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THE BOBWHITE BRIGADE: AN INNOVATIVE APPROACH TO WILDLIFE EXTENSION EDUCATION

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ABSTRACT

A pilot program was initiated in 1993 to train high school youth in natural resource management and leadership skills with the goal of training them as "master volunteers." The "Bobwhite Brigade" was formed to educate youth about northern bobwhite (*Colinus virginianus*) biology and management needs. Cadets (high school sophomores and juniors) undergo an intensive curriculum in bobwhite biology, applied ecology, critical thinking skills and leadership development to equip them as spokespersons for wildlife management. Upon graduation from the Brigade, cadets are required to give >3 educational programs to various audiences (youth and adult), and are provided incentives to give additional programs. Through 1996, 145 young people had graduated from the Brigade and presented approximately 1,200 educational programs. These programs have included newspaper and magazine articles, TV stories, public service announcements, and direct contacts through tours and field days. Quail Unlimited recognized the Bobwhite Brigade with its inaugural "Youth in Conservation Award" in 1994, and recognized the Brigade again in 1996 with another award. The Bobwhite Brigade model has served as a springboard for similar programs in >6 other states. The underlying message reinforced throughout the Bobwhite Brigade is one of ecosystem management and how "the whole is greater than the sum of the parts." We have found that ecosystem management concepts can be delivered to high school youth in a very tangible manner with a very popular, non-controversial native wildlife species. This same model holds great potential for other youth camps where there is an emphasis on wildlife extension education.

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INTRODUCTION

The Bobwhite Brigade, initiated in 1993, is a 5-day "boot camp" on bobwhite biology and management aimed at educating high school youth in conservation and leadership skills. The Bobwhite Brigade embraces the energy of youth, the charismatic appeal of wildlife (in this case, the northern bobwhite), the importance of natural resource conservation, and the need to educate the public about natural resource issues.

The impetus for the Bobwhite Brigade was the need to develop a corps of trained volunteers for providing nontechnical information on wildlife to a variety of audiences (e.g., school groups, civic clubs). Time, travel, and budget constraints often preclude Extension specialists from addressing all groups with information needs. Urban horticulturists in Texas developed a "Master Gardener" program to provide in-depth training to volunteers, certify them as "Master Gardeners," then empower them to handle the more routine aspects of horticulture. We adapted this concept to empower youth to be ambassadors for conservation. We describe the components of this successful

youth education workshop and offer advice about expanding this successful effort to other states.

Cadets undergo extensive training in bobwhite biology, ecology, human dimension aspects of wildlife conservation, public speaking, critical thinking and program development. The Bobwhite Brigade differs from other summer camps in that participants must agree to conduct >3 educational programs upon returning to their communities. Cadets are tested to assess their knowledge about bobwhites before and immediately after the camp.

While the Bobwhite Brigade focuses on quail, the cadets are trained to view quail within the context of the "big picture." Impacts of various quail management strategies on nonhunted species (e.g., neotropical migrant birds) are discussed. Similarly, while the role of hunters in quail conservation is stressed, an appreciation for nonconsumptive recreation like photography and birding are also encouraged and developed.

OBJECTIVES OF THE BRIGADE

1. To provide intense training to a cadre of motivated high school youth on quail biology and manage-

ment, and the ecological processes prerequisite to maintaining quail on the Texas landscape.

2. To improve leadership skills of cadets, especially relative to natural resource management, and subsequently develop young spokespersons to serve as Master Volunteers for conservation.
3. To refine students' critical thinking skills as a method for evaluating management alternatives and differentiating fact from fiction.
4. To assemble a team of resource specialists from various agencies and interested volunteers to plan and execute interdisciplinary conservation education efforts.

DESCRIPTION OF THE PROGRAM

A maximum of 30 in-state, plus 2 out-of-state "cadets" (high school youth 14 to 17 years old) are selected from a pool of applicants by the Steering Committee. The Steering Committee is comprised of representatives of the Texas Agricultural Extension Service (TAEX), Quail Unlimited, Texas Parks & Wildlife Department (TPWD), United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS), interested volunteers and various sponsors (e.g., local Soil and Water Conservation Districts). The camp is conducted at the Kroomed River Lodge located near Abilene, Texas during the last week of June.

Cadets are charged a tuition (\$200 in 1997) which covers meals, lodging, and teaching resources. Cadets are grouped into "coveys" of 5 youths each. Each covey is coupled with a "Covey Leader" and an "Assistant Covey Leader" (ACL) (cadets from a previous Battalion who have earned the right to return as counselors). Cadets undergo a rigorous curriculum of biology, conservation and leadership skills. Disciplines covered include morphology, behavior, botany, applied ecology, ornithology, entomology, photography, art, firearms safety, and journalism. Teaching is a blend of lecture and hands-on activities, most of which are conducted in the field. Field projects include plant identification, radio telemetry, nest depredation studies, habitat analysis, dog training, and birding. Pre- and post-testing are conducted to assess information transfer.

Cadets sign a "contract" with the Bobwhite Brigade requiring them to complete >3 educational programs in their home communities upon graduation from the Brigade. Those who complete the most programs are invited back the following year to serve as ACLs. The ACLs are eligible for college scholarships. The scholarship program was implemented at the 2nd Battalion with 1, \$500 scholarship awarded. The next year, 1 \$750 scholarship was awarded. In 1996, we obtained sufficient funds to award each of the 6 ACLs a scholarship ranging from \$1,000 for the top performer, a \$750 award for second, and \$500 for each of the other 4 ACLs. We hope to sustain (or expand) the scholarship program in the future.

LOGISTICS

Steering Committee

The Steering Committee is composed of 10 to 15 representatives from various sponsoring agencies and organizations. Currently we have representatives from the Texas Agricultural Extension Service (wildlife specialist, communications specialist, 3 county Extension agents), Texas Parks and Wildlife Department (2 biologists), USDA-NRCS (2 district conservationists and 1 soil conservationist), Quail Unlimited (regional director and chairman of state council), vocational agriculture (1 high school teacher), soil and water conservation districts (1 county chairperson) and other private individuals (4 at this time). The committee meets 3 times annually, usually in January, April, and August. The January meeting is to make initial plans and secure funding for the current year's camp. The April meeting is to screen applications, score record books submitted from the previous year's cadets, and make any necessary revisions to the curriculum. The August meeting is used to critique the most recent camp and identify areas within the curriculum that need to be modified.

Recruiting

We seek 32 qualified applicants (high school sophomores and juniors preferred). Applications are solicited through "traditional" clientele (i.e., 4-H and FFA) and by other means (e.g., media). Applicants may also apply via the Internet at <http://texnat.tamu.edu/specpgms.bwbrigad.bwbmain>. Word-of-mouth from past cadets is also an effective recruiting tool. Applications are screened on the basis of demonstrated leadership skills, academic achievements, and an essay stating why the applicant is interested in becoming a member of the Bobwhite Brigade. Those individuals selected are mailed registration forms >6 weeks prior to the camp. Two "alternates" are also selected in the event that any of the chosen cadets withdraw prior to the camp.

Covey Structure

Cadets are assigned to groups of 5 ("coveys") that are led by a Covey Leader (e.g., County Extension Agent, agency biologist) and an ACL. We can accommodate 6 coveys, appropriately named for the 6 species of quail that occur in the U.S. (i.e., Bobwhites, Blues, Gambel's, Mearns, California, and Mountain). Coveys work, live, and sleep together to "bond" and develop a spirit of teamwork. They compete all week against other coveys for the "Top Covey" award. All members of a particular covey share the same lodging facilities. The addition of the ACLs, beginning with the 2nd Battalion in 1994, has been very worthwhile. The returning cadets know the rigor of the camp and can share ideas that have allowed them to be successful. Additionally, the leadership responsibilities help foster their own abilities in a different role from being a cadet.

Curriculum

The topics covered during the week reflect what a junior-level college student majoring in wildlife science would encounter. In the first exercise, cadets conduct a necropsy on a bobwhite to discuss the form and function of bobwhite anatomy. Various morphological adaptations important to how a bobwhite uses its habitat (i.e., white breast muscle limits long distance flights thus reinforcing the need for interspersions of habitat components) are discussed. Various topics dealing with quail biology include anatomy, behavior, diseases, embryology, plant identification, entomology, and radio telemetry. Each covey of cadets affixes a radio telemeter to "their" bobwhite on the first afternoon. The radio-marked bobwhites are carried to another site about 10 km away and released. On day 3 each covey uses telemetry equipment to locate their quail and record its fate. About one-third of the curriculum deals with leadership development and critical thinking. Basics of communication skills (written and oral) are covered. Other support disciplines like art, photography, and firearm safety are also presented. A detailed description of the week's curriculum is discussed by Rollins (1993).

Field Work

Our curriculum involves 18 to 20 hour work days; basically the only "free time" is between 1 a.m. and 6 a.m. Accordingly, our teaching plans must be action-oriented and fast-paced to keep cadets from falling asleep. A traditional "slide talk" on any subject is likely to be met with inattentive students. Therefore, we concentrate on "hands on" activities like crop analyses, nest depredation transects, plant collections, and others to stimulate the cadets. We use role playing to illustrate various subjects (e.g., roosting behavior) and Project Wild activities like "Habitat Lap Sit" to illustrate ecological principles like community structure and interspersions. An activity dubbed "Run for Your Life" uses hula hoops as loafing coverts to illustrate the relationship between predation and the interspersions of brush cover. In this game, 2 ACLs play the role of hawks (1 *buteo* and 1 *accipiter*) whose goal is to capture an errant quail who cannot find refuge in a loafing covert (i.e., hula hoop).

Leadership

All cadets are required to conduct >3 educational programs upon returning to their communities. Leadership is stressed at every opportunity during the camp (Rollins 1996). Each cadet is assigned a "silver bullet" (i.e., inspirational quotation by someone like Aldo Leopold or Will Rogers) which he must recite upon command by a superior any time during the week. We provide training in how to write news releases, conduct slide programs, television interviews, and assemble a static tri-fold display. Each cadet is interviewed on video and their efforts are critiqued by the group the next night. Various exercises stressing teamwork and networking are conducted.

Table 1. Program accomplishments of the Bobwhite Brigade, 1993-1997.

Accomplishment	Measurement	Comments
Battalions mustered	4 in Rolling Plains 1 in East Texas	East Texas Bobwhite Brigade formed in 1996.
Cadets trained	119 in Rolling Plains 24 in East Texas	
Educational programs conducted	Estimated at 1,100	Number of programs conducted by cadets has doubled each year.
Media coverage	7 articles in state or regional periodicals 6 television news stories 3 feature stories in regional newspapers	Periodicals include <i>Texas Parks and Wildlife Magazine</i> , <i>Texas Wildlife</i> , <i>Texas Farmer-Stockman</i> , <i>Quail Unlimited Magazine</i> , <i>Texas Fish and Game</i>
Awards received	4	Quail Unlimited's Youth in Conservation Award 1994 and 1996; Texas Section, Society for Range Management's Special Award 1995; Texas Chapter, The Wildlife Society's Excellence in Wildlife Conservation Award (Group Category) 1996
Cadets honored	2	Outstanding Youth Conservationist Award from Sportsmen's Conservationists of Texas 1994; Outstanding Youth Conservationist Award from Georgia Wildlife Federation, 1997

Esprit de corps

Comradery and teamwork are stressed in a quasi boot camp-like atmosphere. One of the main instructors is a former U.S. Marine who strives to keep the cadets motivated. Beginning in 1996, a series of cadences were written (Rollins 1996) and will be included in the curriculum beginning in 1997. Coveys compete all week for points in various exercises for the opportunity to have first selection from a bevy of door prizes donated by various sponsors. Additionally, all cadets and instructors cast 1 ballot for their selection as the "Top Cadet" and this individual receives a special prize.

Sponsors

Initial sponsors in 1993 included the TAEX, TPWD, USDA-NRCS, Lower Clear Fork of the Brazos Soil and Water Conservation District, Krooked Riv-

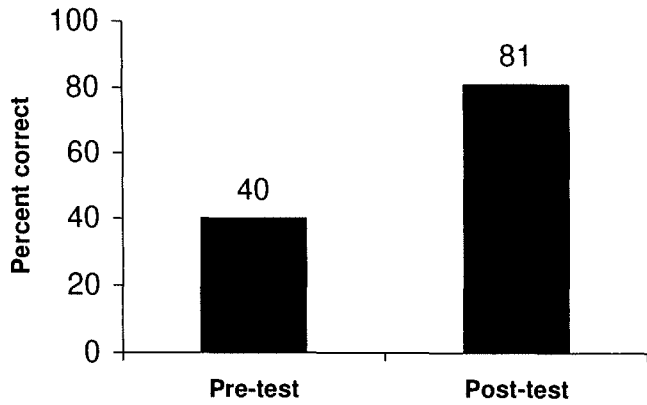


Fig. 1. Pre-test versus post-test scores of Bobwhite Brigade cadets from 1993-1996 ($N = 119$ cadets).

er Ranch Outfitters and the Texas Council of Quail Unlimited. Since 1993, additional sponsors have included the Texas Wildlife Association, Big Country Birdhunters Association, Federal Aid in Wildlife Restoration, U.S. Environmental Protection Agency, Ray and Susan Murski Foundation, Johnny Stewart Wildlife Calls, and an anonymous donor.

Fundraising

Costs for conducting a "typical" Bobwhite Brigade (32 cadets plus about 20 adults) are about \$8,000. Food costs account for about 35% of the overall budget. Our lodging costs are donated by Krooked River Lodge. We solicit grants and scholarships from various sponsoring agencies, private individuals, and anonymous donors. The Bobwhite Brigade is a 501(c)(3) charitable nonprofit foundation. Tuition for the camp is \$200 per cadet. We assist cadets in locating sponsors at their local level for half of the tuition cost.

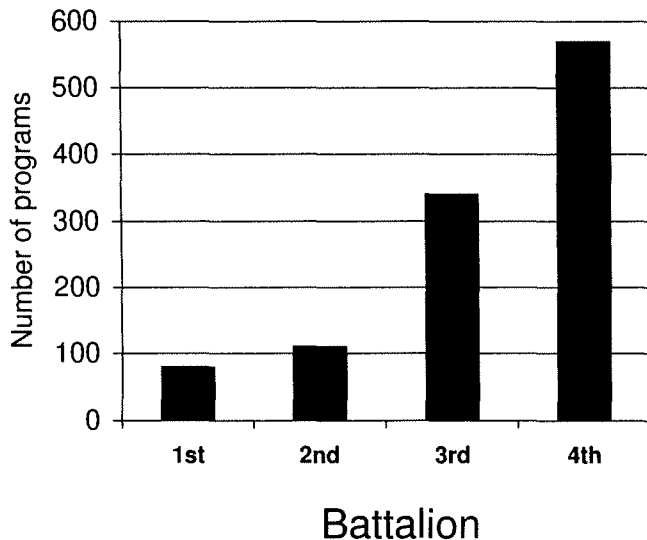


Fig. 2. Number of educational programs conducted during the year following graduation from the Bobwhite Brigade, 1993-1996.

Table 2. Quotes from various media representatives and parents after their exposure to a Bobwhite Brigade camp, 1993-1996.

Source	Author	Quote
Print Media		
<i>Abilene Reporter News</i>	J. O'Bryant	"I don't believe I've ever seen your tax dollars doing a better job."
<i>Dallas Morning News</i>	R. Sasser	"The Bobwhite Brigade is the MTV of wildlife science."
<i>Texas Wildlife Magazine</i>	C. McTee	"We are all winners because of the Bobwhite Brigade."
<i>Progressive Farmer Magazine</i>	L. Hodge	"I have seen nothing else that comes close to meriting the recognition this program does."
Parents		
	C. Taylor	"I will never forget the excitement and enthusiasm that I saw in my son when my wife and I picked him up at the completion of the camp. It's a day we won't soon forget."
	T. Dean	"The Bobwhite Brigade is doing a good job of filling a void in the understanding and appreciation of wildlife resources."
	E. Brown	"Thank you for challenging my high school junior. I appreciate the high level of academics and the wide variety of topics presented."
	L. Clift	"Our daughter now has a deeper understanding of the delicate balances that exist within our environment, and that resources such as wildlife require careful management."
	C. Holcombe	"As parents of two 4-H members that have attended this event, we want you to know that our sons both consider this as one of the most outstanding opportunities they had ever been involved in. Your group does a tremendous job."
	L. Isenhour	"Our son attended the recent Bobwhite Brigade and he is still talking about it—it was the best! Thanks for supporting youth."

RESULTS

Knowledge Transfer

Pre- and post-tests are administered to cadets to assess their knowledge about quail management before and after exposure to the Brigade. Results suggest that

quail knowledge is increased an average of 100% across the first 4 Battalions (Figure 1).

Program Highlights

Measurable accomplishments of the Bobwhite Brigade from 1993–1996 are summarized in Table 1. One of the most noteworthy accomplishments is the information transfer by cadets when they conduct educational programs in their local communities. The number of programs conducted by cadets has increased geometrically in the last 3 years (Figure 2).

We believe we get “good” productivity (i.e., > 10 educational programs conducted) from about 20% of the cadets. However, we have not been satisfied with that response rate. In 1995 we raised sufficient funds to award each ACL with a college scholarship ranging from \$500 to \$1,000 if they earned the most points (by conducting various educational activities). We believe the poor performance among the bottom quartile of cadets is due to a lack of mentors in their local communities, or perhaps in our inability to match up mentors with cadets in a timely manner.

Expanded Efforts

Quail Unlimited adopted the Bobwhite Brigade as its national youth education program in 1995. Since that time camps have been conducted in >6 other states. The East Texas Bobwhite Brigade was initiated in 1996 and graduated 24 cadets during its first year. The first battalion of the South Texas Bobwhite Brigade was conducted in 1998.

Media Response

The Bobwhite Brigade has received excellent publicity by various outdoor, agricultural and “general” press media (Table 2). We often involve various outdoor writers or television reporters to teach various portions of the curriculum dealing with communication skills.

Enthusiasm about the Brigade continues to run

high among the cadets, instructors, and sponsors. The Brigade has been a classic example of cooperation among natural resource agencies (e.g., TPWD., USDA-NRCS), private conservation groups (e.g., Quail Unlimited, Texas Wildlife Association), grass-roots supporters (e.g., Texas Farm Bureau, local Soil and Water Conservation Districts), private industry (e.g., Johnny Stewart Wildlife Calls, Krooked River Ranch Outfitters), and landowners. The Bobwhite Brigade has been the recipient of several state and national awards, and is the template for Quail Unlimited’s “Covey Kids” camps that are now held in >6 states.

We take great pride in observing and working with talented young men and women as they evolve over the course of a very intense week. We often receive feedback from parents who comment that the excitement and level of self confidence are apparent immediately following the Brigade (Table 2). The human capital that is being developed by the Bobwhite Brigade should pay conservation dividends for many future years.

ACKNOWLEDGMENTS

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