

DEVELOPMENT OF AN ALL-HAZARDS ANIMAL HEALTH CONSIDERATIONS PLAYBOOK

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PROJECT INTRODUCTION

Animals and humans are affected by the same natural disasters, yet emergency managers are often expected to care for livestock with little or no specialized training or understanding of the unique needs of livestock. Veterinary teams can be deployed to a disaster, but they usually arrive later, leaving the emergency managers without guidance in animal health. To fill this gap, we created a practical playbook using research, expert input, and lessons from past disaster.

The playbook covers:

- Recognizing animals that require medical attention
- Tools to address basic animal health concerns
- Safely transporting animals
- Biosecurity for livestock shelters
- Management of sheltered livestock
- Understanding livestock behavior and handling

NEXT STEPS

This playbook will be maintained and distributed by the Colorado Department of Agriculture to county Emergency Managers across the state. It is intended to serve as a living document, continuously updated to provide the most current recommendations and guidance.

WHAT I LEARNED



This internship has taught me the importance of both disaster preparedness and response, as well as the importance of integrating livestock into these areas to preserve human and animal life. In addition to expanding my knowledge of emergency management, I developed skills in consulting with subject matter experts and translating veterinary concepts into practical tools for non-veterinary professionals. This experience has strengthened my ability to collaborate across disciplines, and gave me a clearer understanding of the roles veterinarians can hold in government, disaster response, and community leadership.

WHAT I DID

- Collaborated with veterinary teams and first responders to develop the playbook
- Attended in person trainings throughout Colorado to gain a deeper understanding of disaster response and the role of emergency managers
- Completed the AVMA Veterinary First Responder Certificate Program
- Worked with the CSU Avian Health Team to perform field testing for Avian Influenza at County Fairs and Livestock Sales throughout Colorado



Figure 1.

ESF-11
Animal Health Quick Reference guide for Flood

| PLAY 1 (+1hr) | PLAY 2 (+6hrs) | PLAY 3 (+12hrs) | PLAY 4 (+24 hrs) | PLAY 5 (+48hrs) | PLAY 6 (+4 days) |
|--|--|--|--|--|---|
| Emergency managers | Emergency managers | Emergency managers | Emergency managers | Emergency managers | Emergency managers |
| Priorities are effective communication and safe animal handling. | Priorities are animal evacuation and shelter intake. | Priorities are biosecurity and animal management. | Priorities are maintaining shelter operations and assisting animals that could not initially evacuate. | The priority is maintaining shelter operations. | The top priority is addressing the increasing needs of animals. |
| Consider activating the ESF-11 Desk in the EOC operations center, and contacting CARTs, brand inspectors, veterinarians, and the CDA emergency managers. | Establish a location for the livestock shelter. Facilities such as fairgrounds, rodeo centers, and private farms are likely equipped to house large amounts of livestock for extended periods of time. | Ensure there is effective communication between field responders and the EOC. | Utilize feed and water requirements to estimate and procure the necessary amount of food and water to safely shelter the affected animals. | If sheltering is going to be long-term, consider seeking additional support and staffing from regional resources to meet the increased needs of the livestock. | Consider reaching out to Disaster Behavioral Health (DBH) as a mental health resource for the EOC and field staff, and be prepared to recommend resources such as AgriAbility, CAAMHP, RMFU, and HICAHS to producers. |
| Field Team | Field Team | Field Team | Field Team | Field Team | Field Team |
| Main concerns for animal health in a fire are Respiratory distress and Burns | Ensure transport vehicles are species-appropriate and provide protection from heat, cold, and poor air quality | Housing of animals should be separated by species: sheep and goats, pigs, equids (horses and mules), cows, birds, and camelids (llamas and alpacas). | A field team should be established and assigned to provide a proper assessment and care for all shelter-in-place animals. | This disaster has the highest probability of animal suffering post-rescue or evacuation, consider humane euthanasia for severely burned animals when pain and suffering cannot be managed. | Do not feed a severely malnourished animal, or animal who has been deprived of food for 5 or more days without consulting the veterinary team. |

Fig 1: Example of quick references sheet for extreme cold

HOW I WILL APPLY THIS EXPERIENCE

I plan to continue this work by participating in animal-related disaster response trainings and volunteering with community veterinary medical reserve corps. I also aim to apply the lessons I learned through my time with the Colorado Department of Agriculture to expand my involvement in policy and advocacy through the Student American Veterinary Medical Associate. This experience has deepened my interest in emergency medicine and demonstrated to me how veterinary expertise can be utilized beyond clinical practice.

Figure 2.

Play 1

1-hour post disaster

During this phase, **effective communication** and **safe animal handling** are the top priorities. Clear messaging to owners is essential for preparing and implementing emergency protocols, including livestock evacuation plans. Remaining calm and quiet—and using indirect handling techniques whenever possible—will increase the chances of safely managing and evacuating animals while minimizing stress and reducing the risk of injury to both animals and responders.

- 1) Release pre-scripted public messaging stating (1) to evacuate with your animal, (2) what to bring when evacuating with animals, (3) the location of emergency animal shelters, (4) how to locate a lost animal, report a missing animal, or request retrieval of animals left behind.
 - a) In consideration of disease outbreaks, owners should be notified of any animal species that will not be accepted at emergency shelters.
 - i) Example: Not accepting birds due to an avian influenza outbreak
- 2) Advise equine owners not to release their horses from their property.
 - a) Best practice is to secure them outside of a stall and inside of a paddock on the owner's property.
- 3) When working with animals, it is best to turn off all lights and sirens, as these can be distressing for animals. Park all emergency vehicles a safe distance from the animals and do not block exit paths.
- 4) Use indirect handling of animals when possible to reduce risk of harm to the handlers or the animal.
- 5) Contact local or Community Animal Response Teams (CARTs), Veterinary Emergency Response Teams (VERTs) and Colorado Volunteer organizers such as the FRVMRC, if available, for animal handling and triage assistance.
 - a) Refer to Appendix I for a list of emergency contacts related to animal health and disaster response.
- 6) If volunteers and resources are needed, consider reaching out to local groups such as local Horseman's Association, Cattleman's Association, Humane Society, Future Farmers of America, and 4-H organizations.
- 7) Planning for animals in a shelter includes determining if the shelter is accessible, the location to house animals, the allocation of responsibility, necessary staffing levels, and training of qualified personnel such as animal control officers, technicians, veterinarians, and volunteers.
 - a) Biosecurity is a top concern for all animal shelters, and control areas should be determined and mitigation efforts implemented to maximize the health and safety of all humans and animals on the premises.
 - i) These control areas should include measures such as shoe and hand washes, gloves, and industrial disinfectant sprays.
 - b) Biosecurity should be included in all location risk assessments.
 - i) Consider areas of high traffic and space surrounding the isolation/sick area as high priorities for disease outbreak prevention and control area implementation.

Fig 2: Excerpt from playbook for operational period 1