

# Researchers team up to solve quail decline



## WILDLIFE BY DESIGN

By DR. DALE ROLLINS

**B**OBWHITE quail abundance has declined significantly over the past 20 years.

Some of that decline is especially perplexing. For example, take the past two years. Despite favorable weather conditions during much of that time (e.g., September 2009 to July 2010), quail counts in the Rolling Plains were the lowest on record. Landowners, hunters and biologists from other ecoregions in Texas, as well as other states (e.g., Oklahoma), have similar concerns.

To address such concerns, the Rolling Plains Quail Research Foundation recently announced that it had committed \$2 million to investigate the potential role of various diseases and parasites in quail populations in the Rolling Plains. Since that time, a team of scientists from several universities in Texas submitted eight research proposals.

The project is called Operation Idiopathic Decline — “idiopathic” being medical jargon for “the doctors don’t know.”

### Key Points

- The bobwhite quail population has declined sharply over the past 20 years.
- Operation Idiopathic Decline is bringing top scientists together.
- Eight specific projects are aimed at solving mysterious decline.

A brief synopsis of each project follows:

#### ■ Central Specimen Receiving, Processing, Distribution Laboratory (S. Presley et al., Texas Tech University)

Pursuant to the entire OID research venture is the development of central receiving lab that will function to store, catalog and distribute various specimens (i.e., whole birds, various tissue samples). Presley and his colleagues at the Texas Institute of Environmental and Human Health, or TIEHH, will fill this role. The goals are to collect whole birds, tissue and blood samples, and arthropod vectors (e.g., ticks, mosquitoes) from a minimum of 15 sites across northwest Texas and 10 sites across western Oklahoma (via collaboration with the Oklahoma Department of Wildlife Conservation).

#### ■ Bacterial and Fungal Pathogens of Texas Bobwhites (Shuping Zhang and Michael Z. Zhang, College of Veterinary

Proposals funded by Operation Idiopathic Decline May 2011			
Proposal	Title	Institution	Amount
Presley et al.	Central Specimen Receiving, Processing and Distribution Laboratory	Texas Tech	\$349,459
Presley et al.	Prevalence of Arboviral, Infectious and Zoonotic Pathogens	Texas Tech	\$247,483
Lupiani	Viral pathogens in Texas Bobwhites	Texas A&M	\$205,162
Zhang and Zhang	Bacterial diseases in Texas Quail	Texas A&M	\$238,611
Fedynich	Survey for Trichomonas gallinae and Helminth Parasites	Texas A&M Kingsville	\$181,091
Peterson and Reyna	A Scalar Approach to Quail Population and Environmental Data in the Rolling Plains of Texas	Texas A&M & Texas Audubon	\$249,962
Zhu	Major Protozoan Parasites in Bobwhite Quail	Texas A&M Vet School	\$250,000
Kendall et al.	Contaminant Analysis in Quail Tissues	Texas Tech	\$249,154
<b>TOTAL</b>			<b>\$1,970,922</b>

Medicine, Texas A&M University)

Bobwhites can be affected by a variety of infectious diseases, including aspergillosis, colisepticemia, mycobacteriosis, mycoplasmosis and ulcerative enteritis. The goal of this study is to identify the bacterial and fungal disease agents of quail populations.

#### ■ Viral Pathogens in Texas Bobwhites (B. Lupiani and S. Reddy, College of Veterinary Medicine, Texas A&M University)

The main goal of this project is to investigate the prevalence of four major avian viral pathogens in bobwhite quail populations in the Rolling Plains. The viral pathogens to be investigated include avian influenza virus (AIV), avian paramyxoviruses (APMV), reticuloendotheliosis virus (REV) and quail bronchitis virus (QBV). Although these viruses may not cause clinical disease, they may cause immunosuppression or increase susceptibility to other pathogens or environmental stressors.

#### ■ Survey for Trichomonas gallinae and Helminth Parasites in Bobwhites From the Rolling Plains Ecoregion (Alan Fedynich, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville)

Parasites have been known to cause ecological and behavioral changes in host populations, decrease host breeding productivity, regulate host populations, and cause morbidity and mortality in host individuals. This project will evaluate the prevalence of various nematode (roundworm) parasites (e.g., cecal worms and eyeworms) and the parasite responsible for trichomoniasis.

#### ■ Major Protozoan Parasites in Bobwhite Quail (G. Zhu, et al., College of Veterinary Medicine, Texas A&M University)

Little is known on the impact of micro-parasites on wild quail population at state and national levels. This project will study the impact of major avian protozoan parasites (e.g., coccidia) on Texas quail.

#### ■ Prevalence of Arboviral, Infectious and Zoonotic Pathogens (S. Presley et al., Texas Institute of Environmental and Human Health, Texas Tech University)

This study will determine the preva-

lence of specific infectious and zoonotic pathogenic microorganisms in quail populations. It will also determine the extent of influence of arthropod vectors on transmission of various disease agents, including encephalitis, West Nile virus, quail pox, quail bronchitis, fowl cholera and tularemia.

Those diseases were selected for investigation because each has been previously reported to cause pathology in wild quail populations, and their potential to be easily disseminated across large geographic regions through arthropod vectors or quail translocation.

#### ■ Contaminant Analysis in Quail Tissues (R. Kendall, et al., TIEHH, Texas Tech University)

The objectives of this study are to identify metal and other contaminants that may be factors influencing decline in quail populations, and to evaluate the interactions of contaminants and disease in affecting quail populations.

#### ■ A Scalar Approach to Quail Population and Environmental Data in the Rolling Plains of Texas (M. Peterson and K. Reyna, Texas A&M University and Audubon Texas)

Although the focus of OID is to determine the effects of infectious agents on quail populations, it is imperative that reliable data be collected on quail abundance and environmental conditions on a regional and ranch level, in addition to infectious agents and contaminants, to determine whether these suspect agents influence quail numbers.

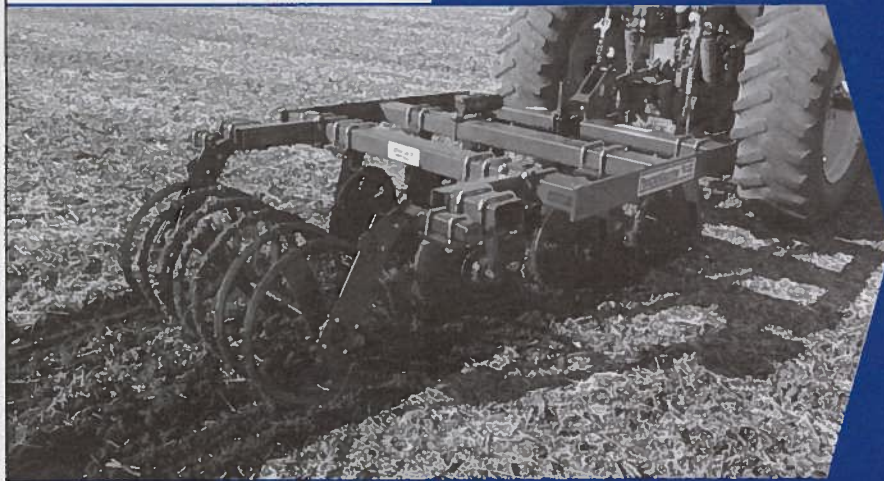
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