Ensuring Animal Welfare during Natural Disasters
Challenges of the Texas Hurricanes and Floods

Ron Gill, PhD
Assoc. Dept. Head for Extension – Department of Animal Science

Texas A&M Agencies Involved in Emergency Response

○ Texas AgriLife Extension
  ◯ State Level
  ◯ Regional Level
  ◯ County Level
○ Texas Forest Service (Lead agency on Wildfires)
○ Texas Wildlife Services (logistics and mapping)
○ College of Veterinary Medicine (Triage and Vet Care)

○ Texas Animal Health Commission
  ◯ (Lead Agency for Animal Issues)

Defined Role Within State Emergency Plan

Texas Forest Service – Wildfires
Texas A&M AgriLife Extension provides public information and educational resources, visual learning resources and promotes mitigation practices for landowners, residents, businesses and county governments across rural and urban-rural wildlands of Texas.

Department of State Health Services – Preparedness
Texas A&M AgriLife Extension provides all-hazards evacuation and shelter in place preparedness and mitigation outreach and educational resources for individuals, families, communities, businesses and county governments.

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Defined Role Within State Emergency Plan

Texas Animal Health Commission - Animal Issues
Texas A&M AgriLife Extension provides public information and education targeting agricultural producers, manufacturers, wholesalers and retailers. We also provide agricultural disaster assessment and livestock response and recovery during disease and non-disease animal incidents. County Extension Agents (CEA) assist County Emergency Management Coordinators (CEMC) to establish local Animal Issues Review Committee (AIRC) and write County Animal Response Plans (CARP) supporting county government and USDA.

Defined Role Within State Emergency Plan

Texas Division of Emergency Management - Public Information
Texas A&M AgriLife Extension provides public information and education to address preparedness, mitigation response and recovery.

Defined Role Within State Emergency Plan

Texas Division of Emergency Management - Drought Issues
Texas A&M AgriLife Extension provides educational materials and services related to agricultural crop production systems, range management, risk management, and urban landscape and water use. These educational programs are designed to make field crops, forage, landscapes, and urban homes more efficient in utilizing water or less prone to drought and heat stress.

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Livestock and Poultry Environmental Learning Center Webinar Series

January 26, 2018

Defined Role Within State Emergency Plan

Texas A&M AgriLife Extension maintains its emergency communications and coordination capabilities and remains poised to activate the following elements in time of crisis:

- 20 administrators at the agency Headquarters Operation Center (ICS framework)
- 8 agency liaisons to the State Operations Center (SOC) in Austin
- 24 agency liaisons to Disaster District Committees (DDC) statewide
- agency Emergency Management Website [https://TexasAgraLife.tamu.edu](https://TexasAgraLife.tamu.edu)
- provide an agency liaison at the EOC of state agencies as requested
- research teams to plan and conduct evaluation and accountability service
- 4 livestock specialists on the State Animal Response Teams (SART)
- 50 county extension agents on seven agricultural strike teams (mission-ready-packages)

The archived presentation is available at:
Phases of Disaster

**MITIGATION**
Pre-Disaster Mitigation Efforts

**PREPAREDNESS**
Education, Outreach and Training
Business Continuity & Emergency Management Planning

**RESPONSE**
Immediate Response to Stakeholders
Establish Business Recovery Center

**RECOVERY**
Post-Disaster Economic Recovery Plan

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Attention Paid to:
Emergency/Disaster Management
- Mitigation
- Preparedness
- Response
- Recovery

Our Role in:
Emergency/Disaster Management
- Mitigation
- Preparedness
- Response
- Recovery

Emergency/Disaster Management
- The primary goals of Texas EDEN are to:
  - Provide credible and reliable information relating to disaster preparedness and recovery for individuals, families, and urban and/or rural communities.
  - Reduce the impact associated with disaster by disseminating educational materials related to disaster mitigation, preparedness and recovery.

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Supplies

Prepare early for hurricane season by creating a "Disaster Kit." Keep your kit well stocked and in an easy to get to location. Be sure to include the following items:

- Supplies for temporary identification of your animals - if they do not have permanent I.D.
- First Aid Kits for both Humans and Animals
- Handling Equipment such as Halter, Leads and Cages
- Water, Feed, and Bedding
- Sanitation Supplies
- Cell phones, Flashlights, Portable Radios and Batteries
- Food, Water, and Groomer Supplies for your Family or Employees
- Current list of all animals, including their location and records of feeding, vaccinations, and tests. Make sure that you have proof of ownership for all animals. This includes but is not limited to receipts from livestock bought and sold, registration papers, veterinary records, etc. This proof of ownership is necessary if you must apply for livestock indemnity payments with USDA Farm Service Agency.

Identify Your Livestock

Whether livestock remain in the county, or are evacuated out of the path of the storm, your livestock identification is important. Both in times of natural disaster and during other emergencies, the use of identification tools is essential to protect livestock from livestock identification. Identification can be critical, but are not a positive. Livestock can be positively identified with microchips or tattoos. Keep ownership records with you as you evacuate. Take pictures of yourself with your livestock to help with identification if they be lost. If you lose a livestock, it is important to keep a record of ownership. You can use temporary forms of identification including tags, microchips, and DNA testing. You can also write on your animals with livestock marking spray, non-water-soluble paint, or non-water-soluble markers.

Feed & Water

Hay and water are the most important items for livestock in both hurricane evacuation and recovery. Carry sufficient water with you so that the livestock drink — or you might get caught in traffic on the evacuation route. It is recommended to carry a three-day supply of water per animal if you’re evacuating livestock out of the county.

<table>
<thead>
<tr>
<th>Daily Water Intake</th>
<th>Animal</th>
<th>Gallons Water</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horses</strong></td>
<td>18</td>
<td></td>
</tr>
<tr>
<td><strong>Cattle</strong></td>
<td>23</td>
<td></td>
</tr>
<tr>
<td><strong>Swine</strong></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Sheep/Goat</strong></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Chickens</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Turkeys</strong></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Be prepared for after the storm by filling storage tanks and have a generator available to hook up to your well pump, and plenty of hay and feed secured in a dry location. You may need to supplement for some time depending if your property was affected by storm surge. Cattle should not drink water with a salt content over 5,000 ppm.

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Livestock After the Storm

Before evacuating, plan for the recovery phase by having at least one week of hay and water supply for each horse or cow —135 gallons of water/animal/week. You may want to fill storage tanks, water troughs, or have a generator available to run water wells. Before bringing livestock home, inspect your property for damage. Is water available? Did pastures heal from storm surge? Will grazing be sustained? Did fences survive the storm?

If you have any questions, or know of livestock in need of assistance after the storm passes, contact your local County Emergency Management Office. Agriculture professionals will be on staff at the EOC to handle the livestock recovery effort.

Preparing Youth Livestock Projects

Everything related to this project pertains to preparation, evacuation, and recovery of livestock and applies to youth livestock projects. However, there are a few things that were learned from past disasters that may apply to all different types of livestock projects.

Hemorrhagic disease runs annually from June 1st to November 30th. The peak of this season is the fall when many animals are on feed for Fall Fairs, 4-H, and BeAFair. Always make sure to have a Hemorrhagic Disease Vaccine on hand. (See special section in back of youth catalog.)

When a storm is likely to impact your county, youth need to have a plan for evacuating your show animals to safe grounds, having them stay until after the storm passes. A variety of winter feed needs to be available at the time of evacuation. Youth need to make sure livestock has access to clean water, shelter, and space to move about. A variety of feed needs to be available at the time of evacuation.

Response/Recovery

- Limited Response Role
  - Four ANSC Livestock Specialist credentialed to deploy with State Animal Response Team (ART).
  - Under the umbrella of the Lead Agency – Texas Animal Health Commission
  - County Extension Agents assigned to Strike Teams to assist in management of Evacuation Facilities
  - Manage Animal Supply Points that are set up during the disaster. Most are in conjunction with the Evacuation Facilities
  - AgriLife usually manages up to four ASPs
  - Harvey had eight major ASPs at one time, three privately run, five managed by AgriLife

Heads it was white terrors, tortoise, and turtle that were deployed to help clean up after the disaster.

But with ice in 2011, many were impacted by the cold — in terms of physical damage and lack of electricity and water. Animals froze at home and were discovered by neighbors, vets, and nurses. If left untreated, many animals would die.

When a storm is likely to impact your county, youth need to have a plan for evacuating your show animals to safe grounds, having them stay until after the storm passes. A variety of winter feed needs to be available at the time of evacuation. Youth need to make sure livestock has access to clean water, shelter, and space to move about. A variety of feed needs to be available at the time of evacuation.

Harvest a Duck, Turkey, or Goose:
- Don’t attempt to evacuate. The stress of losing a pet is enough on its own without the added stress of losing additional animals. Tell the family that the pet is safe at home and will be returned once the storm passes.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
- Make sure to have a plan for evacuation. If the pet is not able to return home early on Saturday and Sunday after the storm to evacuate. Those without evacuation plans were in better shape than those with evacuation plans.
Hurricane Harvey

- Hurricane Harvey was the costliest tropical cyclone on record, inflicting nearly $200 billion in damage, primarily from widespread flooding in the Houston metropolitan area
- Total fatalities: 77
- Damage: $198.63 billion (2017 USD)
- (Costliest tropical cyclone on record)
- Flooding Remained active until Sept 8, 2017

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Problem With Harvey?

- Estimated 2.1 Million head of cattle in the impact zone
- Where to move them?
- Logistics of moving 40 cows per truck?
- There are no acres or facilities available to handle that many cattle

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Evacuating Livestock

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Role in Supply Management

- Coordinate donations and delivery across:
  - State Agencies
  - TAHC
  - TDA
  - Texas Wildlife Services
  - Industry organizations
  - Transportation companies and individuals.

TDA's Hay Hotline helps agricultural producers locate forage and hay supplies for sale.
Livestock and Poultry Environmental Learning Center Webinar Series

Animal Evacuation/Supply Points

Animal Evacuation/Supply Points

Animal Supply Points

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Livestock and Poultry Environmental Learning Center Webinar Series  

January 26, 2018

Animal Supply Points

Animal Supply Points

Animal Feed Delivery

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Livestock and Poultry Environmental Learning Center Webinar Series

Animal Supply Points

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive