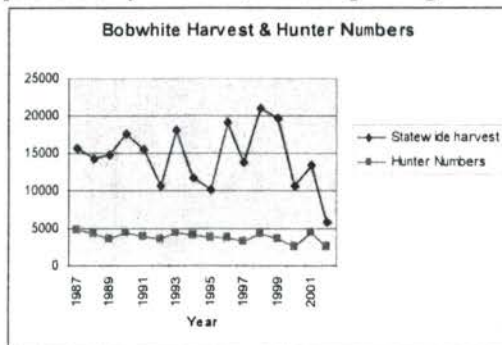
POPULATION STATUS

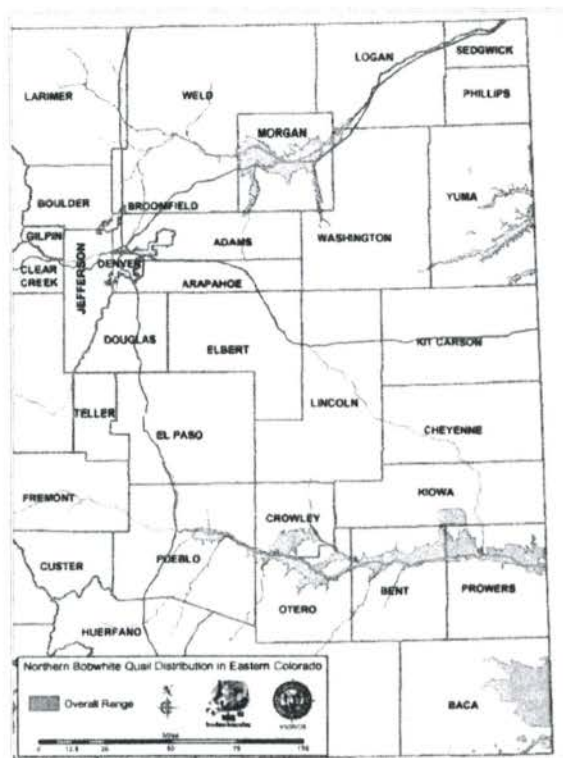
Over the last 15 years, Colorado's northern bobwhite quail (*Colinus virginianus*) populations have been relatively stable, but like most other upland birds in Colorado, show fluctuations related to severe weather conditions including heavy snowfall (historically) and more recently, severe drought. Populations are monitored by the summer whistle count method primarily, with harvest estimates secondarily. With eastern Colorado being considered the northern and western fringe of acceptable bobwhite habitat, our populations are very susceptible to severe fluctuations.



As indicated by the whistle count data, a severe decline in breeding population is somewhat common, occurring in 3 of the last 16 years. Often these declines relate to winter conditions, although the 2003 decline is probably related to the severe drought that eastern Colorado experienced during the summer production period in 2002. Statewide harvest data shows similar dynamic changes. In 1997, the Division created a telephone based harvest survey, instead of a mail in survey, which greatly reduced confidence intervals for harvest of small

game species, bobwhite quail included. Today's harvest estimates are much tighter than those of 10-20 years ago, providing a clearer indication of fall population levels. Hunter numbers have shown a decline as well, although declines may be directly proportional to fall hunting forecasts, particularly in 2002, when upland game forecasts were very negative with concerns of the severe summer droughts impacts to quail.





Core bobwhite range in Colorado include the South Platte River from the Nebraska state line to nearly Greeley, the Republican River near Bonny State Park, the Arkansas River from the Kansas state line to nearly Pueblo, and the extreme southeast corner of Baca County in southeast Colorado. Presently, in the absence of a severe, or even normal Colorado winter since 1993, Colorado's quail range has increased into areas providing moderate habitat quality, including sandsage rangeland in Yuma and Phillips counties in northeast Colorado. These range expansions are not uncommon, but often are short-lived, with a normal to severe winter eliminating nearly all populations that have expanded from core cottonwood/willow riparian areas in the northeast portion of Colorado. The exception to this is found in extreme SE Colorado, where bobwhites commonly inhabit sandsage rangeland, Conservation Reserve Program lands, and rangeland/cropland fringe areas. Little

whistle count survey data exists for these populations in extreme SE Colorado, although harvest data is available on a county basis for these populations.

MANAGEMENT INITIATIVES

With a few exceptions, Colorado's quail habitat is extremely limited, making far-reaching management initiatives nearly impossible. Over most of eastern Colorado, bobwhite quail simply does not occur, regardless of potential habitat development programs. Higher emphasis is duly placed on widespread habitat initiatives in eastern Colorado for ring-necked pheasants, with bobwhites being an indirect beneficiary, particularly in the southeast corner of Colorado and Phillips and Yuma counties in the northeast, through the CDOW's Pheasant Habitat Improvement Program. Undoubtedly, bobwhites in these pheasant focus areas benefit significantly from habitat projects including shrub establishment, food plots, native grass plantings, disturbance tillage plots which produce native annual forbs, and in some cases, Conservation Reserve Program lands.

Within the core bobwhite range in northeast Colorado, on the South Platte River, CDOW managers are experimenting with some habitat manipulations within the cottonwood/willow riparian areas. Application of managed grazing within riparian areas has been the primary focus, to remove rank cover, reduce populations of noxious weeds, and to create small openings within the riparian canopy. Experiments are in a very early stage.

RESEARCH

Currently, with stated declines and recovery efforts in short-grass prairie birds like mountain plover, two species of sage grouse (greater and gunnison's), Colombian sharp-tailed grouse, and plains sharp-tailed grouse, among other issues, no avian research FTE's are dedicated to bobwhite quail at this time.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
DELAWARE

Limited long term surveys suggest that quail numbers have reached an all time low in Delaware; however, as the State's only resident game bird, it continues to be a high priority of the Division of Fish and Wildlife. Throughout the decline of this species, speculation about the cause has ranged from predation, over hunting, and weather extremes to habitat loss. It is now widely speculated that the latter is the determining variable in Delaware and throughout the southeast. While the amount of habitat in this state is declining, substantial high quality cover remains over most of southern Delaware and the Delmarva Peninsular.

In addition to quantity, biologists suspect that distribution (fragmentation) is an equally if not more important consideration. Commercial and residential development is rapidly consuming farmland in an opportunistic and poorly planned pattern. The result is fragmentation of former quail habitats into many small sections. Each smaller parcel may provide high quality habitat but the small size and increased isolation from nearby parcels has detrimental effects during both the breeding and winter seasons. During the breeding season, production of a second and third covey may not be possible. Additionally, genetic variability and, thus, reproductive potential is reduced and the potential for population recovery is eliminated. During the winter, isolated islands of habitat may produce a greater chance of mortality as predators and hunters continually return to known coveys. Additionally, as covey size is reduced below an optimal group size, coveys in fragmented landscapes are unable to exchange membership with nearby coveys. This inability to rescue covey membership increases the risks of local extinction.

Delaware remains a "fringe" state for Northern Bobwhite Quail and is not currently part of NBCI; however, the Division of Fish and Wildlife is targeting recovery of that species through habitat restoration and management. In 2003, the Division restructured staff to create a private lands habitat restoration program using state funds, the USFWS Landowner Incentive Program (LIP), and provisions of the 2002 Farm Bill. Three full time biologists are currently working in this program and another will be added in 2004 funded by LIP. In addition, the Division is extending a Contribution Agreement with NRCS to provide technical assistance in the implementation of habitat programs in the 2002 Farm Bill. Delaware was one of the first states in the Mid-Atlantic region to enter into this type of agreement.

Because the federal funding sources that support the Delaware program require emphasis on rare and endangered species or species of special concern, a species specific program is not designated even though the restoration that is promoted is often textbook management for bobwhite quail. The Division is responding to opportunities on both public and private land and is placing special emphasis on sites that expand existing habitat and/or connect adjacent areas to reduce fragmentation. An ultimate goal is to connect grassland and secondary successional habitats across the state to provide contiguous habitat sufficient to sustain harvestable populations of bobwhites.

Delaware Fish & Wildlife's Wildlife Habitat Enhancement Program (WHEP) is a state program that pays landowners \$70/acre to take ground out of agricultural production for a five

year period. Landowners receive the full payment the first year, and ground is allowed to go fallow or be planted to perennial species based on a management plan. Emphasis is placed on developing quality nesting cover. In 2004, forty-three acres were enrolled in this program, 10 acres of which were renewals from previous WHEP contracts. High corn and soybean prices discouraged several farmers from participating. Under the Wildlife Conservation and Restoration Program (WCRP), a program funded through the U. S. Fish & Wildlife Service, 18.5 acres of native grasses and 2 acres of buffers around wetlands were established. Landowner Incentive Program (LIP) monies from the USFWS are expected to be available to use in September 2004 for potential quail habitat work.

Delaware's private lands biologists actively promote the USDA's 2002 Farm Bill programs where appropriate. Following is a summary for all Delaware signups of Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP) practices that have potential to improve quail habitat:

Introduced Grasses and Legumes CP1—53.1 acres
 Native Grasses CP2—23.3 acres
 Tree Planting (Softwoods) CP3—5.1 acres
 Hardwood Tree Planting CP3A—2,815.7 acres
 Permanent Wildlife Habitat CP4D—2,087.2 acres
 Shallow Water Areas for Wildlife CP9—381.3 acres
 Established Grasses CP10—30.2 acres
 Established Trees CP11—56.4
 Wildlife Food Plots CP12—29.0
 Filter Strips CP21—1,493.1 acres
 Riparian Buffer CP22—137.1 acres
 Wetland Restoration CP23—288.0 acres

Currently very little Wildlife Habitat Incentive Program (WHIP) money is used to restore and manage upland grassland habitat, even though this is listed as a priority for the program. The other state and federal programs leave this funding source underutilized.

Delaware does not have a recovery plan within the NBCI; however, the Division is working with the eastern shores of Virginia and Maryland and the State of New Jersey to identify habitat focus areas and establish habitat and population goals for the region. This year we plan to present a stepped down plan for recovery of bobwhite quail in this region. Following this plan, the Division will focus upon restoration of grassland and secondary successional habitat to decrease fragmentation and increase viable habitat for quail. In addition, we look forward to initiating research on quail populations in the region through the University of Delaware. A new staff person has been hired by the University that has a keen interest in quail and has conducted extensive quail research in Kansas. Initially, he will be conducting radio telemetry work in New Jersey to gather baseline and demographic data but plans to address the fragmentation and genetics issue in the near future in Delaware. Graduate students are being recruited to conduct this work. Other personnel changes include the appointment of Bill Jones as the Delaware NBCI/Quail Coordinator. Bill coordinates the State's Wildlife Habitat Enhancement Program and provides technical assistance to NRCS under a contribution agreement to implement Farm

Bill Programs. He will represent Delaware in the development of a stepped down bobwhite recovery plan for Delmarva/New Jersey.

Bill Whitman (*Past Coordinator*)
Delaware NBCI / Quail Coordinator

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
FLORIDA

Management plan

A "Conceptual Plan for Restoration of Bobwhites in Florida" (CPRBF) was completed on July 1, 2004. The CPRBF will be the basis for a comprehensive management plan for the state. The development of the plan will be guided by a series of committees; which will address goals and strategies necessary to achieve statewide goals in timberlands, row-crop agriculture, and range and pasture lands.

Current programs

There continues to be Forest Stewardship Program (FSP) implementation, with approximately 200 plans written in 2003, 04. The FSP encompassed approximately 40,000 acres in the past year and, since burning and thinning pine timberlands is a significant part of the recommendations on most properties, these plans have some bobwhite management significance. Approximately 40 Wildlife Habitat Improvement Program (WHIP) projects have been implemented (totaling approximately 10,000 acres). At least 20% of these plans have had some emphasis on providing bobwhite habitat. Ten landowners, with a total of approximately 5,000 acres, have participated in the Landowner Incentive Program (LIP). The emphasis of LIP is imperiled species, but the majority of the plans have emphasized early successional habitat and also will enhance bobwhite habitat.

Research

The current year has been the second year of a research project on the Webb Wildlife Management Area (WMA). Bobwhite harvest has declined on Webb WMA in spite of continued management efforts, but has stabilized at a relatively low level during the last three years. The Webb WMA project, which is a cooperative effort between the Florida Fish and Wildlife Conservation Commission (FWC), the USGS Florida Fish and Wildlife Cooperative Research Unit (Coop Unit), is designed to determine the cause of the quail population decline, and provide information necessary to improve management efforts on the area. The Webb WMA project director is Dr. Ralph Dimmick. The major goals are to determine if harvest and survival are affected by hunting pressure and harvest, to identify non-hunting mortality factors, and to identify seasonal habitat utilization

A cooperative bobwhite research project between the FWC, Dr. Bill Palmer of Tall Timbers Research Station (TTRS), and Dr. John Carroll, University of Georgia, has been initiated. The overall goal of this project is to develop information on how to integrate quail management into a modern ranching system, with an emphasis on economics of the necessary land management changes. We have established a study area, and James Martin, a M.S. student, is on the ground and has begun to collect baseline data on habitat, bobwhite density, and habitat use and population demographics of radio-tagged bobwhites. Habitat implementation, including prescribed burning, chopping and pasture conversion will influence 17% of the ranch.

Native range still occupies over 3,000,000 acres in Florida, and ranch lands are typically in large ownerships. Rangeland has a high potential for bobwhite recovery because suitable habitat can be created without major land use changes, and interest in bobwhite recovery is high among landowners. According to the National Bobwhite Conservation Initiative, 73% of the population goals for this region could be achieved by managing 7% of the rangelands as bobwhite habitat. However, while potential for bobwhite restoration on rangelands is high, significant habitat problems must be addressed. The long-term use of winter fire and subsequent overgrazing has resulted in the proliferation of palmetto (*Sabal spp.*), at the expense of grasses and forbs. Furthermore, there is a general lack of understanding among land managers as to what constitutes good bobwhite habitat. It was with these important facts in mind, that the present ranchland project was initiated. We are proposing expansion of the current project to include a focal area, which will involve multiple ranches in four south central counties. Private and public funds are being sought, and additional partnerships (NRCS and UFL) are being formed to initiate the development of the ranch land project. It is proposed that a significant part of the expanded project will evaluate the effectiveness of farm bill programs in restoring bobwhite habitat.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
GEORGIA

MANAGEMENT INITIATIVES

Status

The most recent USGS Breeding Bird Survey Data show bobwhite populations in Georgia declining at the rate of - 4.17 percent per year from 1966 – 2002. 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 harvested about 3.3 million quail while in the 2002 – 2003 season an estimated 29,858 hunters harvested 541,922 quail, of which 371,217 (68.5%) were pen reared and 170,705 (31.5%) were wild (1966 and 2002 – 2003 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 abundance on properties being managed for quail, particularly in Southwest Georgia.

**Georgia Wildlife Resources Division
Bobwhite Quail Initiative FY04 Update**

- ƒ State budget reductions resulted in the removal of one biologist position and 2 counties from BQI. Additionally, budget cuts resulted in the elimination of intensive monitoring activities by the University of Georgia.
- ƒ Incidental monitoring by BQI staff in conjunction with habitat compliance checks continues to show higher quail occupancy rates on BQI treatment farms than controls.
- ƒ A total of 142 cooperators successfully enrolled land into BQI for financial incentives during 2001 – 2003. They enrolled 289 crop fields and 94 pine stands, successfully established 407 miles of field borders, hedgerows and filterstrips, and positively impacted a minimum of 20,700 acres.
- ƒ Seventy percent of the cooperators achieved full compliance, 23% partial compliance and only 7% non-compliance.
- ƒ Public interest in BQI increased in 2004 with 90 people submitting proposals for financial incentives that scored above the minimum quality rating required for entry into the program. Due to budget reductions only 26 cooperators and 12 percent of the qualified proposals received funding.
- ƒ A total of \$540,245 of habitat incentives would have been required to accommodate all proposals for 2004 – 2006 contracts.
- ƒ A total of 43 (96%) of the cooperators who were seeking re-enrollment into BQI (i.e. they had participated for the last 3 years and wanted to renew their contracts) were denied re-enrollment due to lack of funds.
- ƒ For FY04, assuming full compliance, \$150,147 will be obligated in 3-year contracts and this will result in the establishment of 302 miles of field borders, hedgerows and filter strips; pre-scribed burning of 1,587 acres of pine stands; heavy thinning of 611 acres of

pine stands; and a total positive impact for bobwhites and other early succession wildlife on more than 16,300 acres in the 15 county BQI area.

- (BQI biologists outreach accomplishments included: 1) conducting 5 field days with over 500 people in attendance; 2) writing 111 detailed management plans covering a minimum of 54,935 acres; 3) making technical guidance contacts with a minimum of 92 landowners on 223,000 acres; 4) conducting 8 public service interviews, publishing 6 popular articles and 2 technical posters. Additionally, detailed assistance was provided to Turner South Broadcasting in the development of a 20-minute segment for the Natural South TV Program on the bobwhite decline and ongoing management/research to restore the species. This program covers 8 southern states and has about 12 million viewers. Finally, 2 BQI Newsletters were produced and distributed to over 1,500 subscribers.
- (Three youth quota quail hunts were conducted on BQI farms. A total of 7 youth/adult pairs participated. Only 1 of the youth had ever hunted quail before. Eighteen coveys of quail were located and 11 quail were harvested. Plans are to conduct 6 hunts in the coming year.
- (BQI automobile tag sales through April generated about \$ 900,000. The current BQI annual budget is about \$785,000.
- (BQI continues to increase in popularity and has become increasingly competitive. Additional funding and staff are needed to fully meet current program demands.
- (It has become increasingly apparent that adequate habitat must occur at the landscape scale to support viable and huntable quail populations. Therefore, maintaining BQI focus areas and maximizing landowner participation and development within these areas is critical for program success. *(submitted by Reggie Thackston, BQI Coordinator)*

Georgia Wildlife Resources Division Private Lands Program (PLP)

The Georgia Department of Natural Resources, Wildlife Resources Division (WRD) administers the PLP that assists private landowners by cooperating with various agencies and forest industry companies to develop, enhance, and revise programs to better meet Georgians' interests in wildlife resources. The PLP works with Farm Bill programs such as WHIP, CRP, EQIP, FLEP, WRP, and CSP, as well as the Forest Stewardship Program (FSP) to provide wildlife-related technical guidance to private landowners statewide. The PLP program also administers the Forestry for Wildlife Partnership Program (FWP) to improve wildlife habitats on industry lands by recognizing forest industry companies as partners after they have demonstrated and documented their commitment through a formal application and review process.

Since 1990, WRD has been successfully working in cooperation with the Georgia Forestry Commission (GFC) to provide wildlife management related advice and information to private landowners throughout the state. This has been accomplished via written FSP management plans and on-site, in-person visitations. From November 2002 through June 2003, two FSP wildlife biologists whose primary responsibilities are to assist GFC FSP delivery, reviewed 229 plans, co-wrote 39 plans, were primary authors on 8 plans, and provided on-site technical guidance for landowners through 45 separate visitations.

The PLP helped initiate a Wildlife Subcommittee that serves Georgia's Forest Stewardship Program Steering Committee, led by the GFC, in order to identify ways to more effectively deliver wildlife management related advice to Georgia's private landowners. Specific goals are to help WRD, GFC, NRCS, Cooperative Extension Service, private consultants, and

others (1) provide higher quality management plans, (2) keep up with the Public's continued increasing demand for wildlife-related advice and information, and (3) become more efficient and streamlined to deliver useful plans as professionally as possible. As a result of this effort, GFC foresters and WRD wildlife biologists will meet to develop joint land management recommendations and guidelines for all major stand types throughout Georgia. These management recommendations and information will be shared with private forest consultants, and others who write FSP plans, at future wildlife training workshops and be available on a new FSP website for Georgia. WRD and GFC are working together to hire an additional wildlife biologist to specifically help with future FSP duties.

PLP also continues to cooperate with the Natural Resources Conservation Service (NRCS) in several ways. For example, we worked together to help develop a new ranking process for selecting WHIP applications and have provided comments regarding the new CSP program. Also, an additional wildlife biologist has been added through a Cooperative Agreement with NRCS. This biologist will be targeting landowners within a particular watershed to promote riparian buffer work. *(submitted by Eric Darracq, PLP Wildlife Biologist)*

REASEARCH UPDATES

University of Georgia D.B. Warnell School of Forest Resources

The University of Georgia (UGA) has a number of quail projects underway and several nearing completion. Ryan Thornton completed his M.S. looking at aspects of predation management and bobwhite quail as part of a joint project with Tall Timbers Research Station, Auburn University, and USDA Wildlife Services. Seth Stapleton is writing his M.S. thesis on rat snake ecology as both prey and predators as part of that same project. Kim Sash is beginning her fieldwork to follow-up Seth's project. Gretchen Turner has just completed her undergraduate senior thesis using videotapes obtained on nesting bobwhites in this study to investigate male and female incubation patterns. Jason Burkhart completed his M.S. on the effects of bermudagrass invasion on Georgia BQI field margin management. Patrick Cook should be completing his thesis on the ecology of bobwhites relative to BQI management during late summer 2004. New projects include research on range management and bobwhite ecology in central Florida. James Martin has started his M.S. thesis work on this project. Elizabeth Doxon is undertaking a bobwhite and ring-necked pheasant brood ecology study relative to CRP prescriptions in northwest Kansas. Four students are undertaking genetics projects on bobwhites in Georgia, including Brant Faircloth, working on bobwhite social systems for his Ph.D., Terry Valentine is studying genetic diversity among high and low populations for her M.S., Theron Terhune is researching population demographics and genetics of wild trapped and transplanted quail in an isolated population for his Ph.D., and Soo Hyung Eo is starting a project on the phylogeography of quail for his Ph.D. *(submitted by Dr. John Carroll, UGA Associate Professor Wildlife Ecology)*

Auburn University Albany Quail Project

This summer marks the 13th year of fieldwork by Auburn University's School of Forestry and Wildlife Sciences on Quail Plantations in southwest Georgia. This long-term radio telemetry investigation has focused on the demographics of quail populations in this area as well as measured their response to various habitat management techniques, supplemental feeding, and predation management. During this time period, nearly 7,000 wild quail have been radio-tagged by project personnel. Current emphasis is on a large-scale nest predator removal project in conjunction with the USDA, University of Georgia, and Tall Timbers Research Station. This project has documented significant improvements in reproductive output on areas where intensive trapping was conducted throughout the nesting season for 3 years and has recently been "crossed over" for an additional 3 years.

Graduate student Theron Terhune has finished his Thesis, which documented a significant correlation between male whistling activity and female nest incubation on 5 sites. These whistle counts were demonstrated as being reliable indicators of the progression of the nesting season and to have predictive ability for fall populations if used correctly. He also analyzed our long-term nest data from well over 1,000 nests and demonstrated that the only habitat variable to effect the outcome of incubated nests much to be the percent of an area left unburned in the spring. The variables that effected nest success the most were site and year, which led us to conclude that in areas where nesting habitat is abundant, an interaction between predator density and weather is what effects nest outcome.

Other work includes project expansion into Alabama in association with the Alabama Wildlife Federation and their "Quail Trail". This work is modeled after the Albany Project in that it is a long-term telemetry projected investigating factors limiting quail populations on managed lands in Alabama. A project is also underway in east Georgia on a large Plantation where quail land is being irrigated to offset the potential effects of drought on reproduction and vegetation growth.

In addition to these telemetry projects we have been very active on several large management projects as well as with extension of quail management information throughout the region. *(submitted by Clay Sisson, Albany Quail Project Coordinator)*

Iowa Population and Status Report 2004

Todd R. Bogenschutz, Upland Wildlife Biologist

Southeast Quail Study Group
Morrilton, AR
August 2-5, 2004

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, 1967 to hunt small game in Iowa. Resident hunting license cost \$17.50 and habitat stamp \$8.50. Non-resident (+18) small game hunting license are \$80.50 plus \$8.50 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 will be required of small game hunters in 2004 hunting season. The DNR does not have a hunter access program.

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 28 th	10/20	Sunrise-sunset

Hunters and harvest:

A random survey of Iowa small game hunters was conducted following the 2003-04 small game season to determine the size and distribution of Iowa's small game harvest. Survey questionnaires were mailed to 8,161 license holders. Survey participants returned 3,560 usable questionnaires for a response rate of 44%. Based on these returns 152,874 small game hunters took to Iowa's fields last fall, a 12% increase in hunter numbers compared to the year before. Approximately 24,895 quail hunters (16% of small game hunters) harvested 114,067 quail during the 2003-04 quail season. This is a 79% increase from the 2002 harvest estimate of 63,872. Resident hunter numbers increased 23%, while nonresident hunter numbers increased 6% compared to 2002. Quail hunters averaged 7 days afield and harvested 5 birds for the season. Fifty-nine percent of the quail harvest occurred in the first 31 days of the 2003 season. Over 90% percent of quail hunters hunted 15 days or less and over 50% hunted 4 days or less. Most of the quail harvest (61%) came from the southwest and south central regions of the state.

Populations and survey methodology:

The Iowa DNR uses an August roadside survey (ARS) to assess its upland game populations. The ARS generates data from 210 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. Bobwhite quail numbers improved significantly in 2003 with the statewide index of 0.87 birds per route, a 135% increase over the 2002 count. This year's statewide index is 14% above the 10-year average, but remains 44% below the long-term mean. In Iowa's primary quail range, SW, SC, and SE regions, populations increased significantly in both the SC and SW regions (> 300%) and were unchanged in the SE region. The 2003 August Roadside Survey results are available on the DNR's website at WWW.IOWADNR.COM.

Habitat trends:

Long-term habitat trends in Iowa have been related to conversion of grasslands and wetlands to row crops. Percent row crops by county range from 40% to >90%. Intensification of agricultural practices since the 1960's has led to a general decline in upland game populations across Iowa. Cropping practices have changed, with less emphasis on hay and small grains and more corn and soybeans (Figure 1). Bigger and better machinery has lead to fewer and larger farms resulting in

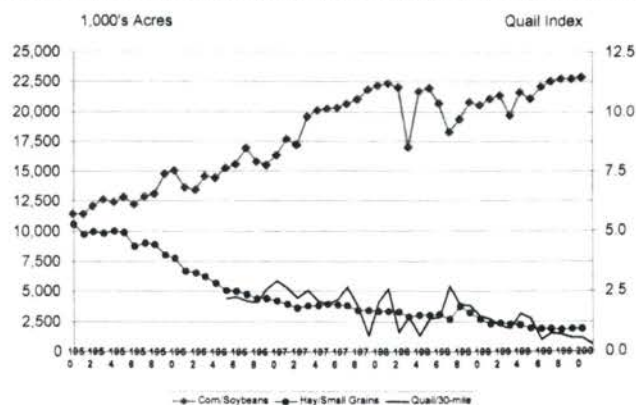


Figure 1 Iowa quail population, cereal and row crop trends.

the loss of brushy fencelines and hedgerows. The Conservation Reserve Program (CRP) has provided much needed pheasant/quail habitat, in Iowa with over 2.2 million acres enrolled through 1995. Unfortunately with the changes in the 1996 Farmbill Iowa's CRP acreage fell to 1.4 million acres. Through a joint effort the DNR, Pheasants Forever, NRCS, and Iowa's SWCD's have actively promoted the continuous CRP (400,000+ acres) to boost Iowa's CRP acreage to 1.8 million acres. However, much of this acreage is in poor covers or desperate need of disturbance to benefit quail.

Current research:

Iowa has 2 ongoing quail research projects. The first 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. Sam Pociask a student at St Mary's University, Winona MN, is in the process of summarizing changes in macro landscape variables using ArcInfo and Fragstats software. The second project is a new study with ISU (Dr. Dave Otis), bobwhite quail habitat relationships in Southern Iowa. The goal of this project is to develop a habitat model for use on public and private land.

Special projects:

Native Seed Harvest Program - The goal of this project is to provide local ecotype grass and forb seed to increase grassland plant diversity on public wildlife management areas. In the fall of 1996 the Iowa DNR entered into a cooperative agreement with Iowa Parks and Preserves board to harvest local ecotype seed from native prairie remnants on state preserves as well as DNR wildlife management areas. The more common native grasses and forb seed is provided to local wildlife biologists for use on their areas. Local inmates from area prisons are used to hand collect less common native species. This seed is grown in production plots by contracting with private growers, local prisons, or on DNR production plots.

DNR/Pheasants Forever/SWCD Buffers Program - The purpose of this cooperative agreement is to facilitate the promotion and establishment of filterstrips, farmable wetlands, and other conservation practices on private lands through the continuous CRP. The Iowa DNR provides \$100,000 as a challenge grant to Iowa Pheasants Forever. Funds are used to hire temporary technicians through SWCD offices to promote and work individually with private landowners in establishing CCRP practices. Approximately 13 positions will be funded in FY05 covering 52 of Iowa's 99 counties.

Pheasant/Quail Restoration Program - The 2002 Iowa legislature passed HF2591 which raised resident hunting license fees \$4.50 beginning July 1, 2002. Over the next 5 years, HF2591 directs the DNR to spend 60% (~\$500,000/yr) of the funds per year from this license increase to restore declining pheasant and quail populations, particularly populations in southern Iowa. Of the \$500,000 available per year the DNR will give \$100,000 to Pheasants Forever to leverage its county chapters to promote CCRP and FWP programs statewide. Another \$100,000 will be used to establish shelterbelts statewide. The remaining \$300,000 will be spent in the southern third of Iowa to pay private landowners to develop pheasant/quail habitat on their property. Practices the DNR will pay for on private land include: foodplots on CRP, strip-disking and/or spraying on CRP, establishment of warm season grasses on CRP, interseeding on CRP, edge feathering, and burning. The DNR will pay the full cost of establishing habitats on private CRP lands and require a 5-year habitat agreement from participating landowners. Enabling language prohibited funds for staffing or evaluation.

Summary of FY2003 Pheasant/Quail Restoration Contracts

Data represents 66 contracts, 63 in Lucas/Wayne focus area, 2 in Clarke, and 1 in Decatur counties

Practice	Units	Cost	Cost/Unit
Site Preparation ^a			
Chemical Burndown on 2,042 acres		\$40,985	\$20.07
Habitat Improvements			
Food Plots (ac.)	424	\$53,212	\$125.41
Native Grasses (ac.)	1,150	\$66,970	\$58.23
Legumes (ac.)	422	\$16,111	\$38.20
Stripdisk (ac.)	46	\$1,838	\$39.95
Burning (ac.)	217	\$600	\$2.76
Edge Feathering (ft.) ^b	18,850	\$3,555	\$0.19
Habitat Improvement Totals	2,259	183,271	\$81.12

^a All habitat improvements, except burning, required chemical treatment to kill existing sod.

^b Not included in unit (acre) total.

2004 Pheasant/Quail Restoration Project Spring Call Counts

Pheasant Crowing Count

Focus Area	Control
7.5 rooster/stop	1.0 rooster/stop
(Mean individuals heard/stop.)	

Quail Whistle Counts

Focus Area	Control
3.4 quail/stop	0.3 quail/stop
(Mean individuals heard/stop.)	

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
KANSAS

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Population and Harvest Trends

During 2003, roadside survey (rural mail carrier survey) trends for northern bobwhites continued their long-term declines (Figure 1). The exception to this trend was in the western region where long-term trends have continued an upturn. Western Kansas bobwhite populations tend to be relatively eruptive. Numbers of whistling cocks from spring whistle counts increased 18-43% in all regions except the Flint Hills (Table 1). Production indices from brood surveys (July 20-August 30, 2003) increased 19-126% over 2002 indices in all regions but the southeast (1% decline; Table 2). Brood sizes increased from the Flint Hills eastward, and were lower west of the Flint Hills (Table 2).

Peak of quail hatch was during the weeks of June 21-30 and July 1-10 (Figure 2).

Although the 2002 (most recent available) estimated harvest (621,000) was slightly increased from the all-time recorded low harvest of 2001 (408,000) and preliminary indications suggest that the 2003 harvest increased, the long-term harvest trend continues downward (Figure 3).

Southeastern Kansas Quail Initiative

The Southeastern Kansas Quail Initiative (SEKQI) was born in 2000 in four southeastern Kansas Counties: Bourbon, Allen, Neosho, and Crawford. These four counties are in the heart of Kansas' core bobwhite range. The SEKQI is a collaborative program of Kansas Department of Wildlife and Parks Region 5, Kansas Farm Bureau, See-Kan RC&D, USDA Natural Resources Conservation Service, Kansas State University Research and Extension, Quail

Unlimited, and Pittsburg State University. The evaluative research program is a partnership between Kansas Department of Wildlife and Parks, the Kansas Cooperative Fish and Wildlife Research Unit, and the Department of Range, Wildlife and Fisheries Management, Texas Tech University. Initial funding for habitat practices was obtained from a National Fish and Wildlife Foundation Grant and funds from the Kansas Buffer Initiative administered by the State Conservation Commission. The SEKQI area has been included in a Conservation Priority Area for CRP, and the Conservation Commission employed a Buffer Coordinator for the area. Through 2003, the most money has been spent on native grass seeding which has occurred mostly as fescue pasture conversion with some seeding of cropland. Table 3 summarizes contracted practices and costs through 2003.

SEKQI Evaluation

In 2002 an evaluation of the efficacy of SEKQI practices was initiated on a demonstration area 25 mi² area in southwestern Bourbon County. The area consists of fescue pasture and hayfields intermixed with native warm season grass pastures and hayfields. Large tracts of cropland are located within the floodplains of streams and creeks. Smaller tracts of cropland are scattered throughout the upland. The area has narrow riparian forest interconnected with small woodlots and linear wooded fencerows. Many of the fencerows consist of hedgerows > 50 years in age. Conservation Reserve Program (CRP) lands are scattered throughout the uplands and in small patches in the floodplains of streams and creeks. CRP tract sizes in the study area range from 12 to 395 acres.

Quail were trapped from January through March 2003 on eight 0.25 mi² areas. All captured birds were sexed, aged, weighed, and banded. Three to six random individuals within each covey weighing ≥ 150 g were fitted within a necklace transmitter weighing < 5 g. In late

March all individuals caught were equipped with radio transmitters to examine dispersal patterns. All birds were released immediately at the capture location. Birds were located 4 to 7 times/week until mortality, loss of contact (radio failure or long distance movement).

Birds with radio transmitters were located using a combination of 3 element yagi antennas and 4 element null peak vehicle antennas. Homing and short distance triangulation ($\leq 200\text{m}$) were conducted with hand held antennas. UTM gridded aerial photos were used to record location of birds when homing and short distance triangulation was used. When birds were flushed a Garmin Legend Global Positioning System (GPS) was used to record the location. When the location of the radio-equipped bird was obtained the habitat type was recorded.

Vehicle telemetry consisted of 2 to 3 bearings being taken in order to triangulate the radio-equipped bird's location. The GPS was used to record the base stations for vehicle triangulation. We used the program LOAS (Ecological Software Solutions) to obtain locations of radio collared quail based on triangulation data.

Mortalities were determined by signal strength and fluctuation. When mortality was suspected we homed in on the transmitter in order to determine the exact cause of death. The exact cause was determined based on the remains and marks on the transmitter. The habitat type of the mortality was recorded. We also recorded the location of mortalities using a GPS.

During the nesting season, when the radio signal appeared to be stationary, we homed in on the signal in order to determine if the bird was incubating. The location of the nest was marked with flagging 15 m from suspected nest at 2 cardinal directions. We returned to the suspected nest site when it was determined that the radio-equipped quail was no longer on it. At the nest site we recorded the habitat of the nest, the number of eggs in the nest, and the location using the GPS. The nest location was monitored until the radio-equipped bird stayed away from

the location for 2 consecutive days then the nest was relocated to determine if the nest was successful or depredated and the number of successful/depredated eggs. We also attempted to determine the cause of nest loss based on shell remains.

Land cover was on-screen digitized in ArcView 3.2a for the study area. We used 1991 Digital Orthophoto Quarter Quads (DOQQ) as base maps for land cover analysis. Land cover was classified at two levels. The first level was generalized classes which included: cropland, native warm season grassland, nonnative grassland, woodland, water, odd area, and developed. The second level consisted of crop type, land use such as hayfield or rangeland, hedge row, open canopy, closed canopy, riparian forest, and habitat management practices. All areas were ground truthed in order to obtain an accurate map.

From January through March 2003 we captured a total of 106 of which 89 were equipped with radio transmitters. We also trapped quail from August 2003 through March of 2004 and captured 195 of which 122 were equipped with transmitters. In 2003 46 males and 42 females were equipped with radio transmitters. Of the 89 equipped with radio transmitters in January through March 2003 we equipped 18 adults and 70 juveniles. The average weight for males was 173.7g and for females 174.3g. The average weight for adults was 182.1g and 171.3g for juveniles.

There were a total of 44 mortalities from January through August of 2003. Of those 34% were mammalian, 27% avian, and 39% unknown. Quail mortalities occurred in a variety of habitats, 29% occurred in pastures, 18% in idle land, 18% in fencerows, 13% in woodland, 11% in CRP, and 11 % in other habitats.

Of the 89 equipped with radio transmitters 43% of radio equipped birds were lost due to radio failure or long distance movement out of the study area which could not be tracked. Of the 51 birds which were tracked and fate could be determined 14% survived through August.

In 2003 radio-equipped northern bobwhite incubated 10 nests. Half of the nests which were incubated were successful and produced 1 or more chicks. Of the 10 nests, 1 was a re-nest that was successful but hatched in mid-September. Two of the nests were known to have been incubated by males. A total of 51 chicks were produced by radio tagged quail. Nests were established in a variety of habitats in 2003, 70% of nests were established in fescue pasture, 20% established in fescue hayfield, and 10% in idle land.

Northern bobwhite habitat use changed between seasons. During late winter January through March radio-equipped quail had 40% of locations in woodland, 25% in CRP, and 17% in fencerow. During spring dispersal and early nesting (April through June) radio equipped quail had 40% locations in woodland, 18% in fencerows, 8% in pasture, and 6% in CRP. Quail during the late nesting and brood rearing (July through September) had 35% of locations in pasture, 23% in fencerows, 16% in idle land, and 7% in CRP.

Home ranges of radio equipped quail also varied between seasons. Covey home ranges from January through March ranged from 12 acres to 62 acres (Figures 4 and 5). Individual home ranges from April through August ranged from 100ha to 800ha (Figures 6 and 7).

All data presented here is generalized raw data to provide a sample of some of the data being collected during the study. The preliminary data shows the importance of managing woodland, fencerows, CRP, and other idle lands for northern bobwhite. It also shows that seasonality needs to be taken into account when managing habitat. Although nesting did occur in fescue it was probably due to the fact that fescue was the main nesting habitat available. In

the study area CRP often occurs in small patches surrounded by woodland or cropland which may reduce its use by nesting hens. Also radio-equipped quail often made movements away from winter cover during the nesting season which resulted in the birds traveling away from CRP and into fescue grasslands in the uplands.

The effect of landscape configuration plays an important role in understanding how areas should be managed for northern bobwhite. Survival for radio-equipped birds was relatively low and in fact may be due to the configuration of the landscape. In the next couple of years it is hoped that landscape configuration can be tied to survival of quail. This will help in determining how management may affect overall survival of quail in an area and point us in to the direction management is needed. Some of the habitat patches show seasonal source-sink dynamics with quail moving out of the area for several months before returning to the habitat patch later in the year. These movements all play a key role in how quail populations in an area will respond to management.

Other Private Lands Habitat Management

Like most states in the Midwest, Kansas has funded programs to deliver habitat improvement practices to private lands. In the past, data on private lands programs has been included in a variety of internal reports and has largely been difficult to compile and assimilate. Starting in 2004 an effort has been made to develop a database to track all private lands management. Most practices, whether performed specifically for quail, or for other species such as ring-necked pheasants, has some potential for improving quail populations. Four practices, legume interseeding of CRP, food plots, strip disking CRP, and strip disking CRP with legume seeding, have been performed (Table 4). Much of this work has been done with KDWP funding

from its Western Kansas Pheasant Initiative, along with partnership funds from Pheasants Forever and Quail Unlimited.

Farm Bill Summary

Kansas was the National leader by acreage of CRP enrolled during the 26th general signup with 294,000 acres accepted. Of these acres, 222,000 were in 8 Conservation Priority Areas (3 specifically for wildlife —Western Kansas Pheasant Initiative, Southeastern Kansas Quail Initiative, Lesser Prairie-chicken; 5 water quality but with wildlife benefits) and 155,000 were enrolled in CP25. This brings the total area in CRP after the 26th signup to 2.8 million acres of which 30% are in CP2 and 60% are native grass re-enrollments in CP10. Statistics on Continuous Signup CRP, WHIP, WRP, EQIP, and GRP are included in Table 5.

Other Activities

A collection of relevant literature on northern bobwhite ecology and management, being termed the Northern Bobwhite Thunderbook, is being compiled. The purpose of this organized collection of literature is to provide all Kansas Wildlife and Parks District Biologists and wildlife area managers with the latest information on bobwhite biology, habitat, plants, practices, and other topics. This material is being selected to provide both the latest and the best data and tools to assist with promoting the welfare of bobwhite populations throughout the state.

Figure 1. Rural Mail Carrier Survey long-term trends for northern bobwhite.

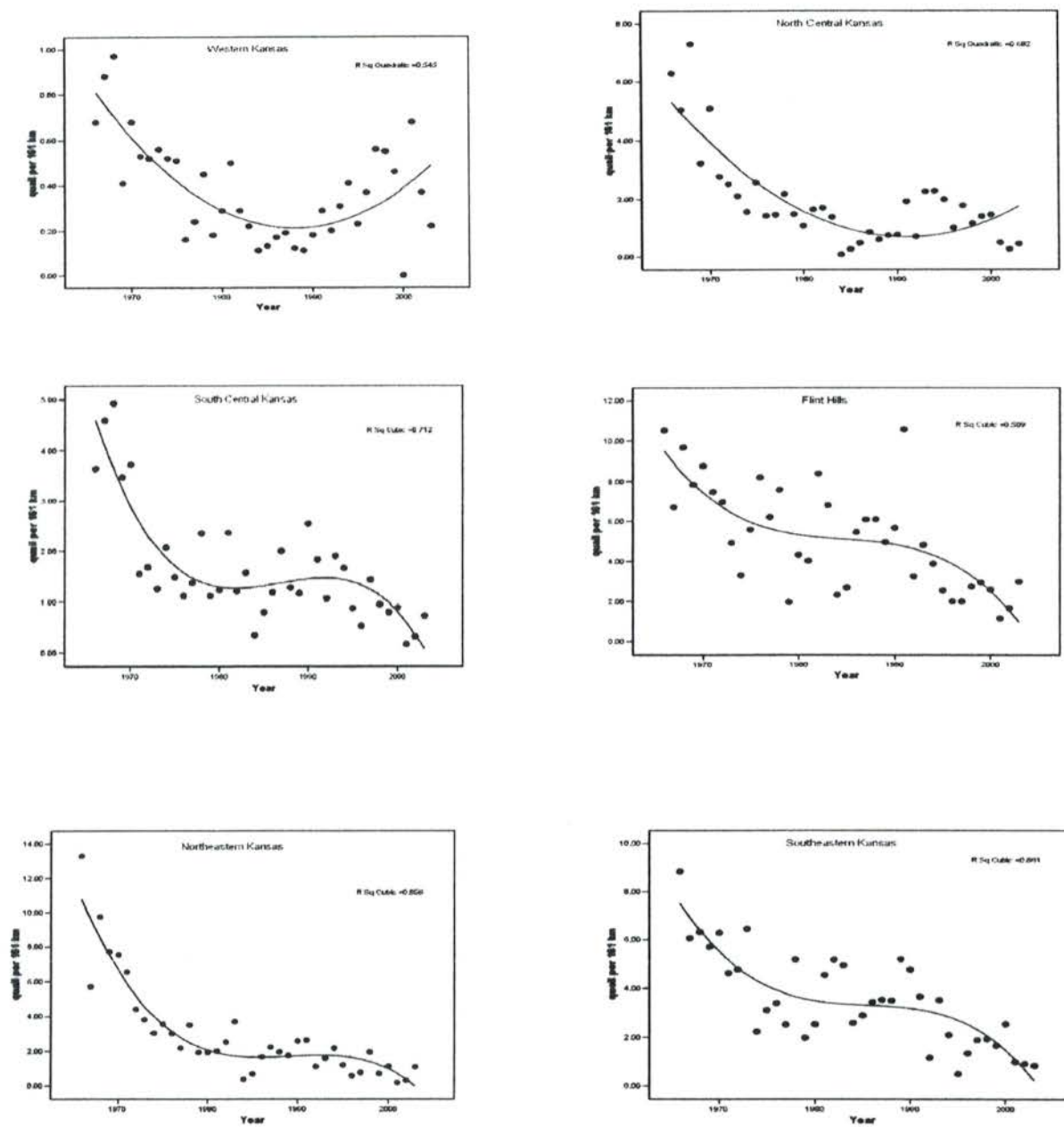


Figure 2. Statewide quail hatching dates for 2003.

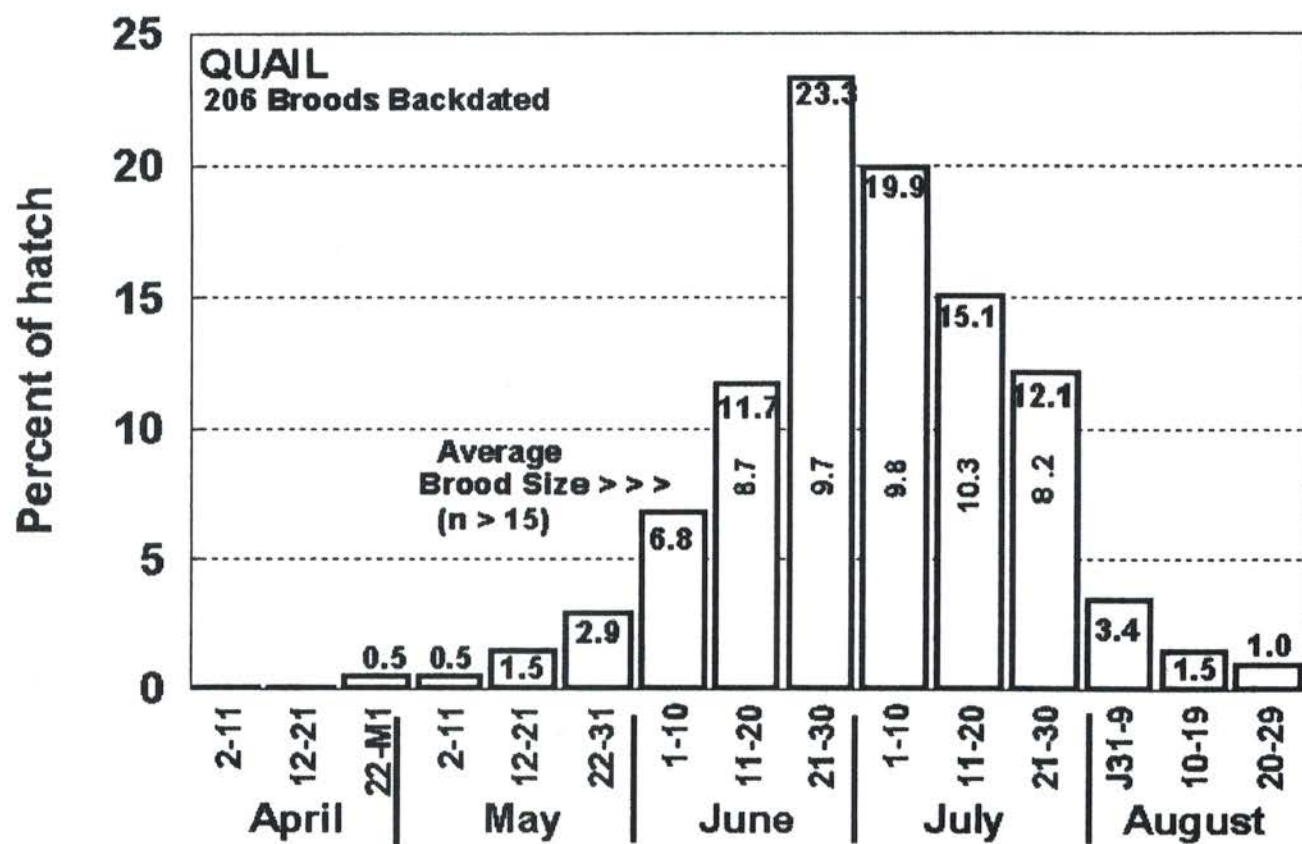


Figure 3. Northern bobwhite long-term harvest trend from annual mail survey of licensed small game hunters.

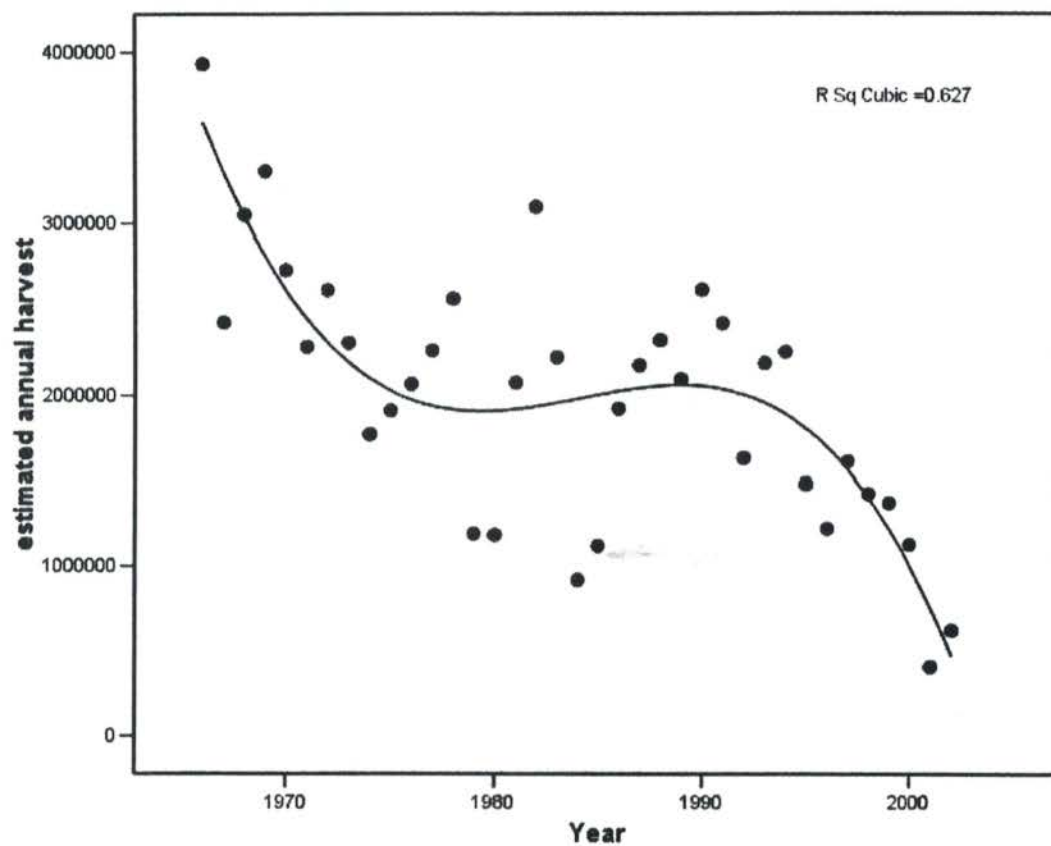


Figure 4. Winter covey range in an area of CRP.

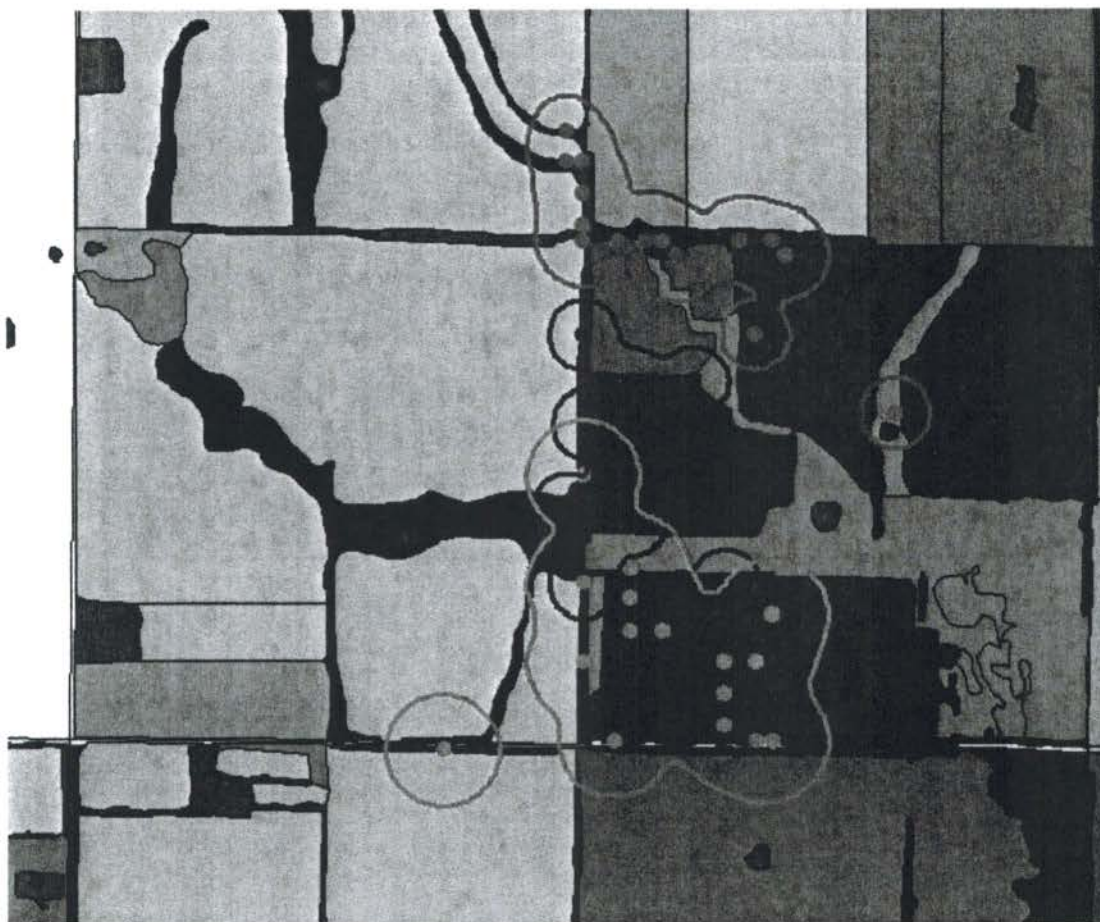


Figure 5. Winter covey range in a woodland area.

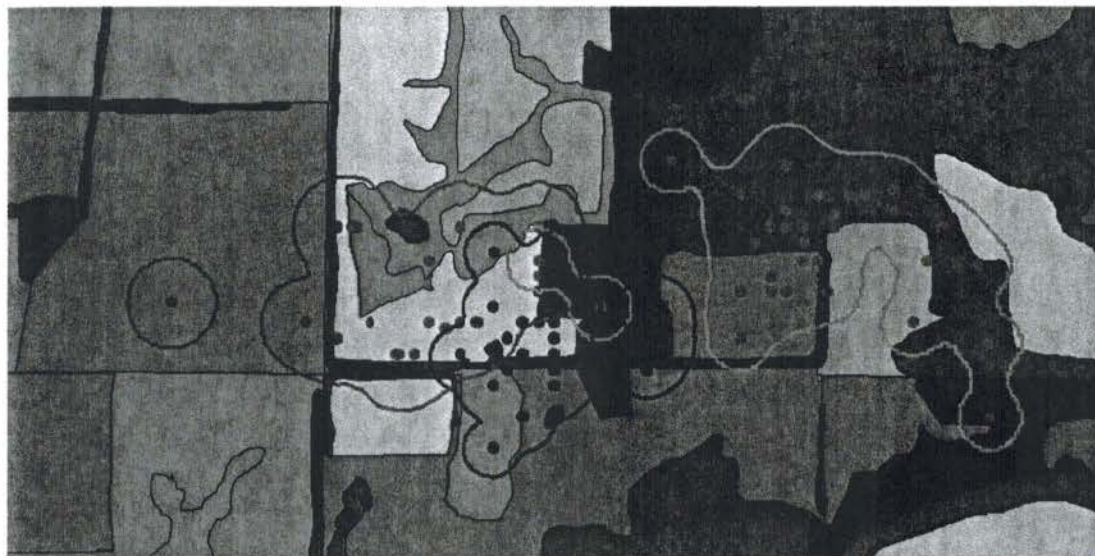


Figure 6. April through August home range of a radio-equipped northern bobwhite.

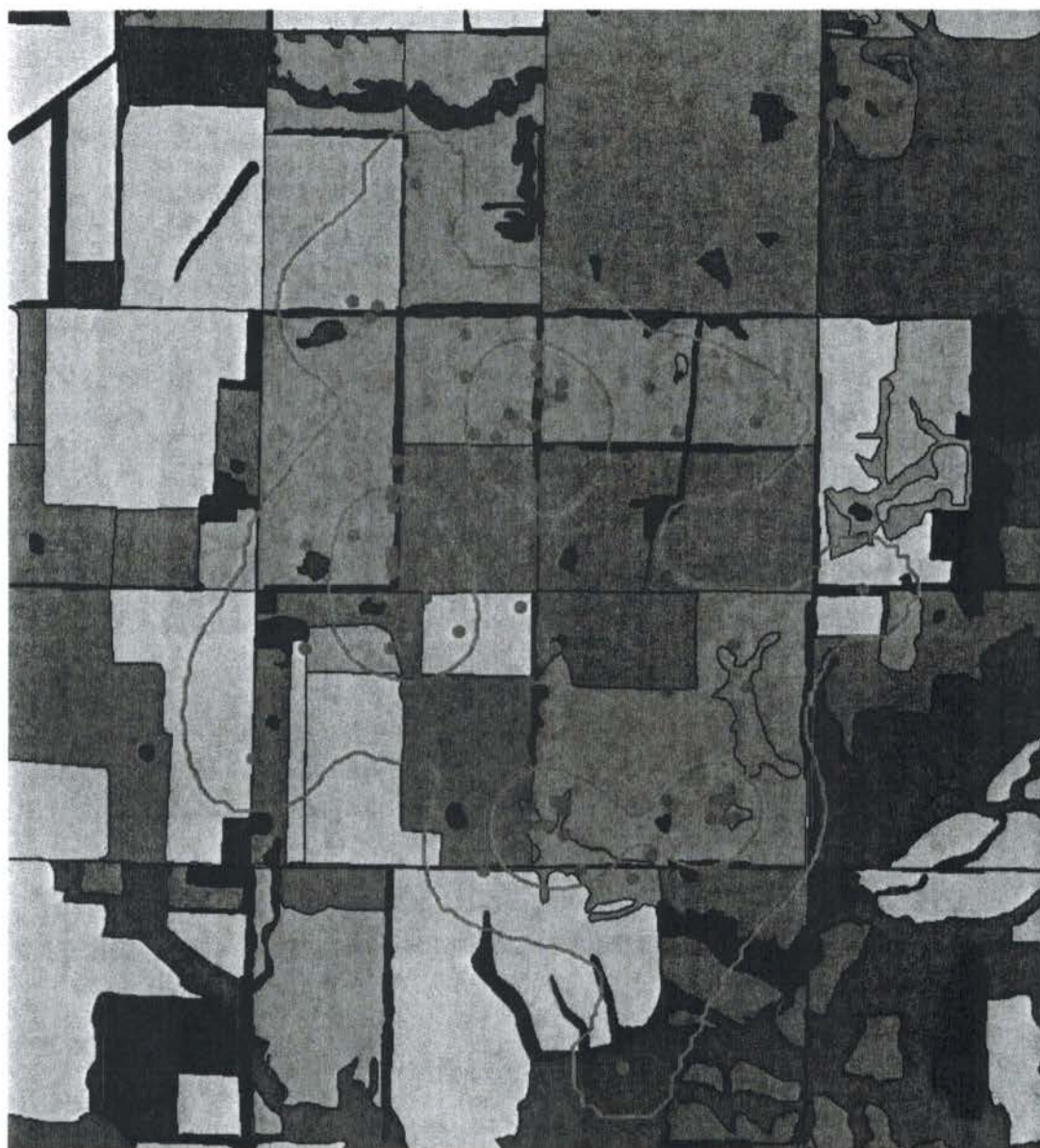


Figure 7. April through August home range of a radio-equipped northern bobwhite.

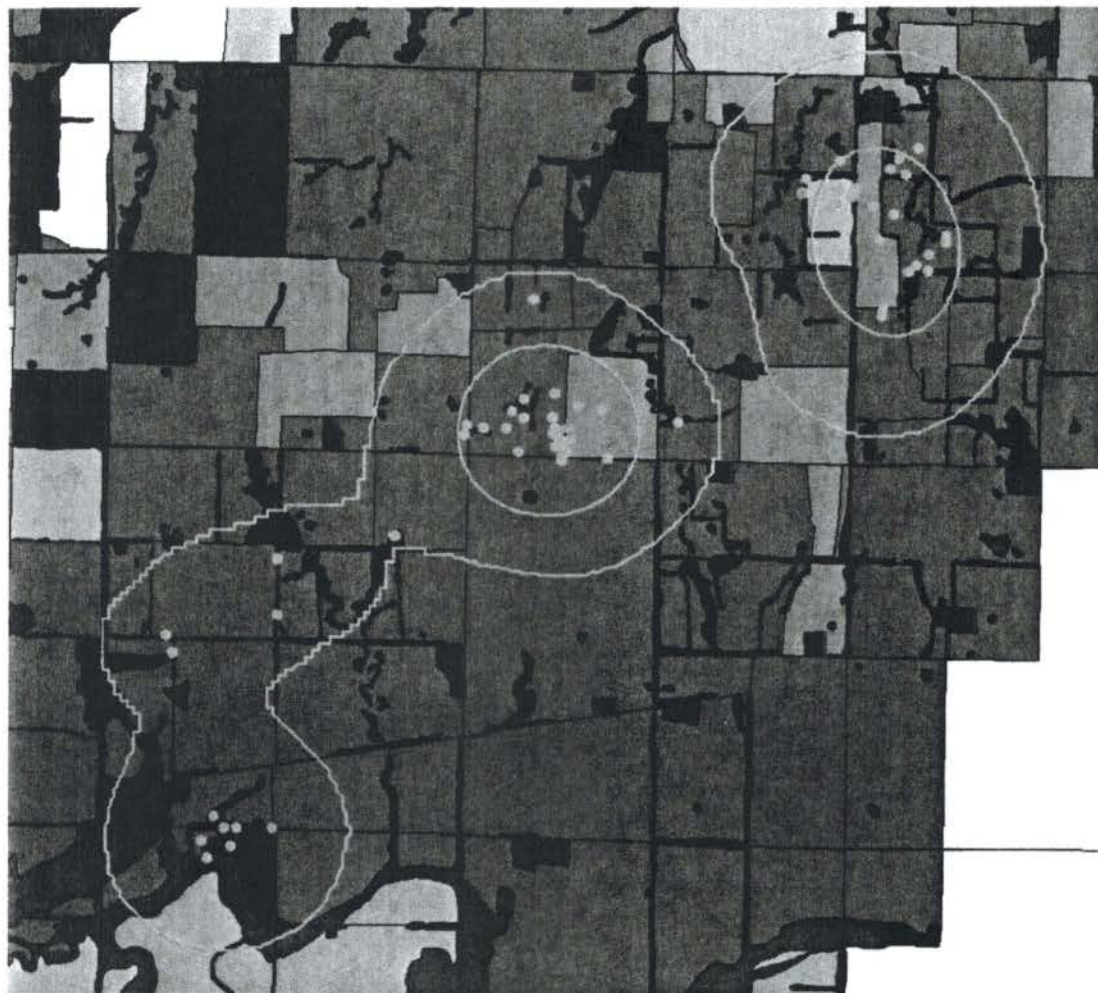


Table 1. Number of whistling cock bobwhites per route June 1-15, 2002 vs. 2003. Number in parentheses is number of routes.

Region	2002 Index	2003 Index	% Change
West	1.16 (8)	1.42 (9)	18
Northcentral	0.70 (12)	1.08 (12)	35
Southcentral	1.89 (7)	3.34 (9)	43
Flint Hills	2.89 (6)	2.45 (7)	-18
Northeast	1.83 (8)	2.24 (8)	18
Southeast	1.52 (10)	1.91 (9)	20
Statewide	1.53 (51)	2.00 (54)	24

Table 2. Change in BOBWHITE production indices - 2002 to 2003.

Index	Year	Survey Regions						STWD
		1-W	2-NC	3-SC	4-FH	5-NE	6-SE	
Quail Per Observer Day	2002	0.66	0.95	1.29	1.37	0.71	1.46	1.07
	2003	0.83	1.03	2.63	1.63	1.06	1.69	1.50
	% Change	26	8	104	19	49	16	40
Cocks Per Observer Day	2002	0.10	0.15	0.20	0.28	0.10	0.25	0.18
	2003	0.15	0.17	0.31	0.23	0.15	0.29	0.22
	% Change	50	13	54	-17	50	17	24
Hens Per Observer Day	2002	0.10	0.15	0.17	0.21	0.12	0.19	0.16
	2003	0.09	0.15	0.31	0.27	0.16	0.24	0.21
	% Change	-6	0	85	30	31	26	29
Young Per Observer Day	2002	0.38	0.64	0.91	0.87	0.49	1.02	0.72
	2003	0.39	0.65	1.88	1.12	0.75	1.16	1.01
	% Change	3	2	107	29	53	13	40
Broods Per Observer Day	2002	0.04	0.06	0.09	0.11	0.06	0.11	0.08
	2003	0.05	0.08	0.20	0.13	0.08	0.11	0.11
	% Change	25	30	126	19	25	-1	36
Brood Size	2002	9.24	10.11	10.03	8.06	7.96	9.36	9.12
	2003	7.82	8.41	9.27	8.60	10.00	10.61	9.32
	% Change	-15	-17	-8	7	26	13	2

Changes in **bold italics** denote a significant change ($P < 0.10$) between years.

Table 3. Habitat practices contracted, and their associated costs for the Southeastern Kansas Quail Initiative.

	2001	2001	2002	2002	2003	2003	total	total
practice	acres	cost	acres	cost	acres	cost	acres	cost
food plots	13	\$653	44	\$1,597	113	\$5,007	170	\$7,257
livestock management ¹	20	3,456	152	937	653	3,674	834	8,067
native grass restoration	292	21,060	335	18,729	774	54,018	1,401	93,807
plow-perch ²	100	150			7,920	1,900	8,020	2,050
prescribed burning	70	225	235	326	170	480	475	1,031
strip disk	2	25	15	183	26	328	43	536
tree/shrub planting ³	2,215	1,661			20,215	15,172	22,430	16,833
brush control ⁴			10	1,500	86	9,851	96	11,351
conservation headlands					58	\$461	58	\$461

¹ includes rangeland and meadow practices such as burning, haying, and grazing, as well as livestock exclusion on 40 acres and construction of 9 miles of fence.

² a linear strip is plowed or tilled and a wire is stretched between posts along the length. This practice provides a perch site for birds which will void plant seeds in their feces that will germinate and provide a "natural" food and cover patch. Area of practice is in feet rather than acres.

³ number of individual trees or shrubs.

⁴ primarily hedgerow renovation.

Table 4. Kansas Wildlife Habitat Improvement Program practices contracted in 2003.

<u>Practice</u>	<u>Acres</u>	<u>Cost</u>
Legume Interseeding	6,681	\$63,395
Food Plots	274	10,029
Strip Disking	151	2,867
Strip Disking w/ Legumes	695	\$22,283

Table 5. Summary of farm bill contracts through 2003, excluding CRP.

Continuous Signup (CCRP):

Total 2003: 6,000 acres

Grand Total (96-03): 49,000 acres

Filter strips: 50% of total

Waterways: 15%

WHIP

	Contracts	Acres	Dollars
2003 applications:	135	17,000	\$625,000
2003 approved	100	14,000	450,000
grand total approved (98-03)	435	70,000	2,000,000

WRP

2003 applications	30	1,800	
2003 approved	21	1,450	1,700,000
Total (95-03)	123	12,000	

EQIP

2003 applications	4,295	1,100,000	64,000,000
2003 approved	790	300,000	13,000,000
Total (97-03)	4,600		50,000,000

GRP

2003 applications	1,070	450,000	120,000,000
2003 approved	12	6,400	2,200,000

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
LOUISIANA

Status

Long term bobwhite abundance trends are monitored by a statewide call count survey. The survey is conducted during a 3-week period in October-November. The state is divided into 5 habitat types encompassing the historic bobwhite range.

Fall whistling surveys were conducted along 41 routes in 5 habitat types. There were 7 assumed zero routes. The Southeast Loblolly Region had the highest call per stop value, followed by the Northwest Loblolly-Shortleaf-Hardwood Region, Longleaf Region, the Acadiana Rice Belt, and the Mississippi/Atchafalaya River Agricultural Belt. Changes from 2002 were not significant ($P \geq 0.10$). Data are summarized in Table 1.

Table 1. Statewide fall bobwhite whistling survey results, 2002.

Habitat Type	Calls Per Stop 2003	Calls Per Stop 2002	Change From 2002	Long-Term Mean Calls per Stop 1983-2002
SE Loblolly	0.12	0.09	+33%(NS)	0.23
NW Loblolly-Shortleaf-Hardwood	0.08	0.07	+14.3%(NS)	0.12
Longleaf	0.07	0.06	+16.7% (NS)	0.15
Acadiana Rice Belt	0.01	0.05	-80.0% (NS)	0.11
Miss./Atchaf. R. Agricultural Belt	0.08	0	NS increase	0.04

S = Significant ($P \leq 0.10$)

NS = Not Significant ($P \geq 0.10$)

With the exception of the Mississippi/Atchafalaya Agricultural Belt, the 2003 regional indices (calls per stop) remain below the long-term averages. The number of routes in which no quail were heard was the second highest recorded. This year no quail were heard on 21 routes, including those assumed to be zero. The high number of routes on which no quail were heard was 24 routes in 2002. All routes except the Acadiana Rice Belt exhibited nonsignificant increases over 2002. The index for the SE Loblolly Region is the highest of the 5 habitat types recorded in 2003 and is the highest value recorded for the region since 1999. The

Mississippi/Atchafalaya Agricultural Belt index is the highest since 1997 and the fourth highest recorded for the region.

The Mississippi/Atchafalaya Agricultural Belt has consistently had the lowest index since the survey began. However, this region tied for the second highest index during 2003. This is due to a large number of responses on a single route that passes through considerable WRP or CRP land. Quail populations have likely responded to the new habitat created by these conservation programs. Since much of this CRP/WRP land is planted in hardwood trees, the improvement in quail habitat will likely be a short-term occurrence.

The number of routes in which no quail were heard was the second highest recorded. This year no quail were heard on 21 routes, including those assumed to be zero. The previous high number of routes on which no quail were heard was 24 routes in 2002. During 1983-92, the number of routes on which no quail were heard ranged from 4 – 14 per year, and averaged 8.0 routes per year. Since 1993, the number of routes on which quail were not heard ranged from 8-24 per year, and averaged 14.3 routes per year.

Weather conditions during the summer of 2003 were favorable for quail production. Temperatures during June – August were near normal, and in many areas precipitation was near or exceeded normal. Despite improved weather conditions, the survey did not detect statistically significant increases in the number of coveys located. However, the survey cannot detect changes in covey size, so improved production may have occurred and resulted in larger coveys, if not more coveys. It is important to note that this survey is designed to track long-term changes in abundance, and its ability to detect making year to year differences is very limited.

Quail Management Initiatives

The Louisiana Department of Wildlife and Fisheries (LDWF) and the Louisiana Army National Guard are cooperating to improve bobwhite habitat on Camp Beauregard, a 13,000-acre base and Wildlife Management Area in central Louisiana, and on Camp Minden, a 13,600 acre base in northwest Louisiana. The LDWF continues to feature bobwhites on its 33,000 acre Jackson-Bienville WMA. This property is owned by Weyerhaeuser Corp., and red-cockaded woodpecker management is driving the silviculture program on this property. Consequently, habitat for bobwhites is improving.

Private Lands Program

Louisiana's private land program is directed at providing technical assistance to landowners and working through the state technical committee to affect delivery of federal farm programs. LDWF has been pursuing a MOU with NRCS to serve as a technical assistance provider, but have thus far been unsuccessful due to the 50% state match requirement and lack of available state funding.

Research

LDWF has contracted with Dr. Michael Chamberlain of the LSU School of Renewable Natural Resources to examine bobwhite responses to use of selective herbicides for habitat enhancement. Fieldwork continued through 2002-03 with the monitoring of instrumented bobwhites. Chick foraging experiments have been conducted to determine foraging efficiency in stands with various treatment regimes.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
MAINE

Population status – Maine does not have a wild breeding population of bobwhite quail. Hunters, dog trainers, and field trial organizations release bobwhite quail for their respective activities. Maine's hunting season for bobwhite quail is 1 October – 31 December, with a 4-bird bag limit.

Habitat Management – No habitat management for bobwhite quail occurred on state-owned land during the past year, and none is planned in the foreseeable future. There were no requests for technical assistance regarding habitat management for bobwhite quail on private land within the past year.

Prepared 22 June 2004

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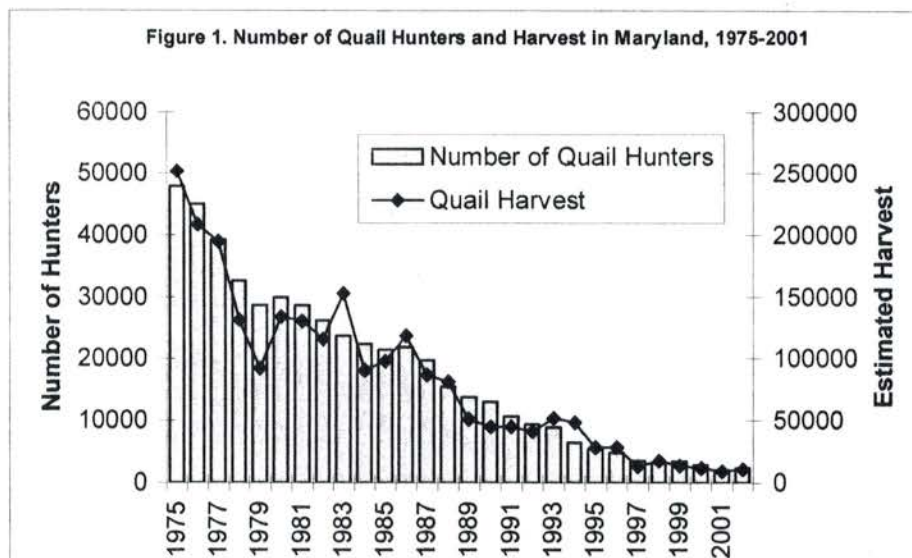
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2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
MARYLAND

POPULATION STATUS

The most reliable bobwhite population data for Maryland are obtained through the Breeding Bird Survey (BBS). The high density of routes (66 total) throughout the state has provided consistent sampling of the entire state since 1966. Based on the most recent BBS data, statewide bobwhite populations have declined 4.7% annually since 1966 and almost 7% per year since 1980. Decreases have not been uniform across the state. The Eastern region is still holding huntable quail numbers while bobwhite have virtually disappeared from the central and western portions of the state.

Paralleling the quail population decrease has been a 96% decline in both quail hunting participation and harvest since 1975. The most recent hunter mail survey estimates there are about 2300 quail hunters in the state that harvest about 10,000 birds annually (Figure 1).



MANAGEMENT AND RESEARCH ACTIVITIES

The Maryland Department of Natural Resources has continued several quail-specific projects during the past year including fall and spring bobwhite surveys on several Wildlife Management Areas, the development of a quail demonstration area, a CREP buffer research project, and various private lands technical assistance projects.

The Conservation Reserve Enhancement Program (CREP) has considerable potential to make landscape-level changes in quail habitat abundance in Maryland. As of February 2004 nearly

70,000 acres have been enrolled, with about 40,000 acres of grass buffers (CP-21) established. The amount of land enrolled in CREP in the eastern region, where quail are still present in fair numbers, has been significant, converting about 6% (47,000 acres) of cropland into more bobwhite-friendly cover. BBS data suggest population stabilization or increases along several of the routes that intersect a significant amount of CREP lands. New maintenance practices have recently been approved, and participants will now receive cost-share payments for prescribed burning and light-disking of warm-season grass buffers.

Fall covey call surveys were conducted on various private lands and Wildlife Management Areas in the eastern region of the state. This was the 2nd year for the surveys and the technique appeared well-suited to accurately census small tracts (<300 acres) with a limited number of observers. Spring call counts were conducted on several of the same lands and should provide valuable baseline data for the years ahead.

Work has begun on the development of the 1st early-successional habitat demonstration area in Maryland. A variety of bobwhite habitat creation and enhancement practices including selective herbicide application, timber thinning, field border development, and fallow field management will be employed over the next 4 years in an effort to increase quail abundance and provide a site to host periodic workshops.

A research project was conducted by DNR in cooperation with the University of Maryland to examine the use of CREP buffers by bobwhite quail and early-successional songbirds on the Eastern Shore of Maryland. Field work has been completed and data are currently being analyzed.

PERFORMANCE REPORT

State: Massachusetts

Grant Number: W-35-R-46

Grant Title: Game Population Trend and Harvest Survey

Grant Type: Research and Surveys

Period Covered: 1 July 2003 to 30 June 2004

Project III: Census and Banding of Game Birds

Project Objectives: To measure and evaluate population trends of certain species by using breeding indices and band recovery information.

Job III-2: Bobwhite Quail Census

Job Objectives: To determine the dynamic aspects of quail population densities and distribution.

Summary: The 2003 weighted call indices for all three counties surveyed and for the statewide total showed no significant differences ($P \geq 0.05$) from 2001 mean indices. The 2003 indices for Bristol and Plymouth Counties showed no significant difference ($P \geq 0.05$) from the five year (1993-2001) mean index. However, the 2003 indices for Barnstable County and for the statewide total showed a significant difference ($P < 0.05$) from the five-year (1993-2001) mean index.

Target Date: 30 June 2005

Progress: On schedule.

Deviations: None

Recommendations: Continue the biennial quail whistle count survey in 2005 using the same procedures and routes as used in 2003. Peripheral data on weather conditions and disturbance (traffic noise) may be useful in assessing between-year changes.

REMARKS:

Procedures: Roadside whistle counts were conducted during the first two weeks of July 2003 using established procedures and routes (W-25-R). The resultant call indices were corrected for temperature variations and were tabulated and analyzed on a county basis. Counts for all counties were compared with the previous year's index (2001) and with a five-year (1993, 1995,

1997, 1999, 2001) mean index. Changes in annual counts were analyzed for statistical significance by t-test using the SAS statistical package and the results reported accordingly by county and state.

Findings: The 2003 weighted call indices as compared to those from 2001 and the five-year (1993-2001) mean index are shown in Table 1. A total of 18 routes were conducted in 2003, as compared to 17 in 2001. Bristol route #9 was not conducted in 2001. The 15 mobile routes have been conducted consistently since at least 1977; the three "stationary" routes were added in 1979.

The 2003 call indices for all counties and for the statewide total showed no significant difference ($P \geq 0.05$) from 2001 indices.

Call indices for Bristol and Plymouth Counties were not significantly different ($P \geq 0.05$) from the five-year (1991-99) mean. However, the indices for Barnstable County and for the statewide total were significantly different ($P < 0.05$) from the five-year (1993-2001) mean index.

Changes in call indices may also reflect demographic fluctuations in quail populations, noise or other disturbances which affect the investigator's ability to monitor whistling quail, or some undetermined environmental factor which affects the whistling rate. Bobwhite populations are declining throughout most of the species' range and drastic changes to hunting seasons may have to be implemented in the future.

Acknowledgments: I appreciate the assistance of William A. Woytek in making statistical comparisons of quail call indices.

Prepared by:

Trina L. Moruzzi
Wildlife Biologist

Date:

Table 1. Analysis of bobwhite quail indices, by state and county, 2001 vs. 2003 and 5-year (1993-2001) mean index vs. 2003.

Area	No. Rts.	2001 Mean Index	2003 Mean Index	T-value	Prob.>T T-value	Sig. Diff.
Barnstable	6/6	11.50	6.00	0.79	0.4523	No (0.05)
Bristol	6/6	4.60	1.50	0.92	0.3946	No (0.05)
Plymouth	6/6	5.17	2.83	0.40	0.7028	No (0.05)
Statewide	18/18	7.24	3.44	1.16	0.2561	No (0.05)

Area	No. Rts.	5-Year Mean Index	2003 Mean Index	Calc. T-value	Prob.>T T-value	Sig. Diff.
Barnstable	6/6	40.83	6.00	-6.74	<0.0001	Yes (0.05)
Bristol	6/6	6.50	1.50	-1.92	0.0868	No (0.05)
Plymouth	6/6	34.83	2.83	-1.50	0.1911	No (0.05)
Statewide	18/18	27.39	3.44	-3.06	0.0065	Yes (0.05)

Quail whistle counts, 1993-2003.

County	Route	03	01	99	97	95	93	5-Year Mean
BA	16	0	0	0	0	61	117	36
BA	18	0	0	0	7	23	186	43
BA	22	0	31	38	0	59	113	48
BA	23	23	12	27	0	21	73	27
BA	39	13	26	NC	14	106	42	47
BA	97	0	0	0	107	75	40	44
BR	8	9	8	0	0	11	30	10
BR	9	0	NC	0	0	7	0	2
BR	15	0	0	0	0	0	0	0
BR	35	0	0	0	21	0	0	4
BR	36	0	15	7	0	28	16	13
BR	98	0	0	0	0	50	0	10
PL	5	0	0	0	0	0	9	2
PL	6	0	0	7	0	0	0	1
PL	12	0	0	7	10	102	15	27
PL	13	17	31	7	10	91	47	37
PL	38	0	0	0	0	28	0	6
PL	96	0	0	0	0	588	93	136



Pheasant and Northern Bobwhite Quail Status in Michigan, 2003



Michigan Department of Natural Resources
Wildlife Report No. 3409, November 2003

Valerie R. Tuovila, Steven B. Chadwick, and C. Alan Stewart

The Michigan Department of Natural Resources (DNR) annually monitors pheasant (*Phasianus colchicus*) distribution and abundance using summer brood surveys and harvest surveys. Harvest is monitored using mail surveys of randomly selected small game license buyers and a separate survey of volunteer cooperators. From 1949 through 2002, pheasant crowing surveys were also conducted each spring. In 2003, however, crowing surveys were discontinued, because trend information could be obtained through summer brood surveys. Also, the introduction of Sichuan pheasants (*P. c. strauchii*) to Michigan during the mid-1980's complicated interpretation of crowing survey results because Sichuan pheasants crowed less frequently than pheasant subspecies previously established in Michigan (Luukkonen et al. 1997).

The DNR monitors northern bobwhite quail (*Colinus virginianus*) distribution and relative abundance using whistling surveys. Harvest is monitored using mail surveys of randomly selected small game license buyers and volunteer cooperators. This report summarizes the results of these surveys and discusses the upcoming hunting season.

METHODS

Pheasant Mail Carrier Brood Survey

The pheasant brood survey is conducted during a 2-week period from late July through early August by cooperating rural mail carriers. Mail carriers stationed at post offices in southern Michigan record the number of pheasant broods, chicks, and lone hens observed each day along their mail delivery routes during the survey period. The same routes (N=1,341) are asked to be run each year so that a comparison can be made between years. An index of pheasant brood abundance is calculated as the number of broods observed per ten carrier-days (one mail carrier observing one day = one carrier-day). In Michigan, the brood index has been a good indicator of fall pheasant abundance and harvest (Luukkonen 1998a).

Luukkonen (1998a) reported a strong correlation between the brood index and estimates of pheasant harvest derived from mail surveys from 1955-1996. However, relatively low brood indices were documented during 1985-2002 (Figure 1), and there was concern that the predictive model including all years would do a poor job of estimating harvest during years of lower pheasant abundance. Therefore, we constructed a new predictive model for harvest using only the data for 1985-2002. Harvest predictions were developed from the model for the regular season only, excluding the December hunt which started in 1993. Harvest surveys indicated that about 9% of the pheasants harvested in Michigan were taken during the December hunt period during recent years. Thus, the harvest prediction for the December hunt was calculated based on the same proportion. In addition,



the harvest estimate for 1986 was considered an outlier and therefore excluded from analysis. The estimate for 1986 was about 30% lower than the estimates for 1985 and 1987, while the brood index increased each year from 1985-1987.

Pheasant/Quail Hunter Cooperator and Mail Surveys

Cooperator surveys are based on a group of volunteer hunters who record numbers of hours hunted and pheasant and quail flushed each day. Data obtained from cooperating hunters is summarized as the number of pheasant and quail flushed per hour of hunting. Although final estimates of hunting effort and harvest come from a mail survey of randomly selected hunters, flush rate surveys from pheasant cooperators provide an early indication of harvest. Hunters may participate in the cooperator survey by contacting the Lansing Wildlife Division office or by printing and completing the cooperator form which can be accessed at www.michigan.gov/dnr.

Quail Whistling Survey

The quail whistling survey is conducted on established routes in southern Lower Michigan. Routes were established in areas of known quail populations. Routes are run once a year on calm mornings (winds < 12 mph) during June 1-15. This period includes the seasonal peak in whistling call activity among male bobwhite quail. Surveys begin at sunrise and observers make 3-minute stops to count the number of individual quail whistling at each of the 20 stops along routes. Routes are approximately 20 miles long.

RESULTS

Pheasant Mail Carrier Brood Survey

Mail carriers returned 686 useable survey forms. Comparison of 537 routes conducted in both 2002 and 2003 revealed no statistically significant changes in the brood index (paired $t=0.491$, $P=0.62$). In 2003 mail carriers observed 0.42 broods per ten carrier-days; in 2002 they observed 0.38. Mail carriers observed an average of 0.38 broods per ten carrier-days on all routes in 2003 (Figure 1). There were also no statistically significant changes in the number of chicks observed per brood (paired $t=1.06$, $P=0.29$) between years. In 2003 mail carriers observed 4.6 chicks per brood; in 2002 they observed 3.9 chicks per brood.

Michigan hunters may take an estimated 109,000 pheasants during the regular season based on the predictive model that includes brood and harvest survey data from 1985-2002 (Figure 3). Hunters may take an additional 10,800 pheasants during the December season.

Pheasant/Quail Hunter Cooperator and Mail Surveys

Records were available from 81 cooperators, who combined to hunt over 1,300 hours in 2002. Cooperators flushed an average of 1.00 rooster per hour and 1.47 hens per hour while hunting. These flush rates are similar to the average flush rates of 0.92 roosters and 1.23 hens per hour that were reported in 2001. The highest average pheasant flush rates from 2002 were reported in many counties in central lower Michigan as well as in the thumb region (Appendix A). Hunters harvested approximately 111,000 pheasant during approximately 265,000 hunter-days (one individual hunting during a day=one hunter-day) in 2002 (B. Frawley, MI DNR, personal communication).

Cooperators reported flushing an average of 0.25 quail per hour while pheasant hunting in 2002. In 2001, the average flush rate was also 0.25 quail per hour. The highest average quail flush rates in 2002 were reported in Calhoun and Shiawassee counties (Appendix C). Preliminary estimates of hunter harvest indicate that about 3,000 birds were taken across the state during approximately 11,000 hunter-days in 2002 (B. Frawley, MI DNR, personal communication).

Quail Whistling Survey

A total of 23 quail whistling surveys were completed in 2003. The overall mean index was 4.4 quail heard per route. Comparison of 21 routes conducted in both 2002 and 2003 revealed no statistically significant changes from 5.1 to 4.5 quail heard per route (paired $t=-0.47$, $P=0.6$). For routes completed in both 2002 and 2003, 6 routes decreased, 8 routes increased, and 7 did not change. The highest number of quail heard on a route in 2003 was 24, compared to 44 in 2002.

Quail are usually most abundant in 22 counties in southern Michigan (core quail range). Quail counts ranged from 0 to 24 per route in these 22 counties in 2003 (Table 1). A mean of 4.0 quail was heard per route in this core area compared to 5.0 in 2002. The highest counts have been in St. Clair county for the past 10 years.

DISCUSSION

The decline of pheasant and quail populations in Michigan is well documented (Figures 1 and 2). Ring-necked pheasants, quail, and other grassland species have declined on Michigan Breeding Bird Survey (BBS) routes during the period 1966-2002 (Sauer et al. 2003) as well as on DNR survey routes. Gormley and Luukkonen (1998) found that Michigan quail whistling surveys and BBS indices were significantly correlated. Data from DNR breeding indices over the past 10 years indicate pheasant abundance has been relatively stable, however at a much reduced abundance from historic highs during the 1950's.

Changes in agricultural practices, land use changes, and weather factors may have all contributed to the pheasant decline. Areas such as southeastern Michigan, which once contained some of the best pheasant habitat in the state, have experienced extensive human development and loss of grasslands. Additionally, pheasant abundance appears to decline as the amount of tree cover exceeds about 10% of the landscape (Luukkonen 1988b). The amount of forest cover in southern Michigan increased by about 40,000 acres per year from 1980 to 1993, therefore an increase in forest cover appeared to have been a major contributing factor in the decline of pheasants (Luukkonen 1988b).

Belyea (1991) noted that state and federal land management programs have not reversed the downward trend of pheasant numbers. However, private land initiatives implemented by the DNR, Natural Resources Conservation Service, and private conservation organizations, may prove beneficial to landowners wishing to improve habitat conditions for pheasants (Sargent and Carter 1999). The implementation of Michigan's Conservation Reserve Enhancement Program (CREP) may positively impact pheasant populations as well as other species. Under CREP, private landowners in 3 priority watersheds agree to enroll eligible lands in the program for 10 to 15 years and establish prescribed conservation practices such as filter strips, wetland restoration, wetland creations, windbreaks, and riparian buffers. Approximately 47,000 acres are currently enrolled in this program, and about 15,000 acres of warm season prairie grasses have been planted in these areas (M. Sargent, MI DNR, personal communication). Because pheasant populations seem to respond to habitats on a broad, landscape scale, habitat improvements made on a few isolated sites are often ineffective in increasing pheasant abundance (Luukkonen 1998b). However, because CREP is a focused initiative on a broad watershed scale, pheasant abundance may increase due to the habitat improvements made through this program. For more information about this program, please see www.michigan.gov/mda.

Quail abundance and distribution in Michigan is limited by many factors. Severe winter weather, changes in land-use and farming practices, and increased use of biocides are all cited as possible factors that have contributed to the long-term decline of Michigan quail (Gormley and Luukkonen 1998). Quail are currently at relatively low population levels based on whistling surveys conducted by the DNR since 1958. The average number of quail heard on routes declined markedly since the

mid-1970s (Figure 2). Ice storms and severe winters in the late 1970's adversely affected the quail population (Janson 1976, Fouch 1978). Since 1979, the Michigan quail index has fluctuated but has not reached levels reported from 1958 to 1976 (Figure 2).

Habitat and land use changes in Michigan will likely prevent quail from recovery to historic population highs of the mid-1950s. However, quail could benefit from habitat improvement projects. Private landowners are the key to significantly increasing quail numbers, because 97% of Michigan quail range is privately owned. Landowners wishing to improve their land for wildlife will find the publication "Managing Michigan's Wildlife: A landowner's guide" an excellent resource. This publication is also available online at www.michigan.gov/dnr.

2003 Hunting Season Forecast

Pheasant

The 2003 pheasant hunting season should be similar to last year. Results from the summer brood survey indicated that the pheasant population has remained relatively stable between years. Michigan hunters may take an estimated 109,000 pheasants during the regular season based on the predictive model that includes survey data from 1985-2002 (Figure 3). An additional 10,800 birds may be taken during the December season. Preliminary analyses indicated that in 2002, approximately 62,000 hunters harvested about 111,000 pheasants while spending about 265,000 hunter-days (B. Frawley, MI DNR, personal communication).

While pheasant numbers are far below the historical high levels of the 1950s and 1960s, they still are widely distributed in southern Lower Michigan and in some areas of the Upper Peninsula (Belyea 1991). Some of the highest pheasant numbers are reported in the central and thumb regions (Appendices A and B).

Pheasant season is open from October 10-31 in Zone 1, October 20-November 14 in Zones 2 and 3, and December 1-15 in portions of Zone 3. Information on zone boundaries may be found at www.michigan.gov/dnr or in the 2003 Michigan Hunting and Trapping Guide. Only males may be harvested and the bag limit is 2 per day, 4 in possession. The season limit is 8 pheasants.

Quail

Although patchy in distribution and abundance, quail can be found throughout southern Michigan. Preliminary analyses indicated that last year approximately 2,500 hunters harvested about 3,000 quail while spending about 11,000 hunter-days (B. Frawley, MI DNR, personal communication). Hunters may again take an estimated 3,000 quail in 2003.

Quail season is open from October 20-November 11. Based on the regional abundance of quail, the counties listed in Table 2 are open to quail hunting in 2003. The bag limit is 5 per day, 10 in possession.

ACKNOWLEDGEMENTS

We thank the DNR personnel and volunteers who conducted whistling surveys and the rural mail carriers who participated on the brood survey. We thank the pheasant cooperators for submitting their hunting records. Lauren Doyle and Polly Gray assisted with data entry. Mike Bailey, Brian Frawley, David Luukkonen, Sarah Mayhew, and Bill Moritz reviewed an earlier version of this report.

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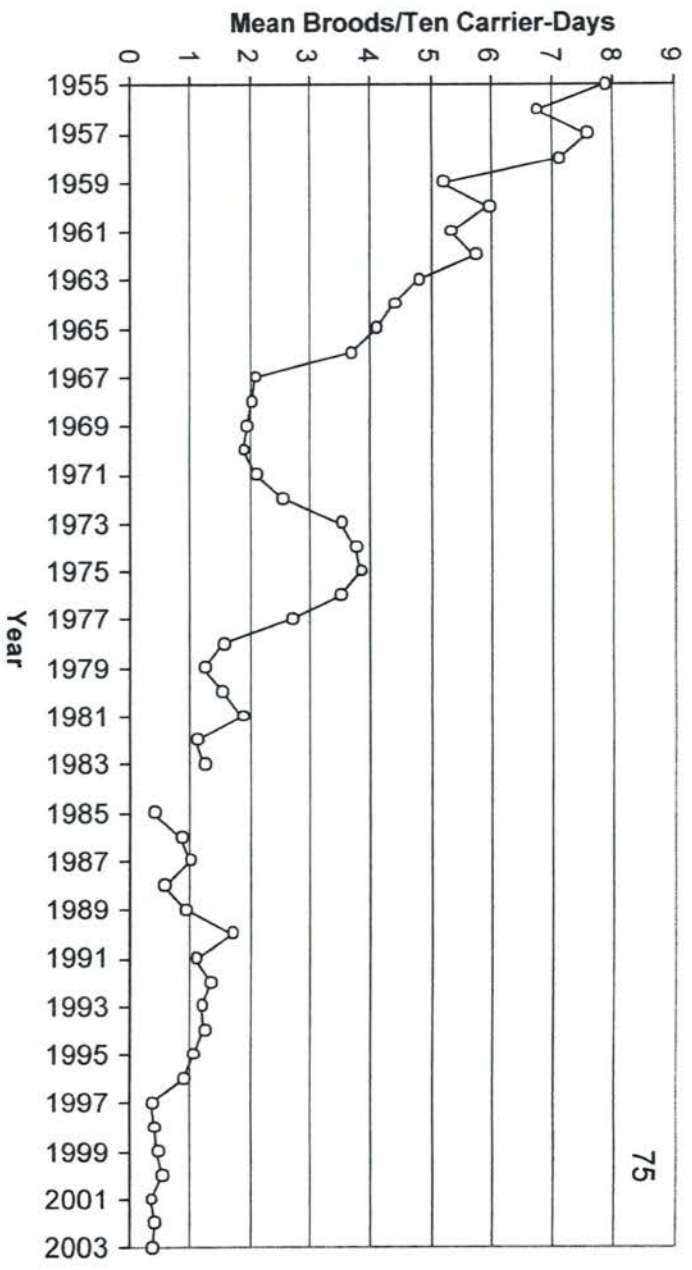


Figure 1. Pheasant brood indices in Michigan, 1955-2003.

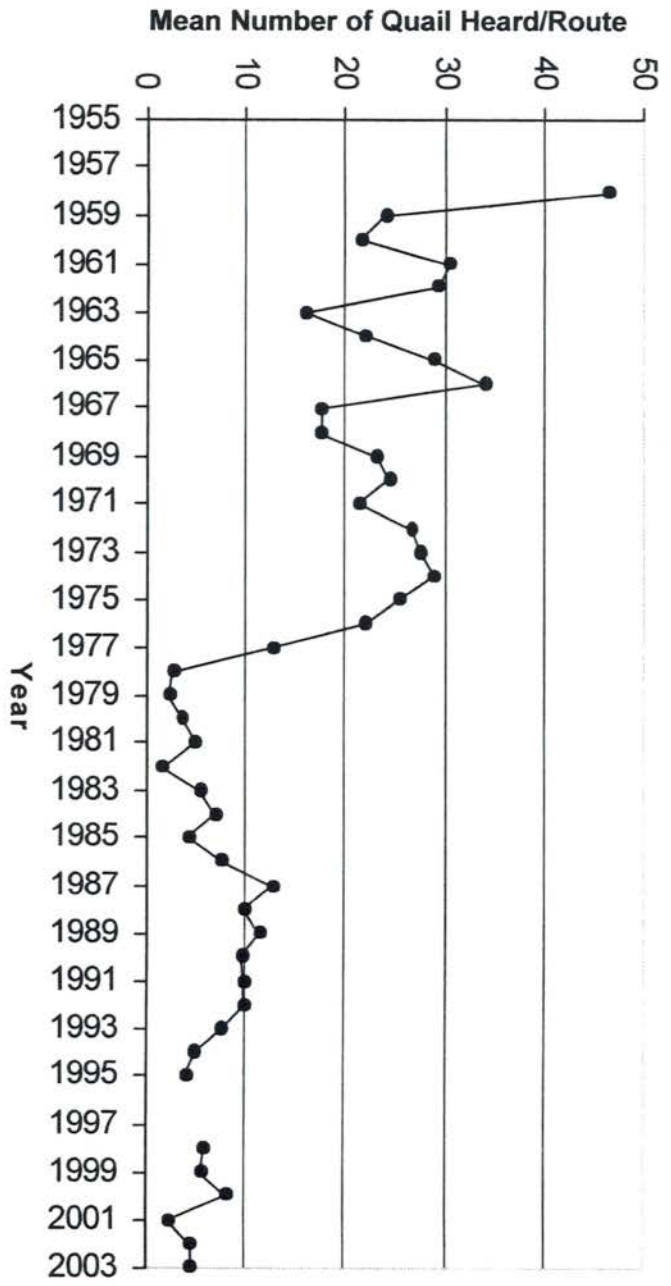


Figure 2. Bobwhite quail whistling indices in Michigan, 1958-2003.

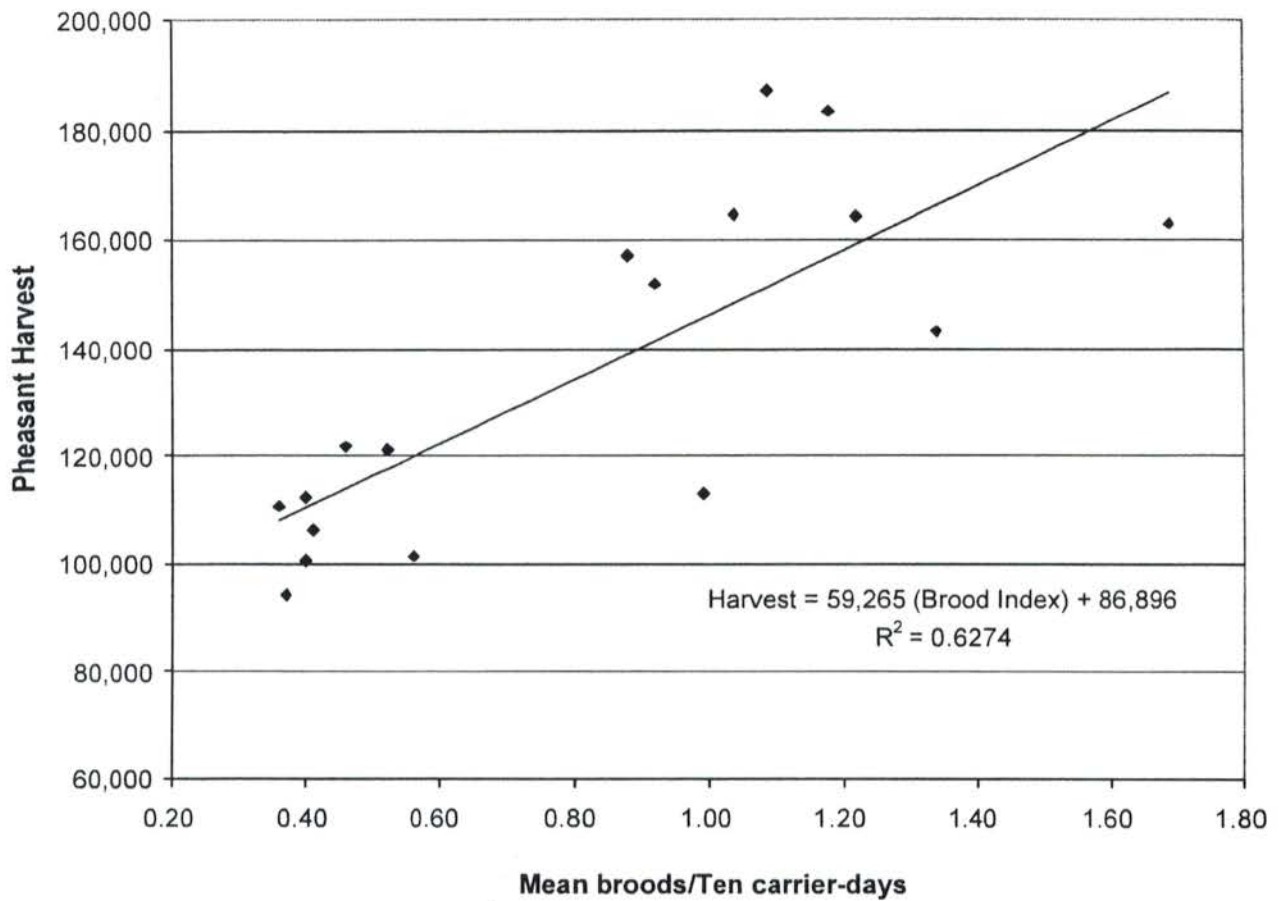


Figure 3. Relationship between regular season pheasant harvest and mail carrier brood indices, 1985-2002. Pheasant harvest was estimated from mail surveys sent to randomly selected hunters after the end of small game hunting seasons. No harvest estimate was available for 1984. The harvest estimate for 1986 was considered an outlier and therefore excluded from analysis. The estimate for 1986 was about 30% lower than the estimates for 1985 and 1987, while the brood index increased each year from 1985-1987.

Table 1. Quail whistling survey indices in Michigan counties, 1990-2003. Index is quail heard per route. Surveys were not conducted in 1996 or 1997.

County	1990	1991	1992	1993	1994	1995	1998	1999	2000	2001	2002	2003	1990-2003 Average
Allegan	0	0	0	0	0	0	0	0		0			0.0
Barry	2	2	3	0	0	0			0	0			0.9
Berrien	1	0	3	0	0	0	3	0			0		0.8
Branch*	15	15	21	13	8	2	8	7	0	0		0	8.1
Calhoun*	12	15	13	12	9	17	9	16	7	4	8	3	10.4
Cass	0	0	0	0	0	0	0	0		0			0.0
Clinton*	2	2	2	2	1	0	2	0	2	0	0	0	1.1
Eaton*	4	14	14	3	0	0	1	2	12	1	4	1	4.7
Genesee*	12	11	10	7	0	0	3	1		3	1	1	4.5
Gratiot*	2	2	5	1	2	0	9	18	0	2	0	0	3.4
Hillsdale*	18	16	8	6	10	5	8	8	13.5	1.5	1.5	12	9.0
Huron	4	1	11	5	0	0	0	0	1.5	2	0		2.2
Ingham*	14	11	13	11	4	6	16	16	9	0	1	4	8.8
Ionia	0	0	2	5	0	0	1	1	0	3		11	2.1
Jackson*	14	15	23	15	4	6	8	7	4	2	3	3	8.7
Kalamazoo	3	4	12	5	6	1	3	0	3	0			3.7
Kent	1	0	3	0		0	0	0		0			0.5
Lapeer*	13	12	12	5	7	4		0	1	0	2	2	5.3
Lenawee*	9	15	24	8	15	4	20	13	17	10	15	3	12.8
Livingston*	8	9	10	6	9	6	12	2	5	1	2	1	5.9
Macomb*	9	24	7		6	9	4	1	3	1	1	3	6.2
Monroe*	4	10	15	16	2	12	8	1	2	1		3	6.7
Montcalm	2	10	15	21	2	0	1	5	1	2	5	5	5.8
Muskegon	0	0	0	0		0	0			0			0.0
Oakland*	14	2	0	0	0	0			0		0		2.0
Ottawa						0							0.0
Saginaw*	7	8	11	23	7	1	1	12	5	0	2	5	6.8
Sanilac*	42	18	7	14	8	4	15	8	14	1	4	3	11.5
Shiawassee*	11	18	13	7	3	4	6	11	8	3	2	6	7.7
St. Clair*	44	41	22	25	18	32	20	21	42	19	44	24	29.3
St. Joseph	14	15	12	12	5	0	2	1	2	1	6		6.4
Tuscola*	14	15	13	7	6	1	6	1	13	6	4	4	7.5
Van Buren	0	0	0	0	0	1	0	0		0			0.1
Washtenaw*	15	11	13	11	12	8	11	15	16	3		4	10.8
Wayne*	12	12	14	9	12	14	4	2	32	2	1	3	9.8
MEAN	9.47	9.65	9.74	7.55	4.88	3.91	5.84	5.45	7.89	2.14	4.63	4.39	6.3

*Bulleted counties represent 22 core counties referenced in text.

Table 2. Counties open to quail hunting in 2003.

Branch	Gratiot	Jackson	Macomb	St. Clair	Washtenaw
Calhoun	Hillsdale	Kent	Monroe	St. Joseph	Wayne
Clinton	Huron	Lapeer	Montcalm	Sanilac	
Eaton	Ingham	Lenawee	Oakland	Shiawassee	
Genesee	Ionia	Livingston	Saginaw	Tuscola	

Legend

Average number of
quail flushes per hour
information available

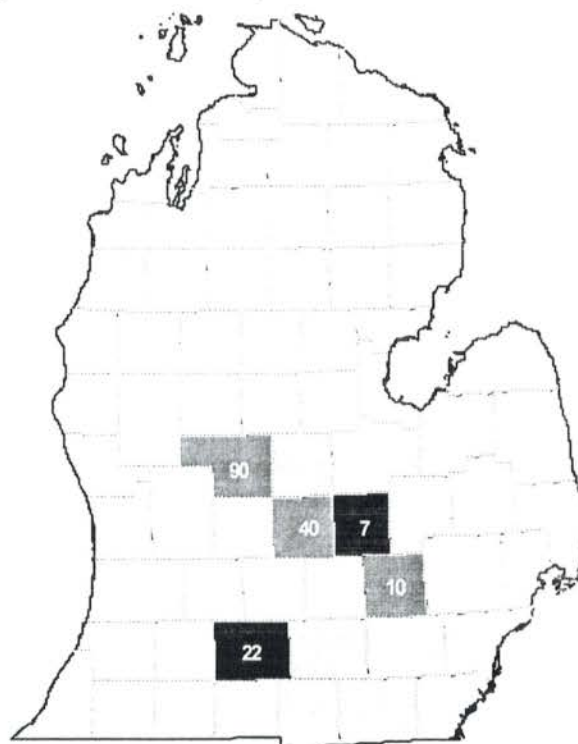
<0.1 or no hunting

0.11-0.50

0.51-0.99

1-3.57

(Number in county
represents hunting hours)



Appendix C. Average number of quail flushed per hour by cooperators, 2002.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
MISSISSIPPI

EXECUTIVE SUMMARY (July 1, 2003 - June 30, 2004)

By Dave Godwin

Primary Program Accomplishments:

1. Technical assistance on quail management was provided to private landowners in each region of the State.
2. Technical assistance on quail management was provided to public land managers (e.g., U.S. Forest Service, Corps of Engineers, and MDWFP Wildlife Management Area personnel) within the state.
3. Statewide program provided funds and technical support to conduct quail habitat management on numerous agency Wildlife Management Areas, including Marion County WMA, Black Prairie WMA, Leaf River WMA, Hell Creek WMA, and Red Creek WMA.
4. Worked with Mississippi State University and the Mississippi Bobwhite Quail Initiative Technical Group to begin step-down planning to help implement the Northern Bobwhite Conservation Initiative in Mississippi.
5. Cooperated with Mississippi Fish and Wildlife Foundation to acquire grants relative to native grassland restoration.
6. Cooperated with Mississippi State University to fund and implement the following wildlife research projects:
 - A. Habitat suitability evaluation and implementation of the Northern Bobwhite Conservation Initiative in Mississippi.
 - B. Genetic assessment of northern bobwhites on Black Prairie WMA.
 - C. Effects of field border practices on bobwhite populations.
7. Conducted 12 public presentations (e.g., Quail Unlimited Chapter meetings, local and statewide television shows, county wildlife dinners) on quail management.
8. Cooperated with Extension Service to maintain the mobile classroom "The Life and Times of Bobwhite Quail in Mississippi", which is used in 3rd and 4th grade classrooms across the State.
9. Provided technical assistance to Delta Wildlife on quail-friendly native warm season grass buffers program.
10. Provided technical assistance to federal agencies (e.g., NRCS, FSA, etc.) in the implementation of federal Farm Bill Programs (e.g., WHIP, CRP, EQIP, WRP, etc.) at the local, county and state levels, including serving on NRCS State Technical Committee.
11. Continued quail monitoring programs: in addition to data from the mail hunter survey, quail populations are monitored in Mississippi using 2 means: a volunteer quail hunter survey, and summer and fall call counts conducted on managed tracts across the state.

12. Cooperated with Extension Service to write, publish and distribute quail management information in booklets and video.
13. Wrote and published 15 popular articles on quail and other small game issues.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
MISSOURI

Submitted By:
Elsa Gallagher, Missouri Department of Conservation

QUAIL POPULATION & HUNTING STATUS

- Missouri's 2003 statewide quail roadside index increased slightly from record lows of recent years. The counts per 30-mile route were 3.90 in 2003, 3.51 in 2002 and 8.36 when averaged across 1983-2002. For more information see <http://www.mdc.state.mo.us/hunt/gamebird/>.
- The estimated number of licensed hunters that hunted quail during the 2002-2003 season was the lowest since 1967, the year the survey began. Hunter numbers were 39,636, 65% below the long-term average of 114,026 (1967-2001). The estimated statewide quail harvest during the 2002-2003 season increased slightly from record lows of recent years. However, the harvest of 374,497 is 80% below the long-term average (1967-2001; 1,858,621).
- Despite the large decline in quail hunting, the sport still is a major recreational activity with 255,269 days spent in the field for the 2002-2003 season. Moreover, hunting success for today's quail hunter is not as poor as the low total quail harvest would indicate. The average number of quail bagged per day of hunting has not declined as dramatically as the total harvest. The daily bag was 2.9 for the 10 "best" years of quail hunting, 1.9 for the worst 10 years, and 1.5 during the last season. Although total harvest is down 80%, hunting success (expressed as daily bag) is down only 38% compared to the average for 1967-2001.

RESEARCH

- Research continues on the benefits of the CRP to quail. Studies of attitudes of CRP contract holders, and of CRP vegetation are being analyzed.
- We are analyzing effect of herbaceous crop field borders on corn and soybean production, and on arthropod population diversity.
- Research is being conducted on several University of Missouri farms related to quail use. The University of Missouri has formed a Quail Task Force to address research issues.
- Based on our findings of inaccuracy of the fall covey whistle count technique we are providing extensive training to biologists. Our research indicated that observer error leveled out after 3 training sessions. We use multiple recorders with loud speakers and known locations to familiarize observers with some of the errors of the technique.

QUAIL RESTORATION

- As a result of guidance from the NBCI, a Missouri Quail & Grassland Bird Leadership Council was formed this winter. The main purpose of this Council is to “advocate for quail and other early successional wildlife through promotion of and support for MDC’s Strategic Guidance for Northern Bobwhite Recovery and the Northern Bobwhite Conservation Initiative.”
- The current list of statewide Quail Emphasis Areas is being evaluated and will be revised in the next several months.
- Regional Quail Plans are being developed with an emphasis on “focus area selection.”
- MDC is in the 7th year of the Northeast Missouri Open Lands Initiative (OLI), a 10-year small game and songbird habitat restoration effort in 4 counties. This program has been re-evaluated and recommended changes are occurring.
- The Missouri Quail Habitat Initiative (QHI) has continued to serve as cost-share opportunity for landowners. This matching program (1:1, MDC:Q.U.) has allocated over \$450,000 towards quail habitat improvements for private landowners to date.
- Several grants have been received for quail restoration work statewide, including grants from the Missouri Bird Conservation Initiative; **“Working together to conserve and restore bird populations and their habitats.”** The Missouri Bird Conservation Initiative (MoBCI) is a new initiative with a broad vision – to develop a diverse partnership dedicated to the conservation of all wild bird species.
<http://mdc.mo.gov/nathis/birds/mobci/>
- 29 counties were listed as bobwhite quail priority areas in the state during the 26th CRP sign-up. These counties received additional ranking points when planting “wildlife-friendly mixes.”
- The state NRCS working group has included bobwhite ranking criteria under WHIP, EQIP and CSP.

OUTREACH

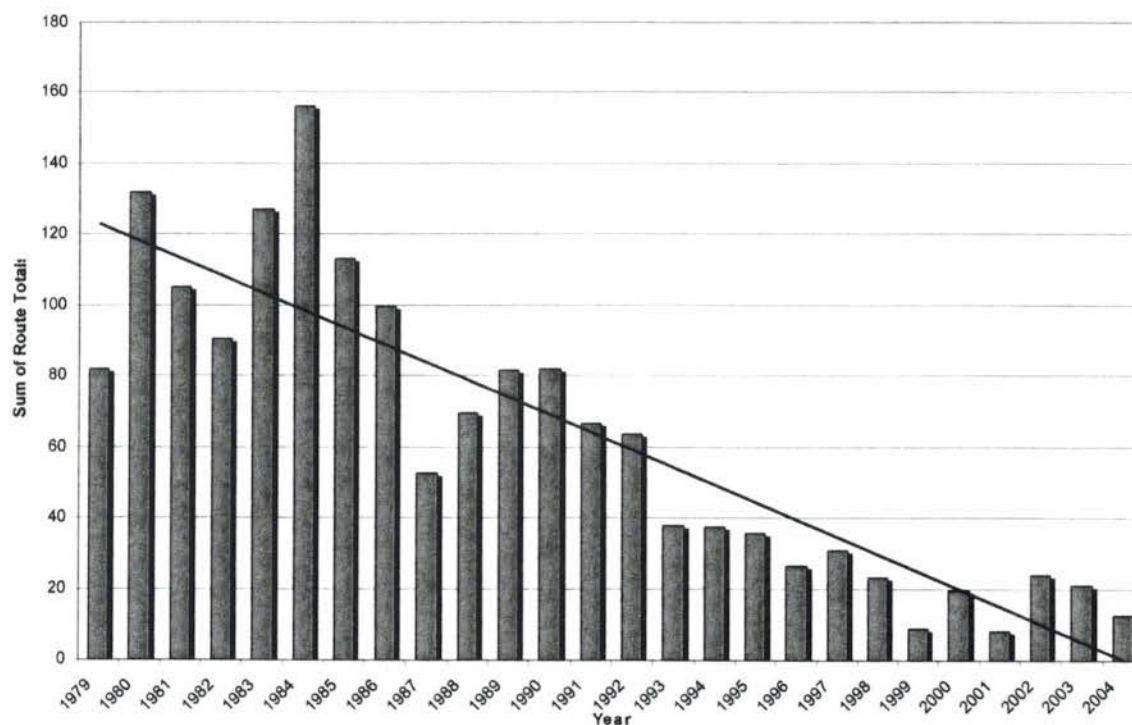
- The Department’s Outreach and Education Division has been instrumental in increasing quail articles in the *Conservationist* and developing quail promotional materials for regional staff using the Covey Headquarters concept.
- A statewide workshop titled “Approaches to Early Successional Management: Edges, Landscapes, and Quail” was held in June and attracted over 60 biologists from across the state. The natural community approach to quail restoration was a hot topic of conversation.
- The “Covey Headquarters” marketing concept has been expanded to include an array of marketing tools. Materials include; buttons, bumper stickers, stickers, table placemats, pens, pins, and videos. The readership of this newsletter now tops 10,000.
- The Department and Quail Unlimited jointly held the 13th Missouri Quail Academy for youth interested in quail biology and management.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
NEW YORK

Bobwhite Population Status

Bobwhite Quail are limited to extreme southeastern New York State with the main population concentration found on Long Island. The New York State Department of Environmental Conservation has been monitoring population trends on Long Island since 1979 using annual quail call surveys during late June-early July. The trends detected by these surveys (Figure 1.) match well with anecdotal observations showing a marked decline in population on Long Island. The 2004 survey results were 73.3% below the long-term average, and 31.1% below the 10-year average. Most of this decline can be attributed to habitat loss to succession and development.

Figure 1. Quail Call Count Trend 1979-2004



Quail Management Initiatives

There has been little management activity over the past ten years, but interest has picked up recently. There has been some work proposed by private groups and by the state agency. The management actions proposed are mostly focused on restoring habitat lost to succession, and working with landowners to provide some habitat.

The state agency, NYSDEC is working to restore openings and fields that have become overgrown and succeeded into forest habitat. This work involves annual mowing and brush removal on areas of state-owned land each year. There is also limited use of prescribed burning to open up the understory of some wooded areas. Most recently, in 2004-5 NYSDEC has been working with the National Wild Turkey Federation to till and reseed some low quality fields into native warm season grasses.

At least one private group is working with farmers to restore/create quail habitat along field borders. This group is also working with the local power company to adapt their transmission line right-of-way maintenance activities to encourage grasses and reduce the prevalence of woody vegetation in the right-of-ways. It is a win/win situation for the power company, due to the long-term savings that can be realized by reducing the annual cost of brush/tree removal from under the lines in favor of spot treatments of any brush patches that appear.

Research

No research is currently underway or planned.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORT
NORTH CAROLINA

1. Status

Northern bobwhite quail (*Colinus virginianus*) populations have declined drastically throughout the southeastern United States during the last several decades. North Carolina's quail population has followed this same downward trend. Quail were once an abundant byproduct of rural landscapes and a mainstay for North Carolina's small game hunters. Large-scale changes in both land use and farming practices, with the resultant loss and/or degradation of habitat, have been major contributing factors. Urban sprawl and fragmentation of remaining habitats have further exacerbated an already dire situation for quail by increasing their susceptibility to predation and other limiting factors.

While the long term trend is obviously downward, it appears that quail numbers in North Carolina may be stabilizing, though at a very low level. Although there have been minor annual fluctuations, both quail call count survey results and avid hunter survey results over the last five to six years seem to indicate that quail abundance may be stabilizing at a low level consistent with the limited amount of available habitat.

2. Quail Management Initiatives

We are currently working on several initiatives to expand our Cooperative Upland habitat Restoration and Enhancement (CURE) efforts on private lands. During the year we were successful in our efforts to obtain a Grant from the US Fish and Wildlife Service Landowner Incentives Program. The funds will support creation of a new 10,000 acre CURE cooperative with a focus on increasing populations of at risk wildlife species who depend upon grass, shrub, and savannah habitats in one of the two Coastal Plain CURE Cooperatives. Bobwhites will be benefited. We are establishing a new time limited position to manage the project.

We have applied to the NC Department of Justice to seek a grant to provide support for implementing a new CURE area in southeastern NC in conjunction with Murphy Brown, the world's largest hog producer. We hope to use the grant to integrate water quality and wildlife practices on a 5,000 plus acre farm and to use the area to demonstrate practices that other farmers in eastern NC may wish to adopt. In preparation for this habitat project we began conducting pre-treatment quail and songbird surveys in the summer of 2003. We are proceeding to establish a position to coordinate habitat implementation on the area. In conjunction with this project, a pre-proposal has been submitted to the National Fish and Wildlife Foundation Challenge Grant to work on private lands that lie adjacent to and between the Murphy Brown Property in Ammon and the existing Suggs Millpond Game Land CURE Area. Funds will be used to prepare and implement management plans addressing early succession wildlife needs.

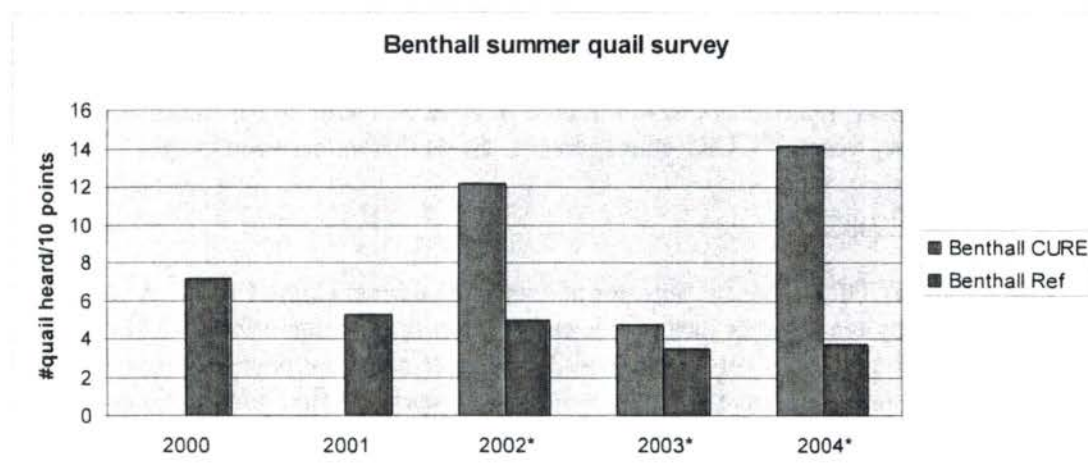
The farming landscape near the 5,000 acre Rowland CURE Cooperative offers an exceptional opportunity to expand our CURE initiative by recruiting adjacent landowners to implement practices similar to those used on the CURE cooperative. A grant proposal was submitted to the

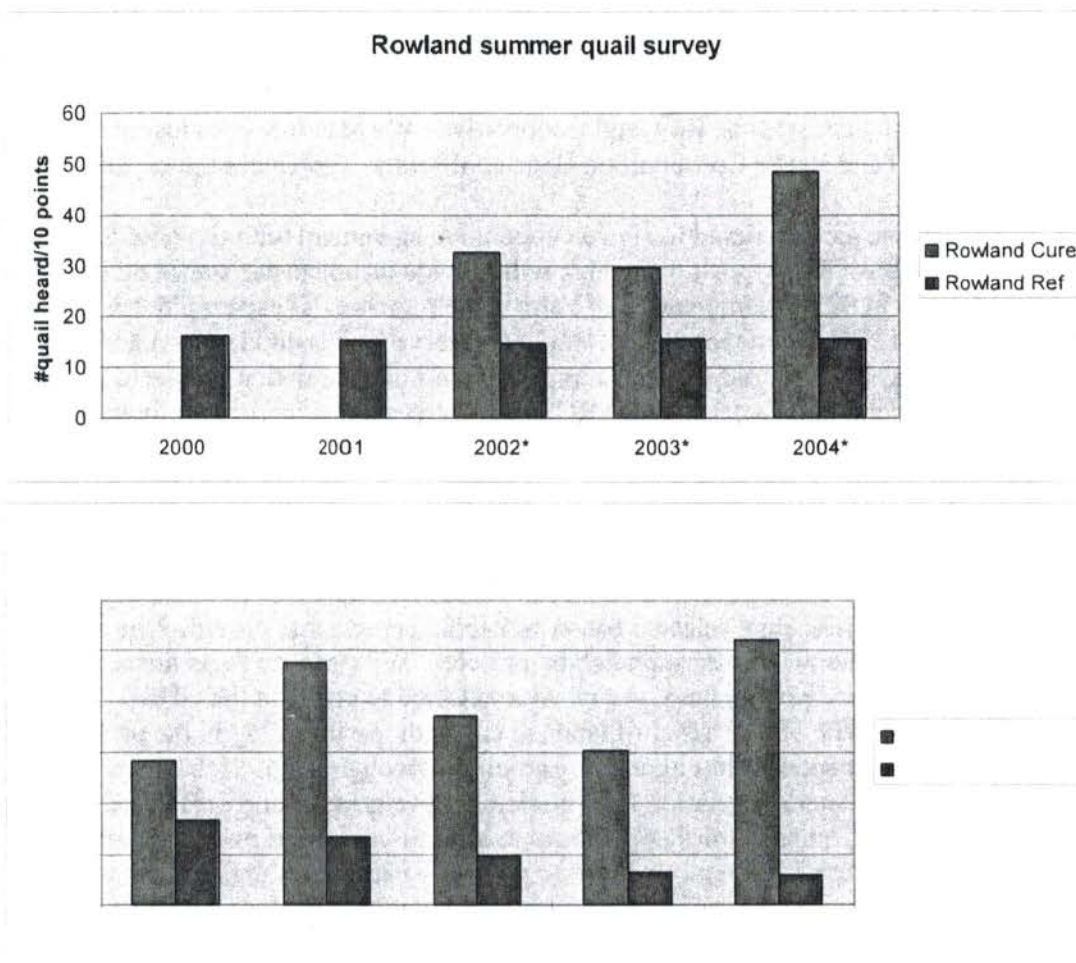
Natural Resources Conservation Service (NRCS) Conservation Innovation Grant Program to expand onto adjacent farms. If successful, we will establish a new time limited technical guidance position to work with landowners to take advantage of existing Farm Bill programs to add habitat on lands adjacent to the Rowland Cooperative. We plan to work closely with the local NRCS and Soil and Water Conservation District offices to implement the expansion.

After many delays, we are scheduled to sign a cooperative agreement with the NRCS during August 2004 to establish 3 new positions which will provide technical assistance on wildlife habitat management in the implementation of Farm Bill Programs. These employees will work in regional offices of NRCS and work with District Conservationists and landowners to develop and monitor wildlife conservation plans. An important part of their duties will be to work with Soil and Water Conservation Districts and NRCS to develop special projects to focus resources toward landscape scale private lands early succession habitat projects.

3. Private Lands Programs

The CURE Program was established as a result of Commission approval and funding on August 30, 2000. Three focal areas were selected based on habitat criteria that provided the greatest potential for impacting bobwhites through habitat projects. Within these focal areas, three Cooperatives, or groups of private landowners, were selected to enroll in the CURE program. Forty-two landowners with 16,801 acres of land are currently participating in the program. Each landowner (with two exceptions) has agreed to participate through 2006. Habitat improvements consist primarily of volunteer vegetation field borders, native grasses, and prescribed burning. We are monitoring quail and songbird populations as well as vegetation response to habitat treatments. Population trends, when compared to reference routes off the CURE areas, show cause for optimism (Figures 1, 2, & 3). Our first permit quail hunts will occur on the Rowland CURE area this November.





Figures 1, 2, & 3. Total number of quail heard/10 survey points on CURE and CURE reference areas. Values are number of quail heard per 10 listening stations during 3 minute, unlimited distance counts. CURE area surveys were initiated in 2002 on Benthall Plantation and Rowland. (Notes: asterisk (*) are years of CURE management. Scale differs between graphs.)

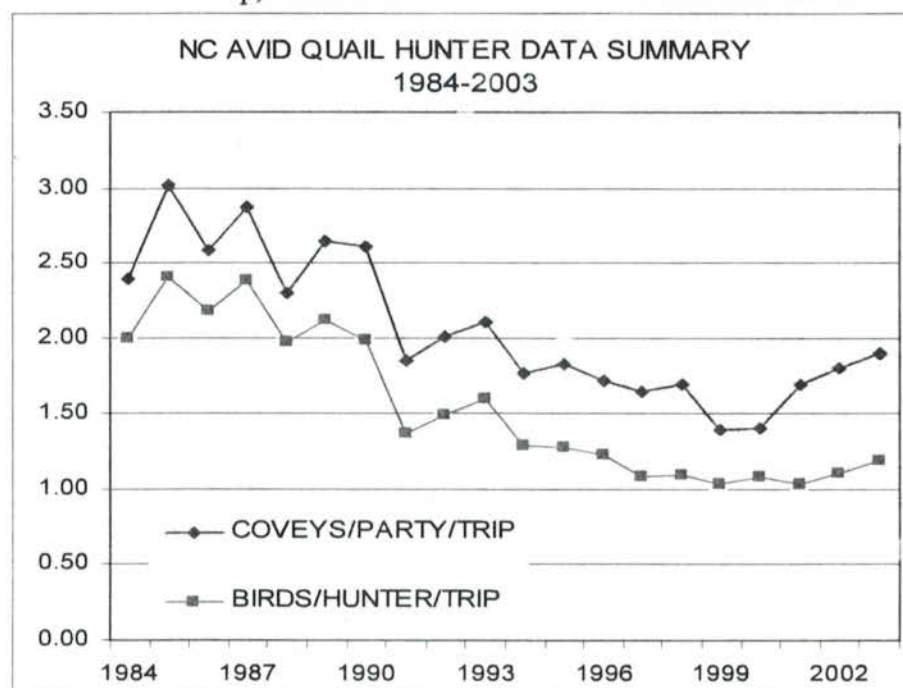
4. Public Lands Programs

We have established CURE areas on portions of four state-owned Game Lands. A total of 21,266 acres are being managed as part of this early succession habitat initiative. Habitat projects are now well underway on these areas. Since these areas are primarily forested primary techniques for habitat establishment are timber harvest, prescribed fire, and herbicide treatments. Habitat improvements in forested settings are occurring more slowly than on the private areas where much of the habitat is in association with agriculture. To date only a small part of these areas support high quality quail habitat. Monitoring has been initiated using protocols similar to private lands CURE cooperatives. These areas are closed to quail hunting until habitat improvements have been implemented and monitoring indicates that populations will support quality hunting through a permit system.

5. Research and Surveys

Avid Quail Hunter Survey

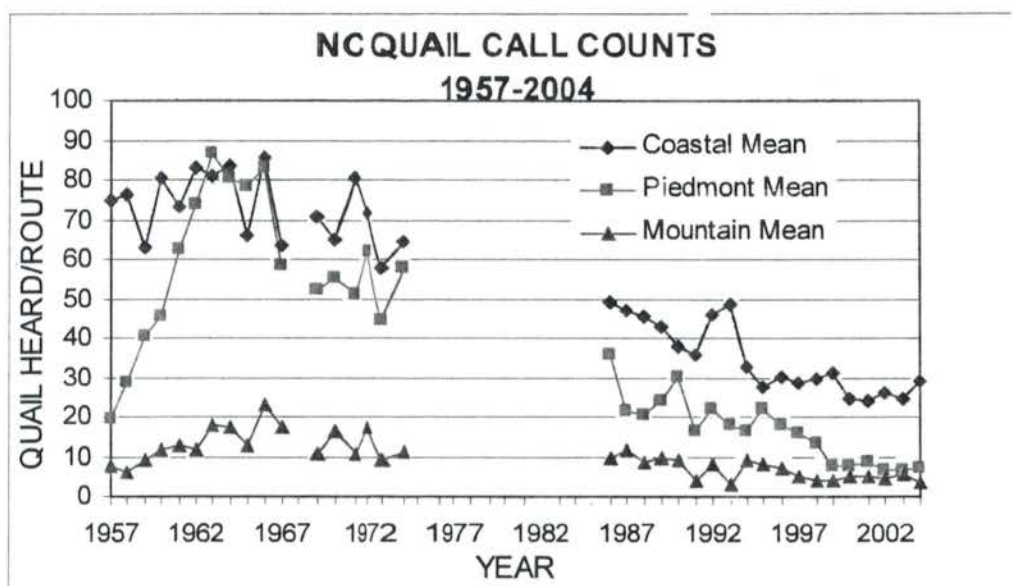
A total of 71 avid quail hunters reported on 1,103 hunts during the season. Although the long-term trend has been significantly downward, during the 2003-2004 season the average flush rate statewide increased 5.6% to 1.90 coveys/party trip while the average harvest rate increased by 7% to 1.19 quail bagged/hunter trip. Regionally, the average flush rate in the Coastal Plain was 2.42 coveys/party trip (+15%), the average flush rate in the Piedmont was 1.22 coveys/party trip (-9.6%), and the average flush rate in the Mountains was 1.37 coveys/party trip (+41.1% but a very small sample size). Hunter success, both in terms of coveys/party trip and in birds harvested/hunter trip, seems to have leveled off somewhat over the last several years.



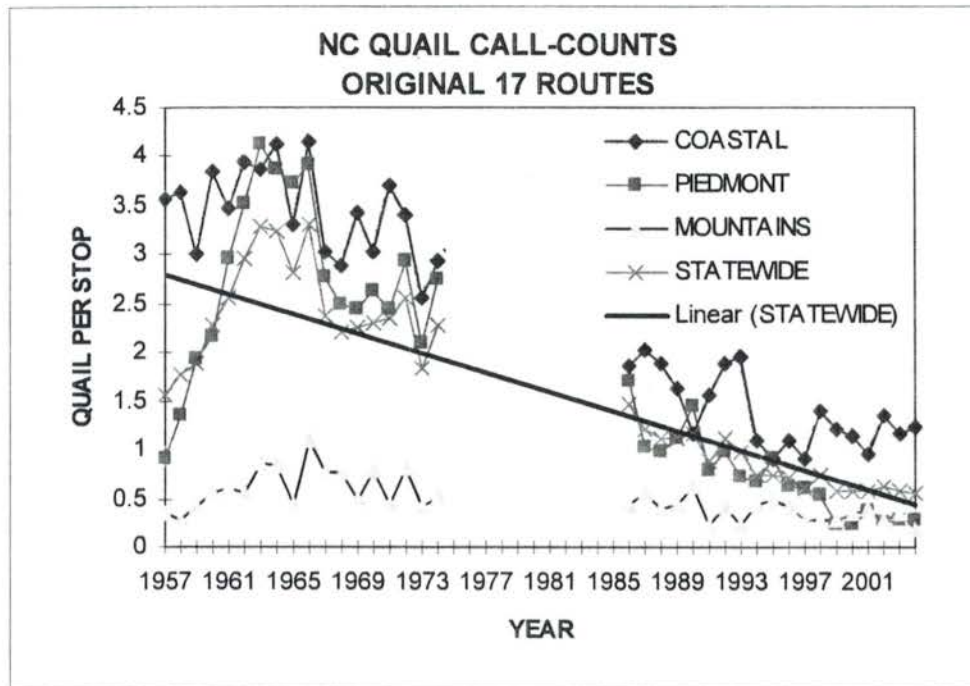
Bobwhite Quail Call Count Survey

Quail call count surveys have been used to monitor quail abundance and population trends in North Carolina since 1957. Originally, seventeen routes were established; five routes in the Coastal Region, eight routes in the Piedmont Region, and four routes in the Mountain Region. In 1986, one additional route was established in the Coastal Region. In 1990, nine more routes were established; four in the Coastal Region, two in the Piedmont Region, and three in the Mountain Region. In 1992, one additional route was established in the Piedmont Region bringing the total routes being surveyed to twenty-eight. Survey protocol calls for routes to be dropped if no quail are heard for two consecutive years. Between 1992 and 2002, three routes were dropped; one each in 1992, 2001, and 2002 – all three in the Mountain Region. Routes were not surveyed in 1968 and from 1975 through 1985.

In 2004, twenty-five routes were surveyed; ten routes in the Coastal Region, eleven routes in the Piedmont Region, and four routes in the Mountain Region. In the Coastal Region, the average number of quail heard per route (29.0) was up 18.4% over the previous year. In the Piedmont Region, the average number of quail heard per route (7.18) was up 5.3% over the previous year. In the Mountain Region, the average number of quail heard per route (3.5) was down 36.4% from the previous year. The graph below shows the results of the 25 quail call count surveys by geographical region.



Results from the original 17 quail call count survey routes from 1957 through 2004 are depicted in the graph below.



While the long term trend is obviously downward, it appears that quail numbers in North Carolina may be stabilizing, though at a very low level. Although there have been minor annual fluctuations, both quail call count survey results and avid hunter survey results over the last five to six years seem to indicate that quail abundance may be stabilizing at a low level consistent with the limited amount of available habitat.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
OKLAHOMA

Status--The 2003-2004 hunting season was a welcome sight with many hunters reporting their best season in 6 years. Roadside surveys during the fall of 2003 increased 9% over the previous year and 17% above the previous 13-year average. Undoubtedly, mild weather throughout the nesting season helped to facilitate the increase.

Estimated quail harvest also increased from 2002-2003 season totals (771,218) to an estimated 875,614 quail during the 2003-2004 season. While hunter numbers continue to decline in Oklahoma participation during the 2003-2004 season did increase over the previous year primarily due to the increase in quail numbers.

Northern Bobwhite Conservation Initiative-- Oklahoma Department of Wildlife Conservation (ODWC) employees continue to give presentation to the general public and professional audiences concerning NBCI. To date no formalize committee or council has been developed.

In order to perpetuate the implementation of NBCI a temporary biologist position has been advertised. The duties of the new biologist will center on the establishment of focal areas for habitat restoration. Specifically, the biologist will be responsible for modeling available habitat using GIS technologies, establishing landowner contact and locating funding opportunities for habitat restoration.

Farm Bill Activities—In July of 2003 ODWC entered into an agreement with the Natural Resources Conservation Service (NRCS) serving as a Technical Service Provider for their Wildlife Habitat Incentive Program (WHIP). Four technician positions were filled in order to fulfill the agreement. Over the past year these technicians and staff biologists with ODWC processed 301 WHIP applications. Oklahoma's appropriation for the NRCS's WHIP totaled \$1,188,000 with preliminary funding of 74 projects. To date 726 proposed projects remain unfunded totaling more than \$4.5 million.

ODWC biologists continue to work with other Farm Bill programs and serve on the state technical committee.

Private Lands Program--During the 2004 fiscal year (fy) ODWC received 96 applications for the ODWC's Wildlife Habitat Improvement Program. Seventy-six projects were approved totaling \$145,923.67 in approved cost/share. Funds administered by the ODWC's cost-share program are specific to quail, deer, turkey, prairie chickens, waterfowl and pheasant.

ODWC along with the U.S. Fish and Wildlife Service have developed a priority area for habitat restoration for lesser prairie chickens and northern bobwhite in western Oklahoma. Grants for landowner initiatives now total \$230,000 for restoration activities. Management plans are currently being developed.

ODWC continued production of a newsletter entitled "Your Side of the Fence" and a "Habitat Management Calendar" for private landowners/managers. During the 2004 fy ODWC biologists provided technical assistance visits to some 265 landowners on 232,752 acres.

Research--Data collection for the Packsaddle Quail research project was completed June 30, 2002. Data analysis is being conducted by Fred Guthery and Jeff Lusk of Oklahoma State University and is scheduled for completion this summer. OSU researcher Sam Fuhlendorf is spearheading a GIS research project exploring quail population changes in relation to habitat change and fragmentation in eastern Oklahoma. The GIS project is scheduled for completion in January of 2005.

Mike Sams, Upland Game Biologist, Oklahoma Department of Wildlife Conservation

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
SOUTH CAROLINA

STATUS: South Carolina's quail population has declined dramatically over the past 35 years as a result of large-scale changes in land use and the resultant habitat loss or degradation. Between 1952 and 1999, pine plantation acreage in South Carolina increased from approximately 200,000 acres to approximately 2,400,000 acres. Urban sprawl and changes in farming practices have also reduced habitat availability and suitability. Sustained drought during the years 1998-2002 likely negatively impacted reproduction during those years. USFWS Breeding Bird Survey results indicate an approximate decline of 4.5% annually in bobwhite quail abundance in South Carolina from 1966-2003. Improved weather conditions, including above-average rainfall in 2003 and 2004, have resulted in excellent cover conditions on remaining habitat. 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 are being incorporated into state planning efforts, as well as regional bird conservation efforts such as the South Atlantic Migratory Bird Initiative (SAMBI).

HABITAT IMPROVEMENT: SCDNR offers small game management technical assistance to private landowners through the Small Game Project. Twenty-two management plans were written by Project staff during the past year, covering over 30,000 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. Establishment of native grasses has been attempted on several areas with limited success. 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 Thanksgiving Day to March 1 in the majority of the state, with some game zones having slightly longer seasons. Bag limits range from 10 to 15 birds per day throughout the state.

SURVEYS

Bobwhite Quail Whistling Cock Survey - This survey has been conducted for the past 26 years, producing reliable trend data which parallels field observations and the USFWS Breeding Bird Survey. Seventy-one 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 per during the 2003 survey was 10.3 per route.

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 01 to August 27 are recorded. From these sightings, an annual index of productivity (juveniles/adult) is calculated. Statewide, the ratio of juveniles to adults in the 2003 survey was 2.3:1. The 2004 brood sighting survey is currently underway and results will be available to interested parties in the fall of 2004.

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 from 0.59 coveys per hour in 2002-03 to 0.52 coveys per hour in 2003-04. Quail hunters participating in the survey bagged 0.51 birds/hour in 2003-04, down from 0.56 birds/hour the previous season.

Fall Covey Counts- Fall covey counts were conducted on 6 WMA's during October and November, 2003. Quail densities were estimated at 1 covey/25-50 acres on three of the six areas. 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 35 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 2004.

EDUCATIONAL PROGRAMS AND TECHNICAL LITERATURE

For the past 17 years, the Small Game Project has conducted annual quail management seminars for private landowners, land managers, and agency personnel. Over 1000 people have participated in this highly-successful seminar series which combines classroom instruction with field demonstrations.

In 2003, a new illustrated color brochure, "Nesting and Brood Rearing Habitat: Critical to Quail Management Success," was produced by Project personnel.

AGRICULTURAL LIAISON ACTIVITIES

Farm Bill coordination and implementation activities have been re-assigned to the DNR Small Game Project. Staff continue to work with NRCS and other USDA agencies to incorporate quail-friendly practices into farm conservation plans. Project staff have positively influenced wildlife practices in the Conservation Security Program and the Grassland Reserve Program in South Carolina in the past year.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
SOUTH DAKOTA

Bobwhite quail occur in a number of counties in southeastern and south central South Dakota. Limited habitat, coupled with severe winter weather prevents populations from extending their range further north. A limited season is held in eight counties located in the southeastern and south central part of the state. The season coincides with the states pheasant season, which usually runs from the 3rd weekend in October through the end of December or the first weekend in January. The daily bag limit is 5 birds/day or 15 in possession. Quail populations are monitored using the Bobwhite Quail Whistle Count Survey. The survey has been conducted annually in eight southeastern and south central South Dakota counties since 1963. Available habitat varies within the surveyed counties and quail numbers vary accordingly. All eight counties are located within the Temperate Zone in South Dakota and all eight counties have varying amounts of good river-bottom habitat. The average number of whistling quail heard per stop on listening runs has varied from a high of 1.31 in 1968 to a low of 0.03 in 2003. With the survey just ending for 2004, preliminary indications show approximately 0.06 quail per stop, which is up over last year but still well below the long-term average of about 0.45 quail per stop. In 1973 the Quail Bag check was initiated to add harvest information to the study. This job was eliminated in 1988 due to the very low number of wings returned for analysis.

In 1973, quail was added to the Small Game Hunter Questionnaire Survey and the survey indicated that in the last four years prior to being discontinued in 1990, approximately 3,000 man-days of recreation have been realized annually during the hunting season with an average annual harvest of around 2,200 birds. This survey was discontinued due to the small number of hunters and sample size. Currently, determination of quail harvest and hunter numbers is included as a part of the Small Game Harvest Survey Study (Study 9520).

In summary, South Dakota's limited quail population has shown a noticeable decline beginning around the mid-1990's. Since that time South Dakota has experienced only two winters that were average or slightly colder than normal, while the rest of the winters have been much milder than normal. We are unsure of the exact causes for the decline in quail numbers, but do feel some of it is habitat related. Any comments or input from the other states would be welcome.

Respectfully Submitted,

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2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
TENNESSEE

The purpose of the Tennessee Statewide Small Game Coordination project is to improve Tennessee's habitat for small game populations, and to improve recreational opportunities for small game users. Primarily one statewide program coordinator and 8 regional small game biologists conducted project implementation and operation. A wide variety of programs and efforts are being utilized to address the project's goals and objectives.

Quail and rabbit populations were down significantly in 2003-04 after increasing substantially during the previous season. However, quail and rabbit numbers have increased during three of the last four years.

The Small Game Program Coordinator, Farm Bill/Private Lands Coordinator, and eight Regional Small Game Biologists were actively involved in state, regional and national meetings and activities in efforts to influence wildlife considerations in the USDA conservation programs; and worked closely with landowners to improve habitats on private lands.

USDA FARM BILL PROGRAMS

In an effort to direct Farm Bill programs in Tennessee to be most beneficial to small game, TWRA created a position as Farm bill Liaison and Private Lands Coordinator in 2002. Additionally, TWRA funds three Upland Wildlife Biologists who work for NRCS in each of the three grand divisions of the state.

USDA CONSERVATION RESERVE PROGRAM (CRP).

Strong emphasis continued on USDA conservation programs. There was a CRP signup held during this past fiscal year. Approximately 24,000 acres of NWSG habitat were enrolled and planted in 2004. Additionally, the Continuous signup CRP "Buffers" Program (CCRP) has been popular among landowners and continues to have good enrollment. These practices have resulted in creation of several thousand acres of early successional habitat providing critical small game and non-game habitat. TWRA biologists, particularly from Regions I and II (where most CRP land is located) continued to be very active in meeting with landowners and USDA personnel to promote and implement the CCRP Program, to explain the CRP's revised Environmental Benefits Index, and promoting conversion of fescue to native warm season grasses.

Game biologists also coordinated with CRP landowners to use TWRA herbicide sprayers and native grass no-till drills for habitat conversions. TWRA Regional Biologists and NRCS Biologists, Mike Hansbrough, Chris Wolkoniwski, and Robin Mayberry (whose positions are partially funded by TWRA's small game program), were active in assisting landowners with grass drill allocation and NWSG planting practices. The NRCS has been active in signing up Several NWSG planting workshops were organized by NRCS with assistance from TWRA for landowners who were planting

NWSG on CRP contracts. These have been successful for the past two years and we expect these types of training workshops to continue. We have seen better establishment as a result of proper planting techniques and new innovative planting prescriptions.

WILDLIFE HABITAT INCENTIVES PROGRAM (WHIP)

There was approximately \$ 122,000 appropriated for WHIP in TN in FY 2002-03. Most of these monies were obligated and spent with some being left unspent due to cancelled contracts late in the fiscal year. So far in FY 2003-04, 27 contracts have been awarded statewide for a total of \$192,222.00

FARM WILDLIFE HABITAT PROGRAM

TWRA's Farm Wildlife Habitat Program is similar to WHIP. This program provides up to \$1000 per landowner per year for habitat work on private land. The landowner agrees to leave the practices in place for 5 years. This program also funds habitat work done on public lands by sportsmen's groups such as Quail Unlimited. A total of \$130,000 was spent funding habitat projects, both on private and on public lands. More than 3000 acres of actual management practices improved small game habitat across more than 20,000 acres in Tennessee. Public lands projects included: Percy Priest COE lands, Coal Creek Mining Area, Yuchi WMA, Oak Ridge WMA, Catoosa WMA (Otter Creek, Peavine,), Chickamauga WMA (Riversmeet, Hixon tract), Cordell Hull WMA, Prentice Cooper WMA, TVA - Crawford Branch (2), Melton Hill, and Blue Springs.

WILDLIFE BUFFERS PROJECTS

This project of this pilot buffers program is to pay landowners up to \$100 an acre to set aside wildlife-friendly field borders to complement and expand the impact of USDA conservation program buffers in the targeted watershed areas. The two project areas include a 5-watershed area where Chester, Hardeman and McNairy counties meet, titled the A Tri-County Buffers Project. The other is the A Nolichucky Buffers Project area, which includes the Nolichucky watershed in Greene and Washington counties.

In each of the pilot project areas (described above under PROJECT STATUS), funding was sufficient to enroll approximately 200 acres of native grass or natural vegetation field borders in each project area. All 400 acres budgeted for the program was enrolled in the two project areas in FY 2000-01. However, some landowners have removed the habitat practices and are no longer enrolled in the program. Approximately 300 acres remain in good, early successional habitat and anecdotal reports indicate an increase in quail and rabbit populations in these areas.

SEED DISTRIBUTION

TWRA's small game program purchased over 700,000 lbs. of seed (lespedezas, annual grain mixes, NWSG, Quail Unlimited Conservation annual grains), which was enough to plant over 40,000 acres of wildlife food and cover. This seed was distributed to landowners and sportsmen's groups. Additionally, TWRA purchased 275 gallons of

Plateau herbicide, approximately 100 gallons of Roundup, and about 50 gallons of Garlon 3-A. Most of this herbicide was distributed to landowners and the remaining was utilized on WMAs, for exotic weed eradication and NWSG management.

QUAIL UNLIMITED GRANT

TWRA provides a five-year grant to Quail Unlimited for habitat development and technical guidance in Tennessee. Quail Unlimited has a regional director position in Tennessee, and through efforts of this individual in working in developing new QU chapters, providing chapter guidance, providing technical assistance efforts and coordinating TWRA resources with QU programs and chapters, it is expected that TWRA will realize at least four times its' investment in planting materials, in-kind labor in habitat projects by QU members and personnel, and donations of equipment and research dollars to the State. This grant is funded at \$20,000 per year.

2004 SOUTHEAST QUAIL STUDY GROUP STATE REPORTS TEXAS

The Texas Quail Conservation Initiative

The Texas Quail Conservation Initiative (TQCI) is well under way and has made major headway in the past year. Summary of accomplishments: a) The Texas Parks and Wildlife Department contributed 100K to the initiative in this past budget cycle in a time of statewide budget crisis b) The governor of Texas signed 250 Cowan quail prints (donated to the initiative) which will raise approximately 100K for the TQCI c) The Texas Wildlife Association (TWA) has agreed to allow the TQCI use its 501c3 d) The Texas Quail Council of Quail Unlimited agreed to donate 20K to the 501c3 account e) Texas has the first NRCS EQIP "emphasis" areas for target wildlife species (thanks to the efforts of the TPWD Federal farm bill coordinator) f) The TQCI Quail Council, SEQSG, and WMI worked with USDA to develop a bobwhite conservation poster which was recently distributed to every NRCS office across the country g) A draft TQCI logo and a popular version have been developed through coordinated efforts with the TPWD Marketing Program h) TQCI technical committee members have begun to "plug in" to the Joint Ventures of Texas i) Equipment purchases have been made for the development of state quail management demonstration areas j) on the ground implementation of NBCI/TQCI habitat goals and objectives have begun

Texas Audubon Society

The Audubon Texas Quail Initiative hired a full time coordinator, Jason Hardin, who has made significant progress facilitating the formation of quail cooperatives in fragmented landscapes. The program, funded through a generous grant from Houston Endowment, Inc., will be instrumental in implementing the strategies outlined in the NBCI and the recently developed Texas Quail Conservation Initiative.

Quail Season Forecast

Most of Texas including the Rolling Plains and South Texas ecological areas, have experienced a cool wet summer, the most ideal conditions for production. Many field reports indicate an above average year for production, noting that there was sufficient brood stock from last year.

Ongoing Texas Quail Research Projects

Status, Distribution and Ecology of Gambel's Quail in Trans-Pecos, Texas

Louis A. Harveson, Sul Ross State University; Michael R. Sullins, TPWD; Michael Gray, Sul Ross State University

Although Gambel's quail (*Callipepla gambelli*) are classified as a game bird in Texas, little information exists on their ecology. We initiated a study to determine the distribution, status, and ecology of Gambel's quail in Texas. We identified 2 study sites (Rio Grande and Upland) that were typical of Gambel's quail habitat in Texas. The Rio Grande study site was dominated by exotic shrubs (e.g., salt cedar [*Tamarisk* spp.]), whereas the Upland study site was dominated by native vegetation (e.g., desert willow [*Chiopsis linearis*] and Greg's catclaw [*Acacia greggii*]). We radioed 27 of 41 Gambel's quail captured at the Rio Grande and 30 of 51 at the Upland sites. At both sites, sex ratios (M:F) approximated 1:1, but age ratios (J:A) were different between sites (Rio Grande 13:28, Upland 39:12). Additionally, productivity (young of year:adult) was greater on the Upland site (1.55:1) than the River site (1.29:1). Although predation contributed approximately 30% of mortality for both study sites, causes of mortalities for Gambel's quail differed between the 2 sites. The Upland site was dominated by raptor mortalities, whereas the Rio Grande site consisted of raptor and mammalian mortalities. Our findings suggest that Gambel's quail populations are more productive and successful in landscapes dominated by native rather than exotic vegetation.

Nesting Ecology of Scaled Quail at Elephant Mountain WMA

Scott P. Lerich, TPWD; Dale Rollins, Texas A&M University-San Angelo;
Louis A. Harveson, Sul Ross State University

We investigated scaled quail (*Callipepla squamata*) nesting ecology and survival relative to small man-made surface water catchments at the Elephant Mountain Wildlife Management Area, Brewster County, Texas. During spring of 2000 and 2001, 179 scaled quail were captured (131 in 2000, 48 in 2001) in funnel traps on two study sites and banded with individually numbered aluminum leg bands. One hundred eighteen (70F, 2M in 2000; 25F, 21M in 2001) were radio marked with neck-loop telemeters. One treatment site contained spreader dams (small lateral or perpendicular dikes or levees of soil and rock) constructed circa 1950s, whereas the control site had no spreader dams. Survival and nest success rates were compared to simulated nest survival. Predator indices were monitored with scent stations and simulated quail nests. Weekly survival March-September was similar between sites and years (0.64 vs. 0.5 in 2000, 0.56 vs. 0.58 in 2001). We failed to reject the H_0 : spreader dams have no effect on reproduction and survival of scaled quail. Cause-specific mortality ($n = 32$) included kills by mammals (43%), unknown predators (31%), avian predators (13%) and drowning (9%). Eleven nests were detected in 2000-2001; four hatched; five were depredated; and two were abandoned. Nests were located in bunch grasses ($n = 5$) and under shrubs ($n = 6$). Earliest recorded nesting activity was April 15; latest hatch date was approximately September 7. Forty-four of 96 (46%) simulated quail nests survived in 2000, but only 3 of 96 (3%) of simulated quail nests survived in 2001. Survival of scaled quail in this study was slightly less than unpublished data for other Texas scaled quail populations and higher than

survival reported for northern bobwhites (*Colinus virginianus*) from the southeastern USA.

Funding for this study was provided by the Texas Agricultural Experiment Station and TPWD.

DETERMINING THE MINIMUM LAND-AREA NECESSARY FOR MANAGING NORTHERN BOBWHITES IN FRAGMENTED LANDSCAPES

Fidel Hernández, Caesar Kleberg Wildlife Research Institute, Michael Janis, TPWD

Understanding bobwhite population dynamics in fragmented habitats is important because it defines the boundaries beyond which management no longer is ecologically or economically feasible. Patterns of land ownership are changing. Landowners are more often absentee, with sources of income outside the ranch. They are more interested in the recreational aspects of land ownership and are willing to invest in wildlife and habitat improvements to their property. However, ranch size also is decreasing. Thus, there is a need to answer the question of how much land is necessary to sustain and effectively manage a bobwhite population in fragmented landscapes. The answers to these questions are unknown, although Guthery et al. (2000) provided some insight.

Our overall research goal is to determine if bobwhite populations can be established and maintained with management in fragmented landscapes in the lower post oak savannah of Texas. Specifically, we want to determine the minimum area of usable habitat that is needed to maintain a bobwhite population and test the population modeling conducted by Guthery et al (2000). The ideal study design would consist of monitoring bobwhite populations on isolated habitat patches of different sizes. These habitat patches would be classified into 3 size categories: small (<250 ac), medium (250-500 ac), and large (>1,000 ac). If the population models are correct, bobwhite populations on small areas would not persist, populations in medium-sized areas would fluctuate around 100 individuals, and those in large areas would increase in number. However, before investing in a large-scale study, we propose conducting an initial 1-year pilot study that will focus on establishing bobwhite populations on 2 separate areas that have >1,000 ac of usable habitat. At the conclusion of the pilot study, if the results indicate that establishing bobwhite populations in these 2 large areas is feasible, then it would be prudent to either extend the duration of the pilot study or pursue a more extensive study at that time.

2004 SOUTHEAST QUAIL STUDY GROUP
STATE REPORTS
VIRGINIA

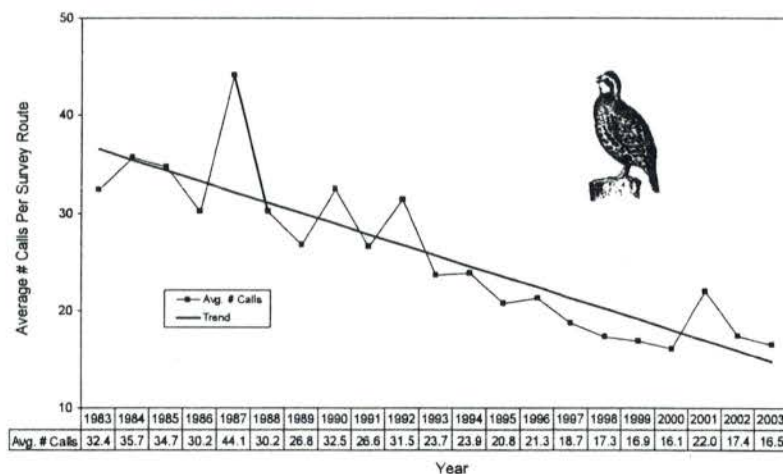
Submitted By:
Steve Capel, Virginia Department of Game & Inland Fisheries

Quail Populations

Virginia's quail population has been in almost continuous decline since the late 1960's. For the past five to six years (since @ 1997), Virginia's population has leveled off and shown signs of recovery. This is especially true in the Tidewater and North Piedmont regions, where populations appear to be above the 10 year average in 2003, based on hunter success.

The June 2003 call count surveys on 157 routes averaged 16.5 bobwhite calls/route, with an average of 4.6 bobs heard/route. When compared to 2002, the average number of calls and bobs/route decreased slightly (-7.2 and -1.3%, respectively). Regionally, the average number of quail calls heard declined in all areas, with central & SW mountain regions experiencing the most significant declines (-61.1 and -51.3%). Calling in East Piedmont and Tidewater were relatively unchanged (-3.3 and -0.4%). Thus spring breeding populations declined slightly from 2002 to 2003. Statewide, however, the number of individual quail heard calling declined only 1.3%.

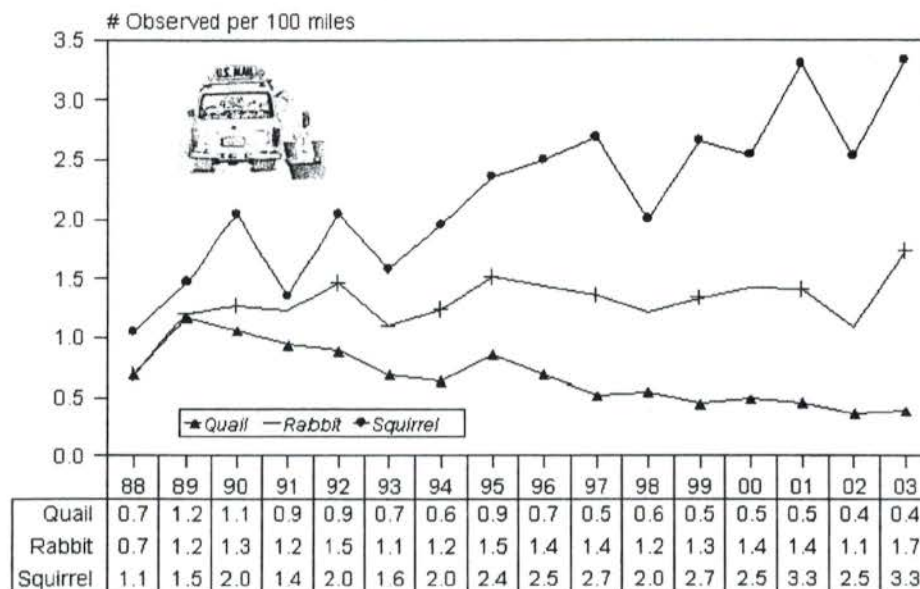
**AVERAGE NUMBER OF BOBWHITE CALLS HEARD
PER SURVEY ROUTE (1983 TO 2003)**



Rural Mail Carrier Counts have been run in early August in Virginia since 1988. The graph below summarizes this information through August 2003. More detailed regional analysis will be available once the new biologist is settled in. Essentially, since 1997 the

statewide population has leveled off, and has actually risen in Tidewater (Virginia's highest quail population density region) fairly significantly since 2001.

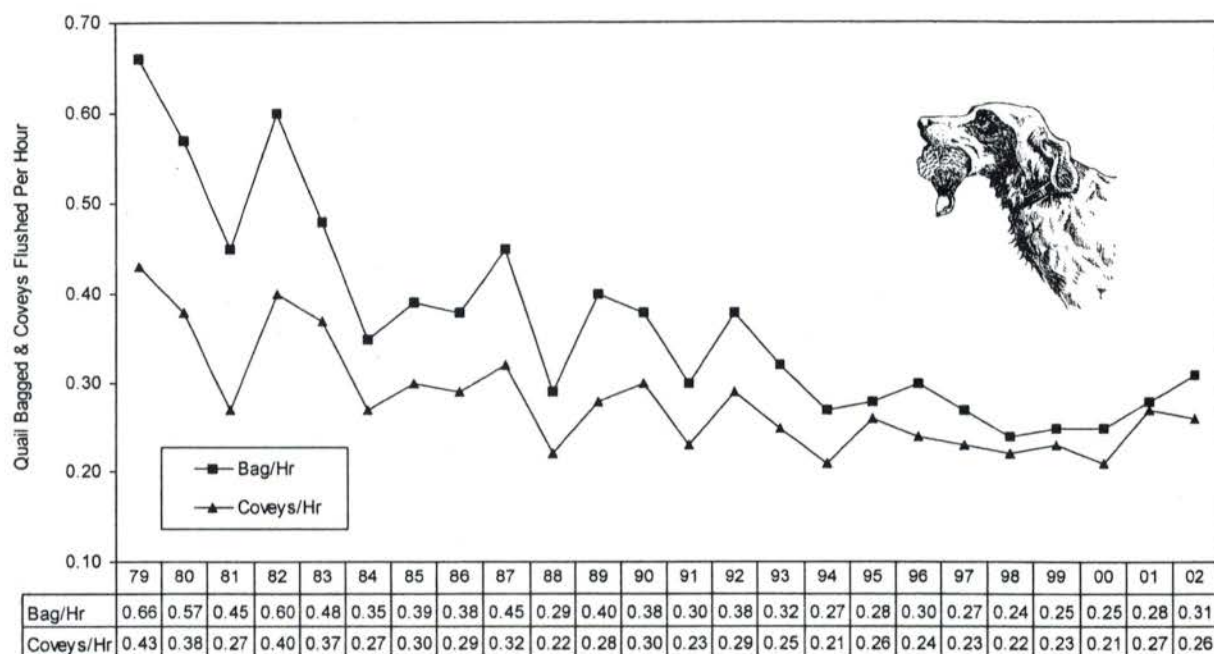
RURAL MAIL CARRIER SURVEY (1988-2003)



Quail Harvest

During the 2002-2003 season, 99 cooperating quail hunters reported the results of 768 hunts. Compared to the previous year, statewide quail hunter success was slightly improved. The average number of quail bagged per hunter hour was 0.31, up 10.7% from 2001-2002. The number of coveys flushed per hunter hour averaged 0.26, down 3.7% from the previous year. Regionally, hunter success (quail bagged per hunter hour) increased substantially in the Northern (+77.8%) and Tidewater (+35.3%) regions, but declined sharply in the West Piedmont (-41.9%) and East Piedmont (-23.8%) regions. Statewide, the average number of quail bagged per covey was 1.3, the same as the long-term average. Quail age was determined from 1,435 of the wings submitted by cooperators. Juvenile quail comprised 72.6% of the harvest, well below the long-term average of 76.8%. The low percentage of juvenile quail in the harvest suggests that reproductive success was below normal. The proportion of juvenile quail hatched after 15 August was 10.7%, slightly lower than the long-term average of 12.0%. Statewide, the percentage of juvenile quail greater than 84 days old (full sized birds) during the opening week harvest averaged 83.8%, above the desired goal of 82.0%. Quail wing age data indicated that the hatch, although poor, was slightly earlier than normal. Unusually dry weather during most of the nesting season likely reduced nest attempts and chick production, resulting in fewer birds available to hunters.

First impressions of 2004 harvest data indicate that hunter success was up fairly markedly in Tidewater (+33% or so), but overall hunter participation had declined somewhat. This will probably result in a fairly flat statewide harvest, when data analysis is completed.



Quail bagged and coveys flushed per hunter hour by Virginia quail hunter cooperators, 1979-1980 to 2002-2003.

Note: The Farm Wildlife Research Biologist position in Virginia has been vacant for the past 6 months. Recruitment is nearing completion at this writing. In the interim, quail population and hunting/harvest data have been collected; however no analysis of 2004 data has been completed. The most current information and data is provided above.

Quail Management Activities

An agreement with the NRCS was developed, under which DGIF will provide technical assistance in developing Preliminary Wildlife Habitat Incentives Program (WHIP) plans. Over the past 6 years, roughly 80% of WHIP plans were to improve early successional habitats on Virginia farms.

EQIP funds were in high demand in Virginia this FY. A feature that was used by a number of producers to increase the score of their EQIP application was to add one or more wildlife features (native grass plantings, shrub rows, conversion of fescue, 3 year

early succession cover, and prescribed burning). While the number of acres in such cover was not tallied by NRCS, this approach was utilized by numerous applicants. An interesting sidelight was that in the process of monitoring EQIP contracts, several contracts were found to not have completed the wildlife practice. These participants were brought in to compliance before any payments were made.

Native grass plantings have increased in size, but not in total acreage. The average native grass planting in Virginia has gone from a small "test" plot of 2-5 acres to @ 30 acres in 2004, not including CREP plantings. CREP plantings were usually buffer strips along riparian corridors, and usually involved less than 5 acres. Total NWSG acreage planted using DGIF equipment has not changed much the past few years, as our equipment can only handle @ 800 acres/year logistically.

Program Abstracts

Northern Bobwhite Conservation Initiative Progress
Report to the Southeast Quail Study Group
August 3, 2004 – Morrilton, AR

Annual Goals and Accomplishments

1. Increase the visibility of and raise awareness of the goals of the NBCI (marketing), especially with USDA and the agricultural community.
 - Two meetings were held with NRCS Chief Bruce Knight to discuss the role of that agency in NBCI implementation.
 - The NRCS, Wildlife Habitat Management Institute was assisted with development of a poster promoting the use of Farm Bill programs for bobwhite habitat restoration.
 - An article on the NBCI was written and submitted to 22 agriculture trade publications throughout bobwhite range.
 - The NRCS national biologists' meeting was attended and a presentation on the NBCI given.
 - The NBCI plan was reprinted and copies distributed to requesting state agencies, organizations and individuals.
 - A signing ceremony for an MOU between NRCS, QU, SEAFWA and MS State University for monitoring of NBCI habitat accomplishments utilizing Farm Bill programs was attended.
 - A draft MOU between SEAFWA and the US Forest Service for cooperation on the attainment of NBCI habitat goals is under review.
 - A color logo for the NBCI was finalized.
 - Lapel pins and window decals were produced depicting the NBCI logo.
 - A portable exhibit was purchased for display of the NBCI poster presentation.
 - A national forage and grazing conference was attended where an exhibit booth was manned and a poster presented on integrating habitat for quail and grassland birds into livestock operations.
 - Two NBCI update articles were written for the Southeast Quail Study Group (SEQSG) newsletter that appears in QU Magazine.
 - A color flyer on the NBCI was created from a previous QU Magazine article and quantities provided to NRCS State Biologists for use in promoting the goals of the program.
2. Establish a bobwhite/grassland bird Joint Venture Focus Area.
 - A proposal was made to the Atlantic Coast Joint Venture Management Board for the creation of 2 bobwhite/grassland bird focus areas: one encompassing the southeastern coastal plain from northern Florida to southern Virginia; and another covering portions of Delaware and the eastern shore of Maryland. The proposal was favorably received, but no details have been finalized yet.

3. Work with willing "fringe states" to develop bobwhite habitat and population goals to include in the NBCI plan.
 - Natural Resources Inventory land-use data was obtained for all fringe states.
 - Biologists with bobwhite/upland gamebird responsibility were contacted in all fringe states to gauge interest in participating in NBCI.
4. Develop a relationship with the timber industry and encourage cooperation in achievement of NBCI habitat goals.
 - Meetings were held on 3 occasions with American Forest and Paper Association officials (Clemson, SC, Washington, DC, and Gulfport, MS) to discuss a potential MOU between SEAFWA and AF&PA concerning the NBCI.
 - An MOU was subsequently drafted and was approved by the SEAFWA Directors at their Spring 2004 meeting. A signing ceremony is planned for the SEAFWA Conference in Hilton Head, SC October 31 – November 3, 2004.
5. Develop a database to monitor, compile and summarize bobwhite habitat development projects at the local, state and regional levels.
 - A meeting was held with Lower Mississippi Valley Joint Venture and West Gulf Coastal Plain Bird Conservation Region staff to brainstorm data collection needs and monitoring of NBCI implementation.
 - A data base template was developed for use by field personnel at the state level to track bobwhite habitat accomplishments.
6. Develop a popularized version of the NBCI plan.
 - Work was begun on a popularized version of the NBCI plan and will continue into year 2. Actual production of this piece will be dependent upon securing of partner funding. The aforementioned NBCI color flyer has been used as popularized "short" version in the interim.

Other Accomplishments Towards Project Objectives

1. Represent, promote and act on behalf of the NBCI and the SEQSG at national regional and state meetings.
 - Thirty-four conferences, workshops and other meetings were attended during the year to inform and advocate for the NBCI.
 - Input was provided into the drafting of national and regional bird conservation plans, Joint Venture strategic plans and state quail recovery plans.
2. Track and disseminate up-to-date information regarding relevant federal and state habitat conservation programs and policies to state, federal and non-government bobwhite advocates.

- Comments were drafted in response to USDA Farm Bill rule-making activities on a minimum of 9 occasions.
 - Served on the IAFWA Agriculture Conservation Task Force and chaired a working group to evaluate wildlife integration into the Environmental Quality Incentives Program.
 - Reviewed Multi-State Conservation Grant proposals submitted through the IAFWA Ag Conservation Task Force.
 - The Alabama Department of Conservation and Natural Resources was assisted with planning for a discussion forum at the 2003 SEAFWA Conference to foster better communication and enhanced partnerships between state fish and wildlife agencies, forestry agencies and the NRCS. A second forum is being planned for the 2004 SEAFWA Conference in SC.
 - A proposal for addition of a "Bobwhite Buffers" practice to the Continuous CRP was developed, and support secured from the Congressional Sportsmen's' Foundation and others, with assistance from other SEQSG members.
3. Develop grant proposals for large-scale bobwhite quail/grassland-forb habitat projects.
- Plans for establishment of a national NBCI Habitat Fund were coordinated with Quail Unlimited. A meeting was held with marketing consultant Dave Case and Associates to discuss a marketing approach for development of such a fund.
 - Reviewed grant proposals submitted for North American Waterfowl Conservation Act funding through the Atlantic Coast Joint Venture.
 - Preliminary project proposals for a bobwhite habitat restoration program through the National Fish and Wildlife Foundation/Southern Company "Power of Flight" grant program were compiled for Alabama, Florida, Georgia and Mississippi.
4. Submit written monthly and annual activity reports and administer the project budget.
- Monthly reports were provided to the SEQSG Steering Committee, and the Fish and Wildlife Service Federal Aid office to satisfy Multi-State Conservation Grant requirements.
 - NBCI coordination was accomplished within the allocated budget (budget summary attached).

Respectfully Submitted by: D. Breck Carmichael, Jr.
Program Coordinator

An Introduction to Joint Ventures and Bird Conservation Regions

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ABSTRACT: The Joint Ventures began with the North American Waterfowl Management Plan in 1986 in response to dwindling duck numbers. Priority Habitat Ranges were designed to promote conservation in the principal waterfowl breeding and wintering areas. The Lower Mississippi Valley was included in one of the five initial Priority Habitat Ranges. In the mid-nineties to early 2000, the Joint Ventures were expanded to include "all birds in all habitats" to incorporate the goals of the Partners In Flight plan, North American Waterbird Plan, U.S. Shorebird Conservation Plan, and the Northern Bobwhite Conservation Initiative. These plans have been incorporated in the North American Bird Conservation Initiative (NABCI). NABCI is a "regionally based, biologically driven, landscape-oriented partnership" that delivers "the full spectrum of bird conservation across the entirety of North America". This region focus necessitated the division of North American into Bird Conservation Regions, ten of which are located in the southeastern United States. The Lower Mississippi Valley Joint Venture is primarily covered by the West Gulf Coastal Plain (WGCP) and Mississippi Alluvial Valley Bird Conservation Regions. A Landbird Planning Group has been formed for the WGCP; this group has developed a list of priority species and habitats and now has integrated the Northern Bobwhite into their conservation planning efforts. The Northern Bobwhite is one of the umbrella species for pine savannah habitats in the WGCP. The present emphasis is on the development of an Ecological Landscape Analysis Project to assess the potential of the landscape to support priority species.

Oak Woodlands Restoration in Arkansas

Martin L. Blaney, Arkansas Game and Fish Commission

The Interior highlands have been oak-hickory for over 4000 years as determined by fossil pollen records, managed primarily by human influences (fire and axe) as well as natural fires and climate conditions. Most conservationists believe that things began to change with the suppression of fires on the landscapes beginning in the early 1900s. Now, we face incredible forest densities at levels four times the historical densities, as well as, the encroachment of fire-sensitive species competing on the same soil, nutrient and moisture levels. As a result of the oak decline event in Arkansas, a coalition of conservation partners began earnestly finding funding mechanisms for landscape-scale oak restoration efforts. One such project is the Bayou Ranger District Ecosystem Restoration Project, a 60,000 acre project funded to restore fire-dependent woodland communities on the Ozark/St. Francis National Forest. Our management intent in Arkansas is to re-construct landscape-scale representations throughout the historic range of woodlands and savannas, to provide, once again, a mosaic of early successional habitat. The most economical and strategic method of reducing accumulated litter layers is through aerial ignition burns. By using this method, initial fire intensities can be controlled by the number of ignition points per acre. After fuel and litter layers are reduced in dormant season fires, these sites then require an appropriate fire regime, which involves a fire return interval and more historical seasonality. Commercial and non-commercial thinning is then required to regain the lower stem density levels of woodlands or savannas. Eventually, after a few rotations of prescribed burns, the woodland characteristics begin to be evident and then the season of subsequent burns will influence the types of native herbaceous communities we get back. As far as bobwhite quail are concerned, I think most of us are hoping that "if we build it, they will come". I'm not sure of that, but I do know that we first must regain representations of their historic habitat conditions across landscapes if we are to succeed.

Pine-bluestem Community Restoration and Ecology in the Interior Highlands of Arkansas and Oklahoma

Ronald E. Masters, Tall Timbers Research Station, Tallahassee, FL 32312

Shortleaf pine (*Pinus echinata*.) – bluestem (*Andropogon* spp.) habitats were once a prevalent landscape component in the Ouachita Mountains. Historic red-cockaded woodpecker (*Picoides borealis*) populations may be indicative of the extent of the pine-bluestem system in the Ouachita Highlands. Frequent fire maintained these woodlands as distinctly open, pine-dominated or hardwood-dominated communities with a bluestem grass to shrub dominated understory. Frequent fires occurred with mean fire intervals of 3.5 to 5.6 years and ranged in size from less than 300 ha to over 1400 ha. Historic fire frequency was related to settlement patterns in the Ouachita Highlands with frequent fire occurring during time periods of Native American occupation. Patterning of fires suggested that Native Americans had habitat management objectives. Lightning caused fires ranged from 2 days to 12 years apart somewhere on the 5,701 ha McCurtain County Wilderness Area, with a mean of 3.1 years. Lightning caused fires occurred most often from July to October and of lower frequency in March and April. Fire suppression has led to the replacement of pine-grassland woodlands with closed canopy pine-hardwood forest types throughout the southeastern United States. For landscape and ecosystem restoration, quantitative knowledge of historical vegetation patterns across the landscape is essential in order to develop accurate restoration targets. Historical land use documents such as General Land Office (GLO) survey notes have successfully been used to describe presettlement and settlement landscapes. Analysis of GLO data in the Ouachita Highlands of Arkansas and later in Oklahoma provided targets for stem density, basal area and information on tree species composition for renewal of the pine-bluestem community. In the absence of quantitative data, plant community composition and fire regime may be inferred by review of sediment cores from bogs, human settlement patterns, and historical accounts. Sediment cores provide insights on long term community dynamics and possible occurrence of fires. Historical accounts give insights to help develop restoration targets based on plant and animal occurrence records. They may provide insight for developing a suitable fire regime from descriptions of aboriginal firing patterns and seasonality of those patterns. Where possible fire chronologies can be used to refine recommended fire regimes and landscape interaction. Understanding gained from long-term small scale experiments on fire frequency and plant community response can further enhance development of management plans. Implementing a restoration plan may require direct intervention to restructure the system in a manner that is conducive to perpetuating it with fire, particularly where time is critical for saving fire-dependant species.

Northern Bobwhite Response to Pine-bluestem Restoration in the Interior Highlands of Arkansas and Oklahoma

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We evaluated northern bobwhite (*Colinus virginianus*) abundance and habitat characteristics in unmanaged shortleaf pine (*Pinus echinata*)-hardwood stands and in thinned pine-grassland stands managed for the red-cockaded woodpecker (*Picoides borealis*) on the Ouachita National Forest, Arkansas. These stands were managed on an ecosystem management basis rather than specifically for bobwhites. We used whistling-male counts, and covey-call counts as indices of population abundance in order to determine bobwhite population response in untreated control, thinned, and thinned and burned stands either 1, 2, or 3 growing seasons post-burn. Woody stem density, understory and overstory canopy cover, conifer and hardwood basal area, and the disc of vulnerability were used to characterize habitat response. Relative abundance of whistling males in the spring was greatest in thinned stands 3 growing seasons postburn and in thinned, but unburned stands. These stands had the smallest disc of vulnerability, and the greatest understory shrub cover <2 m in height compared to other treatments. A threshold-like increase in bobwhite abundance was observed as a function of woody structure <2 m. Pine-grassland restoration provided suitable structure for bobwhites in spring, summer, and fall, but may not be adequate in winter. Bobwhite density within a stand was apparently related to the amount of usable space surrounding the stand. We also examined 2 hypotheses commonly used to manage northern bobwhite habitat: 1) usable space and 2) habitat quality, i.e., food quality and quantity. We studied the response of bobwhite foods (plants and invertebrates), usable space and populations following thinning and burning. We estimated invertebrate food abundance using sweep nets and plant food abundance using herbaceous and woody stem counts of food-producing plants. Richness, density, and frequency of occurrence of bobwhite food-producing plants increased following thinning and fire. Relative abundance, mass, and frequency of occurrence of invertebrate foods also increased following thinning and fire and as a function of time since burning. Important fall and winter food plants, especially tick trefoil (*Desmodium* spp.) and bush clover (*Lespedeza* spp.) legumes, increased in density and frequency of occurrence following thinning and fire. We found food supply following pine-grassland restoration was a function of usable space. Food abundance alone did not characterize bobwhite population response. By comparing stands where usable space and bobwhite abundance were similar, we deduced an increase in bobwhite food supply had a minor effect on bobwhite abundance. Food abundance was therefore not considered a limiting factor for bobwhites following pine-grassland restoration. This was further supported by on-going food habits studies and average body weights of bobwhites captured for telemetry studies. Radio-telemetry data suggested that pine regeneration areas and hardwood drainages were important components for providing

suitable winter habitat. Telemetry data also showed that time since burned was important for determining usable space as defined by woody understory structure. Bobwhites avoided mature stands in the fourth year or longer post-burn. They also avoided regeneration stands in the third year or longer post-burn. Bobwhite management efforts in similar shortleaf pine forests should include thinning to reduce midstory and overstory cover, and frequent fire on a < three-year cycle to maintain low basal area stands with limited midstory.

**The Lower Mississippi Valley Joint Venture:
Conservation Planning Activities in the West Gulf Coastal Plain BCR**

R. Randy Wilson, LMVJV Science Coordinator

The Lower Mississippi Valley Joint Venture (LMVJV) is a self-directed, non-regulatory private, state, federal conservation partnership that exists for the purpose of implementing the goals and objectives of national and international bird conservation plans. That is, the LMVJV functions as the forum in which the private, state, and federal conservation community develops a shared vision of bird conservation, cooperates in its implementation, and collaborates in its refinement. To accomplish this, the LMVJV strives to provide value added services in the following areas: (1) stepping down the broad goals and objectives of national and international plans to eco-regional specific population targets, habitat objectives, and conservation strategies; and (2) provide science-based planning and landscape-level prioritization in support of targeted delivery of partner conservation programs. This presentation will provide insight into LMVJV activities in the West Gulf Coastal Plain Bird Conservation Region.

In the West Gulf Coastal Plain Bird Conservation Region, the LMVJV is working with NatureServe to identify and map ecological systems (e.g., large river floodplains, wet longleaf savannas and flatwoods). These delineations will provide an important basis for assessing historic change in land cover / land use patterns, as well as, to provide a basis for prioritizing the habitat delivery projects. We have also undertaken a landscape characterization project targeted at characterizing the ability of the current landscape to support source populations of birds. The forested wetland assessment is nearing completion and we have begun GIS activities to characterize grassland / early successional habitats. As part of this grassland assessment, we are developing a surface suitability model that depicts the relative abundance of Northern Bobwhite Quail across the entire BCR. This modeling effort follows similar methodology described by Dr. Wes Burger for the Central Hardwoods and Southeast Coastal Plain BCRs. Breeding Bird Survey data is being combined with National Land Cover Data to develop mathematical models that can then be applied to the landscape using GIS technologies. It is anticipated that this surface suitability model will be useful to land managers in deciding where to target habitat delivery. The final product should be available in the latter part of 2004.

REGIONAL PLANNING AND PRIORITIZATION OF NORTHERN BOBWHITE HABITAT RESTORATION IN THE CENTRAL HARDWOODS BIRD CONSERVATION REGION

Northern bobwhite populations have declined throughout their range at nearly 4% per year since 1966. Although these declines have been attributed to a variety of factors, the most likely cause has been



large-scale deterioration of quail habitat quality associated with advanced natural succession, intensive monoculture farming, and intensive timber management. In the Southeast, Midwest, and Central regions of the United States, northern bobwhites are linked to early successional plant communities maintained by disturbance (e.g. fire). Stemming the population decline and restoring bobwhite populations to former densities will require creation and maintenance of essential habitat on a massive scale. Although, in the past, bobwhite were an accidental by-product of broadly applied land management practices, in modern landscapes, comparable densities will only exist as a result of premeditated, intentional creation and maintenance of early successional plant communities.

Northern Bobwhite Conservation Initiative

In response to this decline, the Southeast Quail Study Group Technical Committee developed an ambitious, range-wide population and habitat restoration plan called the Northern Bobwhite Conservation Initiative (NBCI). The goal for this plan is to restore range-wide northern bobwhite populations to an average density equivalent to that which existed on improvable acres in the baseline year of 1980.

Central Hardwoods Region

Bobwhite populations declined at a rate of >4% per year from 1980 to 1999 in the Central Hardwoods Bird Conservation Region (BCR). As of 2002, the NBCI plan estimated that

376,584 coveys would need to be added to the autumn population to restore bobwhite populations to 1980 levels. In this region, important bobwhite habitat management practices include conversion of exotic cool season grasses or cropland to native warm season grasses and forbs and site preparation, burning, and thinning of pine forests to encourage favorable grasses and forbs.

Distribution of Conservation Efforts

The NBCI defines explicit habitat enhancement or creation objectives for each BCR and land use category within the BCR. However, the recommendations are not spatially explicit in the sense that no recommendations are made as to how habitat management practices should be distributed within the BCR or among patches of a specific land use category across the BCR. Estimates of required viable population size, coupled with expected densities, provide guidelines for how habitat should be distributed over a landscape with regard to patch size so as to produce self sustaining populations.

Stemming the population decline and restoring bobwhite populations to former densities will require creation and maintenance of essential habitat on a massive scale.

A fundamental question of concern for all large-scale conservation initiatives is "How do we distribute technical expertise, cost-shared practices, and other resources in a manner that optimizes conservation benefit per investment ratios." Conservation investments should be placed within the landscape in regions that have potential for greatest population response and highest probability of eliciting a sustained response. Such regions might be characterized as already sustaining extant bird populations, yet having extensive quantities of potentially

usable habitat available for enhancement. Tracts large in size and in close proximity to existing suitable habitat should receive priority status. Previous state-level bobwhite initiatives have selectively allocated resources using a variety of subjective and objective criteria so as to maximize return on investment. In this project we use a large-scale habitat modeling approach to identify extant suitable habitat for the purpose of identifying NBCI focal areas and guiding habitat enhancement efforts and conservation investments.

Bobwhite Habitat Model

Bobwhite habitat suitability was modeled as a function of landscape structure and composition in a logistic regression context. Bobwhite counts from Breeding Bird Survey routes ($n = 84$, 1990–1994) were used as a measure of bobwhite abundance and were linked to landscape structure and composition estimated from the 1992 National Land Cover Data (Figure 1).

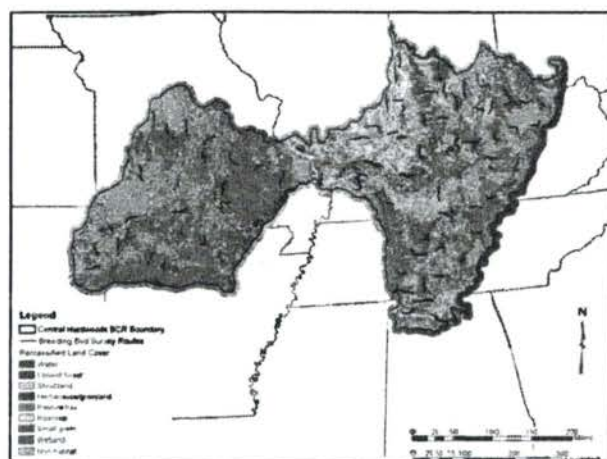


Figure 1. Breeding Bird Survey routes and land cover data used to develop a bobwhite habitat suitability model for the Central Hardwoods region.

A model selection process was used to identify the best approximating model (based on AIC and correct classification rates) from a set of competing candidate models that predicted probability of occupancy as a function of metrics describing landscape structure and composition. The best model included the landscape structure and composition measures: 1) cohesion (measures the connectedness of all habitat patch types); 2) percentage of

landscape with woody core area (percentage of woody habitats minus 100 m of edge around woody patches); and 3) pasture contiguity index (index of connectedness and shape of pasture habitats). The model was used to estimate bobwhite habitat suitability on a scale of 0–1 relative to landscapes in which populations exhibited greater abundance. To evaluate habitat suitability over the BCR, we back-applied the model to the entire Central Hardwoods region to generate a surface of habitat suitability with a 5000m grid cell size. Habitat suitability (HSI) was projected at 6 levels: 1) 0.00–0.49; 2) 0.50–0.74; 3) 0.75–0.84; 4) 0.85–0.89; 5) 0.90–0.94; and 6) 0.95–1.00 (Figure 2).

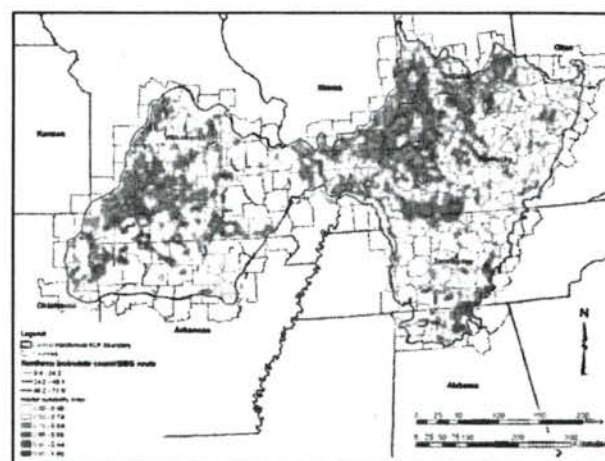


Figure 2. Breeding Bird Survey routes, scaled by bobwhite counts, in relation to predicted habitat suitability for the Central Hardwoods region.

The large-scale northern bobwhite habitat suitability model suggested several areas within the Central Hardwoods BCR as having a high probability of supporting moderate bobwhite populations. These areas would likely be most practical for application of habitat/population restoration efforts. There were about 73,560 square miles (62% of total BCR area) of habitat patches with $HSI \geq 0.50$; 51,880 square miles (44% of total BCR) of habitat patches with $HSI \geq 0.75$; and 21,650 square miles (18% of total BCR) of habitat patches with $HSI \geq 0.95$.

Based on a simulated bobwhite population viability model assuming winter weather catastrophes and a 30–40% harvest level, 400 birds was defined as a sustainable population. Average bobwhite population density in the

Central Hardwoods region was assumed to be about 1 bird per 20 acres. A sustainable population patch was defined as a contiguous habitat patch that was large enough to support ≥ 400 birds assuming a 1 bird per 20 acres. There were about 72,720 square miles of sustainable population patches with HSI ≥ 0.50 (99% of all patches with ≥ 0.50 HSI); 49,775 square miles of sustainable population patches with HSI ≥ 0.75 (96% of all patches with HSI ≥ 0.75); and 18,940 square miles of sustainable population patches with HSI ≥ 0.95 (87% of all patches with ≥ 0.95 HSI).

Model Utilization

This habitat suitability model provides an objective, data-based approach for assigning

management priority areas to landscapes within the Central Hardwoods Bird Conservation Region. Habitat suitability is based on land use characteristics that have the greatest probability of supporting moderate bobwhite populations. These areas likely represent the greatest opportunity for successful bobwhite population restoration. The model may also be useful for identifying those areas where the most extensive management will be needed to restore and maintain sustainable bobwhite populations. In order to reach a measurable bobwhite population increase at a regional level, there must be active, large-scale habitat improvements.

- **Restoring bobwhite populations will require large-scale habitat management.**
- **The Northern Bobwhite Conservation Initiative estimated that >375,000 additional coveys were needed to restore bobwhite populations to 1980 levels.**
- **Conservation investments should be placed in the landscape in regions that have greatest potential eliciting a sustained population response.**
- **The large-scale bobwhite habitat suitability model suggested several potentially suitable bobwhite restoration areas within the Central Hardwoods region.**

This project was a collaborative effort among The American Bird Conservancy, Mississippi State University, Forest and Wildlife Research Center, The Central Hardwoods Joint Venture, and the Southeast Quail Study Group.

Poster Abstracts

Georgia's Bobwhite Quail Initiative: Facilitating quota youth quail hunts on private lands in Georgia

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ABSTRACT: The Georgia Department of Natural Resources-- Wildlife Resources Division's (DNR) Bobwhite Quail Initiative (BQI) was initiated in 1999 and is being implemented in 15 counties of Georgia's Upper Coastal Plain Physiographic Province. The primary goal of BQI is to restore habitat for northern bobwhites (*Colinus virginianus*), songbirds and other farm wildlife on private lands in Georgia. A secondary goal is to promote and encourage quail hunting. BQI biologists have worked with 753 cooperators to provide quail management assistance for their farmlands. In 2003, several of these cooperators were approached by BQI biologists for permission to conduct youth hunts on farms that were known to have adequate quail populations and ample area to support a full day hunt. The hunt dates were arranged by BQI biologists and set up on the state quota system for selection of youth hunters between the ages of 10 and 17 yrs. The hunts were advertised on the DNR website and in a popular state wildlife magazine. A total of 20 youth hunters applied. Eight hunters (ages 11 -16) were chosen and then paired together to attend one of the 4 available hunts. The hunters' parents were notified following the drawing and again just prior to the hunts. Seven of the eight chosen hunters attended their respective hunts. Hunters were allowed to bring their own dogs or have dogs provided by BQI biologists and volunteers. Three of the 7 hunters had access to bird dogs that they brought with them to their hunts. In total, 18 coveys were located. All youth hunters shot at quail, and 11 birds were harvested. The hunts were the first opportunity for 6 of the youths to hunt wild quail and were considered a great success by all involved.

Georgia's Bobwhite Quail Initiative: Results from four years of program implementation

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ABSTRACT: The Bobwhite Quail Initiative (BQI) is implemented by the Georgia Department of Natural Resources—Wildlife Resources Division on private lands in 15 counties of the upper coastal plain physiographic province of Georgia. Since initiation of the BQI in the summer of 1999, biologists have contacted 753 cooperators and provided management assistance for >403,000 acres of farmlands in efforts to meet the program's goal of restoring habitat for northern bobwhites (*Colinus virginianus*), songbirds and other farm wildlife in Georgia. In total, >\$394,000 has been disbursed through BQI to 144 cooperators as incentives for the management of 501.5 miles of linear field practices, 1,078 acres of fallow patches and pivot corners, and 2,345.5 acres of pine stands. Across all program years cooperators averaged 72% total compliance (range: 69%-78%), 17% percent partial compliance (range: 6%-23%) and 11% non-compliance (range: 5%-22%). Cooperator enrollment of fields and pine stands peaked at 227 in 2003 as a result of increased incentive rates and management options. While conducting habitat compliance evaluations during May – August (2003) biologists recorded incidental sightings and calling of quail that resulted in occupancy rates of 2.4 quail per treatment field (n = 228) versus 1.3 quail per control field (n = 39). Bobwhites have continued to respond positively to BQI practices on enrolled farms. As long as incentives meet or exceed land rental rates, landowners' interest in enrolling in this program will likely continue to be high.

A New Bobwhite Quail Habitat Assessment Tool for Missouri

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ABSTRACT: The Missouri Department of Conservation has utilized a field evaluation procedure (Wildlife Habitat Appraisal Guide) for measuring the quality of habitat for bobwhite quail for more than 20 years. The guide rates the quality of existing vegetative cover within a particular habitat and accounts for agricultural practices and management. The system produces a habitat quality index for specific fields as well as for an entire land management unit or farm and identifies limiting factors as a basis for making improvement.

However, actual home ranges for bobwhite quail are not marked by permanent field boundaries, nor are they the same from one year to the next or from one season to another. Research conducted in Oklahoma has suggested that landowners interested in enhancing habitats for bobwhite quail improve the usable space for bobwhites by making initial management decisions on the basis of the species conceptual home range. Additional research conducted in Missouri describes a lack of brood-rearing and shrub cover as the greatest limiting factors for quail populations in Missouri.

We revised the existing wildlife habitat appraisal guide for bobwhite quail and developed a new procedure for evaluating habitats and making management decisions. The new guide will provide landowners and resource professionals with a tool to examine the basic habitat requirements of bobwhite quail within a conceptual home range so that limiting factors can be identified and specific management practices implemented. The habitat assessment tool will also enable landowners to determine the practicality of managing for bobwhite quail on their property and the intensity of management that might be required to achieve their goals and objectives.

Field testing of the new model is complete. Comparison testing of the original and new models will be gathered in 2004. One comparison will evaluate habitats with good quail populations while another comparison will rate habitats with no quail population present.

Information and Marketing Efforts of the Northwest Missouri Quail Initiative

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ABSTRACT: A facilitated focus group discussion was conducted with 56 northwest Missouri landowners known to have an interest in bobwhite quail management. 83% of landowners desired more technical assistance. Citing a lack of staff to meet the need for technical assistance requests, the landowners were asked what else they needed to restore quail habitat. The overwhelming response was access to how-to information. Specific examples receiving the most votes were: workshop/tour series, small group meetings with a biologist, how-to videos, website, newsletter and calendar.

Efforts to meet landowner needs were started with a newsletter that now has a statewide circulation of 10,000 landowners and agency staff. Additional information and marketing materials were developed through June 2004, including a followup survey of 2000 quail cooperators to identify further needs and evaluate marketing efforts to date.

Comparison of different techniques to estimate annual survival rates of northern bobwhites

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ABSTRACT: The validity of estimating annual survival rates of northern bobwhites (*Colinus virginianus*) using radio telemetry has been questioned. A recent comparison between previously published telemetry-based survival estimates and annual survival estimates generated using stable population age ratios has shown that many reported telemetry-based survival estimates to be too low to maintain a stable population. At our study sites, Tall Timbers Research Station (TTRS), and Pebble Hill Plantation (PH), we have estimated annual survival rates via telemetry, collected age ratio data during annual banding in January, and monitored annual population change using band-recapture from 2000–2003. Therefore, this created an opportunity to compare the differing techniques to estimate survival on these sites. At TTRS, telemetry-based annual survival rates ranged between 0.07 and 0.40. January age ratios ranged between 2.1 and 2.9 generating stable population age ratio survival estimates ranging between 0.25 and 0.32. Survival estimates from banding data were not available at the abstract deadline. In 2000 and 2001, survival was similar between the age ratio method and telemetry methods. Age ratio survival rates were significantly lower than telemetry-based estimates in 2002 and significantly higher in 2003. We adjusted the stable population age ratio survival estimates by the annual finite growth multiplier and survival estimates were not significantly different in all years except 2003. At PH, telemetry-based annual survival rates ranged between 0.09 and 0.24. January age ratios ranged between 1.3 and 6.9 and stable population age ratio survival estimates ranged between 0.25 and 0.32. Survival rates for all methods were similar for all years except 2003. Our results suggest that telemetry-based survival rates were realistic and were useful when comparing demographic responses to experimental treatments. On our study areas, annual survival rates determined from “stable population” age ratios were not useful or realistic because key assumptions were not met as bobwhite populations exhibited large annual fluctuations due to annual variation in seasonal survival, annual survival, and recruitment.

Two Quail Focal Areas Within the Central Hardwoods BCR of Arkansas

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ABSTRACT: During the 2003 and 2004 WHIP sign-ups in Arkansas, two areas were designated as "Quail Special Project Areas" (one in Searcy County and one in Fulton County). Both of these areas lie within the Central Hardwoods BCR in northern Arkansas. Landowners within these two project areas received 75% federal cost-share for quail friendly management practices, such as prescribed burning, strip disking, fescue eradication/native grass establishment and fencing. Additionally landowners received 25% state cost-share (provided by Arkansas Game and Fish Commission) for these same practices. Collectively, thirty-nine (39) landowners have enrolled in WHIP in these areas during the past two years.

Specifically, fourteen (14) landowners within the Searcy County area have enrolled 1,100 acres (6.5% of land base within the project area) and twenty-five (25) landowners within the Fulton County area have enrolled 3,000 acres (7.5% of land base within the project area).

Habitat manipulations began in both areas in October 2003. Meanwhile, baseline data was collected in order to obtain pre-treatment information relative to quail numbers, resident songbird abundance and vegetative characteristics.

Data from spring call count surveys in these areas averaged 1.40 quail heard/mile in Searcy County and 1.45 quail heard/mile in Fulton County. Resident songbird abundance is being monitored through summer point counts (N=120) at both project areas and at reference sites. Likewise, vegetative data is being monitored at a total of 220 plots within both project areas and at reference sites. Data collected at these plots include percent canopy cover, basal area, ground cover composition and vertical structure of woody vegetation within 10 meters of the plots.

Due to the recent timing of habitat manipulations thus far, post-treatment data is not available at this time. Future efforts will be made to track quail and songbird response to habitat changes within these two project areas.