

Disaster Medicine

Report of the 2006 National Animal Disaster Summit

Bonnie V. Beaver, DVM, MS, DACVB; Robert Gros, DVM; E. Murl Bailey, DVM, PhD, DABVT;
Cindy S. Lovern, DVM, MS

Three hurricanes devastated the Gulf Coast of the United States during 2005—Katrina, Rita, and Wilma. Together those 3 storms cost 1,786 lives, caused \$100 billion in property damage, and called attention to one of the most important problems associated with natural disasters: that preplanning failed to take into account the human-animal bond. Of course, the fact that the human-animal bond may have an impact on how people react during a disaster has been known for some time. A study¹ published in 2001, for instance, reported that 41% of pet-owning households that evacuated without their pets during a disaster later attempted to rescue their dogs and cats. Yet, the Robert T. Stafford Relief and Emergency Assistance Act ignores the important relationship between animals and owners relative to emergencies. The failure to recognize that relationship was demonstrated all too well in New Orleans during Hurricane Katrina. About a month later, the mayor of Galveston, Tex, ordered mandatory evacuation in anticipation of Hurricane Rita and made it clear from the beginning that people were to take their pets with them.

Hurricanes are not the only natural disasters that can have an impact on the human-animal bond. Earthquakes, tornados, and wildfires have the same potential if they affect major urban areas. Human-related disasters can have similar impacts, as illustrated by the Three Mile Island nuclear reactor shutdown on March 28, 1977, and the March 4, 1996, train derailment and subsequent propane spill in Weyauwega, Wis.

Of course, such disasters don't affect only pets. They also impact horses, production animals, wildlife, fish, and free-roaming dogs and cats. They also show how much people care about and to what extremes they will go to ensure the safety of their animals. Immediately following the 2005 hurricanes, millions of dollars poured into animal-related foundations and

From the Departments of Small Animal Clinical Sciences (Beaver) and Veterinary Physiology and Pharmacology (Bailey), College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX 77843; the Louisiana Veterinary Medical Association, 8550 United Plaza Blvd, Ste 1001, Baton Rouge, LA 70809 (Gros); and the Scientific Activities Division, American Veterinary Medical Association, 1931 N Meacham Rd, Schaumburg, IL 60173 (Lovern).

Address correspondence to Dr. Beaver.

ABBREVIATIONS

VMAT	Veterinary Medical Assistance Team
ICS-NIMS	Incident Command System-National Incident Management System
NMACG	National Multi-agency Coordination Group
SART	State Animal Response Team

rescue groups, and hundreds of thousands of hours were donated by individuals involved in rescuing, evacuating, treating, and sheltering animals affected by the storms. Local, state, and federal agencies involved in the hurricane response worked tirelessly to provide what was needed, and animal-related organizations and companies contributed in ways too numerous to count.

These massive disaster relief efforts saved many lives, and those who contributed should rightfully feel proud of their accomplishments. However, the extent of these disasters meant that not everything went right, and in fact, a lot went wrong. Since the end of the 2005 hurricane season, there have been numerous meetings to discuss and develop ways to respond better the next time. Various states are working on plans and, importantly, are including animal needs in those plans. But at the public level, increased planning is desperately needed. Several animal-related organizations have hosted meetings, bringing in high-profile people to address specific problems. In addition, the AVMA recognized that it could facilitate a meeting of all groups involved in animal disasters, allowing those actually involved in relief efforts to identify roadblocks to their efforts and collectively find ways to address those problems. The intention was to host a working meeting rather than one where the audience listened but did not actively participate.

The National Animal Disaster Summit was hosted by the AVMA on May 5 and 6, 2006, in Washington, DC, with partial support from the American Veterinary Medical Foundation. Invited participants represented several federal agencies, the Department of Defense, the US Public Health Service, state governmental agencies, humane organizations, charities, animal-related groups, VMATs, veterinary associations, and the AVMA Committee on Disaster and Emergency Issues. Participants from Louisiana were sponsored by the

Walter J. Ernst Foundation of the Louisiana Veterinary Medical Association. The more than 100 participants were initially asked to identify 3 positive and 3 negative lessons learned by their organization during hurricane relief efforts. These were summarized and used to stimulate the discussions that occurred throughout the remainder of the meeting. Summarized materials from meetings held by other organizations were also presented, so as to build upon what had already been done by others.

Various breakout sessions took place during the meeting. During the first day's breakout sessions, participants were divided into working groups of organizations with similar activities (ie, federal governmental agencies, state governmental agencies, colleges of veterinary medicine, foundations and charities, animal evacuation and shelter organizations, state veterinary organizations, other veterinary organizations, and VMATs). Each group was then charged with identifying the major roadblocks they encountered during their relief efforts and with organizing those roadblocks by importance. These prioritized lists of roadblocks created by the various groups were then combined under major subject headings (Appendix) to provide starting points for the next day's breakout session discussions. Each major subject heading became an assigned discussion topic for a group during the second day's breakout sessions.

For the second day's breakout sessions, participants from the previous day's session were redistributed to allow for comingling of ideas and experiences. Each group was asked to develop realistic approaches to address the problems identified in the group's assigned topic area. It was understood that overarching and far-reaching problems would not have quick fixes, but participants were encouraged to develop detailed problem-solving pathways when possible. From this second set of breakout sessions, various recommendations for improving the overall response efforts for animals during major national and regional disasters were developed.

RECOMMENDATIONS FROM THE NATIONAL ANIMAL DISASTER SUMMIT

Lead Agency

It was recognized that the ICS–NIMS should drive disaster response plans, but the single largest problem identified was a lack of overall coordination and control. Most groups during the first breakout sessions pointed to this lack of leadership as the cause of the problems they identified or, at least, as a contributing factor. It was recommended, therefore, that the NMACG be created to address the need for overall coordination. The mission of this group would be to serve as a unifying, ongoing national forum for animal emergency management issues. The group would be composed of participants from all groups that have a stake in such issues, including, but not limited to, federal agencies such as the US Departments of Agriculture, Health and Human Services, Homeland Security, and Defense; animal health associations such as the AVMA and the United States Animal Health Association; national animal organizations such as the

SARTs, SART-like groups, the American Kennel Club, the American Humane Association, the Doris Day Animal League, and the Humane Society of the United States; state-based organizations, including governmental and private groups; and private industry.

It became clear during these discussions that the USDA, the federal agency responsible for production animal issues, was not mandated or funded to plan for or respond to the needs of companion animals during disasters. In addition, no single private organization that was the animal equivalent of the American Red Cross existed. Further, it was apparent that there was some mistrust among organizations involved in animal disaster response, and claims were made that for some, organizational directives had a higher priority than saving animals of certain species. This led to the belief by the group that an NMACG was needed to oversee all aspects of any disaster response involving animals.

To create the NMACG, the AVMA and other organizations to be determined would be expected to approach the Federal Emergency Management Agency to create a National Response Plan Coordination Unit, which would serve as a framework for the NMACG. It was expected that funding would come from both federal and private sources, with the hopes that the USDA and the US Department of Health and Human Services would lead the effort to develop a companion animal component for the National Response Plan.

It was envisioned that the NMACG would form a concept of operations for development of education plans for all stakeholders that would include such issues as standardization and credentialing. The NMACG would also develop a concept of operations matrix to assign tasks to specific groups, so that volunteers would know what they were expected to do during a disaster, while serving as an umbrella group to help states prepare for disasters beforehand.

A second area discussed under the topic of lead agency was the need to amend the Stafford Act to include animals in disaster planning. During this discussion, it was clear that all the groups represented at the National Animal Disaster Summit would have an important part to play in the legislative activities required to have such an amendment approved.

Communications

In discussions about communications, it became clear that 2 types of issues had to be addressed. The first involved the management of internal and external communications; the second involved the hardware needed to accomplish the first. Although recognized to be a broad topic, public information dissemination was a primary focus that involved the following discussion points:

- Individuals interested in volunteering their services, such as veterinarians, humane society personnel, and rescue personnel, must be provided some means to identify unmet needs and locate where those unmet needs exist.
- Individuals wanting to donate goods must be provided some means to determine what items are needed and how to donate those needed items.
- Individuals wanting to donate money must be pro-

vided some means to determine where to send donations.

- Owners of animals affected by a disaster must be provided some means to request assistance with animal rescue; to request needed supplies for their animals, such as food, water, and other supplies; and to identify sources that could fulfill those needs.
- A single site for information regarding animal evacuation, sheltering, identification, transportation, and fostering should be available to increase the likelihood of reunification of owners and their animals.
- A question-and-answer section should be available to decrease the need to repeat the same information over and over.

It was envisioned that a major part of this communication effort could be fulfilled by establishing a single Web site, potentially with assistance from the AVMA. Such a Web site would allow individuals located anywhere in the world to find a way to provide assistance. In addition, allowing all states and all animal-related organizations to link to this Web site would provide a quick and easy way for anyone to post appropriate information, regardless of the organization from which the information initially came.

It was recognized that because of major disruptions to communication that can occur during a disaster, this Web site might be unavailable in some situations. Thus, there would need to be an alternate way to link to the information, such as a telephone bank or ham radio network, staffed by volunteers who would be capable of answering questions. One suggestion was that veterinary students might serve as telephone bank volunteers, directing callers to appropriate agencies or organizations on the basis of information in the Web site database.

Local communications was recognized as a vital component of the entire communications effort during a disaster. Although each disaster is unique, any disaster can result in interference with power lines, cell phone towers, land lines, and other communication infrastructure. Therefore, the need for communications flexibility during disaster response efforts was recognized to be critically important. Numerous alternate communication mechanisms exist, including direct communication, couriers, cell phones, e-mail, Web-based communication, bulletin and message boards, two-way communication devices, ham radios, and checkpoint stations. But the importance of considering communication options during preplanning exercises and assessing communication tools and methods at the outset of any disaster response was stressed. All groups involved in the response to any disaster should be briefed on the reporting structure, information chain, and communication methods being used.

Finally, it was emphasized that there is a need to develop and adopt national standards for communication modalities and methods. Companies that have portable on-demand capabilities, including communications on wheels and portable cell towers, should be included in this effort.

Logistics (Resource) Management

The breakout group assigned to discuss the topic of logistics identified several factors that would allow materials and information to be distributed to where they were needed most and to minimize the collection and distribution of unneeded goods. It was suggested that the first element in the process would be to identify a primary logistics officer for animal needs who would be responsible for coordinating donations management, supply intake and distribution, unmet needs, and logistics information management. This person would have to be an expert in logistics and resource management, and contact information for this person would have to be readily available, including on the central Web site, so that all potential donors could find out about current needs.

The second element in the logistics process would be designation of a single staging area where all donated supplies would be received, logged, and distributed, allowing for the most efficient management of resources. Information about how to contact this area would also have to be readily available. The logistics officer would be expected to coordinate management of reusable supplies and dated goods in relation to predetermined needs and needs arising during a disaster response. Reusable supplies could be stored in a cache at the main staging area, whereas dated material could be donated to local animal health organizations. During a disaster, secondary staging areas could be established closer to affected areas, with each secondary staging area under the management of a site-specific logistics officer leader who would report to the logistics officer and be responsible for coordinating movement of materials to specific locations and emergency response personnel at the local level.

The third element in the logistics process would be to identify a single public information officer who would work with the logistics officer, Web site database managers, responding organizations, state and federal agencies, and media to ensure that all outgoing information was accurate and timely. This person would ensure that all organizations involved in the effort received the same information and that credit was equally distributed among all responding organizations. It was recognized that the Federal Emergency Management Agency has a donations management workshop, but its relevance to animal needs during disasters needs to be evaluated.

It was acknowledged that the required prestaged equipment and supplies would vary depending on the types of disaster that could be expected to occur in each area. However, it was recommended that the following factors be considered in logistics preplanning for each area:

- A list should be developed of essential supplies that would be needed immediately following any disaster to shelter and house all types of animals likely to need assistance, including companion animals, livestock, exotic animals, and aquatic animals.
- Plans should be made to meet the health, medical (including mental health), and well-being (eg, food, water, housing, and waste management) needs of disaster workers and volunteers.

- Sites for supply staging areas should be identified, and plans should be made for their rapid use in time of need.
- To prevent unprepared volunteers from interfering with the disaster response, the credentials required for individuals working in each of the various disaster response areas should be developed and posted on the central Web site, along with information on training opportunities for those interested in obtaining required credentials.
- Skilled transport personnel and capabilities for moving people and materials involved in rescuing, sheltering, and treating animals affected by the disaster should be identified.
- Plans should be made for providing the financial support needed for the disaster response, including maintaining, repairing, and demobilizing following the response, and governmental agencies and private foundations that could be potential sources of funding should be identified.
- Memorandums of understanding should be executed among the various entities that could be expected to respond during various worst-case scenarios.

Each person who would be expected to be mobilized during the initial response, either as an individual or as part of a group, should have sufficient equipment such that he or she would be self-supporting for a short period after mobilization because of the time delay that can be expected when activating any disaster plan. Suggestions for what should be included should be developed and posted on the central Web site.

Volunteer Management

Volunteers were identified by meeting participants as a blessing and a curse. It was obvious that it took a lot of people to help the animals affected by any disaster; however, it was also clear that some volunteers were there for personal or group glorification and were not willing to work within a system. Others were put into situations for which they were not qualified. To manage these types of situations in the future, it was suggested that some minimum level of training and credentialing be mandatory prior to involvement of any disaster responder. In particular, it was agreed that training in the basic functioning of the ICS-NIMS would help to address this need. It was also thought that the National Volunteer Organizations Active in Disasters could potentially play a coordinating role in training and credentialing. Appropriate training programs and requirements should be established for each of the functions that volunteers could be expected to fulfill, along with requirements for frequency of training. A credentialing program based on successful completion of required training programs should be developed, and volunteers would be admitted to the disaster response area only after presentation of their credentials. It was thought that the central Web site could serve as a clearinghouse for information about how to become credentialed as a volunteer and that related organization Web sites could link to this site. The central Web site could also serve as a source of information on how many and what type of volunteers are

needed and at which locations during any particular disaster.

Meeting participants recognized that providing veterinary care to animals affected by a disaster is a unique area that relates specifically to the AVMA. Further, it was recognized that VMAT members spend extensive time preparing for disasters and, once deployed, become federal employees for the term of their deployment. But many other veterinarians and veterinary technicians volunteer to help during major disasters, and in certain instances, state licensing issues could become major impediments to getting help for animals. Meeting participants suggested that the state veterinary licensing boards and American Association of Veterinary State Boards work to identify ways to modify licensing requirements such that the health needs of animals can be met during overwhelming disasters.

Clarifying the role of the ICS-NIMS in providing for the health needs of animals will also be necessary as volunteer training is developed. It was noted that continuing education requirements in many states limit the number of credits that can be given for continuing education relative to disaster preparedness, which could have a detrimental effect on having prepared veterinary volunteers available during a disaster. Within the veterinary care component, a unique situation exists regarding the use of controlled substances by veterinarians who are not part of a VMAT. At this time, veterinarians who are not licensed in the state cannot donate controlled drugs, and humane groups cannot bring euthanasia solution from out-of-state sources. Thus, it is important that the Drug Enforcement Administration and state veterinarians establish policies regarding the use of controlled substances by locally deployed, volunteer veterinarians and that such policies be clear and readily available for all involved.

Animal Evacuation and Owner Reunification

Rescuing animals stranded during a disaster is important, but eventually reuniting them with their owners is every bit as important. In some cases, owners evacuating an area can take their animals with them, but as was seen during the hurricanes of 2005, individuals who use mass transit to evacuate are often not allowed to take animals with them. In part, this is because of the omission of animal evacuation plans from the Stafford Act, so amending the act to mandate the inclusion of animals in disaster and evacuation planning was recognized as an important goal. In addition, veterinary and animal organizations should work with the American Red Cross to allow people to be sheltered with or near their animals, decreasing the chances that some people will stay behind during a disaster and increasing the likelihood that owners and their animals will remain together.

Animals that are rescued must be permanently identified, and certain information must be recorded to increase the likelihood of reunification. Each animal rescued during a disaster should have a microchip implanted (if it does not already have one), and the microchip number, along with a digital picture and

identifying information (ie, sex, breed, location found, identifying marks, and location housed), should be uniformly recorded in the central database. In this way, owners who have evacuated will be able to access the information regardless of where they have relocated to. To reduce human error and increase accuracy of the information, only trained personnel should be allowed to enter data into and manage the identification database. State laws should address the definition of “abandoned” animals, and states should consider lengthening the holding period required for animals in disaster situations, with the goal of establishing uniformity among states. The interstate movement of animals posed a problem following Hurricane Katrina because animals from one state that were being held in another state were put up for adoption before their owners had an opportunity to find and claim them.

During any disaster, animals that are evacuated are likely to be sheltered at various locations, so it will be important that location data be updated immediately and consistently each time an animal is moved. A uniform national health certificate, perhaps also available with the identification information on the central Web site, would make interstate transport less problematic during future disasters. Transportation protocols, such as acceptable types of vehicles, acceptable types of confinement or caging during transport, requirements for facilities accepting animals, maximum distance that can be traveled during a specific period, protocols for preventing disease transmission, and identification database management, should be established well in advance of any disaster.

The potential for theft of evacuated animals from evacuation triage areas and shelters needs to be considered. Consideration should be given in the planning stages for security, including a police presence. Groups and individuals taking animals from a facility should be screened and their credentials checked before any animals are released to their care to ensure the animals will be safe, will be taken to the proper location, will receive proper care, and will be maintained in adherence with the nationally accepted protocol. A memorandum of understanding detailing what is expected from each organization involved in transporting animals will increase the chances for successful reunification and improve the quality of care the animals receive. Exportation certificates should be mandated for any animal leaving a facility, and these should be checked at the exit gate or door.

Livestock in a disaster area have needs that are very different from those for companion animals in the area because they are often kept in herds larger than available transportation can handle. Disasters can result in the deaths of large numbers of animals. Following Hurricane Katrina, there were times when dairy cows could be fed but not milked or when feed was available but could not be delivered to the livestock. Identification of individual animals would help livestock owners be reunited with their animals, and this issue is, in part, being addressed with the national animal identification initiative that is currently underway. Nevertheless, livestock owners should have a disaster preparedness plan. In addition, staging areas

where livestock can be taken when appropriate should be identified during state and local disaster planning, and these areas should be made known to local producers. Getting feed and supplies to stranded livestock should be part of the duties of the logistics officer during a disaster response. Thus, organizations that deal with the various livestock species should be part of the NMACG and should work together to plan for the unique situations that could develop.

Laboratory animals and animals housed in zoos, parks, and aquaria present unique problems during a disaster and are best protected through development of individual disaster response plans that take into consideration the unique concerns relating to proper handling, housing, and biosecurity. Facilities that house and care for these types of animals should develop their disaster response plans in conjunction with similar facilities elsewhere and with state and local authorities.

Education of animal owners is an important part of disaster preparedness because the primary responsibility for the safety and well-being of any animal rests with the owner of that animal. Veterinarians can help owners develop a “disaster passport,” which would include a picture of the animal, microchip number, health record, shelter options, and contact information for a person other than the owner living outside of the likely disaster area who can be contacted in case the owner and animal become separated. Veterinarians and animal-related groups should work with city, county, and state authorities; the media; and their local extension service to emphasize disaster preparedness, including animal disaster preparedness, to the public.

Other Problems

Several other problems identified by the meeting participants did not make it into the list of the top 5 problems. However, groups present at the meeting recognized how their special expertise might allow them to address those particular problems.

Conclusion

The National Animal Disaster Summit provided an opportunity for diverse groups to come together and work toward a common goal: improving the response to disasters that involve animals. It is the intention of the AVMA to take steps to help integrate disaster preparedness and response efforts among the various organizations involved. Because other organizations requested that the AVMA facilitate planning and implementation, the association will be taking a close look at the proposed recommendations to see how to address some of the existing gaps. In addition, the AVMA is requesting input from other organizations and members of the veterinary profession regarding future disaster preparedness and response initiatives for consideration by the AVMA Committee on Disaster and Emergency Issues.

Reference

1. Heath SE, Voeks SK, Glickman LT. Epidemiologic features of pet evacuation failure in a rapid-onset disaster (Erratum published in *J Am Vet Med Assoc* 2001;219:1268). *J Am Vet Med Assoc* 2001;218:1898-1904.

Appendix appears on next page.

Appendix

Major roadblocks to disaster relief efforts identified by participants at the 2006 National Animal Disaster Summit.

Lead Agency

- No or poor understanding of and compliance with established chain of command (incident command system)
- No mandate for companion animals to be part of response plans
- Inaccurate assumptions made by many groups and failure to consider factors that became important during the actual disaster
- Ambiguous roles for responding organizations with no recognized triggers for when organizations would become involved, activated, deployed, and deactivated
- Reluctance of agency leadership to embrace new responsibilities
- Funding problems associated with limitations of the Stafford Act and loss of or limited access to outside funding resources
- Lack of coordination of response plans on the national, state, and local levels

Communications

- Lack of a sustained, proactive public relations strategy to keep rumors under control
- Inconsistent public relations protocol or person
- Competing public service announcements and rumors from various groups
- Lack of a single individual charged with delivering a single accurate, timely message
- Lack of important communications hardware (eg, centralized Web site, satellite telephones, and cellular telephones)
- Lack of communication regarding pets during the disaster
- Failure to share information among the responding agencies
- Inconsistent flow of information to public, volunteers (ie, telling them what to expect and what they will do on-site), and media
- Lack of communication because of power outages and poor signal quality
- Problems with disseminating information from base to individuals in the field
- Quality and accuracy of information not maintained adequately
- Duplication of efforts because of lack of communication, resulting in wasted time and energy
- Loss of time spent debunking rumors, particularly Internet-based rumors
- Inability to contact association and professional group members and constituents because of a lack of information on their temporary locations
- Lack of a centralized information database
- Lack of communication within and among responder groups
- Difficulties in communication because of geographic dispersion

Logistics (Resources) Management

- Initial lack of needed supplies
- Lack of centralized resource and logistics management
- Use of volunteers in inappropriate ways
- Lack of organization in regard to managing donations, including managing how funds are raised and spent
- Inappropriate, unneeded, and dated supplies

Volunteer Management

- Members of the public and professionals unclear as to whether they should offer to help and how
- Pet owners unclear as to their own obligations and role
- Unclear as to whether veterinary students and recent veterinary school graduates should be required to have disaster response training and their possible roles during a disaster response
- Ineffective NIMS
- Lack of training and credentialing so that volunteers were placed in roles they were not trained for
- Difficulties in matching qualified people with appropriate roles or jobs
- Inefficient management of resources (ie, volunteers and donations) resulting in inappropriate donations, mismatched donations, blurred lines of authority, an unclear chain of command, and failure of the ICS
- Need for standardized training and credentialing
- Lack of central source for volunteer information, resulting in poorly defined needs and volunteers who did not know what to do or where to go
- Lack of information on adequate professional training and credentialing for disaster response tactics and procedures

Animal Evacuation and Owner Reunification

- Unclear guidelines for animal evacuation or lack of plans at all levels
- Lack of understanding of legal issues involving moving animals
- Inability to track transport, import, and export of animals
- Problems with documentation because of a lack of computers and a lack of a complete documentation system for tracking animals
- Inadequate capacity to care for animals
- Lack of uniform export rules and regulations or too restrictive rules and regulations
- Lack of a permanent identification system, such as microchipping

Other Problems

- Pets not allowed on public transportation during evacuation
- States unaware of what assistance was available or how to request assistance
- Inefficient process for requesting federal assistance
- Societal disconnect between human and animal health
- State and local veterinary medical associations lacked a response structure that would have allowed them to assist with disaster planning at the state level
- Lack of preselected locations for staging and animal rescue efforts
- Lack of training and instruction for volunteers regarding what to expect, including physical demands
- Lack of understanding of the various funding mechanisms in place and which organizations provide funding
- Lack of physical presence for various funding organizations
- Lack of a national strategy for animal disaster response funding
- Inadequate security to ensure safety of responders, animals, and supplies (particularly controlled substances)
- Lack of understanding among administration, faculty, staff, and students of local schools and colleges of veterinary medicine as to their potential role in animal disaster response
- Lack of resources to deal with post-traumatic stress disorder
- Lack of personal protective equipment
- Lack of adequate protocols to maintain health and safety and inadequate response to safety concerns that were identified