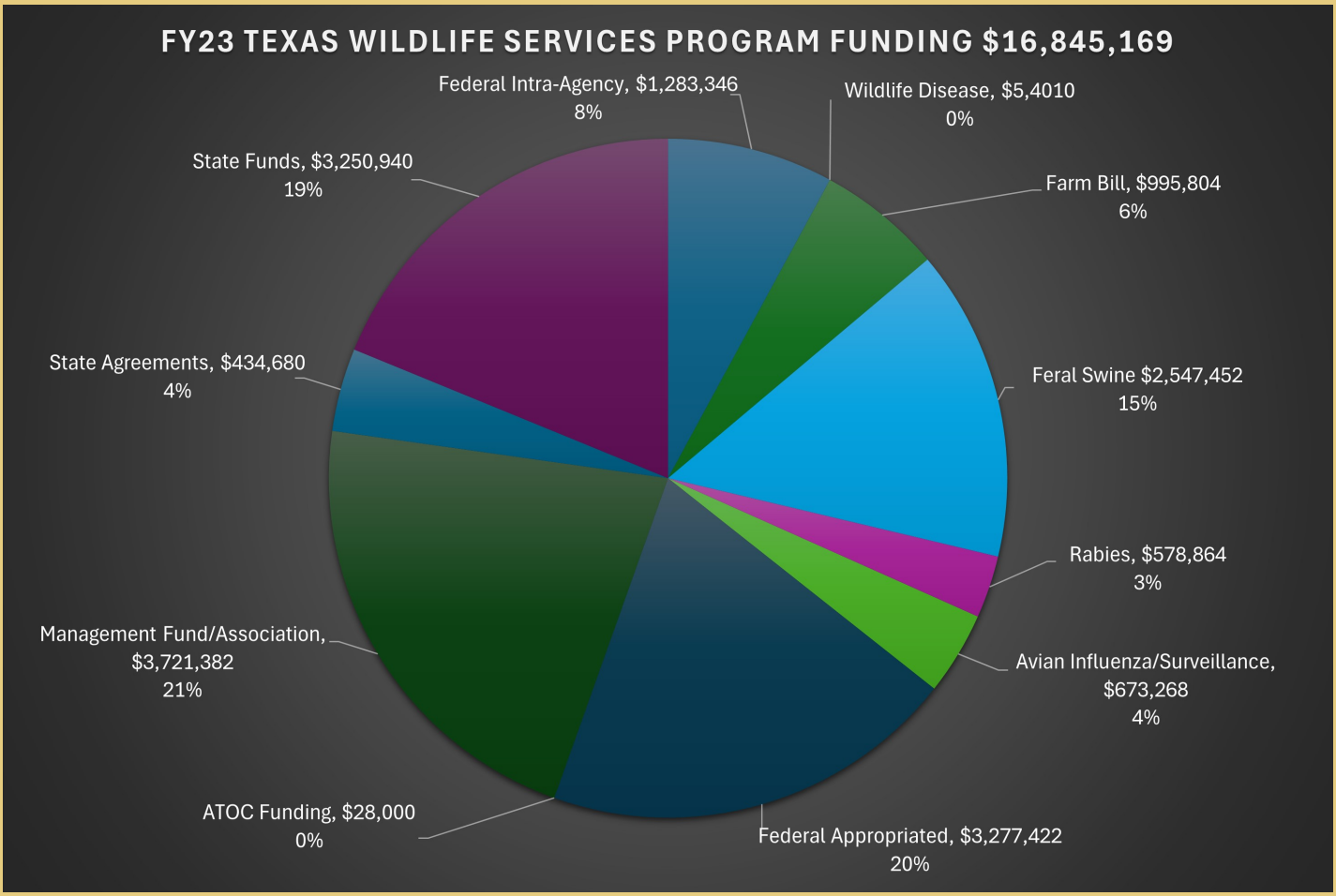
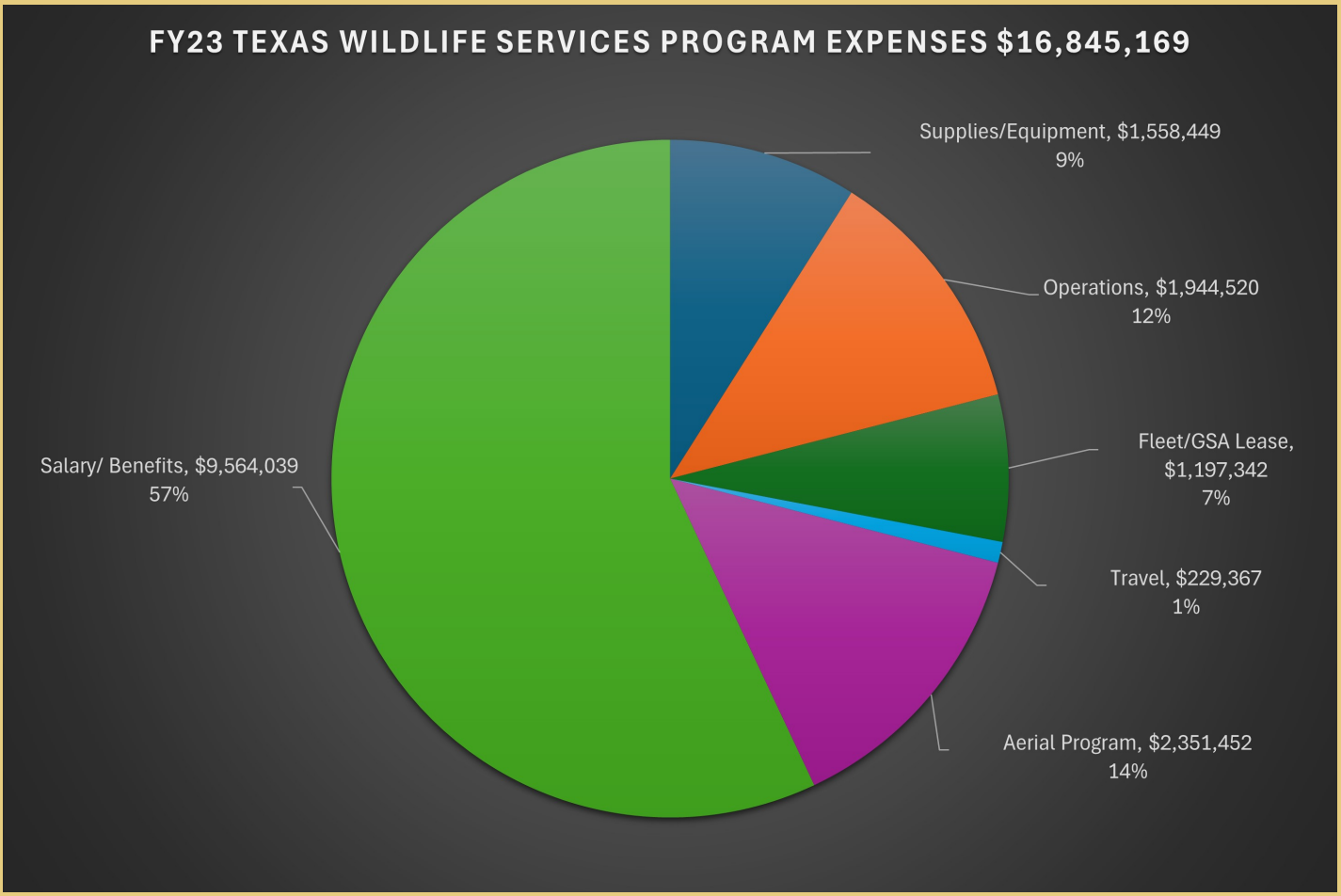
2023 STATE REPORT

Texas Wildlife Damage Management Association

Texas A&M AgriLife Extension Service

USDA-Animal & Plant Health Inspection Service—Wildlife Services


FY23 TEXAS WILDLIFE SERVICES PROGRAM FUNDING $16,845,169
Federal Intra-Agency, $1,283,346
8%
Wildlife Disease, $5,4010
0%
State Funds, $3,250,940
19%
Farm Bill, $995,804
6%
State Agreements, $434,680
4%
Feral Swine $2,547,452
15%
Rabies, $578,864
3%
Management Fund/Association,
$3,721,382
21%
Avian Influenza/Surveillance,
$673,268
4%
ATOC Funding, $28,000
0%
Federal Appropriated, $3,277,422
20%


FY23 TEXAS WILDLIFE SERVICES PROGRAM EXPENSES $16,845,169
Supplies/Equipment, $1,558,449
9%
Operations, $1,944,520
12%
Fleet/GSA Lease,
$1,197,342
7%
Salary/ Benefits, $9,564,039
57%
Travel, $229,367
1%
Aerial Program, $2,351,452
14%

State of the Lonestar State

A message

Like the rest of the world in the post-COVID era, Wildlife Services has seen an incredible amount of change in the past two years. There is value in spending time to highlight some of those changes and think about how to adapt to remain relevant in the future:

As COVID changed the landscape for human health, wildlife-borne diseases are changing the animal health industry, which in turn affects livestock production. The threat of a foreign animal disease and the associated trade implications forces the US to conduct aggressive surveillance to prove to our trade partners that our livestock products are safe. The ongoing saga with highly-pathogenic avian influenza is taking resources (people, equipment and money) away from other critical project areas. Texas Wildlife Services is at the forefront of both surveillance and responses, as we have the largest workforce in APHIS handling more wildlife than any other program. We also have a shared international border, which increases the need for surveillance.

Implementing the Farm Bill Feral Swine Eradication and Control Program was a huge undertaking, made more difficult by the pandemic. The Farm Bill expired at the end of FY 23, but has been extended for another year by Congress while they debate the 2025 Farm Bill. By all measures, the Texas response to the Farm Bill was exceptional. Over the course of the project, Texas WS employees removed 52,896 feral hogs and administered the trap loan program for NRCS, which removed an additional 7,451 hogs. In Dallam County, feral hogs have been declared eradicated. In other project areas, hog densities have decreased anywhere from 40% to over 80%. And work continues. But the change is that this funding will be gone in 2025 and a new Farm Bill, hopefully with new funding, will be in place. What that means for WS is still unknown.

State of the Lonestar State

A message continued

Changes in personnel have also occurred. It's harder than ever to find new technicians with the skills necessary to hit the ground running. Texas WS has invested more money into training than ever before. Simply put, we look for local, farm or ranch kids with a good work ethic and train them to be trappers. Training our seasoned employees in developing technology is equally important. The technological tools available today (mapping software, GPS in the helicopters, inReach devices for safety) were considered science fiction just 20 years ago. These changes are positive, but getting all employees ready to use them requires investments of time and money.

Changes in livestock husbandry have forced other changes. The proliferation of hair sheep, for example, has allowed producers to use a more productive breed with higher lamb rates. But by leaving bucks out year-round, predation pressures change. Between year-round lambing and black vulture range expansion, we're spending more and more time combating avian predators than ever before. The evolution of the Texas Wildlife Damage Management Association Black Vulture Permit is a positive step in allowing producers to manage their problem legally and effectively.

Finally, politics affect change. A single Senator from New Mexico inserted language into the FY 2024 appropriations Conference Committee report that prohibits WS from using M-44 devices or LPC's. This change affects predation management on thousands of properties across Texas. How well we craft our response will be critical to resolving this issue in both the short-term and the long-term.

As wildlife folks, the parallels between organizational change and changes in nature are apparent. In nature, individual animals are affected by changes. How well the individual responds determines how well the population, or even the entire species, responds. Species with very specific requirements, such as condors or black-footed ferrets, can't change and become endangered (or extinct) very quickly. Those species which can adapt thrive, such as the success story of the black-capped vireo that was delisted from the endangered species list here in Texas in 2018.

While Texas WS will keep to the core of who we are (predation management, airport protection, beaver damage management, rabies and disease monitoring and management), we need to recognize and forecast the changes. We can let go of some of the details and accept change for what it is. Sometimes change is slow and is something you don't notice. Sometimes it comes at you like a freight train and you either need to get on or get out of the way. In nature, paying attention is the key to survival. In business, it's just as important to pay attention and invest in the employees, the tools and the strategies that will allow us to continue to protect Texas WS customers into the future.

Program Overview

The Texas Cooperative Wildlife Services Program is a joint effort between USDA-APHIS-Wildlife Services, the Texas A&M AgriLife Extension Service and the Texas Wildlife Damage Management Association. A three-party Memorandum of Understanding establishes that the USDA program shall operate the day-to-day management, integrating Federal, State and Cooperative funds and employees into one seamless program. The authority for the program rests in several Federal and State codes.

Protecting Agriculture

These occur on farms, ranches, aquaculture facilities, forested lands, and other sites across Texas. The program continues to support predation management for the livestock industry. Changes in landownership and land use has created areas within the historic sheep and goat country where predators are now abundant. With limited access, our strategy must be one of preventing predators' access to livestock.

Protecting Natural Resources

This includes rare species, native wildlife, and ecosystems; the control of feral hog damage in Texas has increased in importance. Research, led by Texas A&M University and the National Wildlife Research Center has estimated damage in excess of $500M in Texas annually. The Cooperative program represents the efforts of both the State of Texas and USDA in managing the damage by this invasive species.

Protecting Property

The combined program also addresses beaver damage, and migratory bird damage. As an example, through the Texas Wildlife Damage Management Association, landowners can get sub-permits to address black vulture conflicts with livestock. Protecting property includes buildings, dikes and dams, irrigation pipes, landscaping, radio towers to name a few examples.

Protecting Human Health and Safety

Wildlife conflicts with aviation is at the forefront of our program, we have 13 employees at military and civilian airports. Wildlife-borne disease continue to emerge as significant issues. Diseases such as plague, brucellosis, toxoplasmosis, CWD and rabies are always foremost on our minds as we handle and sample wildlife. (*Continued on page 8).*

Texas Wildlife Services Strategic Plan

The Texas WS program has a simple but effective Strategic Plan which assists in keeping the program on track and helps prioritize our human, financial and control resources. The plan is a dynamic document which consists of bullet statements and is reviewed and updated at least every 3 years. It is organized along the lines of the National WS Strategic Plan with emphasis on the 4 tenants below. While there will likely never be enough time or money to solve all wildlife conflicts, by prioritizing, including using the Strategic Plan as a tool to evaluate our actions, we can stay on track to provide high quality service to the citizens of Texas.

Providing Wildlife Services

Our core responsibility: is directed in both State and Federal law. We resolve wildlife conflict- through direct action and technical assistance. We commit to maintaining an effective predation management program for livestock and wildlife, managing the feral hog program, prioritizing beaver damage management for public infrastructure, maintaining bird damage management and supporting other agricultural/wildlife issues such as disease monitoring. We also recognize the difficulty for rural economies to fund our work and commit to utilizing our financial resources to minimize the impact on cooper-ating counties and landowners to the extent practical.

Valuing and Investing in People

While much of our funding comes from cooperators and, since wildlife is a public trust, much of the funding should come from public coffers. We also owe our employees a living wage. We are committed to providing competitive pay to attract and retain wildlife damage professionals. We are committed to supporting professional development for our employees. We will evaluate and expand successional planning to support a career ladder for Texas WS employees. We need to supply high quality equipment so employees can do their job efficiently. We support a diverse workforce to meet the needs of present and future customers.

Developing Methods

We recognize that some of the best ideas come from the field employees who have to solve the problems on a daily basis, even though developing methods is traditionally viewed as the responsibility of the National Wildlife Research Center We are committed to participate with NWRC personnel in any research conducted in Texas, to provide high quality, practical field expertise to scientists. We work with local universities. We've created an innovation award to encourage employees who develop specialized techniques and tools to share, and support professional authorship and presentations on the development of field techniques.

Information and Communication

To conduct and report our activities via electronics is critical: from entering data into the MIS database, to email and automated flight following. We need to maintain IT infrastructure as part of our job. We maintain several communication methods with employees- from conference calls, to District meetings, and our Trapline Newsletter and this Annual report share information with stake-holders. We are committed to working with cooperator groups to get the widest audience possible. We've developed outreach tools, from websites to DVD's, to get the message to the right audience.

Texas WS By the Numbers

FY2023

- **3,717** Properties Worked
- **12,219,926** Acres Worked
- **12,275** Coyotes Removed
- **33,838** Feral hogs Removed
- **5,306** Surveillance Samples Collected
- **346,776** Non-lethal Dispersals
- **18,697** Technical Assistance Sessions
- **44,125** Parties Consulted
- **10,407** Leaflets Distributed
- **151** Species Conflicts Discussed

Value of Resources Protected

- **1,712** aircrafts valued at **$15,856,800,002.00**
- **4,689,708.76** acres of pasture and rangeland valued at **$3,862,773,804.20**
- **122,834** acres of wetlands valued at **$24,402,408,093.59**
- **393,529** head of cattle valued at **$484,363,824.06**
- **262,424** head of goats valued at **$142,526,905.52**
- **264,420** head of sheep valued at **$27,968,385.64**
- **75,159** Domestic White-Tailed deer valued at **$128,753,753.18**
- **34,540** Exotic livestock valued at **$56,296,938.03**
- **490,334.95** acres of food crops and gardens valued at **$127,234,721.02**

Methods

To prepare and implement an integrated management plan that reduces, and prevents loss in the form of predation, or other damages to agriculture, natural resource and property, in addition to protecting human health and safety; we make lots of observations and collect data. This often means walking miles of fencing, cross-roads, and damage sites. The conjunctional use of tools like aircraft (fixed-wing, helicopter, and unmanned aerial vehicles) can take bird's-eye view snapshots of the area to complete the picture of the wildlife conflict issue. As technology advances, some of these tools could be in the box for daily use of our workers to make their time more efficient, however, the skilled eye and experience of following tracks and setting equipment is a proud heritage that is needed to create an effective plan.

WS Program Overview

Continued from page 5

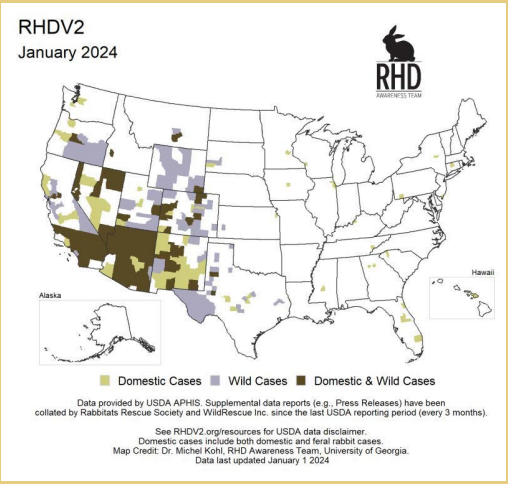
Whether looking for production diseases such as brucellosis, wildlife hosts for human diseases such as rabies or foreign animals diseases that have the potential to impact global trade, the disease portion of the Cooperative Texas Wildlife Services Program will likely increase in intensity and importance over the next decade.

By integrating Federal, State, County and private funding into the program, Texas Wildlife Services is poised to address problems as they occur. Because we have the cooperative relationship, we can deploy personnel, equipment and other resources when and where needed. The program also has operational plans for emergency activities, as we have personnel and resources available throughout the State whenever the need arises. Emergency activities have increased and personnel from the cooperative program serve in that role often.

Disease Surveillance

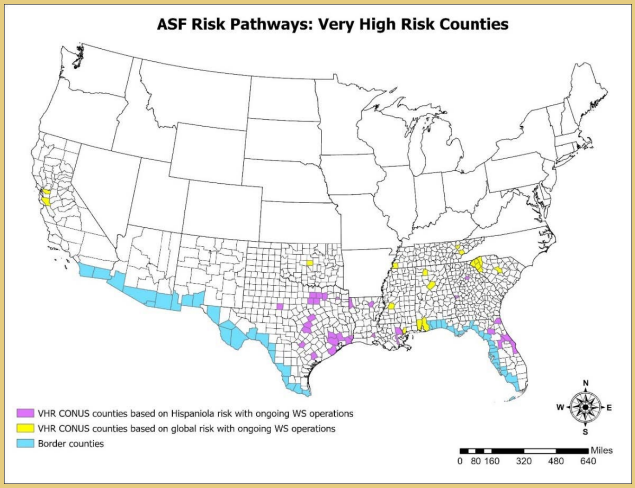
WS Program Highlight

HPAI Surveillance for the 2022-2023 waterfowl season was a busy one for many TX WS Biologists across the state, with just over 2,000 samples taken. The Fort Worth district has a great sampling area for the Trinity watershed. The College Station district is part of four watershed sampling areas: Neches, Sabine, Trinity, and Central Texas Coast. The Sabine and Neches watersheds are challenging, as there only a few hunter harvest sampling areas. To optimize sampling, opening and closing weekends of each waterfowl split were the best sampling times.



Trouble arrived in West Texas as a string of mysterious rabbit deaths cropped up around early December. We collected three specimens for the Regional Zoonosis Control Veterinarian (Texas Department of State Health Services) for examination and they tested positive for Rabbit Hemorrhagic Disease (RHD); and tested negative for plague. Little is known about how RHDV2 manifests on the landscape, but research has shown the virus can survive in a carcass for as long as 90 days. A source introduction is unclear, but researchers have noted the potential for long-distance viral transmission by insects, scavenger birds, or human-mediated dispersal (e.g., by contaminated hay or feed, movement of rabbits, etc.). Eliminating the virus in wild species remains unfeasible, so containment and proper disposal of dead animals upon discovery is crucial to reduce transmission risk.

WS expanded its African swine fever (ASF) surveillance in feral swine within the conterminous (CONUS) United States. It focuses upon zones deemed most vulnerable based upon VS' Center for Epidemiology and Animal Health risk assessment of introduction into the United States. In May 2022, recognizing a risk of introduction from the ongoing ASF outbreak on Hispaniola, WS stood up active surveillance for ASF in feral swine in four states (purple counties on map). In May 2023, WS expanded active ASF surveillance in feral swine in an additional six states (yellow counties). Additionally, WS is expanding operations and ASF surveillance to 22 new counties along the southern border deemed to be at risk of human international movement at official and unofficial points of entry (blue counties).



2018 FARM BILL

Feral Hog Program Recap

The Agriculture Improvement Act of 2018 (2018 Farm Bill) established the Feral Swine Eradication and Control Pilot Program, providing $75M in funding for 5 years, with 50% going to APHIS and 50% going to the Natural Resources Conservation Service (NRCS). The two agencies were directed to (1) establish programs to control or eradicate feral swine, (2) determine the nature and extent of damage caused by feral swine in the pilot program areas, (3) provide programs to mitigate that damage and (4) develop programs to help local landowners. Within USDA, it was determined that Wildlife Services would take the lead for APHIS funding and NRCS would coordinate programs through their respective State Technical Committees. Programs would be focused on high density feral swine states, as low-density states were already working towards eradication.

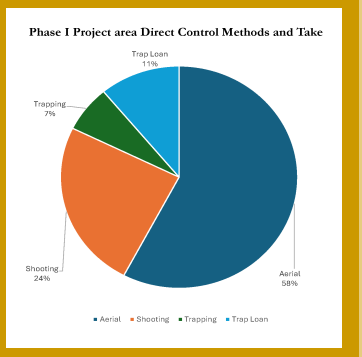
In Texas, the Cooperative Texas Wildlife Services (WS) worked with NRCS to identify 3 project areas for control. These projects were designed around impacted watersheds, but any landowner in the affected counties could participate in the program. For the initial call for projects, WS and NRCS identified the Upper Leon River area (Eastland, Erath and Comanche Counties), the Red River Drainage (Clay, Wichita, Wilbarger and Hardeman Counties) and the Canadian River area (Hartley, Potter and Oldham Counties). All three projects were funded for 3 years of direct control and 4 years of technical assistance.

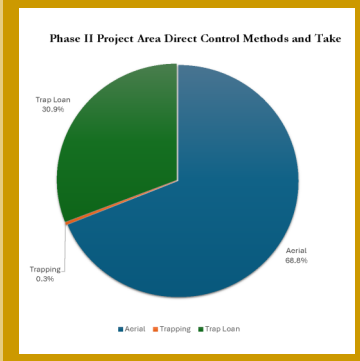
Projects in these areas focused on removing as many feral swine as possible throughout the drainages. WS conducted direct control, including trapping, shooting and aerial shooting of feral swine throughout the areas on property under agreement. Damage Assessments were conducted in these areas by Texas A&M AgriLife Extension Service Wildlife technicians, under contract from WS. NRCS funding was used to support a trap loan program, through a contract with the Texas State Soil and Water Conservation Board and subsequent participation by local county-level Boards. To facilitate an integrated program, these local boards contracted with the Texas Wildlife Damage Management Association to provide the technicians needed to loan out the traps and collect the data associated with their use.

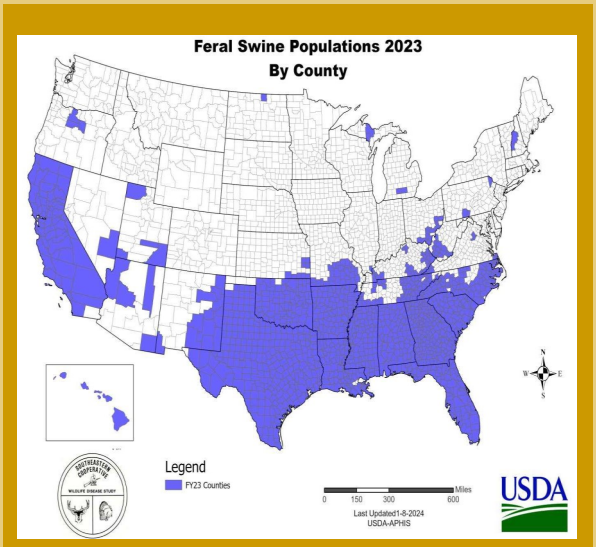
A second call for proposals went out half-way through the Farm Bill, soliciting additional projects. During this "Phase II" process, Texas was approved for 3 additional projects; Eradication of feral swine in Dallam County, control of crop damage in eastern Williamson and Milam Counties and crop protection in the coastal bend area in Bee, Nueces and San Patricio counties. Due to the late start in these areas, the crop protection projects were able to protect the 2022 and 2023 crop production. To maximize the effort, aerial shooting was concentrated before planting and during the crop production period. A trap loan project was also implemented in the Phase II project areas and WS technicians collected damage data directly from cooperators.

For the three Phase I project areas, WS applied direct management of feral swine to **573 properties totaling 2,091,490 acres.** Over the term of the original Farm Bill (through FY 23) a total of **50,053 feral hogs were removed** by WS. Looking at changes in removal rates over the period, the average reduction in feral hog abundance for these three areas was 55% (range between areas was 33%-80%). The trap loan program for the

Phase I projects provided traps to 106 landowners who controlled 395,123 acres (some of these acres were also managed by WS). Landowners removed 6,182 additional feral hogs. Congress provided that landowner time managing their feral hog damage could be counted as an "in-kind" cost share, so WS calculated and tracked landowner contributions. Using the NRCS standard labor rate, landowners participating in the Phase I trap loan program contributes $1,089,180 in labor to feral hog removal. The Phase II Dallam County Eradication Project was designed to locate and remove any remaining feral hogs in this northwestern corner of the Panhandle. Feral hogs have been identified and removed by WS in the past and it was generally recognized that the pigs moved into the county from Oldham County (part of the Canadian River project) as well as from the western Oklahoma panhandle, or the area around Nara Visa NM. Both New Mexico and Oklahoma had aggressively removed pigs in areas adjacent to Dallam County and it was believed that very few pigs may remain in this county, making it "low hanging fruit" for eradication. WS initiated control systematically in the Canadian River Project with the first efforts concentrated in Oldham County to prevent pigs from reaching Dallam County. The strategy worked. Over two years, WS flew surveys, talked with landowners, Extension and TPWD personnel to identify areas which might have pigs. The concurrent removal of pigs across the three states has proven effective and after 103 hours of aerial surveys, WS was able to determine that no feral hogs remained in the county. This is the first county in Texas removed from the map of occupied territory, and the funding for surveys and coordinated control in adjacent areas would not have been possible without the Farm Bill. Because the other Phase II projects started late in the Farm Bill, all parties agreed to focus on crop protection. Direct management in the two Phase II project areas was applied by WS on 120 properties totaling 208,296 acres. Over the term of the original Farm Bill, a total of 2,843 pigs were removed. **It is estimated that, on average, pig abundance was reduced by 50% across the two project areas** (the range of reduction was between 27% and 61%). The trap loan project for the two project areas provided traps to 113 landowners who controlled 161,034 acres. A total of 1,270 pigs were removed through this trap loan program. Landowner "in-kind" time spent managing their damage was valued at $53,618.







Reduction in damage is going to continue in the Farm Bill Projects beyond the end of FY 2023. In fact, the 2023 crop was just being harvested as the original term of the Farm Bill ended and initial damage assessments do not include savings to the 2023 crop. Even without these data, the Farm Bill provided a very positive benefit/cost ratio. For Phase I projects, the total cost of direct management was $3,375,678 and the reduction in damage through 2022 was identified at $10,111,464 (again, without including the 2023 crop data). It is estimated that the total benefit will exceed **$12M**, but even without the 2023 data, the benefit/cost ratio is **3/1**. While initial damage in the Phase II project areas wasn't nearly as great as the watershed projects, reported damage in the Phase II projects declined an amazing **96%** for WS cooperators over the two years! By any measure, the Farm Bill was a success and showed what can be done with a focused, dedicated effort and adequate funding.

The 2018 Farm Bill expired September 30, 2023. Congress approved one-year funding to cover FY 2024 while they debate the new Farm Bill. As of this writing, the Feral Swine Eradication and Control program is written into both the House and the Senate version of the bill. It is expected that the Farm Bill will continue to provide funding through 2030, but the amount and the rules about site selection remain to be seen.

Predation Management

Predation management is one of the core businesses of the Texas Wildlife Services Program. Wildlife is a public trust and regulations are in place to protect wildlife. However, when the public wildlife damages private property, there is a public obligation to rectify the damage. The Wildlife Services Program is the accountable program to address conflicts, in this case predators killing livestock and other wildlife.

Domestic sheep and goats are vulnerable to predation year-round and require protection from coyotes, bobcats, mountain lions and black vultures. Over the past 2 decades, the number of sheep in Texas has declined, and the area where Texas Wildlife Services has conducted predation management activities has contracted considerably. During this time also the change to hair breeds of sheep (from wool breeds) has also changed the dynamics of predation management. Wool breeds were frequently bred to lamb in either early spring or in fall. The development of "ethnic markets" involving live sheep of light to medium weight has produced a demand for lambs year-round. As a result, many producers leave bucks out year-round and lambing season now extends into every month of the year.

Cattle are not immune to predation issues. As sheep and goat numbers decline, the predation management that was in place declines. Cattle producers often see themselves the target of opportunistic predators and losses to calves have been on the increase over the past 10 years. Calf losses are often seasonal, as calves quickly outgrow their vulnerability to predators. The Texas Wildlife Services Program conducts cattle protection in all 8 Districts.

There has been a lot of emphasis on non-lethal methods of predation management. For some very vocal members of the public, the objective is to never have to kill a predator. For producers, the interest is to effectively protect their livestock. But let's be clear: if "non-lethal measures" are effective, they reduce predator populations. Removing habitat from a predator (as guard animals or fences do) means a smaller predator population. Predators are evolutionarily designed to adapt. Harassing predators only leads to sneakier predators. Texas Wildlife Services supports the use of non-lethal methods ***where effective and economical.***

Predation Management

Continued

We completed an exercise where we looked at a multi-ranch, chronic predation area in Edwards County. Good, fairly-effective fences existed on 2 sides of the triangular-shaped area due to highway fences. To build new, net-wire fence across the third side would involve building 10-11 miles of fencing. We estimated the cost of the fence and examined the pattern of predation to estimate the number of livestock saved if effective fences were built. In short, the landowners involved cannot save enough money in livestock saved to justify the cost of the fence, even when amortized over 50 years and even when discounting fence maintenance costs. And if the fence was 100% effective at reducing predation, it would save an estimated 11 coyotes per year. The predation prevention benefits from a fence cannot be the only benefits of a fence for a producer to justify building one. Also, if society at large expects the government (or for that matter the ranchers themselves) to kill fewer predators, they need to invest in the improvements to do so. Similar analyses need to be conducted for additional nonlethal methods and the livestock industry needs to be looking at additional funding sources to implement these.

Neck snares and M-44 devices have been a critical components in the management of predation. Neck snares, when safely set in boundary fences, can prevent untold losses to livestock. The M-44 device is one of the most cost effective tools for a trapper to use. However, it's use is not without controversy. Restrictions put on the placement of devices by APHIS and EPA have significantly decreased M-44 use in recent years. Decreased use of the device increases the cost of management, and increases livestock losses.

Aerial operation removal of coyotes remains low- only 10% (**1,274 out of 12,275** coyotes taken) were removed. Aerial operations are critical to supporting the trapper trying to stop a problem. To keep it in perspective, M-44's removed **2,478** coyotes (20%) and neck snares removed **6,585** coyotes (54%).

Financially, the available Federal funds for responsive predation management have declined over the years. While overall Federal funding has been stable, all new funding has been earmarked, mostly for wildlife disease or feral hog work. The cost of predation management has increased and the Federal funding available has declined. State funding, approved by the legislature, has also been stable, with the only increases for feral hog management. Cooperators contribute towards predation management through cost-share funding into the Wildlife Damage Management Fund.

Black Vultures

Resolving Vulture Conflicts Despite the problems, the benefits vultures provide outweigh the damage and so solving problems should focus on those vultures causing the damage. For airports, the risk of a catastrophic incident requires managers to act quickly. For damage caused by roosting birds, dispersing the roost is the most frequently used solution. In an urban setting, responsible relocation efforts take multiple people and observations to ensure the displaced vultures do not continue to pose a safety and human health risk in the new location. Effigies (dead vultures, taxidermized mounts of a vulture, or an artificial vulture placed to scare away other vultures) are an effective strategy when used in conjunction with deterrents like loud noises. In livestock pastures, they can be placed at prominent perching sites or hung on fence posts where vultures can see them. Effigies are less effective in open range situations.

Lethal Control Vultures are protected under the Migratory Bird Treaty Act (MBTA) and under State law. "Take" as defined by the MBTA does not include harassment, the non-injurious harassment of vultures does not require a permit. Texas Parks and Wildlife Code states that it is a violation of State law to kill a migratory bird (excluding under season game birds) without a Federal permit. If you have the Federal permit, you do not need a State permit. ***The purpose for lethal take is to reinforce the non-lethal harassment.*** With repeated exposure to harassment, vultures become accustomed to harassment and it becomes ineffective. By shooting a vulture (one at a time) while conducting harassment, you can extend the efficacy of harassment and save livestock. In extreme cases, vultures may be trapped and lethally removed. The Wildlife Services program has a permit to remove vultures and can set up a vulture trap if significant losses occur and high numbers of vultures are involved. Livestock producers can also apply for a Federal permit via the US Fish and Wildlife Service (FWS) website. A WS Form 37 is required. The Form 37, as well as ***assistance with the application can be obtained by contacting the Texas Wildlife Services District Office near you*** (contact information is on the back of this report).

TWDMA Permit Another option recently became available to livestock producers through The Texas Wildlife Damage Management Association (TWDMA) Livestock Protection Pilot Program. The FWS granted a permit to TWDMA for lethal removal of black vultures to protect livestock. The permit allows the TWDMA to grant sub-permits to livestock producers. By FWS rule, only 5 black vultures can be available per sub-permit. The permit limits the total take to 750 vultures, so TWDMA can issue a maximum of 150 sub-permits for 5 birds each. To apply, contact a Texas Wildlife Services biologist through the District Office and ask to be included as a TWDMA vulture sub-permittee. Information will be collected to complete the WS Form 37 and forwarded to the WS State Office. Upon review of the application, a sub-permit could be issued to a producer within one or two business days. ***TWDMA and WS will prioritize those experiencing current depredations and those still having newborn livestock*** because of the limit on the number of sub-permits which can initially be issued. This process will be less expensive and faster for livestock producers and provides a legal, accountable way for producers to protect their livestock. Administering the vulture permit process involves coordination and reporting to the US Fish and Wildlife Service as well as coordinating with landowners and field biologists to accurately capture damage and location data.

Airport Wildlife Hazard Program (AWHP)

When we share the skies with birds, especially large ones, the intersection can cause catastrophic events. WS is tasked with reducing the risk of wildlife strike hazards to the community and aircrafts, while working directly with airports and military installation airfields. WS provides crucial support during litigation in the aftermath of any significant strike event that might occur. In addition to protecting human lives, WS is tasked with reducing the economic impact to aircraft and equipment in civil and military airports. Wildlife strikes in the USA cost the civil aviation industry an estimated minimum of $196 million annually, 1990-2019 (Begier, Dolbeer, Washburn. USDA-Wildlife Services Assistance at Airports, 2020). Efforts to reduce strikes need to focus on the airport environment because about 72% of all reported bird strikes with civil aircraft occur at less than 500 feet above ground level.

Texas WS biologists provided a wide range of technical and direct management assistance at airports. Technical work consisted of consultations with airport authorities regarding wildlife issues, training of airport personnel in wildlife identification and control methods, continued monitoring of wildlife, development and revisions of Wildlife Hazard Management Plans, Environmental Assessments, and Wildlife Hazard Assessments. Direct management assistance included lethal removal of hazardous wildlife, nonlethal dispersal of hazardous wildlife, modification of habitats to discourage wildlife, and capture and translocation of wildlife away from the airport. Lethal control of protected species was done under state and federal permits as a last option after solely non-lethal options had been determined to be ineffective or impractical. In addition to work done on airport property, WS biologists provided technical and direct management assistance regarding off-airport wildlife attractants. Effective management of wildlife to reduce strikes is based on principles from wildlife ecology, physiology, and behavior. Airport wildlife hazard biologists consider how these disciplines interact particularly with an understanding of regulatory guidance, non-wildlife related airport safety priorities, and strike data. In 2023, Texas WS provided service at **35** airports or military installations, with **12,599** staff hours, including training **3,931** airport personnel- resulting in a reduction, suppression, or prevention of hazardous conditions caused by wildlife.

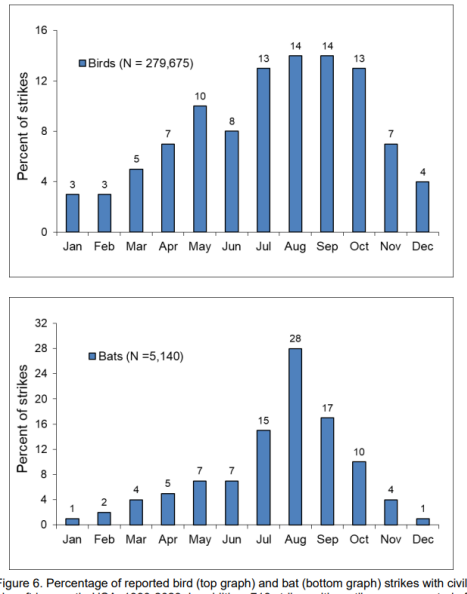


Figure 6. Percentage of reported bird (top graph) and bat (bottom graph) strikes with civil aircraft by month, USA, 1990-2023. In addition, 718 strikes with reptiles were reported of which 59 percent occurred in May-July. Strikes reported for U.S.-registered aircraft in foreign countries were excluded.

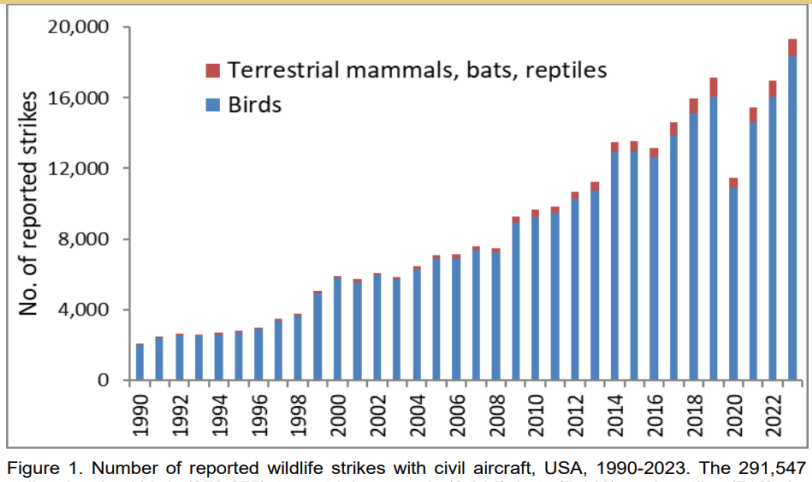


Figure 1. Number of reported wildlife strikes with civil aircraft, USA, 1990-2023. The 291,547 strikes involved birds (279,675), terrestrial mammals (6,014), bats (5,140), and reptiles (718). An additional 5,066 strikes were reported for U.S.-registered aircraft in foreign countries for a total of 296,613 strikes (see Tables 1, 2, and 18).

Sources cited: Begier, Dolbeer, & Washburn. 2020. Protecting the Flying Public and Minimizing Economic Losses within the Aviation Industry Assistance provided by USDA-Wildlife Services to reduce Wildlife Hazards to Aviation.

Wildlife Strikes to Civil Aircraft in the United States, 1990–2023. FAA

Beaver Damage Management

During FY 2023, Texas Wildlife Services Program worked **371** properties totaling **882,238** acres for beaver damage management. About ¼ of our staff worked on beaver projects through direct control or outreach. Overall, the damage reported and verified by beavers in FY 2023 decreased to **$1,703,417** (a 68% decrease from FY 2022 of $2,498,915**,** sitting at just below average of the past three years of damage totals). The most damage was **$1,046,151,** to property: which includes dikes, irrigation pipes, buildings, and roads. In eastern Texas, roads remain especially vulnerable to beaver damage. Beavers typically will build a dam in a culvert or under a bridge and back water up on the upstream side. When this water reaches the level of the roadbed, it causes instability which can cause the roadbed to collapse. Texas WS has a cooperative agreement with several counties and TxDOT to protect county and state roads from beaver damage. Documented road damage in FY 2023 was **$311,500,** and because WS was available to respond and drain the water, additional damage was prevented. The value of trees and crops damaged by beavers may depend on their economic, ecological, aesthetic, cultural, or historical importance. The damming of one small stream; however, may cause potential harm to human life and overshadow all other values. Public outreach remains a critical part of beaver damage management. Teaching landowners how to avoid beaver conflicts is an effective way to minimize losses. In FY 2023, Texas WS personnel conducted **437** outreach projects reaching **570** people.

Protected Resources Highlights

- **1,192** dikes, dams or impoundments
- **20,628** acres of timber protected
- **15.5** miles of roads protected
- **17** miles of streams protected
- **$798,736,945.44** total value of the resources protected from beaver damage (a **60% Increase** from FY22)

Rabies Management

Oral rabies vaccination (ORV) has been in use in the United States since 1990, and while Texas WS distributes baits for gray fox and coyote, there are 16 states distributing oral vaccines for raccoons in the U.S. The ORV baits are distributed by air and ground personnel. Fixed-wing aircraft are the most effective means for distributing large numbers of the ORV baits. Hand-baiting is important for reaching urban areas where there may be safety risks associated with distributing baits by air. WS's federal authority includes management of wildlife which serve as vectors for zoonotic diseases. APHIS-WS is a signatory party to the North American Rabies Management Plan, which calls for the elimination of terrestrial rabies on the continent. Successful programs for the vaccination of companion animals have greatly reduced the risk of human rabies from domestic dogs or cats, but wildlife rabies remains a significant concern. WS partnered with the Texas Department of State Health Services (TDSHS) to distribute approximately 837,000 RABORAL V-RG® oral rabies vaccine (ORV) baits across 31,784 km2 (12,272 mi2) in 19 south Texas counties along the border with Mexico. Aerial ORV operations were based out of 3 airports and WS personnel participated in ORV operations, along with TDSHS staff and representatives from the Texas Army National Guard. The longstanding cooperative partnership between WS and TDSHS to conduct wildlife rabies management includes cost sharing on bait purchases, ORV crew staffing, on-site logistical support during operations (staffing the Mobile Rabies Command Post), and post-ORV and enhanced surveillance sampling. During the 2023 operation, the NRMP purchased 198,300 (24.2%) of the total baits distributed. Baits distribution occurred at a density ranging from 64 to 70 baits/mi2. The current ORV zone along the border serves as a maintenance zone to prevent re-emergence of the domestic dog-coyote rabies virus variant in the United States. Rabies management is expensive and adaptive strategies may identify less costly management options. All options require some risk, and along with biological assessments, disease risk assessments and economic analysis is necessary to best balance resources and risks.

Another rabies project undergoing was in the second year of a three-year field trial using an experimental vaccine, ONRAB, targeting coyotes in the Texas panhandle to assess whether ONRAB is useful as a complement or supplement to RABORAL V-RG®. WS distributed approximately 70,200 ONRAB baits over 2,600 km2 (1,000 mi2) in portions of Oldham and Hartley Counties in north-central Texas by fixed wing aircraft. The study also includes post -ORV sampling to collect blood samples to assess antibody response as an index to vaccine induced population immunity in coyotes as well as documenting evidence of a biomarker that indicates vaccine-bait uptake.

Additionally, vampire bat rabies surveillance continued with checking adult cattle on the southern border and providing outreach and consulting to a wide variety of landowners, livestock producers, and veterinarians.

Texas Wildlife Services Program Highlight

Gratitude

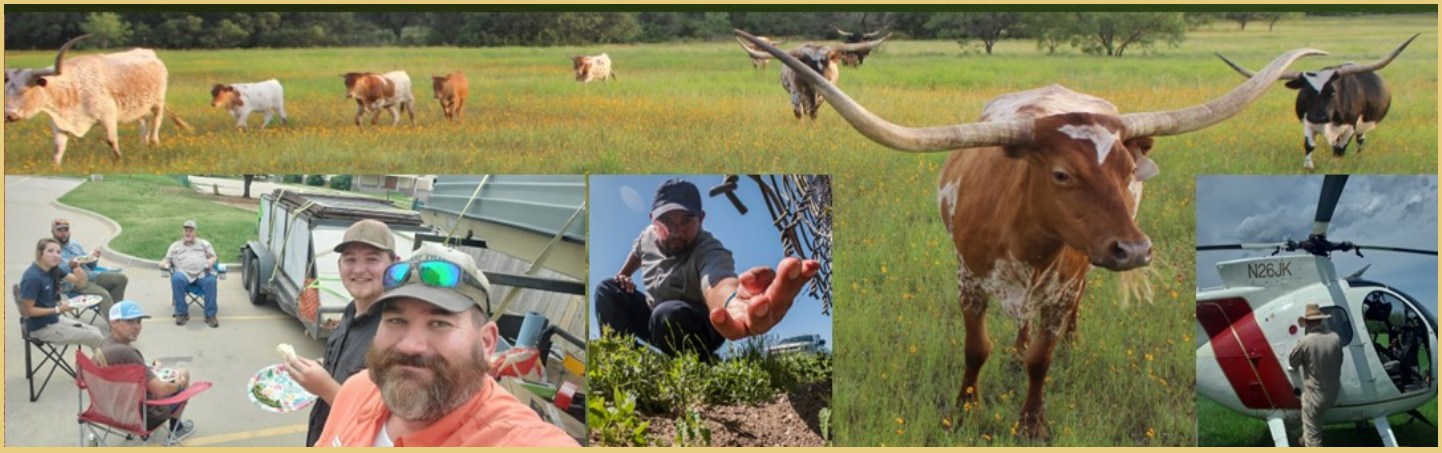
The Texas Wildlife Services Annual Report covers activities on a Federal Fiscal Year (October 1-September 30). By necessity, data need to be checked and rechecked, financial years need to be closed and analyzed and only then can the writing of the Annual Report begin. The Texas Wildlife Damage Management Association (the publisher of this report) works with Wildlife Services and others to provide data in order to have the Annual Report available for the Association Annual Meeting in July each year. This means that by the time readers see this report, it's well into summer.

Summer means a lot of different things to different people. School kids are out of school and moms and dads are busy keeping track of them. Vacations are often planned around summer. Beaches, 4th of July picnics, county rodeos and fishing trips are all part of the summer for "normal" people.

For the "government trappers"-those dedicated Wildlife Service employees charged with resolving wildlife conflicts-summer is the very hardest time of the year. Predators are at their worst with coyotes provisioning pups and vultures at an all-time high. Predator movements slow down and are always at night. Feral hogs become completely nocturnal and, to be honest, so do many trappers. The beaver swamp is a terrible place to be in the Texas summer and those beaver trappers deserve a special place in heaven for working through beaver problems this time of year!

The government trapper doesn't make a lot of money. They work long, hot, dusty hours and utilize their skills to resolve very difficult, expensive problems. Their reward is often the inner satisfaction of doing a job well. They get to see sunrises, breathe fresh air and see the world through the eyes of wildlife. They believe in public service and the long-term employees of the program have literally rearranged their lives to be able to do this work. Without a doubt, they are underappreciated by society.

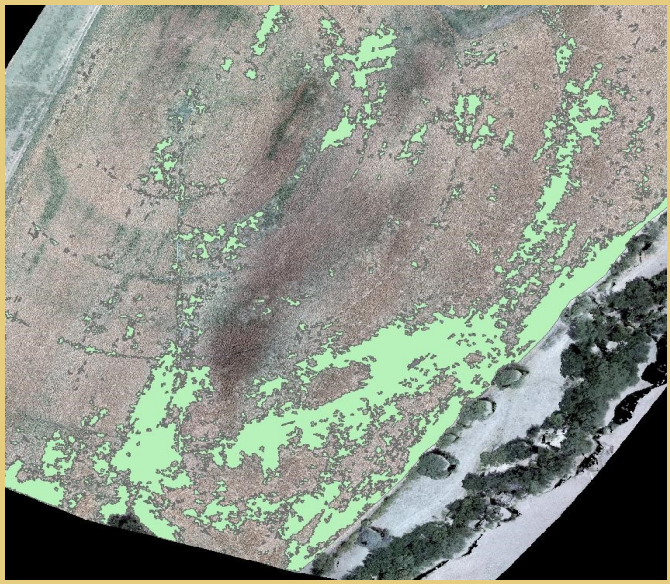
The office staff and managers of the WS program want to take this opportunity to let our field employees know how much they are valued and appreciated. We value our cooperators as well and believe most of the cooperators appreciate their trappers. If you're a landowner and have the opportunity, please let your trapper know that you appreciate their efforts. If you're a trapper, please know that we do see your contributions and they are the appreciated.



Methods Development

Texas WS conducted, collaborated with researchers

- South Texas Coyote Home Range and Movement Study (rabies implications)
- Beaver Genetics (University research)
- Feral Hog Euthanasia Data Collection (NWRC)
- Feral Hog Genetics (NWRC)
- Vulture Diseases & Movements (CKWRI & CBP)
- Vulture Deterrents (NWRC)
- Vulture Genetics, Immune Systems (Smithsonian Institute)
- OnRab Coyote Vaccination (NRMP)
- Anthrax/Feral Hog Research (NFSDMP and CSU)
- ASF Mock Exercise (NFSDMP and NWRC)
- Feral hog disease issues (CSU)
- Pasturella in feral swine (NFSDMP, TDSHS and attending physicians)
- Gray Fox Genetics (NWRC & NRMP)
- Economics of Feral Hog Damage- Farm Bill (NWRC)
- Economics of feral hog damage to wetlands (NWRC and USACOE)
- Vampire Bat Surveillance (NRMP)
- Vampire Bat use of Feral Hogs as a Food Source (NWRC & NRMP)
- Raccoon Genetics (NRMP)
- Feral Swine and Prion Diseases (NFSDMP and UT-Health)
- Toxicant Development and Testing sodium nitrite (NWRC)
- Warfarin-based feral hog toxicant use by ranchers (TDA, TAMU and manufacturer)
- Non-lethal Predator Management
- Fencing (Internal at this time)
- Data collection for feral swine modeling (NWRC)



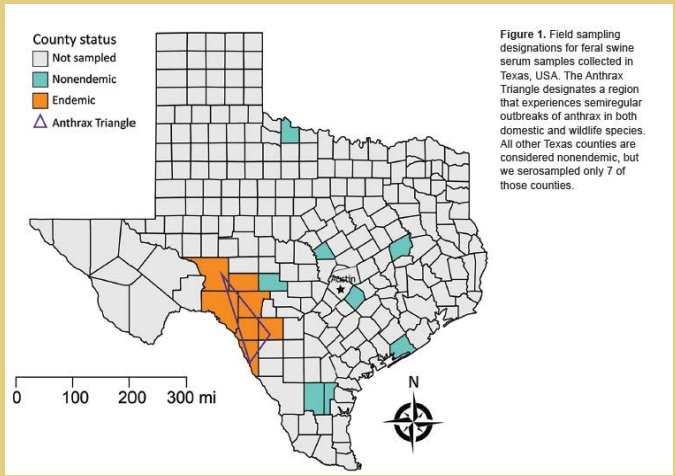
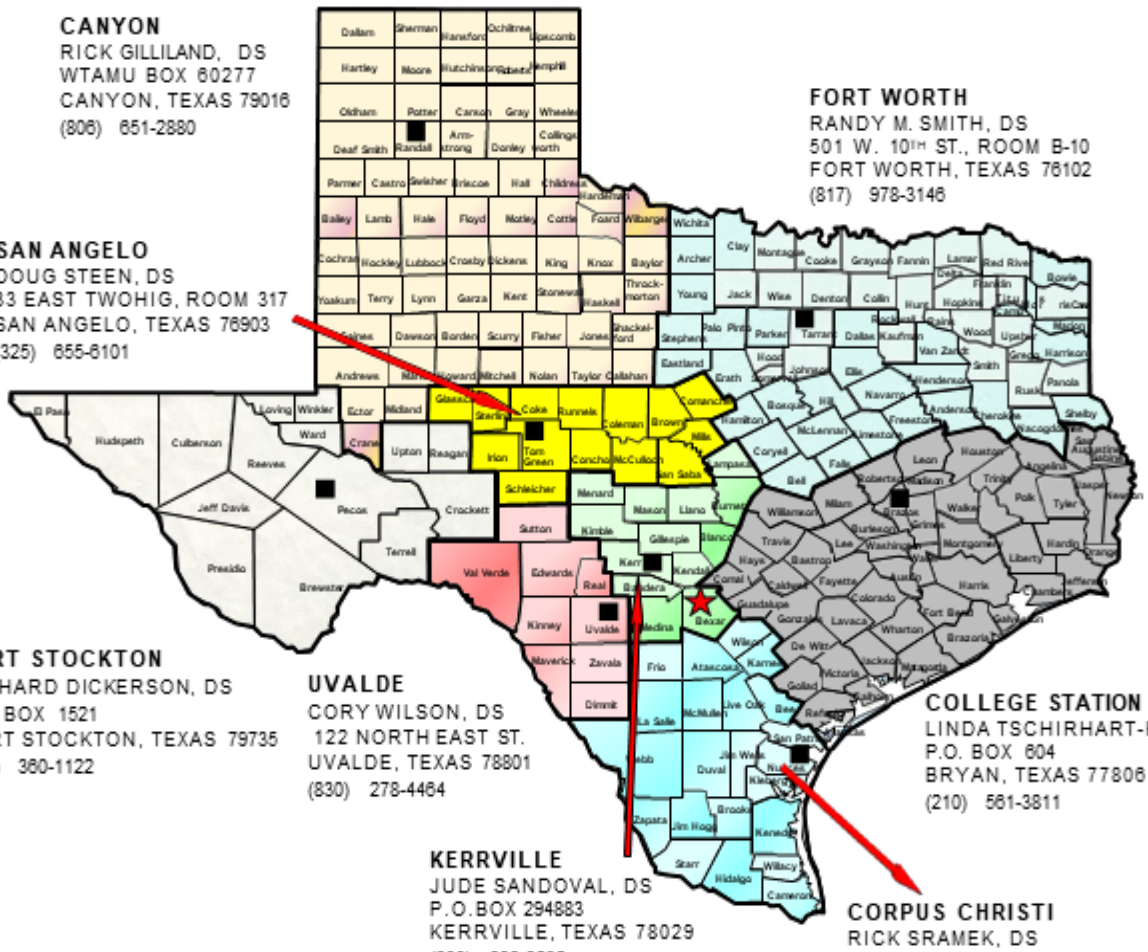


Figure 1. Field sampling designations for feral swine serum samples collected in Texas, USA. The Anthrax Triangle designates a region that experiences semiregular outbreaks of anthrax in both domestic and wildlife species. All other Texas counties are considered nonendemic, but we serosampled only 7 of those counties.

TEXAS WILDLIFE SERVICES PROGRAM

TEXAS A&M UNIVERSITY

USDA



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04/25/12

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