

# Caesar Kleberg Wildlife Research Institute and Private Landowners: Partners in Research and Conservation

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## Introduction

Vast and diverse, South Texas provides an unparalleled outdoor laboratory for wildlife research. Extensive tracts of relatively undisturbed and unfragmented habitat on large ranches occur in the region bordered by the Laguna Madre on the east, Mexico on the west and south, and the Edwards Plateau on the north. The unique combination of large ranches and biological diversity in South Texas provided the backdrop for the evolution of an institution with a vision of working in concert with private landowners to study wildlife and their habitats. The Caesar Kleberg Wildlife Research Institute (CKWRI) was born with a grant in 1981 from the Caesar Kleberg Foundation for Wildlife Conservation. Caesar Kleberg was a pioneer in wildlife conservation in Texas and a member of the family that ran King Ranch, the largest private ranch in Texas. This new research institute was named in his honor.

The link between a private ranch and a wildlife research institute was a natural one for Texas. This relationship drives the philosophy of CKWRI and the Institute's dedication to wildlife conservation and advancing the science and art of wildlife management. The bedrock principle underlying the philosophy of CKWRI is that in Texas, wildlife and wildlife conservation do not exist without private landowners. Native wildlife is a public resource but decisions about wildlife habitat are made by landowners. How landowners manage habitat determines abundance, survival, and persistence of wildlife populations. Founders of CKWRI realized the critical importance of private lands to wildlife conservation. A philosophy that has existed since the inception of the Institute is that wildlife research must address the needs and values of landowners and that research should be done in partnership with landowners.

### **Dr. Fidel Hernandez discusses native grasses with a group of private landowners.**



Most conservation research in North America occurs on public lands rather than private lands. Private lands constitute >95% of the land surface of Texas and 70% nationally yet they are understudied (O'Brien et al. 2021). Thus, lack of research on private land creates a serious gap in our knowledge in the very places where most of the wildlife habitat in the United States is found. Even more concerning is the fact that research results on public land may differ from those derived on private land (O'Brien et al. 2021). Thus, conducting wildlife research on private lands with researchers working together with landowners promotes and encourages conservation of wildlife and biodiversity in the face of changing owners, changing land-use patterns, and changes in the land itself.

Texas provides a valuable outdoor laboratory for studying wildlife on private land in part because of the vast tracts of private land. Large, undeveloped and unfragmented tracts of land are critical to maintain wildlife and habitat diversity. South Texas is rich in diverse and unique wildlife and rangelands that support them. There are 625 species of vertebrates in South Texas and 281 species of woody plants and subshrubs. There are at least 1,558 vascular plant species in the Coastal Bend area alone.

Another reason South Texas is a critical outdoor laboratory is that more than 80% of 332 species of long-distance migrant bird species from across North America travel through the Texas Coastal Bend. South Texas is important for conservation of birds throughout much of North America because it provides critical stopover habitat for migrating birds and habitat for wintering birds. Without stopover and winter habitat, bird populations in much of North America would decline.

South Texas is also an ideal outdoor laboratory because wildlife recreation, especially hunting, bird watching, and wildlife photography, are culturally and economically



**Hooded oriole photographed by Breanna Green.**

important in the region. In addition, South Texas is an important laboratory for studying wildlife diseases and zoonotic diseases because of its proximity to the subtropics at the southern tip of the United States.

Rangeland science and management are strongly interwoven with wildlife research at CKWRI because of the interrelationships between vegetation, soils, and other habitat components and wildlife. Particularly important topics include fire ecology, brush management, grassland restoration, and livestock management.

CKWRI has undertaken a unique mission with its philosophy of conducting research that addresses the needs and values of private landowners in a region that provides an unparalleled outdoor laboratory. The goal at CKWRI has been to provide landowners and other land stewards the knowledge and tools they need to meet their objectives. Meeting that goal requires CKWRI scientists to build trust with landowners across the state. Our objective in this report is to assess how successful CKWRI has been in achieving its mission. Our assessment includes a brief history by decade, a review of ranches where CKWRI has conducted research, the geographic extent of research, and the number of species studied.

## Decade 1: 1980s

CKWRI started under the leadership of Dr. Charles DeYoung in the early 1980s. At that time, the location and faculty of CKWRI were not well known in the scientific community. Early research was localized in 1981 on 3 ranches in Brooks and Hidalgo counties. Five wildlife species were under study in addition to general work on waterfowl and habitat. Geographic extent and topical breadth of research had increased dramatically by 1985. In 1985, research was being conducted on 28 ranches in 17 counties that included 13 species and several species groups – non-game birds, small mammals, large mammals, and game birds. Although CKWRI lacked notoriety in the early 1980s, it held true to its philosophy of working closely with landowners.

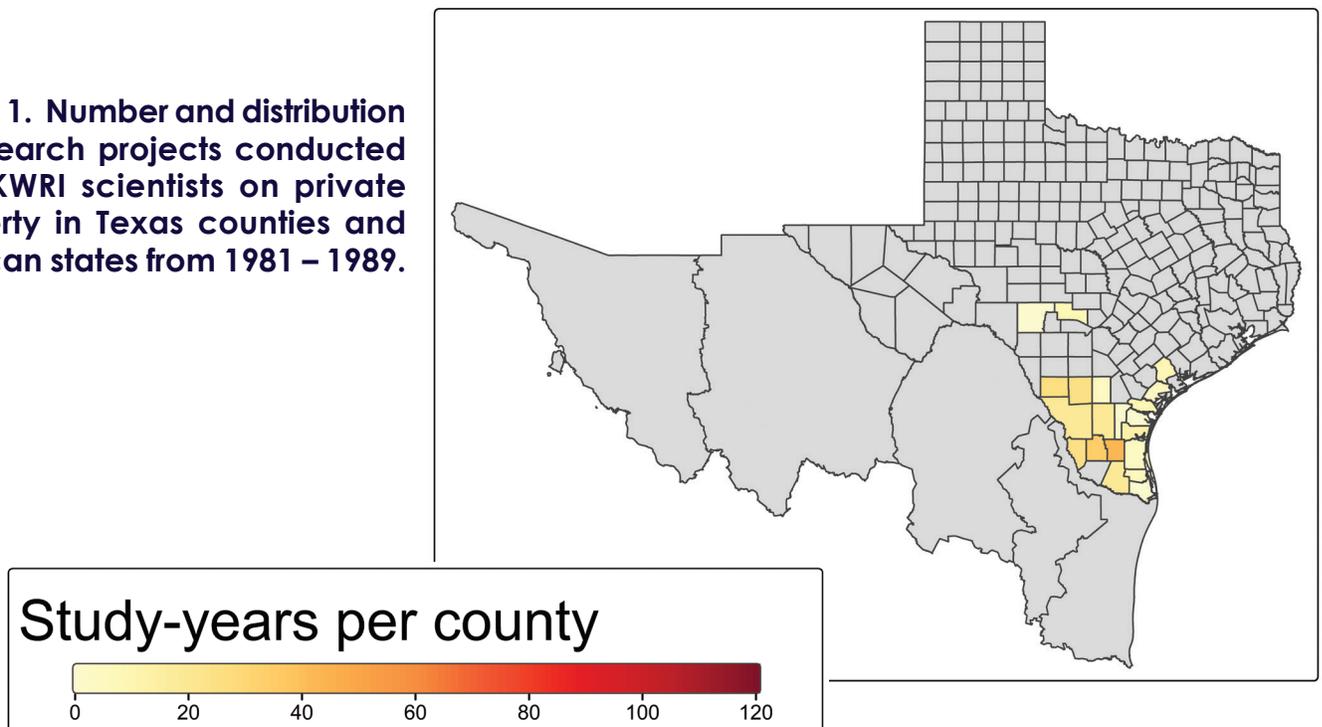
In 1984, Sam Beasom was named as CKWRI's director and an advisory board was formed. Most of the board members were landowners and leaders in the ranching community in South Texas. They were asked to recommend research topics and com-

ment on research that was being done. Appointment of an advisory board was a strong move toward addressing the goal of conducting research to meet the needs of landowners.

Cattle grazing systems were a major focus of research during the 1980s. Short duration grazing was an emerging grazing method that garnered considerable attention and controversy because there was no scientific evidence to support or refute the efficacy of the practice. Landowners were concerned about the effects of livestock concentrated in small paddocks and of extensive fencing on wildlife.

Bill Maltsberger was not only an innovative rancher, but was a keen observer of rangeland ecology. His father had root plowed brush in several areas of the ranch decades earlier. Bill noticed that the brush that reestablished on the old root plowed areas was not nearly as diverse as untreated brush. Bill's observations led to a series of studies by Sam Beasom, Tim Fulbright, and their graduate students on the long-term effects

**Figure 1. Number and distribution of research projects conducted by CKWRI scientists on private property in Texas counties and Mexican states from 1981 – 1989.**



of brush management on woody plant communities. Because of these studies, root plowing became recognized as a treatment to avoid by landowners wanting to maintain habitat diversity.

Use of food plots and supplemental feeding of deer were frowned upon by many wildlife biologists in the 1980s. However, interest among landowners in these topics was growing because of the potential to produce more deer and larger bucks. Sam Beasom recognized that CKWRI scientists may not agree with a management practice that a landowner was using, but they should research it to find out whether it is viable or not. Sam engaged landowners in the early 1980s that were interested in food plots for deer. A long string of studies on food plots ensued, first on the Rio Paisano ranch and then on El Tecomate Ranch. Various landowners shared their expertise and experiences regarding dry land farming and successfully growing food plots. This knowledge strongly improved the value of our food plot research.

Most landowners and range and wildlife managers were strongly in favor of planting exotic grasses during the 1950s - 1980s. Barry Roberts, a CKWRI advisory board member, shared a newspaper clipping with Tim Fulbright from the 1970s that talked about the value of buffelgrass for wildlife. However, some landowners and land managers that worked with CKWRI were skeptical about the ecological impacts of exotic grasses. Scientists at CKWRI started doing research on the ecological effects of exotic grasses during the 1980s despite considerable criticism by some colleagues. The tide has turned after more than 40 years and numerous studies. Today, exotic grasses are widely considered to be undesirable for wildlife.

By the end of its first decade, CKWRI scientists had conducted research on at least 48 different private ranches spread across 20 counties (Figure 1 and Table 1). Research included at least 19 different wildlife species, ranging from game species such as bobwhite quail and white-tailed deer to nongame species such as black-spotted newts. General research topics and species groups included exotic deer, gamebirds, habitat, large mammals, nongame birds, small mammals, and waterfowl. Habitat has remained an important topic of research since the inception of the Institute.

**Table 1. Private lands involved in CKWRI research from 1981-2024 and years research was conducted on each ranch. Table is continued on multiple pages.**

3H Ranch	2023-2024
Anacahuillas Ranch	2012-2013
Ann Williams Farm	1984-1985
Armstrong Ranch	2018-2020
Arroyo Ranch	2018-2021
AT Canales Ranch	2023-2024
Barnhart Ranch	2013-2016
Baylor Mountain Ranch	1993-1997
Beach Mountain Ranch	1993-1997
Black Mesa Ranch	2009-2010
Blanco Ranch	1986-1987
Bobby Clay Ranch	2015-2021
Buen Vecino Ranch	2012-2014
Buena Vista Ranch	2011-2024
Buena Vista Ranch-Cameron Co.	2018-2022
Cactus Jack Ranch	2011-2013
Calcasieu Ranch	1998-2000
Callaghan Ranch	1996-2009
Camaron Ranch	1984-1990
Campo Santa Maria (Mexico)	1996-1999
Carroll Beaman Estate	2022-2023
Cascabel Ranch	2015-2016
Chapote Ranch	1984
Colima Ranch	2018-2022
Cologne Ranch	2014-2017
Comanche Ranch	2003-2018
Concho's Quail Ranch	2018-2020 2022-2023

## Decade 2: 1990s

Geographic extent of research at CKWRI and species studied expanded during the 1990s (Table 1 and Figure 2). CKWRI researchers conducted research on 54 different ranches during the 1990s. These included ranches in 34 counties in Texas and private lands in Georgia and Mexico. The number of different species that were the subject of research projects increased to more than 47 (Table 2, p. 16). New species groups included insects, wading birds, and waterfowl (Table 3, p. 18).

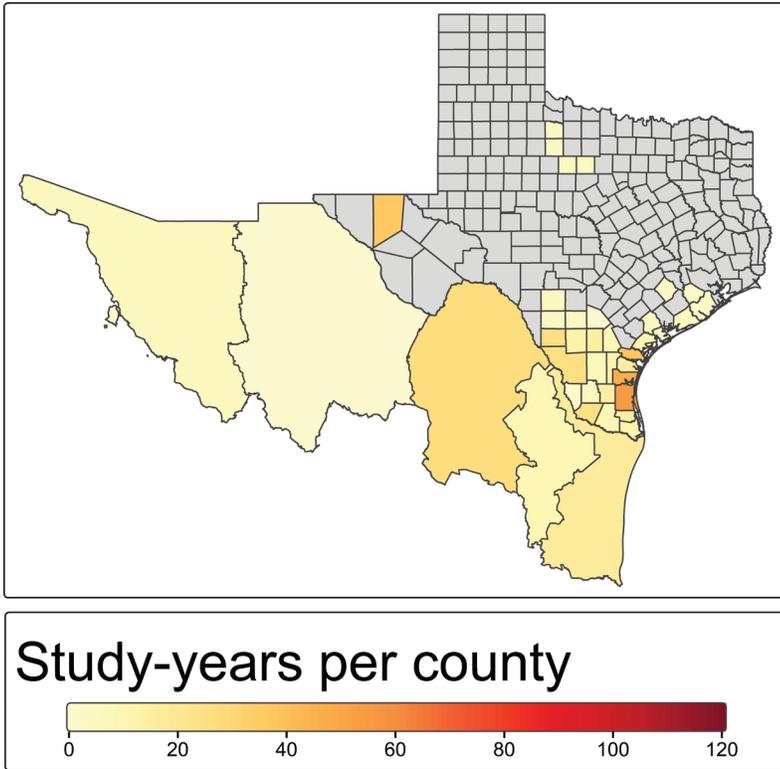
More research projects were conducted on ranches outside of South Texas in the

1990s than in the previous decade (Table 1). South Texas remained the focal point for research, however, several projects initiated during the 1990s included species not found in the region (Table 2). These species included black bears and jaguarundis in northern Mexico and desert bighorn sheep in the Trans-Pecos region of Texas. During the first 2 decades of CKWRI's existence, research projects had been conducted in 36 Texas counties (Figure 2).

One unique species that became the subject of several research projects during the second decade of CKWRI was the cactus ferruginous pygmy-owl. The tiny owl was

**A ferruginous pygmy-owl photographed in Kenedy County, Texas, by Tom Langschied.**





**Figure 2. Number and distribution of research projects conducted by CKWRI scientists on private property in Texas counties and Mexican states from 1990 – 1999.**

listed as endangered in Arizona in 1997. Status of the owl in South Texas was undocumented at the time. In response to the lack of information on the species, Dr. Sam Beasom led extensive research on the species in South Texas during the 1990s. His work showed that pygmy-owl populations on private lands were stable and were not threatened or endangered in the region. Interestingly, the status of the cactus ferruginous pygmy-owl is again being questioned, and CKWRI has initiated new studies on the species on private lands in South Texas.

Dr. Fred Bryant replaced Dr. Beasom as director of CKWRI in 1996. Dr. Bryant led the advisory board in becoming more active in fundraising for CKWRI. Involvement of the advisory board in fundraising was instrumental in growth of CKWRI. The Institute's endowment blossomed under his tenure. Dr. Bryant's leadership ushered in a phase of expansion of research and increasing prestige of CKWRI in the research community.

- Contigo Ranch  
2023-2024
- Cool Creek Cool Water  
2022-2024
- Corbett Ranch  
1987-1991  
1999-2000  
2003-2004
- Corn Ranch  
1993-1997
- Cypress Creek Ranch  
2014-2017
- D Bar J Ranch  
2014-2019
- David Garza Laguera Ranch (Mexico)  
1990-1991  
1996-2002
- Del Charco Ranch  
1995-1996
- Delafosse Ranch  
1996-1998  
2013-2015
- Delores Ranch  
1984
- Des Woods Ranch  
1984-1985
- Dietert Ranch  
2013-2017
- Dobbs Run Ranch  
2014-2019
- Dolores-Needmore Ranch  
2018-2021
- Double D Ranch  
2023-2024
- Driscoll Ranch  
1987-1989
- Dunn-O'Connor River Ranch  
2018-2019
- DuPont Site  
1993-1996
- Durham Land and Cattle (Oklahoma)  
2022-2023
- Duval County Ranch  
2019-2020
- East El Sauz Ranch  
2010-2024
- El Canelo Ranch  
1995-1996
- El Coyote Ranch  
2004-2005  
2008-2009  
2019-2020  
2022-2024
- El Gato Del Monte Ranch  
2013-2019
- El Milagro Ranch  
1986-1988
- El Montelongo Ranch (Mexico)  
1992-1993
- El Panal Ranch  
1996-1998  
2004-2006

### Decade 3: 2000s

CKWRI increased its outreach efforts to private landowners during the decade of the 2000s through new programs including quail associates and deer associates. Quail Associates was created in 2000 by Dr. Fred Bryant and Dr. Lenny Brennan with the objective of conducting research on South Texas quail that engages and benefits landowners and managers. Data collected by landowners were used to reveal numerous interesting and important facts about quail populations. These included the importance of adequate bunchgrass cover for quail reproduction and the need for large, contiguous tracts of habitat to maintain genetic diversity and viable populations.

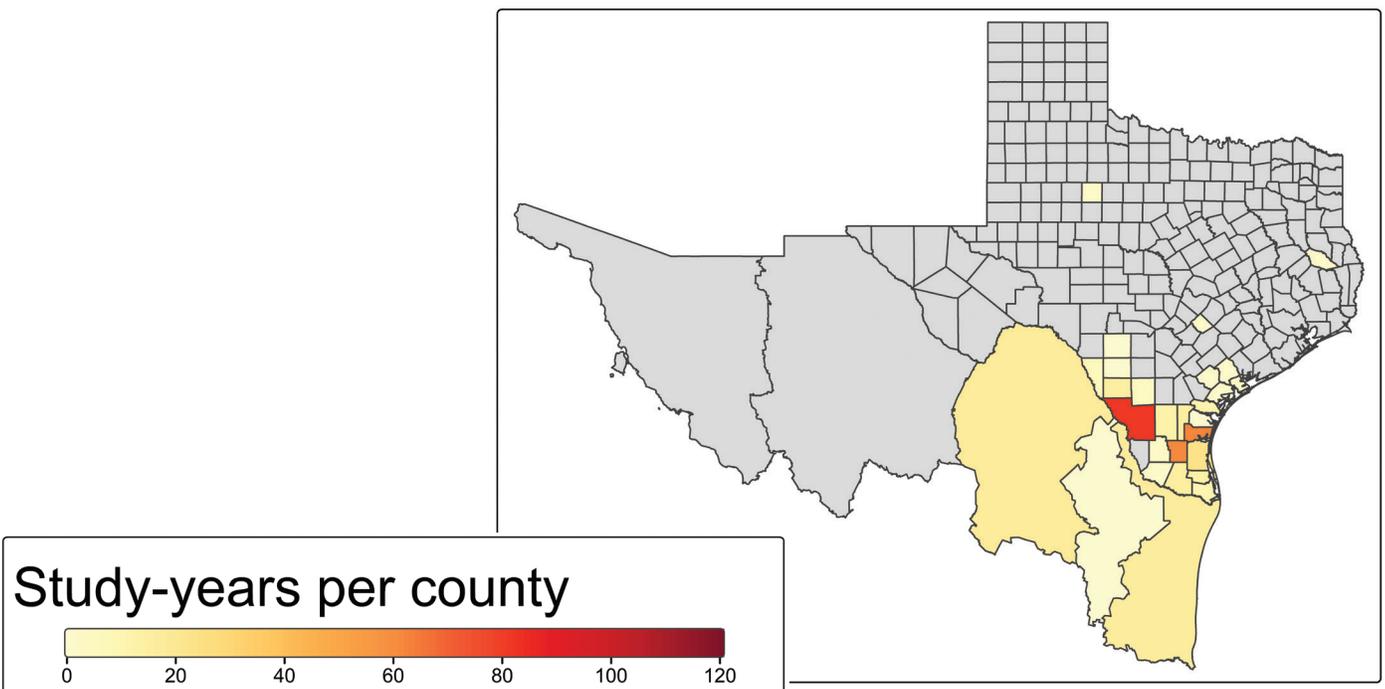
Deer Associates was also created by Dr. David Hewitt during the decade of the 2000's. Deer Associates meetings, now called Deer Research meetings, have been held annually since its inception, and hundreds of landowners and private-land managers have attended the meetings to learn

the latest information on deer management. Quail Associates along with Deer Associates are great examples of the outreach and partnership with private ranches and ranch managers that are central to the philosophy and mission of CKWRI.

Research projects were conducted by CKWRI scientists on 41 different private ranches during the 2000s (Table 1). Studies were conducted in 25 Texas counties and involved more than 24 different wildlife species (Table 2). Habitat studies became an increasingly important focus of CKWRI with the development of South Texas Natives.

Research at CKWRI during the 1980s and 1990s on the effects of exotic grasses on wildlife pointed to the need for native plants for revegetation and rangeland plantings in Texas. Seed available for large-scale habitat restoration during the 20th century was that of exotic plant species. Seeds of localized native plants were either not available or were ecotypes developed in northern latitudes that were not adapted to South Texas.

**Figure 3. Number and distribution of research projects conducted by CKWRI scientists on private property in Texas counties and Mexican states from 2000 – 2009.**



Demand for native seeds was growing because landowners and land managers were becoming more aware of CKWRI research that illustrated the pitfalls of planting exotic plants for wildlife. Dr. Bryant led the development of South Texas Natives, a program dedicated to producing seeds of native plants and making them available to landowners through commercial seed companies. The program grew rapidly and expanded statewide to become Texas Native Seeds. Texas Native Seeds has greatly increased the abundance and diversity of native plant materials commercially available to Texas landowners and is a leading entity in habitat restoration. Since its inception, South Texas Natives and later Texas Native Seeds has collected grass and forb seeds from over 500 private ranches in at least 200 Texas counties.



Cattle tick fever is a major threat to the ranching industry along the border between the United States and Mexico. White-tailed deer are viable hosts of the ticks that transmit the disease and CKWRI scientists discovered that nilgai are also viable hosts. If ticks become locally established in the United States, wildlife complicate efforts to eradicate the tick. CKWRI scientists began studying movements of deer and nilgai in relation to spread of ticks in the early 2000s. Research on fever ticks and control methods continued for the next 20 years. This research helped the USDA refine techniques to control ticks on wildlife, showed the potential of wildlife to spread ticks, and showed interactions between livestock and wildlife important in designing tick-control strategies. This information made tick control less onerous for landowners, although the presence of cattle fever ticks on a ranch is still disruptive.

- El Sauz Ranch  
1996-1998  
2005-2007  
2017-2019
- El Tecomate Ranch  
1990-1996
- El Toro Ranch  
2018-2019
- El Veleno Ranch  
2013-2014  
2017-2019
- Elzita Ranch  
2018-2019  
2023-2024
- Encinitos Ranch  
2004-2005
- Eschleman-Vogt Ranch  
2001-2002  
2004-2005  
2012-2016
- Esperanza Ranch  
1984-1990
- Faith Ranch  
1984-1998  
2002-2024
- Falcon Point  
2004-2007  
2009-2010
- Floyd Ranch  
2004-2005  
2008-2009
- Fort Davis Ranch  
2013-2015
- Freeborn Ranch  
1994-1996
- Frick properties  
2018-2022
- Fulbright-Hinnant Ranch  
1986-1987
- Galvan Ranch  
1984  
1996-2000
- Goldsmith Solar Farm  
2020-2022
- Green Ranch  
1996-1998
- Harle Ranch  
2012-2015
- Harrel Nix Property  
1988-1989
- Harris Ranch  
1996-2000
- Helena Energy Center  
2023-2024
- Hixon Ranch  
2008-2024
- Hoffman HC 30 Ranch  
2013-2014  
2017-2019
- Indian Creek Ranch  
2014-2017

## Dr. Charles DeYoung: Long-term research program at the Faith Ranch

"There was a lot of interest in the early 1980s in 'cell grazing' for cattle. Stuart Stedman, whose family owned the Faith Ranch near Carrizo Springs, wanted to explore how this practice affected deer. He contacted the manager of an adjoining ranch and asked if he knew of a professor that did that type of research. At the time I was on a hunting lease on the manager's ranch and he recommended me to Stuart. After he contacted me, I went to Austin and had dinner with Stuart and he agreed to fund a research project on cell grazing and deer. That project did not work out, but in 1984 we started long-term buck captures on Faith Ranch."

The exchange of ideas between Stuart and CKWRI researchers led to cooperative deer research on Faith Ranch with Stuart's support that continues today.

The conventional paradigm underlying white-tailed deer management in North America assumes that they are density dependent. Density dependent means that characteristics of the population such as reproductive success, survival, and productivity depend on population density. Previous studies by Dr. Charles DeYoung suggested density dependence may not be expressed as strongly in the semiarid and variable environment of western South Texas as in other portions of the species' range. With the support of private landowners Dan Friedkin and Stuart Stedman, CKWRI scientists set out to test density dependence theory in 2003. The important message for landowners and wildlife managers from this research was that harvest of deer in the region is additive mortality; deer do not compensate for animals harvested by increasing fawn production and survival. Harvest of females, a standard practice on many South Texas ranches, is often unnecessary.

Another aspect of this 15-year research effort was supplemental feeding. Results of the study showed that nutritional quality of native vegetation in South Texas brushland is relatively low most of the time. Regardless of density, bucks that were supplementally fed had antlers with 16% greater gross Boone and Crockett scores than those that were not supplementally fed. Fawn production was also boosted with supplemental feed. Study results showed the benefits and the drawbacks of supplemental feeding, providing private landowners with the information needed to decide if supplemental feeding fits with their management goals.

Researchers at CKWRI set up a long-term project on northern bobwhites in the early 2000's on the Encino Division of the King Ranch. Conventional wisdom among quail biologists during the 20th century was that bobwhites did not need much brush. Many biologists felt that 5% cover of brush was adequate, an opinion that led to a lot of brush



**Charlie DeYoung and Stuart Stedman in one of many conversations about wildlife conservation. Photo by Wack Eckell.**

clearing in South Texas to “improve” habitat for bobwhites. Researchers and students from CKWRI compared bobwhite abundance and persistence and found that bobwhite abundance was 2-3 times greater with 11 or 32% brush cover than with 5% cover. Brushy areas were particularly important during drought, a frequent occurrence in South Texas. Results of the study ushered in a new way of thinking about bobwhite habitat management on private ranches.

## Decade 4: 2010s

In its fourth decade, CKWRI research experienced major geographic expansion and an increase in the number of wildlife species studied. Researchers at CKWRI conducted studies on 98 different private ranches during the decade of the 2010s (Table 1). These included ranches in 61 Texas counties as well as Mexico and New Mexico (Fig. 4). Research subjects included 33 different wildlife species in addition to habitat, nongame birds, and waterfowl. Dr. David Hewitt replaced Dr. Bryant as director in 2017 ushering in a new era at CKWRI.

A milestone during the 2010s was formation of a partnership between CKWRI and the East Foundation of San Antonio, Texas. The East Foundation was created with the last will and testament of Robert East, a prominent South Texas rancher. The partnership resulted in research on East Foundation ranches, which total 217,000 acres. Because East Foundation properties are working cattle ranches, research conducted on these ranches produces results that are pertinent to Texas ranchers and private landowners.

Researchers at CKWRI confirmed the critical importance of the coastal bend for neotropical migrants using radar technology during the 2010s. The Laguna Madre is an important wintering area for redhead ducks. Inland freshwater ponds are important to redheads because they need to drink large amounts of freshwater to purge their bodies of high salt loads consumed while feeding on shoalgrass in saltwater environments. CKWRI researchers found that wind farms alter use of inland freshwater ponds by redheads.

Indio/Faith Ranch	2013-2014
	2017-2019
	2022-2024
Jennings Ranch	1984-1985
	1987-1988
JF Welder Ranch	2015-2017
Jones Borregos Ranch	2001-2002
	2012-2013
	2016-2021
Jones Center (Georgia)	2019-2021
Kenedy Ranch	1986-1988
	1993-1997
	2018-2020
	2022-2024
Kenemer family property	2018-2022
King Ranch	1983-2024
Knapp Ranch	1995-1996
L7 Ranch	2013-2014
La Campana Ranch	1987-1993
La Ceniza Ranch	2014-2016
La Golandrina Ranch	2013-2015
La India Ranch	2008-2009
La Paloma Ranch (Mexico)	1993-1997
	2001-2002
	2004-2005
	2008-2009
	2012-2013
	2020-2024
La Paloma Ranch	1987-1988
	1995-1996
La Puerta Ranch	1987-1988
La Rucia Ranch	1989-1990
Laborcitas Creek Ranch	2004-2005
	2010-2012
Las Palmas Ranch	2013-2014
Las Raices Ranch	1989-1990
Las Vivoritas Ranch	2023-2024
Lipps Ranch	2015-2021

Scaled quail populations in South Texas have declined at a rate of about 2.9% per year since 1980. Several studies during the 2010s focused on determining causes for the decline. Scientists at CKWRI found that scaled quail avoid areas dominated by exotic grasses. They also found that thermal cover, woody vegetation that provides shade, is critically important for survival of scaled quail during summer. Increase of exotic grasses and brush clearing likely contributed to the decline of the species.

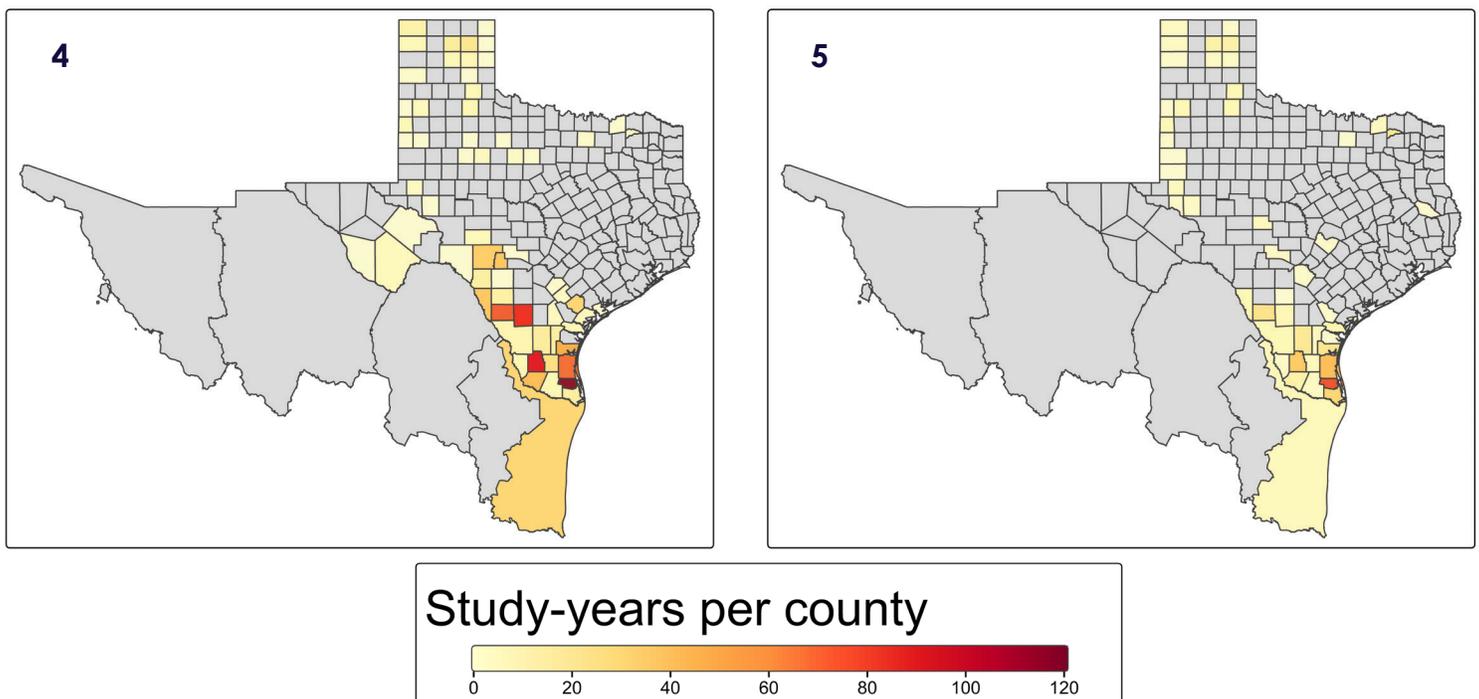
Expansion of CKWRI research into north Texas during the 2010s included projects on mule deer and pronghorns in the Texas Panhandle. Private landowners in the region wanted to know more about the interaction of these big game species with crops. Farmers were concerned about crop depredation. Important findings included that, when cropland was available, an estimated 63% of the mule deer population selected winter wheat during the months immediately following breeding. Cropland use by mule deer declined when the density of cropland exceeded 20% of the land area.

Pronghorn generally avoided cropland in the Texas Panhandle although they temporarily used crops such as winter wheat when available. Roads and fences were barriers to pronghorn movement. Results suggested that although crops may provide temporary benefits, continued cropland expansion in the Texas Panhandle causes loss of key habitat and will negatively impact pronghorns in the long term.

### Decade 5: 2020s

Research programs at CKWRI continued to expand in the early 2020s. Expansion included pronghorn studies in Oklahoma and increased work in carnivore ecology. In the first 5 years of the decade, studies were conducted in 46 Texas counties on 28 wildlife species, as well as habitat, small mammals, reptiles, nongame birds, and insects. Use of new technology in wildlife research will, and has, shed new light on old questions and will make scientists rethink past conclusions. For example, remember the research during the

**Figures 4 and 5. Number and distribution of research projects conducted by CKWRI scientists on private property in Texas counties and Mexican states in the 2010s and 2020 through 2024, respectively.**



1980s that showed that root plowing is bad for deer? Recent analysis of data from GPS-collared deer on the Laureles Division of the King Ranch showed that they selected root-plowed areas over brush-dominated areas during the middle of the day. This counter-intuitive finding is likely because humidity is high along the coast, and shade where its humid doesn't cool as much as shade where its dry. On top of that, the coast has a constant sea breeze – standing in the open in a breeze has a cooling effect. So, how does root plowing affect deer? Well, it's complicated. That is what science is all about, learning new things and rethinking old ideas. That is why CKWRI scientists tirelessly try to learn more about our natural world and its wonders.

## Conclusion

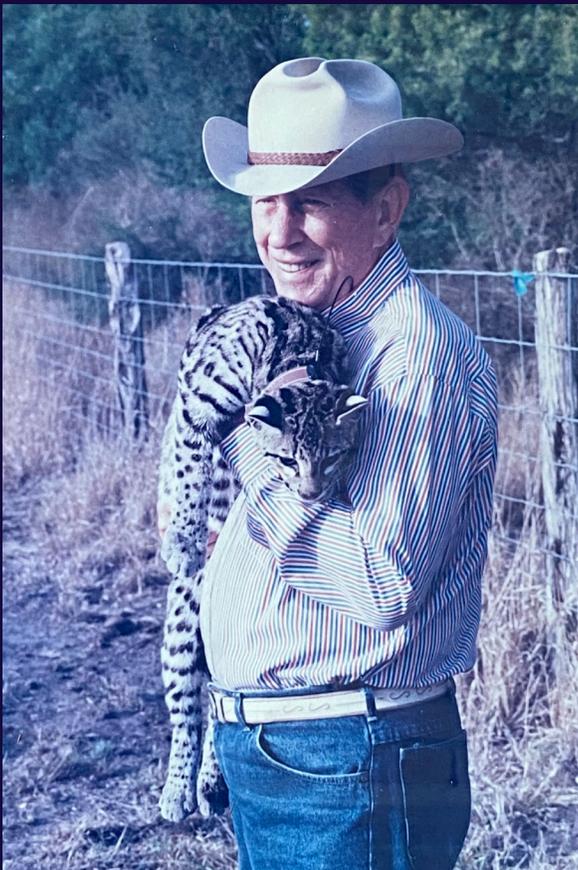
CKWRI scientists have conducted research on more than 200 different private properties since the inception of the institute (Table 1). This statistic is strong evidence that CKWRI has stuck to its philosophy that wildlife research must address the needs and values of landowners. Ranches where CKWRI scientists have conducted research include properties in 84 Texas counties, New Mexico, Oklahoma, and Florida, in addition to the Mexican states of Tamaulipas, Chihuahua, Coahuila, and Nuevo Leon (Figure 5). Studies have included more than 72 different wildlife species (Table 2). In addition, studies have focused on native and exotic plants, other aspects of wildlife habitat, and groups of species such as amphibians, insects, nongame birds, reptiles, wading birds, and waterfowl (Table 3). Many ranches have a long history of CKWRI research. For example, research projects have been ongoing on the King Ranch and Faith Ranch for more than four decades.

A research program based on a strong partnerships with private landowners has an impact broader than the knowledge that is generated. Over 400 graduate students have pursued MS and PhD degrees at CKWRI. Each of these students does a research project and most of the projects have an intersection with private lands. These students leave CKWRI with an understanding of the importance of private lands and how to work with private landowners. This understanding makes them more effective in their jobs to

Long Ranch	1989-1990
Longer Ranch	1986-1989 1994-1995
Longfellow Ranch	2009-2010
Los Compadres	2023-2024
Los Ebanos Ranch (Mexico)	1989-2014
Los Ebanos Vitro Ranch (Mexico)	1999-2000
Los Picachos Ranch (Mexico)	1992-1993
Lucas Ranch	2014-2016
Macaque Observatory	1996-1998
Maltsberger Ranch	1984-1985 1994-1995
Marathon Manufacturing lease	1984-1987
Mariposa Ranch	1981-1982
Marshall Pond Farm	1988-1989
McFaddin Ranch	1984-1988
McGill Ranch	1984-1985
McNeil-Haas Ranch	1993-1997 1999-2000
Mesquite Ranch	1984-1985
Miller Ranch	1981-1982 1984-1985 2009-2010
Miramar Ranch (Mexico)	2008-2010 2014-2015
Montgomery Ranch (Oklahoma)	2022-2023
Mott Creek Ranch	2009-2010
NewAgra Ranch	1993-1996
Newby Ranch	2014-2017
Newell Ranch	1996-1998
Noble Foundation (Oklahoma)	2020-2021
North West Panhandle Ranch	2009-2010
Nueces Ranch	2013-2015
O'Connor River Ranch	2015-2017

## Dr. Mike Tewes: Ocelot conservation on Frank Yturria's San Francisco Ranch

Mr. Frank Yturria, a prominent South Texas rancher, was an early supporter of the Kleberg Institute's ocelot research and conservation program. Michael Tewes visited the San Francisco Ranch in 1983. At that time, Mr. Yturria expressed support for ocelot conservation and stopped clearing his last 500 acres of relict prime ocelot thornshrub called "El Jardin," or Spanish for "the Garden." Over the years, the Yturria Family established most of the ranch, almost 10,000 acres, into a conservation easement with the goal of significantly expanding the ocelot population in the US. In addition, the Frank Daniel Yturria Endowed Chair in Wild Cat Studies will be a perpetual source of funding to promote ocelot recovery in Texas. The Yturria Family continues to champion ocelot research and conservation, in both words and actions.



**Frank Yturria holds an ocelot that has just been fitted with a tracking collar.**

conserve wildlife and its habitat. Understanding private lands also makes CKWRI alumni more employable because landowners, agencies, and non-governmental organizations all recognize the value of employees who understand private lands and private landowners. CKWRI alumni work in 44 states where they share their respect for private land and its role in wildlife conservation.

Researchers at CKWRI have completed many long-term studies, some of which would have been impossible to conduct on public land and others which would normally be exceedingly difficult to conduct on private land. One that would have been difficult on public land focused on white-tailed deer, the most popular game species in Texas. Another, which normally would have occurred on public land because of landowner concerns about endangered species, involved a critically endangered cat species, the iconic ocelot.

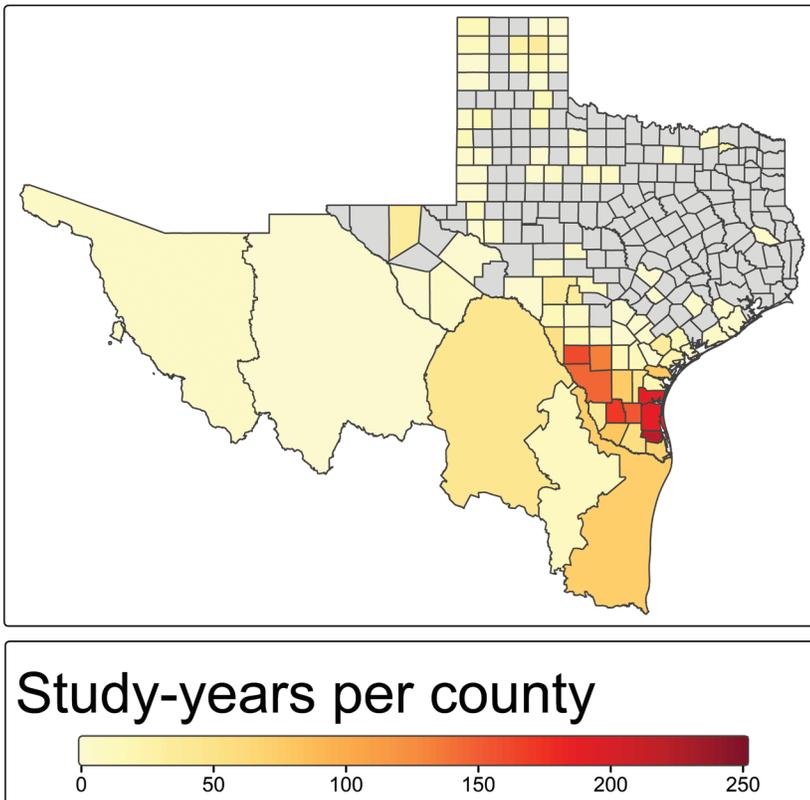
Conventional wisdom among wildlife managers in Texas is that culling of poor-quality bucks will improve overall antler size of bucks in a population. CKWRI scientists spent 15 years determining if culling poor-quality bucks improves overall antler size. They found that antler heritability is weak, especially in young bucks. Nutrition is the factor that primarily determines antler size. This study demonstrated that harvesting bucks with small antlers will have little effect on the genetic propensity of bucks in future generations to grow large antlers. Like findings on the amount of brush needed to support quail populations, this finding on the effects of buck culling is revolutionary for wildlife management in South Texas and beyond.

Ocelot ecology has been an important topic of research at CKWRI since its inception. Research on ocelots has included projects on private lands in Texas and in the state of Tamaulipas in Mexico. One of the key ranches for ocelot research in the early years of CKWRI was the Yturria Ranch owned by the late Frank Yturria. In recent years,

ocelot populations have been discovered on East Foundation properties. About 80-100 individuals of the endangered cat remain in Texas. Researchers at CKWRI have worked diligently to determine ways to conserve the species, such that nearly all knowledge of ocelot ecology in the United States came from CKWRI research. This knowledge has been the basis of conservation efforts with the Texas Department of Transportation to reduce collisions between automobiles and ocelots. It is also informing efforts to establish an ocelot population in a remote area of the East Foundation's San Antonio Viejo Ranch, expanding the current range of the species and reducing threats from hurricanes, roads, and disease.

The degree to which CKWRI has benefitted wildlife conservation in Texas since 1981 is as extensive as it is immeasurable. Private lands, landowners, and ranchers have opened their gates to CKWRI researchers. The resulting partnership between researchers and landowners has ensured that the work done addresses important issues and provides lasting benefit to the people, wildlife, and wild places of Texas.

**Figure 6. Number and distribution of research projects conducted by CKWRI scientists on private property in Texas counties and Mexican states from 1981 – 2024.**



- Osuna Ranch (Mexico)  
1990-1991  
1996-2002
- Paisano Ranch  
1990-1993
- Palomas Ranch  
1987-1988
- Patio Ranch  
1984-1985
- Perkins Prothro Ranch (Oklahoma)  
2022-2023
- Piloncillo Ranch  
1989-1990  
2001-2002  
2008-2009
- Railway Ranch  
2013-2015  
2017-2020  
2022-2023
- Rancho Blanco  
1988-1989  
2010-2013
- Rancho Comotal (Mexico)  
2011-2012  
2014-2021
- Rancho Carocal (Mexico)  
2008-2021
- Rancho Catamol (Mexico)  
2020-2021
- Rancho Cazadores  
2023-2024
- Rancho del Charco  
1991-1995
- Rancho El Carrizo  
1993-1996
- Rancho El Rincon (Mexico)  
1991-1994
- Rancho Isabella  
2023-2024
- Rio Bravo Ranch  
2013-2014  
2017-2019  
2022-2024
- Rio Costero Ranch  
2017-2022
- Rio Farms  
2008-2013
- Rio Grande LNG Company  
2021-2024
- Rio Paisano Ranch  
1984-1985  
1988-1991  
1993-1994
- Riverby Ranch  
2018-2024
- Roche-Thompson Ranch  
1992-1993
- Rockefeller Ranch  
1984-1985
- Rocking G Ranch  
2015-2021

**Table 2. Animal species researched by CKWRI scientists on private lands from 1981 through 2024 by decade.**

Decade 1: 1981-1990	Northern pygmy mouse	Gray fox
Barn owl	Ocelot	Hog-nosed skunk
Black-spotted newt	Raccoon	Jaguar
Blackbuck antelope	Sandhill crane	Jaguarundi
Cattle	Scaled quail	Lesser prairie-chicken
Collared peccary	Scissor-tailed flycatcher	Margay
Coyote	Snipe	Montezuma quail
Feral pig	Turkey	Mountain lion
Grackle	White-fronted dove	Mule deer
Ground dove	White-tailed deer	Nilgai
Mourning dove	White-winged dove	Northern bobwhite
Nilgai	Whooping crane	Ocelot
Northern bobwhite	Wood rat	Pronghorn
Ocelot	Wood stork	Raccoon
Pintail		Redhead
Scaled quail	Decade 3:2001-2010	Scaled quail
Turkey	American kestrel	Striped skunk
White-fronted dove	Attwater's prairie chicken	Texas Horned Lizard
White-tailed deer	Axis deer	Texas tortoise
White-winged dove	Black bear	Turkey
	Bobcat	White-tailed deer
Decade 2: 1991-2000	Cooper's hawk	White-tailed hawk
American kestrel	Crested caracara	
Anteater	Fallow deer	Decade 5: 2021-2024
Axis deer	Feral pig	Badger
Bighorn sheep	Great horned owl	Bobcat
Black bear	Harris' hawk	Butterflies
Black-bellied whistling-duck	Jaguarundi	Cattle
Black-tailed jackrabbit	Loggerhead shrike	Collared peccary
Bobcat	Nilgai	Coyote
Brown-crested flycatcher	Northern bobwhite	Deer mouse
Cactus ferruginous pygmy-owl	Northern harrier	Diamondback rattlesnake
Coati	Ocelot	Domestic cat
Collared peccary	Red-tailed hawk	Feral pig
Cottontail	Redhead	Fulvous harvest mouse
Coyote	Texas indigo snake	Gray fox
Feral pig	Turkey	Hispid cotton rat
Fulvous harvest mouse	White-tailed deer	Jaguar
Grackle	White-tailed hawk	Jaguarundi
Harris' hawk	White-winged dove	Margay
Hog-nosed skunk		Mountain lion
Jaguar	Decade 4: 2011-2020	Mule deer
Jaguarundi	Attwater's prairie chicken	Nilgai
Japanese snow monkey	Axis deer	Northern bobwhite
Loggerhead shrike	Badger	Northern pygmy mouse
Margay	Blue-winged teal	Ocelot
Masked bobwhite	Bobcat	Pronghorn
Merriam's kangaroo rat	Butterflies	Raccoon
Mottled duck	Cattle	Scaled quail
Mountain lion	Collared peccary	Striped skunk
Mourning dove	Coyote	Texas tortoise
Nilgai	Fallow deer	Turkey
Northern bobwhite	Feral pig	White-tailed deer
Northern harrier	Fire ant	

**The use of advanced technology, such as high-resolution remote sensing imagery on drone platforms, has become increasingly important in CKWRI research. Photo by Rupesh Maharjan.**



Rolling Plains Quail Research Ranch  
2006-2007  
2015-2017  
Rooke Scanio Ranch  
1989-1990  
Royal D Ranch  
2019-2023  
Russell Ranch  
2017-2022  
Salteador Ranch  
1998-2011  
San Antonio Viejo Ranch  
2011-2024  
San Christoval Ranch  
2013-2016  
San Jose Ranch  
2022-2024  
San Juan Ranch (Mexico)  
1992-1993  
San Pedro Ranch  
2014-2016  
2021-2024  
San Vincente Ranch  
1984-1988  
San Ysidro Ranch  
2014-2021  
Sandbrock Ranch  
2017-2020  
Santa Maria Ranch  
1998-2009  
Santa Rosa Ranch  
2011-2024  
Santa Teresa Ranch (Mexico)  
1999-2000  
Santo Domingo Ranch (Mexico)  
1999-2000  
Sharp Ranch (Oklahoma)  
2022-2023  
Shield Ranch  
2022-2024  
Shining Ranch  
2008-2010  
South Fork Ranch  
1983-1985  
Southern M Ranch  
2023-2024  
Storey Ranch  
2011-2015  
Sulphur Bluff Ranch  
2018-2022  
Sweden Ranch  
2002-2006  
2018-2023  
Tecolote Ranch  
2003-2005  
2023-2024  
Temple Ranch  
2004-2005  
2009-2014  
2017-2019  
Tepeguaje Ranch  
1984-1989

**Table 3. Topics and species groups researched from 1981 through 2024 at CKWRI.**

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Decade 1: 1981-1990	Decade 4: 2011-2020
Exotic deer	Amphibians
Game birds	Habitat
Habitat	Insects
Large mammals	Nongame birds
Nongame birds	Reptiles
Small mammals	Small Mammals
Waterfowl	
Decade 2: 1991-2000	Decade 5: 2021-2024
Biodiversity	Habitat
Habitat	Insects
Insects	Nongame birds
Mycotoxins	Pollinators
Nongame birds	Reptiles
Small mammals	Small mammals
Wading birds	
Waterfowl	
Decade 3: 2001-2010	
Habitat	
Insects	
Nongame birds	
Raptors	
Small mammals	

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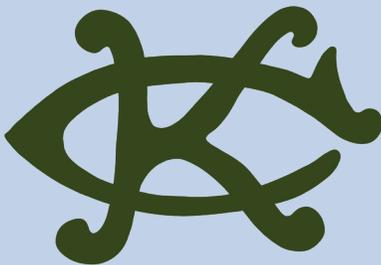
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Tijerina Ranch  
2018-2019  
Torel Wildlife Refuge  
1984-1985  
Toyota Motor Manufacturing  
2022-2024  
Transition Ranch  
2014-2017  
Trapiche Ranch  
2013-2014  
2017-2019  
Tres Corrales Ranch  
1984-1985  
Tularosa Ranch  
2014-2017  
Turkey Ranch  
2013-2014  
Turkey Track Ranch  
2015-2021  
Vidauri Ranch  
2006-2007  
2018-2019  
Wagner Ranch  
2012-2016  
Welder Dobie Ranch  
1984-1988  
1994-1997  
2011-2013  
Welder McCann Ranch  
1984  
1989-1990  
Welder Wildlife Refuge  
1983-1985  
1987-1999  
2001-2007  
2009-2014  
2019-2024  
West Wind Ranch  
1998-2000  
Winston 8 Ranch  
2023-2024  
Woods Ranch  
1984-1985  
Worth Farms  
2022-2023  
YO Ranch  
1983-1985  
Yturria Ranch  
1981-1985  
1987-1991  
1993-2000  
2002-2016  
2018-2024  
Zacatosa Ranch  
2018-2021  
Zachry Randado Ranch  
1984-1990



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*The fund is established by me because of my belief in the great importance of the conservation of wildlife and its beneficial effects on the health, habits, and character of the American people.*

Caesar Kleberg, 1939

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