

# Abstracts of Scientific Papers-WADEM Congress on Disaster and Emergency Medicine 2017

## Providing Empowerment for Rural Pastoralists after Natural Disasters

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**Study/Objective:** In developing nations, wealth and wellbeing is often linked to livestock. By extension, national food security depends on sustainable production. Natural disasters, disease, epidemics, and civil unrest create insurmountable obstacles for pastoral family herds. Providing preventative education for rural agronomists enables farmers to maintain herd health through challenging circumstances.

**Background:** Continued decline in human and animal health, following the Haitian earthquake in January 2010, resulted in the formation of Veterinarians Abroad Supporting and Teaching (VAST). Facing some of the highest political instability, infant mortality rates, illiteracy rates, and infectious disease rates found globally, the Haitian ability to rebuild after large-scale natural disasters and wide-scale emergencies was weakened. Problematically, a cholera epidemic devastated the working population, impairing the restoration of normal structural functionality. **Methods:** VAST began work in Haiti in May 2012. This included building key relationships with government, local veterinarians, and national universities. Guest lectures occurred at two universities, and two animal health clinics were held in remote rural locations. In October 2013, additional clinics and workshops occurred in two other Haitian regions, and two more university classes were provided.

**Results:** Lectures on disease surveillance, biosecurity measures, and basic zoonotic disease epidemiology were provided to more than 300 agronomy students in Haiti. Clinics and workshops supervising treatment of more than 550 food animals, and training 15 animal care workers in basic animal husbandry and disease, have occurred. Feedback shows ongoing improvement in food animal health and economic prosperity in the focus areas.

**Conclusion:** Teaching animal husbandry workers recognition of key diseases, implementation of prevention strategies, and treatment of chronic cases improves long-term economic sustainability. Educating whole families on animal management and health improves living conditions. Empowering people through the animals that provide the foundation of their security provides resilient, informed, connected, and uplifted community longevity and stability.

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## Flood Related Injuries and Diseases Occurring in Horses in Louisiana from 2001-2016

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**Study/Objective:** Horses exposed to flooding conditions may present with unique and potentially life-threatening injuries. This report summarizes the types of flood related injuries and diseases occurring in horses in Louisiana from 2001-2016 (Tropical Storm Allison, Hurricanes Katrina, Rita, Gustav, Ike, Isaac, the Historic Flood of 2016).

**Background:** Floods are common weather-related disasters threatening the lives of people and animals, with an average yearly financial loss due to floods in the US averaging \$6 billion. Flood-related livestock injuries and death make up a major component of these losses impacting the economic and emotional welfare of horse-owners. By working closely with producers and agricultural leaders, veterinarians and owners can lessen the impact of flood-disaster associated injuries and diseases with proper preparation and detailed planning.

**Methods:** Medical records and incident action reports from 2001-2016 were reviewed, categorized, and summarized:

**Results:** Euthanasia was required for horses sustaining fracture disease, septic tendonitis, aspiration pneumonia, fungal encephalopathy and colic. Severe dermatitis and cellulitis was observed in horses which had been standing in water for greater than 24 hours. Horses with water-line dermatitis and cellulitis, which were decontaminated appropriately and administered systemic anti-inflammatory and antimicrobial agents, had a more positive outcome than those which were not.

**Conclusion:** There is no way to prepare for every equine medical situation that arises in a flood situation, however,

System	
Integument & musculoskeletal	-Limb, head, neck, and trunk lacerations and abrasions -Lameness – fracture, cellulitis, tendonitis, -Hoof injuries -Myositis
Dermatitis/cellulitis/ sepsis	-Inflammation -Bacterial & fungal infection
Ophthalmic	-Corneal ulceration -Traumatic uveitis
Gastrointestinal dysfunction	-Colic (impaction, colitis) -Esophageal obstruction
Neurologic	-Head and neck injuries -Infectious neurologic conditions -Tetanus -Botulism
Respiratory	-Aspiration pneumonia -Upper respiratory tract obstruction -Infectious respiratory diseases

Veterinary

by having an awareness of commonly occurring flood related diseases, adequate veterinary resources, and early recognition and treatment will result in a more positive outcome.

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### Goat Evacuations During the 2012 Oklahoma Wildfires

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**Study/Objective:** Evaluate Goat Owners' Responses to a Wildfire Threat with regard to Shelter-In-Place vs Evacuation Decision-Making.

**Background:** Much of Oklahoma's economy is dependent on animal agriculture; Oklahoma also suffers disasters such as wildfires. Livestock are at-risk from disasters, such as a wildfire, because numbers, dispersal, and handling requirements make movement from a threatened area difficult. In disasters, a typical response of livestock owners is to choose between shelter-in-place or cutting fence to turn them loose. In 2012, a group of goat owners were able to arrange successful ad hoc evacuation of goats from wildfire-threatened farms.

**Methods:** Using a triangulated research design of in-depth interviews, observations, documents, spatial mapping, and visual data, we gathered information from affected counties. We focused on variables that influenced the ability to evacuate goats vs shelter-in-place, such as the availability of transportation resources, an evacuation location, assistance with animal handling, the size of the herd, dispersal (pastured vs penned/stabled), and the rapidity of wildfire onset.

**Results:** In all, 470 goats were evacuated. Some goats suffered injuries and were treated post-evacuation. The average evacuation distance was 15 miles. The majority of evacuation coordination and resource-sharing occurred via social media and cell phones. Residents worked hard to evacuate animals threatened by wildfire, but ran into difficulties in transporting large numbers of livestock to safety, particularly with regard to dispersal and trailer availability.

**Conclusion:** Our findings emphasized the necessity for emergency plans to include safeguarding livestock. As social networks were found crucial in successful animal movement, such networks should be mobilized as a means of developing and testing evacuation plans for livestock. Animal owners should create and practice an animal evacuation plan, and permanently identify their animals. Finally, we recommend that owners have a priority list for evacuation. We have also identified avenues requiring further investigation, including highlighting goat-specific concerns during and following wildfires.

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### Emergent Planning for the Veterinary Care and Short-Term Housing of Companion Animals Evacuated due to a Wildfire in Alberta, Canada

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**Study/Objective:** This case study describes emergent planning for the veterinary care and short-term housing of companion animals evacuated due to a wildfire.

**Background:** In response to a wildfire, 88,000 residents of Fort McMurray, Alberta, Canada were evacuated from their homes. The short-notice evacuation and immediate threat of fire prevented many residents from retrieving companion animals before leaving the city. Measures for interim animal care, including shelter in place, retrieval from homes, examination by a veterinary professional, and staging at a local facility were instituted. Animals were then to be transported to the nearest metropolitan center for temporary housing. Representatives from the government of Alberta, the Alberta Society for the Prevention of Cruelty to Animals, and the Alberta Veterinary Medical Association were called upon to plan and implement solutions for veterinary care and short-term housing of animals in Edmonton, Alberta.

**Methods:** Over the course of one weekend, organizations worked collaboratively to secure and establish a facility, equipment, supplies, veterinary professionals and auxiliary volunteers. With the assistance of a commercial realtor, a vacant warehouse was chosen as a suitable facility. A local registered charity that offers animal wellness services to First Nations communities, provided support with experienced personnel, equipment, and supplies. Protocols for animal intake, triage, housing, veterinary care, and treatment of sick and injured animals were created. Roles for veterinarians and veterinary technologists were defined. Medical records, including examination, treatment, and housing forms were developed. In order to provide continuous oversight of all aspects of animal care, requests for volunteer veterinarians and veterinary technologists were disseminated.

**Results:** Within 56 hours of request, and without a prior plan or a secure source of supplies or equipment, the short-term housing facility was operational and received the first intake of animals.

**Conclusion:** Over an 11-day period, 1,192 animals were examined, provided with medical treatment as necessary, and housed.

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### A Risk Based Algorithm for Managing the Companion Animals of Medically Vulnerable Disaster Evacuees

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**Study/Objective:** This presentation describes a risk-based algorithm for managing the companion animals that present at a shelter of convenience with their medically or mentally impaired owners. A case study will be presented implementing this algorithm for the evacuees of Hurricane Ike to College Station, Texas in 2008.

**Background:** Special medical needs patients with pets present unique challenges when they are evacuated in disasters. The human animal bond is critical to these individuals who are often