

SOUTH TEXAS WILDLIFE



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the Texas coast and has become an extremely important habitat for waterfowl. Many waterfowl studies have revealed the extent that ducks and geese forage in active and fallow rice fields during winter. Because of this strong relationship, the North American Waterfowl Management Plan specifically acknowledges the importance of flooding rice fields by private landowners as a critical aspect of winter habitat to sustain continental waterfowl populations. To better put into perspective the importance of rice producing regions to waterfowl, they collectively support around half of all geese and dabbling ducks in North America during winter.

The attractiveness of rice fields doesn't stop with waterfowl as more than 140 bird species have been documented using rice fields. There is no doubt that rice fields have become an important habitat for a diverse array of wetland birds during portions of their annual cycle,

RICE AND WATERFOWL – A WINNING COMBINATION

by Bart Ballard

If you have ever hunted ducks in rice country you likely understand the connection between waterfowl and rice. Rice fields provide a bounty of food for waterfowl in the form of waste rice seeds, native plant seeds, and aquatic invertebrates.

Editor's Note: Dr. Bart Ballard holds the *C. Berdon and Rolanette Lawrence Endowed Chair for Waterfowl Research* at CKWRI and is a Professor within the Department of Animal, Rangeland, and Wildlife Sciences at Texas A&M University-Kingsville.

Although wetland-related wildlife are often negatively impacted by conversion of wetland habitats to agriculture, rice agriculture is a bit different. Most importantly, rice agriculture retains many ecological functions that are lost when wetlands are converted to conventional row crops. For instance, plowing and draining wetland basins in dryland agricultural fields greatly degrades the hydrology of farmed wetlands. Rice, on the other hand, is flooded during the growing season, and much of the hydrology is kept intact.

Rice agriculture has mitigated the loss of natural wetlands along

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By The Numbers

- 2 to 4 typical clutch size of the pyrruloxia (Handbook of Birds of the World, Vol. 16, del Hoyo et al., Lynx Edicions)
- 17.6 weight in ounces of a newborn collared peccary (The Mammals of Texas, W.B. Davis and D.J. Schmidly, TPWD)

particularly as more of our natural wetlands become degraded or are converted to other land uses. In a time when the human population is growing exponentially, resulting in increasing competition for alternative uses of our natural habitats, it is refreshing to see a win-win situation with rice agriculture and wildlife.

Of course, not all stories have a happy ending, and this one is no exception. The rice industry in Texas has struggled in recent times, and acres planted in rice have declined by about 70% over the last 4 decades. Changes in the Farm Policy, low commodity prices, and high production costs have challenged rice farmers in Texas. Further declines are expected because of reduced water availability from district water authorities and the placement of rice farming as a lower priority than “firm water” users (i.e., industrial uses). Add to this the projection that the human population will double in rice producing areas by 2050—rice production in Texas may soon be a thing of the past.



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The rice fields of coastal Texas are a valuable food resource for wintering waterfowl, providing rice seeds, native plant seeds, and aquatic invertebrates.

The reduction in rice production and the bleak outlook for the Texas rice industry has alarmed waterfowl biologists because of the potentially enormous loss of waterfowl habitat and the significant reliance that ducks and geese have on rice fields now that their natural habitats have dwindled. Once rice fields go out of production, it is unlikely that they will retain their attractiveness to waterfowl because of typical land use changes.

As competition for limited water supplies increases in Texas, creative compromises will need to be made to enable us to secure a wetland habitat base that supports our large wintering waterfowl resource. Much of our waterfowl research explores ways that we can better manage our dwindling wetland habitats to help our resident and migratory waterfowl populations.

Landowner incentive programs, such as the Texas Prairie Wetlands Project, will become more and more important in the face of dwindling waterfowl habitat along the Texas coast. Hopefully, the stars will align with agriculture legislation, water restrictions, and production costs to provide a long future for rice agriculture in Texas.

In any event, the next time you fix your favorite duck gumbo recipe, think about the important role that rice agriculture fulfills for many of our wintering waterfowl along the Texas coast. ~

CKWRI NEWS

Researcher Honored

The Wildlife Society (TWS) Council recently selected **Dr. Leonard Brennan** as a *TWS Fellow* in recognition of his exceptional service to the wildlife profession.

Individuals who become *TWS Fellows* are appointed for life and serve as ambassadors of TWS serving the society in outreach and other activities benefitting and promoting the Society and the wildlife profession.



© Leonard Brennan

Dr. Leonard Brennan recently received the *TWS Fellow Award* by The Wildlife Society.

An awards ceremony will be held on October 6th during The Wildlife Society's 20th Annual Conference in Milwaukee, Wisconsin. Lenny, congratulations on being recognized for your service.

Researcher Receives Endowed Chair Position

We are pleased to announce that **Dr. Bart Ballard** has been named the *C. Berdon and Rolanette Lawrence Endowed Chair for Waterfowl Research*. The \$1 million endowment was secured this year and is 1 of only 3 endowed positions in waterfowl research in the United States. The other 2 endowed positions are at Mississippi State University and University of California-Davis.

Bart is a Research Scientist with the CKWRI and Professor in the Department of Animal, Rangeland, and Wildlife Sciences at TAMUK. He received his Masters of Science degree from Texas A&I University in 1993 and was one of our first students to graduate through the previous joint Ph.D. program with

Consider giving a tax-deductible donation to CKWRI



Texas A&M University-Kingsville

A recent CKWRI reception recognized the Lawrence family for their generous donation to establish the *C. Berdon and Rolanette Lawrence Endowed Chair for Waterfowl Research*. From L to R: CKWRI Director Dr. Fred Bryant, Dr. Bart Ballard (recipient of the chair position), C. Berdon and Rolanette Lawrence, Megan and Charles Lawrence, TAMUK President Dr. Steven Tallant, and Dean of the Dick and Mary Lewis Kleberg College of Agriculture, Natural Resources and Human Sciences Dr. G. Allen Rasmussen.

TAMUK and Texas A&M University, College Station.

Bart currently directs waterfowl and wetlands research at the CKWRI and focuses on the ecology and management of waterfowl, waterbirds, and wetland habitats as well as investigating bird migration patterns along the Texas coast. ~

THE IMPACTS OF EXOTIC GRASSES ON QUAIL

by William P. Kuvlesky, Jr. and Leonard A. Brennan

Quail populations throughout North America have declined during the past 50 to 100 years. These declines can be attributed to habitat loss from modern farming techniques, intensive timber production, and expanding suburbanization.

Editor's Note: Dr. William Kuvlesky, Jr. is a Research Scientist at CKWRI and Assistant Dean of the Dick and Mary Lewis Kleberg College of Agriculture, Natural Resources and Human Sciences; Dr. Leonard Brennan is the C.C. "Charlie" Winn Endowed Chair for Quail Research and Research Scientist at CKWRI. Both are also professors within the Department of Animal, Rangeland, and Wildlife Sciences at Texas A&M University-Kingsville.

Quail habitat has become increasingly fragmented. Habitat patches have become smaller and are spaced farther apart. Fortunately, South Texas has avoided these problems because most of the area remains as unfragmented rangeland.

However, there are threats on the horizon that challenge quail populations. Consider, for example, the explosive human population growth occurring in the Lower Rio Grande Valley and Laredo

area. A more subtle, but ecologically significant threat to quail habitat is the one posed by the invasion and expansion of exotic grasses that are now present across hundreds of thousands of acres in South Texas.

Most exotic grasses that have become established in South Texas were purposely introduced almost 80 years ago from Africa, Eurasia, and the Mediterranean region. The motives for introducing these grasses into Texas were to improve forage for cattle and curb erosion. Some of the more common invasive exotic grasses are buffelgrass, Lehman's lovegrass, guineagrass, and Old World bluestems. These species successfully naturalized and eventually came to dominate many pastures.

The main problem with these grasses is that they

create monocultures that exclude most native grasses and forbs. Besides exotic invasive grass species, tanglehead is a native species that behaves much like an exotic grass and has taken over many pastures in South Texas.

Research at the CKWRI has shown that quail abundance is lower (by up to 50% and perhaps more) in areas dominated by exotic grasses. When these grasses dominate landscapes, there is a reduction of the usable habitat for quail. Also, there is a reduction in native grass and forb abundance and diversity, thereby decreasing native food resources. The reduction of native plant species diversity and abundance also lowers the quality of sites that quail have to forage for insects.

Landscapes covered with buffelgrass and Lehman's lovegrass represent very poor brooding habitat because these areas support few insects that the quail chicks need. One of our studies indicated that hens will nest near the fringes of buffelgrass and Lehman's lovegrass stands, but quickly move to native grass and forb stands in search for insects once chicks hatch.



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A bobwhite in front of a stand of buffelgrass on the South Texas landscape.

Did You Know?

The mesquite lizard is ovoviviparous (eggs hatch inside the parent and then the offspring exit).

The common hog-nosed skunk is often known as "rooter skunk" for its behavior of rooting for food like a hog. (The Mammals of Texas, W.B. Davis and D.J. Schmidly, TPWD)

Expansive stands of exotic grasses that cover entire pastures are detrimental to quail.

It should be noted that some studies have shown that exotic grasses can be beneficial to quail under certain circumstances. For example, buffelgrass and Lehman's lovegrass can provide nesting and escape cover (if it is not excessively dense), and guineagrass can be used as thermal cover. Guineagrass and johnsongrass seeds can also be eaten by quail. Consequently, small stands of exotic grasses can be useful quail habitat components. However, large expanses of exotic grasses that encompass entire pastures will support fewer quail than pastures dominated by native grasses and forbs.

Managing exotic grasses once they have become established and have taken over entire pastures is extremely difficult. Completely removing exotic grasses from pastures is probably impossible. Repeated glyphosate herbicide spraying or repeated soil cultivation have shown promise at reducing exotic grass stands and allowing

Advisory Board

The Advisory Board of the Caesar Kleberg Wildlife Research Institute provides leadership in all aspects of our work. We are indebted to them for their commitment to CKWRI and its mission.

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establishment of native plants. King Ranch has seen some success from increasing stocking rates and grazing duration on exotic grass dominated pastures. The role of winter burning in the context of grazing (or not



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A stand of buffelgrass treated with herbicide to control its spread and open up areas for native vegetation and wildlife that prefer diverse habitats.

grazing) to reduce or control exotic grasses remains unclear.

Perhaps the best strategy is to kill exotic grasses when they first appear in a pasture. This can be done by individual plant treatments with herbicides or aggressive repeated disking of newly invaded patches.

The jury is still out as to whether exotic grasses can serve as a substitute for the suite of native plants that provide the best habitat for quail because a small stand of exotic grass can turn into a major monoculture over time. It is extremely important to weigh the short-term benefits against setting the stage for long-term habitat degradation if and when exotic plants rapidly increase from a situation where they initially provide adequate nesting cover for quail to one where they become an impenetrable monoculture for the birds to use for anything. ~

What Do They Eat?

Atlantic spotted dolphins consume fish, squid, and invertebrates. (A Field Guide to Mammals of North America North of Mexico, F.A. Reid)

The black-spotted newt feeds on "seed shrimp (Ostracoda), small snails (Gastropoda), and insect larvae and eggs." (AmphibiaWeb: Information on amphibian biology and conservation. Berkeley, California: <http://amphibiaweb.org/>)

Visit our web page at
<http://www.ckwri.tamuk.edu>



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