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Georgia's Bobwhite Quail Initiative (BQI) has been a proactive effort to restore and improve habitat for northern bobwhite (*Colinus virginianus*; hereafter bobwhite) on private lands across a 15 county area of Georgia's Upper Coastal Plain. Secondary objectives included improving habitat for certain songbirds, quail hunting and wildlife viewing. The BQI provided landowners/managers (Cooperators) with technical assistance, and through a competitive process, financial incentives for bobwhite habitat management. The Georgia General Assembly and Department of Natural Resources (DNR) Board initiated BQI in 1998 in response to hunter/constituent concern over declining bobwhite populations; and the Georgia DNR Wildlife Resources Division began implementation in 1999. Funding for BQI was provided through state appropriations, including funds generated through the sale of BQI vehicle license plates. Habitat incentive payments and practice options were modified gradually to increase Cooperator participation and to better integrate bobwhite management with commercial agriculture and forestry. Research and monitoring indicated positive impacts of habitat practices on bobwhites and certain songbirds. The BQI generated many additional benefits including leveraged funding for management and research; youth quota quail hunts; and increased educational outreach regarding the bobwhite decline and effective restoration techniques. A Cooperator survey indicated high customer satisfaction and a strong perception that BQI practices have improved bobwhite and songbird populations, as well as the environmental condition on Cooperator farms. The BQI showed that: 1) bobwhite numbers can be increased on working farm and forestlands, and 2) adequate levels of economic incentives and qualified technical staff are essential for success.

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Introduction

The northern bobwhite (*Colinus virginianus*, hereafter bobwhite) and bobwhite hunting are prominent in Georgia's wildlife heritage. Consequently, in 1970 the Georgia General Assembly (Assembly) designated the bobwhite as the official state game bird. However, bobwhite populations in Georgia and across the southeastern United States have experienced severe long-term declines (Sauer et al. 2005) primarily as the result of widespread changes in land use (Klimstra 1982, Brennan 1991, Burger 2002). The Northern Bobwhite Conservation Initiative (NBCI) identified nesting cover and brood range as the landscape habitat components most often limiting bobwhite abundance, and recommended restoration of these habitats on agricultural and forestlands as a priority for bobwhite population recovery (Dimmick et al. 2002).

In Georgia the bobwhite decline has been cause for concern ecologically, economically and recreationally (Thackston and Whitney 2001, Burger et al. 1999). In 1964 there were 127,000 quail hunters who comprised 47% of the state's licensed resident hunters and harvested an estimated 3,365,000 quail (Georgia Game and Fish Commission 1965). In 2002, the number of quail hunters dropped to 29,858, and comprised only 12% of the licensed resident hunters; these hunters harvested an estimated 541,922 quail, of which approximately 68.5% were reported as pen-reared birds (Nicholson 2003). In much of Geor-

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gia, bobwhite densities have fallen below the level needed to attract and maintain hunter interest, and in some areas, particularly in the northern half of the state, viable bobwhite populations no longer exist.

In 1995, the Georgia Department of Natural Resources (DNR) Wildlife Resources Division (WRD) began a Private Lands Initiative (PLI) directed at improving the composition and delivery of Farm Bill conservation programs and practices on privately owned agricultural and forested lands. The PLI emphasized enhancing habitat for bobwhites and other grassland dependent species. In 1998, the Chairman of the Georgia House of Representatives, Game, Fish and Parks Committee contacted WRD administrators on behalf of concerned constituents requesting action to restore bobwhite populations, primarily for the purpose of improving quail hunting. This "grass roots" concern worked in synergy with the PLI to facilitate increased interaction of WRD with the Assembly and DNR Board Members (Board) to address the bobwhite decline. This interaction led to the funding and development of Georgia's Bobwhite Quail Initiative (BQI), a pilot program to restore early successional habitat on commercial row crop agricultural fields and associated forestlands. The BQI was Georgia's first state funded private lands wildlife habitat incentive program. This paper summarizes and discusses the BQI developmental process, implementation, and management implications.

Developmental Process

The WRD initiated the developmental process by assigning a PLI staff biologist to oversee and write the BQI plan. Soon thereafter a multi-organizational team of biologists and administrators was assembled to provide input in establishing plan goals, objectives and other procedural components. This proved beneficial for: (1) garnering ideas and information from varying perspectives, (2) accruing buy-in and support from other natural resource organizations, and (3) securing outside credibility or validation for WRD recommendations.

A series of team meetings were conducted where plan components were identified, discussed and refined. A proposed plan was developed, Georgia's Bobwhite Quail Initiative (Georgia DNR 1999), that covered the: (1) bobwhite decline causative factors, (2) goals and objectives, (3) monitoring, (4) personnel and equipment, and (5) proposed budget. The primary goal was to restore bobwhite habitat on commercial row crop fields. Secondary goals included enhancing habitat conditions for early succession dependent wildlife, particularly certain songbirds that were in serious decline, and increasing opportunities for wildlife viewing.

The final proposal included three spatially explicit restoration alternatives and associated budgets: (1) statewide for 10 years at a total cost of $40 million, (2) 47 counties in Georgia's Upper Coastal Plain Physiographic Province (UCP) at an annual cost of $2.3 million, and (3) 12 - 15 counties in the UCP at an annual cost of $1.2 million. After subsequent meetings between WRD, Assembly and Board members, the final plan included 14 counties in the UCP and an annual budget of $939,000. Counties were chosen through a bio-political selection process designed to maximize the probability of successful implementation. Generally, chosen counties were in the UCP and were predominately agricultural with commercial row crops comprising more than 40% of this acreage. Additionally, in an attempt to create a viable habitat matrix at the landscape level, the program was focused on a limited number of counties in close proximity to each other. During 2000-2003 BQI county numbers changed due to budget fluctuations. County numbers increased to 17 in 2001 as appropriations increased and then were reduced to 15 counties in 2003 when state budget reductions occurred (Figure 1).

In 1999 WRD administrators, the Board and supporting Assembly members successfully moved the proposal through the state legislature for final approval and funding. In large part this effort was successful because supporting Assembly members served on, and chaired, key committees as follows: 6 on House Appropriations, 2 on House Game, Fish and Parks, 2 on Natural Resources and Environ-

ment, 4 on Senate Appropriations, and 1 on Senate Natural Resources.

Implementation

The primary BQI implementation components included: (1) securing funding, (2) delivering the program, (3) initiating program promotion and educational outreach, (4) developing habitat incentive scoring guidelines and a competitive ranking process, (5) enrolling landowners/managers (Cooperators) for habitat incentives, and (6) conducting monitoring, research and surveys.

During 1999-2001 program funding was derived solely from appropriations of tax revenue from Georgia's General Fund. However, during 2001 the Assembly developed and passed legislation creating a BQI automobile license plate (tag). Prior to finalizing the tag design, WRD surveyed a diversity of public groups relative to their preferences of several different tag prototypes. The most popular design included a large whitetail (*Odocoileus virginianus*) buck and a covey of bobwhites. During the period 2001 - March 2006, 336,265 BQI tags were sold, which generated $5,777,642 net revenue. Since this exceeded the BQI budget, the overage was used to reimburse the State General Fund for the years that BQI operated without a dedicated funding source.

The WRD contracted with the Georgia Soil and Water Conservation Commission (SWCC) for the distribution of Cooperator habitat incentives. This enabled WRD to carry BQI funding across fiscal years without reverting revenue back to the General Fund, which was key to having guaranteed funding for 3-yr Cooperator contract cycles.

In addition to annual appropriations, BQI funding has been used as a match to secure over $100,000 in grants and donations. It has also been used as a match for a contribution agreement with the Natural Resources Conservation Service (NRCS) to fund a biologist position to deliver Farm Bill programs.

In 1999, a BQI program coordinator, 2 secretaries, 5 field biologists and a public relations specialist were hired to develop and deliver the operational aspects of the program. Four field offices were established and the BQI focus counties were split into three administrative focal areas (Figure 1).

An interdisciplinary task force of wildlife biologists, foresters, agricultural administrators and wildlife researchers was formed to assist with developing specific habitat practice guidelines and incentive payments. These scoring guidelines were used to define and assign point values to habitat practices, set payment rates, and competitively score, rank and fund habitat proposals (Table 1, Appendix A). Through a feedback process these practice guidelines and incentive rates were temporally modified to increase participation, better integrate bobwhite management with Cooperator objectives and optimize the cost benefit ratio. A database was established for tracking Cooperator participation, practice hectares, and incentive allocations.

Cooperator participation in BQI was strictly voluntary. Prospective Cooperators contacted BQI biologists for technical assistance and/or potential enrollment for habitat incentives. Biologists worked intensively with Cooperators to develop detailed technical assistance plans, and/or habitat incentive proposals to integrate bobwhite management with other resource objectives. Cooperators then decided whether or not to submit their proposals for ranking. At the end of each enrollment period, incentive proposals were scored for habitat quality and competitively ranked for funding. Cooperator habitat proposals had to exceed, and if enrolled be maintained above, a quality threshold to enter and remain in the program. Enrolled Cooperators signed 3-year contracts with WRD, which included detailed prescriptions for habitat practice establishment and maintenance. Biologists flagged or marked habitat practices on enrolled lands, Cooperators implemented management as prescribed in the contract and biologists conducted annual contract compliance evaluations. If habitats were in compliance then contracts were approved and SWCC disbursed incentives. If not, depending on the severity of non-compliance, Cooperator contracts were either voided with no payment, or they were amended to provide partial payment. In either case, biologists encouraged Co-

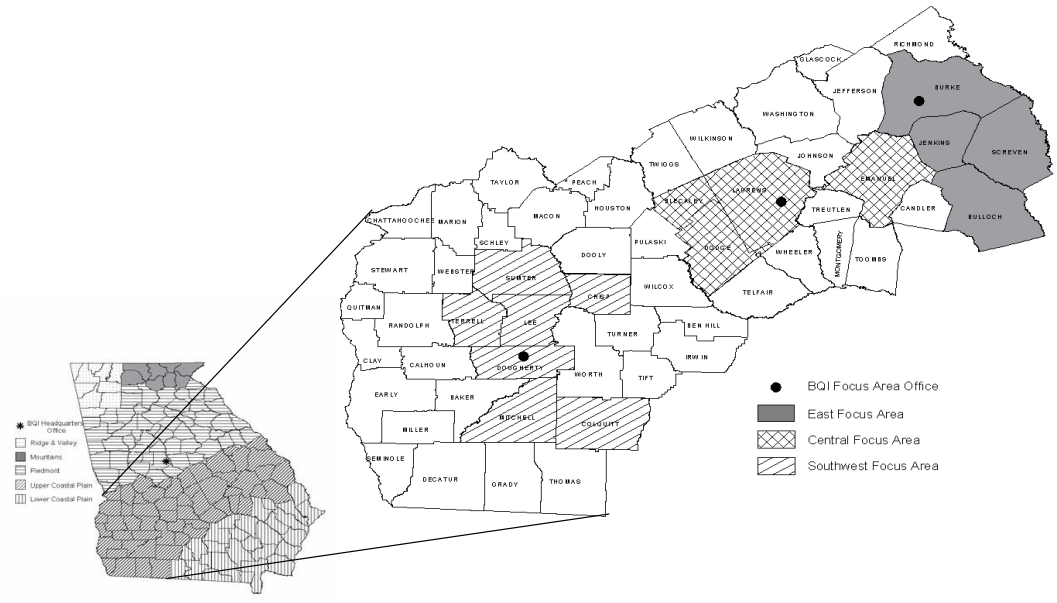

Figure 1: The BQI focus areas in the Georgia Upper Coastal Plain 2000 - 2005.

operators to remain in the program and strive to fully meet practice requirements the following year.

Monitoring, research and survey projects were conducted under contract with the University of Georgia D.B. Warnell School of Forest Resources (UGA) and by BQI biologists. Monitoring was conducted by UGA in 1999-2001 for bobwhites (Hamrick 2002) and songbirds (Hamrick et al. 2001) and then, due to state budget reductions, by BQI biologists for bobwhites only during 2003-2005. Research projects were conducted to determine: (1) the impacts of bermudagrass (*Cynodon dactylon*) on bobwhite chicks (Burkhart 2004), (2) efficacy of various herbicides for controlling bermudagrass (Burkhart 2004, Bond et al. 2005), and (3) bobwhite utilization of BQI habitats (Cook 2004). Additionally, in 2004 BQI Cooperators were telephone surveyed relative to their opinions on BQI and its impact on bobwhites, other wildlife and quail hunting on their land.

Discussion

Education and Outreach

Education and outreach have been identified as important actions relative to effecting positive habitat change for bobwhites on private lands (Brennan 1991, Capel et al. 1996). Outreach efforts were viewed as essential to BQI for informing the public about the: (1) reasons for, and solutions to, the bobwhite decline, (2) multiple resource benefits of BQI practices, and (3) availability of technical assistance and habitat practice incentives. Outreach efforts were varied and generated keen public awareness and interest in BQI (Table 2), which became evident as the number of public inquiries and political support for the program grew. Empirically, the greatest Cooperator response to outreach efforts came from: (1) BQI articles published in the Georgia Farmers Market Bulletin (a biweekly publication by the Georgia Department of Agriculture), (2) BQI town hall meetings (conducted in 12 of the 15 the BQI counties during the first 3 years of the program), (3) BQI Newsletter publication (published 9 times during 2000-2005 and distributed free of charge to more than 1,500 people), (4) enrollment of certain

Table 1: Northern bobwhite habitat practices, point values and incentive rates in Georgia's BQI 2005 (see Appendix A for additional details).

	Habitat Practice Point Values		Practice Incentive Annual Rate Per Hectare (ha)	
Habitat Practice	Per Practice	Maximum	Dry	Irrigated
Field borders	25	150	$148.26	$296.52
Hedgerows	10	40	$148.26	$296.52
Filter strips	10	40	$148.26	$296.52
Center pivot corners	10	40	$148.26	NA
Fallow patches	4.9/ha	20	$148.26	NA
Conservation tillage	10	20	$37.07	NA
Pine forest thinning	2.5/ha	50	$37.07	NA
Pine forest openings	2.5/ha	50	$148.26	NA
Pine forest linear practices	2.5/ha	20	$148.26	NA
Pine forest burning,disking, herbicide	12.4/ha	100	$12.36	NA
Crop field bonus points	5 to 15	20	NA	NA
Pine forest bonus points	5 to 30	40	NA	NA
Habitat connectivity	5	20	NA	NA
Reduction in funding	5 to 20	20	NA	NA

landowners who were considered to be "leading farmers" within a particular county, (5) flyers with program and contact information placed at county FSA/NRCS offices, and (6) mailings to landowners whose names were on mailing lists obtained from the NRCS district offices. Also of importance were the many detailed management notes and technical publications that were developed for specific habitat practices and resource concerns, and were frequently used in technical assistance and educational outreach. An informational video was produced as a training and outreach tool but had limited utility in promoting the program or increasing Cooperator enrollment.

Indirectly related to education and outreach was the hosting of quota youth quail hunts on BQI enrolled farms. Cooperators voluntarily hosted these hunts. The BQI biologists assisted with conducting hunts, but WRD assumed no liability. These hunts were labor intensive but successfully introduced a limited number of youth to wild quail hunting. During 2003-2005 a total of 19 hunts were conducted on 12 BQI enrolled farms, hosting 38 youth/adult pairs, who hunted 118 hours, found 59 coveys and harvested 19 quail. Most of the participating youth had never quail hunted and both youth and adults provided positive feedback.

Technical Assistance

The demand for BQI technical assistance was high. During 2000-2005, BQI biologists provided detailed management recommendations to 815 landowners on 168,227 hectares. A major benefit of BQI was having full-time biologists that worked specifically on the restoration of bobwhite on private lands. This enabled follow up site visits and fine tuning of management practices. This service intensity would not have been available from WRD regional biologists who were multi-tasked over large geographic areas comprised of both public and private lands. The educational aspect of the technical assistance program was another apparent, albeit difficult to measure, program attribute. Interacting in-

Table 2: Summary of BQI public information and education effort 2000 - 2005.

Activity	2000	2001	2002	2003	2004	2005	Totals
Programs/presentations	14	6	18	17	30	25	110
Field day presentations	2	8	12	22	11	1	56
Town hall meetings	6	7	3	0	0	0	16
Presentation attendees	751	888	2476	2738	1650	1476	9979
Professional articles/abstracts	0	1	6	2	4	0	13
Popular articles	2	4	11	8	19	9	53
BQI newsletters	2	2	2	1	1	1	9
Television spots	1	4	2	4	0	0	11
Display booth man-days	5	10	7	8	7	2	39

dividually with Cooperators in the field provided opportunities to impart information, and influence opinions and decision-making, to an extent that may not be accomplished through mass media.

Enrollment

Demand for BQI habitat practice incentives was initially low but increased through time as practice options and payment rates were increased. In 2000, the habitat practice incentive payment was $74.13 per hectare per year for linear practices on crop fields for both dry and irrigated lands. At this incentive rate, the number of Cooperator proposals did not meet the available BQI funding. In response to this lack of enrollment, incentive rates were quickly modified to $98.84 per hectare for dry land linear practices and $296.52 per hectare for irrigated linear practices. Conservation Reserve Program Longleaf Pine Conservation Priority Area enrolled fields were made eligible for the BQI field border practice. Cooperator proposals increased but still did not exceed available funding. In 2001, the BQI dry land incentive rate for linear practices was increased to $148.26 per hectare per year, the conservation tillage practice payment was increased from $2.47 to $37.07 per hectare per year, and the maximum payment cap was increased from $10,000 to $15,000 per Cooperator per contract. Additionally, a suite of forest management practices was added. With these changes, proposal numbers increased to the point of exceeding available funding in 2003.

During 2000-2005 the U. S. Department of Agriculture Farm Service Agency dry land and irrigated cash rental rates for the BQI counties averaged $111.20 and $370.65 per hectare, respectively (C. Weaver, U.S. Department of Agriculture, personal communication). Cooperators were unwilling to enroll field acres into BQI until the habitat incentive exceeded the crop rental rate; hence only 9% of the enrolled crop field acres were irrigated. Cooperators could choose from a variety of eligible management practices (Table 1, Appendix A) but the following 5 were used on over 80% of the total hectares enrolled during 2000-2005: (1) conservation tillage (other BQI practices required) - 26.3%, (2) 9.1 meter wide field borders - 18.5%, (3) managed pine plantations - 16.4%, (4) fallow managed patches 0.4 to 4.0 ha in size - 12.9%, and (5) 18.2 meter wide field borders - 7.4%.

Habitat enhancement peaked in 2003 at 3,274 direct practice hectares and 8,381 impact hectares (Table 3) where direct practice hectares were those specifically manipulated with the BQI practice and impact hectares were defined as the total area within a crop field or forest stand treated with BQI practices. This represents an annual cost of about $71.66 per actual practice hectare and $27.18 per impact

hectare. In 2003, there were 132 Cooperators enrolled for habitat incentives and impact hectares were distributed across 94 pine stands and 289 crop fields, including 663 kilometers of field borders, hedgerows and filter strips. Beginning in 2003, lack of funding became the limiting factor for enrolling Cooperators and positively impacting bobwhite habitat.

Compliance

Each year after crops were planted and/or harvested (May-September), compliance evaluations were conducted by BQI biologists on all of the enrolled practice hectares. Practices were categorized as: (1) full compliance - at least 80% of the habitat practices were properly established and maintained, (2) partial compliance - less than 80% of the practices were properly established and maintained but the total habitat score remained above the minimum quality threshold necessary for entry into BQI, and (3) non-compliance - less than 80% of the habitat practices were established and maintained and the habitat score was below the minimum BQI threshold. Across all years landowners averaged 72% full compliance, 23% partial compliance and 3% non-compliance. Compliance remained high throughout the program and non-compliance decreased as biologists worked with landowners to explain practices and resolve issues. Again, this points to the value of having sufficient numbers of technical staff to work closely with Cooperators.

Cooperator Survey

A 2004 telephone survey of 102 BQI Cooperators (Appendix B) showed: (1) Cooperator satisfaction with BQI was high; (2) prior to BQI most Cooperators were not implementing BQI practices on their lands and the most common pre-BQI practice for bobwhites was planting food plots (48%); (3) post BQI the most common practice implemented was weedy field borders (96%) followed by weedy hedgerows (82%) and weedy field corners (81%); and (4) most Cooperators felt BQI had improved their land's: environmental condition (91%), quail population (81%), quail hunting (79%), and songbirds and other wildlife (82%). However, only 24% said they would have implemented BQI practices without the provision of economic incentives.

Research

BOBWHITE AND SONGBIRD MONITORING - The habitat practices promoted and funded in BQI have been shown or recommended to impact positively bobwhites (Stoddard 1931, Rosene 1969, Minser and Dimmick 1988, Palmer et al. 2001). However, to assess and validate BQI practice impacts, monitoring was conducted on BQI treatment and control fields for bobwhites during 1999-2001 and 2003-2005; and for songbirds during 2000-2001. Bobwhites were surveyed during 1999-2001 with fall covey counts (Carroll 2000, Hamrick 2002). Carroll (2000) reported a pre-treatment average of 2.22 coveys per property across 12 treatment and 18 control fields and felt enough bobwhites were present to respond to habitat enhancements. Hamrick (2002) reported increasing trends in bobwhite numbers on BQI treatment fields post treatment and declining numbers on control fields, and concluded that BQI practices were positively impacting bobwhite populations. Winter songbird populations were also affected; a 30% increase was detected for nine sparrow species with three of these species, Le Conte's (*Ammoddramus leconteii*), grasshopper (*Ammoddramus savannarum*), and white-crowned (*Zonotrichia leucophrys*) occurring only on the first year post treatment (Hamrick et al. 2001). State budget reductions in 2001 forced WRD administrators to choose between reducing BQI habitat incentives and reducing monitoring. The decision was made to curtail intensive monitoring in favor of maximizing habitat establishment and maintenance.

In 2003, BQI biologists began recording incidental sightings and calling of bobwhites while conducting habitat compliance evaluations on treatment fields and then similarly walked and surveyed a random sample of control fields. This technique was not standardized over time or area, and did not provide an estimation of bobwhite density. However, analyses of variances were used to test for differences

Table 3: BQI Cooperator and habitat enrollment and incentive allocation by contract period 2000 - 2005.

BQI Contract Period	Number BQI Counties	Number Cooperators	Number Crop Fields	Longleaf CPA Stands	Number Pine Stands	Direct Practice Hectares[a]	Impact Hectares[b]	Incentives Allocated
2000	14	24	69	1	0	174	1,225	$17,093.40
2000 - 01	14	83	136	58	0	778	4,642	$64,030.20
2000 - 02	17	93	176	57	1	1,237	5,555	$78,355.90
2001 - 03	17	132	289	70	24	3,275	8,381	$233,827.00
2002 - 04	17	108	253	24	24	3,044	6,524	$221,465.40
2003 - 05	15	137	292	38	23	3,169	7,306	$258,544.70

[a]Direct practice hectares are those actually enrolled in BQI.

[b]Impact hectares are those included in the field on which BQI practices are implemented.

in bobwhite occurrence within treatments and controls across years (Sokal and Rohlf 1981). Tests were conducted using the Data Analysis Toolpak in Microsoft Excel©. No significant differences were detected across years for treatments (2003 $n = 252$, 2004 $n = 169$, 2005 $n = 95$; F = 2.115, df = 2, $P = 0.122$) or controls ($n =$ 2003 $n = 39$, 2004 $n = 26$, 2005 $n = 28$; $F = 1.356$, df = 2, $P = 0.263$). Therefore, data were pooled across years and tested with an analysis of variance between treatments and controls (Sokal and Rohlf 1981). Treatments averaged 2.02 quail per field (SE = 0.16) and were significantly greater than the controls that averaged 0.92 quail per field (SE = 0.22; treatment $n = 516$, control $n = 93$; $F = 8.008$, df = 1, $P = 0.005$).

BOBWHITE HABITAT USE - Cook (2004) examined bobwhite breeding season dispersal, habitat use and survival in relation to agricultural lands with BQI habitat practices. He concluded that BQI habitats were utilized by adult birds and extensively by broods, and had a positive effect on bobwhite breeding season survival. Additionally, he concluded that closed canopy pine stands negatively impacted bobwhite winter survival and recommended thinning and burning these stands as a high priority for bobwhite restoration.

FIELD MARGIN VEGETATION - Burkhart (2004) examined vegetation response in BQI field margin habitats, the potential negative impacts of bermudagrass invasion and the control efficacy of certain grass selective herbicides. He found a positive response of desirable vegetation in both species composition and structure on BQI habitats during the first and second post treatment growing seasons. He also documented significant invasion of bermudagrass into fallowed BQI habitats and concluded that at high density it reduced bobwhite chick mobility, increased heat stress and potentially reduced chick survival. He evaluated a single application of 2 grass selective herbicides, Fusion (fluazifop p-butyl, fenoxaprop-p-ethyl) and Select 2EC (clethodim) and found them to be ineffective for significant bermudagrass control and bobwhite habitat enhancement in BQI field borders. Bermudagrass invasion was judged to be a significant problem across more than 50% of BQI field margin habitats. Therefore, BQI biologists conducted additional research to determine effective control techniques. Bond et al. (2005) determined spring burning followed by a summer application of Chopper (Imazapyr) at 0.84 kg ai/ha was the most effective technique to reduce bermudagrass density and enhance bobwhite habitat. Subsequent to this research, bermudagrass control was included as an optional practice in BQI.

FUTURE RESEARCH - In addition to site-specific habitat quality, landscape context (Roseberry and Sudkamp 1998) and thresholds of usable space (Guthery et al. 2000) have been identified as important factors for bobwhite population restoration and long-term viability. The North Carolina Cooperative Upland Habitat Restoration Program, a state implemented bobwhite and early successional habitat initiative, sought to address this issue by forming landowner cooperatives with $\geq$ 2,025 ha of potential habitat (Cobb et al. 2002). Likewise, habitat fragmentation was recognized as a serious impediment to bobwhite restoration during the BQI developmental phase. To address this concern, BQI was focused in only 15 of Georgia's 159 counties. Expectations were that enough land would be enrolled in BQI to positively impact habitat conditions at the landscape scale, and by default create habitat units of sufficient size to support metapopulations that would be enlarged through increasing landowner participation. This appears to have occurred in some areas where large numbers of BQI crop fields and forestlands are in close proximity. However, there are still numerous BQI treatment sites isolated in landscapes of poor habitat quality, and there are large geographic areas within BQI counties that are completely void of bobwhite habitat.

Hamrick (2002) and Cook (2004) speculated that the magnitude of bobwhite population response to BQI treatments was influenced largely by adjacent habitats and recommended additional research on this topic to assess bobwhite population response to BQI treatments. Habitat modeling of the BQI landscape variables relative to bobwhite population den-

sity is needed to set quantitative habitat objectives and facilitate identifying sub-county geographic focus areas where higher habitat incentive rates could be justified. Through this effort these habitat islands and metapopulations could be expanded spatially. Currently, an adaptive resource management analysis of BQI treatments and landscape context is in progress at UGA with the objective of providing results that can be used more efficiently to focus BQI effort and habitat incentives.

Management Implications

Dimmick et al. (2002) recommended enhancing habitat on 6% to 7% of farm, forest and range land to achieve NBCI restoration objectives. Managing 7% of the cropland and pine forest hectares found in the BQI focus counties would have entailed directly treating 21,534 hectares of cropland and 33,489 hectares of pine forests (Thompson 1998, United States Department of Agriculture 1999). During 2001-2003, the peak BQI enrollment period, habitat practices directly impacted 2,350 hectares of cropland and 925 hectares of pine forest. This represented an 11% and 3% attainment of the cropland and pine forest goals, respectively. To fully achieve NBCI goals with BQI funding alone would have cost an additional $3.5 million per year. However, during 2005, Farm Bill Conservation program funding in Georgia for the Conservation Reserve Program, Wildlife Habitat Incentives Program and upland management practices of the Environmental Quality Incentives Program exceeded $15 million (C. Weaver and K. Wooster, U.S. Department of Agriculture, personal communications). All of these programs have a wildlife objective and theoretically a large portion of these funds could have been directed toward early succession habitat management in the BQI focus counties.

Georgia's BQI has shown that bobwhite populations can be increased across working farm and forestlands through focused funding and habitat improvement. In addition to increased habitat for bobwhites and other early succession dependent wildlife, BQI has served to: leverage additional funding for monitoring, research and habitat incentives; increase wildlife conservation education and outreach; and provide public access to private lands for quail hunting. The program has been popular with the public, private landowners and has received strong political support. It has shown that sufficient funding for habitat incentives and adequate numbers of technical staff are critical for enhancing bobwhite habitat on private lands. State initiatives are vitally important for contributing to the attainment of NBCI goals and objectives, but additional sources of funding will be required and Farm Bill conservation programs offer the greatest potential for making bobwhite recovery a reality. Public awareness, financial support and contributions from private conservation groups like Quail Unlimited® and Quail Forever® also are important components for success. The bobwhite decline can be abated, but the question is do we as a profession, and as a society, have the collective will to allocate the resources necessary to solve the problem?

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Appendix A. Detailed information on implementation of Georgia's BQI program including habitat eligibility, funding and scoring guidelines.

1) ELIGIBILITY:

a) Properties must be located in one of the three BQI focus areas

b) Commercial shooting preserves are not eligible for incentives

c) Minimum property size for enrollment is 20.2 contiguous hectares

d) Incentives will not be provided for previously-established habitat (See section 5o for protocol on the determination of previously established habitat)

e) Properties eligible for financial incentives must include commercial row crop agriculture, fields enrolled in the Conservation Reserve Program Longleaf Pine Conservation Priority Area (LLCPA), or pine forests immediately adjacent to either row crop agriculture or LLCPA fields enrolled in BQI.

f) After initial enrollment and during the remainder of the BQI Contract, the area must be maintained as either commercial row crops, land enrolled in the LLCPA, or in a cover conducive to quail management, as determined by the Wildlife Resources Division (WRD) biologist.

g) Whole fields may be fallowed (i.e. cease to be commercially cropped) after initial enrollment. However, the fallowed hectares not under BQI contract must be managed at least once during the three-year contract period by winter disking, planting to a cover approved by the BQI biologist, or commercial cropping.

h) Properties enrolled in the LLCPA will be scored equivalent to commercial crop fields and will not be eligible for Pine Forest Management Practices unless deemed appropriate by the WRD biologist

i) Sites predominated (>51%) by exotic grasses (Bermuda, Bahia, Fescue) will be ineligible for enrollment until the grasses have been chemically treated, as recommended by the WRD biologist.

j) To be re-enrolled in BQI properties must maintain eligibility.

2) ENROLLMENT:

a) Sign-up is continuous, although ranking and enrollment will be based on the funding cycle

b) Cooperators can apply by obtaining an application from the WRD, Soil and Water Conservation Commission, Natural Resources Conservation Service, Georgia Forestry Commission, or Farm Service Agency

c) Proof of ownership or proof of owner agreement to enter into the BQI contract is required

d) Scoring, ranking and enrollment will be for individual fields and/or pine forests >4.0 hectares in size

e) Contracts will be issued per cooperator for all lands enrolled in a given focus area

f) Annual habitat and compliance evaluations will be conducted by WRD biologists

g) During each enrollment period WRD biologists will evaluate applications, contact cooperators, assist with developing plans, and score proposals

h) Scored proposals will be forwarded to the BQI Headquarters where funding will be approved based on competitive ranking by focus area

i) A minimum score is required for enrollment into the program , which will be set at the time of ranking

j) Proposals which are not funded but which score > the minimum will be automatically rolled into the next funding cycle and will be ranked competitively with new applications

k) Habitats established under a BQI Habitat Plan will be eligible for funding in future funding cycles

3) MONITORING PROGRAM:

a) Cooperators enrolled in the monitoring program must agree not to conduct predator control, artificial feeding, and/or release of quail or other game birds in or around the contract area (unless otherwise recommended or approved by the WRD biologist)

4) INCENTIVES:

a) No more than $15,000 will be allotted per property, cooperator, landowner and focus area per contract period (individual cooperator cannot exceed $15,000 during the 3 year contract period)

b) Incentive contracts are for 3 years, and are renewable annually based on available funding and cooperator performance

c) Incentive payments may be provided to cooperators for establishing and maintaining field borders, hedgerows, filter strips, center pivot corners, fallow patches, pine forest openings, linear pine forest practices, prescribed burning, thinning, herbiciding, and/or discing in pine forests.

d) To be eligible for incentives individual crop fields and pine forest stands must be at least 4.0 hectares in size.

e) To qualify for incentive payments all practices must be implemented and maintained according to BQI practice standards and recommendations as prescribed in the BQI Contract Management Plan

f) Incentive payments are $148.26 per hectare per year for the establishment of dry land field borders, hedgerows/filter strips, fallow patches, and center pivot corners and $296.52 per hectare per year for irrigated field borders and hedgerows/filter strips

g) Cost share payment is $6.07 per hectare per year for prescribed burning, disking, and/or herbiciding in pine stands with >30% sunlight

h) Incentive payment is $148.26 per hectare per year for winter discing and/or herbiciding or $6.07 per hectare per year for prescribed burning in pine forest openings and linear pine forest practices

i) Incentive payments are $6.07 per hectare per year for heavy thinning of pine forests (>40% sunlight on the ground at noon and/or $<11.5 m^2$ per hectare BA). Prescribed burning will be required, with cost-share, to further enhance the quality of understory vegetation in the stand

j) Cooperators can receive a maintenance payment of $98.84 per hectare per year for chemical or mechanical treatment of vegetation within enrolled areas, if recommended by a WRD biologist

k) Funding for center pivot corners will be limited to 4.0 hectares per corner

l) Funding for fallow patches will be limited to 4.0 hectares per field proposal

m) When agricultural fields enrolled in the BQI program are in conservation tillage, cooperators will receive a Conservation Tillage Bonus Payment of $37.07 per hectare per year. Conservation tillage will be defined as any tillage system using a winter-grown cover crop and practicing residue management resulting in >30% ground residue throughout the summer. The payment will be calculated only for the crop field area in conservation tillage at the time of compliance and will not include hectares enrolled in other BQI practices.

n) Funding for pine stand burning will not include hectares in other BQI practices

o) Funding will be annually distributed contingent upon successful implementation of habitat practices

p) Funds will be allocated based on the proposal score, which is a measure of habitat quality

q) Incentive payments are $98.84 per hectare for chemical treatment of invasive, exotic grasses when necessary to establish eligibility and will not be paid until successful completion of the first compliance evaluation

r) After WRD approval, funds will be allocated by the State Soil and Water Conservation Commission

5) HABITAT PRACTICES AND POINT VALUES

a) Field Borders - maximum of 150 points (25 points each)

i) Must be at least 9.1 meters wide at narrowest point

ii) Field borders may be stacked to double width (18.2 meters)

iii) The number of field borders for a given field will be determined by the percentage of the total field circumference that the border occupies; one field border must equal 25% of the field with no segment <212.1 meters

iv) Field perimeter covered by BQI practices (i.e., center pivot corners, fallow patches) will be subtracted from the field perimeter for the purpose of determining the percentage of field covered by field borders

v) May require light discing during November - February

vi) Cannot be used for turn rows, travel avenues, or hay or equipment storage

vii) After establishment cannot be mowed, disced, burned, or treated with herbicides during the contract period unless recommended by the WRD biologist

viii) Field borders can be established on the interior edge of fallow patches or center pivot corners.

ix) Field borders may be established along the sides of existing forested hedgerows or filter strips

x) Incentive payment is limited to the hectares included in the 9.1 meters field border or 18.2 meters stacked field border

xi) To attain water quality points field borders must be within 9.1 meters of a watercourse

b) Hedgerows -maximum of 40 points (10 points each)

i) Hedgerows must extend across entire length of crop field or connect to another acceptable habitat area, except for equipment travel avenues as approved by the WRD biologist and these are not to exceed 9.1 meters in width

ii) Hedgerows must be at least 90.9 meters long

iii) Hedgerows must be at least 181.8 meters apart

iv) Hedgerows must be at least 9.1 meters wide at narrowest point along entire length

v) Hedgerows may be stacked to double width (18.2 meters)

vi) Hedgerows must be >30.3 meters from parallel field borders and/or filter strips

vii) Hedgerows can be perpendicular or parallel to field borders and/or filter strips

viii) Hedgerows must be established by light discing, fire or herbicides as recommended by the WRD biologist

ix) Tree canopy cannot shade out more than 10% of the hedgerow area when determined at noon during the growing season

x) Forested hedgerows (where tree canopy covers more than 10% of ground cover) may be renovated by reducing the tree canopy so that less than 10% of the ground cover is shaded out

xi) Hedgerows cannot be used as turn rows, travel avenues or hay or equipment storage

xii) Incentive payment is limited to area included in the 9.1 meters hedgerow or 18.2 meters stacked hedgerow

c) Filter Strips - maximum of 40 Points (10 points each)

i) Filter strips must be at least 90.9 meters long

ii) Filter strips must be at least 9.1 meters wide at narrowest point along entire length

iii) Filter strips may be stacked to double width (18.2 meters)

iv) Filter strips may include ditch banks but must be naturally vegetated with grasses, forbs, and shrubs for at least 9.1 meters on each side

v) Filter strips must be >30.3 meters from parallel field borders and/or hedgerows

vi) Filter strips can be perpendicular or parallel to field borders and/or hedgerows

vii) Filter strips must be established by light discing, fire, or herbicides as recommended by the WRD biologist

viii) Tree canopy cannot shade out more than 10% of the filter strip area when determined at noon during the growing season

ix) Filter strips (where tree canopy covers more than 10% of ground cover) may be renovated by reducing the tree canopy so that less than 10% of the ground cover is shaded out

x) Filter strips cannot be used as turn rows, travel avenues, or hay or equipment storage

xi) Incentive payment is limited to area included in the 9.1 meters filter strip or 18.2 meters stacked filter strip

d) Center Pivot Corners - maximum of 40 points (10 points each)

i) Must be at least one acre in size

ii) Only eligible when connected by field borders or hedgerows

iii) At least 70% of ground must be in direct sunlight at noon during the growing season to be eligible for enrollment ($148.26/ha/yr); however, corners established in thinned pines with >30% but <70% of the ground in direct sunlight may be managed using prescribed burning ($6.07/ha/yr)

iv) To be eligible for incentives, corners planted to pines must be planted at <1,236 trees per hectare

v) Wildlife plantings approved by the WRD biologist will be allowed on <25% of the site

vi) Herbaceous ground vegetation must be established by light discing, fire, or herbicides as prescribed by the WRD biologist

vii) Cannot be used as turn rows, travel avenues, or hay or equipment storage

viii) Funding for corners will be limited to 0.4 hectares per corner

ix) At the recommendation of the WRD biologist, discing or other prescribed treatments may be conducted on the corner hectares in the first contract year provided that the entire acreage is treated by the end of the second contract year. Incentive payments will be made for the entire corner hectares during each year of the contract period; however, if the cooperator fails to treat any portion of the site as directed by the BQI Contract Management Plan the contract will be voided and incentive payments will not be allocated.

e) Fallow Patches - maximum of 20 Points (5.0 points per hectare)

i) Fallow patches must be part of, or in association with, an enrolled BQI field as determined by a WRD biologist; patches do not include center pivot corners

ii) Fallow patches that are part of an enrolled field do not require a cropping history for enrollment; fallow patches that are in association with an enrolled field do require a cropping history

iii) Fallow patches are permitted within the interior of LLCPA fields; fallow patches associated with a LLCPA field are not allowed

iv) Fallow patches must be 0.4 - 4.0 hectares in size; total acreage in fallow patches cannot exceed 10 acres per proposal

v) Fallow patches must be a minimum of 15.2 meters in width along their entire length

vi) Tree canopy cannot comprise more than 30% of the patch. At least 70% of the ground must be in direct sunlight at noon.

vii) Patches must be maintained by winter discing or as prescribed by the WRD biologist

viii) At the recommendation of the WRD biologist, discing or other prescribed treatments may be conducted on the patch acreage in the first contract year provided that the entire area is treated by the end of the second contract year. Incentive payments will be made for the entire patch hectares during each year of the contract period; however, if the cooperator fails to treat any portion of a patch as directed by the BQI Contract Management Plan the contract will be voided and incentive payments will not be allocated

ix) Plantings approved by the WRD biologist will be allowed on <25% in patches

x) Fallow Patches must be >181.8 meters apart

xi) Fallow Patches cannot be used for turn rows, travel avenues, or hay or equipment storage

xii) After establishment, patches cannot be mowed, disced, burned, or treated with herbicide during the contract period unless recommended by the WRD biologist

f) Pine Forest Management - Understory management - maximum of 100 points (12.4 points per hectare)

i) Predominately upland pine forests that do not include longleaf CPA

ii) Must be at least 4.0 hectares in size

iii) At least 30% (BA <13.8m^2 per hectare) of ground must be in sunlight at noon during the growing season to be eligible for enrollment

iv) Pine forests that require thinning must be thinned before May 15th of the first contract year

v) Pine straw raking will not be allowed at anytime or in any portion of the pine stand enrolled in BQI during the BQI contract period.

vi) Burning, herbiciding, and/or discing must be conducted as recommended by the WRD biologist

vii) At the recommendation of the WRD biologist, pine forest management may be conducted on the pine forest hectares in the first contract year provided that the entire contract area has been managed by the end of the second contract year. Incentive payments will be made for the entire contract hectares during each year of the contract period; however, if the cooperator fails to manage any portion of the pine forest as directed by the BQI management plan the contract will be voided and incentive payments will not be allocated

viii) Hectares enrolled in openings and linear practices must be subtracted from total pine stand hectares to calculate points and incentives

g) Pine Forest Thinning - maximum of 50 points (2.5 points per hectare)

i) At least 40% (BA <11.5m^2 per hectare) of ground must be in sunlight at noon during the growing season to be eligible for the heavy thinning incentive payment

ii) Thinning must be completed before May 15th of the first contract year

iii) Burning, herbiciding, and/or discing must be conducted as recommended by the WRD Biologist

h) Pine Forest Openings - maximum of 50 points (5.0 points per hectare)

i) At least 30% (BA <13.8m^2 per hectare) of the ground within the pine forest must be in sunlight at noon during the growing season to be eligible for openings

ii) Pine forest openings must be 0.4 - 2 hectares in size

iii) Pine forest openings must be a minimum of 60.6 meters in width along their entire length

iv) Tree canopy cannot comprise more than 10% of the opening interior

v) At the recommendation of the WRD biologist, discing or other prescribed treatments may be conducted on the opening hectares in the first contract year provided that the entire hectares are treated by the end of the second contract year. Incentive payments will be made for the entire area during each year of the contract period; however, if the cooperator fails to treat any portion of an opening as directed by the BQI Contract Management Plan the contract will be voided and incentive payments will not be allocated

vi) Plantings approved by the WRD biologist will be allowed on <25% of each opening

vii) Openings must be >181.8 meters apart, must be included within the pine forest, and cannot comprise more than 40% of the pine forest stand

i) Linear Pine Forest Practices - maximum of 20 points (5.0 points per hectare)

i) At least 30% (BA <13.8m^2 per hectare) of the ground within the pine forest must be in sunlight at noon during the growing season to be eligible for linear practices

ii) Linear practices include privately owned roadsides, firebreaks, and borders surrounding pine forests

iii) Must be at least 12.1 meters wide at narrowest point (measured from bole to bole)

v) Parallel linear practices within pine forest stands must be >181.8 meters apart.

v) Incentive payments are limited to area included in the 12.1 meters width

vi) Linear practices must be maintained by winter discing or as prescribed by the WRD biologist

vii) At the recommendation of the WRD biologist, discing or other prescribed treatments may be conducted on the linear area in the first contract year provided that the entire area is treated by the end of the second contract year. Incentive payments will be made for the entire area during each year of the contract period; however, if the cooperator fails to treat any portion of a linear practice as directed by the BQI Contract Management Plan the contract will be voided and incentive payments will not be allocated

viii) Cannot be used for turn rows, travel avenues, or hay or equipment storage

ix) After establishment, cannot be mowed, disced, burned, or herbicided during the contract period unless recommended by the WRD biologist

x) Plantings approved by the WRD biologist will be allowed on >25% of the linear pine forest practices

j) Habitat Connectivity- maximum of 20 points (5 points each)

i) Contract sites adjacent to areas (>20.2 hectares) of quality early successional habitat (for example thinned and burned woods and young pine forests with canopy spacing that allows >30% of the ground to be in sunlight at noon during the growing season)

ii) Field borders entirely along all sides of crop fields and Longleaf CPA fields

iii) Linear pine forest practices entirely along all sides of pine stands

iv) Field borders established between crop fields and thinned and burned pine forests >4.0 hectares in size

v) Field borders, hedgerows, or filter strips connecting two or more thinned and burned pine forests

vi) Field borders connected by hedgerows in cropland fields and Longleaf CPA fields

vii) Fallow patches connected by field borders, hedgerows, or filter strips

viii) Enrolled pine forests adjacent to row crop agriculture or a LLCPA field enrolled in BQI

ix) Using linear forest practices to connect to other BQI habitats

k) Habitat Bonus Points - maximum of 20 points for crop fields and longleaf CPA stands; maximum of 40 Points for pine stands

i) An enrolled field is in conservation tillage (as defined in Funding section) during at least 2 of the BQI contract years - 10 points

ii) When field borders, fallow patches, or filter strips are immediately adjacent to wetlands, ponds or streams - 10 points

iii) When field borders are on more than one side of a thinned and burned pine forest (>0.4 hectares in size) that joins a crop field - 10 points

iv) Fallowing of whole fields >16.2 hectares in the contract area (includes LLCPA fields) - 15 points Maximum of 5 points for planting approved foods per pine forest stand or field (>25% of enrolled BQI practices)

v) Maintaining >50% sunlight on the ground (equivalent to >9.2m^2 per hectare BA) within a pine forest (excluding fallow practices) that is being proposed for enrollment - 10 points

vi) Proposed pine forests that are >50% longleaf pine in tree species composition (excluding LLCPA fields) - 10 points

vii) When cooperators have 2 or more agricultural fields, and/or LLCPA fields, and/or pine forests proposed to be enrolled in BQI - 5 points

viii) Bonus for percentage of pine forest stand in managed fallow openings and/or linear habitat practices (20% = 10 points, 30% = 20 points, and 40% = 30 points)

l) Funding Bonus Points - maximum of 20 points

i) 15% reduction in incentive payment - 5 points

ii) 25% reduction in incentive payment - 10 points

iii) 40% reduction in incentive payment - 15 points

iv) 50% reduction in incentive payment - 20 points

v) The payment reduction shall be applied to the Total Annual Incentive Payment (including incentive payments for all BQI habitat practices and the Conservation Tillage Bonus Payment); the reduction shall not be applied to payment for the chemical treatment of invasive, exotic grasses required to establish eligibility

m) Re-enrollment Bonus Points - maximum of 20 points

i) Following 3 consecutive years of enrollment, fields may receive a re-enrollment bonus - 20 points.

ii) When a cooperator who has been successfully enrolled for 3 or more years but is currently not enrolled and has maintained their BQI habitat at a level >55 points - 20 points

n) Additional Scoring and Contract Information

i) Pine Forests should be separated into 2 or more stands whenever:
   1) there is age class or management change that results in significant difference in the way the stand will have to be treated for management and scoring; or
   2) the stand is completely split by a state highway or another cover type i.e. pasture, hardwood stand, river bottom etc. that averages >0.25 mile in width; or
   3) based on the WRD biologist it is in the best interest of the program or the cooperator to divide the stand,

ii) When multiple cooperators occur under the same contract, then all cooperators must sign the "'Ownership and Payment Statement" and the "Signature Page for Contract with BQI Cooperator." Payments must be made per cooperator and the checks mailed accordingly. The payment due to each cooperator must be specified on the "Payment Due Cooperator(s)" page and cooperators must initial beside their respective payments

iii) When multiple ownerships occur under the same contract, then all owners must sign the "Ownership and Payment Statement" giving the cooperator(s) permission to participate in BQI.

o) Determination of Previously Established Habitat

i) Pine forests have been burned during at least 3 out of the last 5 years.

ii) Field borders, and/or hedgerows, and/or fallow patches and/or center pivot corners are present and currently equal or exceed BQI standards.

iii) Based on WRD biologist's opinion, the existing cover conditions provide quality habitat for quail and meet or exceed the current BQI minimum standards.

iv) If at least two of these three criteria are met, it is likely that the property currently is under intensive quail management (pre-existing habitat) and therefore is not eligible for incentive payments through the BQI except where the cooperator agrees to include additional BQI habitat practices.

Appendix B. Georgia BQI Cooperator telephone survey conducted in 2004.

BQI Customer Service

Survey Question	Total N^a	Excellent (%)	Good (%)	Satisfactory (%)
BQI Cooperator experience rating	102	58 (57)	38 (37)	6 (6)
Quality service rating	102	77 (75)	24 (24)	1 (1)

BQI Cooperator Characteristics

Survey Questions	Total N^a	Yes (%)	No (%)	Not Sure (%)
Landowner	102	83 (81)	19 (19)	N/A
Primary farmer	102	65 (64)	37 (36)	N/A
Primary equipment operator	102	56 (55)	46 (45)	N/A
Have you ever quail hunted	102	92 (90)	10 (10)	N/A
Do you own bird dogs used for quail hunting	102	34 (33)	68 (67)	N/A
Do you plan to quail hunt this year	102	65 (64)	37 (36)	N/A
Have you hunted quail on property enrolled	102	52 (51)	50 (49)	N/A
Do you control hunting access	102	94 (92)	8 (8)	N/A
Do you allow quail hunting on land enrolled	94	33 (35)	61 (65)	N/A
Do you charge a fee for hunting privileges	94	25 (27)	69 (73)	N/A
Charge a fee for hunting privileges				
All game species	25	1 (4)	24 (96)	N/A
Deer	25	21 (84)	4 (16)	N/A
Turkeys	25	8 (32)	17 (68)	N/A
Waterfowl	25	1 (4)	24 (96)	N/A
Doves	25	5 (20)	20 (80)	N/A
Quail	25	2 (8)	23 (92)	N/A
Squirrels	25	1 (4)	24 (96)	N/A
Rabbits	25	1 (4)	24 (96)	N/A
Habitat practices pre-BQI				
Timber thinning	102	36 (35)	66 (65)	N/A
Prescribed burning	102	47 (46)	55 (54)	N/A
Weedy field borders	102	22 (21)	80 (79)	N/A
Weedy hedgerows	102	23 (23)	79 (77)	N/A
Weedy field corners	102	22 (21)	80 (79)	N/A
Winter discing	102	24 (24)	78 (76)	N/A
Planting food plots for quail	102	49 (48)	53 (53)	N/A
No practices were implemented for quail	102	21 (21)	81 (79)	N/A
Habitat practices post-BQI				
Timber thinning	102	40 (39)	62 (61)	N/A
Prescribed burning	102	56 (55)	46 (45)	N/A
Weedy field borders	102	96 (94)	6 (6)	N/A
Weedy hedgerows	102	82 (80)	20 (20)	N/A
Weedy field corners	102	81 (79)	21 (21)	N/A
Winter discing	102	75 (74)	26 (26)	N/A
Planting food plots for quail	102	63 (62)	39 (38)	N/A
No practices were implemented for quail	102	0 (0)	102 (100)	N/A

Appendix B cont'd. Georgia BQI Cooperator telephone survey conducted in 2004.

BQI Cooperator Characteristics

Survey Questions	Total N^a	Yes (%)	No (%)	Not Sure (%)
Cooperator perception of BQI impacts				
Improved farm environmental condition	102	93 (91)	1 (1)	8 (8)
Increased quail populations	102	83 (81)	1 (1)	18 (18)
Increased songbirds and other wildlife	102	84 (82)	1 (1)	17 (17)
Reduced soil erosion on land	102	70 (69)	20 (19)	12 (12)
Improved quail hunting	102	80 (79)	4 (4)	17 (17)

Additional Questions

Would implement BQI habitat practices without economic incentives (N = 102)

Yes: 24% No: 38% Some: 38%

Factors most influencing decision to participate in BQI (N = 102)

	N^a
Economic incentive payments	34 (33%)
Desire to improve quail populations	68 (67%)

Charge hectare/season to lease hunting privileges for wild quail on land enrolled in BQI (N = 87)

Less than $1.00	12 (14%)
$1.00 - $3.00	16 (18%)
More than $3.00 but less than $5.00	14 (16%)
More than $5.00 but less than $8.00	10 (12%)
$8.00 or more	35 (40%)

BQI practice affects on property aesthetic appearance (N = 102)

Improved appearance	64 (63%)
Detracted appearance	38 (37%)

[a]Number of people responding to the question(s).