

Authorized Personnel Program Module 3

- *Transmissible Spongiform Encephalopathies (TSEs)*
- *Fever Ticks*
- *Foreign Animal Diseases (FADs)*



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Transmissible Spongiform Encephalopathies (TSEs)



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Transmissible Spongiform Encephalopathies (TSEs)

- Bovine Spongiform Encephalopathy (BSE) – Cattle
- Scrapie – Sheep & Goats
- Chronic Wasting Disease (CWD) - Cervids
- Many more, fairly species-specific





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Clinical Definition

- **BSE**
 - neurological symptoms in adult cattle
- **Scrapie**
 - neurological symptoms in sheep/goats
 - chronic weight loss despite normal appetite
- **CWD**
 - neurological symptoms in deer, elk, others
 - emaciated animals





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Bovine Spongiform Encephalopathy (BSE) in the USA

- Dec. 2003 – 1st case; 6-yr-old dairy cow; WA; imported from Canada in 2001
- Nov. 2004 – 2nd case; atypical; 12-yr-old beef cow; TX
- Feb. 2006 – 3rd case; atypical; 10-yr-old beef cow; AL
- April 2012 – 4th case; atypical; 10-yr-old dairy cow; CA
- July 2017 – 5th case; atypical; 11-yr-old beef cow; AL
- Aug. 2018 – 6th case; atypical; 6-yr-old beef cow; FL

“Atypical” = spontaneous form of disease



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Importance of BSE

- Approximately 14% of U.S. beef production is exported
- Approximately 90% of the exports go to 4 countries (Japan, Korea, Mexico and Canada)
- U.S. beef exports dropped 80% in 2004
 - Estimated loss approximately \$3 billion
- Effects on consumer confidence
- Ongoing surveillance in Texas slaughter plants



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Scrapie Program in Texas

- Premise and animal identification
- Conduct genetic testing
- Testing of “suspects”
- Last detection in April 2016
 - Prior to that 2008





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Chronic Wasting Disease (CWD)

Species Affected:

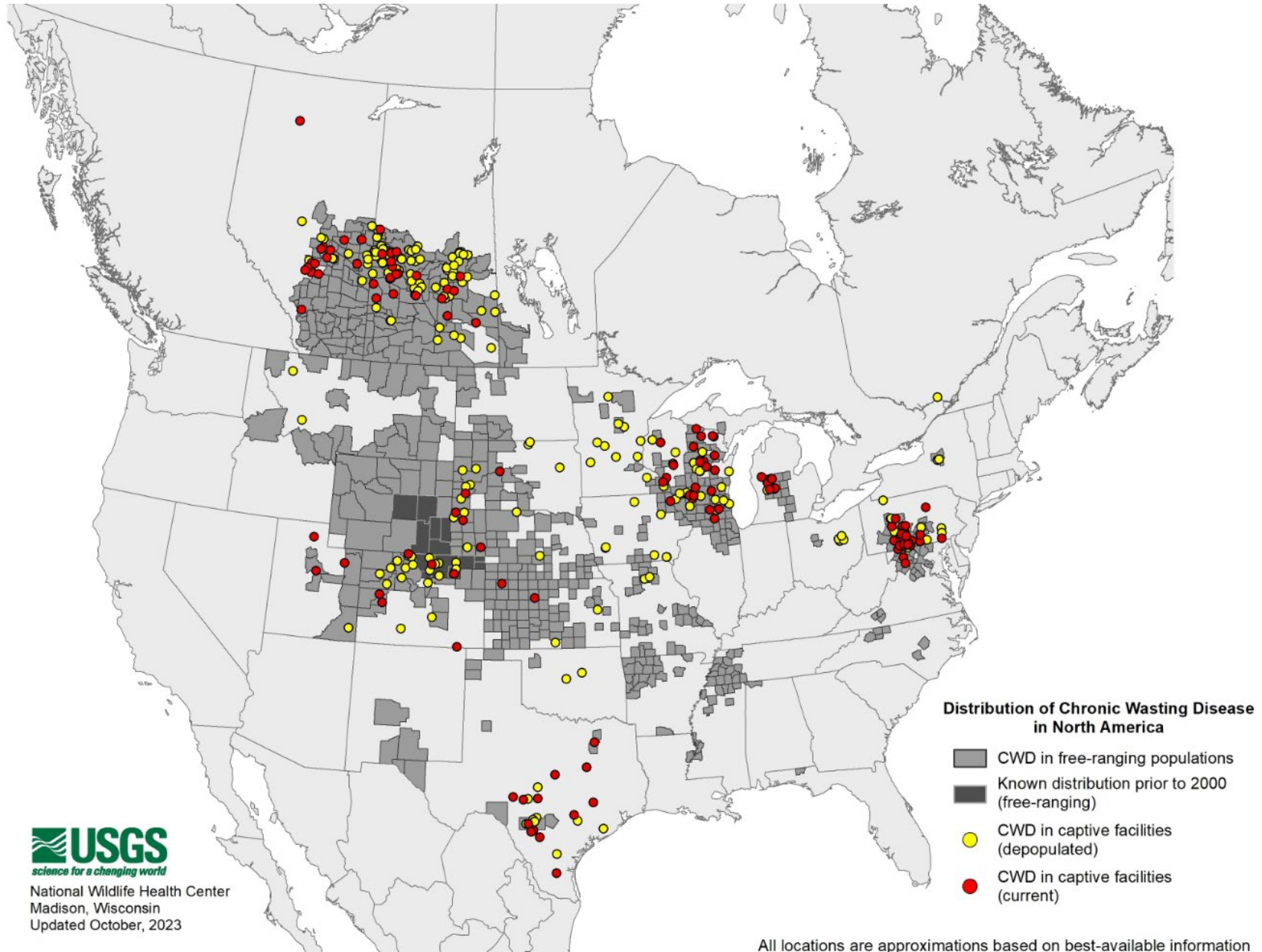
- White-tailed deer
- North American elk
- Mule deer
- Moose
- Sika deer
- Red deer
- Reindeer
- Hybrids of above species





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CWD Distribution



National Wildlife Health Center
Madison, Wisconsin
Updated October, 2023

All locations are approximations based on best-available information



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Cervid Jurisdiction in Texas

- Indigenous species of cervids regulated by Texas Parks & Wildlife Department
 - White-tailed and mule deer
- Non-indigenous species regulated by TAHC
 - Elk, red deer, sika, axis
- CWD program in Texas is shared between both agencies



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CWD Chronology in Texas

- Disease Progression
 - July 2012 – Detected in free-ranging mule deer in far West Texas
 - June 2015 – Detected in captive white-tail deer herd Medina County, Texas
 - February 2016 – Free-ranging mule deer in Texas Panhandle
 - January 2017 – Free-ranging Texas white-tailed deer in Medina County



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CWD Chronology in Texas Cont.

- Disease Progression
 - May 2017 – Detected by antemortem testing in captive white-tailed deer herd
 - October 2017 – detected in elk located on high-fenced premises with common management as a property where white-tailed deer were previously confirmed to have CWD
 - December 2019 – detected in free-ranging white-tailed deer in Val Verde County, Texas
 - February 2020 – detected in captive white-tailed deer herd in Kimble County



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CWD Chronology in Texas Cont.

- 2021 – 7 whitetail breeder facilities tested positive
 - Hunt, Duval, Uvalde, Matagorda, and Mason county
 - 4 have been depopulated
 - 1 has signed a genetic herd plan and has tested over 1,000 head thus far
 - 1 self-depopulated the breeder deer, TPWD depopulated the DMP
- From the 7 positive facilities - 303 direct traces
 - 230 met requirements & released
 - 25 are under a Herd Plan
 - 41 pending a herd plan
 - 8 out of state



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CWD Chronology in Texas Cont.

- 2022 – 2 whitetail breeder facilities & 1 release site tested positive
 - Gillespie, Limestone, and Hunt county
 - 1 depopulated
- From the 2 positive facilities - 81 direct traces
 - 18 met requirements & released
 - 15 are under a Herd Plan
 - 48 are pending a Herd Plan



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CWD Chronology in Texas Cont.

- 2023 – 10 whitetail breeder facilities & 1 release site tested positive
 - Zavala, Washington, Gonzales, Hamilton, Frio, Sutton, Brooks, Kimble and Hunt county.
 - 1 has depopulated
- From the 10 positive facilities – 343 affected facilities, 333 direct traces
 - 133 breeder facilities
 - 197 release/DPM sites,
 - 10 nursing facilities
 - 3 out of state
 - 147 facilities met requirements and were released
 - 148 herd plans distributed
 - 12 under herd plan

*Updated as of September 2023



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CWD Positive Cases in Texas Cont.

- 508 positive CWD cases as of June 2023
 - 368 breeder facilities
 - 39 breeder release sites
 - 101 free range

- 424 white-tailed deer
- 75 mule deer
- 4 red deer
- 5 elk

*Data reported by TPWD as of June 2023



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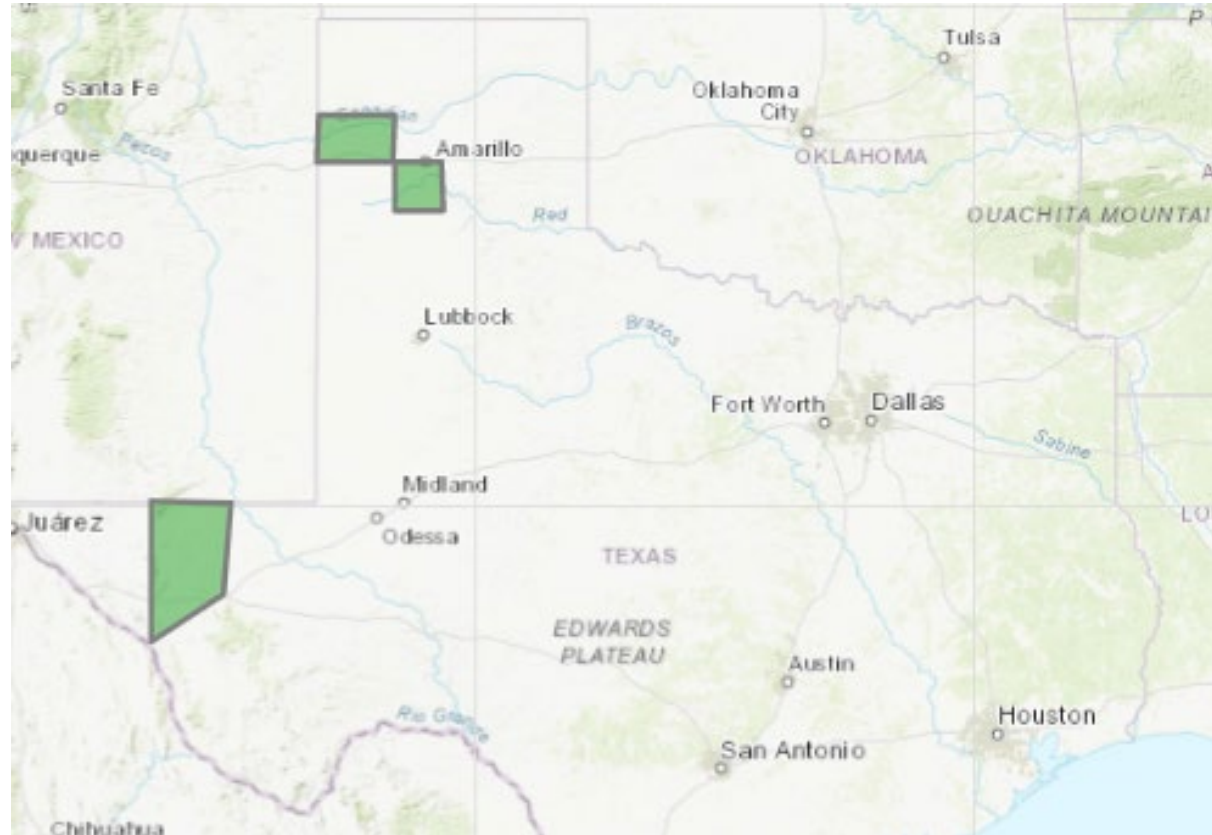
Chronic Wasting Disease (CWD)

- Implications
 - Impacts on deer populations
 - Population declines
 - Shift in age structure—fewer mature deer
 - Higher mortalities due to other causes—predators, vehicle collisions, hunters
 - Economic losses related to CWD
 - Hunting
 - Captive breeding programs
 - Surveillance and program enforcement
 - Unknown long-term risk to human health
 - To date there is no indication that CWD can be transmitted to humans



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TX CWD Check Stations/Zones





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CWD Monitoring Program

- 190 cervid herds in TAHC program
 - Individual animal ID required
 - 100% mortality testing deer 12 months and older – after 5 years may allow interstate sales
 - Annual inventory and recordkeeping requirements
- 1100 herds in TPWD program
 - Only 20% mortality testing – can only sell within state



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CWD Sampling

- Obex portion of medulla oblongata





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Chronic Wasting Disease (CWD) Medial Retropharyngeal Lymph Nodes





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TAHC Movement Requirements for CWD Susceptible Species

- Elk, red deer, sika, reindeer, moose
- 4 TAC 40.5 – outlines requirements
 - Individual animal ID
 - Mortality testing of animals 16 months and older
 - Annual inventory and recordkeeping requirements
 - Movement reporting requirements

Cattle Fever Tick Eradication Program



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What is the Cattle Fever Tick?



- Rhipicephalus (*Boophilus*) *microplus*, and *R. (B) annulatus*, introduced by Spanish colonists
 - One-host tick
- Vectors for bovine babesiosis – “Cattle Fever”



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Hosts Targeted by Fever Ticks

- Cattle are the most efficient host, but
 - horses
 - deer
 - exotics (e.g., Nilgai antelope) also sustain tick populations

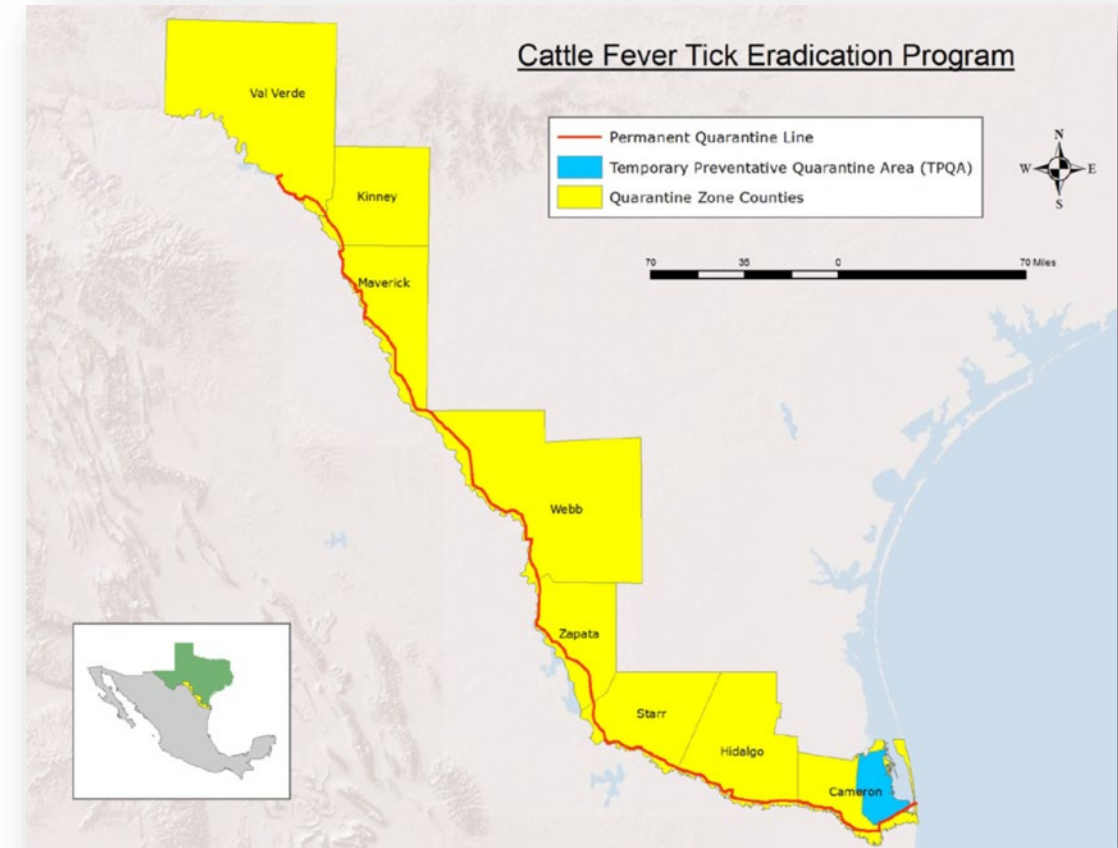




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Cattle Fever Tick Eradication Permanent Quarantine Area

- Del Rio to Brownsville
- Spans 8 counties
- Approx. 600 miles long
- 5 yards to 5 miles wide





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Control Program - Quarantine Zone

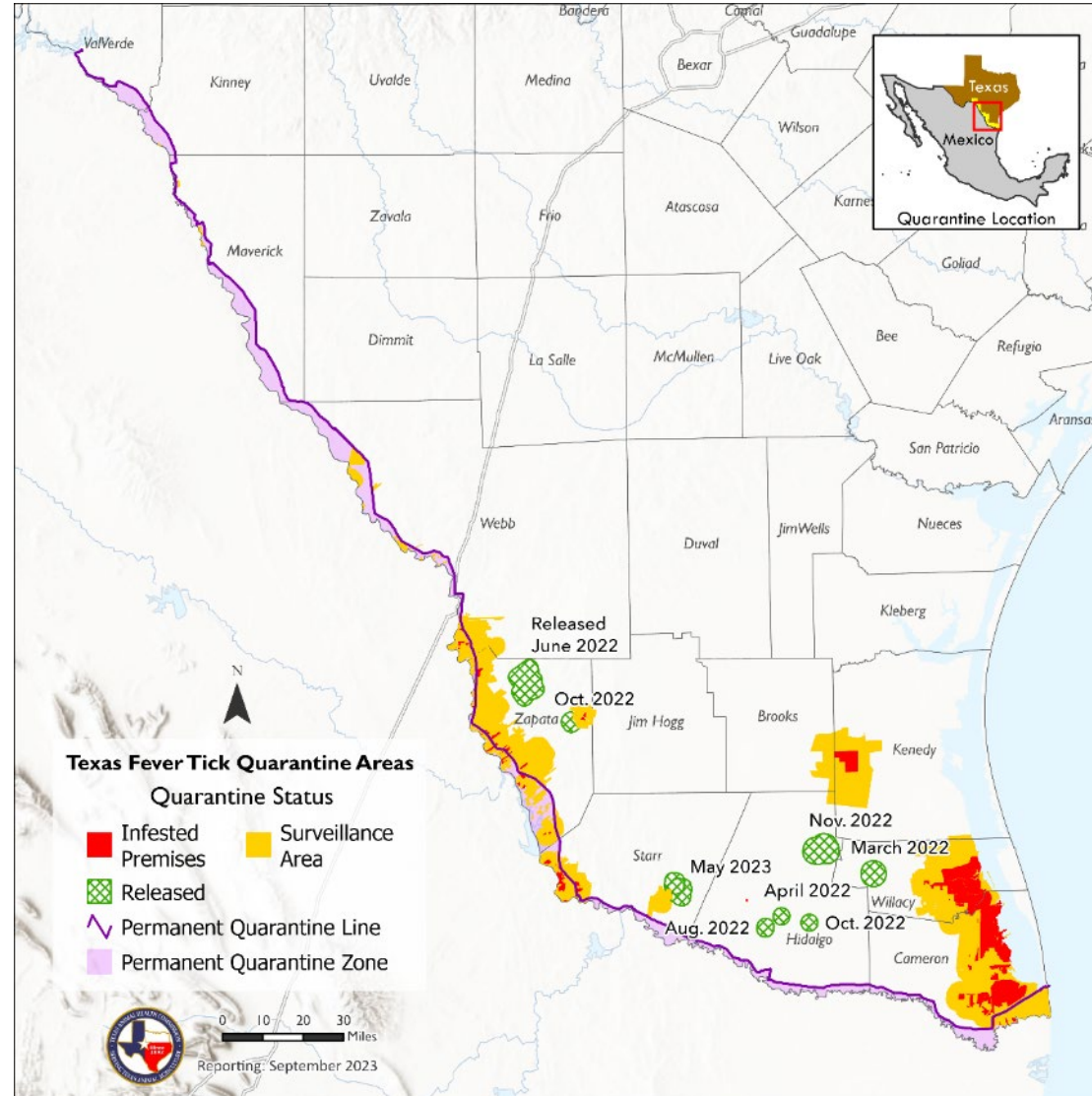
- River, range inspection
- Livestock movement control
- Scratch, dip livestock
- Apprehend stray animals
- Systematic treatment of animals on infested premises





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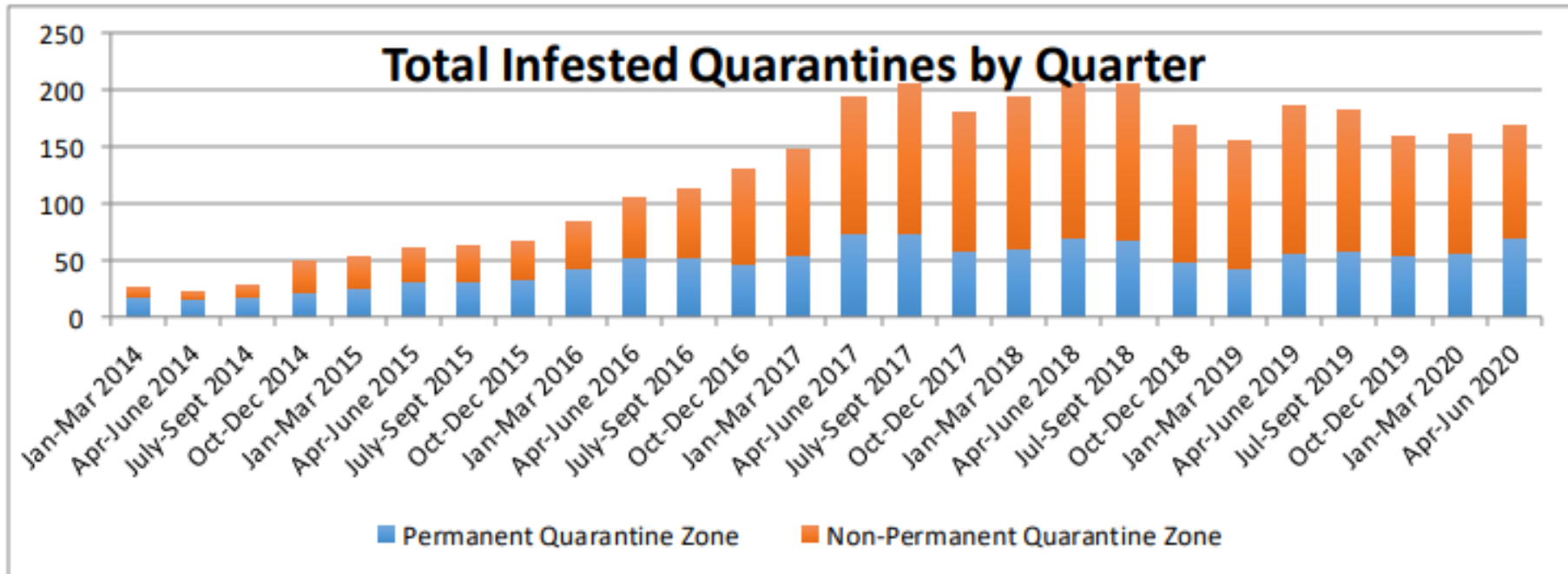
Control Program - Quarantine Zone



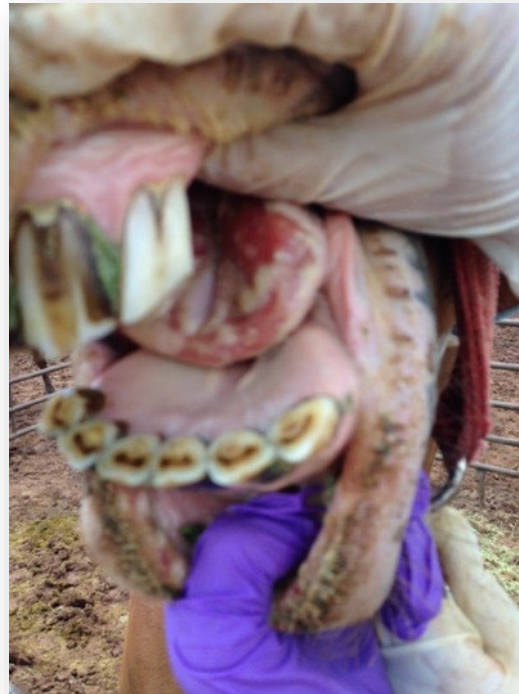


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Control Program - Quarantine Zone



Foreign Animal Disease Response in Texas



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Risks Unique to Texas Agriculture

- 20 land ports
- 9 seaports
- 4 international airports
- Top importer live animals - 1 million+ /year
- Texas borders 8 states
- 1,237-mile border with Mexico

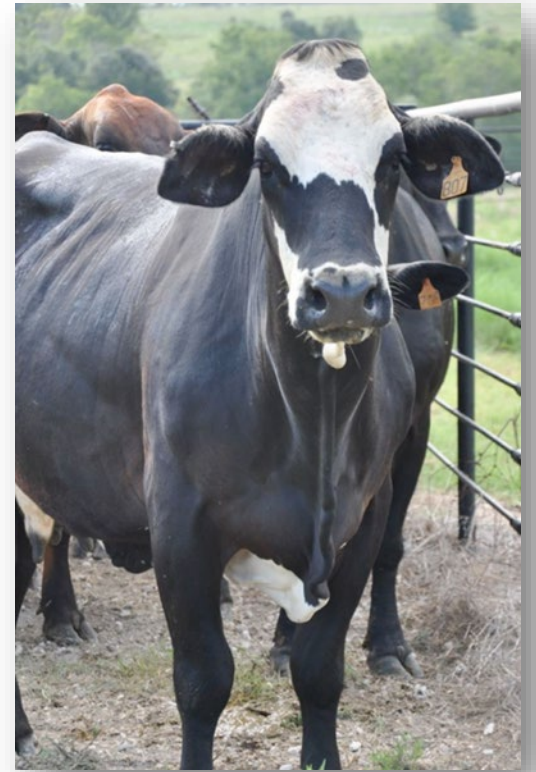




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Scenarios for Disease Introduction

- Accidental - through normal visitor activities and trade
- Intentional - result of a bio-crime or bioterrorist attack
- Response same for both scenarios (except for crime scene activities)





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Foot-and-Mouth Disease (FMD) U.S. 1929





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Foot-and-Mouth Disease (FMD)





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United Kingdom FMD Outbreak 2001

- Failure to stop movement for three weeks allowed the disease to become widespread
- 6 million animals depopulated
- \$6 billion+ (US) direct cost
- Estimated 60 suicides associated





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Foot-and-Mouth Disease (FMD)

- Quarantines
- Roads closed, movement restrictions
- Inspection and disinfection at checkpoints
- Continuous improvement in traceability (animal ID)





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Foot-and-Mouth Disease (FMD)

- Consumer fear
- Meat producers, processors, distributors, and retailers out of work





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Most Important Foreign Animal Disease Threats to Texas

- Foot-and-Mouth Disease
- Classical Swine Fever (Hog Cholera)
- Heartwater Disease
- Screwworms
- Avian Influenza
- Fever Ticks
- Exotic Newcastle Disease



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Conditions That Should Tip Off a Veterinarian of a Possible FAD:

- Central nervous system signs
- Presence of unusual ticks/maggots
- Vesicles/Blisters
- Sudden illness
- Sudden death



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Foreign & Emerging Animal Disease (FEAD) Investigation and Response

Owner calls
private
veterinarian



Veterinarian
investigates
and calls TAHC

24 hours a day, 7 days a week
Call **1-800-550-8242**



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TAHC Vets Do FAD Investigations

- On call 24/7
- Will respond as needed





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Report All Suspicious Animals

USDA-APHIS-VS

Austin

1-512-383-2400

Texas Animal
Health Commission

1-800-550-8242





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Foreign & Emerging Animal Disease (FEAD) Investigation and Response

- FAD Diagnostician (FADD) Assigned to the premises
 - Conducts investigation
 - Collects samples
- TAHC & USDA personnel respond & implement biosecurity protocols as appropriate





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Diagnostic Infrastructure

- USDA/Plum Island, NY(FADDL)
- USDA National Veterinary Services Lab (NVSL) Ames, IA
- Texas A&M Veterinary Medical Diagnostic Lab (TVMDL)

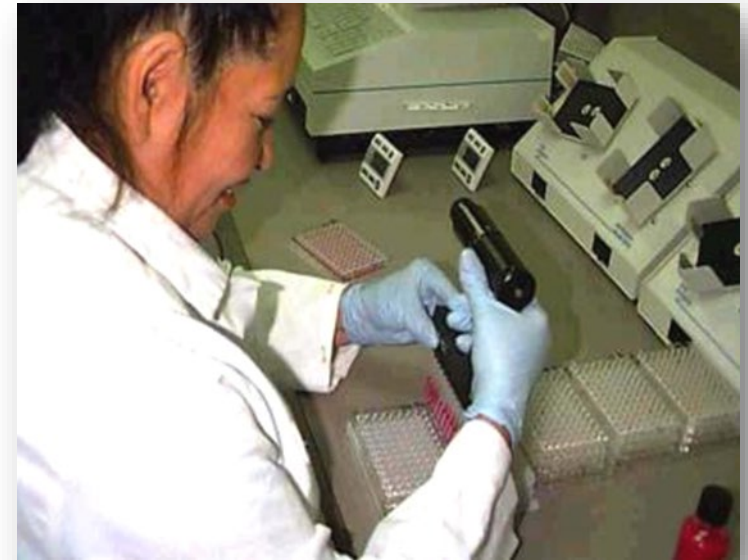




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Diagnostic Infrastructure

- Lab choice dependent on status of U.S.
- 1st case goes to Plum Island Lab
- Must have virus isolation to confirm
- Follow up samples may go to TVMDL
- National Animal Health Laboratory Network (NAHLN) in place





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U.S./Texas Response Plan for an FAD/FMD

- Texas Office of Homeland Security & Division of Emergency Management
- Texas' Foreign & Emerging Animal Disease (FEAD) Plan – Annex O
 - Uses state emergency management system
 - Outlines agencies' responsibilities and tasks
 - TAHC/USDA/DPS are lead agencies



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U.S. Highly Contagious Disease Response Plan Components

Federal quarantine
on interstate commerce
Federal Emergency Declarations

Industry input
into policy
development



State/Local
Response structure
intrastate

Incident
Command
System (ICS)



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TAHC/USDA Area Command





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Incident Command Post California END 2003





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All emergencies &
natural disasters are
“local” problems **FIRST!**





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County Animal Issue Committees



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Local shelters, city,
county, etc.



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Animal Issue Committees – examine local vulnerabilities and prepare for those first!





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Why is Animal Planning Needed?

- Animal issues are people issues
- Tex. Gov't. Code §418.043 (11)
- State law, TDEM & TAHC help local jurisdictions plan for animal issues
- PETS Act
- Federal law amending FEMA Stafford act and requiring locals to plan for household pets



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State Animal Response Plan Partners

- TX Division of Emergency Management
- Texas A&M AgriLife Extension
- TAMU CVM VET team
- Industry – TSCRA, ICA, TCFA, TxFB
- USDA VS, NRCS, AC
- Texas Veterinary Medical Association (TVMA)
- Texas Department of Agriculture



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Hurricane – Pre-Impact:

- Evacuation
- Shelter
- Interstate entry waivers
- Activation of Animal Response Operations Coordination Center (AROCC)





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Hurricane – Post-Impact:

- Re-entry
- Damage assessments
- Veterinary clinics
- Livestock facilities
- Displaced livestock





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Hurricane – Post-Impact

- Carcass disposal
- Animal health issues
- Dehydration, salt toxicity
- Displaced livestock ---- capture, shelter, owner ID
- Donations management





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Veterinary Response Resources

- Texas A&M University College of Veterinary Medicine Veterinary Emergency Team (VET)
- United States Department of Agriculture Veterinary Services (USDA-VS)
- Emergency Management Assistance Compact (EMAC) or other mutual aid agreements; other states' response teams (U of FL, OK State)





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Role of Local Veterinarian

Community Planning:

- Participate in local emergency management activities:
 - **Animal issues planning**
 - Be engaged in local animal issues committee
 - Know the local Emergency Management Coordinator (EMC)
 - Shelter planning advisement
 - Be written into animal plans as a resource!
 - Understand EM system and where to go for help (ICS training)
 - Encourage client preparedness
 - **Animal issues exercises**



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Role of Local Veterinarian

Community Response activities:

- Triage injured animals
- Treat animals, euthanasia decisions
- Support animal sheltering issues
- Reimbursed?
 - If you are identified as a county resource and involved in your area animal issues committee, you are more likely to be reimbursed.

