

SUMMARY OF THE 3RD ANNUAL MEETING OF THE SOUTHEAST QUAIL STUDY GROUP

Sheldon's Motel and Restaurant
Keysville, Virginia
September 15-18, 1997



SPONSORED BY
Virginia Department of Game and Inland Fisheries
Quail Unlimited

PREFACE

Recently, the Virginia Department of Game and Inland Fisheries had the privilege of hosting the third annual meeting of the Southeast Quail Study Group (SEQSG). All of us from the Department want to thank everyone involved, including the attendees, speakers, committee chairs and service providers. The conference went well thanks to all participants.

The following groups and businesses provided funding and services that helped make the third annual meeting a success: Quail Unlimited National, Central Virginia Chapter of Quail Unlimited, South Central Virginia Chapter of Quail Unlimited, Rappahannock Valley Chapter of Quail Unlimited, Pittsylvania Chapter of Quail Unlimited, Sheldon's Motel and Restaurant, and St. Laurent Forest Products. The following private landowners graciously allowed to visit their properties during the field tours: Jim Garnett, Charles Moyer, Rupert Easter, Corbin Easter, John Mellon and Tim Willis. Without the cooperation of private landowners, any quail management effort will fall short.

There were success stories in the quail management field over the past year. Changes in the Conservation Reserve Program were particularly beneficial to the Southeast. Texas and Oklahoma reported stable bobwhite populations in most areas and increasing populations in some. The Public Relations, Information and Education committee reported the successful establishment of a SEQSG web site, placing the latest quail information at biologist's fingertips. Finally, important research on many facets of bobwhite ecology and management was completed since the last meeting.

A summary of the minutes from the SEQSG meeting is presented in the following pages. *Because of the lack of peer review, and preliminary results of ongoing research are presented, this document should not be considered as a "published proceedings"*. It is provided for the benefit of SEQSG participants and others interested in bobwhite management.

Though successes were apparent during the previous year, members of the SEQSG chose to focus on the job that remained to be done. Members expressed the need for increased effort. Increasing acreage of cotton in southeastern agricultural areas and increasing intensity in pine timber management via total herbaceous competition control loom dark on the horizon. Recognizing that only a tiny fraction of the struggle has past, SEQSG members stressed the need to continue lobbying for federal and state programs that can have beneficial effects on habitats across a landscape.

We can study predators, investigate soft-release systems, and attempt to provide quality quail hunting opportunities on public lands. But to truly bring quail back as a huntable species for all sportspersons in the Southeast, landscape level habitat management must remain the foremost goal.

The Editors: Marc Puckett and Mike Fies, Virginia Department of Game and inland Fisheries



SOUTHEAST QUAIL STUDY GROUP MEETING
SEPTEMBER 15 - 18, 1997
KEYSVILLE, VIRGINIA
Theme: Quail In The Real World

AGENDA AND TABLE OF CONTENTS
(page numbers are in parentheses)

Monday, September 15

6:00-until... Steak/Social/Reception At Old Coppermine, Courtesy of St. Laurent Forest Products

Tuesday, September 16 - Moderator, Mike Fies, Va. Dept. Game & Inland Fisheries (VDGIF)

- 8:00-8:15** **Welcome and Opening comments** (page 1)
William L. Woodfin, Jr. - Executive Director, VDGIF
Robert W. Duncan - Wildlife Division Director, VDGIF
Rocky Evans - Executive Vice President, Quail Unlimited
- 8:15-8:25** **Southeast Quail Study Group: Purpose and Vision For the Future** (page 1)
Breck Carmichael - Chair, SEQSG
- 8:25-10:00** **State Reports and Updates**
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| Arkansas - Fred Ward (page 4) | Missouri - Dr. Tom Dailey (page 11) |
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| Georgia - Jerry Bearden (page 6) | South Carolina - B. Carmichael (page 13) |
| Indiana - Brian Frawley (page 6) | Tennessee - Mark Gudlin (page 14) |
| Kentucky - Jeff Sole (page 7) | Texas - Dr. Markus Peterson (page 15) |
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- 10:00-10:30** **Break**
- 10:30-10:50** **Quail and the CRP Program - How Did We Really Make Out?** (page 16)
Mark Gudlin - Tennessee Wildlife Resources Agency
- 10:50-11:10** **EQIP and WHIP Update - Opportunities for Quail Management** (page 16)
Gene Whitaker - National Wetland Conservation Alliance
- 11:10-11:40** **The Sustainable Forestry Initiative - Can Quail Benefit?** (page 17)
Rick Cantrell - American Forest and Paper Association
- 11:40-12:00** **Restoring Longleaf Pine Ecosystems - Implications For Quail** (page 17)
Dr. David Van Lear - Clemson University

- 1200-1:00 Lunch - Provided at Sheldon's Restaurant**
- 1:00-2:00 Are We Mismanaging Quail On Public Lands - Panel Discussion (page 18)**
Panel Members: Mike Fies (Virginia), Jeff Sole (Kentucky), Dr. Tom Dailey (Missouri), and Breck Carmichael (South Carolina)
- 2:00-2:30 Do Opportunities Exist for Reducing Avian Predation of Quail? (page 23)**
Chad Fox - USDA, Wildlife Services
- 2:30-3:00 Break**
- 3:00-5:00 Committee Meetings**
Steering Committee - Breck Carmichael, Chair
Agricultural Policy Committee - Reggie Thackston, Chair
Funding Committee - Rocky Evans, Chair
Habitat Improvement Implementation Committee - Jeff Sole, Chair
Publicity, Information and Education Committee - Dr. Dean Stewart, Chair
Research Committee - Dr. Wes Burger, Chair
- 5:00-7:00 Dinner - On your own**
- 7:00-until... SEQSG Internet Web Site Demo. - Dr. Dean Stewart (page 23)**
Quail Population Model Demo. - Dr. Wes Burger (page 23)
Committee Meetings Continued - As necessary
Quail Videos - New Agency Videos on Quail Management

Wednesday, September 17 - Moderator, Marc Puckett, VDGIF

- 8:00-9:10 Committee Reports (page 23)**
Committee Chairs
- 9:10-9:30 Tall Timbers Research Update (page 31)**
Dr. Bill Palmer, Tall Timbers Research Station
- 9:30-9:50 Albany Area Quail Project (page 32)**
Clay Sisson, Auburn University
- 9:50-10:20 Break**
- 10:20-10:40 Mississippi State University Research Update (page 33)**
Dr. Wes Burger, Mississippi State University
- 10:40-11:00 University of Tennessee Research Update (page 33)**
Dr. Ralph Dimmick, University of Tennessee, Knoxville
- 11:00-11:20 North Carolina Research Update (page 33)**
Dr. Bill Palmer, North Carolina State Univ./Tall Timbers

- 11:20-12:00** **Pen-Raised Bird Issues & The Anchor Covey Release System - A "Shoot From The Hip" Discussion** (page 34)
Marc Puckett - VDGIF
Jim Evans - Quality Wildlife Services, Inc.
- 12:00-1:00** **Lunch** - Provided at Sheldon's Restaurant
- 1:00-5:00** **Field Trip - Quail In the Real World, Amelia Co., Va.**
Nest Predator Reduction Study (Garnett Farm) - Dr. Bill Palmer
Nesting Ecology Study (Easter Cut-over) - Mike Fies, Marc Puckett
Quail Management on Amelia Wildlife Management Area - Pat Keyser
- 5:00-until...** **Social and Evening Barbecue**
Amelia WMA, Courtesy of Quail Unlimited
Skeet Shooting, Interactive Video and pig/chicken BBQ

Thursday, September 18

- 8:00-12:00** **Field Trip - Quail Management in Piedmont Habitats**
Managing Pine for Quail and Timber (Old Coppermine) - Pat Keyser, Joel Cathy (St. Laurent), Jim Bolton (St. Laurent)
Warm Season Grasses for Quail (Willis Farm) - Patty Moore and Pat Keyser
Quail Plantation Management in the "Not-So-Deep" South (Ridgeway Plantation) - Marc Puckett and Pat Keyser
- 12:00** **Return home**

Abstract: The Virginia Department of Game and Inland Fisheries hosted the third annual meeting of the Southeast Quail Study Group (SEQSG) in Keysville, Virginia on September 15-18, 1997. The theme of the meeting was "quail in the real world", with emphasis placed on the importance of managing quail on private lands at a landscape level. Updates on quail-related activities were provided by wildlife agency personnel in all southeastern states. Highlights included Arkansas' passing of the 1/8 of 1 percent sales tax referendum to support their wildlife agency, Mississippi's modification of their existing strategic quail management plan, Tennessee's production of a quail management video for children, and Virginia's report on the first year of their quail management plan. The primary agenda began with presentations by Mark Gudlin and Gene Whitaker that summarized quail management opportunities in the Conservation Reserve Program (CRP), Environmental Quality Incentive Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP). Rick Cantrell, of the American Forest and Paper Association, spoke on the Sustainable Forestry Initiative. He reported that forest industry cooperators contributed \$62 million to forest research, reforested 1.2 million acres and limited average clearcut size to 61 acres. Dr. David Van Lear, of Clemson University, reported that 51 percent of remaining longleaf acres are in the hands of small, private landowners and expressed a need for outreach to establish landscape level interest in longleaf pine reforestation. Mike Fies led a panel discussion to address the question "are quail mismanaged on public lands?". Panel members and the audience tended to agree that quail are overharvested on public management areas but conceded that little evidence existed to substantiate claims that tighter harvest regulations would increase numbers. Chad Fox, of the U.S. Department of Agriculture, discussed possible opportunities for reducing avian predation on areas managed for quail. Committees of the SEQSG met and reported on recent and planned activities. The Agricultural Policy Committee reported on the 15th CRP sign-up and the "wildlife-friendly" Environmental Benefits Index changes. The Habitat Improvement Implementation Committee outlined two new brochures to be completed soon (Fescue Eradication and Pine Plantation Management). The Publicity, Information and Education Committee reported the successful establishment of the SEQSG web page. The Research Committee reported on three areas of emphasis: effects of hunter harvest, methods of improving managed pine plantations for quail and addressing predator issues. Research is ongoing to address forest management and predator issues. A large multi-state study is planned to investigate the effects of hunter harvest. The Albany Area Quail Project reported radio-tagging over 2000 bobwhite and obtaining telemetry information on 238 quail broods. Mississippi State University reported on eight quail research projects, including investigations into marking techniques for day-old bobwhite chicks, economic impacts of bobwhite hunting in Mississippi and the effects of radio-tagging on bobwhite survival. Dr. Ralph Dimmick, of the University of Tennessee, discussed several ongoing research projects. He is investigating the effects of field trial disturbance on quail mortality and whether mycotoxins in soybeans are having harmful effects on bobwhites. North Carolina State University updated the group on two main research initiatives. These included the economic and water quality benefits of field borders in agricultural systems and the effects of habitat improvements and mid-range mammalian nest predator removal on quail recruitment. Tall Timbers Research Station highlighted several research projects including investigations into the effects of chemical pine release with and without fire treatment on quail populations and continued work on brood habitat selection. The issue of pen-raised quail and soft-release systems provided lively discussion to end the indoor meeting sessions. Jim Evans, a biologist for Quality Wildlife Services who developed the Anchor Covey Release System (ACRS) stated that there are many frustrated landowners who have attempted to restore wild coveys with little success. He felt that the ACRS offered hope to small landowners wanting to maintain huntable quail populations. Biologists in the audience expressed concern that the system might be seen as a quick fix solution and that focus might be shifted away from habitat management. Evans felt that the ACRS might actually stimulate landowners to do more habitat work by maintaining interest in quail hunting. The meeting ended with field trips to visit several quail research study sites and to observe quail management on Amelia Wildlife Management Area and other local Piedmont Virginia habitats.

MINUTES FROM THE 3RD ANNUAL SOUTHEAST QUAIL STUDY GROUP MEETING

September 15-18, 1997
Keysville, Virginia

Tuesday, September 16

Welcome and Comments

William Woodfin, Director of the Virginia Department of Game and Inland Fisheries (VDGIF) welcomed the group to Virginia. He recognized the hard work of quail management professionals in the Southeast and challenged the group to give today's youngsters some quail stories to tell their grandchildren.

Bob Duncan, Wildlife Division Director, VDGIF, commended the Virginia staff for doing a fine job organizing the meeting and for their hard work towards bringing back Virginia's bobwhite. He recognized the VDGIF staff for their efforts concerning quail management statewide. He spoke of the enormous challenges facing today's quail managers and thanked Rocky Evans and Quail Unlimited.

Rocky Evans, Executive Vice President for Quail Unlimited (QU) expressed his delight to be a part of the meeting. He thanked the Central Virginia, South Central, Rappahannock and Pittsylvania QU chapters for monetary support of the meeting. He suggested that our love for quail is what brought meeting participants together. He expressed concern that mountain quail may soon be listed as a protected species and fears that the bobwhite could soon be joining them. He stated that the number one priority of Quail Unlimited was to take advantage of opportunities for quail management provided by the Farm Bill. His number two priority was to investigate the effects of predation, primarily nest predators. His third priority was to more effectively quantify the benefits of quail management efforts, particularly to non-game species, which will someday be the "crutch we stand on" to accomplish goals. He stated that sportspersons appreciated our efforts, but they wanted to see results. He suggested that we continue to focus on habitat issues, but that we also take a serious look at predator management. He emphasized that we needed to keep our minds open to new ideas about quail management.

Southeast Quail Study Group: Purpose and Vision for the Future

Breck Carmichael - South Carolina Department of Natural Resources

Good morning, and let me also welcome you to the 3rd annual Southeast Quail Study Group meeting. Back about 7 months ago, when the plans for this meeting were first being formulated, Steve Capel asked me if I would sort of kick this meeting off by presenting a "vision for the future." Although I am certainly no mystical card reader, nor do I have a crystal ball, his request seemed pretty straight forward at the time and I agreed. As I have thought about what I want to say, I now realize that it is not straight forward at all.

Before looking into the future, I'd first like to briefly review some ancient and not-so ancient history. *"The bobwhite quail occurs over a vast area of the Eastern, mid-Western and Southern United States and southward through Central America. During the pioneer period of our country, the species increased greatly and extended its range, for the crude agriculture then in vogue created conditions that were ideal for its multiplication. With the increase of the human population, however, and with improvements in farming methods and farming machinery and expansion of the livestock industry, came conditions less favorable to the species. As a result, difficulty is now being experienced in maintaining these birds in numbers in many parts of their range."*

Those words should be familiar to you for they are from the opening paragraph in the introduction to Herbert Stoddard's classic text "The Bobwhite Quail - Its Habits, Preservation and Increase." *"...difficulty is now being experienced in maintaining these birds in numbers in many parts of their range."* Mr. Stoddard wrote that over 50 years ago! I said it last year at this meeting, and it bears repeating: this problem, the decline of the bobwhite virtually across its entire range, is not a new problem, nor will it be easily solved. Mr. Stoddard, as brilliant as he was did not solve it, although I submit that he did leave us the tools with which to solve the problem. It is up to us to use those tools.

A little more recent history. In August, 1995, a group of over 70 biologists, researchers and managers gathered in Hampton County, SC and formed what has become known as the Southeast Quail Study Group. Many of you were there. The established purpose of our group is, and I quote: "The Southeast Quail Study Group will provide an open forum for discussion of factors affecting the quail resource within the region. The group is charged with the tasks of: (1) identifying factors responsible for declines in wild quail populations in the Southeast, (2) identifying gaps in knowledge about quail population dynamics, ecology and habitat management, (3) developing solutions to specific problems, (4) prioritizing regional research and quail management efforts and (5) providing sound scientifically based information about quail problems to administrators and policy makers. I am often asked, "What has the Southeast Quail Study Group accomplished? How have bobwhites been helped?" I'd like to take a few minutes to tell you what I think has been accomplished.

Thanks to the efforts of our Research Committee, led by Wes Burger, we now have a much clearer and focused research direction for quail in the Southeast. Priorities have been established, and those priorities are becoming well known throughout the research community. Further, the Research Committee has identified projects addressing these priorities, and has played a key role in suggested research design to find answers to our most pressing questions.

Our Agricultural Policy Committee had a tremendous influence on the positive things I believe are going to come from implementation of Farm Bill programs. In a short time, the Southeast Quail Study Group has become a major player in the agricultural policy arena, thanks to the tireless efforts of Reggie Thackston and the Agricultural Policy Committee.

The Public Relations, Information and Education Committee, under the leadership of Dean Stewart, established a web page for the Southeast Quail Study Group. This is the first step in that Committee's objective to better inform and educate bobwhite constituency concerning opportunities for quail restoration.

The Habitat Implementation Committee, with Jeff Sole at the helm, worked towards developing ways to get private landowners to restore quail habitat on a landscape level. Jeff and his group will soon finalize brochures on pine plantation management and fescue eradication which will be valuable references for landowners.

The Funding Committee, chaired by Rocky Evans, with the help of state and local chapters of Quail Unlimited, insured dollars have been available to hold these meetings. This allowed the meeting registration fees to be kept to a minimum and certainly increases participation in these tight budgetary times.

The Steering Committee worked hard to gain the acceptance and support of the directors of the 17 southeastern state fish and wildlife agencies. I cannot tell you how important it is that we maintain that support.

Perhaps our greatest accomplishment was the first one, going back to August, 1995, when we came together in a consolidated effort to start being proactive regarding the plight of the bobwhite.

There have been a number of subspecies of bobwhite identified: the eastern, the masked, the Florida and the infamous Texas bobwhite or "Mexican Quail." But I like to think of just two subspecies. At Mr. Stoddard's time there was only one: *Colinus virginianus accidentalis* - the accidental quail. This bird just happened because conditions were right. Then, Mr. Stoddard, quite "God-like", created a second subspecies of bobwhite: *Colinus virginianus intentionalis* - the intentional quail. Stoddard showed how you could make quail happen through habitat manipulation.

My vision for the future, or maybe it's a hope, is that the accidental quail doesn't go extinct. I believe the Southeast Quail Study Group will have a say in this. I believe federal agricultural programs, combined with favorable actions by timber industry have the power to procreate the accidental quail.

I feel we should stay active in the agricultural policy area, and somehow we must find a way to work for quail within a more intensified timber industry than any of us can imagine. I believe we must be of like mind in our bobwhite research direction, to insure that the questions that need answering are answered. I believe the Southeast Quail Study Group must raise the awareness of the plight of the accidental quail, as well as the 30 or so species of associated songbirds, in the eyes of the public, wildlife administrators and users of other wildlife resources. Bobwhite management must become a priority with every southeastern fish and wildlife agency, as well as federal land conservation agencies with adequate funding sources. We must continue to use the tools Mr. Stoddard gave us to produce the intentional quail. It is rarely easy or cheap, but we have to keep people working at it.

I believe the Southeast Quail Study Group will continue to grow, both in numbers and stature, if we stay focused, rely on good science and never give in. I remember that the general attitude at the first Southeast Quail Study Group meeting was "We're not sure exactly what to do, but let's do something even if it's wrong." Well now I believe this group has clearer vision of what to do, so let's do it. To quote an often used phrase, "If we're going to go down, let's go down swinging."

State Reports

Alabama

Stanley D. Stewart - Alabama Game and Fish Division

Bobwhite quail nesting conditions have generally been favorable this year with recent reports of good bird numbers in locations of suitable habitat. Latest hunter survey results continue to show low bobwhite harvest numbers compared to historical harvests. The current harvest is approximately 400,000 birds, which is similar to harvests throughout the decade of the 1990's.

Most encouraging is the escalating recognition of bobwhite declines across the state and a general desire to see improvement. Quail hunter groups are beginning to organize and expand to publicize quail population problems and influence activity that would improve habitat. They are seeking interaction among various groups and agencies. If the trend to organize and focus attention on current problems continues, the bobwhite quail should ultimately benefit. More abundant quail populations is certainly a strong desire of many.

We are also encouraged that USDA farm and conservation programs will result in the installation of wildlife friendly practices that will create suitable habitat conditions for bobwhite quail. Attention

to wildlife benefits and interaction with wildlife agencies and groups is much better among administering agencies than at any time in the past. If we succeed in providing adequate information to landowners and transfer habitat program potential on to the ground, the bobwhite quail should benefit.

Arkansas

Fred Ward - Arkansas Game and Fish Commission

Amendment 2, a 1/8 of one percent sales tax proposal to benefit the Game and Fish Commission, State Parks, and two other departments was passed by Arkansas voters during the general election last November. It is estimated that \$17 million will be added to the Game and Fish Commission budget annually.

The Plan for Conservation that was designed to show the public how the money from the 1/8 of one percent tax would be spent stated that \$3.4 million would be devoted to private lands programs. Although collection of the tax didn't start until July 1997, the Commission began approving some private land programs before that time.

One of the new programs approved by Congress in the 1996 Federal Farm Bill is the Wildlife Habitat Incentives Program (WHIP). This program provides cost-share payments and technical assistance to landowners who are willing to sign long-term management agreements to maintain fish and wildlife conservation practices on enrolled lands. Congress has provided \$50 million for the program. However, these funds will not be allocated evenly among the fifty states. State proposals will be reviewed by the Washington office and funds allocated according to a ranking system which includes partnership as a major component.

The Game and Fish Commission met the challenge presented by WHIP and during the February, 1997 Commission meeting approved the allocation of \$500,000 during FY98 for the Arkansas program. Working with personnel from other agencies and organizations, our staff developed six Fish and Wildlife Priority Areas within the state. Three of these priority areas (Prairies, Early Successional Plant Communities, and Native Upland Communities) incorporate quail beneficial practices.

A book titled *Arkansas Quail: Private Lands Management Guide* authored by members of the quail team, has been published and is ready for distribution to the public.

Don McKenzie was hired by the Arkansas Game and Fish Commission as an Assistant Chief of the Wildlife Management Division in charge of the Programs Section. Don previously worked in Washington, DC for the Wildlife Management Institute (WMI). His final task at WMI was writing and publishing a *Wildlife Managers' Field Guide to the Farm Bill*, a comprehensive "how-to" manual which guides wildlife managers through the maze of Farm Bill conservation programs. We believe, with the expertise Don brings to us in private lands management, we will see more emphasis placed on programs to benefit quail and other small game in Arkansas.

Delaware

Bill Whitman - Delaware Division of Fish and Wildlife

The bobwhite quail in Delaware appears destined to the same fate as the peach. At the turn of the Century, Delaware was considered the peach capital of the country. Changes in agriculture and farming methods resulted in a rapid decline in peach production in favor of more profitable crops, and the

distinction of peach capital was transferred to Georgia. Similarly, it was not so long ago that bobwhite quail hunting in Delaware ran a close second to more southern states noted for their quail hunting. Today the difference in the number of quail coveys and peach orchards is fast narrowing.

Delaware depends upon three surveys to determine trends of bobwhite quail: (1) random whistling male counts; (2) rural mail carrier counts; and (3) hunter cooperator wing surveys. The whistling male call count conducted between June 15 and July 15 annually since 1995 is our most reliable indicator of the quail population status. Approximately 85 routes are run each year which cover between 800 and 900 miles of rural highway or roughly 20 percent of the total miles of rural highway in the State. In 1995, a total of 1.66 males per mile surveyed was counted. The winter of 1995-96 set 100-year records for snowfall and was followed by a cold, wet spring. Subsequently the call count dropped to 1.00 bird per mile, a 41 percent decline over the previous year. Sharp declines due to weather have been relatively short lived in the past; thus, numbers were expected to rebound in 1996 especially since the preceding winter was unusually mild and snow-free. Unfortunately this did not occur and the 1997 count continued to fall to 0.54 males per mile. Similarly, the rural mail carrier count in mid-August declined from 0.43 birds seen per mile traveled in 1996 to 0.004 per mile in 1997.

These drastic declines were reflected in the Hunter Cooperator Wing Survey. From the same sampling universe, 390 hunters in 1994-95 submitted 305 wings from an average annual harvest of 2.34 per hunter which consisted of 1.12 males per female. In the 1996-97 survey 11 hunters supplied 55 wings. The sex ratio from this small sample was 0.68 males per female. This low number of males is consistent with the low number of whistling males heard during the late spring and early summer call surveys. Correspondingly, our statewide hunter mail survey recorded an all time low number of quail hunters (1492). If rabbit hunters are separated from this figure, a total of only 484 hunters ventured afield to hunt quail.

Without extensive corrective action, quail hunting in Delaware will be relegated to tall tales from old hunters. Application of the components of the 1996 Farm Bill has increased and improved between 1500 and 2000 acres of habitat and more is actively being recruited. Unfortunately, the retirement of farms and enhancement projects are not a long term solution to the quail decline in Delaware. A more threatening and unpreventable urban sprawl southward into our best agricultural lands is a more formidable threat to the future of quail hunting. Delaware will always have quail but a harvestable surplus is fast disappearing.

Florida

Shane Fuller - Florida Game and Freshwater Fish Commission

Shane Fuller has replaced Nick Wiley as the small game project leader for Florida. Nick Wiley is now the Division Chief. Florida legislature passed a measure allowing the Florida Game and Fresh Water Fish Commission to charge fees for special hunts. The Commission is doing some intensive habitat management on certain wildlife management areas, restricting the number of hunters and charging \$35 per day of hunting. Trying to provide quality hunts is the goal.

Some interesting data from Cecil-Babcock Wildlife Management Area (WMA) was presented. This area is managed for quail. On one segment of the WMA (the field trial grounds), the quail population began a dramatic drop several years ago. Corrective management actions were taken and, for a while, the population increased. But the number of hunters increased as well. After several years, the quail populations again dropped. After deciding to decrease the bag limits and number of man days per year, the quail population increased.

On another segment of the WMA (the main grounds), a different approach was taken. The season was shortened by removing three weeks from the end. Instead of decreasing hunting pressure, this action increased the intensity of hunting. There were more man days under this system than before. After looking at harvest data, a bag limit reduction was proposed. However, the average hunter only harvested 0.8 birds per day. Efforts to reduce bag limits did not meet Board approval.

The following year, after a more intensive harvest survey, it was discovered that 8.4 percent of the hunters harvested 77 percent of the quail. Fifteen of 3000 hunters accounted for 42 percent of the total harvest. A better way to limit harvest on WMAs could be to limit the number of man days per hunter.

Georgia

Jerry Bearden - Georgia Department of Natural Resources

Georgia's quail harvest declined over 60 percent during the past thirty years. Several songbird species that depend on quality grassland and shrub habitat have declined sharply. Habitat loss and changes in land management practices are primarily responsible for these population declines.

Ninety-three percent of Georgia's 37 million acres is privately owned. Our Wildlife Division is focusing its efforts through partnership programs (Farm Bill and Forest Stewardship known as the Private Lands Initiative) to assist landowners particularly in the Forest and Agriculture industry with habitat improvements for early successional species.

Georgia has four wildlife biologists working on the Private Lands Initiative as well as support help from biologists in other sections. On a statewide basis, two man-years have been set aside for all our wildlife biologists to assist with the Private Lands Initiative.

Georgia DNR is providing funding assistance for two major quail studies being conducted in Georgia. One study is the Albany Area Quail Management Project being done by the Wildlife Cooperative Research Unit at Auburn University. The other project is a multi-state, multi-species study being carried out on the Di-Lane Plantation Wildlife Management Area.

Quail are in serious trouble in Georgia and the Southeast. But this is the most concern, effort and commitment for quail that I have seen in my 26 year career.

Indiana

Brian Frawley - Indiana Division of Fish and Wildlife

Quail Whistle Counts - Northern bobwhite whistling counts have been conducted in Indiana during 1947-1958 and 1976-1997. In 1997, an average of 0.68 bobwhites were heard per stop statewide ($n = 71$ routes). Bobwhites were most abundant in southwest and southeast Indiana ($\bar{x} = 1.16$ bobwhites/stop, $n = 14$ routes) and in northern Indiana ($\bar{x} = 1.00$ birds/stop, $n = 15$). Bobwhite abundance was lowest in south-central ($\bar{x} = 0.50$, $n = 9$) and in central portions of the state ($\bar{x} = 0.37$, $n = 33$). The number of quail heard decreased statewide by 9 percent between 1996 and 1997. Numbers decreased in all regions of the state except northern Indiana, although declines were significant only in central Indiana.

Quail Restoration Project - During 1993-1995, 868 wild quail were relocated on 44 sites in northern Indiana (approximately 20 birds per site). Whistle counts were collected annually since 1993 to evaluate whether quail were present at release sites and paired control (non-release) sites. Quail were

heard at 28 of 44 release sites (64%) and 21 of 44 control sites (48%) in 1997. During previous years, quail have been more common at release than control sites. The difference between the occupancy rate on release and control sites has become smaller over time, and the difference was no longer significant this year. Despite this insignificant difference, the pattern of population growth in our study area suggests that release areas have benefitted from relocation efforts. Continued monitoring of our relocated birds is planned because the ultimate success of the study cannot be judged until several years have passed.

Kentucky

Jeff Sole - Kentucky Department of Fish and Wildlife Resources

Habitat Improvement - KDFWR provides technical and financial assistance aimed at quail habitat improvement to landowners primarily through two programs. These include the KDFWR Habitat Improvement Program and the Forest Stewardship Program. To date we have worked with over 4000 landowners through these programs, writing management plans covering over 1,000,000 acres. We average working with approximately 300 landowners a year through these programs. Our efforts are concentrated on converting fescue to other grass/legume mixtures, particularly targeting native warm season grass establishment.

Quail and Rabbit Roadside Survey - This is the best long-term data we have gathered on quail population trends. The survey started in 1960 and has been conducted annually since that time. This survey is conducted with cooperation from rural mail carriers who count quail singles, pairs and coveys/broods during the last week of July while driving their routine mail routes.

Quail Wing Survey - This survey was started in 1987 and has been continued annually. The survey collects wings from voluntary cooperators which provide indices to age and sex structure in the harvest. Other data collected on the wing envelopes provide information to monitor hunter success statistics, distribution of hunting pressure through the season, crippling rates, etc.

Quail Hunter Cooperator Survey - This survey was started in 1989. It is comprised of a diary type survey, filled out and turned in by cooperating quail hunters. This survey provides the same type of information as the wing survey, except that it also includes information from unsuccessful hunts and does not provide information regarding the age and sex structure of the harvested birds.

Fescue Conversion Research Project - KDFWR is funding a Ph.D. level project through the University of Kentucky to continue our research into methods of converting fescue to more suitable quail habitat. This project is now in its second year, with the treatments in place and vegetation sampling and monitoring ongoing. Treatment methods include: 1) spring herbicide; 2) fall herbicide; 3) spring herbicide and planted to cool season mix; 4) fall herbicide and planted to cool season mix; 5) spring herbicide and planted to warm season mix; 6) fall herbicide and planted to warm season mix; 7) spring burn followed by herbicide; 8) spring burn followed by fall herbicide application; 9) spring burn, spring herbicide and planted to cool season mix; 10) spring burn, fall herbicide and planted to cool season mix; 11) spring burn, spring herbicide and planted to warm season mix; 12) spring burn, fall herbicide and planted to warm season mix; 13) fall burn, followed by spring herbicide application; 14) fall burn followed by fall herbicide application; 15) fall burn, spring herbicide and planted to cool season mix; 16) fall burn, fall herbicide and planted to cool season mix; 17) fall burn, spring herbicide and planted to warm season mix; 18) fall burn, fall herbicide and planted to warm season mix; and 19) control. Plots are being evaluated regarding their success in eliminating fescue and the production of habitat suitable to meet the various life requisites for bobwhite quail. Sampling includes vegetative cover analysis, nutritional properties of available quail foods and insect production.

Hunting Pressure/Season Comparison on Western Kentucky Wildlife Management Area (WKWMA) - Two units of the WKWMA have been hunted under different hunting pressure regimes since 1990. One hunt unit was subjected to our standard WMA (92-day) hunting season (Nov. 1- Jan. 31) until the 1996-97 season. At that time, the season was changed to November 16 - December 31 (45 days). The other hunt unit has been shut down when gun-hours of hunting pressure approximated a 20-30 percent harvest of the population (harvests have been during the first few days of January).

Some very tentative data analysis indicate there is a correlation between the number of gun hours of hunting pressure one year and the following years' harvest on the short-season hunt unit. We feel this may indicate that this area is being managed under a maximum sustained yield system. When gun-hours of pressure increased, the harvest the following year decreased. On the long season hunt unit, there was no correlation between hours of hunting pressure one year and the following years harvest. We interpret this to mean that the area is actually being over-harvested and operated below a maximum sustained yield level. The population level on this area is therefore more dependent upon immigration of birds from surrounding areas, habitat, and weather related productivity factors. This year we also have a graduate student implementing a banding/telemetry effort on these tracts to try to get a better handle on survival estimates and movements of these birds.

Survival and Movement of Pen-reared Bobwhite Quail on a Heavily Used Non-Hunted Field Trial Area (Central Kentucky Wildlife Management Area) - The CKWMA is a small, approximately 1500 acre site used nearly exclusively for beagle and bird dog field trials. The field trial folks release several hundred pen-reared quail on this area annually for their field trials. The area also has fairly decent wild quail numbers (usually 20+ known coveys). The project is banding all released birds at the time of their release and then trapping throughout the fall, winter and spring to get some idea of survival and movement of the pen-raised bobwhite quail using mark-recapture techniques. Wild quail are also being marked when caught. We are also trying to look at interactions of the pen-reared birds with wild quail on the area. Preliminary results from the first year showed higher than expected survival of the pen-reared birds and considerable intermingling of pen-reared and wild birds on the area. It appears this project is going to be intensified to become a graduate student project with Eastern Kentucky University this coming year.

Louisiana

Fred Kimmel - Louisiana Department of Wildlife and Fisheries

Two statewide population surveys were conducted this past year, the wing/hunter survey and the fall whistling survey. Hunters participating in the annual wing survey supplied 419 wings. From these wings, sex and age ratios were determined, as well as peak hatch periods. Production per adult hen during 1996 was 21.8% higher than the 1995 value. The summer of 1995 was cooler and wetter than normal. Consequently, improved production was expected. Hunters and harvest responded to the good production. The number of quail hunters, as determined by the annual harvest survey, doubled, while the quail harvest tripled from the 1995-96 levels.

Statewide fall whistling counts were conducted on 50 randomly located routes and an additional 6 routes on WMAs and National Forest. On a statewide basis, counts significantly increased from 1995. This was due to increases in the southeastern loblolly pine habitat (+36.8%), the western longleaf habitat (+36.3%), and the rice production belt (+50.0%). The western longleaf region is the most productive area for quail hunting in Louisiana.

Two final reports on quail research projects were prepared. A final report was prepared for a banding project to determine recovery rate of quail on a heavily hunted WMA. The second report is the result of a telemetry project to determine late winter mortality and productivity.

During the 1997 Legislative Session, a bill was passed that creates a Quail Unlimited (QU) license plate. The intent was for proceeds from this license plate to be used for quail management and land acquisition. However, the language in the bill dedicates the money to the Natural Heritage Trust Fund and is to be used for, among other things, threatened and endangered species. There will probably be an effort to rewrite the problematic language during the 1998 Legislative Session.

The majority of the Department's WMAs are not suitable habitat for quail. However, there are a few WMAs in the northern and western part of Louisiana that have potential for quail habitat improvement. During the upcoming year, a plan to enhance quail habitat on these suitable WMAs will be developed. If the QU license plate money becomes available, at least some of it will go toward habitat development on selected WMAs. The Northwest Chapter of Quail Unlimited has been involved in habitat work on the Jackson-Beinville WMA in north-central Louisiana for several years. This year they donated a disk with a value of approximately \$6000 which will be used for quail habitat enhancement.

During the 15th CRP sign-up, 87,601 acres were offered in Louisiana, and 78,599 acres were accepted. There were 68,039 expiring acres, so Louisiana had a net increase of 10,560 acres. The vast majority of the accepted acres were for new or existing trees.

Maryland

Joseph C. Shugars - Maryland Department of Natural Resources

Population Status - Bobwhite quail population status in Maryland is evaluated by two separate surveys, a Hunter Mail Survey (HMS) and the Breeding Bird Survey (BBS). The Hunter Mail Survey is based on responses to a detailed questionnaire from a random sample of hunting license buyers. Analysis of these returns provide, by county, estimates of the number of days hunted for quail, the number of birds taken and the number of quail hunters. This survey has been conducted on a comparable basis since 1977. Quail population trends are also defined by the BBS, which is coordinated by the U. S. Fish and Wildlife Service. The BBS uses trained volunteers to count all birds heard (or observed) on permanent routes each spring. The BBS has a comparable database from 1966 to the present. It's important to realize that the HMS is based on hunting and hunter experiences while the BBS is independent of any hunting seasons.

Findings of both surveys suggest similar downward trends in quail numbers averaging about 5 percent annually since 1975, a trend evident over much of present day quail range in the United States. In Maryland, quail have all but disappeared from the mountainous western counties and dropped to precariously low levels in the Piedmont counties. Coastal Plain quail numbers have also declined, but this region still harbors our largest quail populations, especially in areas where habitat quality has been maintained.

Anecdotal data suggests that the unusually severe winters of 1994-95 and 1995-96 followed by record setting rainfall and cool, wet weather in the summer of 1996 resulted in reduced populations for the 1996-97 hunting season. As a result, harvest in 1996-97 was well below average. These conclusions are supported by preliminary results of Maryland's Quail Harvest Survey. Respondents to this study reported an average harvest of 1.6 birds per trip for the 1996-97 season. Population surveys (BBS, HMS) are also expected to confirm reduced populations and harvest for 1996.

The mild winter of 1997 reduced winter related mortality and a relatively warm if somewhat dry summer of 1997 increased recruitment. Consequently, there should be more birds during the 1997-98 hunting season. Survey results for current year are expected to be finalized by early 1998. Given another mild winter and good breeding season quail numbers are likely to increase. However, it will take major habitat changes at the landscape level to stabilize and turn around the present downward trend. It's important to remember that the present increase in numbers is only temporary and, unless these changes are made, we can expect quail numbers to continue their downward trend.

Habitat - Quail habitat management on private lands is coordinated by the Upland Habitat Program. The Habitat Program administers implementation of the 1995 Farm Bill, our Agency's Wildlife Habitat Incentives Program and other similar projects.

There is no statewide quail habitat initiative in place in Maryland. However, we do have a project focused on the establishment of native grass stands on private and public lands. These stands are managed to provide safe nesting cover and brood cover for a variety of wildlife species, including quail. This project was incorporated into land management initiatives promoted by other agencies in Maryland, most notably the Natural Resources Conservation Service and the Farm Services Agency, and was primarily funded by a state chapter of Quail Unlimited. This past season, 200 acres of mixed native grass and forb stands were planted. The Division has made five specialized drills available to private and public landowners to accomplish these plantings. Other, more intense management plans for quail are prepared for private landowners by Habitat Program staff on an as requested basis.

Planning - A draft Comprehensive Bobwhite Quail Management Plan is scheduled for revision and rewrite during 1997-98. Pending approval, it will be submitted for adoption when completed.

Mississippi

Dave Godwin - Mississippi Department of Wildlife, Fisheries, and Parks

Strategic Plan - Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) revised it's strategic plan for management of bobwhites. The plan will be periodically revisited and updated by a committee of agency and non-agency professionals to more accurately address the changing problems facing quail populations.

Farm Bill Programs - MDWFP served on the NRCS State Technical Committee and state sub-committee on Wildlife, and developed strong working relationships with the NRCS and FSA at the state level. We made progress developing working relationships with these agencies at the county level, however, we are not where we need to be in working with all 82 counties in the state. MDWFP provided written comments on proposed program rules and state program plans.

Private Lands Programs - MDWFP provided technical assistance on bobwhite management to landowners managing > 25,600 acres of private lands during 1997. Successful case studies were documented in each region of the state. These regional "success stories" are helpful in proving that habitat management can work in our area.

Public Lands Programs - MDWFP acquired 2 state-owned tracts for the purpose of demonstrating quail and small game management during 1996 (Hell Creek WMA and Black Prairie WMA). Management of these tracts started during 1997. MDWFP also has quail management demonstration areas on 6 existing WMAs, and provides technical assistance on quail management to other public land managers (e.g., U.S. Forest Service, Corps of Engineers).

Hunter Surveys - MDWFP uses two annual quail hunter surveys: 1) A statewide mail survey of license buyers to assess hunter effort and harvest of all game species, and 2) The Quail Hunter Survey, which is a hunter log-type survey where cooperating bird hunters collect information on their individual hunts. This provides information on regional population abundance (number of coveys per hour), hunter effort, harvest, and comments or concerns.

Extension - MDWFP cooperated with Mississippi State University (MSU) and the Cooperative Extension Service to develop and distribute seven popular publications on quail habitat management and ecology. Information was published in *Quail Unlimited* and *Mississippi Outdoors* magazines as well as Extension Service publications.

Seminars and Workshops - MDWFP and MSU conducted two Bobwhite Habitat Management Field Day seminars (Black Prairie WMA and Marion County WMA). MDWFP also conducted 14 public presentations (Quail Unlimited Chapter meetings, county landowners associations, bird hunter groups, county wildlife dinners, etc.) on bobwhite quail problems and management.

Research - MDWFP provided funds for bobwhite research projects at MSU, including: 1) bobwhite habitat use and reproductive success in managed old field habitats in Mississippi; 2) effects of discing and burning on vegetation structure and invertebrate abundance in CRP fields; 3) evaluation of effects of bobwhite quail management on Black Prairie WMA; 4) effects of radio-transmitters on body-condition, harvest rate, and survival of bobwhite and; 5) cooperative small game and habitat development on multiple-use lands.

Missouri

Dr. Thomas V. Dailey and Vicki L. Truitt - Missouri Department of Conservation

1995 Quail Season - For 1995, the most recent year that data from the Small Game Harvest Survey was analyzed, the estimated statewide quail harvest by resident permit holders was the 6th lowest since 1967, the year the survey began. The harvest of 1,104,960 was 11% less than the 1994 figure, below the average for the previous 10 years (1985-1994; 1,488,673), and 49% below the long-term average (1967-1994; 2,165,523).

The low harvest of recent years is partly due to a decline in hunters. The estimated number of hunters in 1995 ($n = 81,043$) is more than 50 percent lower than in the late-1960's to mid-1970's when more than 160,000 regularly hunted quail each year. The 1990's seem to have ushered in a new era in quail hunting with quail hunters counted in tens of thousands instead of hundreds of thousands. If this trend holds to the end of the decade, hunter numbers will have declined greater than 20 percent from the 1980's when the average hunter number was 108,241.

Despite the reduced popularity of quail hunting, hunting success continues to be relatively good. The average daily bag in 1995 was 2.1, only 9.6 percent below the average for the previous 10 years (1985-1994; 2.3 quail/day). Also, quail hunting continues to provide a substantial amount of recreation with 530,743 days spent afield during the 1995 hunting season.

1997 Population Survey - Quail roadside surveys were conducted by Conservation Agents during 1-15 August 1997. Birds were counted along 30-mile routes in 112 counties, excluding Jackson and St. Louis.

The dry spring weather in 1997 allowed for a slightly better hatch than in 1996. The mean statewide brood count of 0.41 per 30-mile route is 37 percent above the count in 1996 (0.30). However, brood numbers are still depressed compared to the long-term numbers. The 1997 brood count is 38 percent lower than the 10-year average for 1987-1996 (0.67), and 63 percent lower than the recent high index observed in 1987 (1.12). The total quail index (average number of all quail per route) of 5.88 is 27 percent above the 1996 count (4.63), and, similar to the brood counts, 38 percent lower than the 10-year average for 1987-1996 (9.55), and 65 percent lower than the recent high index observed in 1987 (16.85 quail).

Although quail continue to do poorly statewide, drier spring weather in 1997 allowed quail populations to rebound in areas with favorable habitat conditions. In northcentral and northeast Missouri quail counts were 2 to 4 times higher than in 1996. In other parts of the state quail numbers declined (e.g., Ozarks) or changed little.

North Carolina

Terry Sharpe - North Carolina Wildlife Resources Commission

I would like to take this opportunity to discuss where we have been, where we are, and where the road may lead with regard to native warm season grasses (NWSG) and associated herbs in North Carolina and the Southeast.

The North Carolina Wildlife Resources Commission's experiences with NWSG began in 1985 at a meeting of the Soil Conservation Society in St. Louis, Missouri. That is where our staff first learned about the tall growing native grass forages and began to seriously consider the potential for native grasses to play a major role in restoring bobwhite habitat on a meaningful scale.

We followed up on that meeting with a conference in Raleigh, NC in the late 1980s during which Steve Clubine from the Missouri Department of Conservation, local National Resources Conservation Service (NRCS), and University experts discussed the status of our knowledge about NWSG. The knowledge of NWSG in the Southeast turned steeply upward when Steve Capel moved to Virginia from Kansas, bringing along considerable knowledge about establishment, management, and wildlife usage of NWSG. Ten years of experimentation on state areas, pamphlets, and working with forage producers has brought us a long way, to a point where we can actually see some landscape changes looming on the horizon.

Today most of us are familiar with switch grass, big bluestem, eastern gamagrass, indian grass and little bluestem. However, with the exception of some coastal dune species, management has been directed towards stands originated from plant materials derived from, developed in, and produced in other areas of the country. The seed we plant of switch grass, indian grass, big bluestem, eastern gamagrass and little bluestem are derived primarily from the Midwest. Yet eastern ecotypes of all these and other southeastern NWSG and herbaceous species are found growing on our infrequently mowed rights-of ways, open forest stands, old fields, and prairie remnants. However, beyond recognizing their existence and occasionally burning stands when they are in pine woodlands we have barely scratched the surface of eastern ecotypes and species of NWSG.

Today we are working more closely with NRCS and Farm Bill Programs than ever before. However the NRCS has other resources that we have barely tapped. NRCS Plant Materials Centers and plant materials specialists are charged with the mission to "select and develop promising cultivars of plant materials for conservation use."

To date we have not heard much from our plant materials centers concerning grassland and herbaceous ecotypes from the southeast US. The potential for southeastern species and ecotypes to provide valuable plant materials for wildlife management, conservation uses, and grazing is tremendous. The grasses and herbs are widespread, adapted to our soils and climate, and possess many desirable characteristics from a wildlife management perspective. With increased emphasis from plant materials centers we may one day plant native warm season grasses and associated herbs that are better adapted for our uses in the Southeast. We may purchase seed from southeastern seed growers, diversifying Southeast farm income.

To summarize, we have a great untapped potential in our southeastern cultivars which potentially could better fit our conservation and forage needs. I request that the Southeast Quail Study Group work through the Southeast Association of Fish & Game Commissioners to press NRCS plant materials centers and plant materials specialists for more emphasis on Southeast ecotypes of NWSG and associated herbs.

Oklahoma

Stephen J. DeMaso - Oklahoma Department of Wildlife Conservation

Estimated 1996 bobwhite harvest increased 25.1 percent (1,322,260 birds) over the 1995 estimate (990,118 birds). During 1996 the estimate of quail hunters increased 6.0 percent (72,743 hunters) over the 1995 estimate (68,646 hunters). We have just completed our August roadside quail surveys and are preparing for October's survey. The information in the October survey is the basis for our season forecast. August surveys indicate very good production for 1997. Statewide quail season will open on November 1, 1997 and continue through January 31, 1998. Previously, quail season ran from November 20 of any given year through February 15 of the following year. This change was recommended and approved by the Oklahoma Wildlife Commission last year. During the last year the Department hired a private lands biologist to assist private landowners with wildlife management on their property. This biologist has been very active with the state technical committee and various farm bill activities. The Packsaddle quail study is continuing with a new emphasis on chick ecology. Preliminary results indicate that chicks can be radiomarked at 14 to 16 days old. Data analysis and writing of manuscripts continues for the first 5 years of the project. Other activities by the upland game biologist included ring-necked pheasant surveys, technical assistance with landowners, presentations to the general public, and assisting with the lesser prairie chicken recovery program.

South Carolina

Breck Carmichael - South Carolina Department of Natural Resources

1997 brought good and bad news concerning the bobwhite's status in South Carolina. Data collected from the 1996-97 Quail Hunter Survey indicated a significant increase in hunter success rate over the previous year, the first such increase since 1990-91. On the down side, statewide spring call-counts reached an all-time low since surveys were initiated 19 years ago. However, we think weather factors, specifically a very early spring had some influence. By the time our call-count surveys were run, the peak of spring calling may have already passed due to the early warm spell.

Several new and exciting things are happening in South Carolina relative to the bobwhite. DNR biologists are involved in U. S. Department of Agriculture (USDA) conservation programs at an unprecedented level. Every county local working group has a DNR biologist assigned to it, and inter-agency relationships with USDA and state forestry are improving daily. This can only be positive for quail and wildlife in general.

The new Wildlife Habitat Incentives Program (WHIP) in South Carolina will target quail and restoration of quail habitat. WHIP will emphasize quail-friendly management practices not previously cost-shared through other programs, such as field border establishment and construction of permanent fire lanes.

A large, comprehensive research project is scheduled, with study sites replicated in South Carolina and Georgia. This project involves a \$1.4 million grant through a private foundation and will investigate the response of quail, wild turkey and songbird populations to various habitat treatments applied to Conservation Reserve Program pine plantations. Results will be applicable across the bobwhite's southeastern range where intensive pine management is occurring. Six Master's degrees and one Ph.D. will be earned through two universities by students working on this project.

Tennessee

Mark Gudlin - Tennessee Wildlife Resources Agency

Aside from routine population, hunter and harvest data collection and lands management, TWRA's quail management efforts have been focused on:

Farm Bill Activities - 1) Twenty-five TWRA personnel were designated as "Farm Bill Specialists" and received training regarding the Farm Bill and USDA programs. Each is responsible to coordinate efforts at the field level in a 3 to 8 county area, provide technical assistance to USDA personnel and landowners and lead publicity efforts. 2) TWRA is providing supplemental cost-share to encourage landowners to plant wildlife-friendly vegetation on CRP lands. TWRA will match USDA cost-share on native warm season grasses, up to \$30 per acre. Cost share is available for good cool season grass mixtures, herbiciding fescue, and other practices. 3) TWRA already has 5 native grass no-till seed drills and plans to purchase another five or more drills, and several spray rigs. These will be available free-of-charge to landowners planting native grasses and killing fescue, sericea or bermudagrass. 4) Dave Howell's (Quail Unlimited) draft idea was used to produce the brochure *Wildlife Habitat Options in USDA Conservation Programs*. 100,000 copies will be printed and distributed to USDA, Agricultural Extension, Division of Forestry, etc. offices. For those interested in obtaining a copy of the computer layout to revise for use in your states, call Mark Gudlin. 4) TWRA is attempting to establish 2 or 3 cooperative positions with NRCS, devoted strictly to securing wildlife benefits in NRCS programs (not a wetlands position). These positions would be used to provide training to NRCS field staff, produce brochures, and other duties.

Education - TWRA has coordinated with the University of Tennessee to produce a series of short (10 min.) videos, aimed at teaching 4-H age levels youth about bobwhite quail biology and ecology. Production is expected to be finished in late 1997. There may be the potential for the video to be packaged for sale and use by other states.

Regulations - In response to continually declining quail populations and an increasing segment of hunters who want reductions in harvest, TWRA reduced the daily bag limit for quail from 10 to 8 per day. The Agency had proposed a reduction to 6, but it was compromised to 8 by the Commission. It was fully acknowledged that this action was not expected to impact the actual quail harvest. The change was an effort to make the bag limit more commensurate with today's quail populations and provide a more reachable bag limit for hunters.

Research - A summary will be presented by Dr. Ralph Dimmick of the University of Tennessee.

Texas

Dr. Markus J. Peterson - Texas Parks and Wildlife Department

Population Status - Texas Parks and Wildlife Department (TPWD) biologists have monitored quail abundance each August since 1978 using 20-mile roadside counts. Northern bobwhite and scaled quail abundance varied markedly among years. There is no long-term trend in northern bobwhite abundance in the ecological areas where quail routes are used. Anecdotal evidence suggests that East Texas bobwhite numbers have declined substantially over the last several decades. Scaled quail abundance has declined significantly since 1978 in all ecological areas other than the South Texas Plains. The number of quail harvested in each Texas ecological area, and at the statewide scale, can be predicted by mean number of northern bobwhite and scaled quail observed per route.

Quail abundance in 1997 increased in most ecological areas. Northern bobwhite abundance in the Rolling Plains is up sharply and should lead to excellent hunting in this region during the upcoming season. Similarly, scaled quail hunting in the Trans-Pecos ecological area should be good this year.

Regulations and Management - There were regulatory changes related to quail hunting this year. The Wildlife Division of TPWD is working with the NRCS and FSA to ensure that the wildlife benefits of the 16th CRP sign-up come to fruition. Wildlife Division employees are writing a quail-food identification and management field guide for Texas. The book will include numerous color photographs and should be useful in surrounding states as well. Additionally, a scaled quail management booklet is in production and should be available soon.

Research - Quail research is being conducted at several Texas universities, including Texas A&M University, Texas A&M University-Kingsville, Steven F. Austin State University and Southwest Texas State University. The Wildlife Division of TPWD is actively involved in two scaled quail research projects. With the help of a generous contribution from the Cross Timbers Chapter of Quail Unlimited, we funded a landscape-scale study that will attempt to determine whether habitat changes contributed to the long-term decline in scaled quail abundance in much of the state. Drs. Ben Wu, Nova Silvy and Fred Smeins of Texas A&M University were awarded this competitive contract. We also are funding a project exploring the importance of weather, soil moisture, and various edaphic factors on scaled quail population dynamics in Texas. Fred Guthery, of Oklahoma State University will conduct this project.

Virginia

Steve Capel - Virginia Department of Game and Inland Fisheries

On July 1, 1996, Virginia began the implementation of the Virginia Bobwhite Quail Management Plan. Over \$400,000 in additional funding was directed to the plan along with the addition of one full-time habitat biologist position and the reassignment of a Special Projects Biologist to $\frac{3}{4}$ time on quail work.

Although the majority of the effort was by VDGIF, a strong multi-agency effort included the Department of Forestry cooperatively sponsoring pine and prescribed burning workshops, making Stewardship Incentive Program (SIP) funding available first to wildlife/quail habitat practices, and developing a draft Certified Prescribed Burner Program as encouraged by the plan. VDGIF utilized the existing Best Management Practices Program of the Division of Soil & Water Conservation to funnel our cost share funds into specific Wildlife Option practices. These practices added a 25 percent cost-share increase if landowners chose to use the more quail-friendly version of the practice. In addition, VDGIF added three new practices that were strictly quail-oriented: field borders, idle land and fescue

conversion. This program brought the field staffs on the two agencies into much closer working relations, benefitting both groups.

Increased agricultural liaison has brought about a shift in NRCS standards and specifications toward more wildlife, and specifically quail-friendly, practices. As an example, there is a dramatically reduced reliance on fescue. Additionally, there is a greater team effort in the development of such programs as CRP, EQIP, and WHIP.

By the end of the first year, among the accomplishments, the Quail Plan had achieved the following: staff worked with 611 new landowner cooperators, 69 demonstration areas were established, 11 workshops were held with 577 attendees, 1050 acres of habitat were cost-shared, 73 presentations were given, and 26 articles were written.

Quail and the CRP Program - How Did We Really Make Out ?

Mark Gudlin - Tennessee Wildlife Resources Agency

Under the 15th CRP sign-up, Texas, Missouri and Oklahoma enrolled the most acres. Overall, there was an increase in contracted acreage of wildlife quality, but total number of acres signed was down. There was some cool season grass sign-up. In Missouri, orchard grass led the way.

Few acres of native warm season grasses were signed up east of the Mississippi River. Problems remain with education of the public. Misinformation still exists. For example, many eastern farmers were afraid the WSGs would spread like Johnson grass and become a nuisance. High Environmental Benefits Index scores were awarded WSGs, but seed supply was a problem. In the future, landowners should be made aware that they can delay a year in establishment waiting on seed availability. If they establish a temporary cover and good natural vegetation exists, that's enough for recertification.

In Georgia and Mississippi, over 90 percent rollovers occurred on tree acreage. This occurred because almost all available land for CRP sign-up was enrolled and very few "new" acres met criteria.

The 15th CRP restricted mowing frequency for maintenance. Though this is a positive, another factor offset many of the potential wildlife benefits. The primary nesting season was shortened to mid-July, allowing maintenance mowing during a period when many birds are still nesting. State Technical Committees can, and should, recommend the dates be pushed back earlier or later.

EQIP and WHIP - Questions and Answers

Gene Whitaker - National Association of Conservation Districts

The Farm Bill home page is up and running. It provides information on Farm Bill news, practice specifications, maintenance documents and other important topics. The home page can be accessed at www.fb-net.org.

There is a CRP buffers initiative. Enrolled riparian buffers must be 35 to 150 feet wide protecting watercourses in crop or marginal pasture settings. They must be adjacent to a defined watercourse. These buffers should be NWSGs and lobbyists should be pushing to have fescue removed as an allowable plant material.

There is a series of new fact sheet guides. They are designed around each practice and allow biologists and managers to construct a plan right on the sheet in the field.

The Sustainable Forestry Initiative - Can Quail Benefit ?

Rick Cantrell - American Forest & Paper Association

The close of 1994 marked the end of one era and the start of another for members of the American Forest & Paper Association (AF&PA). This new beginning was ushered in by AF&PA when its members established a major industry goal: to enhance the environment by visibly changing the practice of forestry on industrial forestland, especially as it pertains to water quality, wildlife and biodiversity. Equally important, AF&PA members are engaging loggers and private woodland owners in an ongoing dialogue to encourage reforestation, to use environmental Best Management Practices, and to improve the appearance of harvesting operations.

Today, three years later, AF&PA members are on their way toward meeting the goal of sustainable forestry. Through the collection and analysis of reports from individual companies, AF&PA compiled their second annual report on environmental performance across the industry. This information, available for the first time in 1996, is being used to identify trends in the practice of sustainable forestry.

The report is reviewed each year by an independent panel of experts assembled by AF&PA to examine industry's performance on an annual basis. Panel members include conservationists, foresters, and university scientists.

The annual report documents progress made by member companies in implementing the Sustainable Forestry Initiative (SFI). Data contained in the 1996 report cover a variety of topics ranging from harvesting practices to wildlife habitat diversity on more than 52 million acres members own or control. In 1996, member companies spent almost \$62 million on forest-related research, reforested 1.2 million acres (using natural reforestation on nearly one-third of the acres that were reforested), limited the average size of clearcuts nationwide on AF&PA companies' lands to 61 acres, and reforested areas harvested by planting or seeding within two years on 97 percent of the acres.

Compliance with the SFI is a condition of membership in AF&PA. During 1996, fifteen member companies failed to meet by-law requirements for committing to the SFI and their memberships in AF&PA were terminated. One additional member company was suspended in 1997 for failure to comply with the SFI principles. The second annual SFI progress report was released in May of 1997.

Restoring The Longleaf Pine Ecosystem - Implications For Quail

Dr. David Van Lear - Department of Forest Resources, Clemson University

The longleaf pine ecosystem in Pre-Columbian times dominated the Coastal Plain of the Southeastern United States and extended into the Piedmont and Mountains in some states. This was an ecosystem characterized by both persistence and diversity. It persisted for millennia because traits of certain key plants, i.e., longleaf pine and bunch grasses, promoted the ignition and spread of fire. Fires during the growing season prevented invasion and eventual dominance by plant species from other habitats. Frequent fire, caused both by lightning and man, maintained an open forest condition of extremely high plant and animal diversity. The frequently burned longleaf pine ecosystem was primarily a two-tier ecosystem with an overstory of longleaf pine and an understory of grasses and forbs. Site diversity and the nature of fire created a mosaic of grasslands, savannahs, unburned thickets, bare soil, dead wood, and other habitat features.

Since the advent of European man, the extent of the longleaf pine ecosystem has declined dramatically. Some scientists estimate that longleaf pine once occupied about 92 million acres, but now there are only about 3 million acres remaining. There are numerous causes for the precipitous decline

of this ecosystem, including heavy cutting at the turn of the century, conversion of forest land to agriculture, suppression of fire, and increasing use of short rotation forestry favoring loblolly and slash pines. The dramatic decline in acreage of the open, yet diverse, longleaf pine ecosystem corresponds to the current precarious state of numerous wildlife species, including the red-cockaded woodpecker, gopher tortoise, southern fox squirrel, and perhaps the bobwhite quail.

There is currently much interest in restoring the longleaf pine ecosystem. About 51 percent of the present longleaf pine acreage is owned by small, private landowners, 31 percent by public agencies, and 18 percent by forest industry. Because of this mix of ownerships, effective restoration will require a multiowner approach across the landscape. Fortunately, longleaf pine is a species that provides numerous management options. For restoration to be successful in the long term, the activity must benefit society in general and private landowners in particular. Longleaf pine can be managed to provide both forestry and wildlife benefits. Disincentives must be avoided. The public, landowners, and resource managers must appreciate the benefits of a diverse longleaf ecosystem that is maintained by frequent fire.

A restored longleaf pine ecosystem would provide many of the habitat requirements of the bobwhite quail. Growing season burns would create an open habitat and favor warm season grasses and legumes. Burning patterns could be altered to provide nesting and escape cover. The longleaf ecosystem provides many of the best features of an open forest and a grassland environment, traditional features of quail habitat in the Coastal Plain of the South.

Panel Discussion: Are We Mismanaging Quail on Public Lands ?

Opening Comments

Michael L. Fies - Virginia Department of Game and Inland Fisheries

This afternoon, I'll be leading a panel discussion entitled "Are we mismanaging quail on public lands?". I think that this title is appropriate because quail populations on many state-owned wildlife areas are far lower than they should be. On many of these same areas, large amounts of manpower and money are spent managing habitat for quail. We're eradicating fescue, planting native warm season grasses, burning, developing escape cover, planting food plots, and managing timber. Despite intensive efforts on these "model" areas, quail populations are often lower on public lands than in adjacent habitats that are unmanaged.

Not surprisingly, quail hunter satisfaction on many public areas is currently low, presumably because quail populations are below hunter's expectations. Many hunters mistakenly assume that quail are abundant on state-owned wildlife management areas (WMAs). As a result, they are often surprised and disappointed by the lack of quail that they encounter while hunting these areas. In a recent Virginia survey, 53 percent of respondents rated the overall quality of their quail hunting experiences on state-owned WMAs as poor or very poor in comparison to other areas that they hunted.

Because of this apparent contradiction (good habitat with low populations), I contend that state wildlife agencies risk losing credibility with the public for established habitat management principles. In Virginia, we use our wildlife areas as demonstration sites for proper habitat management practices. The educational value of these demonstration sites is compromised by our inability to offer proof that desired population increases can be achieved.

I believe that quail populations on Virginia wildlife management areas are low because of overharvest and excessive disturbance. For example, Amelia WMA, which you will be visiting tomorrow, is in close proximity to a major metropolitan area (Richmond) and receives very heavy hunting pressure. Are quail overhunted on most public areas? Among quail managers in the Southeast, the general consensus seems to be "yes". However, data is generally lacking regarding site-specific quail abundance and hunting pressure.

Although we often lack rigorous scientific data, there is frequently plenty of anecdotal information to suggest that hunting pressure is excessive. As a result, some states currently restrict hunting pressure on some or all of their public areas. The following are some of the most popular options: restrict the number of hunters (i.e. permits), restrict hunting time (special season, reduce days/week), or some combination of these methods. Although these types of special restrictions are often implemented, there is usually only a token effort made to monitor the success of the program. Populations are sometimes monitored through call counts, flush surveys, or road counts. Hunter success is often measured through a survey that determines the number of quail bagged or coveys flushed per unit of effort.

Are these special regulations working? Without adequate population data, it is impossible to accurately determine whether management objectives have been achieved. I know of few, if any, examples of areas where populations have been documented to increase following enactment of restrictive regulations. If challenged to defend our rationale for implementing these regulations, we're often left out on a limb. In many cases, we don't even have well defined objectives.

So what do we do? Is attempting to provide quality quail hunting on public areas a hopeless endeavor? If so, why do we waste valuable time and resources managing habitat for this species? These are the issues and questions that I'd like to see addressed during this panel discussion.

The Missouri Response - No Control

Dr. Tom Dailey - Missouri Department of Conservation

Since the late 1980s, quail hunting on six Missouri Department of Conservation (MDC) public areas has been restricted to mornings in November, whereas statewide regulations allow hunting day-long, 1 November-15 January. Implicit in the restrictive regulation is the idea that statewide regulations result in over harvest of quail on public areas (declining fall numbers). Although restrictive regulations could improve the *quality* of the hunting experience, that is not the case in Missouri because hunting is concentrated into a brief period. Wildlife manager's attempts to monitor effects of the restrictive regulation have produced mixed results. Changes in habitat management, errors inherent in drive counts and hunter surveys, inconsistencies in methodology among wildlife areas, changes in personnel, and *most importantly, lack of measurement of quail abundance and hunters on wildlife areas with statewide regulations (experimental controls)*, have all rendered management's evaluation *speculative*. Moreover, a recent finding in Missouri that radiotagged quail subjected to 61 and 73 percent harvest levels fared as well by spring as did quail harvested at a 35 percent rate, casts doubt on the value of MDC's experimental restrictions. However, hunters like the "corrective" hunting regulations and managers like the minimal labor associated with the 30, ½ day hunts, so general satisfaction has been achieved. Although managers plan to appraise the outcome of restrictive regulations once long-term data are collected, there is no objective way to determine success or failure. This unscientific approach to quail management is risky in light of diminishing habitat (and associated effects on quail populations and hunter access) and increased scrutiny from antihunting entities. I suggest the solution lies in agency commitment to long-term study of quail population dynamics using radiotelemetry *and* to experimental replication using area managers with less sophisticated research tools (i. e., quail density estimation,

mandatory bag checks, treatment areas without radiotagged quail). Although long-term research projects are fairly-well accepted, long-term consistency in administration is rare. Agency administrators must decide the priority of scientifically-based quail harvest management.

The South Carolina Response

Breck Carmichael - South Carolina Department of Natural Resources

The South Carolina Department of Natural Resources (DNR) operates a public hunting wildlife management area (WMA) program encompassing approximately 1.3 million acres. The majority of these acres are leased from the U.S. Forest Service, South Carolina Forestry Commission and timber industry. There is little management for bobwhites, relatively low quail populations and consequently low hunting pressure on these areas overall. Quail hunting success is significantly lower on public lands as compared to private land. Quail hunters on public lands in South Carolina are most definitely not satisfied with their level of success.

More intensive quail management is done on some DNR-owned properties and selected WMA tracts owned by other cooperators. About eight areas, ranging in size from 800 acres to over 5000 acres, are managed with bobwhite quail being one of the featured species. However, even on the most intensively managed WMAs, only about 75 percent of what should be done is actually accomplished towards optimizing the bobwhite population. This is due to time and manpower constraints and compromises to other land uses, primarily timber production.

In general, bobwhites are not overhunted, or at least not overharvested on public lands in South Carolina. I believe quail have the ability to alter their behavior when pressured, thereby, preventing excessive harvest by hunters under most circumstances. Recent research from the Albany Area Quail Management Project bears this out.

Our attempts at managing hunting pressure are designed to preserve the quality of the quail hunting experience, as much as to prevent overharvest. Hunting pressure is managed by limiting the number of hunt-days (i.e. open Wednesdays and Saturdays only), or by having a limited number of hunts by drawing. The drawing hunts, of which we have only two, also typically have other restrictions such as limiting hunting parties to 2 or 3 persons, stopping hunting before sunset, limiting the number of shells in the gun at one time, etc.

There are no surveys in place to estimate pre-hunt population on these areas, therefore no harvest objectives. We have experimented with fall covey response to tape-recorded calls and bird dog censuses prior to hunting season, but have been satisfied with neither.

We have no evidence that our special regulations have resulted in higher quail numbers or hunter success. In fact, on one of our largest areas, where draw hunts have taken place since the late 1970's, the bobwhite population has declined dramatically. But, I am confident overharvest is not the cause for that decline.

Therefore, I believe the best hope for maintaining high quality quail hunting on public land is a draw hunting system. If I were "lord of the land" and it was a perfect world, I would institute at least ten times the number of draw quail hunts that we have now. I would also increase the level of quail management on our public lands by at least ten-fold. Unfortunately, this would require a great increase in DNR staffing, or existing staff to drop many of the tasks presently accomplished related to management for other species. This is not going to happen in South Carolina.

Therefore, to me, the question becomes not whether “are we mismanaging quail on public lands”, but “are we mismanaging public funds by trying to manage quail on public lands”? If our measuring stick for success is birds in the bag for the public hunter, yes we are mismanaging those funds. If our goal is to provide some bird hunting opportunity, while demonstrating habitat management techniques in the real world, then I would submit we are wisely using public funds in attempting to practice quail management on public lands.

The best bird hunting in the South has always been on private land. It just didn't used to cost so much to access it.

The Kentucky Response

Jeff Sole - Kentucky Department of Fish and Wildlife Resources

Are quail over-hunted on Kentucky's WMAs? I feel most of our WMAs receive very heavy hunting pressure. This hunting pressure very likely limits quail populations to lower levels than the habitat on the WMAs would support under lighter hunting pressure scenarios. Flush rates for the 5-year period of 1992-93 through 1996-97 were 0.48 coveys per hour (range 0.31 to 0.58) on WMAs and 0.62 coveys per hour (range 0.56 to 0.65) on private lands.

We have several years worth of data from quail hunters who were asked to subjectively rate their quail hunts as excellent, good, or poor. An analysis of these data from for the 7-year period 1990-91 through 1996-97 show that WMA hunters had a comparable satisfaction rate as the overall statewide hunter population. Fore those hunting on WMAs, 17.0 percent rated their hunt as excellent, 59.4 percent as good, and 23.6 percent as poor. Among all hunters statewide, 14.6 percent rated their hunt as excellent, 64.1 percent as good, and 21.3 percent as poor.

The KDFWR generally does not manage quail hunting pressure on WMAs. What we have done recently is make regulations changes to have the opening dates on WMAs coincide with the opening dates for quail hunting in the county where the WMA is located. Until two to four years ago, most of our WMAs opened earlier and closed earlier than the statewide season. This was done to demonstrate that hunters would utilize the earlier season framework, which they did very heavily. The move to make the openers for WMAs the same as the county they are in has helped reduce hunting pressure.

We do have one area, the Western Kentucky WMA (WKMA), where hunting pressure is limited on a few tracts. On WKWMA we have certain tracts on the area open to the normal 45 day (until last year 90 day) WMA hunting season and parts of the area (approximately 2100 acres) regulated by a gun-hour threshold of hunting pressure. These short hunting season tracts have a potential 10-day hunting season. However, we meet the hunting pressure threshold, based upon gun hours of hunting, by the 3rd day of hunting in every year. The threshold was designed to achieve a 30 percent harvest level based upon Roseberry and Klimstra's estimate of gun hours of pressure approximating a certain percentage of population harvested.

Effort to monitor populations on specially managed areas are minimal. On several of our areas we do mowing flush count surveys in which the WMA personnel monitor coveys of birds and numbers in coveys they flush while doing routine strip-mowing on the areas. These data are indexed to coveys per mower hour and records usually kept by WMA tract. Some WMA managers also conduct fall covey call counts. Several of our WMAs also have hunter check-in/check-out requirements which provide an index to harvest and flush rates.

We may have some evidence that special regulations have increased quail numbers. At WKWMA, the tracts under the short season framework have, without a doubt, annually have better quail populations and hunter flush rates than the rest of the area. Habitat is of similar quality on all of the area. We have some data which I believe will end up supporting this. However, at this time these data have not been fully analyzed.

Some very tentative data analysis indicate there is a correlation between the number of gun hours of hunting pressure one year and the following years' harvest on the short season hunt unit. We feel this may indicate that this area is being managed under a maximum sustained yield system. Basically, when gun-hours of pressure increased, the harvest the following year decreased.

On the long-season hunt units, there was no correlation between hours of hunting pressure one year and the following years harvest. We interpret this to mean that the area is actually being overharvested and operated below a maximum sustained yield level. The population level on this area is therefore more dependant upon immigration of birds from surrounding areas, habitat, and weather related productivity factors. This year we also have a graduate student implementing a banding/telemetry effort on these tracts to try to get a better handle on survival estimates and movements of these birds.

In the best of all worlds we would know population levels and be able to monitor harvests to known acceptable limits, e.g. 30 percent. I would personally to like see high quality, limited access, limited hunting pressure seasons implemented.

We have also asked the question of "What is a minimum viable population size?". According to generic conservation biologist opinions, you must have 500 breeders for long-term viability. If one assumes a 70 percent annual mortality for quail, you must have a fall peak population of 1667 to have 500 quail breeders in the spring. Habitat needed to have 1667 quail at various densities is as follows:

| <u>Density</u> | <u>Acres of Habitat</u> |
|------------------|-------------------------|
| 1 quail/acre | 1,667 |
| 1 quail/2 acres | 3,334 |
| 1 quail/3 acres | 5,001 |
| 1 quail/4 acres | 6,668 |
| 1 quail/5 acres | 8,335 |
| 1 quail/10 acres | 16,670 |

At WKWMA, our premier quail management area, the area is quickly being surrounded by either subdivision-type development or intensive row crop agriculture. While these areas were part of an ecosystem from which we were assisted by immigration of quail from surrounding private lands, this outside help is quickly disappearing. On WKWMA there is a total of 7000 acres. Only about 5000 of this could be considered quail habitat and about 3500 to 4000 acres as high quality quail habitat. At this latitude, a density of 1 quail per 3 to 5 acres would be considered high density. Using these figures you can see the WMA is barely large enough to support a long-term viable population. Without the immigration of quail from surrounding lands, the WKWMA quail population is likely to experience a long term decline. What we are doing to try to combat this is improving the habitat on the area in every way feasible. We are targeting surrounding landowners to promote habitat restoration and protection on their properties. We are trying to use the Farmland Protection Program for this as well as other Farm Bill and KDFWR cost-share programs. We are also working to control hunting pressure.

This situation makes our hunting strategies that much more important, since this is the only thing we have much control over other than maintaining high quality habitat. There may also be some potential for predator management.

Do Opportunities Exist for Reducing Avian Predation of Quail ?

Martin Lowney - U.S. Department of Agriculture, Wildlife Services

Avian predation of quail is a growing concern among private quail managers and state game biologists. Comments made by quail managers suggest that raptor damage management may be necessary to increase the economic benefits of quail management. The take (killing or capture) of raptors to protect livestock or other wildlife is illegal under the Migratory Bird Treaty Act of 1918, unless permitted. The USDA Wildlife Services program, whose mission is to provide federal leadership in developing and implementing solutions to alleviate wildlife damage, suggests using the National Environmental Policy Act (NEPA) process to identify the needs of quail management. Utilizing NEPA, an Environmental Assessment would outline the need for a proposed raptor management action, alternatives, and environmental consequences. The U. S. Fish and Wildlife Service would use the Environmental Assessment as a decision document to determine if "just cause" exists to issue permits for raptor damage management to enhance quail management.

Southeast Quail Study Group Internet Web Site Update and Demonstration

Dr. Dean Stewart - Mississippi State University

The SEQSG web page is accessed via: www.ces.msstate.edu/anr/wildfish/wildlife/quail.html. The SEQSG 3rd annual meeting proceedings will be on the web page. Changes and additions to the web page should be submitted to Dean Stewart as a windows WordPerfect 6.0 file on disk via regular mail (Department of Wildlife and Fisheries, Box 9690, Mississippi State, MS 39762) or in ASCII format via e-mail (deans@mces.msstate.edu). The specific location on the web should be stated and the format should fit current font, style, etc. of the information on the desired web page.

Quail Population Model Demonstration

Dr. Wes Burger - Mississippi State University

A stochastic bobwhite population model, QUAILSIM, was developed using population parameter estimates from field research conducted throughout the Southeast. The model was demonstrated to the group and input was solicited regarding accuracy and usefulness. For information on QUAILSIM, contact Wes Burger at Mississippi State University.

Wednesday, September 17

Committee Reports

Steering Committee

Breck Carmichael, Chairman - South Carolina Department of Natural Resources

The Steering Committee of the Southeast Quail Study Group (SEQSG) met at Okeetee Club, near Ridgeland, South Carolina on February 27 and 28, 1997. Present were Lenny Brennan, Steve Capel, Breck Carmichael, Ralph Dimmick, Rocky Evans, Mark Gudlin, Terry Sharpe and Bert Shiflet.

Details relative to the 1997 SEQSG meeting were discussed. The meeting is to be held September 15-18, 1997 in Keysville, Virginia. Capel reported the theme would be "Managing Quail in the Real World". It was agreed that state reports should be brief and emphasize new or different initiatives. Ample time should be allotted for committee work, by scheduling several hours at the end of the first afternoon. Research updates should pertain to information not presented at Quail IV, and a "Shoot From The Hip" session on a controversial topic such as releasing pen-reared quail will be planned.

Carmichael felt it was important to begin dialogue with the American Forest and Paper Institute concerning the Sustainable Forestry Initiative (SFI). It was agreed to seek a speaker for the Virginia meeting to discuss how SFI might benefit quail.

The Steering Committee also agreed to recognize Don McKenzie, Wildlife Management Institute for his excellent and diligent work on the 1996 Farm Bill. A plaque and copy of Stoddard's or Rosene's book were determined to be appropriate. Capel indicated cost could be covered out of meeting registration fees.

Activities of each of the working committees were discussed. It was recommended that the PR-Info-Education Committee be responsible for submitting at least 1 article per issue for Quail Unlimited Magazine. Evans indicated space would be made available. Dean Stewart, PR-Info-Education Committee chair should be responsible for soliciting articles from SEQSG membership and submitting to QU magazine.

The function of the Funding Committee was then discussed. It was suggested that the Funding committee develop a list of foundations and other sources of monies that could be used for SEQSG sanctioned research and other projects. A decision as to whether to establish a permanent SEQSG treasury was deferred. Project funding needs will be addressed on a case-by-case basis.

It was noted that the Grazing, Range and Pasture Committee was without a chairman. Gudlin agreed to make contacts to seek a new leader for this committee.

Agricultural Policy Committee members will assist with development of agenda for a training session primarily for NRCS personnel. The session would take place at Tall Timbers just prior to Quail IV and would concentrate on using farm bill programs for quail habitat improvement. Bill Palmer of Tall Timbers and Dave Howell of QU are coordinating. Carmichael agreed to contact all state agency SEQSG members and ask that they contact NRCS in their respective states concerning the training opportunity. Evans noted that QU could cover travel expenses for NRCS personnel if need arose.

The possibility of developing a training video on same subject, and possibly of using some of the material presented at the Tall Timbers workshop was also discussed. The video would again target county-level NRCS personnel. Objectives are: outlining the plight of quail and other early successional birds, propose concepts of how Farm Bill programs can address problems and show examples of good conservation practices.

Carmichael reported on the formation of a Southeast Forestry/Wildlife Working Group which met in Atlanta on February 20-21, 1997. The purpose of the meeting was to reach consensus on implementation of the 15th sign up of the Conservation Reserve Program (CRP), specifically as related to blending wildlife practices into pine plantation contracts. Carmichael, Reggie Thackston and Donnie Buckland represented the SEQSG at the meeting. Discussions were very productive and the group agreed to meet again prior to a 16th CRP sign up.

Discussion was held relative to establishing a procedure for changes in the Steering Committee membership. Current members agreed to serve for 2-3 more years to insure the SEQSG is on firm footing. In the interim, a set of by-laws and a procedure for rotating SEQSG members on to and off of the Steering Committee will be put in place. Gudlin, Dimmick and Shiflet agreed to form a subcommittee to review the by-laws of other, similar groups and develop procedures. Gudlin is to obtain a copy of the Southeast Deer Study Group by-laws. It was also mentioned that the Prairie Grouse Technical Committee may have by-laws that would be useful to review.

Brennan agreed to contact SEQSG committee chairs to see if meeting space was needed at Quail IV in Tallahassee.

Meeting adjourned at approximately 12 noon on February 28.

Agricultural Policy Committee

Reggie Thackston, Chairman - Georgia Department of Natural Resources

Chairman Reggie Thackston called the meeting to order at 3:00 pm with 19 people in attendance. A copy of the 1996-97 annual committee report (Appendix A) was presented to each member present, along with a brief discussion of accomplishments during the past year.

Each state provided a brief update on the results of the 15th Conservation Reserve Program Sign-up. Overall, the consensus was that cooperative working relationships between state wildlife agencies and other natural resource agencies relative to farm bill program implementation had improved substantially. Georgia and Alabama felt that the 30 point EBI misinterpretation had been beneficial because most landowners opted to go to a 50 point EBI. However, Mississippi lost wildlife habitat benefits as most landowners were able to remain in the program with only 10 point cover practices. In general, all states felt significant wildlife habitat benefits had been achieved during the 15th sign-up.

The committee recommended developing a brochure on the CRP Continuous Sign-up as there has very little participation in this program. Mark Gudlin, with TWRA agreed to lead the effort.

Chairman Thackston discussed the Forestry/Wildlife Farm Bill Working Group that met twice during the past year. Several of the committee members participated in these meetings and consensus was reached between foresters and wildlifers on several important habitat issues with the CRP (see Appendix B).

Steve Capel with VDGIF recommended and agreed to lead the effort in the development of a herbaceous cover working group that would function like the forestry working group. It was suggested that this be coordinated with Jeff Sole and the Habitat Committee.

The committee discussed and unanimously approved pursuing the development of a Longleaf Pine Conservation Priority Area for CRP. It was felt that this might be best achieved by working through the Forestry/Wildlife Farm Bill Working Group.

Dave Howell with QU made the committee aware of a pocket booklet ID guide to conservation plants that is available from the National Association of Conservation Districts at 1-800-825-5547.

Gene Whitaker with the National Wetlands Conservation Alliance recommended holding a committee meeting in the spring of 1998 to begin developing strategy for the 2002 Farm Bill.

Considerable discussion occurred over the CRP eligibility of lands with contracts expiring on September 30, 1997. A couple of follow up phone calls to Mike Anderson by Larry Robinson with NRCS indicated that all lands with contracts expiring on Sept. 30, 1997 would be eligible.

The committee recommended that Chairman Thackston draft the following letters:

1. Letters to Paul Johnson, Chief of NRCS, and Parks Shackleford, FSA Deputy Administrator of Farm Programs, recommending the removal of fescue and Old World bluestem from the CRP.
2. A letter to Parks Shackleford recommending the approval of a field border practice for CRP Continuous Sign-up. The committee agreed that it would be best to exclude center pivot corners from this recommendation as it would pose the potential inclusion of excessive acreage into the program. However, the committee felt that a recommendation for limited inclusion of center pivot corners should be pursued at some point in the future.
3. After considerable discussion, the committee recommended that a letter be sent to Parks Shackleford recommending that states be allowed to work through their State Technical Committee (STC) in concurrence with the state wildlife agency to go beyond the July 1 ending date for nesting seasons in the CRP. It was further agreed that this recommendation would be accompanied by data from as many southeastern states as possible showing the nesting seasons and peak hatching dates for quail. Also, it was agreed that the recommendation include a provision for allowing habitat management, for example summer burning, during the nesting season if recommended by the state wildlife agency.

The committee adjourned at 6:00 pm.

Habitat Implementation Committee

Jeff Sole, Chairman - Kentucky Department of Fish and Wildlife Resources

Committee Charge: "determining what it takes to get landowners interested in managing wildlife habitat in general, and more specifically, in developing ways to get landowners to restore bobwhite quail habitat at the landscape level."

Committee Activities 1996-97: The Habitat Implementation Committee met at the last Southeast Quail Study Group meeting in Tallahassee and once again at the Quail IV Symposium. The committee continued to work along the lines of coming up with ideas and ways to get more of the knowledge we have in hand about quail management "on the ground". Our activities this year included work on drafts of Fescue Eradication and Pine Plantation Management brochures and development of a generic draft Bobwhite Quail Management Workshop Agenda.

The idea of hosting a series of workshops across the southeast to provide training for NRCS/FSA personnel was discussed at length in Tallahassee. It was decided with the short time frame involved in the rapid implementation of Farm Bill programs, it would be best for each state to continue to work on their own to provide this training to their respective NRCS/FSA folks.

Agenda items for this year's meetings in Keysville, VA are as follows:

Old Business:

1. Final review and edit of the Pine Plantation Management draft brochure.
2. Review and edit of the Fescue Eradication draft brochure.

New Business:

1. Discussion of agency/organization program successes and failures to determine commonalities which can be shared to enhance our programs. Discussion will include topics from the statewide or regional programmatic level down to the one-on-one biologist/landowner interface.
2. Discussion of how to proceed with getting the brochures developed by this committee produced and distributed on a wide-scale basis.
3. Discussion of the Habitat Implementation Committee assuming the role of the now defunct Grassland/Range Management Committee.

Publicity, Information, and Education Committee

Dr. Dean Stewart, Chairman - Mississippi State University

Dean Stewart asked all present to identify themselves. He reviewed the list of committee members, and the history of the committee.

Old Business: Dean reviewed accomplishments from last year including the development of seven new extension service publications on ecology, management, strip discing, where to get assistance, food plantings, etc. Other accomplishments were development of the web site for the SEQSG, development of a quail page on Mississippi's web site, development of a series of three articles on the ecology and management of bobwhite quail for the first three issues of 1996 Quail Unlimited Magazine, and editing and printing of the minutes of 2nd annual meeting of SEQSG.

New business:

1. Should we have a separate newsletter; or should we publish our work in the QU magazine?
2. The objective of creating an on-line data base has been accomplished. A handout was provided to committee members that gave a brief rundown of the web page. Minutes for last year's meeting are on the web; publications are on the web (MS Cooperative Extension Service publications). Dean invited all agencies to add their publications via electronic means (submit a disk in WordPerfect or send e-mail to Dean at MSU).
3. Progress of the following video productions was discussed:

Mike Hansbrough reported that a new quail has just been released. It was cooperatively produced by Quail Unlimited, the U.S. Forest Service, and Bureau of Land Management. For more information, contact Roger Wells (Quail Unlimited) at 316-443-5834.

The Mississippi Cooperative Extension Service is close to finishing a 20-minute video on the ecology and management of quail. Contacts with public sources of information were made. The video is patterned after their extension publication and is intended to be a companion to this document. The real problem was getting quality video on quail but obstacles have been overcome. They have a lot of live bird footage, including general life history, hen with eggs, chicks, etc. The video should be out next summer. It will emphasize life history and habitat management. The video is designed for habitat managers.

Mike Hansbrough reported that QU and NRCS are producing a training video for professionals.

Marc Puckett reported that Virginia plans to establish a series of videos that will be accompanied by technical bulletins. Funds are available; getting the production system moving a challenge.

Pete Bromley reported that the North Carolina Cooperative Extension Service is producing a video to emphasize quail as a healthy part of the agricultural ecosystem. It should be done in a year and a half.

4. The group discussed the need for an appealing national level public service announcement (PSA) targeted towards television audiences. States could cooperate. Topics might include history, habitat management, sportsman involvement, and biodiversity. Impacts of quail management to a broad section of society and their quality of life should be included. Care should be taken regarding how the issue of hunting portrayed. Ducks Unlimited messages emphasize habitat production. These are 1 minute or less long (pot hole restoration, cloud of ducks). Key ideas for the PSA are quail, mass appeal, and identifying who can help. How many state quail programs have funds available?

Funding needed is \$1 to \$2,000 per minute. It might be possible to get a grant through cooperative efforts with an agency or university that "volunteers" their facilities but the proposal would have to include direct costs of getting, producing, and distributing the products. End products would be a series of short, hard-hitting videos. A possible contact might be Ted Turner who has a quail shooting plantation. Could Mossy Oak sponsor a show? There would be a short life span for these items; strategic planning of the message is critical.

Other funding partners might be USDA (WHIP, EQIP), state wildlife agencies, Wildlife Management Institute (WMI), International Association of Fish and Wildlife Agencies (IAFWA), Quail Unlimited, or Partners in Flight. There are many ideas but the group needs starting funds (perhaps from QU). The SEQSG could take a leadership role. Breck Carmichael could take it to the directors at the Southeast Association, but the SEQSG members would have to sign on and take action before then. Bill Whitman volunteered to coordinate overall efforts, to contact the National Fish and Wildlife Foundation (NFWF) and other funding sources. Bill will write the draft basic grant to the NFWF, with input from the committee. Dean Stewart will ask his Cooperative Extension Service if they will provide footage free and will ask if they will assist with the spots.

5. The need for a general video to cover actions across the Southeast, basic life history, status, challenges, etc. was also discussed. Could states do various parts? The audience would be students, QU members, landowners, or civic groups. This type of video would need major support from larger organizations and companies, perhaps firearms companies. Several states are producing these types of videos. Stewart questioned whether this video is necessary now

that other states are doing them. Hansbrough recalled the benefit of reaching a national or regional audience. Funding might be available through the Grant -in-Aide Program of the IAFWA.

6. The idea of having a SEQSG newsletter was revisited. Dean Stewart suggested adding the newsletter to the web page. The audience for the newsletter would be landowners, QU members, and others. It could be part of the QU national magazine or state agency magazines. Could the committees in SEQSG be charged with providing basic material and someone on this committee review and prepare text for the magazine and web page? Length would be one page, front and back. The newsletter would come out 2 to 3 times per year. Marc Puckett volunteered to begin the process and coordinate the effort. Dean Stewart volunteered to assist Marc. Mike Hansbrough suggested ways to contact the editor of QU. Topics for the newsletter could come from the SEQSG meetings.
7. Additional subjects were also discussed. Rick Chastain pointed out the need to share successes of individuals in our group. An example is the cutoff date for mowing on CRP. This information needs to be shared via e-mail. Dean Stewart will set up the e-mail list, and he will establish directions for any member of the SEQSG to access the whole group, each committee, or individuals.

Mark Whitney expressed the advantage of access to state publications, newsletters, brochures. People who put things on the web page need to be aware that everything they submit is public information.

The Habitat Implementation Committee is working on two brochures (fescue eradication and pine plantation management) and the Agricultural Policy committee plans to do one on Farm Bill programs. This committee will work with the other two to accomplish similar goals, possibly producing the brochures as inserts in QU magazine.

Dean Stewart adjourned the meeting at 5:09 pm.

Research Committee

Dr. Wes Burger, Chairman - Mississippi State University

The research committee of the Southeast Quail Study Group (SEQSG) met during the 1997 annual meeting of the SEQSG. The meeting was brought to order by committee chair Wes Burger. Previously established research priorities and subcommittee structure were reviewed. These are as follows:

1. **Harvest Study Subcommittee** - Chair Dr. Tom Dailey, Missouri Department of Conservation
Charge - Develop protocol and proposal for a regionally replicated study of the effects of exploitation on bobwhite.
2. **Agricultural Ecosystems Subcommittee**- Chair Dr. Bill Palmer, Tall Timbers Research Station
Charge - Coordinate regional bobwhite research activities in agricultural ecosystems, specifically addressing population consequences and economic implications of wildlife provisions of the 1996 Farm Bill (i.e. field borders, filter strips, CRP management practices, etc.)

3. Forest Ecosystems Subcommittee - Chair Dr. Sara Schweitzer, University of Georgia

Charge - Coordinate regional bobwhite research activities in forested ecosystems with specific attention to management practices on young pine plantations.

Harvest Issue

Wes Burger provided a brief synopsis of the meeting of the Research Committee held in conjunction with Quail IV in Tallahassee, FL during April 1997. At this meeting Tom Dailey provided an overview of proposed experimental design, hypotheses to be tested, required population parameters, study area selection considerations, and a tentative time table. Considerable discussion ensued. Potential limitations of the longer cross-over design were discussed including annual variation and residual effects of previous treatments. The general consensus was that a blocked design with 3 years pretreatment data collection and 3 years post-treatment with the potential to extend the treatment period was preferable. Tom Dailey continued the discussion of the proposed regional harvest study with an overview of a protocol proposal (see below).

Proposed Regional Harvest Study Proposal

The Strategic Plan for quail conservation at the 1992 National Quail Symposium identified harvest as a critical issue facing managers. Deteriorating habitat conditions, reduced quail abundance and increasing demands by the non-hunting public for conservative exploitation have all accentuated the need for scientific harvest information. In 1994, researchers at the National Upland Game Bird Planning Session at the 59th North American Wildlife and Natural Resources Conference presented a paper calling for a 6-12 year, multi-state experiment designed to resolve the issue of effects of harvest on quail populations. Over the past 5 years researchers have conducted studies aimed at resolving questions that could affect the biological interpretation and statistical validity of the multi-state experiment (e. g., effects of radio transmitters on survival estimation, evaluation of quail population density estimators). Discussion and planning sessions within the SEQSG (1995, 1996, 1997), the Midwest Bobwhite Research Initiative (1993, 1994, 1995), and Quail IV (1997) have proceeded to the point where at least 4 states (Missouri, Mississippi, Oklahoma, Florida) are interested in conducting replicates of the harvest study.

The harvest subcommittee has identified experimental protocol for measuring effects of 0, 30 and 60% harvest rates on seasonal survival and reproduction by radiotagged bobwhite. The study would focus on density-dependent responses in mortality and reproduction. The study is planned to begin in July 1999. Estimated annual direct cost per state replicate is \$150,000 for a *total annual study cost of \$600,000* for the 4 states for ≥ 6 years. The study would be administered by a steering committee composed of a representative from each replicate state and 1-2 representatives from non-replicate states.

The SEQSG Research Committee requests that each member state in the SEAFWA contribute funds toward the establishment and completion of this study. The VDGIF has set a precedent by planning long-term financial support to the study (Virginia Bobwhite Quail Management Plan, p. 13). In addition, this spring the SEQSG harvest subcommittee will submit a proposal for funding by the Federal Aid in Sport Fish and Wildlife Restoration Administrative Projects. The proposal will request 50:50 matching funds, or \$300,000 annually from Federal Aid Administrative Funds. The balance of the annual direct cost per state replicate, \$75,000, will be a burden for any one state. *We request that non-replicate states commit at least \$25,000 annually to the study.* This funding request will be extended to non-SEAFWA states. In order to present a clear description of matching funds for the Federal Aid Administrative Projects application, *we request states provide a commitment to the July 1999 study initiation before May 1998.*

Forest Issue

Sara Schweitzer provided an overview of an ongoing research project being replicated in Georgia and South Carolina in cooperation with Dr. Dave Otis, Clemson University. This project involves bobwhite habitat use and population response to creation of openings in 10-12 year old CRP pine plantations. Additionally, avian community and wild turkey population response is being evaluated. The first year of pretreatment data collection on this project is nearing completion.

Predator Issue

Wes Burger brought before the committee a proposal to develop a regionally replicated study of the effects of predator removal on bobwhite populations. He outlined the situation where several large but local projects were simultaneously being developed by research staff at Tall Timbers Research Station, Albany Game Management Project, Mississippi State University, and University of Tennessee - Knoxville (Ames Plantation). Additionally, research staff at the Jones Ecological Station, Newton, GA, have expressed an interest in developing a similar project. Burger proposed that instead of simultaneously developing parallel, but independent projects, the Research Committee could serve as a coordinating body to guide development and implementation of consistent and coordinated experimental design, testable hypotheses, research protocol, and a timetable. Burger suggested that such a research endeavor would be useful only if testable hypotheses were carefully constructed to identify mechanisms of bobwhite population response. Additionally, such a project should similarly evaluate mechanisms and magnitude of predator community population response (i.e. density dependent reproduction). Considerable debate ensued regarding the philosophical and ethical appropriateness of research and management along these lines. At least one research committee member expressed strong opposition to the ethical underpinnings of such an endeavor. Several committee members acknowledged probable public and political philosophical opposition. It was acknowledged that although state resource management agencies would clearly desire and use research information from a well-designed study on this topic, few state agencies would have the political freedom to participate in such an endeavor. Research committee members interested in pursuing this topic agreed to work together to develop a regionally coordinated research protocol and proposal.

Conclusion

Wes Burger proposed that Dr. Bill Palmer succeed him as Research Committee Chair. The meeting was adjourned.

Research Updates

Tall Timbers Research Station

Dr. Bill Palmer - Tall Timbers Research Station

Over the past year, Dr. Bill Palmer, formerly with North Carolina State University, was hired as Tall Timber's Robert C. Balfour Gamebird Research Fellow. Under Dr. Palmer's direction, upland gamebird research will be management oriented. Areas to be stressed include: 1) effects of chemical pine release applications (particularly Arsenal®), with and with out burning regimes, on quail populations; 2) brood habitat selection by quail chicks; 3) winter versus summer fire effects on quail habitat; 4) effects of predator removal and habitat manipulation on quail populations.

Albany Area Quail Management Project

Clay Sisson - Auburn University

The Auburn Area Quail Management Project (AQMP) is a large scale quail research and management project being conducted by Auburn University's Department of Zoology and Wildlife Science in cooperation with several large private hunting plantations in southwest Georgia. The project began in the spring of 1992 and has since collected data on almost 2,000 radio-tagged birds. Funding is being provided by plantation owners, quail hunters, the Georgia DNR, and Quail Unlimited. Recently completed, ongoing, and future studies are summarized below.

An intensive study of brood ecology is ongoing. To date, 238 radio-tagged adults with broods have been intensively monitored for habitat use and survival. A strong preference for weedy fields that had been disced the previous fall has been clearly demonstrated. Chick survival to flight stage, estimated by flush counts, has averaged 35 percent. However, this survival rate may be an underestimate due to chick abandonment and adoption. Insect abundance and management continues to be evaluated using sweep net sampling. Emphasis currently is on best management practices (i.e. disking, crop rotation, fertilizing) to produce insect foods in fallow fields. The role of agricultural plantings is being evaluated on experimental areas with results currently suggesting high quail populations can be maintained without agricultural crops.

Supplemental feeding continues to be evaluated as an intensive quail management tool. Earlier work documented benefits of supplemental feeding in years of poor native food production and light cover. Current studies are investigating the role of high protein feeding in the spring as well as the pros and cons of feeding by spreading versus feeders.

The response of a quail population to intensive hardwood control in the mid and overstory of a pine forest is being monitored. A 30 percent increase in hunting success was documented after one growing season followed by an increase in over-winter survival as well as nesting success of radio-tagged birds the following year.

A cooperative study with the Jones Research Center at Ichauway is investigating optimal habitat components in a forested ecosystem using geographic information system (GIS) technology. Habitat variables are being measured on three southwest Georgia plantations encompassing 50,000 acres. These measurements will be compared to records of hunting success on a course by course basis. Preliminary results indicate that size, shape, and distribution of open fields is strongly correlated with hunting quality.

We plan to continue our evaluation of pre-season pen-raised bird release techniques. We have already documented increased survival using a Smith-O'Neal type release system. This fall we will be analyzing the effectiveness of call birds as part of this technique.

This winter, our project will venture out into the real world with the initiation of a new study of quail ecology and management in a center-pivot irrigated agriculture dominated landscape. In the near future, we will also be initiating an intensive study to look at the effects of predator management on quail production.

Mississippi Cooperative Bobwhite Research Program

Dr. Wes Burger - Mississippi State University

The Mississippi program currently includes eight individual studies addressing: 1) bobwhite habitat use and reproductive success in managed old-field habitats in Mississippi; 2) effects of disking, burning, and herbicide on vegetation structure, invertebrate abundance, and soil erosion in Conservation Reserve Program fields; 3) effects of radio-transmitters on body condition, harvest rate, and survival of bobwhites; 4) economic impact of bobwhite hunting in Mississippi and the Southeast; 5) population response of northern bobwhite quail to intensive habitat development on a prairie site in Mississippi; 6) development of marking methods for day-old bobwhite chicks; 7) development of a stochastic population model and Windows-based software to facilitate sensitivity analysis and; 8) development and validation of landscape-level habitat models for Missouri agricultural habitats.

University of Tennessee

Dr. Ralph Dimmick - University of Tennessee, Knoxville

Dr. Dimmick described conditions at Ames Plantation. His studies over a period of 31 years have been conducted on 2,100 acres, most of which is field trial courses. He described the area as typical of the mid-South, mostly hardwood forests and cotton and soybean agriculture. The 2,100 acre study area is part of a 21,000 acre operation, most of which are working farms and forestry operations.

Quail populations on Ames Plantation have experienced declines mirroring those typical of much of the Southeast. In 1966, Dr. Dimmick began a December walking survey of the entire study area. At that time, quail densities were 1.0 to 1.5 birds per acre. He estimated that there were more than 3,000 quail on 2,100 acres. Today, he estimates the population to be about 400 quail. Dr. Dimmick believes that the ultimate factor responsible for the decline is the loss of old field habitat, primarily through improper management. The fields are mowed each November to provide visibility for field trials.

Dr. Dimmick discussed preliminary results from two studies with the following objectives: 1) to determine if disturbance from field trials caused higher mortality among quail, or caused quail to leave their established ranges and; 2) to determine whether mycotoxins, primarily T2 *Aspergillus*, under field and controlled conditions, could reach levels on soybeans that would be harmful or fatal to quail consuming them.

In the first study, no difference was detected for bobwhite survival on areas with and with out field trials. Although coveys did move during the field trial period, no coveys left their respective home ranges.

Results of the second study showed that some soybean samples obtained randomly contained mycotoxins. However, experiments, as well as subsequent field sampling, revealed no soybeans having mycotoxin levels high enough to be problematic. Dr. Dimmick emphasized that only one year of data had been collected so far and that it was too early to draw conclusions.

North Carolina State University

Dr. Bill Palmer - Tall Timbers Research Station and North Carolina State University Research Associate

Under the leadership of Dr. Pete Bromley, North Carolina State University is taking a multi-faceted approach. They have two main projects underway. The first project examines the potential importance of bobwhites to North Carolina's economy; the other is a joint venture to investigate the effects of habitat

management and predator removal on bobwhite populations in Virginia and North Carolina. Incorporated within the broader studies are research projects examining: 1) the accuracy of censusing quail coveys using electronic calls and the usefulness of this technique for estimating population size; 2) the economics and water quality benefits of field border systems; 3) the effects of field border establishment on quail and songbird populations; 4) methods of estimating quail response to predator removal and; 5) habitat viability for quail broods.

Discussion Session: Soft-Release Systems and Pen-Reared Quail

Opening Comments

K. Marc Puckett - Virginia Department of Game and Inland Fisheries

Marc opened the session by repeating Rocky Evans' call to all meeting participants to "... keep an open mind to new possibilities in quail management." Marc also recalled an axiom he heard from Dale Rollins, "If I hadn't believed it so strongly, I never would have seen it with my own two eyes." Marc proposed the reverse idea, "...had I not disbelieved it so strongly, maybe I would have seen it." He went on to suggest that, until soft-release systems are tested in a sound manner, we can't close the book on their viability. Marc made the point that none of us, whether we are proponents of habitat management, predator control, or soft-release systems, can guarantee results 100 percent of the time. Marc also pointed out that places do exist where recolonization by wild quail is unlikely due to habitat fragmentation.

Marc provided written notes that were not discussed during the debate due to time constraints. These notes discussed the idea that a threshold for minimum patch size is not known. We also don't know how important small habitat patches are to large patches. The subject is always approached as if large habitat blocks are more critical for sustaining populations. However, small patches may be just as important for maintaining populations in large patches as large patches are for maintaining populations in small habitat areas. Natural systems are feedback as much as feed forward systems. Both small and large patches make up the whole. Soft-release systems may be a viable means of maintaining populations in small habitat patches which may, in turn, be critical to maintaining population and genetic flow across the landscape.

Integrating Pen-Raised Bird Releases With Wild Quail Management Programs

Jim Evans - Quality Wildlife Services, Inc.

The quail hunter of yesterday had many options available to him. He could roam from farm to farm and find quail habitat and coveys of birds. This caused interest in the management of bobwhite quail to remain high. It is understandable how the bird hunters torch was easily passed to the next generation.

Today's scene is quite different. Farms are much harder to access for hunting and in most cases the support habitat needed (brood habitat and nesting areas) is nonexistent. Farm fields are planted in crops year round, hedgerows have been removed to accommodate the center pivot, and fields too small for crops have been put into CRP pine plantations. As if this isn't bad enough, a deflated fur market along with a boom in the raptor population has presented us with an unprecedented predator problem.

Today's quail hunter is restricted to hunting smaller tracts of land. He's begging for help and the only advice he hears is "just create the habitat and the birds will come back." Although there are still places where this action could result in success, I believe in most cases this is a false assumption due to the changes in today's land use practices.

It is my contention that we must provide today's quail hunter with the means to manage quail on smaller tracts of land. As a private consultant, I have been doing this successfully for several years on tracts of land as small as 200 acres. It is a fact that on 200 acres one could perform every management recommendation ever propounded by Tall Timbers and still not be able to sustain good hunting one day every week of the season. Are there any options? In my case, I conducted a preseason release of good quality flight conditioned quail and used the Anchor Covey Technique. Using this method, we released coveys into suitable habitat from mid-September to mid-October. If properly executed, this results in several coveys available to hunt during the season. Of course, the prerequisite for this is to at least have good fall support cover and habitat. I always tell people that you cannot do this in a parking lot and expect any results. It has been my experience that once the landowner is back into birds, his interest in management is elevated. At the end of the year, he knows that he still has birds on his land and usually asks me if they will reproduce. If all my banding data and field data is ignored, we still see that there have been three different studies conducted in three different states that give us the same answer--YES.

This is when we enter the next phase of management which is achieved by removing surplus egg eaters (such as raccoon and opossum) and conducting efforts to establish areas with suitable nesting cover and brood rearing qualities. The landowner can now mix a release bird program with a wild bird management program and begin to see results. An example of this is here in Burke County, Georgia, where after five years, the 1996 season hunt data showed 38 percent native quail (offspring from the original release project); 59 percent preseason released (from September 1996); and 3 percent quail from the September 1995 preseason release. On this tract, we are continuing to expand quail habitat and servicing the release systems with food and water on a year-round basis. This is no different than fertilizing a fish pond to increase productivity in a limited area.

In summary, I believe this to be a biologically sound technique which will motivate even the small landowner to keep managing his land for quail and allow him not only to continue enjoying his sport, but also to pass the torch to the next generation.

Post-Presentation Discussion

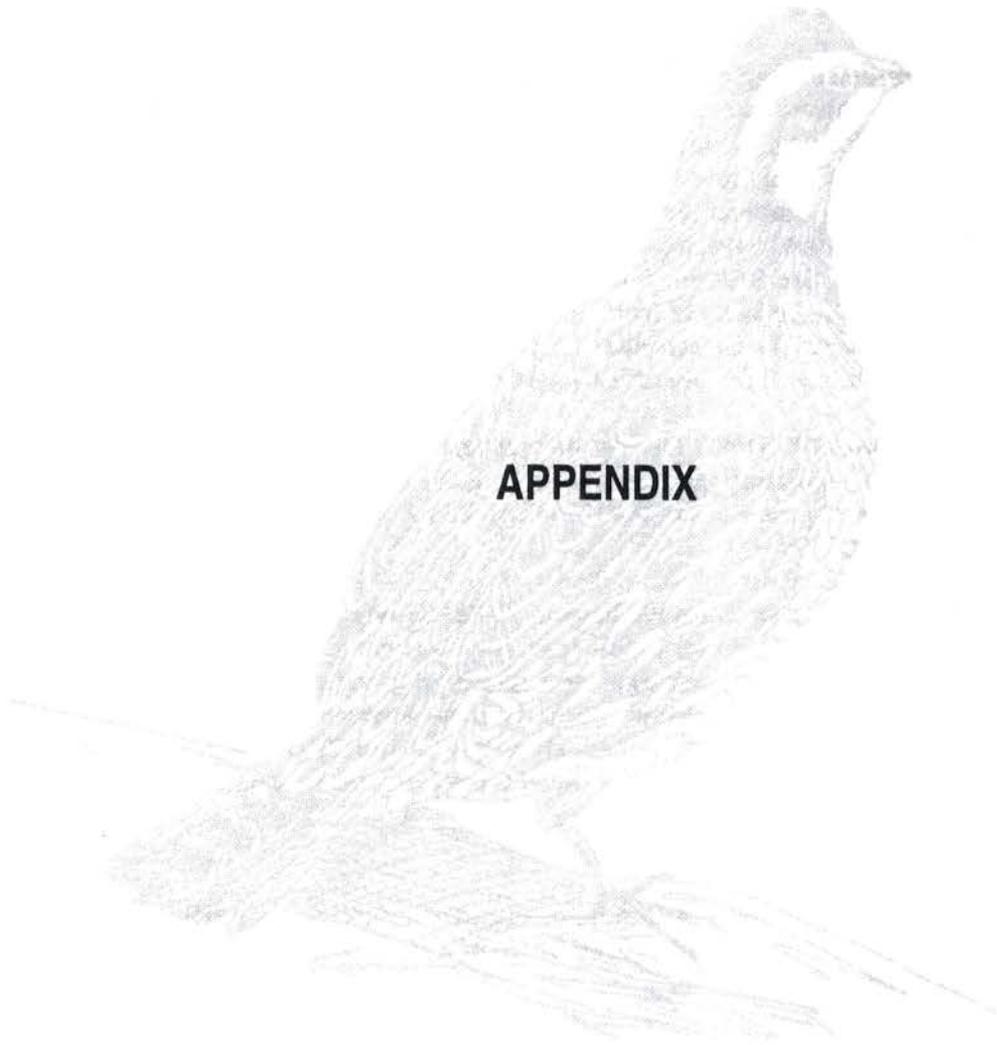
Dr. Pete Bromley raised the question "what is a wild quail?" He expressed concern that areas "repopulated" with pen-raised birds did not have quail that were truly wild. Jim indicated that, if the birds were hatched in the wild, spent their entire life there and survived there, they were "wild" birds, even though there may be minor differences in morphology from "true" native birds

One biologist in the audience made an analogy to trout breeding in a stream after being stocked. The stream subsequently develops a "wild" trout population, even though the parents were hatchery fish.

Clay Sisson suggested, if it walks, talks and acts like a duck, it's a duck. He expressed that, in Georgia, they had success using "soft-release" systems and documented successful breeding.

End of Presentations

APPENDIX



Appendix A: Agricultural Policy Committee Annual Report

Committee Purpose: The Southeast Quail Study Group Agricultural Policy Committee charge is to monitor agriculture policy with respect to potential impacts on northern bobwhite quail habitat. In coordination with the SEQSG Steering Committee, the Agricultural Policy Committee will draft position statements and provide recommendations relative to the formulation and implementation of agriculture programs and provisions. Additionally, the committee will work with appropriate state and federal agencies and private conservation organizations to facilitate information transfer.

Committee Members: Reggie Thackston, Chairman, Georgia Department of Natural Resources; Stan Stewart, Alabama Game and Fish Division; Chuck McKelvy, Florida Game and Fresh Water Fish Commission; Mark Whitney, Georgia Department of Natural Resources; Jeffery Sole, Kentucky Department of Fish and Wildlife Resources; Dave Godwin, Mississippi Wildlife, Fisheries and Parks; Denton Baumbarger, North Carolina Wildlife Resources Commission; Bert Shiflet, Okeetee Club, South Carolina; Steve DeMaso, Oklahoma Department of Wildlife Conservation; Rocky Evans, Quail Unlimited, South Carolina; Breck Carmichael, South Carolina Department of Natural Resources; Sam Stokes Jr., South Carolina Department of Natural Resources; Mark Gudlin, Tennessee Wildlife Resources Agency; Steve Capel, Virginia Department of Game & Inland Fisheries; Patty Moore, Virginia Department of Game & Inland Fisheries; Chester McConnell, Wildlife Management Institute, Tennessee.

Committee Activities 1996-1997: During the past year the committee was active in providing input into the legislative and regulatory processes involving the development and implementation of the conservation programs and provisions of the 1996 Farm Bill. Listed below are the primary activities that the committee participated in:

- * Helped initiate the Southeast Farm Bill Forestry/Wildlife Working Group. The group is comprised of foresters, wildlifers, and administrators from southeastern states and Washington, DC with the purpose of promoting communication and identifying common ground regarding Farm Bill conservation provisions and implementation. Two meetings were conducted in 1997 regarding the Conservation Reserve Program (CRP), specifically CP3 and CP11 tree practices. Consensus was achieved on a number of issues that improved these practices for quail.

- * The following letters were prepared and mailed:

Mr. Parks Shackelford, Deputy Administrator, Farm Service Agency (FSA) concerning the 10% cropland limitation and 30% woody vegetation requirement of CRP CP4. These restrictions were later removed.

Mr. Warren Lee, Natural Resources Conservation Service concerning comments on the Wildlife Habitat Incentives Program (WHIP) proposed rules.

Mr. Lloyd Wright, NRCS, concerning Environmental Quality Incentives Program.

Mr. Dan Glickman, Secretary of Agriculture, concerning limiting acreage and evaluating the CRP Environmental Benefits Index during the 15th sign-up. Also, a letter recommending the inclusion of a field border practice in the CRP.

Mr. Paul Johnson, Chief of NRCS, in support of state WHIP plans that target quail habitat.

Ms. Cheryl Zavodny, FSA, concerning the CRP Long Term Policy and suggested improvements for quail habitat.

The Environmental Protection Agency regarding prescribed burning legislation and potential impacts on habitat management.

- * A committee meeting was held in conjunction with Quail IV. Agenda items included the following: 1) state updates on Farm Bill implementation; 2) possible longleaf pine CRP Conservation Priority Area for the Southeast; 3) Farm Bill educational materials and; 4) monitoring of CRP habitat impacts.
- * Committee members corresponded throughout the year concerning opportunities, issues, and concerns with Farm Bill program implementation.

Plans For Coming Year: Coordinate information exchange between southeastern states concerning strategies for involvement in the Farm Bill implementation process. Continue periodic meetings of the Southeast Forestry/Wildlife Working Group.

Submitted by: Reggie E. Thackston, Chairman

Appendix B:

**Southeast Forestry/Wildlife Working Group Meeting
Recommendations for the Conservation Reserve Program
August 11-12, 1997 - Atlanta, GA**

Maintenance - Consensus Agreement

1. Thinning of pine should be allowed during all seasons.
2. Allow limited growing season controlled burning, as well as at other times of year, according to landowner objectives.
3. Allow NRCS State Technical committee to designate ending dates for primary nesting season later than July 1.
4. All maintenance requirements shall be addressed in the Conservation Plan of Operations (CPO).
5. CP3 and CP11 wildlife openings shall be maintained on 1-3 year basis (rotation) by light discing, burning, mowing or selective herbicide application.

Cover Establishment Time Frame

1. A majority of forestry and wildlife professionals favor allowing up to 5 years or age 15 for landowners to conduct pine stand thinnings for 30 point and 50 point EBI wildlife cover scores.

EBI Point Values

1. To achieve 30 points under the wildlife cover factor for CP11, the pine stand must be thinned to \leq 300 trees per acre (majority agreement).
2. To achieve 50 points under the wildlife cover factor for CP11, the pine stand must be thinned to \leq 300 trees per acre, on the forested acres, and 15-20% of the contract acres must be established to wildlife openings, corridors or strips (majority agreement).
3. A majority of the forestry and wildlife professionals favored allowing 30 points for the CP11 wildlife cover factor to those landowners that offered to thin pine stands to less than 500 trees per acre in the 15th sign up.
4. State Technical Committee (NRCS) should set eligible species and management recommendations for hardwood tree plantings, and these should be included in the CPO (consensus agreement).
5. Predominant cover rule - to receive additional wildlife points under CP3 and CP11, all contract acreage must be treated or use a weighted average to calculate wildlife cover points based on the percentages of different covers present (all CP's) (majority agreement).
6. Stocking rates for longleaf pine should be determined by the NRCS State Technical Committee. Controlled burning should be included in the CPO as the preferred maintenance tool for longleaf pine (consensus agreement).

7. Three options were discussed relative to the EBI Long-term Retention Factor:

- a) Leave new softwood tree planting points as is; increase wetland ecosystem restoration (CP23) with restored semi-permanently and permanently flooded wetlands to 50 points.
- b) Decrease softwood tree planting to 25 points; increase wetland restoration to 40 points.
- c) Leave as is.

There was no consensus reached by the group.

8. Influence of the cost factor on the EBI was discussed and 2 options considered:

- a) Separate cost from the EBI and set a minimum EBI score that must be achieved before applying the cost factor.
- b) Leave as is.

There was no consensus reached by the group.

9. Influence of reduced erosion ranking factor was discussed and no consensus reached by the group.

Other Topics

- 1. Concern was expressed that inappropriate cover types were being prescribed for lands qualified as "Associated Wetland Acres" for CRP in the 15th signup. In order to obtain maximum wildlife benefits for reptile, amphibian and neotropical migratory songbird species, specifications for cover types eligible for CRP acres qualified as "Associated Wetland Acres" should be formulated through an interagency process and brought up through the NRCS State Technical Committee (consensus agreement).
- 2. Guidance is available for width requirement on Continuous CRP sign up practices from NRCS.
- 3. Marginal pasture land should be eligible for CP22 if $\leq 25\%$ tree canopy cover is present (majority agreement).
- 4. CRP block size was discussed as a concern for certain songbird species. Block sizes of at least 40 acres are preferred.
- 5. CP12's should be permitted on up to 2% of the CP3/CP11 acreage (majority agreement).

Appendix C:

**SOUTHEAST QUAIL STUDY GROUP COMMITTEES
1997-98**

Steering Committee

Breck Carmichael, Chair - South Carolina Department of Natural Resources
Dr. Leonard Brennan - Tall Timbers Research Station
Dr. Ralph Dimmick - University of Tennessee, Knoxville
Rocky Evans - Quail Unlimited
Mark Gudlin - Tennessee Wildlife Resources Agency
Terry Sharpe - North Carolina Wildlife Resources Commission
Bert Shiflet - Okeetee Club, South Carolina
Steve Capel, Ad Hoc - Virginia Department of Game and Inland Fisheries

Agricultural Policy Committee

Reggie Thaxton, Chair - Georgia Department of Natural Resources
Denton Baumbarger - North Carolina Wildlife Resources Commission
Steve Capel - Virginia Department of Game and Inland Fisheries
Breck Carmichael - South Carolina Department of Natural Resources
Steve DeMaso - Oklahoma Department of Wildlife Conservation
Rocky Evans - Quail Unlimited, South Carolina
Dave Godwin - Mississippi Wildlife, Fisheries, and Parks
Mark Gudlin - Tennessee Wildlife Resources Agency
Chester McConnell - Wildlife Management Institute, Tennessee
Chuck McKelvy - Florida Game and Freshwater Fish Commission
Patty Moore - Virginia Department of Game and Inland Fisheries
Bert Shiflet - Okeetee Club, South Carolina
Jeffrey Sole - Kentucky Department of Fish and Wildlife Resources
Stan Stewart - Alabama Game and Fish Division
Sam Stokes, Jr. - South Carolina Department of Natural Resources
Mark Whitney - Georgia Department of Natural Resources

Funding Committee

Rocky Evans, Chair - Quail Unlimited, South Carolina
Donnie Buckland - Quail Unlimited, Virginia
Tommy Dean - Quail Unlimited, South Carolina
Randy Guthrie - Quail Unlimited, Arkansas
Mike Hansbrough - Quail Unlimited, Tennessee
David Howell - Quail Unlimited, Indiana

Habitat Improvement Implementation Committee

Jeffrey Sole, Chair - Kentucky Department of Fish and Wildlife Resources
Donnie Buckland - Quail Unlimited, Virginia
Larry Campbell - Florida Game and Freshwater Fish Commission
Steve DeMaso - Oklahoma Department of Wildlife Conservation

Habitat Improvement Implementation Committee (continued)

Patrick Keyser - Virginia Department of Game and Inland Fisheries
Fred Kimmel - Louisiana Department of Wildlife and Fisheries
Patty Moore - Virginia Department of Game and Inland Fisheries
Joseph Shugars - Maryland Department of Natural Resources

Publicity, Information, and Education Committee

Dr. Dean Stewart, Chair - Mississippi State University
Dr. Pete Bromley - North Carolina State University
Rick Chastain - Arkansas Game and Fish Division
Mike Hansbrough - Quail Unlimited, Tennessee
Marc Puckett - Virginia Department of Game and Inland Fisheries
Terry Sharpe - North Carolina Wildlife Resources Commission
Bill Whitman - Delaware Division of Fish and Wildlife
Mark Whitney - Georgia Department of Natural Resources

Research Committee

Dr. Wes Burger, Chair - Mississippi State University
Dr. Leonard Brennan - Tall Timbers Research Station
Dr. Tom Dailey - Missouri Department of Conservation
Steve DeMaso - Oklahoma Department of Wildlife Conservation
Dr. Ralph Dimmick - University of Tennessee, Knoxville
Mike Fies - Virginia Department of Game and Inland Fisheries
Dr. Fred Guthrey - Texas A&M University
Dr. Bill Palmer - Tall Timbers Research Station
Dr. Sara Schweitzer - University of Georgia
Clay Sisson - Auburn University

Appendix D:

**1997 Southeast Quail Study Group Meeting
List of Attendees**

Wayne Adcock
Tennessee Wildlife Resources Agency
P. O. Box 206
Livingston, TN 38570
(615) 823-6739
(615) 456-1025 (FAX)

Frank B. Barick
Falls of the Neuse Chapter QU
4533 Inwood Road
Raleigh, NC 27603
(919) 821-2071
(919) 833-5138

Judy Barnes
South Carolina Dept. of Natural Resources
P. O. Box 167
Columbia, SC 29202
(803) 734-3609
(803) 734-6020 (FAX)

Haven Barnhill
Georgia Wildlife Resources Division
142 Bob Kirk Road
Thomson, GA 30824
(706) 595-4222
(706) 595-5639 (FAX)

Denny Baumbarger
North Carolina Wildlife Resources Commission
317 Hamlet Avenue
Hamlet, NC 28345
(910) 582-5903
(910) 281-4184 (FAX)

Jerry Bearden
Georgia Dept. of Natural Resources
2592 Floyd Springs Rd., NE
Armuchee, GA 30105

Don Brazil
Mississippi Wildlife, Fish & Parks
505 Dogwood Lake Drive
Vicksburg, MS 39180
(601) 638-3162
(601) 364-2215 (FAX)

Dr. Peter T. Bromley
North Carolina State University
Dept. of Zoology
Raleigh, NC 27695-7646
(919) 515-7587
(919) 515-5110 (FAX)

Donnie Buckland
Quail Unlimited
P. O. Box 1110
Stuart, VA 24171
(540) 694-6979
(540) 694-6979 (FAX)

Dr. Wes Burger
Mississippi State University
Dept of Wildlife & Fisheries
Box 9690
Mississippi State, MS 39762
(601) 325-8782
(601) 325-8726 (FAX)

Rick Cantrell
American Forest and Paper Association
1111 19th Street, NW, Suite 800
Washington, DC 20036
(202) 463-2432
(202) 463-2708 (FAX)

Stephen Capel
VA Dept. of Game & Inland Fisheries
4792 Anderson Highway
Powhatan, VA 23139
(804) 598-3706
(804) 598-4934 (FAX)

Dr. Rick Carlisle
 University of Tennessee-Ames Plantation
 P. O. Box 389
 Grand Junction, TN 38039
 (901) 878-1067
 (901) 878-1068 (FAX)

Breck Carmichael
 South Carolina Dept. of Natural Resources
 P. O. Box 167
 Columbia, SC 29202
 (803) 734-3609
 (803) 734-6020 (FAX)

Rick Chastain
 Arkansas Game & Fish Commission
 Rt. 1, Box 389
 Lewisville, AR 71845
 (501) 525-8606
 (501) 525-2265 (FAX)

Dr. Tom Dailey
 Missouri Dept. of Conservation
 1110 S. College Avenue
 Columbia, MO 65201
 (573) 882-9880
 (573) 882-4517 (FAX)

Steve DeMaso
 Oklahoma Dept. of Wildlife Conservation
 1801 N. Lincoln
 Oklahoma City, OK 73152
 (405) 521-2739
 (405) 521-6535 (FAX)

Dr. Ralph Dimmick
 University of Tennessee
 Dept. of Forestry, Wildlife & Fish
 Knoxville, TN 37901
 (615) 974-8844
 (615) 974-4714 (FAX)

Billy Dukes
 South Carolina Dept. of Natural Resources
 P. O. Box 167
 Columbia, SC 29202
 (803) 734-3609
 (803) 734-6020 (FAX)

Robert W. Duncan
 Virginia Dept. of Game & Inland Fisheries
 P. O. Box 11104
 Richmond, VA 23230-1104
 (804) 367-6878
 (804) 367-0262

Alan Dyck
 NRCS
 1606 Santa Rosa Rd., Suite 209
 Richmond, VA 23229-5014
 (804) 287-1619
 (804) 287-1782 (FAX)

Robert W. Ellis
 Virginia Dept. of Game & Inland Fisheries
 P. O. Box 11104
 Richmond, VA 23230-1104
 (804) 367-6482
 (804) 367-0262 (FAX)

Rocky Evans
 Quail Unlimited, Inc.
 P. O. Box 610
 Edgefield, SC 29824
 (803) 637-5731
 (803) 637-0037 (FAX)

Jim Evans
 Quality Wildlife Services, Inc.
 234 Daybrook Road
 Waynesboro, GA 30830
 (706) 554-7460

Michael Fies
 Virginia Dept. of Game & Inland Fisheries
 P. O. Box 996
 Verona, VA 24482
 (540) 248-9360
 (540) 248-9399 (FAX)

Steve Fox
 Tennessee Wildlife Resources Agency
 363-B Eldad Road
 Fayetteville, TN 37334
 (615) 433-7471

Chad Fox
USDA Wildlife Services
P. O. Box 130
Moseley, VA 23120
(804) 739-7739
(804) 739-7738 (FAX)

Brian Frawley
Indiana Division of Fish and Wildlife
3900 Soldiers Home Road
West Lafayette, IN 47906
(765) 463-0032
(765) 497-3425 (FAX)

Shane Fuller
Florida Game & Fresh Water Fish Commission
Rt. 7, Box 3055
Quincy, FL 32351
(850) 627-9674
(850) 875-4897 (FAX)

Jim Gillis
North Carolina State University
Dept. of Zoology
Raleigh, NC 27695-7646
(919) 515-7587
(919) 515-5110 (FAX)

David Godwin
Mississippi Dept. of Wildlife, Fisheries & Parks
2247 S. Montgomery
Starkville, MS 39759
(601) 325-5119

Roy Grimes
Kentucky Dept. of Fish & Wildlife Resources
#1 Game Farm Road
Frankfort, KY 40601
(502) 564-4336
(502) 564-4859 (FAX)

Mark Gudlin
Tennessee Wildlife Resources Agency
P. O. Box 40747
Nashville, TN 37204
(615) 781-6612
(615) 781-6654 (FAX)

Mike Hansbrough
Quail Unlimited
9901 Elkins Road
Heiskell, TN 37754
(423) 925-2473
(423) 925-2473

Steven Harrell
Mississippi Dept. of Wildlife, Fish and Parks
Box 9690
Mississippi State, MS 39762
(601) 272-8303

Leslie Hawkins
Clemson University
South Carolina Cooperative Wildlife Unit
6-27 Lehotsky Hall, Box 340372
Clemson, SC 29634-0372
(864) 656-5334

John Hendricks
Oklahoma Dept. of Wildlife Conservation
1801 N. Lincoln
Oklahoma City, OK 73152
(405) 521-2739
(405) 521-6535 (FAX)

David Howell
Quail Unlimited
10364 S. 950 E.
Stendal, IN 47585
(812) 536-2272
(812) 536-2272 (FAX)

Mark Jones
North Carolina Wildlife Resources Commission
317 Hamlet Avenue
Hamlet, NC 28345
(910) 582-5903
(910) 281-4184 (FAX)

Mike Kemmerer
Florida Game & Fresh Water Fish Commission
29200 Tucker Grade
Punta Gorda, FL 33955

Irv Kenyon
Virginia Dept. of Game & Inland Fisheries
12108 Washington Highway
Ashland, VA 23005
(804) 752-5502
(804) 752-5505 (FAX)

Patrick Keyser
Virginia Dept. of Game & Inland Fisheries
HC6, Box 46
Farmville, VA 23901
(804) 392-9645
(804) 392-1415 (FAX)

Fred Kimmel
Louisiana Dept. of Wildlife & Fisheries
P. O. Box 98000
Baton Rouge, LA 70898
(504) 765-2355
(504) 765-2607 (FAX)

Ken Knight
North Carolina Wildlife Resources Commission
317 Hamlet Avenue
Hamlet, NC 28345
(910) 582-5903
(910) 281-4184 (FAX)

Dr. David Van Lear
Clemson University
Dept. of Forest Resources
Lehotsky Hall
Clemson, SC 29634
(864) 656-3302
(864) 656-3304 (FAX)

Eddie Linebarger
Arkansas Game & Fish Commission
P. O. Box 35
Scotland, AR 72141
(501) 592-3317
(870) 297-8994

James O. McAfee
Tennessee Wildlife Resources Agency
1695 Jim Fox Road
Greeneville, TN 37743
(423) 639-0677

Don Miller
Tennessee Wildlife Resources Agency
225 Dr. Martin King Drive, Box 55
Jackson, TN 38301
(901) 423-5725

Patricia Moore
VA Dept. of Game & Inland Fisheries
4792 Anderson Highway
Powhatan, VA 23139
(804) 598-3706
(804) 598-4934 (FAX)

George C. Muckenfuss
Westvaco
P. O. Box 1950
Summerville, SC 29483
(803) 871-5000

Mike Olinde
Louisiana Dept. of Wildlife & Fisheries
P. O. Box 98000
Baton Rouge, LA 70898
(504) 765-2353
(504) 765-2607 (FAX)

Dave Otis
Clemson University
G27 Lehotsky Hall
Clemson, SC 29634
(864) 656-0320
(864) 656-1034 (FAX)

Dr. Bill Palmer
Tall Timbers Research Station
Rt. 1, Box 678
Tallahassee, FL 32312
(850) 893-4153
(850) 668-7781 (FAX)

Chuck Peoples
National Wild Turkey Federation
P. O. Box 530
Edgefield, SC 29824-0530
(803) 637-3106
(803) 637-0034 (FAX)

Dr. Markus Peterson
Texas Parks & Wildlife Dept.
4200 Smith School Road
Austin, TX 78744
(512) 389-4410
(512) 389-4398 (FAX)

Marc Puckett
Virginia Dept. of Game & Inland Fisheries
HC6, Box 46
Farmville, VA 23901
(804) 392-9645
(804) 392-1415 (FAX)

Larry Robinson
NRCS
11710 Beltsville Drive, Suite 100
Beltsville, MD 20705
(301) 586-1343
(301) 586-1387 (FAX)

Sara H. Schweitzer
University of Georgia
Daniel B. Warnell School of Forest Resources
Athens, GA 30602-2152
(706) 542-2686
(706) 542-8356 (FAX)

Gary H. Sharp
West Virginia DNR
Rt. 1, Box 484
Pt. Pleasant, WV 25550
(304) 675-0871
(304) 675-0872 (FAX)

Terry Sharpe
North Carolina Wildlife Resources Commission
317 Hamlet Avenue
Hamlet, NC 28345
(910) 582-5903
(910) 281-4184 (FAX)

Joseph Shugars
Maryland Wildlife & Heritage Division
14038 Blairs Valley Road
Clear Spring, MD 21722
(301) 842-3355
(301) 842-0072 (FAX)

Clay Sisson
Auburn University
c/o Pineland Plantation
Rt. 1, Box 115
Newton, GA 31770
(912) 734-3039
(912) 734-5365 (FAX)

Jeff Sole
Kentucky Dept. of Fish and Wildlife Resources
#1 Game Farm Rd.
Frankfort, KY 40601
(502) 564-4858
(502) 564-4859 (FAX)

Dr. Dean Stewart
Cooperative Extension Service
Box 9690
Mississippi State, MS 39762
(601) 325-3177
(601) 325-8750 (FAX)

Stan Stewart
Alabama Game & Fish Division
64 N. Union Street
Montgomery, AL 36130
(334) 242-3469
(334) 242-3032 (FAX)

Daniel Stillinger
Stillinger's Gun Dogs
304 Hidden Forest Drive
Union, SC 29379
(864) 674-6581

Robert D. Sullender
Indiana Dept. of Natural Resources
R.R. 2, Box 300
Montgomery, IN 47558-9549
(812) 644-7711
(812) 644-7605 (FAX)

Reggie Thackston
Georgia Wildlife Resources Division
Route 5, Box 180
Forsyth, GA 31029
(912) 994-1438 7583, 7584
(912) 993-3050 (FAX)

Fred Ward
Arkansas Game & Fish Commission
P. O. Box 729
Calico Rock, AR 72519
(870) 297-4331
(870) 297-8994 (FAX)

Shane Wellendorf
North Carolina State University
Dept. of Zoology
Raleigh, NC 27695-7646
(919) 515-7587
(919) 515-5110 (FAX)

Gene Whitaker
WMI/NACD
509 Capital Ct., NE
Washington, DC 20002-3949
(202) 547-6223

Bill Whitman
Delaware Division of Fish & Wildlife
89 Kings Highway
Dover, DE 19901
(302) 739-5297
(302) 739-6157 (FAX)

Mark Whitney
Georgia Wildlife Resources Division
2111-A U.S. Hwy. 278, S.E.
Social Circle, GA 30025
(770) 918-6416
(706) 557-3042 (FAX)

William L. Woodfin Jr.
Virginia Dept. of Game & Inland Fisheries
P. O. Box 11104
Richmond, VA 23230-1104
(804) 367-9231
(804) 367-0405 (FAX)