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QUAILS IN MEXICO: NEEDS AND OPPORTUNITIES

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ABSTRACT

Recently, McGowan et al. (1995) completed a worldwide conservation strategy for all species of partridges, quails, and francolins. They identified priority species and projects for the next 5 years. Mexico was identified as a critical country in Latin America because of the presence of a large number of species of quails (15) and presence of several species and one subspecies which received conservation status; the bearded tree-partridge (*Dendrortyx barbatus*), ocellated quail (*Cyrtonyx ocellatus*) and masked bobwhite (*Colinus virginianus ridgwayi*). We are presently undertaking research and conservation efforts on the critically endangered bearded tree-partridge and use this to highlight concerns and opportunities related to quails in Mexico. This program includes local educational programs advertising the plight of this species, development of survey techniques, collection of life history data, and a complete survey of distribution of the species. From our efforts so far, we have found that local involvement and interest in rural communities is possible. We are finding that techniques, such as play-back of tape recorded calls, show great potential for both census and surveys of the bearded tree-partridge. Finally, we are finding that lack of basic life history and population data of these species can result in misguided development of conservation strategies.

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INTRODUCTION

The New World quails range from southern Canada through Central America to Bolivia and Argentina (Carroll 1995). It is believed that the New World quails probably evolved in the vicinity of southern Mexico because the greatest diversity of genera and species occurs in this geographic region (Carroll 1995). However, there is a profound lack of information on taxonomic status, distribution, biology, and conservation status of most species of quail that inhabit Mexico (Carroll et al. 1995, McGowan et al. 1995). This is unfortunate because many species are harvested whether they are common or rare, and all are subject to threat of habitat destruction.

Mexican quails deserve a much higher profile in international conservation efforts. Increasing the amount of attention directed at quails in Mexico provides an opportunity to develop closer ties between U.S. wildlife biologists and Mexican biologists. This has begun, in part, through cooperative efforts for masked bobwhite *Colinus virginianus ridgwayi* population recovery (Kuvlesky et al. *this volume*) and the conservation program for the bearded tree-partridge described here.

STATUS AND NEEDS

The status of many quails in Mexico is difficult to assess, because of the poor state of knowledge about

their biology, and the limited data on their distributions and/or populations (Carroll et al. 1995). This includes even basic techniques for accurately censusing these species. Based on limited data, Carroll et al. (1994) determined that the bearded tree-partridge, ocellated quail, masked bobwhite, and possibly the southern Mexican subspecies of the Montezuma quail *Cyrtonyx montezumae sallei* deserve the highest conservation priority.

The bearded tree-partridge has been given the highest conservation priority of all quails in Mexico because of: (1) historically small distribution; (2) potentially low and isolated populations; (3) proximity to high human populations; (4) deforestation in its historic geographic range.

BEARDED TREE-PARTRIDGE: CASE STUDY

The distribution of the bearded tree-partridge is centered on the State of Veracruz, Mexico. There are additional, isolated populations in the adjoining states of Hidalgo, Queretaro, and possibly Puebla and San Luis Potosi as well (Figure 1). Until this present work, very little information was available on the conservation status of this species, other than some surveys by Leopold (1959) and Johnsgard (1973) and anecdotal observations from Howell and Webb (1992). It is known that there has been a great deal of human impact and deforestation of the montane habitats of the bearded tree-partridge in this part of Mexico. Many of the sites where the species was formerly found have

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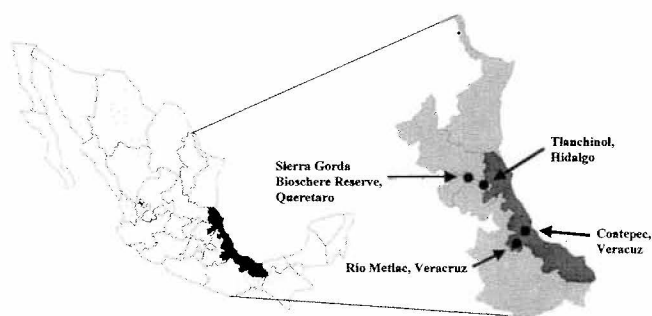


Fig. 1. State of Veracruz in Mexico (shaded). Individual locations show known populations of bearded tree-partridge in 1997 (This study, Garcia et al. 1993).

been impacted to the point that there is little chance that the bearded tree-partridge is still present. In addition, there are potential threats due to the rapidly increasing human population in Mexico and the resulting conversion of forest to agricultural purposes (Carroll et al. 1994). Local farmers and hunters take this species for food. Sport hunters from the city also bag an unknown number of individuals. Recently, some local farmers have poisoned bearded tree-partridges because of depredation of bean crops in the mountains (S. Aguilar, personal communication).

In 1995, we knew of only one population that seemed to be persisting in remnant forests in Veracruz. Therefore we developed a cooperative project based on a study area near Coatepec, Veracruz. This program attempted to address the problems of the bearded tree-partridge on a number of levels: (1) using the local biologists we developed survey and habitat analysis techniques on the Coatepec Study Area; (2) we began collecting information on radio-tagged individuals in order to obtain much more specific life history data. Information on nesting and brood rearing as well as food habits and survival are lacking for this species; (3) we began to use the play-back techniques developed at Coatepec to survey and map the distribution of the species in Veracruz State and adjoining states; (4) education efforts began with production of additional caps and shirts with a conservation message, and we also produced a poster identifying the bearded tree-partridge as an important species. Several billboards were erected in the area around Coatepec; (5) local contacts petitioned the Governor of Veracruz to establish the bearded tree-partridge as the State Bird.

Preliminary results on the Coatepec study area suggest that the play-back census techniques can be useful for locating populations of bearded tree-partridge, but that timing during the year is crucial to make sure that the birds will respond (J.C. Eitniet, S. Aguilar, J.P. Carroll, and J.T. Baccus, unpublished data). Unfortunately, bearded tree-partridge populations are low and isolated. These problems hamper development and testing of play census techniques. Development of statistical inference is difficult when dealing with only a few dozen birds on a patch of forest only a few hundred hectares in size.

Observations of birds made during surveys, along with subsequent radio-telemetry data suggest that the

birds can tolerate habitats other than primary forest. Traditional shade coffee grown throughout the study area appears to be used regularly by bearded tree-partridges. Population surveys suggest that there are about 12 to 15 individuals on the study area.

Although bearded tree-partridge populations appear to be small and fragmented, they still occur in much of their recorded historical distribution. A recent survey completed by J.E. Eitniet et al. documented additional populations further north and west of the historical distribution. Therefore, human impact on the bearded tree-partridge is still difficult to judge. Within a year at Coatepec we went from being relatively confident about the short-term survival of the species to having much more concern. Conversion from the predominantly shade coffee to more plantation (sun) coffee varieties could dramatically change the landscape and potential habitat for this species. A short plane ride over the study area in May 1996 revealed large numbers of new sun coffee fields being cleared.

However, the bearded tree-partridge populations found in Hidalgo and Queretaro appears to be located in much more remote habitats and might be more secure because the habitat is owned by the local municipality or located in the Sierra Gorda Biosphere Reserve.

OPPORTUNITIES

The most important areas for research and conservation efforts for quails in Mexico should be directed towards those species that have some kind of conservation status. So far, much of the emphasis has been on species with limited distribution, but there are many subspecies and populations of common species such as the northern bobwhite (*Colinus virginianus*), for which we know very little and could also be threatened (Brennan 1999). Other species such as the elegant quail (*Callipepla douglasii*) or barred quail (*Philortyx fasciatus*) are not thought to be threatened and may be common, but we know little of their biology. Both species are endemic to Mexico.

Mexico has a long history of sport hunting by both residents and foreigners. Regulation of bird hunting has been highly variable. Poaching of species such as the bearded tree-partridge is known to occur. Common species offer the opportunity for sustainable management in some circumstances.

Any conservation or research effort on these species must include local collaboration and support. We have worked with two different nongovernmental organizations, Pronatura Veracruz and Grupo Ecologico Sierra Gorda, without whom little progress on the bearded tree-partridge project could have been made. However, the collaborative relationship must be flexible to deal with the particular strengths and weaknesses of local cooperators.

SUMMARY

There are many potential problems facing the quails of Mexico. Many of these problems are high-

lighted by the plight of the bearded tree-partridge. Our efforts in Mexico represent the kinds of fundamental efforts needed to conserve this species. These efforts have only just been started. Mexico has a number of endemic species that represent the center of the evolution of the New World Quails. Mexico and its quails deserve much greater support and attention than they have received to date.

ACKNOWLEDGMENTS

A large number of people are involved in this project on many levels. S. Aguilar has been coordinating much of the effort in Veracruz. P. Mota has provided a great deal of local natural history expertise and shared his knowledge of the bearded tree-partridge. J. Baccus is providing logistical and research advice. Alvaro Aragon Tapig is coordinating field efforts in Hidalgo and Queretaro. Funding has been provided by the P. van Vlissingen Foundation, Prince Bernhard Nature Trust, Chicago Zoological Society, World Pheasant Association, and Southwest Texas State University Faculty Grant Program.

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