

# Emergency Animal Management During Disasters

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Texas A&M System

**FAZD CENTER**

**NATIONAL CENTER FOR FOREIGN ANIMAL  
AND ZOO NOTIC DISEASE DEFENSE**

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# Threatened by Potential Occurrences

- Endemic animal diseases
  - Currently present in U.S., not increasing in prevalence
- Foreign (exotic) animal diseases
  - Not currently present in U.S.
  - Accidental and intentional risks for entry
- Emerging animal diseases
  - A new disease, increasing in prevalence
  - A new form of an old endemic disease, increasing in prevalence
  - Natural, accidental and intentional risks of emergence

- Epidemic animal diseases
  - Outbreak of a disease in regional animal populations
  
- Pandemic animal diseases
  - Outbreak of a disease in world-wide animal populations
  
- Zoonotic diseases
  - Diseases shared by animals and people

# Devastating Impacts of Animal Disease Outbreaks

- Economic impacts
- Sociologic impacts
- Emotional impacts
- Political impacts



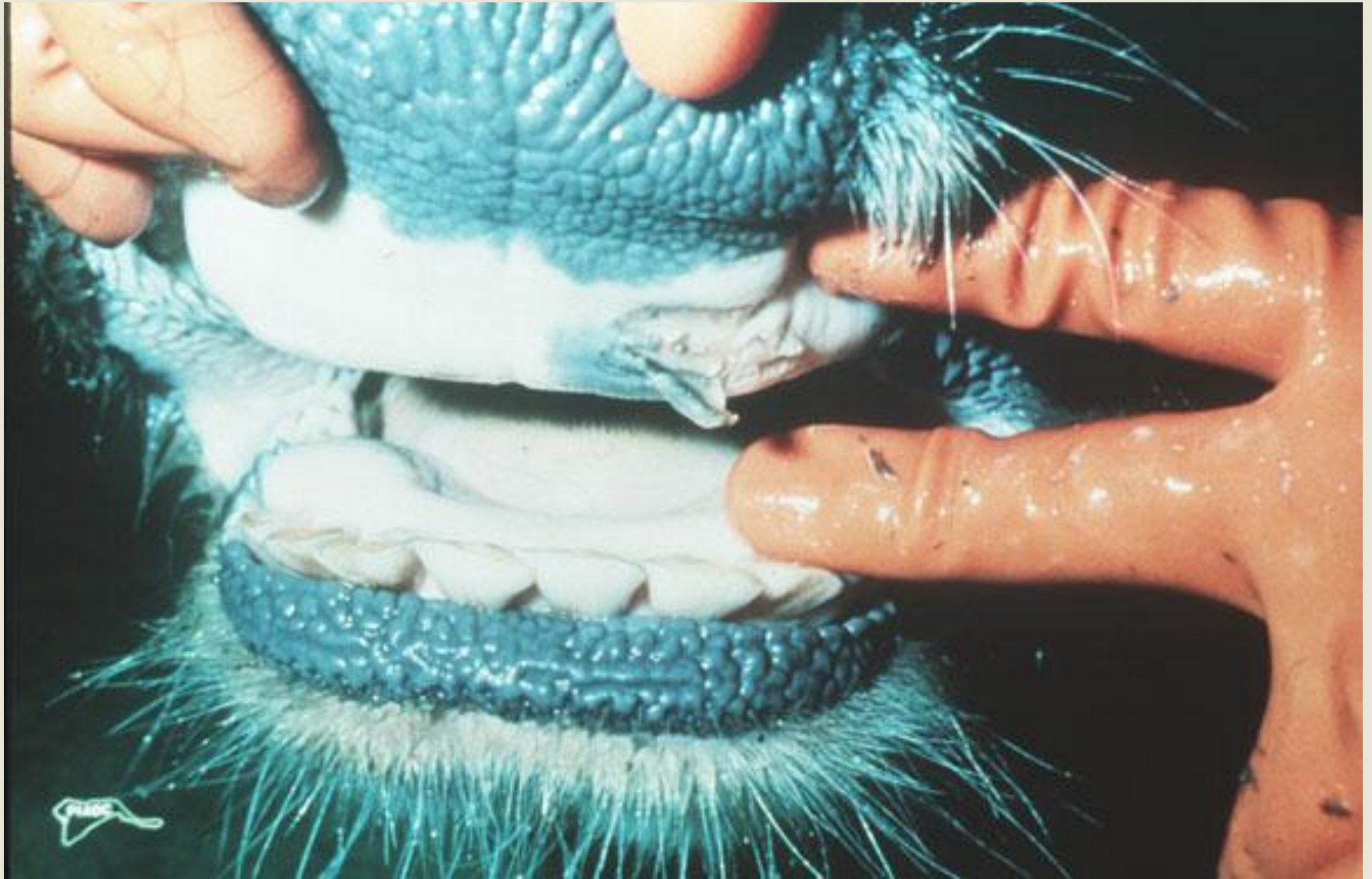
# Foot and Mouth Disease

- Not in U.S.
  - A reportable disease
- Viral disease
  - Domestic and wild cloven-hoofed livestock
  - Blisters and sores in mouth and on feet
- Transmission
  - Aerosol
  - Direct and close contact
- TAHC ban
  - Meat garbage feeding to swine







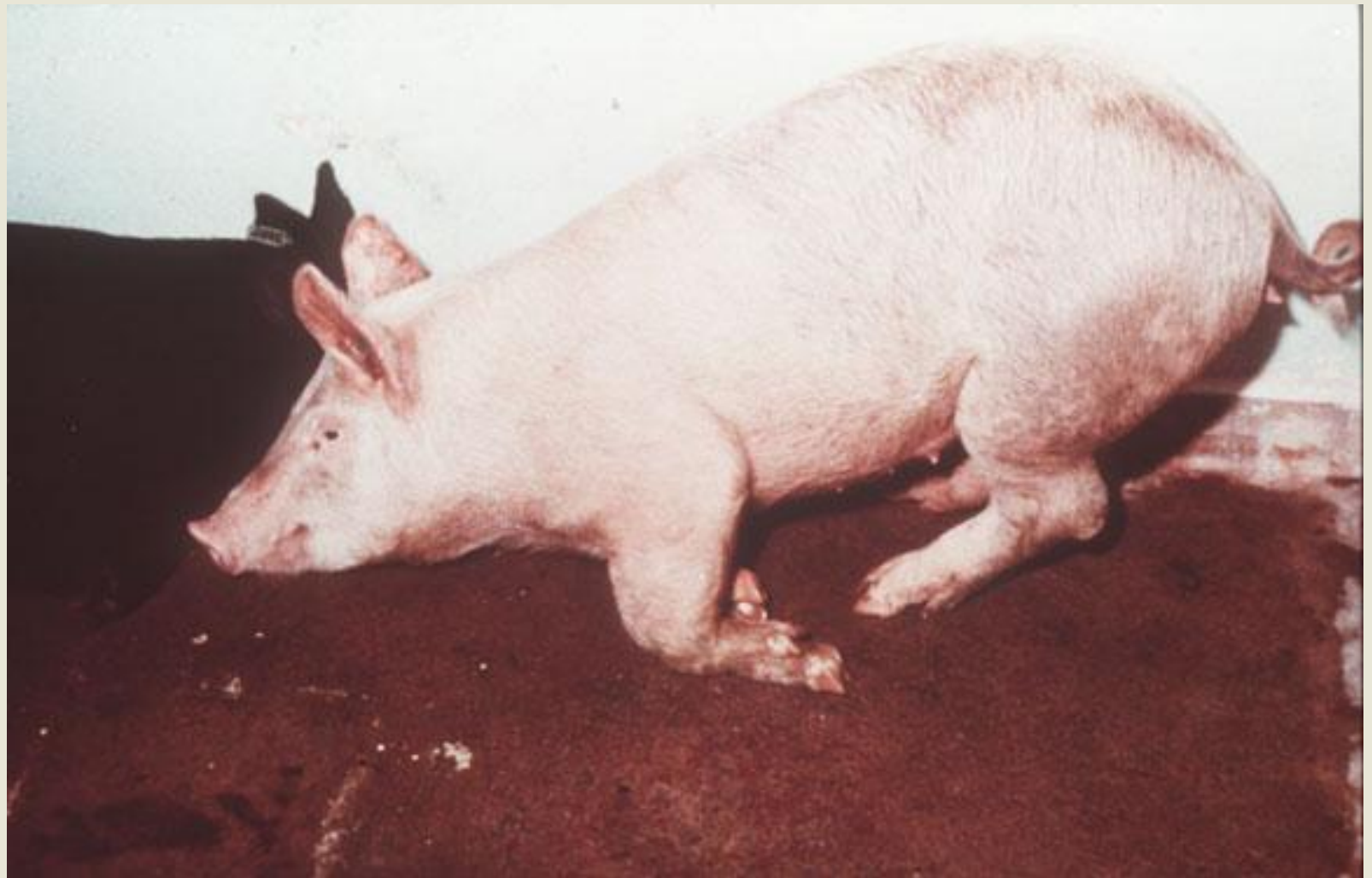


















# Avian Influenza

## (Avian Flu) (Bird Flu)

- Viral disease
  - Migratory waterfowl
  - Domestic poultry
  - Virus in intestines
  - Virus shed in feces
- Transmission
  - Aerosol
  - Direct and close contact
- A reportable disease

- Two classifications – disease symptoms
  - Low-pathogenic avian influenza (LPAI)
    - Little risk to poultry industry
    - In U.S.
    - Endemic disease
    - Most common class
  
  - High-pathogenic avian influenza (HPAI)
    - Serious damage to poultry industry
    - Not in U.S.
    - Epidemic disease
    - Zoonotic disease (rare)

# Causative Agent

- Caused by influenza strain A virus
  - Over 144 subtypes of type HN
    - By combinations of 16 Hs and 9 Ns
      - H = Hemagglutinin
      - N = Neuraminidase
  - Examples = H1N1, H1N2, H2N2, H7N2

- Types H5 and H7
  - Mutates from LPAI to HPAI
  - FAD (not in U.S.)
- Subtype H5N1 (epidemics)
  - HPAI
  - Bird to bird, *rarely to people*
  - Asia
- Various Subtypes of HN (endemics)
  - LPAI
  - Bird to bird, *not to people*
  - In U.S.









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# Biblical Bird Flu



# Anthrax

- In U.S.
  - A reportable disease
- Bacterial disease
  - Domestic and wild livestock
  - People – zoonotic disease



# First Line of Defense in Emergency Management of Animal Disease Outbreaks

- Education of first defenders is key
  - Animal owners
  - Private veterinarians
  - Animal industry personnel
  - Local emergency management personnel
  - County Extension agents
  - Ag science teachers

- Biosecurity is key
  
- Early detection is key
  - Unusual signs
  
- Rapid reporting is key
  
- Rapid response is key
  
- Prompt quarantine is key

- Biocontainment is key
- Quick diagnosis is key
- Disease surveillance is key
- Regulatory agencies and animal industries working together is key

# Biosecurity Key Components

- Mitigation
- Preparedness
- Response
- Recovery

# Biosecurity Practices

- Wash hands
- Wash disinfect boots
- Wash disinfect trailer
- Wash disinfect tires
- Wash disinfect borrowed equipment
- Create buffer fences
- Lock gates
- Alert for strangers
- Restrict international visitors – >48 hours wait
- Establish quarantine quarters – 2-6 weeks

# Biocontainment Practices

- Maintain current vaccinations
- Provide routine observations
- Provide early detection of diseases
- Establish isolation quarters



# Early Detection of Diseases

- Rapid reporting
  - Private Veterinarian
  - Texas Animal Health Commission
  - 800-550-8242
- Rapid response
- Rapid diagnosis
- Rapid quarantine
- Rapid treatment
- Rapid euthanasia
- Rapid carcass disposal

# Communicable Diseased Carcass

- Reportable diseases
  - Report to Texas Animal Health Commission (TAHC)
  - 800-550-8242
- Burial or burning required within 24 hours
- Burning most effective means

# State Emergency Management

- Texas State Emergency Management Plan
  - Annex O
    - Agriculture Production and Companion Animals
  - Appendix 3
    - Foreign and Emerging Animal Diseases (FEAD) Response Plan (“Disease Animal Emergencies”)
      - [http://www.tahc.state.tx.us/emergency/StateFEAD\\_Plan.pdf](http://www.tahc.state.tx.us/emergency/StateFEAD_Plan.pdf)
- State jurisdiction
  - Texas Animal Health Commission

- Identified incident command system
  - Incident command post(s)
  - Incident commanders – TAHC and DPS

- First Assessment and Sampling Team (FAST)
- Joint Information Center (JIC)
- Texas Emergency Response Team (TERT)
  - To support field deployed ICP(s)

- Quarantine animals
  - Several mile radius containment zone
  - Months to years
  - Depopulate animals
  - Surveillance of animals
  - Control or eradicate options

# Key Components of Plan

- Mitigation
- Preparedness
- Response
- Recovery

# Simulative Exercise





# Appendix 3 to Annex O Texas State FEAD Response Plan

## Texas A&M AgriLife Extension Service

1. **Develop educational materials**, as appropriate, and work with ranchers and farmers on infectious diseases and animal depopulation activities.
2. Provide mitigation, preparedness, response, and recovery support to TAHC and FEAD operations, as capable.
3. **Provide applicable media support** for ongoing FEAD operations.
4. **Provide management training and educational information** for impacted farmers and ranchers.

5. Assist with staffing actions related to indemnity payment issues.
6. Assist in presenting and evaluating economic issues related to FEADs as well as a risk assessment should the disease spread.
7. Assist in sampling of burial sites and groundwater adjacent to burial or burn sites.
8. Assist with the permitting of animal movements and animal welfare issues at the local level when animals, animal products, and/or animal-related equipment are allowed to move under permit.
9. Provide support, as available, from agriculture extension personnel assigned to 254 counties in Texas to assist in foreign and emerging animal disease mitigation, preparation, and response activities. 0000

# FAZD Online Courses Sponsored by DHS

- Faries, F.C., Jr. 2008. “Foreign and Emerging Animal Diseases: Train-the-Trainers Curriculum for Educators Online Course”.
  - <http://campus.extension.org>
- Faries, F.C., Jr. 2010. “Foreign Animal and Zoonotic Diseases: Train-the-Trainers Curriculum for Educators Online Course”.
  - <http://campus.extension.org>

# FAZD Print and Electronic Publications Sponsored by DHS

- Faries, F.C., Jr. and A.I. Dement. 2008. “Foreign and Emerging Animal Diseases: Train-the-Trainers Curriculum for Educators Handbook and CD”. B-6204
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2197](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2197)
- Faries, F.C., Jr. and A.I. Dement. 2008. “Foreign Animal and Zoonotic Diseases: Train-the-Trainers Curriculum for Educators Handbook and CD”.
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- Scott, B.D. 2008. “Best Management Practices for Equine Disease Prevention”. B-6214
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2603](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2603)
  
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  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2606](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2606)
  
- Dement, A.I. and B.F. Craddock. 2008. “Biosecurity for Sheep and Goat Producers”. B-6212
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2605](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2605)

- Jordan, E. A.I. Dement and F.C. Faries, Jr. 2008. “Biosecurity Practices for Dairy Operations”. B-6213
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2602](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2602)
  
- Sterle, J., A.I. Dement and F.C. Faries, Jr. 2008. “Biosecurity for Swine Producers”. L-5507
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=2604](https://agriflifebookstore.org/publications_details.cfm?whichpublication=2604)

# Additional Extension Publications

- Carey, J.B. 2005. “Poultry Facility Biosecurity”. L-5128
  - [https://agriflifebookstore.org/publications\\_details.cfm?whichpublication=823](https://agriflifebookstore.org/publications_details.cfm?whichpublication=823)
- Sterle, J. 2009. “Biosecurity Practices for Swine Validation – A Checklist”.
  - <http://animalscience.tamu.edu/images/pdf/swine/swine-biosecurity-practices-swine-validation.pdf>



# Public Health Publications

- National Association of State Public Health Veterinarians. 2009. “Compendium of Measures to Prevent Disease Associated with Animals in Public Settings”. (Petting Zoo Compendium)
  - <http://www.nasphv.org/documentsCompendiumAnimals.html>

# Legislations

- Pets Evacuation and Transportation Standards Act of 2006 (PETS Act)
  - State and local jurisdictions must plan for sheltering and evacuation prior to disaster
  - No Plan = No FEMA aide
- Texas HB-88 “Simba’s Law”
  - Assist local jurisdictions with animal-related emergency planning

# State Emergency Management

- Texas State Emergency Management Plan
  - Annex O
    - Agriculture Production and Companion Animals
  - Appendix 6
    - Animal Response Plan  
(“Non-disease animal emergencies”)
      - <http://www.tahc.state.tx.us/emergency/Appendix6AnimalResponsePlan.pdf>
  - State jurisdiction
    - Texas Animal Health Commission

# Appendix 6 to Annex O

## Texas State Animal Response Plan

### Texas A&M AgriLife Extension Service

- (1) Provides personnel resources to the Animal Response Area Command (ARAC), to the animal response function of the state's rapid response task forces (RTFs), and to the field animal incident command post (ICP), if it is established
- (2) Provides personnel resources with livestock expertise for staffing the ICP and for technical support and expertise
- (3) Provides an operational supervisor and assist in staffing operations of Livestock Supply Points (LSPs), if any are established
- (4) **Assists in assessing animal agriculture damages** to identify disaster response resource needs and assist to identify retail/wholesale suppliers for procuring animal disaster resources
- (5) Designates a local county Extension agent (CEA) to be a member of the ICP to provide information on local agribusiness, the infrastructure, and land ownership, and serve as liaison to the County Judge
- (6) Provides liaison to farmers, ranchers, and agribusiness stakeholders in regards to agriculture/livestock issues related to the disaster

- (7) **Assists in providing public information** support to the field animal operational location(s)
- (8) **Provides current capacity and status of operations** (open/full/closed) of designated livestock/equine evacuation stalls/pens/corral facilities throughout the state during the disaster period **in support of evacuation and sheltering**
- (9) **Provides preliminary reports of animal losses** to USDA-FSA and assist in preparing a loss report to the SOC
- (10) **Assists in placing economic values on animal agriculture-related losses**
- (11) **Provides leadership to short-term disaster management process awareness and long-term mitigation and recovery education** to livestock and agricultural producers
- (12) **Works with local county government** to identify an appropriate facility in or near the impacted area(s) that could be used as an ICP for field animal operations with the approval of all ARAC representatives
- (13) **Works with local county government** to identify an appropriate facility for a Livestock Supply Point (LSP), if needed
- (14) If appropriate, ensures that the use of any county facility for an ICP and/or LSP is included in the “Delegation of Authority” letter prepared by the state IMT incident commander for approval by the county judge

# Local Emergency Management

- Texas Local Emergency Management Plan
  - Annex N
    - Direction and Control
  - Appendix 4
    - Animal Issues Committee Plan (AIC Plan)
      - [http://www.tahc.state.tx.us/emergency/Animal\\_Issues\\_Committee\\_Plan.pdf](http://www.tahc.state.tx.us/emergency/Animal_Issues_Committee_Plan.pdf)
    - Animal Issues Committee Guidance Document
      - <http://www.tahc.state.tx.us/emergency/AnimalIssuesCommitteeGuidance.pdf>
- Local jurisdiction
  - County Judge or City Mayor
  - Local Emergency Management Coordinator (EMC)

# Local (County) Animal Issues Committee



# Local (County) AIC Members: Appointed by Local EM Coordinator

- Animal control representative
- Animal humane association representative
- Public veterinarians
- Private veterinarians
- Veterinary technicians
- Animal health regulatory agency representative
- Public works representatives
- Animal industry representatives
- Environmental representative
- Agricultural science teacher
- County Extension agent
- Media communication representatives
- Elected official representative
- Emergency management coordinator representative

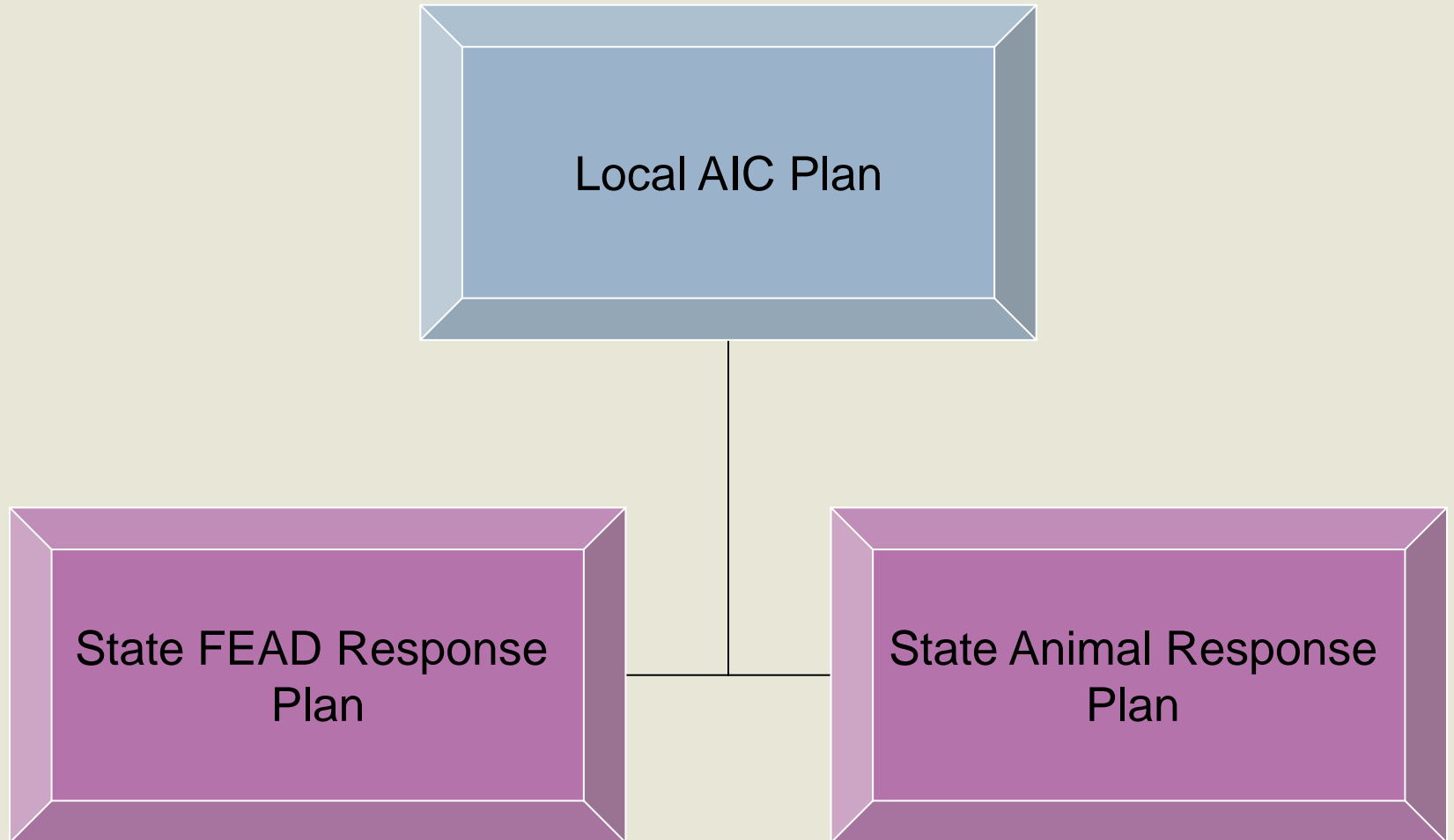


# Local (County) Animal Issues Plan (AIP)

- Appendix to Local EM Plan
- Addresses animal issues  
(includes **BOTH** livestock and pets)
- Determines what should be done before, during and after disaster
- Local AIC Plan is set of guidelines



# Coordination of Local and State Plans



# Key Components of Plan

- Mitigation
- Preparedness
- Response
- Recovery

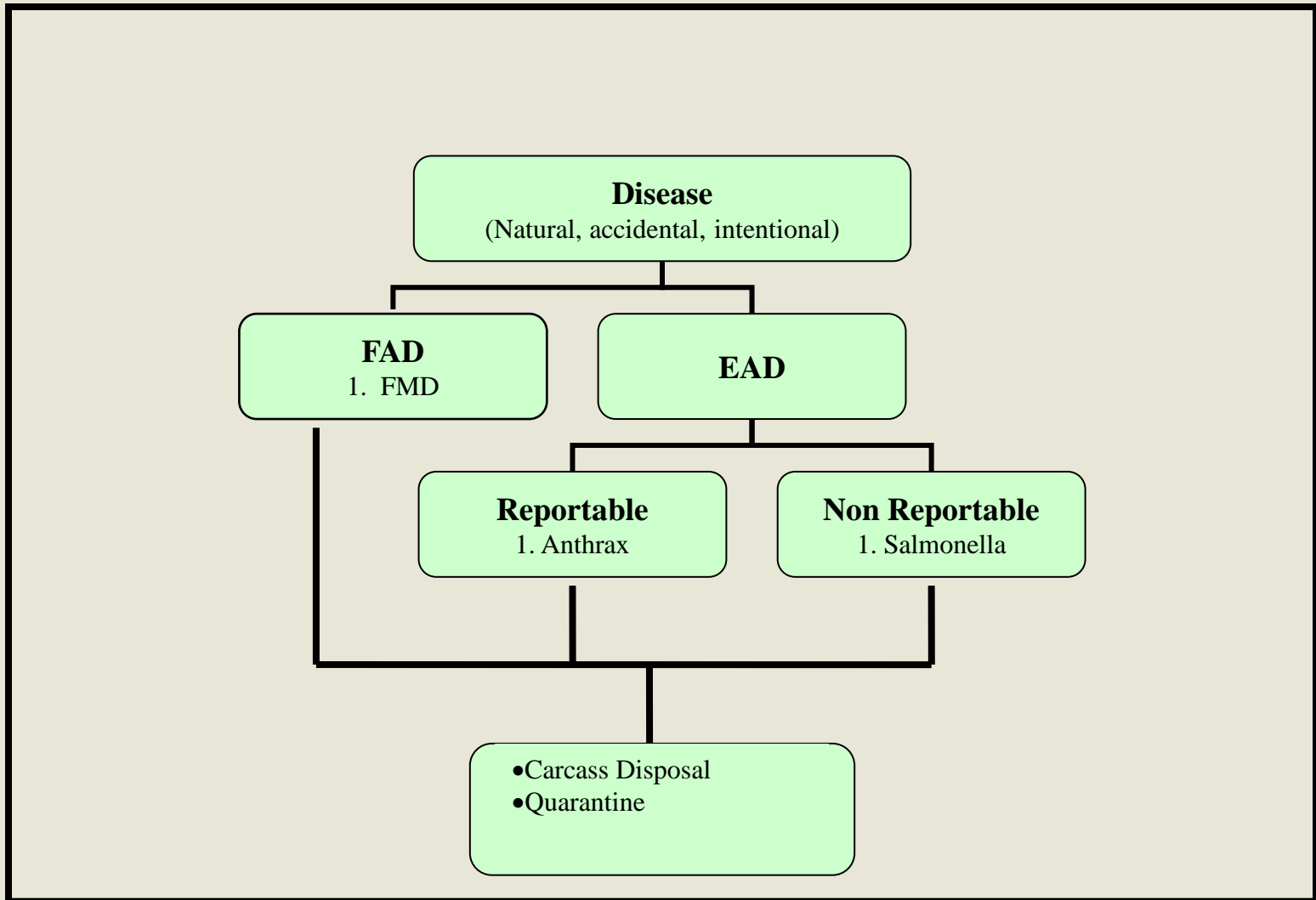
# Natural Animal Disasters

- Disease outbreaks
- Floods
- Wildfires
- Hurricanes
- Tornadoes
- Winter storms
- Droughts

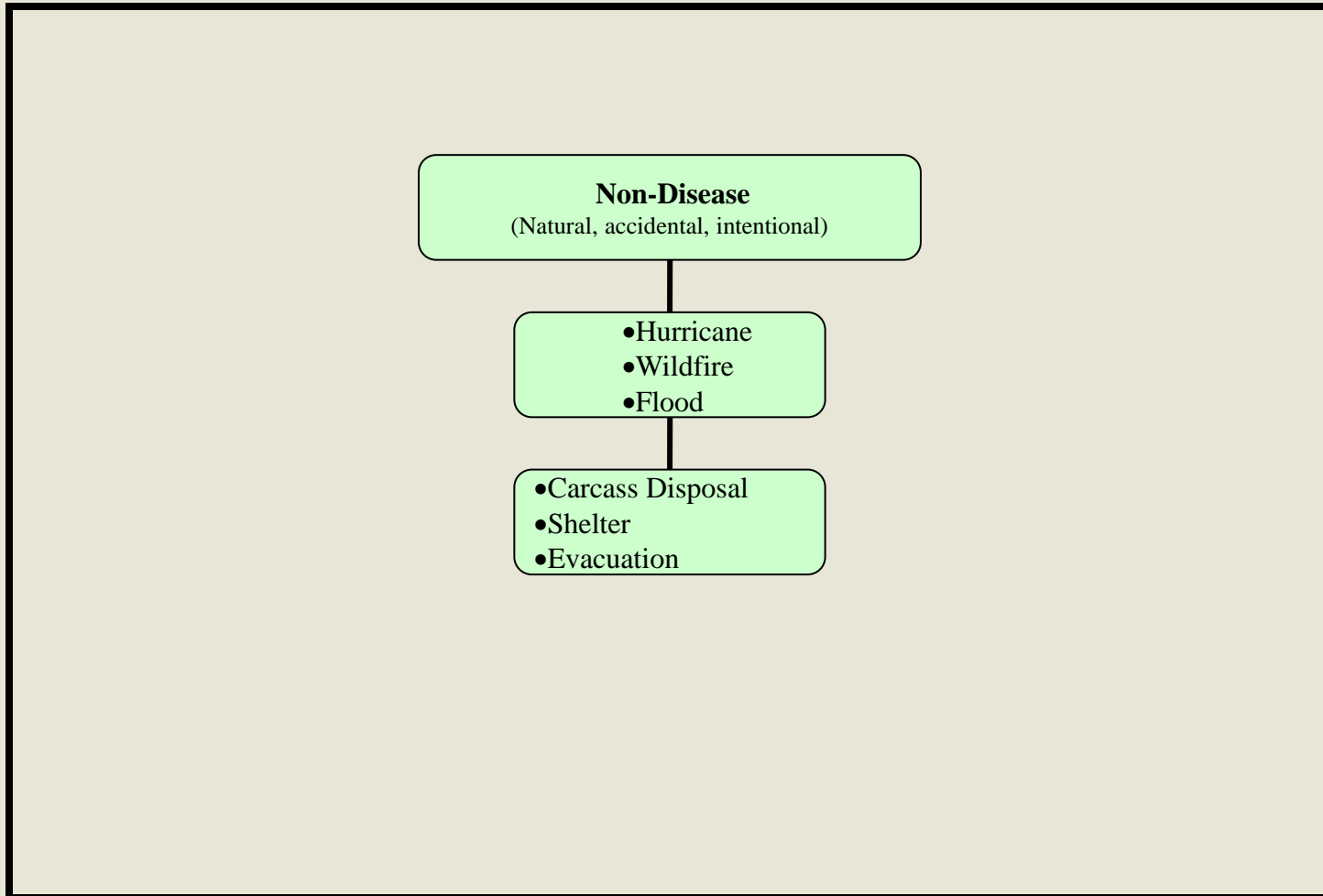
# Human-Caused Animal Disasters

- Disease outbreaks (accidental)
- Disease outbreaks (intentional)
- Traffic
- Terrorism
- Power outages
- Explosions
- Hazardous material spills

# Animal Disease Disasters



# Non-Disease Animal Disasters



# Emergency Animal Management of Non-Disease Disasters – Floods





# Emergency Animal Management of Non-Disease Disasters – Tornadoes



# Emergency Animal Management of Non-Disease Disasters – Hurricanes, Carcass Disposal



# Emergency Animal Management of Non-Disease Disasters – Evacuation, Shelters



# Dead Animals

- Euthanasia deaths
  - Intravenous veterinary chemical
  - Gun shot
- Disaster deaths

# State Laws for Dead Animals

- Prohibit leaving carcass in open
  - Wild animals spread disease
  - Rainfall runoff spreads disease
  - Carcasses contaminate surface water
  - Carcasses contaminate ground water
  - Carcasses cause nuisance odors
- Allow natural decomposition
  - Not public nuisance
  - Not environmental hazard

# Regulatory Agencies

- Texas Animal Health Commission (TAHC)
- Texas Commission on Environmental Quality (TCEQ)
- House Bill (H.B) 3061 78th Regular Legislative Session
  - “TCEQ may not adopt a rule related to the disposal of livestock carcasses unless the rule is developed in cooperation with and approved by TAHC”

# Disposal of Dead Animals

- Proper disposal
  - Protects public health and safety
- Improper disposal
  - Creates public nuisance
  - Allows disease spread
  - Allows water contamination
  
- Could be fined up to \$10,000 per violation

# Methods of Carcass Disposal

- Burial
- Burning
- Composting
- Waste burial landfill
- Waste burning incinerator
- Renderer plant



# Carcass Pit Burial

- Right soil
  - Not in highly permeable soils (sandy)
    - Plastic pit liners
- Right site
  - Not high water table levels
    - Maximum depth – 5 ft
    - Minimum above water table – 2 ft
  - Not within 100-year floodplain
  - Not discharge to ground and surface waters
  - Not within minimal distances
    - Drinking water wells – 300 ft
    - Surface waters – 300 ft
    - Neighbors – 200 ft
- Right cover
  - Not less than 2 feet soil cover

# Mass Carcass Pit Burials

- Assistance for burial sites
  - Natural Resources Conservation Service (NRCS)
    - 254-742-9800 (Temple)
- Assistance for burial instructions
  - Texas Commission on Environmental Quality (TCEQ)
    - 800-344-8377 (Austin)
- Notify TCEQ
  - Prior to burial
  - Animal type
  - Animal numbers
  - Site locations
- More than 10 animals – deed recordation

# Carcass Burning

- No public nuisance
- No traffic hazard
- No wildfire risk
- No diesel
- No crankcase oil
- No treated timber

# Types of **Functions** for Non-Disease Animal Disasters

- Shelter
- Evacuation
- Rescue
- Carcass Disposal
- Security
- Damage assessment

# Prioritize Events and Functions

## Functions

Events	Shelter	Evacuation	Rescue	Disposal	Security	Euthanasia
Transportation Accidents (All)	◆			◆		◆
Foreign Animal Diseases (All)				◆	◆	◆
Tornadoes (All)	◆		◆	◆		
Hurricanes (Most)	◆	◆	◆	◆		
Floods (Most)	◆	◆	◆	◆		
Wildfires (Most)	◆	◆	◆	◆		
CBRNE <sup>[1]</sup> (Limited)	◆	◆		◆	◆	◆

- Create Local Animal Issues Plan (AIP)
  - Submit to Local EM Coordinator for approval
    - Incorporate in Annex N Appendix 4 of Local EM plan
  
- Create Community Animal Response Plans (CARPs) for identified “Functions” in county
  - Submit to Local EM Coordinator for approval
    - OPTION A: Attach CARPs to AIP of Local EM Plan
    - OPTION B: Incorporate CARPs into corresponding annexes as emergency support functions (ESFs) of Local EM Plan

# Guides to Develop AIP

- State of Texas Animal Issues Committee Plan:  
[http://www.tahc.state.tx.us/emergency/Animal\\_Issues\\_Committee\\_Plan.pdf](http://www.tahc.state.tx.us/emergency/Animal_Issues_Committee_Plan.pdf)
- Animal Issues Committee Guidance Document:  
<http://www.tahc.state.tx.us/emergency/AnimalIssuesCommitteeGuidance.pdf>
- State of Texas FEAD Response Plan: (for diseases)  
[http://www.tahc.state.tx.us/emergency/StateFEAD\\_Plan.pdf](http://www.tahc.state.tx.us/emergency/StateFEAD_Plan.pdf)
- State of Texas Animal Response Plan: (for non-diseases)  
<http://www.tahc.state.tx.us/emergency/Appendix6AnimalResponsePlan.pdf>
- Emergency Animal Management During Disasters  
[https://agrilifebookstore.org/publications\\_details.cfm?whichpublication=2191](https://agrilifebookstore.org/publications_details.cfm?whichpublication=2191)

# Guides to Develop CARPs by Function

- Shelter Function:

[http://www.tahc.state.tx.us/emergency/Mar2009\\_ShelterFunction-CARP.pdf](http://www.tahc.state.tx.us/emergency/Mar2009_ShelterFunction-CARP.pdf)

- Evacuation Function:

[http://www.tahc.state.tx.us/emergency/Aug2009\\_EvacuationFunction-CARP.pdf](http://www.tahc.state.tx.us/emergency/Aug2009_EvacuationFunction-CARP.pdf)

- Carcass Disposal:

[http://www.tahc.state.tx.us/emergency/Oct2009\\_CarcassDisposalFunction-CARP.pdf](http://www.tahc.state.tx.us/emergency/Oct2009_CarcassDisposalFunction-CARP.pdf)



# TAHC EMC for Assistance and Representation on AICs

- Amanda Bernhard

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# Response to Animal Non-Disease Disasters

- Local EMC activates Local AIP
- Local EMC requests assistance
  - GDEM
  - FEMA

# Response to Animal Disease Disasters

- TAHC is lead agency (top down authority)
- TAHC activates and directs State FEAD Response Plan
- TAHC activates and directs Local AIP through Local EMC

