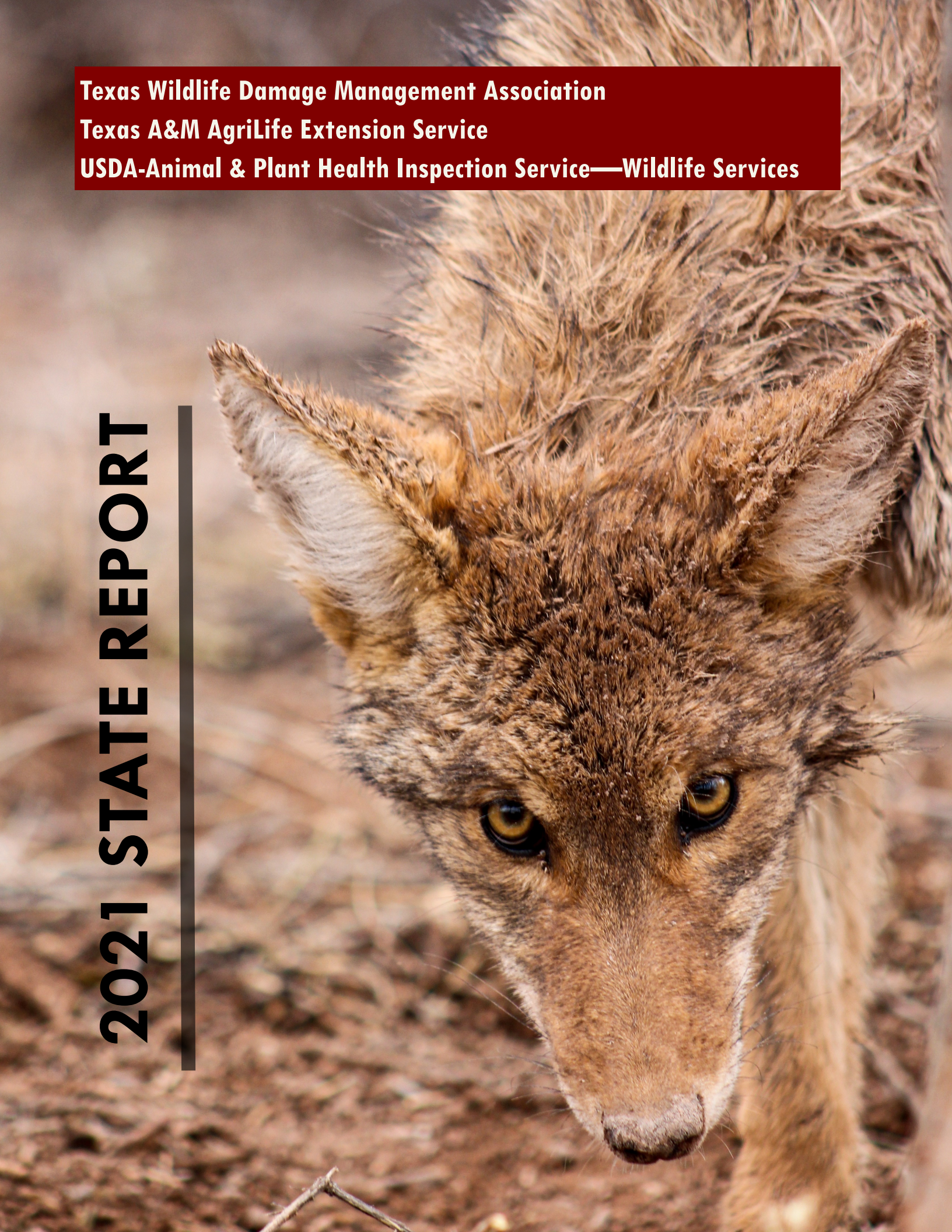
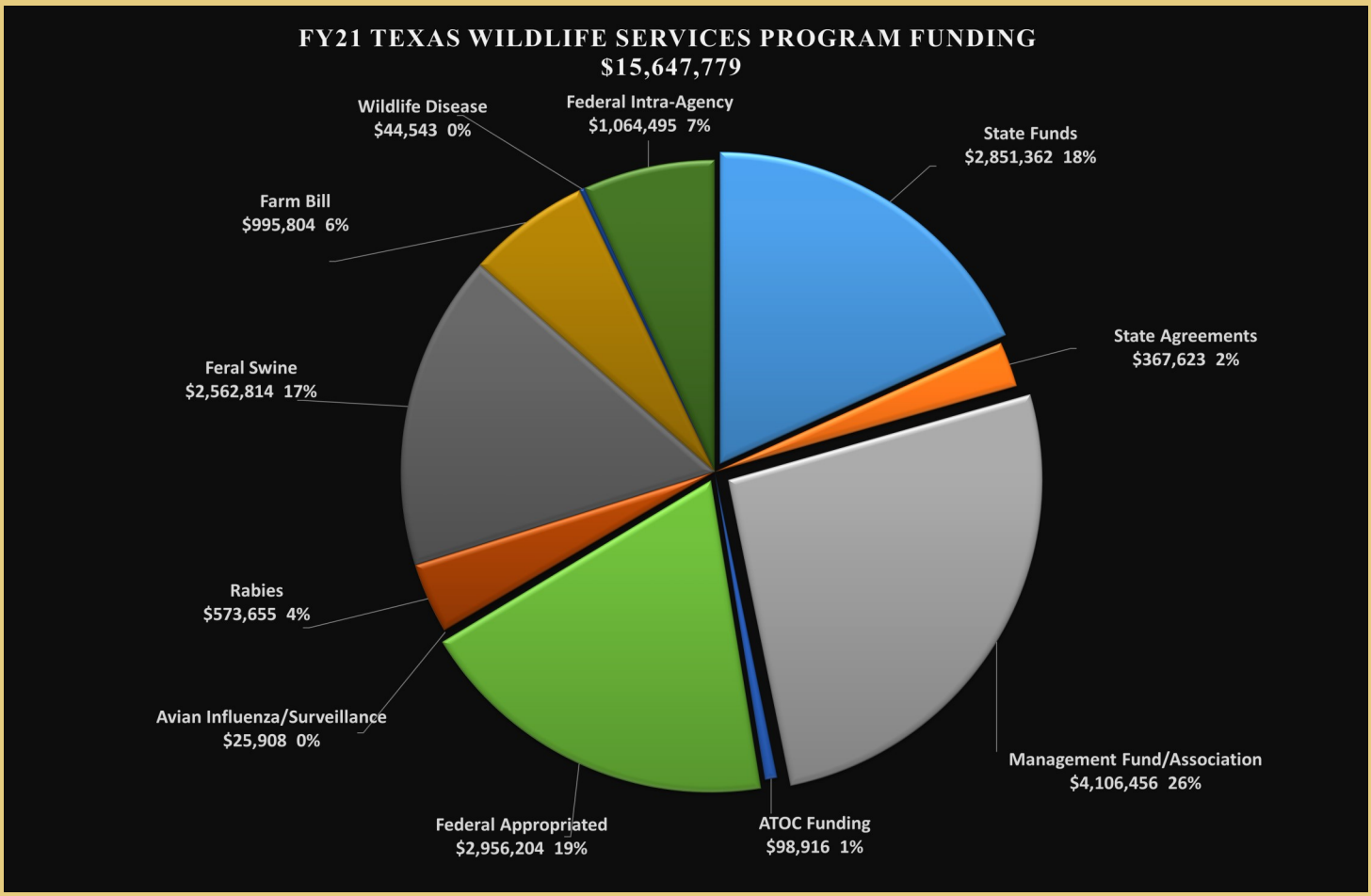
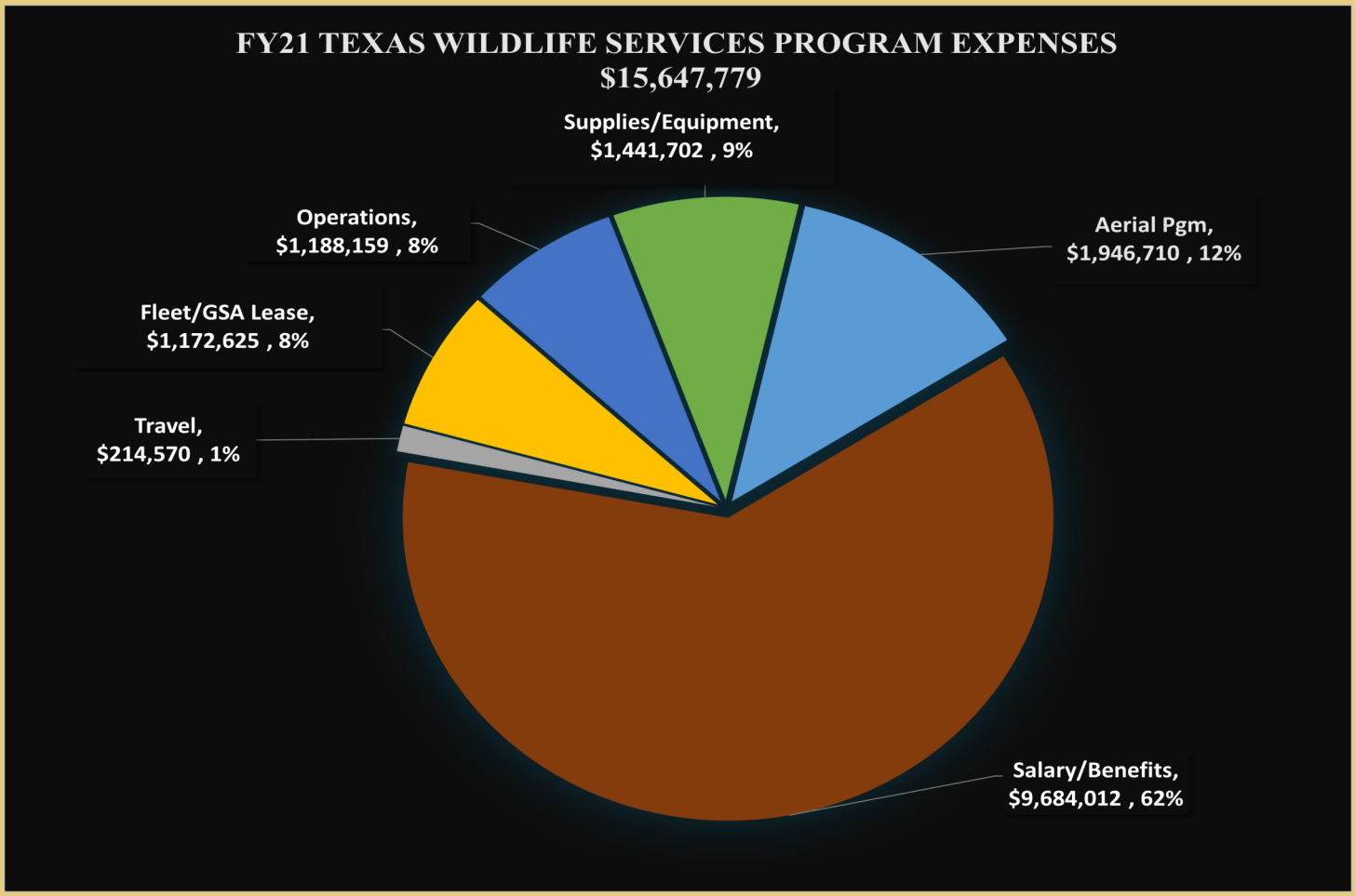
Texas Wildlife Damage Management Association
Texas A&M AgriLife Extension Service
USDA-Animal & Plant Health Inspection Service—Wildlife Services

2021 STATE REPORT




FY21 TEXAS WILDLIFE SERVICES PROGRAM FUNDING
$15,647,779
Wildlife Disease
$44,543 0%
Federal Intra-Agency
$1,064,495 7%
State Funds
$2,851,362 18%
Farm Bill
$995,804 6%
State Agreements
$367,623 2%
Feral Swine
$2,562,814 17%
Rabies
$573,655 4%
Avian Influenza/Surveillance
$25,908 0%
Management Fund/Association
$4,106,456 26%
Federal Appropriated
$2,956,204 19%
ATOC Funding
$98,916 1%


FY21 TEXAS WILDLIFE SERVICES PROGRAM EXPENSES
$15,647,779
Supplies/Equipment,
$1,441,702 , 9%
Operations,
$1,188,159 , 8%
Aerial Pgm,
$1,946,710 , 12%
Fleet/GSA Lease,
$1,172,625 , 8%
Travel,
$214,570 , 1%
Salary/Benefits,
$9,684,012 , 62%

From the Director

Michael J. Bodenchuk, State Director

I am continually impressed by the employees who work for this agency. I want to share with you a story about one call we received:

Late one evening I got a call on my cell phone at the house. A rural homeowner called about a strange-acting skunk, which attacked his dog in his yard. His son actually killed the skunk by stepping on it, and it didn't even spray. To me, this behavior included classic signs of skunk rabies. In questioning him, he revealed that his dog was not vaccinated (it was just a pup) and that his young children were in constant contact with the dog. I got a bit of additional information and called the District Supervisor. While the homeowner lived in a non-cooperating county, we had a trapper nearby. That trapper volunteered to go meet the homeowner that very evening, take the skunk head and keep it on ice and delivered it in person the next morning to the Texas Department of State Health Services Lab for rabies testing. The skunk subsequently tested negative for rabies (it probably had distemper). But the prompt action by our field staff prevented his kids from having to take unnecessary post-exposure rabies vaccinations. It also provided a quick reassurance to the homeowner and gave him time to get the dog vaccinated against both rabies and distemper. Had the skunk been positive, the action could have saved the life of the kids.

This is just one of the incidents where our people make a difference. Daily, our folks are out there trying to save livestock, preventing flooding caused by beavers and reducing feral hog damage to crops and pastures. In last year's report, I told you about the 37,000 feral hogs we removed in 2020. In 2021, the Texas Wildlife Services Program removed **51,215** feral hogs an 82% increase over the past 5 years.

During the same period, the number of acres worked for coyotes has declined about 14%. The number of coyotes removed annually has declined about 16%. To be sure, we still do more predation management than we do feral hog management (over 11M acres for predators compared to 7M acres for feral hogs). But the scales are tipping.

Which brings us to the budget. In Civics Class we learned that Congress passes the Federal budget and OMB passes the budget to the agencies. The agencies pass along the allocations to the individual programs which then pass the funding down. What you might not have learned is that at each level, some overhead is taken out by the programs to run their operations.

In recent years, the budget available for predation management has been flat, with the only increases being available for non-lethal work in states with wolves or grizzly bears. The Texas WS base appropriation has been flat for over a decade, with the only add-ons being dedicated to feral hog control or disease suppression. However, during this same time the Federal agencies have been taking increased overhead ***and*** passing along additional expenses they had previously covered by that overhead. In 2021 over $200,000 in agency rent and IT costs were passed along to the Texas program. In 2022, these costs increased to over **$900,000**!

(From the Director continued on page 4)

From the Director on page 3

Because the other Federal funds (feral hog, rabies, aviation) are dedicated to those activities, the result is that decreased funding usually affects predation management. In some cases, we've had counties drop out of the program which reduces the number of employees and the acres worked. Up until now, we've also been able to balance these costs by counting the employee time in feral hog control (a predator of sheep and goats) against that funding. We've been able to pay vehicle expenses for those employees gathering samples to the rabies fund or the feral hog fund to better reflect the work they do.

The State budget has been kind to the program and we received increased funding from the last Legislative session to evaluate landowner use of Kaput ® feral hog toxicant. The Management Fund, which receives funds from rancher associations and counties, has been managed well and we have not requested a cost-share increase for 5 years now. With uncertain economic times ahead, it's more important than ever to manage the program to provide maximum benefits for all the citizens of Texas.

This is the fifth Annual Report for the program and, as last year, we're including some of the new, upcoming issues as well as reporting on FY 2021 results. I hope you enjoy this Annual Report for the Texas Cooperative Wildlife Services Program.

Mike Bodenchuk
State Director

Texas Cooperative Wildlife Services case studies

The College Station district regularly conducts rodent work with contract farmers in broiler farm and egg laying operations. Texas Wildlife Services was contacted by an operator who runs 16 broiler houses. This operation has been plagued with rat infestations for several years and reached out for assistance. Once a farm has a large population of rats using their houses it can be impossible to manage them with traditional commercially available toxicants. While some rats will eat the bait and die the percentage is not great enough to overcome the speedy reproductive abilities of black roof rats; especially in conditions such as these where they have a steady supply of hi protein feed, clean water, and good shelter. Mixing Zinc Phosphide 63% concentrate with cut apples has proven to be an extremely effective method to kill large numbers of rats in these broiler and egg laying operations. A date was set to come out and bait the rats and the farm operator had applied pre-bait for two nights with the designated amount of cut up apples, on the 3rd day the mixed toxicant bait was applied. The next day an estimated 600 black roof rats were killed. The farmers with rat problems are extremely grateful for this service because there really is no other good option for removing large quantities of rats quickly. These broiler houses usually have a total of 16 large evaporative cool cells, these can be costly to repair or replace when rats turn the cardboard into rat nests. Damage in the hundreds of thousands of dollars is not uncommon.

Methods Development

Texas WS conducted or collaborated with researchers on the following projects:

- **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 (CKWRI & CBP)**
- **Vulture Movements (CKWRI &CBP)**
- **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)**

Texas WS By the Numbers FY2021

- **3921 Properties Worked**
- **13,257,211 Acres Worked**
- **16,639 Coyotes Removed**
- **51,215 Feral hogs Removed**
- **3,156 Surveillance Samples Collected**
- **359,327 Non-lethal Dispersals**
- **18,937 Technical Assistance Sessions**
- **52,665 Parties Consulted**
- **10,575 Leaflets Distributed**
- **67 Species Conflicts were Discussed**

Value of Resources Protected

- **1454 aircraft valued at $14,481,800,002.00**
- **1,985,247 acres of pasture and rangeland valued at $1,823,312,587.80**
- **60,250 acres of wetlands valued at $11,242,400,454.00**
- **438,8687 head of cattle valued at $566,345,312.82**
- **318,340 head of goats valued at $63,420,729.26**
- **325,350 head of sheep and lambs valued at $29,684,366.81**
- **47,440 Domestic White-Tailed deer valued at $122,712,243.79**
- **57,696 Exotic livestock valued at $55,175,994.51**

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.

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.

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. In Edwards County, for example, the Wildlife Services program works on only about 33% of the land. With limited access, our strategy must be one of preventing predators' access to livestock. Or program works with cooperating landowners, constantly looking for those coyotes or bobcats which are within striking distance of vulnerable livestock.

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. The importance of wildlife diseases cannot be overstated- the COVID-19 pandemic which ground the global economy nearly to a halt had origins in wildlife. Whether we 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.

Rabies management, for the protection of humans, remains an important component of the Program. Two terrestrial strains of rabies, the Texas gray fox strain and the Coyote/Canine strain, have been eliminated from the US due to oral rabies vaccination (ORV) campaigns. Because these strains may still be circulating in northern Mexico, we continue to maintain the border ORV project with partners from the Texas Department of State Health Services and the Texas National Guard. ORV in Texas is the only project in the US which has completely eliminated specific rabies strains and supports the North American Rabies Plan objectives of the elimination of terrestrial rabies in North America.

The combined program also addresses beaver damage, wildlife conflicts with aviation (we have 13 employees at military and civilian airports) 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.

By integrating Federal, State, County and private funding into the program, Wildlife Services is poised to address problems as they occur. Because we have the cooperative relationship, we can deploy personnel, equip-

ment and other resources when and where needed. Other agencies include the Wildlife Services program in their 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.

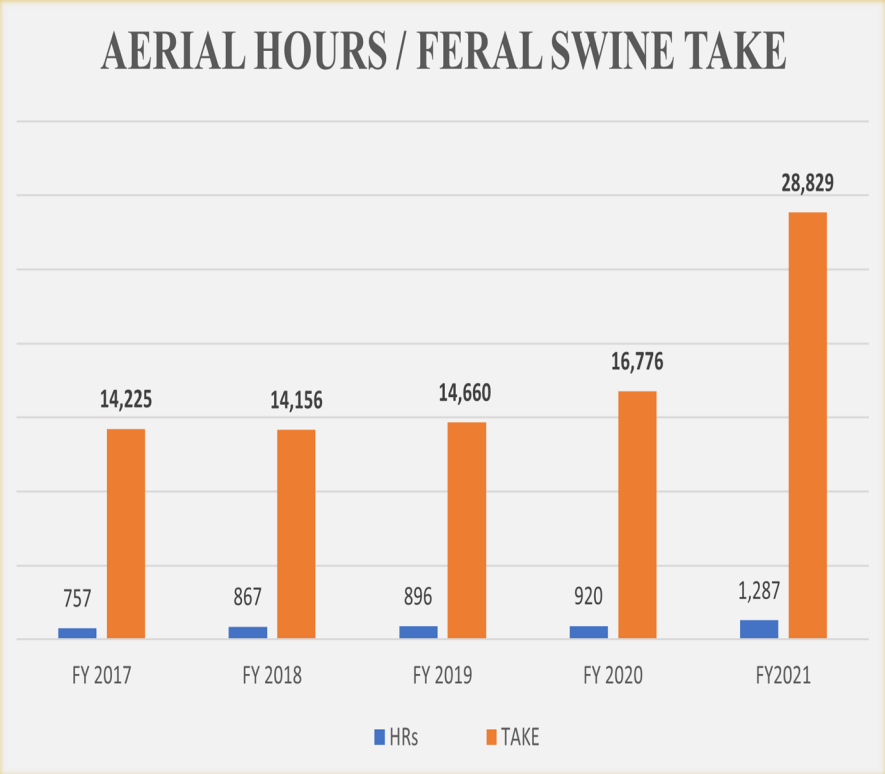
Feral Hogs

Increasingly, feral hogs are demanding more and more of the Texas Wildlife Services Program. Certainly, feral hog funding has increased over time and the Farm Bill Pilot Project has initiated more intense work in the 6 Texas project areas.

Feral hog damage has increased annually until FY 2021, when it took a significant dip. We attribute the dip to improved conditions in the Farm Bill areas as well as reduced densities around crops in a number of counties. The prospect for FY 2022 remains blurry- the price of fuel, fertilizer and seeds remain so high that the value of hog damage will likely increase due to the input costs to farmers.

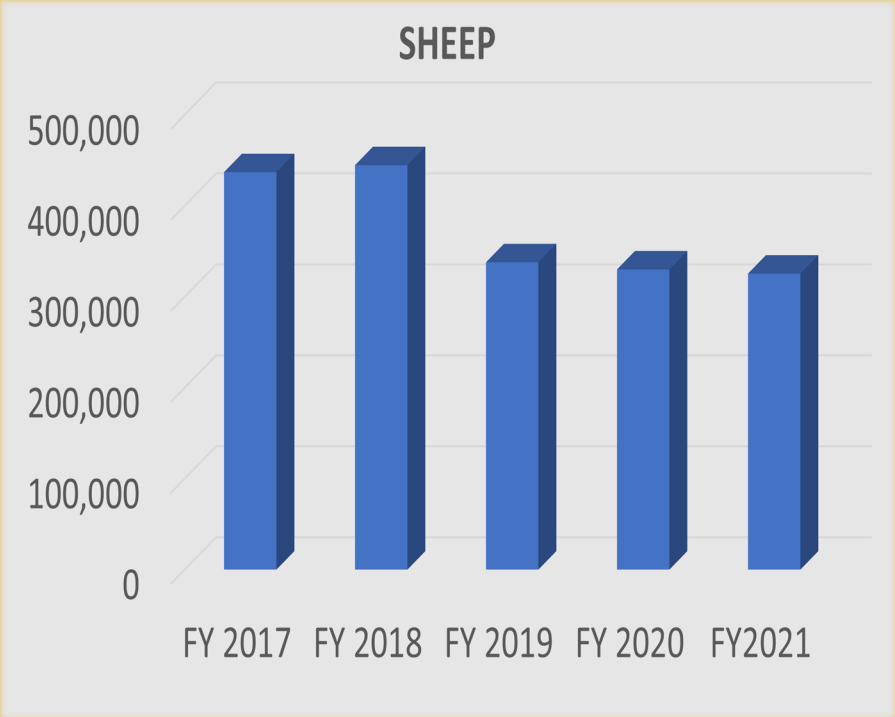
Texas WS started 3 Farm Bill Pilot Project areas in FY 2020, at the height of the COVID pandemic. The projects started slowly due to restrictions on meetings and travel. A second round of projects were approved in FY 2021 and, because these have a shorter life span, were intentionally designed to protect crops for the 2022 and 2023 growing seasons. At the time of this writing, there are six (6) Pilot Projects in Texas; the Canadian River Project, the Red River Project, the Upper Leon River Project, the Dallam County Eradication Project, the Milam/ Williamson Counties Crop Protection Project and the Nueces/Bee/San Patricio Counties Crop Protection Project. All projects are slated to end with the expiration of the current Farm Bill in September 2023.

Texas WS operates 5 helicopters, two of which are dedicated to feral hog management. One helicopter is funded through the National Feral Swine Damage Management Program (NFSDMP) and is available to any of the Wildlife Services Western Region States, though most of the flying is conducted in Texas. The other is dedicated to the Farm Bill Projects. The number of hogs removed skyrocketed in FY 2021 due to the addition of the Farm Bill helicopter. Overall, Texas Wildlife Services removed **51,215** feral hogs in FY 2021, with **28,829** of these removed by aerial shooting..(*feral hogs continues on page 15)*



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.

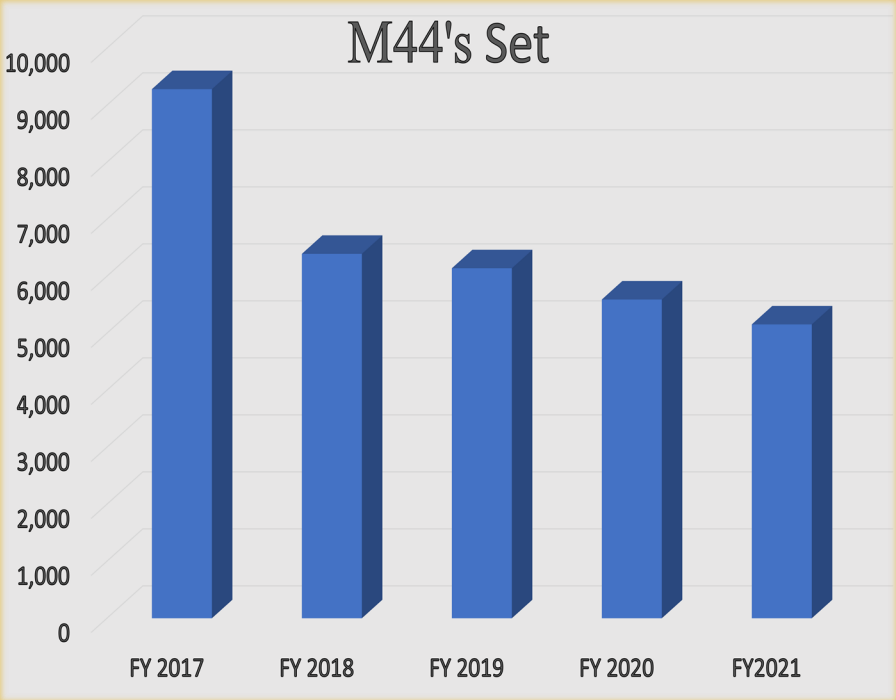


Domestic sheep and goats are vulnerable to predation year-round and require protection from coyotes, bobcats, mountain lions and black vultures. Over the past 2 decades, the number of sheep in Texas has declined, and the area where Texas Wildlife Services has conducted predation management activities 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 (for fall markets or feedlots) or in fall (for the Easter market). 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.

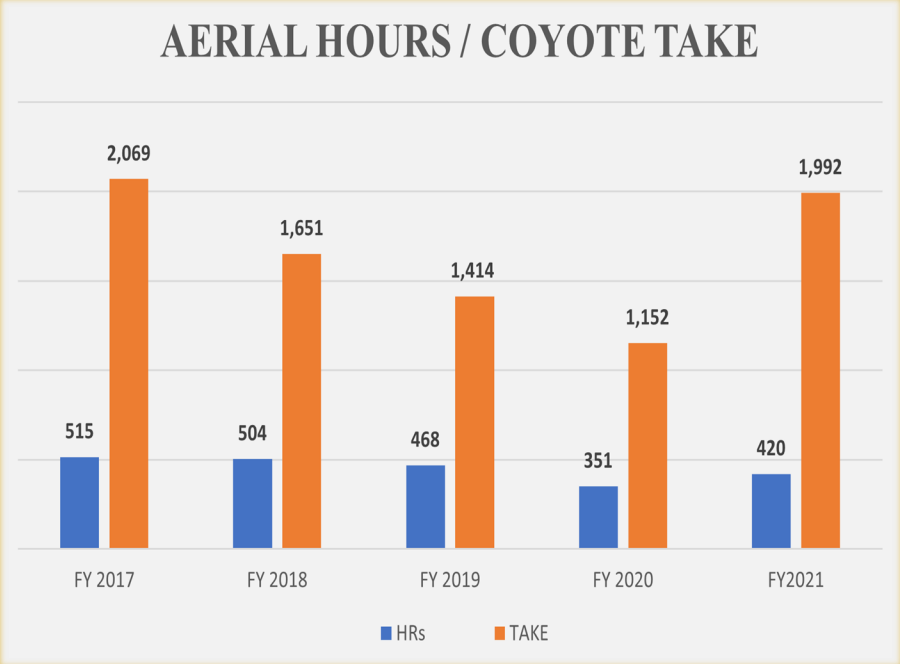
Goats have increased in abundance in recent years, and many small producers are now involved in goat production. Smaller producers have more options for predation management, including guard animals, night penning and elaborate fencing. Large rangeland operations, however, remain more vulnerable than ever. Changes in land ownership in rural Texas has created properties where predation management does not occur- and coyote reservoirs exist in all counties. This requires livestock producers and Wildlife Services employees to be ever vigilant and to be as proactive as possible in getting predators as they enter the pastures.

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.

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 not only increases the cost of management, but likely increases livestock losses.



Aerial operations get a lot of attention, but the aerial removal of coyotes remains low- only 12% (1,992 out of 16,639 coyotes taken) were removed with aerial hunting. That's not to say these weren't important! Aerial operations are critical to supporting the trapper trying to stop a problem. To keep it in perspective, M-44's removed 3,949 coyotes (24%) and neck snares removed 8,228 coyotes (49%). While the aerial crews always get a lot of attention, the trapper on the ground is getting the work done!



Financially, the available Federal funds for responsive predation management have declined over the years. While overall Federal funding has been stable to slightly increasing, 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 to do this work has declined. State funding, approved by the legislature, has similarly been stable, with the only increases been earmarked 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 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. Multiple harassment methods can be put in place to move vultures from structures where they roost. In an urban setting, you need to have a large group of observers available to prevent the displaced vultures from roosting in a new, undesirable location.

Effigies can be dead vultures, taxidermized mounts of a vulture or an artificial vulture placed to scare away other vultures. As odd as it seems for an animal that eats other dead animals, vultures do not like to be around dead vultures, so the effigies can be effective. 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 (other than game birds within season) without a Federal permit. If you have the Federal permit, you do not need a State permit.

Since turkey vultures are rarely, if ever, involved in killing livestock, lethal take for livestock protection is limited to black vultures. The purpose for lethal take is to reinforce the non-lethal harassment. With repeated exposure to harassment, vultures become accustomed to harassment and will not leave the pasture or, if they do, they will immediately return. 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 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 numbers on the back of this report). Another option recently became available to livestock producers: The Texas Wildlife Damage Management Association (TWDMA) Livestock Protection Pilot Program.

TWDMA Permit

After years of discussions, the FWS granted a permit to the Texas Wildlife Damage Management Association (TWDMA) for lethal removal of black vultures to protect livestock. The permit allows the TWDMA to grant sub-permits to livestock producers for the protection of their livestock. By FWS rule, only 5 black vultures can be available per sub-permit. The initial 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 (back of the report) and ask to be included as a TWDMA vulture sub-permittee. The biologist will collect the information necessary to complete the WS Form 37 and forward that form the WS State Office. Upon review, the form becomes the application and is sent to the Association Treasurer who should be able to issue the sub-permit within one or two business days.

Because of the limit on the number of sub-permits which can initially be issued, TWDMA and WS will prioritize those experiencing current depredations and those still having newborn livestock. 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. The amount of work has increased with the number of sup-permits issued.

A big round of thanks is due to **Ms. Linda Benke**, TWDMA Secretary/Treasurer who has professionally added these duties to her already packed workload. Because of Linda's dedication and quick turn-around on permits, over 120 landowners are now legally able to protect their own livestock from black vultures.

Texas Wildlife Services Program Highlight

Feral hogs aren't just a rural issue in Texas and the Texas Wildlife Services Program receives numerous requests for assistance in urban areas. In FY 2021, Texas Wildlife Services Program personnel logged over 1077 hours controlling pigs on 34 urban properties which totaled 159,865 acres. Among the properties were various schools, landfills, golf courses, airports and city-owned properties. Personnel removed 810 pigs from urban areas in FY 2021.

Texas Wildlife Services Program has coordinated with scientists at the National Wildlife Research Center and at Texas A&M University to help identify the amount of damage caused by feral hogs in Texas. Research indicates that hogs do more than $89M in damage just to 6 main grain crops, $25M in damage to livestock, more than $1M in damage to golf courses and cemeteries and millions more in damage to natural resources. All told, feral hog damage is estimated to be greater than $500M annually, just in Texas. Ongoing efforts to evaluate the efficacy of control indicates that control efforts reduce damage to wetlands more than 75%, providing a very large benefit: cost ratio. More data will be collected through the Farm Bill Projects and additional wetland damage research to further refine the initial information.

Beaver Damage Management

During FY 2021, Texas Wildlife Services Program worked **355** properties totaling **468,976** acres for beaver damage management. The number of properties appears to have stabilized over recent years, likely the result of reduced rainfall, which causes beavers to disperse. Overall, the actual damage caused by beavers increases over FY 2020 to **$1,733,934** in FY 2021. The greatest amount of damage **($805,850 or 46%)** is to dikes or dams. Beavers burrow into dikes and dams and weaken the structure, potentially causing catastrophic failure.

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 2021 increased to **$473,750** but the damage could have been much worse had the program not been in place.

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 2021, Texas WS personnel conducted 339 outreach projects reaching 861 people.

Protected Resources Highlights

- **1206** dikes, dams or impoundments (a **64%** increase over FY 2020)
- **186,775** acres of timber protected (a **10%** increase over FY 2020)
- **111** miles of roads protected (a **15%** increase over FY 2020)
- **176** bridges and 2 RR trestles protected (**112**% increase)
- **$741,017,287** total value of the resources protected from beaver damage

Airport Wildlife Hazard Program (AWHP)

"Strikes" are when birds or other animals collide with an airplane. This may occur when the airplane is taking off, landing, or while it is in the air. Wildlife strikes have increased in the past 30 years because of a combination of expanding populations of many wildlife species that are hazardous to aviation and increasing numbers of aircraft movements (Dolbeer and Eschenfelder 2003). For example, 13 of the 14 largest (>8 lbs) bird species in North America have shown significant population increases in the past 30 years. These species include Canada geese, white and brown pelicans, sandhill cranes, wild turkeys, and bald eagles.

Managing bird and other wildlife hazards at airports is a complex, and public-sensitive endeavor involving many species of wildlife governed by the Migratory Bird Treaty Act and other Federal, State and local regulations. Because of the complexity and sensitivity involved in managing wildlife hazards, airports are required to employ professional biologists trained in wildlife hazard management at airports (14 CFR Part 139.337 and FAA Advisory Circular 150/5200-36a [FAA 2012]) to assess hazards, provide training, and to assist in the development, implementation, and evaluation of wildlife hazard management plans. Such professionally developed and implemented management plans minimize the likelihood of catastrophic or major-damage wildlife strikes on an airport and provide crucial support during litigation in the aftermath of any significant strike event that might occur.

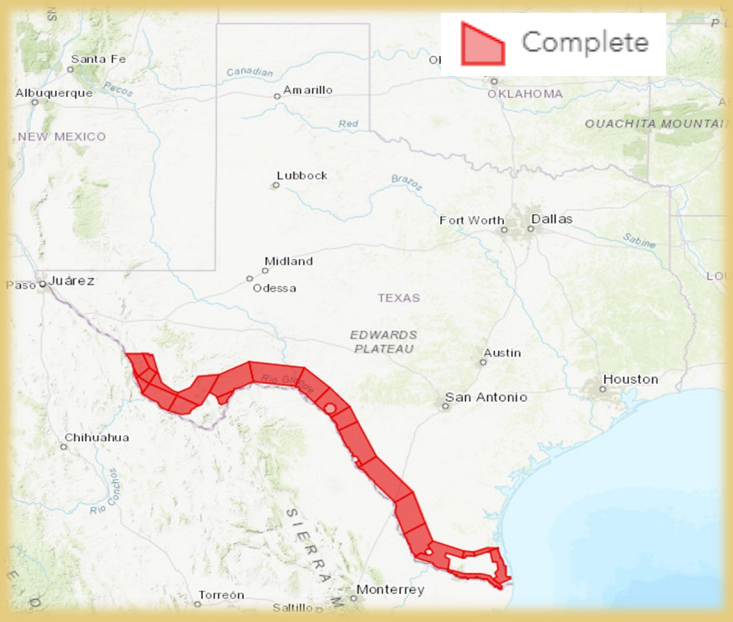
In recognition of WS' expertise and accountability, the Federal Aviation Administration (FAA) entered into a Memorandum of Understanding (MOU) with WS, which encourages airports to "request technical and operational assistance from WS to reduce wildlife hazards." The Department of Defense executed a similar MOU to address wildlife conflicts at military installations. In 2013, a MOU between WS, the National Association of State Aviation Officials (NASAO) and the FAA was signed, fostering cooperation between the signatory parties to reduce wildlife hazards at airports in every state.

WS provides protection of Airport Resources and Human Health and Safety associated with the protection of aircraft, runways, and taxiways. This category includes human safety protection and response related to wildlife-aircraft collisions on runways or birds strikes in the air.

Texas Wildlife Services Program provided technical assistance or direct management assistance at **30** "Part 139"-certificated airports, non-certificated airports, and military airbases. This assistance resulted in a reduction, suppression, or prevention of hazardous conditions caused by wildlife. Due to this complexity and number of airports assisted, Texas WS provided **18,686** hours of assistance to the **30** airports across **36** counties in the 8 districts of the Texas Wildlife Services Program.

Rabies Management

Oral rabies vaccination (ORV) has been in use in the United States since 1990, in Canada since 1985 and in Europe since 1980. Currently there are 16 states distributing oral vaccines for raccoons in the U.S., while Texas WS distributes baits for gray fox and coyote. 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 and to reduce the possibility of people and domestic animals coming into contact with the baits. 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 still remains a significant concern. In FY 2021, Texas WS partnered with the Texas Department of State Health Services in the distribution of **1,175,100 Oral Rabies Vaccine (ORV) baits** along **19** counties (**9.1** million Acres) of the international border to prevent the reintroduction of canine and Texas grey fox rabies from Mexico. The lack of surveillance or management of wildlife in Mexico makes maintenance of the border zone crucial.



In addition to the ORV zone along the border, Texas Wildlife Services Program and the National Rabies Management Program have been planning a field trial for a new vaccine (OnRab) in coyotes. The OnRab vaccine has proven effective in eastern efforts to manage raccoon rabies but it's potential as a canine vaccine remains untested. In 2020, Texas WS dropped OnRab vaccine baits in South Texas, near the border maintenance zone. However, the results were confounded by proximity to the existing border zone as well as a lack of access to many ranches due to ongoing quail hunting season. In FY 2021, Texas WS met with landowners in the Panhandle and identified a more suitable site and baits were distributed in February 2022. This project will be ongoing for 2 additional years.

The efforts to manage rabies in wildlife, and ultimately wildlife-vectored rabies in humans, must be adaptable to be effective. ORV projects effectively removed the canine-strain and the Texas gray fox strains from the US, and the ongoing border maintenance project is designed to prevent their reoccurrence. However, 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. Adaptive management strategies are being developed and may be tested to get better data on efficacy and risk.

Feral hogs continued from page 7

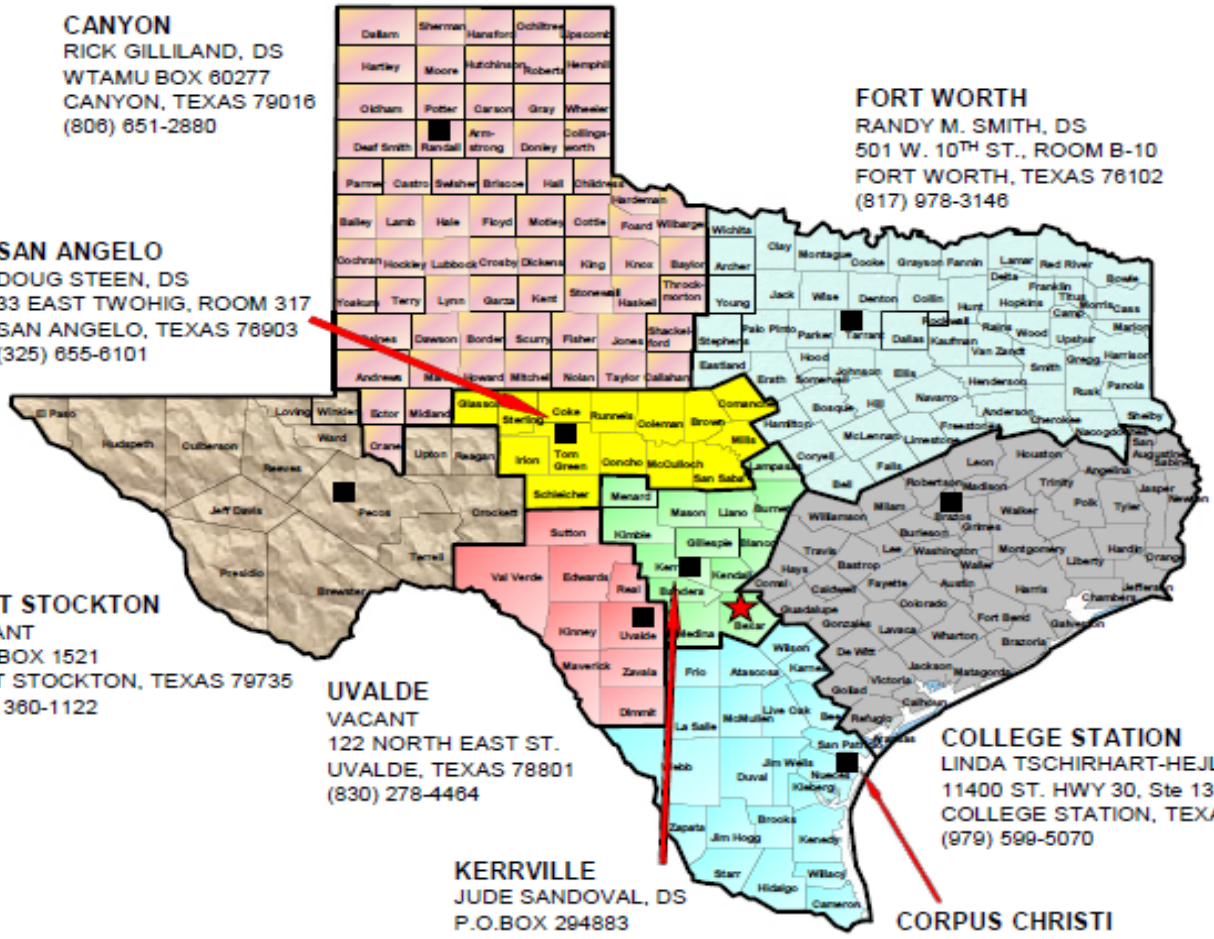
The 2021 Legislature directed the Texas Wildlife Services Program to work with the Texas Department of Agriculture (TDA) to implement a field trial for the landowner-applied, warfarin-based feral hog toxicant Kaput. The intention is to gather data on efficacy of landowner efforts to use the toxicant in multiple eco-regions of the state and in multiple seasons. The program has entered into an agreement with Texas A&M University to have academic oversight to the project and has identified cooperators willing to put in the effort to use the toxicant. A field trial protocol was developed and agreed upon with TDA and the manufacturer of the product. Actual application of the product did not begin until FY 2022. A report is due to TDA and the Legislative Budget Board by August 2023. At the time of this writing, the project is ongoing.

A major concern regarding feral hogs in Texas is the possibility of a foreign animal disease. Texas Wildlife Services has been involved in disease contingency planning at the national level, using data from operational efforts here to populate models for disease surveillance and control. The expansion of African Swine Fever (ASF) across much of Europe is of concern to the domestic pork industry. ASF is an environmentally stable, highly virulent virus which kills domestic and wild pigs but can survive on food products, such as sausage and cured meats. ASF has been moved around Europe through the movement of contaminated food products either intentionally fed to domestic pigs or unintentionally left available for European wild boar to eat. Once wild boar populations become infected, it is difficult and expensive to eradicate.

In FY 2021, ASF was found on the Caribbean Island of Hispaniola, which contains the countries of Haiti and the Dominican Republic. Because Hispaniola and Puerto Rico (a US Territory) are close, USDA began a feral hog eradication project in Puerto Rico shortly after the discovery of ASF on Hispaniola. While ASF is highly fatal to pigs, the real economic danger is the loss of markets for US meat products. Contingency plans, including plans for surveillance and control in feral hog populations, have been prepared by USDA in coordination with the pork industry and Animal Health Officials at the State level. Data from operational control in Texas has been used to model the level of control necessary to contain an outbreak. The fate of feral hog carcasses left on the landscape has been studied to determine the level of risk associated with a wild pig mortality event. Texas WS, working with the NFSDMP and Veterinary Services planned a mock exercise in Texas (completed in FY 2022) to replicate the effort necessary to remove pigs in a containment exercise. Beginning in FY 2022, Texas Wildlife Services will be collecting samples from "high risk" counties to assure our trading partners that the US has a robust system to prevent, detect and respond to ASF, should the virus make its way to the US.

TEXAS WILDLIFE SERVICES PROGRAM

USDA



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