

Animals and Society Institute



Animals in Disasters: Responsibility and Action

POLICY PAPER

Leslie Irvine, PhD

The Animals and Society Institute is an independent research and educational organization that advances the status of animals in public policy and promotes the study of human-animal relationships. We are a think tank as well as a producer of educational resources, publications and events. Our objectives are to promote new and stricter animal protection laws, stop the cycle of violence between animal cruelty and human abuse, and learn more about our complex relationship with animals.

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1. Animals in disasters

Executive Summary

Domestic animals are integral elements of daily life in America. Approximately 60 percent of U.S. households include dogs and cats as companion animals. Billions of farmed animals (often referred to as livestock) are bred within an agriculture industry whose revenues exceed \$100 billion annually and employ thousands of people. Service animals perform complex roles in improving the quality of life for people with various disabilities, and both police dogs and search and rescue dogs routinely save human lives. In addition to being used as resources, animals have intrinsic value.

Rescuing animals from natural or human-caused disasters has both practical and moral dimensions. Any incident that poses a threat to large numbers of people is likely to put animals at risk also. The large numbers of individuals involved coupled with the logistical difficulties inherent in emergency situations makes the need for coordinated and well-planned disaster relief a considerable concern.

In 2005, Hurricane Katrina brought public attention to the plight of companion animals abandoned during the evacuation of the Gulf Coast. Effective evacuation of humans cannot occur without incorporating their animal companions. However, other types of animals face risks and other events pose threats as well. Animals raised for food are uniquely at risk in large-scale disease outbreaks, such as avian flu, anthrax, and foot-and-mouth disease. In addition, animals can suffer in human-caused disasters, such as large-scale hoarding cases. Birds and marine wildlife suffer and die from oil spills and other sources of pollution.

This paper summarizes and synthesizes the most up-to-date information about disaster response for animals in the United States. Section Two reviews the risks different types of animals face. Section Three outlines the existing response system and discusses current legislation on behalf of animals. Section Four provides an overview of organizations directly involved in animal rescue and care following disasters. Section Five provides state-by-state information and offers planning recommendations. A list of references and key readings is also provided.

By implementing existing resources and devising new ones based on unfortunate past mistakes and oversights, it is possible to create a disaster-relief program that will bring national and local agencies together for the benefit of animals and people alike.

2. Animal Issues in Emergencies and Disasters

Disasters differ from emergencies in that they overwhelm the capacity for local authorities to respond. Disasters fall into two categories. *Natural disasters* include hurricanes, tornadoes, blizzards, extreme heat, flood, fire, and drought. They also include geological incidents such as earthquakes and tsunamis. *Technological disasters* include hazardous material incidents, nuclear accidents, and biological and chemical weapons. In this category, too, are hazards posed by terrorist attacks, bombings, and power blackouts. Biohazards pose risks to animals through disease outbreaks, such as avian flu or foot-and-mouth Disease. Hazards often overlap in disasters; for example, a flood may create technological risks when damaged containers of chemicals seep into groundwater. Moreover, different species or categories of animals face different risks.

2.1 Companion animal evacuation and sheltering

The American Veterinary Medical Association (AVMA, 2002) estimates that 58.3 percent of U.S. households include dogs, cats, birds, and/or horses. Moreover, six out of ten households having companion animals include multiple animals. Because the status and living conditions of horses differ somewhat from that of dogs and cats, I address horses in the section on livestock, below.

The welfare of animals left behind during a disaster can be seriously jeopardized, as Hurricane Katrina demonstrated (see also Heath, Kass, Hart, and Zompolis, 1998). Estimates by the Humane Society of the United States, Animal Rescue New Orleans, and the Louisiana SPCA indicate that more than 8,500 companion animals were rescued from the Gulf Coast region. Some estimates place the number as high as 15,000 (see Bryant, 2006; Scott, 2006). Precise figures are difficult to obtain because so many organizations were involved in the rescue efforts. According to the HSUS, over six thousand companion animals were rescued from the city of New Orleans and taken to the staging area at Lamar-Dixon in Gonzales. Only 500 were reunited with their guardians. Most were transferred to more than two hundred shelters across the country. HSUS reports that 2,385 animals were rescued in Mississippi and sheltered at the Hattiesburg staging area. One hundred

twenty-six reunions took place there. Six weeks after Katrina, only 207 animals were known to have been reunited with their guardians at HSUS-run operations. By December 2005, HSUS estimated over two thousand reunions. Although the number of animals who died is unknown, estimates by the LA/SPCA place it in the thousands.

Saving the lives of companion animals has implications for saving human lives. Research has shown, and Hurricane Katrina verified, that people are less likely to follow evacuation orders if they cannot take their animals with them (see Heath, Beck, Kass, & Glickman, 2001a). A September 2005 Zogby poll revealed that 49 percent of all adults, but 61 percent of companion animal guardians, would refuse an order to evacuate if they could not take their animals with them.¹ Until Hurricane Katrina, research indicated that people who left their animals behind had weaker attachment and lower commitment to their animals (Heath, Beck, Kass, & Glickman, 2001b). Katrina is the first incident in which people were forced to leave their animals behind (see Haygood and Tyson, 2005)

People will also endanger themselves and emergency personnel by re-entering evacuated areas to retrieve their companion animals. This occurred in Weyauwega, Wisconsin, in 1996 (see Heath, Voeks, and Glickman, 2001). At 5:30 a.m. on March 4, a train derailed while passing through Weyauwega. Fifteen of the train's cars carried propane, and five caught fire. At 7:30 a.m., concerns about potential explosion prompted an evacuation order. Emergency personnel anticipated that the response would take several hours. Half of the 241 pet-owning households left their companion animals behind. However, the response took much longer than expected. After the evacuation, 40 percent of guardians returned to the evacuation zone illegally to rescue their animals. Following protocol, emergency managers prevented residents from re-entering their own homes. Four days later, the Emergency Operations Center organized an official animal rescue, using the National Guard's armored vehicles.

When the human members of a home evacuate, companion animals must also leave. They can accompany guardians to temporary housing in hotels or with friends or family, or they can be sheltered in a facility designated for animals. For health and safety reasons, American Red Cross shelters do not allow animals (except service animals).

The separation of people from their animals produces significant anxiety and hardship. Consequently, "pet-friendly" shelters, which house people and animals in close proximity, have gained currency. Exhibition buildings at fairgrounds could accommodate people, for example, while the barns become shelters for companion animals and livestock. This allows guardians to care for their animals and minimizes reunification problems. When animals are left behind, reunification with guardians becomes extremely difficult, especially if the animals lack identification. Identification tags, microchips, and photographs become essential in a disaster. Hurricane Katrina made this clear, as thousands of abandoned animals were later transferred out of the Gulf region.

2.2 Equine and livestock issues

The size of horses and other large farmed animals, along with the issues of shelter, transportation, and identification, make disaster planning essential. They risk traumatic injuries following tornadoes and hurricanes, and can suffer dehydration and starvation during drought or blizzards. Structure fires can cause smoke inhalation and burns. Following floods and tornados, hazardous materials stored on farms can pose various risks.

2.2.1 Horses

Because horses are seldom housed and transported in the intensive conditions used for cattle and pigs, they face lower risk from large-scale disease outbreaks. However, barn fires pose a leading risk for horses. Their homing and territorial instinct prompts them to run back into a barn. They can suffer from complications of smoke inhalation, as well as burns, blindness, and injuries from falling debris.

Some incidents require evacuating horses to safe places, while in other cases horses can remain in barns or fields. Evacuation requires having adequate trailers, hitches, and vehicles capable of hauling, as well as making horses accustomed to transport. Evacuation also requires securing beforehand a location where horses can be taken.

Identification of horses and reunification with their owners after evacuation from a disaster area is another significant issue. When several horses of the same sex and similar size and color are

sheltered together, owners must positively identify their animals. Temporary identification can be as simple as writing the owner's name and phone number on a hoof with grease pencil, nail polish, or other durable substance. Readily available leg bands secured just below the fetlock (ankle) with Velcro are cheap and effective means of identification. Several permanent means are also available. Horses can be microchipped and logged into a national registry, and they also can be tattooed or freeze-branded. Photographs of horses from all sides taken before the event can confirm ownership.

2.2.2 Livestock (animals raised for food)

In addition to suffering from the effects of natural disasters, animals raised for food (livestock) face risks unique to their use as sources of food. Issues related to livestock in disasters can be categorized as *contagious disease*, *food safety*, and *disposal of waste and carcasses*.

Contagious disease

Livestock disease emergencies have economic, sociological, and moral implications. In addition, because disease agents can serve as biological weapons, outbreaks can threaten national security. Some diseases are zoonotic (communicable to people), thereby threatening human populations also.

Livestock disease emergencies can take the following forms:

- **A diagnosis of a reportable animal disease foreign to the United States or North America (known as foreign animal disease, or FAD)**

Veterinarians must notify their state veterinarian's office of the appearance of certain diseases (see Heath, Dorn, Linnabary, Casper, Hooks, and Marshall, 1997). Some diseases spread rapidly and have epizootic (widespread infection) potential. Because many reportable diseases affect international trade, the World Trade Organization has oversight. The WTO recognizes the World Organization for Animal Health (Office of International Epizooties) as the international monitoring agency. The OIE maintains a list of "notifiable" diseases. As a member

country, the United States monitors and reports on listed diseases through the Department of Agriculture's Animal and Plant Health Inspection Service. In 2006, more than 20 multispecies livestock diseases were listed.ⁱⁱ

- **A notable outbreak in livestock of a disease naturally endemic in animals (in contrast to foreign diseases)**

These diseases occur naturally within species or a given region. For example, spores of *bacillus anthracis*, the bacteria that causes anthrax, can be dormant for decades. The spores become active under the right conditions, such as when flooding brings the spores to the ground's surface. Activated by exposure to oxygen, they then pose a risk to grazing livestock through ingestion. Other diseases in this category are brucellosis, foot-and-mouth disease, various wasting diseases, and scrapie. Depending on the scale and the measures required to safely dispose of carcasses and sanitize soil, an endemic disease can easily become a disaster.

- **An outbreak of a known zoonotic disease, or of a new animal disease with unknown potential to infect livestock or humans**

This category includes diseases involving animal as vectors or reservoirs. Several occur naturally in North America; others have emerged in recent decades. Emerging zoonoses have potentially serious impact on human health and the global economy. Health experts expect current upward trends in the emergence of new zoonoses to continue. There are over 200 identified zoonoses, including SARS, E. coli, salmonella, plague, tularemia, ebola, hantavirus, West Nile virus, avian influenza, and prion diseases such as bovine spongiform ecephalopathy (mad cow disease).

Food Safety

Food safety disasters involve the intentional or unintentional introduction of biological, radiological, or chemical agents in animal feed or directly into meat, milk, and eggs. Nuclear disaster has long been a concern regarding food contamination. To date, the 1986 Chernobyl nuclear power plant event represents the most serious incident of the kind. Currently, other agents pose great risks. The

transportation of livestock creates many opportunities for the introduction and spread of toxic and pathogenic agents. Dangerous agents also can be spread by humans traveling from affected areas. Food safety emergencies can result from improper processing in slaughterhouses and packing plants. Deliberate contamination could occur in a criminal act or terrorist attack. Animal science scholars argue that agroterrorism poses a greater threat than FAD outbreaks, which receive greater attention (see Kosal and Anderson, 2004).

Disposal of Waste and Carcasses

Outbreaks of FAD necessitate large-scale euthanasia, including preemptive slaughter of healthy animals. Because methods vary by species and the agent involved, state and local veterinarians determine appropriate procedures. Large animals are usually killed using captive bolt guns; poultry are often gassed using carbon monoxide or dioxide.

Carcass disposal following a livestock disaster presents significant logistical problems. When carcasses present no public health hazards, they can be buried. Burial must be done away from water sources as ground and surface water can be affected when decomposing carcasses release bacteria.

Farms and stockyards ordinarily rely on rendering facilities to dispose of carcasses, but the scope of the disposal needed and the agent involved might require other procedures. Rendering plants will not accept cattle infected with BSE or sheep with scrapie. Infected carcasses can be burned on site; however, this raises public health issues and environmental and biosecurity risks. Depending on the disease agent, regulations might prohibit certain methods of disposal.

Animal waste also presents hazards following disasters. After flooding, waste lagoons often overflow. If the waste flows into rivers and streams, it can contaminate water. This occurred in 1999 following Hurricane Floyd in North Carolina, a leading hog-producing state. The flooding washed huge amounts of waste into the Pimlico and Core Sounds, producing a dead zone in the coastal areas and causing a massive fish kill.

2.3 Hidden disasters: large-scale abuse and neglect cases

“Hoarding” describes situations in which individuals have unusually large number of animals and cannot provide minimal standards of care. In nearly all cases, many animals are found dead or in extremely poor health. Hoarders often deny that they cannot care for their animals and do not acknowledge the impact of their actions on the animals and any human members of their household. The medical literature increasingly relates hoarding to obsessive compulsive disorder or other mental health problems. The behavior has serious public health implications, including the spread of zoonotic diseases. Many, if not most, hoarding situations involve high levels of environmental ammonia, requiring rescuers to use protective breathing equipment. Public health hazards, combined with animal welfare issues, can escalate a hoarding case into a disaster.

2.4 Animals in zoos and aquaria

The diversity and value of species, combined with the size of some animals and their environmental and dietary needs, present unique logistical problems for facilities with captive fish and animals. The transportation requirements alone necessitate special considerations. The risks posed to any facility depend on the hazards presented by geographical location, type of structures, and other assessment factors. The Audubon Zoo in New Orleans fared well in the floods that followed Hurricane Katrina because of its location on high ground. Zoo officials reported the deaths of only two river otters.

Captive marine species require electricity to make their water environment habitable. This is often lost during disasters. Most of the 10,000 fish in the New Orleans Aquarium of the Americas died when the city lost power and the aquarium’s generator failed. Penguins and other animals were transported to other facilities.

2.5 Animals in research facilities

Animals used for research and testing include numerous species, but mice and small rodents compose the majority. Accustomed to being housed and fed, they cannot seek shelter or forage on their own. Many animals in laboratories are immuno-compromised or genetically modified and require special environmental conditions. Failure of

heating, cooling, and ventilating systems causes numerous animal deaths. Animals involved in studies of infectious (and potentially zoonotic) diseases pose unique risks for handlers and rescuers.ⁱⁱⁱ

Until Hurricane Katrina, the worst event to affect animals housed in research facilities was Tropical Storm Allison in 2001. Flooding destroyed one of five vivaria at the University of Texas Health Sciences Center in Houston. Seventy-five nonhuman primates, 35 dogs, 300 rabbits, and countless rodents died.^{iv}

After Hurricane Katrina, 8,000 animals housed in Louisiana State University's Health Sciences Center died of starvation, dehydration, or drowned. Those who survived the flood were euthanized. At Tulane University's Health Sciences Center, staff began euthanizing animals on August 30, the day after the hurricane made landfall. Transgenic animals were evacuated to other facilities in early September. No animals were reported to have died on the Tulane campus as a direct result of the storm.^v

2.6 Native wildlife

Birds, fish, wildlife, and marine mammals face risks from wildfires, pest and disease outbreaks, and natural disasters. The most common disasters to affect animals are oil spills. Although there are no precise figures on the numbers of birds and animals affected, the number of annual spills puts the potential figure in the billions. Oil spills are especially damaging to birds. Oil-soaked birds frequently die from malnutrition, dehydration, or become vulnerable to predators.^{vi}

A unique challenge facing wildlife rescue organizations is how to increase public awareness without prompting the involvement of untrained but well-intentioned citizen rescuers. Birds and wild animals are usually wary of humans, and handling can add stress to injuries already suffered. Moreover, because birds and wildlife must eventually be released, improper handling can have a negative impact on their ability to survive.

2.7 Search and rescue dogs

Dogs have a growing role in post-disaster search and rescue (Otto, Franz, Kellogg, Murphy & Lauber, 2002). Trained search and rescue

(SAR) dogs locate disaster victims in collapsed buildings and search for remains after earthquakes, fires, and other incidents. An estimated 300 dogs worked in the response to the 2001 World Trade Center attack.

In the United States, SAR dogs and handlers receive training and certification (at the handlers' expense) through FEMA's National Urban Search and Rescue System.^{vii} There are currently 28 SAR teams in the system, sponsored by fire departments in 19 locations.

3. The State of Emergency Management Regarding Animals

3.1 Emergency management systems overview

In planning for emergencies, jurisdictions develop Emergency Operations Plans that consist of the following (see Heath 1999, p. 166):

- A statement outlining the approach to emergency management, including policies, plans, and procedures;
- Functional Annexes addressing specific activities within emergency management, such as fire, public information, or evacuation. EOPs can address animal issues in animal care and agricultural annexes;
- Hazard-specific appendices containing technical information and resources for use in each functional annex, as needed.

EOPs can include animal response measures through mutual aid agreements with animal care agencies. Mutual aid agreements, which include the less formal memoranda of understanding, document arrangements between two or more agencies to provide assistance. For example, the American Red Cross, the American Humane Association, the American Veterinary Medical Association, and the American Veterinary Medical Foundation have agreed to work in cooperation in disaster relief efforts. Similarly, APHIS has a memorandum of understanding with the Humane Society of the United States.

3.2 The role of the federal government

The Federal Disaster Relief Act of 1950 authorizes the president to provide federal assistance at the request of a governor. The presidential disaster declaration constitutes approval of the request. The United States lacked a system for coordinating resources until 1979, when President Jimmy Carter authorized the creation of the Federal Emergency Management Agency (FEMA). In 1988, the Robert T. Stafford Disaster Relief Act gave FEMA authority to respond to all disasters. In 2003, FEMA became a component of the Department of Homeland Security.

When an incident overwhelms local and state response capacities, a governor may request that the president declare a major disaster. After consideration at the regional level and at Washington, D.C. headquarters, FEMA makes a recommendation to the president. The presidential declaration activates resources through the departments and agencies coordinated through FEMA under the Federal Response Plan. Federal assistance supplements state and local efforts. FEMA and other agencies do not take control of disasters; the governor and local officials maintain oversight.

To create a standardized emergency management approach, FEMA incorporated the results of a 1972 study known as FIREScope (Firefighting Resources of California Organized for Potential Emergency).^{viii} The study was conducted after wildfires destroyed more than 600,000 acres in California. The response involved multiple jurisdictions at the municipal, county, and federal levels. The lack of coordination across jurisdictions, the inability to communicate on the scene, and general lack of preparedness greatly hampered the response. FIREScope identified elements common to all disasters, regardless of size or cause. One outcome, known as the “all-hazards” approach, changed the way responders thought about disasters by portraying them as continuous cycles of four phases:

- Mitigation: actions taken to prevent or eliminate risk from hazards
- Preparedness: the development of a plan to address a disaster or emergency
- Response: actions taken to save lives, attend to basic needs, and protect property
- Recovery: returning the setting to normalcy. Recovery overlaps with response and usually involves elements of mitigation.

The cycle places all stakeholders - whether communities, farms, businesses, or individuals - in some stage in the cycle at all times. In addition, FIREScope resulted in the adoption of the Incident Command System (ICS, outlined below) to manage disasters.^{ix}

3.3 National Incident Management System and the National Response Plan

The National Incident Management System and the National Response Plan are documents intended to improve the national response capability. The NIMS was created to coordinate local, state, federal, and tribal governments in emergency response.^x It provides the technology, information, and doctrine for the response. It is not a national response plan, but it provides the framework for such a plan (the NRP) by standardizing practices in six component areas:

- Command and Management
- Preparedness
- Resource Management
- Communications and Information Management
- Supporting Technologies
- Ongoing Management and Maintenance

Of the six components, the first two are the most thoroughly developed at the time of this writing, as a consequence of regular use by jurisdictions across the United States. The first component outlines the Incident Command System, an explanation of which will be helpful for further reading.

Command and Management includes the Incident Command System through which the response is coordinated. The ICS model uses common terminology and a pre-established, manageable division of labor. An incident commander establishes a post from which to oversee the ICS hierarchy. Under the incident commander is a staff consisting of a liaison officer, who coordinates all the activities of the responding groups and defines each group’s responsibilities; a public information officer, who authorizes the release of information to the public and the media; and a safety officer, who is responsible for the safety of responders and the public. On the next level are the general staff, who oversee the functional areas of Operations, Planning, Logistics, and Finance. The ICS allows incident commanders to adapt the structure to the needs of the event or jurisdiction.

The National Response Plan emphasizes local responsibility and the coordination of agencies. It establishes emergency support functions, which categorize the kinds of assistance needed, such as firefighting and transportation, and support annexes, which categorize the administrative assistance required. For example, the “Canine Search Specialists,” or SAR dogs, are part of the National Urban Search and Rescue Response System, which is a component of the NRP.

3.4 Lessons learned from recent disasters

Hurricane Andrew in 1992 first raised public awareness of the plight of animals following disasters (see Lawson, 1992; Dee, 1993). It also represents the first efforts to shelter and rescue lost and abandoned animals and initiated the first attempts to include animals in disaster response. During Hurricane Charley in 2004, cooperation and planning in Charlotte County, Florida, saved the lives of untold animals (Irvine, 2004). Hurricane Katrina sent a strong message about the weakness of disaster plans regarding animals. One of the most poignant images is of a small white dog named Snowball being torn from the arms of a sobbing young boy by police during the evacuation of the New Orleans Superdome (Foster, 2005). The “Snowball Effect,” as it became known, brought national awareness to the situation involving companion animals. People and animals often share intense emotional bonds. Animals can have such significant roles in people’s lives that they become part of one’s sense of self (see Irvine, 2004). Separation from and concern over the welfare of animals can add additional distress to those displaced by disasters. In this respect, the lessons of Hurricane Katrina took effect quickly: During Hurricanes Rita and Wilma, residents were instructed to take their companion animals with them. A February 2006 White House report on “The Federal Response to Hurricane Katrina: Lessons Learned” acknowledged the need to include animals in disaster plans.^{xi}

3.5 The PETS Act

On October 6, 2006, President George W. Bush signed the Pets Evacuation and Transportation Standards Act into law. The PETS Act amends the Stafford Act to require state and local emergency management agencies to include companion and service animals in their disaster response plans. The act gives FEMA the authority to assist in the creation of disaster plans for

animals; authorizes federal funds to establish pet-friendly emergency shelters; and allows FEMA to provide aid to individuals with companion or service animals, and to the animals themselves.

The anticipated benefit of the legislation is that it will facilitate evacuations. Although such organizations as the American Society for the Prevention of Cruelty to Animals, the Humane Society of the United States, and In Defense of Animals applaud the PETS Act, some within the animal welfare community remain skeptical. Critics point out that the law is not enforceable, and because state governments have little money to implement the level of assistance called for, they likely will rely on nonprofits instead of developing their own plans.

4. The Roles of Organizations and Individuals in Animal Response and Recovery

4.1 National animal welfare organizations with disaster response capacities

The American Humane Association and the Humane Society of the United States have disaster response services. In addition, both organizations raise public awareness about disaster preparedness.

American Humane Association

AHA first provided disaster relief to animals during by caring for horses and mules injured in World War I. Its Animal Emergency Services response capabilities include an 82-foot tractor-trailer equipped with kennels, a veterinary facility, sleeping quarters for 15 responders, and a self-contained command center. Animal Emergency Services has 100 deployable responders and another 500 who are potentially available. A letter of understanding with the American Red Cross recognized AHA as the main contact for disaster relief involving animals.

The Humane Society of the United States

HSUS has responded to disasters since its formation in 1954, but its National Disaster Services Program was formally established in 1969. Hurricane Andrew in 1992 sparked significant development of its Disaster Animal Response Team. DART cooperates with the Red Cross and FEMA, and has memoranda of understanding with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). The global branch of HSUS, Humane Society International, responds to disasters around the world.

4.2 Emergency animal response organizations

These nonprofit organizations specialize in disaster services for animals:

Code 3 Associates

Code 3 Associates, located in Longmont, Colorado, specializes in animal rescue operations in the United States and Canada. The base of operations is a specially designed, self-contained tractor-trailer. Ten trained leaders and 35 animal welfare and public safety professionals

make up the Essential Animal Services Team, which can respond to various incidents.

Noah's Wish

The sole mission of Noah's Wish is to care for animals during disasters. Noah's Wish provides free relief assistance at the request of emergency managers or animal welfare organizations. The organization was founded in 2002 by Terri Crisp, a rescuer with experience in over 50 disasters (see Crisp and Glen, 1997). From the group's headquarters in El Dorado Hills, California, Noah's Wish assists with evacuation, transportation, temporary sheltering, rescue, humane trapping, donation coordination, grief counseling, and other aspects of disaster relief.

United Animal Nations

Trained volunteers provide disaster relief services through the Emergency Animal Rescue Service, located in Sacramento, California. EARS focuses on temporary animal sheltering, and its 2,900 volunteers can respond throughout the United States and Canada (see Crisp, 2002).

4.3 Federal and national veterinary responders

United States Public Health Service Commissioned Corps

The Corps of the Public Health Service, led by the Surgeon General, is one of the seven uniformed services of the United States.^{xii} The veterinarians among the Corps' 6,000 officers work in agencies throughout the Department of Health and Human Services, especially the National Institutes of Health, the Centers for Disease Control and Prevention, and the Food and Drug Administration.

The role of PHS veterinarians in disasters includes veterinary care, carcass disposal, bite quarantine, and monitoring and eradication of disease outbreaks and zoonoses. In disasters, the PHS coordinates with the USDA, FEMA, the American Red Cross, and Department of Homeland Security.

Veterinary Medical Assistance Teams

Veterinary Medical Assistance Teams were established by the American Veterinary Medical Association and are funded by the American Veterinary Medical Foundation. VMATs include veterinarians,

technicians, and support staff. The teams can be activated in federally declared disasters at the invitation of stricken states. When local veterinary infrastructure is destroyed, VMATs can set up field hospitals and treat a range of animal species. VMATs also address animal disease and public health hazards (see Moore, Kaczmarek, and Davis, 1991; Dee, 1993).

A memorandum of understanding between the U.S. Public Health Service and the AVMA incorporated VMATs into the Federal Response Plan. A similar agreement makes VMATs available to assist the USDA in the control and eradication of animal disease.

4.4 Federal and state departments of agriculture

At the federal level, the USDA's Animal and Plant Health Inspection Service (APHIS) is responsible for controlling animal diseases and enforcing the Animal Welfare Act. However, the USDA has no mandate or funding to provide for animals in disasters (see Beaver, Gros, Bailey, and Lovern, 2006).

In a large-scale disease outbreak or other disaster, the Veterinary Services division of APHIS would assist state and local authorities, including representatives from agricultural industries as well as fish and wildlife officials.

State departments of agriculture also oversee the health, welfare, and productivity of farmed animals. Some states combine agriculture with forestry and natural resources. Brand inspection units are components of the departments of agriculture in states with brand laws. During a disaster, brand inspectors identify lost livestock.

4.5 Animal tracking/location schemes and Animal Emergency Response Network

The National Animal Identification System is an effort to identify the sites of livestock disease outbreaks. The components include premises registration, animal identification, and animal tracing. Through numbering systems, such as ear-tagging, diseased animals can be traced to their origins and animals from disease-free premises can be so recognized. The animal tracing component, incomplete at the time of this writing, consists of a nationwide database that can track animal movement and the spread of disease.

For companion animals abandoned or lost during disasters, identification greatly increases the likelihood of reunion with guardians (see Heath, Kass, Hart, and Zompoli, 1998). Microchips and leg bands (for birds) can be logged into a national registry. However, the effectiveness of microchip tracking depends on guardians' updating information, the availability of shelter equipment and the uniformity of microchip formats.

Following Hurricane Katrina, the online database Petfinder.com became a valuable resource for guardians and welfare organizations. Most of the time, Petfinder.com extends local animal shelters' resources through a searchable inventory of adoptable animals. After locating a suitable companion, adopters can access a local shelter's web site for adoption information. When Katrina struck, Petfinder.com became the platform for the Animal Emergency Response Network. With support from Maddie's Fund,^{xiii} Petfinder.com posted data on nearly 23,000 animals found or rescued in the disaster areas. The database also included nearly 26,000 requests for rescue from people who left animals behind and another 8,000 lost animal notices. The AERN reunited 3,200 animals and human companions. The network, funded by the nonprofit Petfinder.com Foundation, remains in place to assist in future disasters.

Any identification and tracking system faces obstacles to overcome. Some of those facing Petfinder.com following Katrina included inaccurate or incomplete records of where an animal was found, inaccurate or unhelpful descriptions (e.g., "black Lab mix") of animals. Poor quality photographs or photos taken when animals were wet or dirty made identification difficult. In addition, different rescue groups used different methods to record information. Much hand-written information was illegible. Paper records were often torn or separated from animals as they moved from rescue to staging area to foster shelters. Some animals arrived at staging areas before the cataloging system was in operation. Also, some animals' photos were posted online several times, as they moved through the rescue and sheltering process. This added unnecessarily to the time it took for guardians to search the web site for their lost animals.

4.6 Animal shelters

Local shelters play various roles during disasters. If the facility participates in community response plans, the staff will usually transfer its adoptable animals to shelters outside the area, making room for lost and abandoned animals. Some facilities provide emergency shelter or foster care for animals when human populations have no alternatives. In addition, through agreements with local and state officials, shelters can be designated as critical care facilities when veterinary hospitals are damaged.

The Society of Animal Welfare Administrators is a nonprofit management organization of local humane shelters and animal control operations. Following Hurricane Katrina, more than 100 of SAWA's member organizations sent an average of six staff members and eight volunteers per organization to assist in the disaster areas for 10-12 days. SAWA member organizations opened their shelters to more than 3,500 evacuated animals, housing some for several months (Rhoades, 2006).

4.7 Citizen volunteers

In disasters, large numbers of people often want to help. Most are known as "emergent" volunteers, who have no previous training or association with a disaster response organization (see Wenger, 1989; Drabek and McEntire, 2003). The issues raised by emergent or self-mobilized volunteers are addressed under Public Relations Issues in the following section.

Volunteers, especially from the immediate area of a disaster, can often provide the fastest response (Mileti, 1989; Dynes, 1994). Following Hurricane Katrina, HSUS estimates that more than 1,000 official volunteers were working at the sheltering facility at Lamar-Dixon (see Anderson and Anderson, 2006). Countless others simply showed up to help, but never filled out the registration paperwork. Self-motivated volunteers were vital to the response. Conditions following Katrina—particularly the heat—meant that many volunteers put themselves at risk to help animals (Irvine, 2006; see also Crisp, 2002).

Citizens wanting to volunteer in disasters have numerous opportunities for training beforehand. Some national animal welfare organizations offer training for people with animal care and handling experiences. Most

organizations require independent study courses through FEMA (available online) to become familiar with the NIMS, ICS, and other response protocols.

5. Planning and Preparedness Related to Animals at the State and Local Level

5.1 State-by-state assessment of existing disaster plans for animals^{xv}

<u>State</u>	<u>Has disaster plan for companion animals as of 2006?</u>
Alabama	In development
Alaska	Yes, but minimal
Arizona	Yes
Arkansas	In revision
California	Yes
Colorado	In development
Connecticut	In development
Delaware	In development
Florida	Yes
Georgia	Yes
Hawaii	No
Idaho	In revision
Illinois	In development
Indiana	Yes
Iowa	In development
Kansas	Yes
Kentucky	No
Louisiana	Yes
Maine	Yes
Maryland	In revision
Massachusetts	In development
Michigan	No
Minnesota	Yes
Mississippi	In revision
Missouri	In development
Montana	No
Nebraska	No
Nevada	No
New Hampshire	No
New Jersey	Yes
New Mexico	Yes

New York.....	Yes
North Carolina	Yes
North Dakota.....	In revision
Ohio	In development
Oklahoma	Yes
Oregon	No
Pennsylvania	Yes
Rhode Island	Yes
South Carolina.....	Yes
South Dakota	No
Tennessee	Yes
Texas.....	In development
Utah	Yes
Vermont.....	Yes
Virginia.....	In development
Washington	Yes
West Virginia	No
Wisconsin	Yes
Wyoming	In development

5.2 The State Animal Response Team Model

State Animal Response Teams are nongovernmental, nonprofit organizations through which various stakeholders can provide a coordinated response to incidents involving animals. The goal is a public-private partnership capable of responding to any animal incident within a state. SART members may include local emergency managers, animal shelter administrators, representatives from statewide veterinary organizations, state departments of agriculture, departments of public health, kennel clubs, breeders, equestrian groups, and others.

North Carolina established the first SART following Hurricane Floyd in 1999.^{xv} The previous lack of a coordinated plan resulted in the deaths of millions of farmed and companion animals. The major animal stakeholders developed a partnership that could mobilize enough personnel with sufficient training and equipment to respond to large-scale incidents. SARTs implement the ICS and other FEMA/NIMS procedures. At the time of this writing, 12 states have active SARTs; another 11 have teams in development.

Because disaster response begins at the local level, County Animal Response Teams are key SART components. CARTs assess hazards, provide mitigation, and coordinate response and recovery efforts.

5.3 Public relations issues

The handling of “Spontaneous Untrained/Unwanted Volunteers,” or SUVs, poses one of the most challenging public relations issues in disasters. This has been well documented as one of the emergent phenomena that regularly occur following disasters (see Wenger, 1989; Drabek and McEntire, 2003). The convergence of people can distract and overwhelm those in charge (Scawthorn and Wenger, 1990; Auf der Heide, 1989; Wenger, 1989; Quarantelli, 1986). Due to insurance regulations and disease and injury prevention measures, untrained volunteers can be a liability. However, turning them away can pose problems for animal welfare organizations that rely on public support. It is therefore essential to recruit and train interested volunteers before a disaster strikes.

Other public relations issues can be prevented by conveying timely and accurate information to the public and the media through the public information officer.

5.4 Community and household disaster plans for animals

Community planning

Developing plans for animals in any community entails generating awareness and support from government, the public, and all animal stakeholders. Divisions of animal control and public health departments provide useful starting points. Cooperation among agencies, groups, and individuals at all levels is essential. FEMA offers online courses in community planning as part of its Animals in Disaster training program.

Household planning

Many organizations offer online resources for developing household disaster plans for animals. They recommend having identification for animals and having sufficient food, water, medication, leashes, carriers, and other supplies. Most guidelines suggest having provisions to shelter in place, or remain at home, for 72 hours. In the event of evacuation, the guidelines emphasize locating pet-friendly accommodations outside the

immediate area ahead of time. Additional information on planning, as well as details specific to horses and livestock, appear on the following web sites:

American Humane Association

<http://www.americanhumane.org/site/PageServer>

The American Veterinary Medical Association

<http://www.avma.org/disaster/default.asp>

The Humane Society of the United States

http://www.hsus.org/hsus_field/hsus_disaster_center/

6. Overview References

Anderson, A. and L Anderson. 2006. *Rescued: Saving Animals from Disaster*. Novato CA: New World Library.

Beaver, BV, R Gros, EM Bailey, and CS Lovern. 2006. "Report of the 2006 National Animal Disaster Summit." *Journal of the American Veterinary Medical Association* 229:943-8.

Best Friends Animal Society. 2006. *Not Left Behind: Rescuing the Pets of New Orleans*. New York: Yorkville Press.

Crisp, T and S Glen. 1997. *Out of Harm's Way: The Extraordinary True Story of one Woman's Lifelong Devotion to Animal Rescue*. New York: Pocket Books.

Crisp, T. 2002. *Emergency Animal Rescue Stories: True Stories About People Dedicated to Saving Animals from Disasters*. Prima Lifestyles.

Heath, SE. 1999. *Animal Management in Disasters*. St. Louis MO: Mosby.

Heath, S, and A. O'Shea. 1999. *Rescuing Rover: A First Aid and Disaster Guide for Dog Owners*. West Lafayette IN: Purdue University Press.

Haddow, GD, and JA Bullock. 2003. *Introduction to Emergency Management*. Burlington MA: Butterworth-Heinemann/Elsevier Science.

Irvine, L. 2006. "Animals in Disasters: Issues for Animal Liberation Activism and Policy." *Animal Liberation Philosophy and Policy Journal* 4:1-16.

7. Works Cited

- Anderson, A. and L Anderson. 2006. *Rescued: Saving Animals from Disaster*. Novato CA: New World Library.
- Auf der Heide. E. 1989. *Disaster Response: Principles and Preparation and Coordination*. St. Louis: CV Mosby.
- Beaver, BV, R Gros, EM Bailey, and CS Lovern. 2006. Report of the 2006 National Animal Disaster Summit. *Journal of the American Veterinary Medical Association* 229(6):943-8.
- Bryant, S. 2006. No Way Would We Put Them Down : Animals still homeless after Katrina. *Houston Chronicle* April 22 B3.
- Crisp, T. 1997. *Out of Harm's Way: The Extraordinary True Story of one Woman's Lifelong Devotion to Animal Rescue*. Pocket Books.
- Crisp, T. 2002. *Emergency Animal Rescue Stories: True Stories About People Dedicated to Saving Animals from Disasters*. Prima Lifestyles.
- Dee, L.G. 1993. Lessons Learned from Hurricane Andrew. *Journal of the American Veterinary Medical Association* 203:986-88.
- Drabek, TE, and DA McEntire. 2003. Emergent Phenomena and the Sociology of Disaster: Lessons, Trends, and Opportunities from the Research Literature. *Disaster Prevention and Management* 12:97-112.
- Dynes, RR. 1983. Problems in Emergency Planning. *Energy* 8:653-660.
- Dynes, RR. 1994. Community Emergency Planning: False Assumptions and Inappropriate Analogies. *International Journal of Mass Emergencies and Disasters* 12:141-158.
- Foster, M. 2005. Superdome Evacuations Enter Second Day. <http://www.wwtv.com/sharedcontent/nationworld/katrina/stories/090105ccwcKatrinaCoptershot.14dc330e.html> Accessed 1/31/2007 4:03 PM
- Haygood, W, and AS Tyson. 2005. It Was as if All of Us Were Already Pronounced Dead. *Washington Post*. Thursday, September 15; Page A01
- Heath, SE. 1999. *Animal Management in Disasters*. St. Louis MO: Mosby.
- Heath, SE, R Dorn, RD Linnabary, J Casper, J Hooks, and K Marshall. 1997. Integration of Veterinarians into the Official Response to Disasters. *Journal of the American Veterinary Medical Association* 210:349-352.
- Heath, SE, AM Beck, PH Kass, and LT Glickman. 2001a. Human and pet related risk factors for household evacuation failure during a natural disaster. *American Journal of Epidemiology* 153:659-665.
- Heath, SE, AM Beck, PH Kass, and LT Glickman. 2001b. Risk factors for pet evacuation failure after a slow-onset disaster. *Journal of the American Veterinary Medical Association* 218:1905-1910.

Heath, SE, P Kass, L Hart, and G Zompolis. 1998. Epidemiological Study of Cats and Dogs Affected by the 1991 Oakland Fire. *Journal of the American Veterinary Medical Association* 212:504-511.

Heath, SE, SK Voeks, and LT Glickman. 2001. Epidemiological features of pet evacuation failure in a rapid-onset disaster. *Journal of the American Veterinary Medical Association* 218: 1898-1904.

Irvine, L. 2004. *If You Tame Me: Understanding our Connection with Animals*. Philadelphia: Temple University Press.

Irvine, L. 2004b. Providing for Pets during Disasters: An Exploratory Study. *Quick Response Research Report 171*. Natural Hazards Research Center, University of Colorado. <http://www.colorado.edu/hazards/qr/qr171/qr171.html>

Irvine, L. 2006. Providing for Pets during Disasters, Part II: Animal Response Volunteers in Gonzales, Louisiana. *Quick Response Research Report 189*. Natural Hazards Research Center, University of Colorado. <http://www.colorado.edu/hazards/qr/qr189/qr189.html>

Kosal, ME, and DE Anderson. 2004. An Unaddressed Issue of Agroterrorism: A Case Study on Feed Security. *Journal of Animal Science* 82:3394-3400

Lawson, D. 1992. The Plight of Pets in South Florida. *Philadelphia Enquirer* September 27, H5.

Moore, RM, RG Kaczmarek, and YM Davis. 1991. Natural Disasters: The Role of the Veterinarian. *Prehospital Disaster Medicine* 6:265-270.

Otto, CM, MA Franz, B Kellogg, R Lewis, L Murphy, and G Lauber. 2002. Field Treatment of Search Dogs: Lessons Learned from the World Trade Center Disaster. *Journal of Veterinary Emergency and Critical Care* 12:33-42.

Quarantelli, EL. 1986. Research Findings on Organizational Behavior in Disasters and their Applicability in Developing Countries. *Paper #107*. Newark DE: Disaster Research Center, University of Delaware.

Scawthorn, C., and D Wenger. 1990. Emergency Response, Planning, and Search and Rescue. *HHRC Publication 119*. College Station TX: Texas A and M University, Hazard Reduction and Recovery Center.

Scott, RT. 2006. Get Animals out of Town, Too, Bill Suggests: Legislation would provide a place for pets during an evacuation. *Times-Picayune* (New Orleans) April 18, P1

Wenger, D. 1989. The Study of Emergent Volunteer and Emergent Organization Response in Search and Rescue: Approaches and Issues for Future Research. *HHRC Publication 5P*. College Station TX: Texas A and M University, Hazard Reduction and Recovery Center.

Wenger, D. 1990. Is the Incident Command System a Plan for all Seasons and Emergency Situations? *Hazard Monthly* March 8-9, 12

8. Online References

- i N=3,185 adults. Margin of error =+/- 1.8 percentage points. See <http://www.zogby.com/search/ReadNews.dbm?ID=1029> Accessed 11/18/2006 5:25 PM
- ii See http://www.oie.int/eng/maladies/en_classification.htm Accessed 10/28/2006 12:10 PM
- iii See <http://www.nal.usda.gov/awic/newsletters/v11n1/11n1heat.htm> Accessed 11/12/2006 3:26 PM
- iv See <http://www.lama-online.org/Brad1.html> Accessed 11/09/2006 4:29 PM
- v See http://grants.nih.gov/grants/olaw/IACUCCConf2006_Levy.pdf Accessed 11/21/2006 1:58 PM
- vi For details on how oil affects birds, see http://www.ibrc.org/oil_affects.html Accessed 11/6/2006 4:53 PM
- vii For the position description and qualifications for Canine Search Specialists, see http://www.disasterdog.org/forms/policies/fema_k9_position_description_2006.pdf Accessed 11/12/2006 4:37 PM
- viii For a history, see <http://www.firescope.org/firescopehistory/past%20present%20future.pdf> Accessed 1/31/2007 5:08 PM
- ix See <http://www.firescope.org/firescope-history/firescope-historical-documents.htm> Accessed 11/5/2006 2:58 PM
- x For NIMS documents, see http://www.fema.gov/emergency/nims/nims_compliance.shtm#nimsdocument Accessed 11/5/2006 4:48:53 PM
- xi See <http://www.whitehouse.gov/reports/katrina-lessons-learned/index.html> Accessed 11/21/2006 12:40
- xii See <http://www.usphs.gov/html/mission.html> Accessed 11/23/2006 12:24 PM
- xiii See <http://www.maddiesfund.org/index.html> Accessed 11/24/2006 5:10 PM
- xiv For more information, all plans are available at <http://www.friendsofanimals.org> Accessed 11/29/2006 9:42 AM
- xv See <http://www.ncsart.org/> Accessed 11/29/2006 4:01 PM