A DECADE OF PROGRESS, A DECADE OF FRUSTRATION

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ABSTRACT

The past decade has seen tremendous research progress for the northern bobwhite (*Colinus virginianus*). Research conducted during the 1990s advanced our understanding of bobwhite breeding biology, habitat relationships, long-term population trends, and genetics, among other things. Technological advances allowed improvements in censusing techniques, tracking broods, assessing population status in relation to broad scale land use changes, and identifying nest predators. The 1990s also saw the development of a National Strategic Plan for Quail Management and Research, the emergence of the Southeast Quail Study Group, and a renewed interest in National Quail Symposia. Despite this recent renaissance in research and related activities, bobwhite population declines continued throughout much of the southeastern United States and elsewhere. There is a palpable level of frustration among quail hunters, resource agency managers, and other quail enthusiasts who feel that: (1) seemingly nothing is being done to reverse the bobwhite population decline, and (2) that the scientific community has not developed a meaningful or realistic research agenda. It is an amazing paradox that we have made great bobwhite research progress during the past decade, but virtually none of the new insights gained from research have been successfully applied, on the ground, to improve bobwhite numbers. I hypothesize that the disconnect between recent scientific advances, and management applications to reverse the bobwhite decline, is a function of numerous cultural and economic factors that will be difficult to overcome. These factors include: (1) broad scale land use trends that are hostile to the production and maintenance of wild bobwhite populations, (2) habitat management and maintenance costs that are beyond the reach of most resource agencies and individuals, and (3) lack of incentives to motivate individuals and organizations to tackle bobwhite management on a meaningful scale. Whether land use planning, land management policy, and/or market incentives can conspire to provide useable habitat space through time for bobwhites (and other quails) on a scale that will be sufficient to reverse widespread population declines, is one of the most vexing wildlife management problems for the next century.

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INTRODUCTION

The purpose of this essay is to draw attention to a curious paradox in modern wildlife management. During the past decade, wildlife scientists and managers have developed a widespread, renewed interest in northern bobwhite ecology and management. Much of this renewed interest stems from ongoing, long-term bobwhite population declines that have occurred during the past 40–100 years (Kabat and Thompson 1963, Brennan 1991). However, despite a renewed interest in northern bobwhite research, virtually none of the new insights gained have been applied in a meaningful management context to reverse or restore bobwhite numbers. I hypothesize that there are a complex array of economic and cultural factors that are responsible for the bobwhite research progress and management frustration that we have witnessed during the 1990s.

RESEARCH PROGRESS

Thousands of scientific articles and commentaries have addressed aspects of northern bobwhite biology, ecology, and management during the past century (Scott 1985, Brennan 1999). The decade of the 1990s was a particularly productive period of research that revolutionized how we understand bobwhite breeding biology (Curtis 1993), model habitat relationships (Guthery 1997, Guthery et al. 2000), interpret long-term population trends (Lee and Brennan 1994, Brennan et al. 2000; Thogmartin et al. *this volume*), and assess genetic relationships (White et al. 2000, Faircloth et al. *this volume*).

Advances in research techniques have led to improvements in censusing techniques (Wellendorf et al. *this volume*), marking and tracking broods (Carver et al. 1999, Smith et al. *this volume*) assessing population status in relation to broad scale land use trends (Guthery et al. 2001), and identifying nest predators (Staller et al. *this volume*).

While the application of radiotelemetry was responsible for considerable research progress, advances in other methodological, conceptual and philosophical approaches to quail research must also be given credit (Hernández et al. 2002). As wildlife and game bird scientists become more comfortable with contemporary approaches to modeling habitat and population dynamics, and using molecular tools to address quail population and sociological dynamics, new insights into this well-studied galliform will clearly be part of our future. We are gaining new, important knowledge about this species as it continues to decline and undergo local and regional extinctions over most of its native geographic range. As wildlife professionals, however, I can't help but think that we might be standing around playing our research fiddles while bobwhite

habitat disappears, much like Nero did when Rome burned.

MANAGEMENT FRUSTRATION

There is no question that agency resource managers and quail hunting enthusiasts are clearly frustrated at the continued downward trend in bobwhite numbers across most of the bird's range. Tales of woe from lack of quail hunting opportunities pervade conversations from the annual National Quail Unlimited conventions to the local county extension offices. While the magnitude and extent of this frustration has not been quantified, I believe that it is significant. Furthermore, I believe that we have a massive communication problem between quail research professionals and the quail hunting community. For example, from the perspective of a manager, Drew (2000:247) stated ''. . . There is nothing new in quail research.'' This problem stems from the hunting community's frustration with declining quail numbers, and an inability to translate advances in quail research to increases in quail numbers.

Historical documents note that early in the 20th century quail were abundant and provided readily available hunting opportunities throughout the Midwest (Leopold 1931) and Southeast (Leopold 1929), whereas opportunities to hunt white-tailed deer (*Odocoileous virginianus*) and wild turkeys (*Meleagris gallopavo*) were scarce at that time. Today, the opposite is true, and this feeds the frustration. People have a hard time understanding why we have an embarrassment of deer and turkey riches, but few quail.

The lack of quail hunting opportunities has largely eliminated a cultural tradition whereby people of modest means could pursue this bird. The primary upland game hunting opportunities currently available on public lands are for doves, (*Zenaida* spp.) deer, and turkeys. Today, most quail hunting opportunities are available to only people who can own or lease relatively vast (500–2,500+ ha) tracts of land, and absorb land management costs that can range from $50 to $200/ha/year. During the 1950s Herbert Stoddard predicted that bobwhite hunting was on a track to become ''Grand Opera,''—an expensive and rarified experience that would be aavailable only to wealthy people with the means to afford it. Fifty years later, Stoddard's prediction is reality.

Despite the research progress of the past decade, little or none of this new information has been applied to efforts to restore or increase quail numbers. Over the years of reading most of the literature on quail, I have failed to find even 1 publication that documents the sustained recovery of a formerly extirpated population of quail, despite Herculean efforts in case of masked bobwhite (*C. v. ridgwayi*) restoration and recovery efforts (Kuvlesky et al. 2000). Furthermore, contemporary case histories which document localized increases of bobwhite populations in response to management are relatively rare, although they do exist (Brennan 1993, Palmer et al. *this volume*).

LACK OF INCENTIVES

The hypothesis that habitat loss from changing land use is responsible for the bobwhite decline is supported by observations and data from the private hunting plantations in the southeastern United States (Brennan et al. 2000), rangelands in south Texas, and portions of habitat the Midwest, where relatively large blocks of bobwhite habitat remain, and consistently support populations with densities that provide satisfying hunting opportunities.

In all 3 of the cases noted above, bobwhite habitat and wild populations of bobwhites are maintained either through intensive management (on Southeast Quail Plantations) or bobwhite-friendly land uses, such as moderately intensive cattle grazing (in South Texas and other parts of the Midwest). Where there is habitat (and useable habitat space) there are quail (Guthery 1997). When the prevailing land use trends are not favorable to quail, the birds disappear. This simple concept seems impossible for some people to grasp. Many people believe that it is more effective to increase quail by killing predators, planting food plots, or releasing pen-raised quail, than solving the habitat problem through management.

I have come to the conclusion, however, that people are reluctant to tackle efforts to recover, restore, and/or maintain bobwhite habitat through management, because such an undertaking is phenomenally expensive. There are few meaningful incentives to support such efforts.

The people who are owning, leasing, and managing bobwhite habitat on private lands are doing these things because they can afford them. Their incentive is the payoff of enjoying Grand Opera quail hunting at rates of >4 coveys per hour, regardless of the staggering costs. They do this because they can. It is perhaps the most expensive wildlife habitat management in the world.

Nonindustrial private landowners who have parcels ranging from 25–500 ha often face a set of circumstances that disallow them to conduct effective quail management, even if they wanted to do so. There are few economic, governmental, or societal incentives to support efforts by these people to implement prescribed fire, frequent disking, field borders, conservation headlands, and improve habitat for quail. In fact, the disincentives to not do these things are probably greater than the incentives available to encourage them. For example, consider potential or perceived liabilities from applying prescribed fire, despite the presence of right-to-burn legislation in many southeastern states. While weedy field borders may provide crucial winter habitat for bobwhites, they also are frowned upon by farmers, bankers, and county extension agents who worked to eradicate the cotton boll weevil. Stewardship Forest programs seldom seem to reward or encourage private land owners who are interested in single-tree selection and uneven-aged management silviculture systems that have potential to maintain quail habitat in southern pine forests.

Most incentive programs that have been promoted

to enhance wildlife habitat in the southeastern United States have either been hostile to bobwhites, such as the early Conservation Reserve Program (CRP) sign-ups that promoted cool-season fescue pastures, or high-density pine plantations. Other Farm Bill incentives, such as CRP contracts that allow seasonal disking for quail, or favor longleaf pine (*Pinus palustris*) seem like too little too late. Hopefully, I'm wrong.

OVERCOMING INERTIA AND MEETING THE CHALLENGE

Clearly, there is considerable inertia that is preventing progress with respect to reversing the bobwhite decline. As researchers, we have done a pretty good job at building a scientific foundation for quail habitat management in particular and quail habitat management in general. Unfortunately, numerous cultural and economic roadblocks are preventing this science from being translated into effective bobwhite management. Some of these roadblocks, and I argue most of the critical ones, will be impossible to remove without the presence of significant economic and cultural incentives to counter the widespread, continuing losses of quail habitat that are a function of changing land uses.

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