Communicating Animal Readiness: A Content Analysis of Disaster Messaging During Hurricane Helene

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Introduction and Theoretical Framework

Disasters, such as Hurricane Helene, expose critical aspects of animal preparedness overlooked in emergency management planning, and response systems frequently underestimate the complex needs of animals, resulting in logistical, animal health, and infrastructural challenges during crises (Austin, 2013; Heath & Linnabary, 2015; Jameel et al., 2025). Hurricane Helene alone caused substantial livestock loss, heightened disease risks among animals, and infrastructure damage across the region (Cooper, 2024; Munch, 2024) that can add complexity to animal disaster response (Austin, 2013; Spain et al., 2017). Many states have taken steps to include animals in disaster planning through the establishment of State and County Animal Response Teams (SARTs and CARTs); however, preparedness remains inconsistent across counties (Federal Emergency Management Agency [FEMA], 2004; Spain et al., 2017). Gaps in animal disaster planning and failure to engage in mitigation communication before an incident can also increase risk to human life and resource coordination during an emergency (Fritz Institute, 2006), and researchers highlight the need for comprehensive emergency plans that include animals (Jameel et al., 2025) and strategic communication in disasters (Hu et al., 2023; Irlbeck & Moore, 2020).

Purpose and Objectives

This study was conducted to examine patterns in animal disaster–related messaging disseminated by state agencies and Extension offices before, during, and after Hurricane Helene. Our objectives were to (1) describe animal-related disaster communication on Facebook; (2) describe Tennessee agencies and organizations' engagement in posting animal-related disaster content.

Methodology

We employed a quantitative content analysis to systematically examine how social media was used by Tennessee agencies and organizations to disseminate animal disaster-related messages around Hurricane Helene. Our frame was bound by topic, time, and source (Neuendorf, 2017) and included Facebook posts related to animal disaster response published between September 23 and October 21, 2024, by state, university, industry, and county agencies in Tennessee involved in agricultural disasters. We used a census sampling approach (Neuendorf, 2017). Animal related posts were those that included information on animal safety, feed, housing, veterinary care, or if the post had information related to a lost livestock or companion animal as a result of the disaster. We adapted a codebook from Scott and Errett (2018) used to analyze public messaging during the 2016 Baton Rouge Flood to guide the initial coding scheme for this study. Following review by a communications faculty member involved in Helene response and two graduate students, the final codebook included 12 codes across four domains: content, engagement, dissemination, and accessibility, as well as the incident period. These domains align with the Crisis and Emergency Risk Communication (CERC) model's disaster stages and emphasize clarity, timeliness, and engagement. Within the content domain, posts were coded by message type, including situation awareness (information about the disaster or response status), mitigation requests (actions to reduce harm), emotion support (messages offering encouragement or connecting residents to mental health resources) recovery (information on rebuilding, aid, or financial assistance), dispel rumors (clarifying misinformation), other disaster (general disaster-related content not specific to Hurricane Helene), and multicode (posts containing two or more of the main categories). Posts were first evaluated for relevance to a disaster, then whether they

were animal related. Posts were then coded for content and period, and engagement metrics were recorded. Data analysis included descriptive statistics for all objectives.

Results

Of the 1,750 disaster posts coded across the three temporal phases of Helene, 193 (11.03%) were animal related. Many posts (*n* =144; 74.6%) included an image with the post, while few (*n* = 13, 6.7%) included hashtags for dissemination. The content of the posts was focused more heavily on recovery (*n* of posts = 112; 58%) than other content categories, followed by multi-coded posts (*n* = 43; 22.3%) and situational awareness (*n* = 34; 17.6%). Very few posts featured actionable requests (*n* = *n* = 2; 1%) or emotional support messages (*n* = 1; .5%), and no posts were made to dispel rumors. More animal-related posts were made during the incident period (*n* = 165; 85.5%) than the pre-incident (*n* = 5; 2.6%) and post-incident (*n* = 23; 11.9%) periods. Of the posts, 147 (76.2%) were made by county level agencies, with the most active groups being the county animal control (62% of all posts), followed by local EMAs (10% of all posts). State agencies made only eight (4.1%) posts, with only five coming specifically from the Tennessee Department of Agriculture (TDA). The University of Tennessee Institute of Agriculture (UTIA) groups posted 36 (18.7%), with most posts coming from the College of Veterinary Medicine and only two from the state-level Extension page. Lastly, Farm Bureau posted two animal related posts during the event.

Conclusions, Discussion, and Recommendations

Effective animal disaster planning and mitigation communication early in a disaster can help preserve human life and reduce the strain on resources during a disaster (Spain et al., 2017). With few posts made pre-disaster, there was a missed opportunity from Tennessee agencies, county agencies, and UTIA to relay relevant information and preserve human and animal lives. As only 1% of posts were coded as actionable requests, concern for the well-being and safety of livestock and companion animals, as well as their owners, is worthwhile. Owners may increase their own risk of injury to protect their animals rather than evacuate or seek safer conditions (Austin, 2013; Day, 2019; Fritz Institute, 2006). Successful disaster response depends on collaboration between human and animal care agencies, with clear roles for pet owners and well-equipped emergency vehicles to ensure safe evacuation and care (Austin, 2013). Due to inadequate posts coming from the TDA, limited dissemination of information on animal safety, housing, and transportation during disasters makes it harder for livestock and companion animal owners to make informed decisions. As animal disaster preparedness varies greatly among counties, further resources must be allocated toward better establishing and planning CARTs. Information must be readily available to citizens before, during, and after a crisis for the safety of livestock and companion animals, as well as their owners. Future research should determine how social networks can improve livestock evacuation and community resilience in rural and isolated areas. Egbelakin & Adedokun (2024) outline the contributions of community networks to successful animal evacuation and the role of community-led initiatives. If county-wide communication and disaster planning are not resourceful enough to provide adequate support, future research should explore how community-led efforts can supplement government-led disaster relief and information dissemination.

References

Austin, J. J. (2013). Shelter from the storm: Companion animal emergency planning in nine states. *The Journal of Sociology & Social Welfare*, *40*(4). https://doi.org/10.15453/0191-5096.3767

Cooper, R. (2024). *Hurricane Helene Recovery.* North Carolina Office of State Budget and Management.

Day, A.M. (2019) "I was prepared to stay here and die with my animals": Pet owners, Hurricane Harvey, and the role of communication in disaster sense-making. *(Doctoral dissertation).* Wayne State University.

Egbelakin, T., & Adedokun, O. (2024) Social resilient networks for improving animal evacuation in emergencies: Rural/isolated community perspectives. *Australian Journal of Emergency Management, 39*(2), 14-19.

Federal Emergency Management Agency. 2004. Preparing for a disaster: Planning for pets and livestock. http://www.fema.gov/news-release/2004/07/26/preparing-disaster-planning-pets-and-livestock.

Fritz Institute. (2006). *Hurricane Katrina: Perceptions of the affected.*

Heath, S. E., & Linnabary, R. D. (2015). Challenges of managing animals in disasters in the U.S. *Animals, 5*(2), 173–192. https://doi.org/10.3390/ani5020173

Hu, Q., An, S., Kapucu, N., Sellnow, T., Yuksel, M., Freihaut, R., & Dey, P. K. (2023). Emergency communication networks on Twitter during Hurricane Irma: Information flow, influential actors, and top messages. *Disasters, 48*(4), e12628. https://doi/org/10.1111/disa.12628

Irlbeck, E., & Moore, A. (2020). Crisis Communications in a Natural Agricultural Disaster. *Journal of Applied Communications*, *104*(4). https://doi.org/10.4148/1051-0834.2350

Jameel, A. J., Davis, K. J, & Athira, K. (2025). Challenges of emergency animal management during disasters. In T. Rana (Ed.), *Epidemiology and environmental hygiene in veterinary public health* (pp. 487–495). John Wiley & Sons, Inc. https://doi.org/10.1002/9781394208180.ch42

Munch, D. (2024). Hurricane Helene devastates rural southeast. *American Farm Bureau Federation*. https://www.fb.org/market-intel/hurricane-helene-devastates-rural-southeast

Nuendorf, K. A. (2017). *The content analysis guidebook.* SAGE Publications. https://methods.sagepub.com/book/mono/the-content-analysis-guidebook-2e/toc

Scott, K. K., & Errett, N. A. (2018). Content, accessibility, and dissemination of disaster information via social media during the 2016 Louisiana floods. *Journal of Public Health Management Practices, 24*(4), 370–379. Ttps://doi.org/10.1097/phh.0000000000000708

Spain, C. V., Green, R. C., Davis, L., Miller, G. S., & Britt, S. (2017). The national capabilities for animal response in emergencies (NCARE) study: An assessment of US states and counties. *Journal of Homeland Security and Emergency Management, 14*(3). https://doi.org/10.1515/jhsem-2017-0014