Operation Palo Duro: Policy and Decision-making in Response to an FMD Outbreak

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Operation Palo Duro: Background

- February 21-23rd, 2007
  - Texas Animal Health Commission, USDA-APHIS-VS-TX conducted a Foot and Mouth Disease (FMD) exercise in Amarillo, TX
  - Purpose:
    - Examine the response to an FMD outbreak in the Texas Panhandle region
    - More than 26 federal, state and local agencies and private sector organizations participated in the exercise

The Industry

- Panhandle of Texas
  - 31 northern most counties in Texas
  - One of the largest agriculture-based economies in the United States
  - Bordered by Oklahoma to the north and east and New Mexico to the west (High Plains)
  - Beef Cattle Industry
    - 3.5M cattle within 100-mile radius of Hereford (Beef capital of the world) 6.5M head within 250 mile radius of Hereford, Texas
      - $7B dollar cattle feeding industry, 30% of nations fed beef
    - Dairy Industry in Texas has experienced rapid growth and expansion
      - Fastest growing Dairy production region in the U.S.
    - Swine, over 90% of all swine in Texas is concentrated in the Texas Panhandle
      - Northern four counties of Texas Panhandle approx. 1M swine.
        - » Add Texas County Oklahoma-(Guymon)-2.42M swine

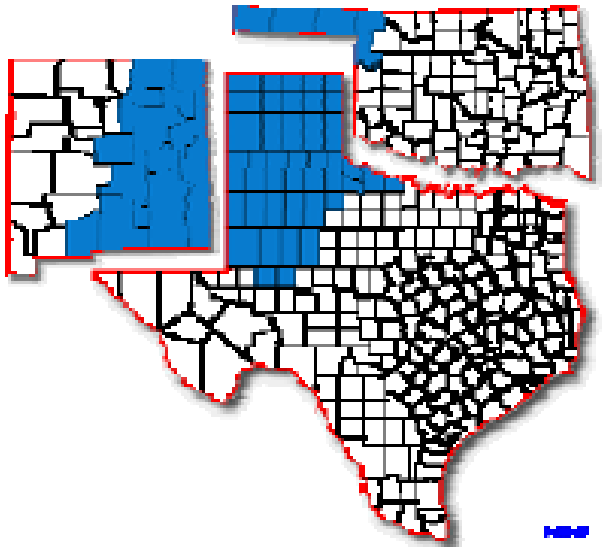

Figure 1. High Plains Region.

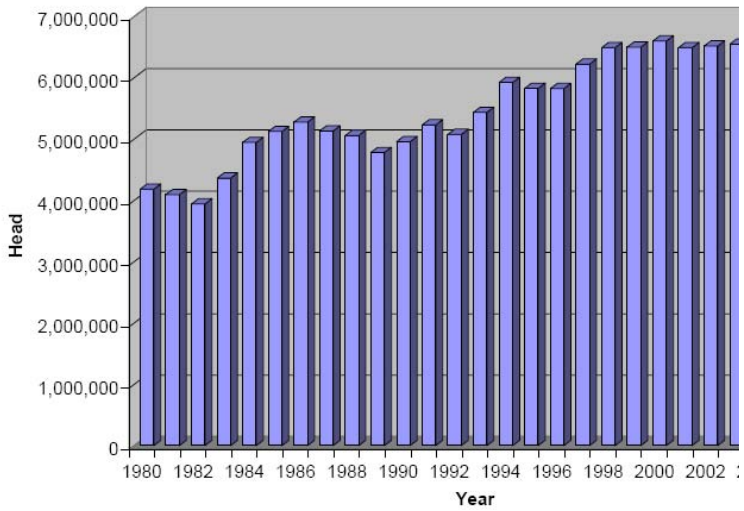

Figure 2. Fed Cattle Marketed in the High Plains 1980-2006.

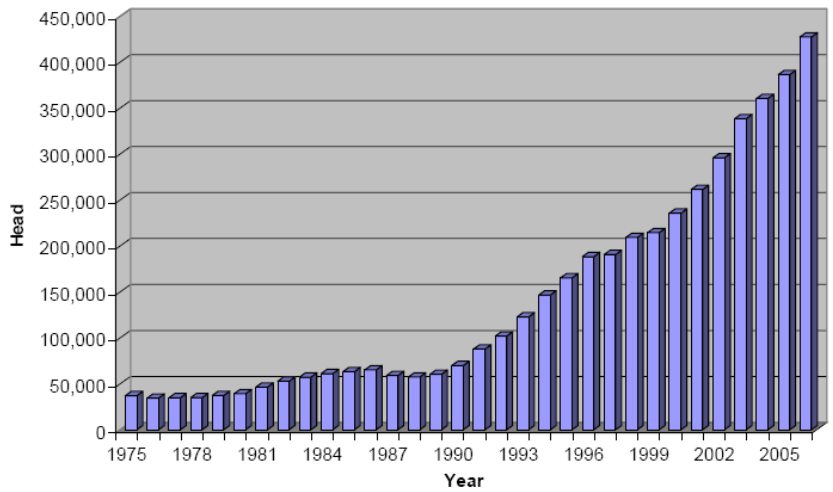

Figure 3. Milk Cow Inventory in the High Plains 1975-2006.

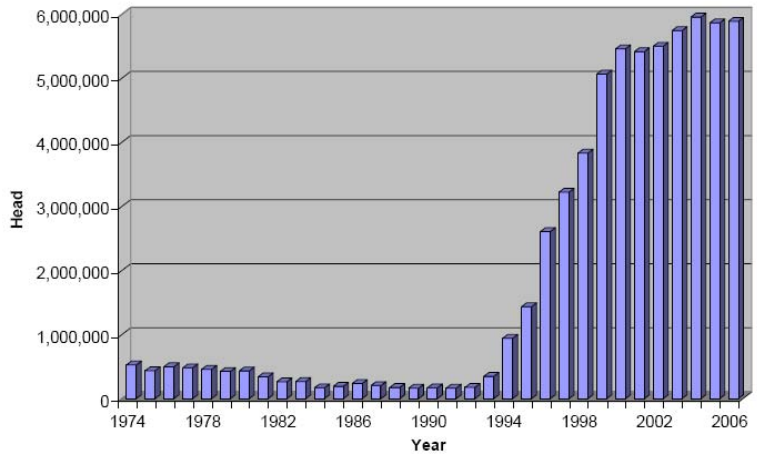

Figure 4. Hogs Marketed in the High Plains 1974-2006.

Table 1. 2006 High Plains Livestock Quantities, Sales, and Value Added.

	Quantity	Sales	Value Added	Economic Impact (millions)
Fed Cattle Marketed (head)	6,425,941	$8,565,939,784	$3,529,126,897	$6,956
Milk Production (thousand lbs)	8,774,780	$1,167,045,740	$1,167,045,740	$2,300
Hogs Marketed (head)	5,887,263	$432,403,810	$432,403,810	$852
Total		**$10,165,389,334**	**$5,128,576,446**	**$10,108**

Planning Team Members

- Texas Animal Health Commission
- Texas Cattle Feeders Association
- USDA-APHIS-VS-Texas
- TVMDL
- Department of Public Safety Disaster District Committee 5B
- City of Amarillo
- Texas National Guard Civil Support Team (6th CST)
- Texas Pork Producers Association
- Texas Association of Dairymen
- West Texas A&M University

Operation Palo Duro: Participating organizations

- Texas Animal Health Commission
- USDA APHIS
- Texas Veterinary Medical Diagnostic Laboratory
- Texas Department of Public Safety
- Governor's Division of Emergency Management
- Texas Military Forces (National Guard 6th Civil Support Team)
- Texas Commission on Environmental Quality
- Texas Department of Criminal Justice
- Texas Department of Transportation
- Texas Parks and Wildlife Department
- Texas Department of State Health Services
- Texas Department of Agriculture
- Texas Forest Service
- American Red Cross
- The Salvation Army
- City of Amarillo
- Panhandle local governments
- Texas Cattle Feeders Association
- Texas Pork Producers Association
- Texas Association of Dairymen
- Texas Sheep and Goat Raisers Association
- Texas and Southwestern Cattle Raisers Association
- Texas Farm Bureau
- West Texas A&M University
- Texas A&M University
- National Center for Foreign Animal and Zoonotic Disease Defense
- Texas Cooperative Extension
- States of New Mexico, Kansas, Oklahoma, and Colorado

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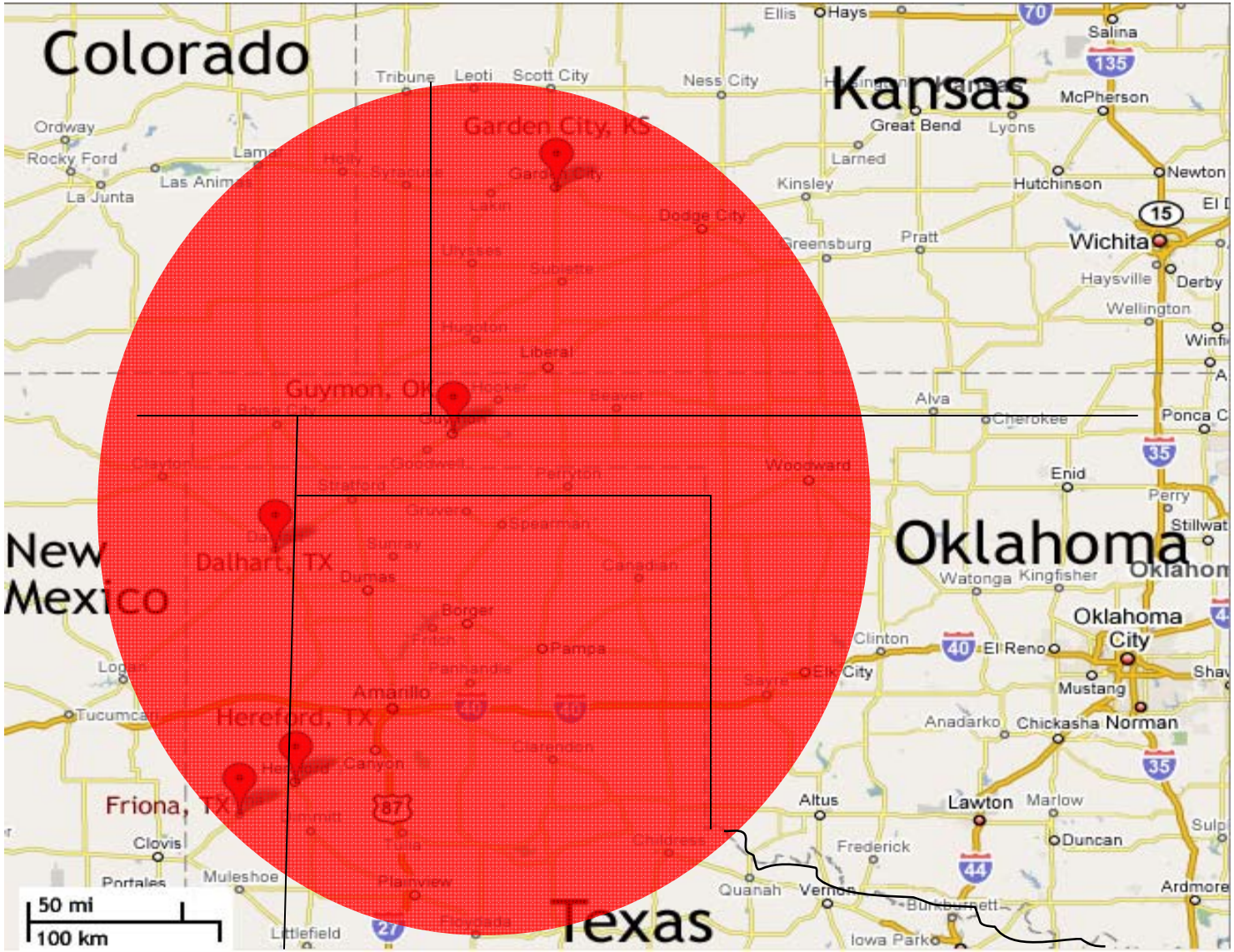
Primary Goals of the Exercise

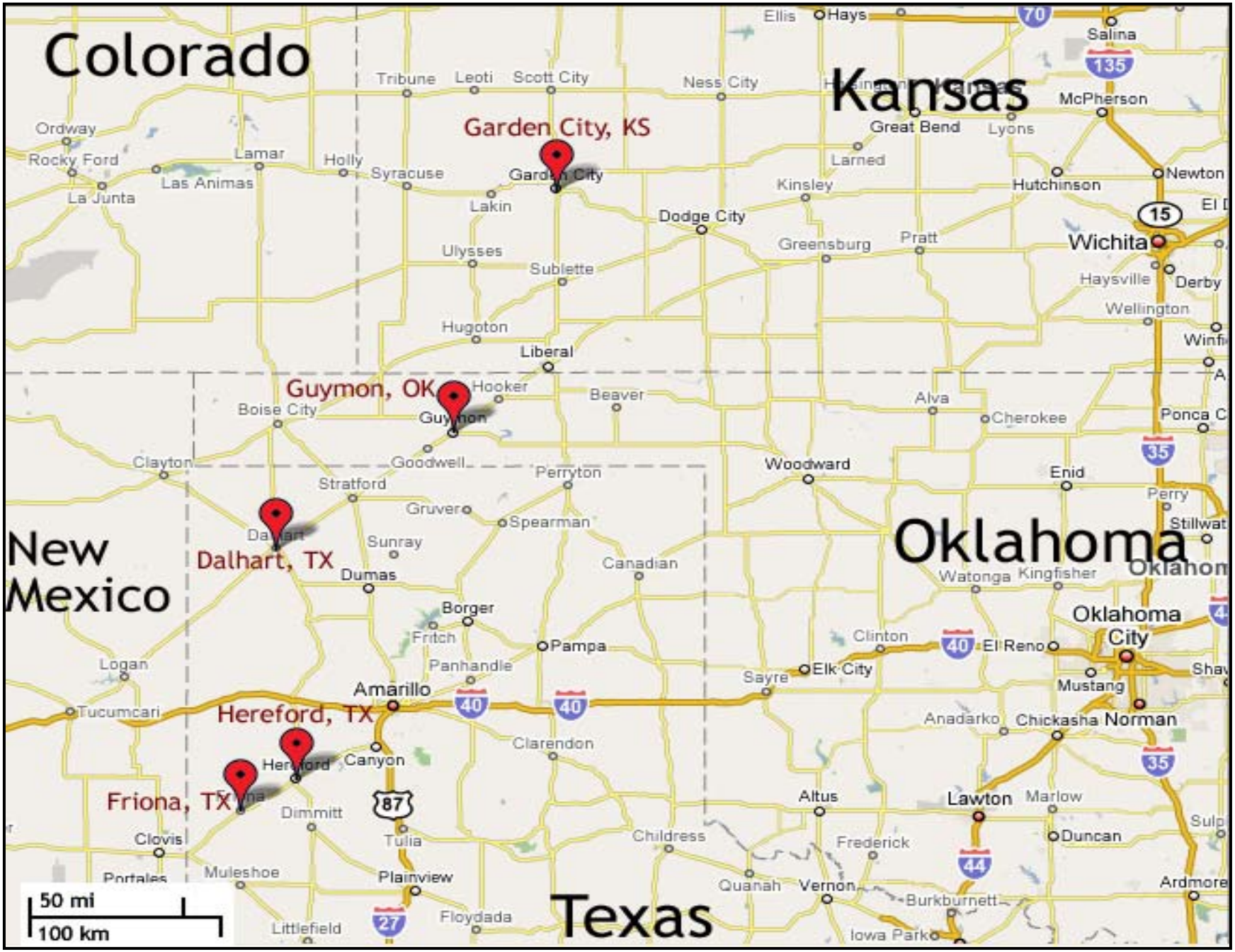
- Exercise the decision-making process for:
  - Methods of euthanasia and disposal in a mass depopulation event
  - Vaccination and assess the ability to conduct mass vaccination
  - Stopping and permitting movement
- Address laboratory surge capacity for testing samples
- Address business continuity
- Exercise joint information functions including the development and dissemination of public information

The Exercise

- D0-(February 21st)-Presumptive positive diagnosis for FMD at Texas Feedyard North in Dalhart, Texas and suspected FMD cases at Texas Feedyard Tour in Amarillo, Texas
- D1-(February 22)-FADDL confirmed presumptive positive at Dalhart (75,000/yard); Texas Feedyard Tour negative; two presumptive positive diagnoses reported for Texas Dairy South and Texas Feedyard South in Hereford
- D2+ 3Days (February 25th)-Four confirmed premises in Texas(2 feedyards and 2 dairies). Two positive feedyards, one in Kansas and one in Oklahoma
  - Feedyards: 75,000/yard; 55,000 (TX); 30,000 (OK); 90,000 (KS)
  - Dairies: 3,500/herd; 3,000/herd

Major Livestock Production Region




Colorado
Kansas
New Mexico
Oklahoma
Texas
Garden City, KS
Guymon, OK
Dalhart, TX
Hereford, TX
Friona, TX
Ordway
Rocky Ford
La Junta
Las Animas
Lamar
Holly
Syracuse
Lakin
Tribune
Leoti
Scott City
Ness City
Ellis
Hays
Salina
McPherson
Great Bend
Lyons
Larned
Kinsley
Hutchinson
Newton
Dodge City
Greensburg
Pratt
Wichita
Haysville
Derby
Wellington
Ulysses
Sublette
Hugoton
Liberal
Hooker
Beaver
Boise City
Alva
Cherokee
Ponca C
Clayton
Goodwell
Stratford
Perryton
Woodward
Enid
Perry
Gruver
Spearman
Sunray
Dumas
Canadian
Watonga
Kingfisher
Oklahoma City
Borger
Fritch
Pampa
Clinton
El Reno
Logan
Panhandle
Sayre
Elk City
Mustang
Tucumcari
Amarillo
Anadarko
Chickasha
Norman
Clarendon
Canyon
Altus
Lawton
Marlow
Dimmitt
Tulia
Childress
Frederick
Duncan
Clovis
Portales
Muleshoe
Plainview
Quanah
Vernon
Burkburnett
Ardmore
Floydada
Littlefield
Iowa Park
50 mi
100 km

After Action Report

- Focus on five areas
  - Euthanasia and disposal
  - Vaccination
  - Movement control
  - Laboratory Surge Capacity
  - Public Information
- Business Continuity

Euthanasia and Disposal

- *Challenges and Exercise Successes:*
  - Logistics
  - Methods of euthanasia
    - Policy makers considered unconventional forms of euthanasia and made decisions regarding use
    - Incident Command Post collaborated with Disaster District Committee (TCEQ and DPS), local government and industry to develop plans for euthanasia and disposal
  - Milk from infected dairies

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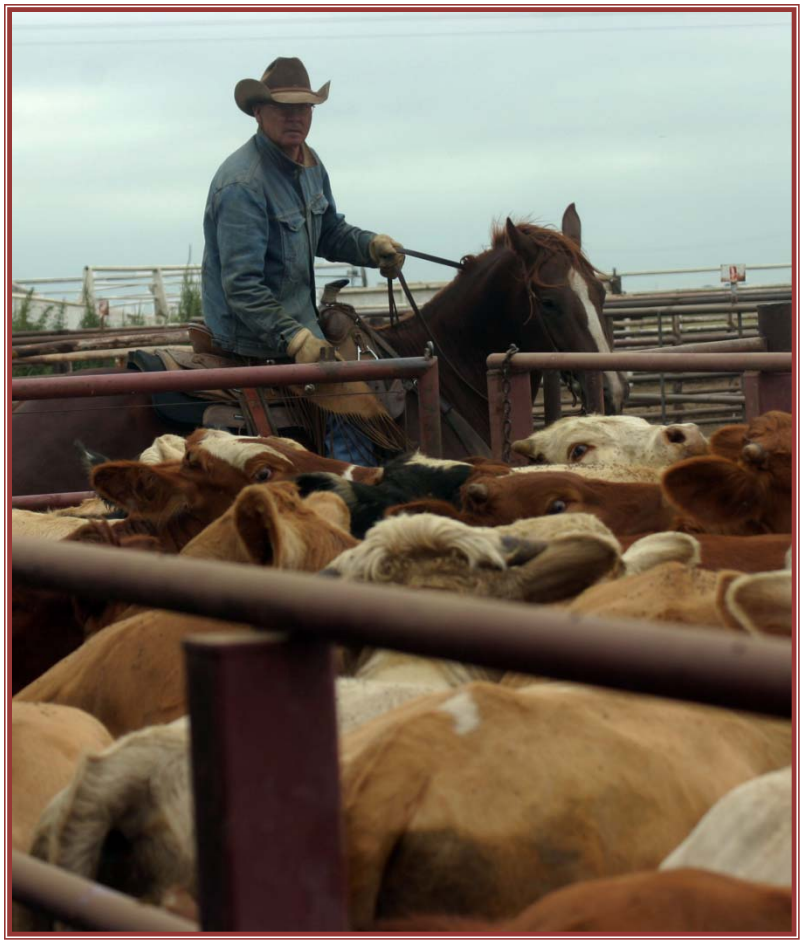

Euthanasia and Disposal

- *Issues*
  - Alternatives to Mass Destruction/Timelines?
    - 72 hours for depopulation and 96 hours for disposal were not feasible
    - Region produces significant percentage of red meat product for US
    - Animals in surveillance zone –surveillance sampling required
      - » Pensides?
      - » Surge testing capabilities for surveillance to demonstrate freedom
  - Indemnity and related policies were unclear to participants
- *Recommendations*
  - A concept of operations for mass euthanasia and disposal in this region should be developed
  - Consider nonconventional methods for euthanasia
    - Develop protocols for implementation
    - Other methods such as drugs administered by feed or water should be researched

Vaccination

- *Challenges and Successes*
  - Personnel were familiarized with North American Vaccine Bank and its capabilities/capacity
    - Availability and Speed of Delivery
  - Vaccine considered to be important tool in disease eradication
  - Policy makers decided on policy of “vaccinate to kill”
  - ICP developed plans to receive and administer the vaccine in coordination with industry and the DDC.

Vaccination

- *Issues:*
  - Personnel at all levels were unfamiliar with the North American Foot and Mouth Disease Vaccine Bank(NAFMDVB)
    - Capabilities/Capacity
  - Vaccine receipt, staging, storage, and distribution could require considerable resources and plans should be established to ensure that vaccine distribution can be conducted rapidly
  - Alternatives to Mass Depopulation
    - “Vaccinate to Live”?
    - “Vaccinate to Slaughter”?
- *Recommendations:*
  - Planning and education needed for decisions during emergency
  - Establish a vaccine advisory group
  - Strategic National Stockpile plans should be established for staging, storage and transport of FMD vaccines

Movement Control

- *Challenges and Successes*
  - Movement control and important part of eradication program but also important in ***business continuity.***
  - Decisions related to stop movement, initial hold and quarantine
  - Permitted movements discussed
    - Guidelines for movement of animals to slaughter discussed

Movement Control

- *Issues*
  - Setting quarantine zones-clarify roles in making these decisions
  - Industry concerns over permitting requirements for movement
    - Sampling, inspection, decontamination
      - Laboratory surge, overwhelmed, pensides?, mobile laboratories? Inspection?
    - Lack of plan for stopped movement of livestock (i.e. livestock in transit)
  - Local representatives concerned about supporting initial 48 hour hold order
    - Resource availability
- *Recommendations*
  - Clarify roles of determination of quarantine zones
  - Address questions on requirements for permitting movement
  - Review resources for enforcing hold orders, develop

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Laboratory Surge Capacity

- *Challenges and Successes:*
  - Supporting surveillance zone testing, large demand for laboratory surge capacity
    - NAHLN was activated ***(first time NAHLN was activated in an exercise)***
    - Additional surge capacity was provided by other NAHLN labs
    - TVMDL established sample collection plans and transport with Disaster District Committee (DDC) and the 6th Civil Support Team

Laboratory Surge Capacity

- *Issues*
  - Alternatives to mass depopulation would require increased sampling in surveillance zone
  - Documented sample collection and transport procedures lacking
  - How long would testing be performed at FADDL before being sent to NAHLN laboratories
  - What should a NAHLN lab do in preparation for receiving samples?
  - Is there a NAHLN “activation plan”
  - Who/what agency determines sample sizes?
  - Resource for sampling, testing reagents?
- *Recommendations*
  - Develop procedures for transport of samples from Amarillo to College Station
  - NAHLN capacity estimates
  - Establish protocol under which NAHLN laboratories are activated
  - Use of CST’s to augment laboratory capacity

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Follow Up Meetings

- Texas Cattle Feeders Association
  - June 26-27th, 2008: Amarillo, Texas
  - "Planning and Responding to Agricultural Disasters: Addressing Issues from the Palo Duro Exercise"
- Aphis Emergency Operations Center, Riverdale, MD
  - September 17th, 2008 "FMD Preparedness and Response Planning Meeting: Follow up to Palo Duro Exercise and Moving Forward"

Follow Up Meetings

- **Agenda Topics**
  - Vaccine options
  - Business continuity
  - Euthanasia methods/carcass disposal
  - Stop movement/restart movement
  - FMD Outbreak models
  - Response Zones
  - Appraisal and Indemnity
  - Information Management

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Follow up Meeting: Progress

- *Vaccine*
  - Vaccine delivery systems exist-National Veterinary Stockpile
  - 24 hour shipping procedures/contracts are in place
  - Need to establish state/local plan for coordination of NVS request, receipt and distribution
  - Time to delivery? Off –the –shelf vaccine availability?
  - “Vaccinate to Live”, “Vaccinate to Slaughter” ? Policy?
- *Euthanasia/Disposal*
  - CAFOs, cattle owned by large variety of owners
    - Logistics of mass depopulation, burial (Operational issues)
    - Look more seriously at vaccination as response if large numbers of animals involved
  - Burial
  - Procedures to destroy animals stopped in route
  - Documentation during disposal for future indemnity

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Follow up Meeting: Progress

- *Indemnity/Business Continuity*
  - Working group established to discuss and clarify appraisals
  - Agister's liens-CAFOs
  - Emergency declaration vs. Stafford Act
  - Appraisal of animal prior to depopulation, needs signature of owner on indemnity claim form
  - No payment for business down-time
  - No payment for animals that are destroyed due to movement s
- *Movement control*
  - CAFOs 5,000 animals in/out per week
    - Trace-backs ---a challenge
    - Cattle from virtually all of US and Mexico
  - Routes and ports for movement control
  - Industry to work to develop C&D plan for commodity trucks
  - Railroad grain shipments?
  - Feed availability and delivery to animals stopped on road
    - Cactus Feeders-70,000 head/feedlot, 11 miles of feed bunks
    - Maintaining on straight roughage, 1 to 1.5 weeks of feed
  - Procedures needed to destroy animals stopped in route

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Follow Up: Laboratory Surge Capacity

- Progress
  - TVMDL increased response capability
  - 580.4
  - NAHLN capacity further defined
- Future
  - Pensides/movement control?
  - Mobile laboratories?
  - Data integration-Information management integration
  - Diagnostic test kits
  - Serological assays for recovery

Follow up Meetings

- Identified Key Issues
- Established contacts and/or working groups
- Coordination between State, Local, Federal governments, industry and universities
  - Excellent coordination between all entities
    - Key to establishing and implementing an effective response
    - Familiarity with industries and daily operations- ***Essential*** for understanding ***business continuity***

Ultimately it is all about “Business Continuity”-Getting our producers and the industry “back in the business” of feeding the nation and the world.

A Special Thank You

- Ross Wilson, Texas Cattle Feeders Association
- Ken Horton, Texas Pork Producers Association
- John Cowan, Texas Association of Dairymen
- Dr. Bob Hillman, Texas Animal Health Commission
- Dr. Dee Ellis, Texas Animal Health Commission