

Pet Care Professionals' Preparedness for, Response to and Utilization of Resources During Hurricane Gustav

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Introduction

The highly publicized problems encountered during the evacuation of New Orleans residents and their companion animals prior to and after Hurricane Katrina in 2005 highlighted the importance of including pets in disaster plans. During this event the media relayed numerous stories of residents who put their own lives in peril by refusing to evacuate because they were not allowed to bring their pets to shelters, as well as those that were forced to make the devastating decision to leave their pets behind. In response to this situation, the National Animal Disaster Summit was held in 2006 with the goal of identifying roadblocks associated with the animal relief effort during this disaster. These roadblocks included failure on the part of lead agencies to consider all factors that become important during a disaster, unclear guidelines for the

evacuation of animals, and lack of communication regarding the availability of resources (Beaver et al., 2006).

Since Katrina, steps have been taken to include household pets in community disaster planning and resource allocation. One example of this is the passage of the Pets Evacuation and Transportation Standards (PETS) Act of 2006, which requires local and state officials to accommodate household pets and service animals in their disaster planning. Also, many national animal welfare organizations such as the Humane Society of the United States, the American Humane Association and Code 3 Associates have coordinated plans with individual states to mobilize animal response teams and pet-friendly shelters to aid in the evacuation of pet owners and their animals. The research community has also taken an interest in understanding the complex subject of humans, pets, and disasters. To date, this research and related policy changes have tended to focus on the care of family pets by individual owners (Heath et al., 2001a and 2001b) or the organizational relief effort following hurricanes (Irvine, 2004 and 2006). However, there exists a population of pet caretakers that is particularly vulnerable to evacuation obstacles that has received very little attention in the research and organizational communities; pet care professionals.

For the purpose of this study, pet care professionals are defined as any individual or business entity that provides care to 1) other people's pets for a fee or 2) animals for sale. This includes in-home pet sitters, boarding facilities, kennels, pet stores and some groomers that offer boarding services. With the proliferation of the pet care industry, these small businesses and private pet care providers may have the responsibility for multiple household pets during a natural disaster. Little is known about the extent to which pet care professionals are prepared for a disaster, or in particular the multiple impacts of the hurricane hazard such as flooding, wind damage, a shortage of supplies or prolonged power outages. Even in states where animal care facilities are required by state law to have an emergency plan, little is known about the actions taken by pet care professionals during hurricanes (or other extreme weather requiring evacuation) and how those actions compare to their expected course of action as expressed in their emergency plan. Also, in the case of in-home pet sitters or kennel operators, they may have on the order of 10-100 pets in their care at any given time, compounding their needs for resources such as up-to-date information about evacuation orders and instructions, alternative sheltering locations, transportation, supplies, and staff assistance.

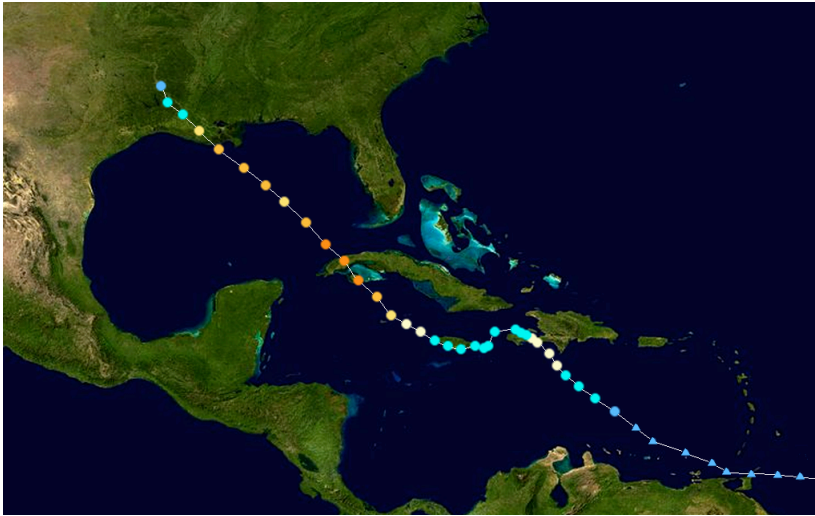
With 63% of U.S. households owning pets and spending on boarding and grooming continuing to rise (APPMA), pet care professionals must be included in local emergency management plans. Furthermore, the more that is known about how these individuals and businesses plan for and respond to disasters, the better local emergency management can incorporate them into a community plan. The goal of this study was to conduct interviews and surveys of pet care professionals shortly after a hurricane landfall in order to explore their response to, preparedness for, and resource utilization during such an event, with the hope that knowledge gained might be applied nationally. The event chosen as the focus of this study was Hurricane Gustav, which made landfall west of New Orleans on September 1st 2008. The specific research questions this report will address include:

- 1) What preparations did pet care professionals make in advance of Hurricane Gustav?
- 2) What actions did pet care professionals take during and after Hurricane Gustav?
- 3) What resources did pet care professionals need or anticipate needing to evacuate the animals in their care during Hurricane Gustav?
- 4) Where did pet care professionals obtain weather and emergency information before and during Hurricane Gustav?
- 5) Did pet care professionals' experiences during 2005's Hurricane Katrina influence what they did during Hurricane Gustav?

Methodology / Data Collection

Hurricane Gustav originated from a tropical wave that moved off the west coast of Africa on August 14th, 2008. This wave developed in to a tropical depression on August 25th and intensified to a hurricane on August 26th. It impacted Haiti, Jamaica, and the Cayman Islands over the next several days as a tropical storm or weak hurricane and then rapidly intensified to a major hurricane before making landfall along the southwest coast of Cuba on August 30th. Hurricane Gustav weakened as it moved over Cuba and into the Gulf of Mexico and headed towards the Louisiana coast. Hurricane Gustav made landfall as a strong category 2 hurricane on the morning of September 1st, 2008 near Cocodrie, Louisiana, which is about 70 miles southwest of New Orleans (Figure 1).

Figure 1: Track of Hurricane Gustav (from Wikimedia Commons, author Ramisses, public domain image, http://en.wikipedia.org/wiki/Image:Gustav_2008_track.png).



Since the hurricane made landfall near such a heavily populated region of the U.S. Gulf Coast, an opportunity was provided to explore the actions of pet care professionals during a natural disaster and an assessment as to whether or not these actions followed any plan they may have had in place prior to the disaster could be made. In addition, mandatory evacuations were ordered within 18 Louisiana parishes and 3 Mississippi counties during Hurricane Gustav, allowing the chance to examine pet care professionals' responses to evacuation orders and determine the resources they needed in order to evacuate the animals in their care.

Information regarding pet care professionals' preparation for, response to, and resource utilization during Hurricane Gustav was obtained via a survey questionnaire (see Appendix for details). A list of business addresses and phone numbers of 131 potential respondents was purchased from InfoUSA. The research team travelled to New Orleans, LA from September 10th through the 13th, 2008. During this time 22 in-person interviews were conducted, which consisted of research team members asking questions from a structured survey and taking notes on any extra information respondents chose to share. The research team also dropped off surveys and stamped return envelopes to several respondents who said they would like to participate in the study but did not have time to meet in person.

Due to the abundance of pet care professionals in the New Orleans metropolitan area and the limited time available for onsite data collection, not all potential subjects from the recruitment list were contacted during the 4-day trip. The remaining pet care professionals on

the list that were not contacted during that time were mailed a packet containing an introduction letter, research cover letter, survey, and a stamped return envelope less than one week later.

Onsite Interviews: Observations from a post-Gustav New Orleans

All four research team members arrived in the New Orleans area on the afternoon of September 10th 2008. In order to conduct as many interviews as possible during our time there, the researchers were split up into two interview teams consisting of two researchers each. Having two researchers conduct each interview was ideal. As one researcher asked questions and guided discussion the other was able to record detailed answers and notes. Interviews were conducted at respondents' business locations during regular working hours (roughly 9am to 6pm) in order to best accommodate their schedules.

Several hotels contacted near the Louis Armstrong International Airport, which is northwest of the downtown area and convenient to points southwest of New Orleans, reported having minor to moderate damage from Hurricane Gustav and were not taking reservations. We found a hotel to stay at on the northeast side of New Orleans, which was convenient to downtown and cities to the north such as Slidell and Mandeville. This area of the city seemed to be experiencing a slower recovery from 2005's Hurricane Katrina than the downtown area. We saw a number of vacant, boarded up houses and stores and several structures that were completely destroyed. Many of the neighborhoods we visited were a juxtaposition of newly-built homes and vacant houses still bearing spray-painted markings left by rescuers after Hurricane Katrina (Figure 2, left). There was also evidence of more recent, less severe damage likely caused by Hurricane Gustav, such as piles of tree limbs on most neighborhood streets, fallen trees and power poles (Figure 2, right), and missing roof shingles. Even though the focus of our study was Hurricane Gustav, it was hard to ignore the lingering evidence of Hurricane Katrina's devastation and this city's past with hurricanes.

When we arrived in New Orleans there was another hurricane, Hurricane Ike, located approximately 370 miles south/southeast of the mouth of the Mississippi in the Gulf of Mexico moving northwestward towards the Texas coast. Hurricane Ike was a large storm, with hurricane warnings extending from Port Aransas, Texas to Morgan City, Louisiana. The New Orleans area was under a tropical storm warning for much of our 3.5 day stay. During onsite data collection we experienced moderate sustained winds, tropical storm strength gusts, and occasional squall

rain storms. Due to Ike-related street flooding and bridge closures we had to abandon our plans to conduct interviews in many cities to the southwest and southeast of the New Orleans. Although we were not able to cover the distance we had hoped, we found there were more than enough pet care professionals willing to meet with us in New Orleans and cities to the north.

Figure 2: A house with markings on it that are most likely from Hurricane Katrina three years prior (left) and a tree that had fallen on a car in a northeast New Orleans neighborhood after Hurricane Gustav (right).



Analysis

A grand total of 61 survey responses were collected for this study. This includes the 22 in-person interviews and 39 completed paper surveys returned out of the 100 surveys dropped off or mailed, a response rate of approximately 40% when accounting for non-deliverable addresses. Of the 61 responses, 41 were from veterinarians, followed by 11 from boarding kennels, the two largest groups represented in the sample (Figure 3). A majority of the sample was female (71.9%). The average business represented by the sample responses had 11 employees, and kept 24 dogs and 7 cats at any one time. The number of horses or other pets compared to the number of cats and dogs was very small. See Table 1 for a list of sample characteristics. Figure 4 shows a map of respondents by county. The remainder of the analysis sought to answer the five questions posed above.

Figure 3. Types of pet care professionals surveyed.

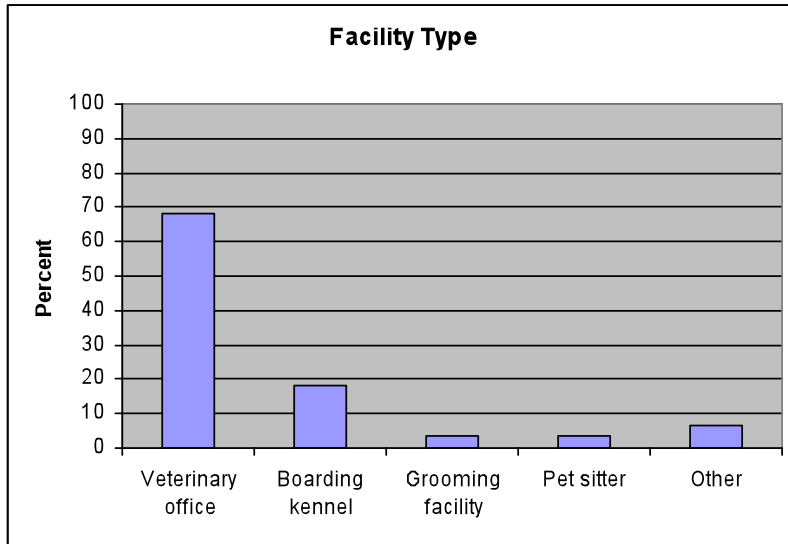
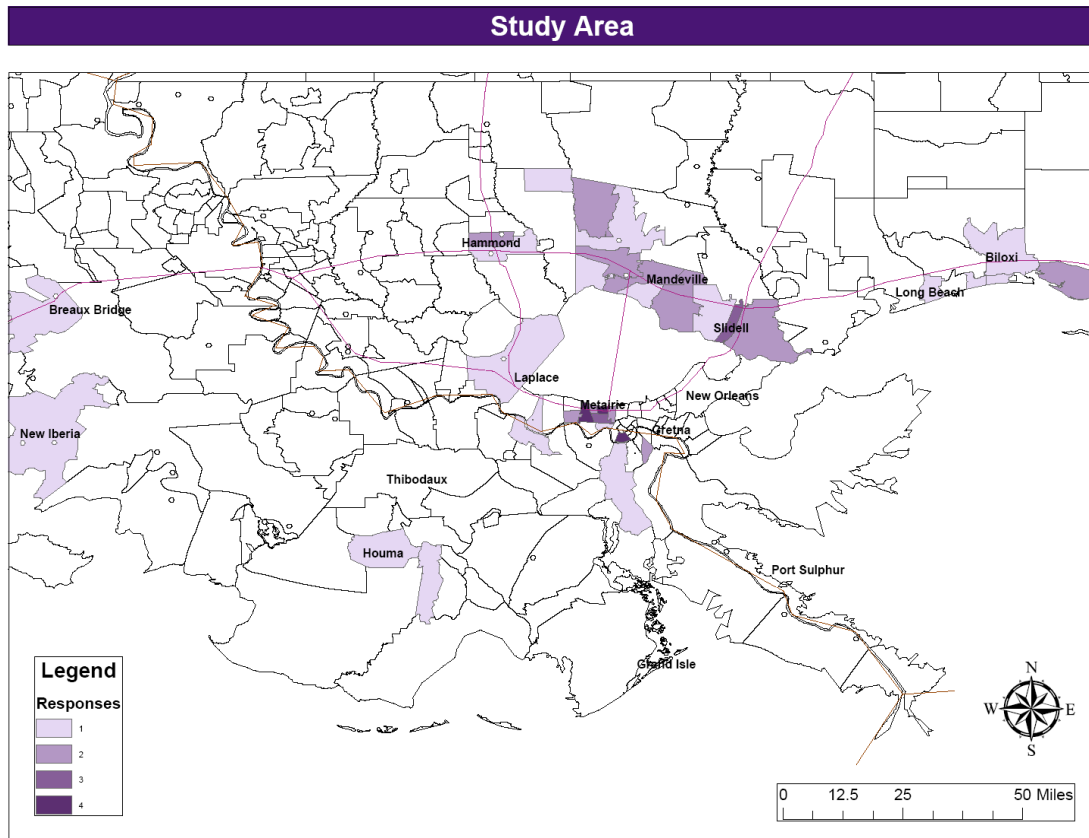


Table 1. Sample Characteristics

Characteristic	Average (standard deviation)	Min - Max values
Number full or part time employees	10.9 (11.7)	0 - 57
Number of dogs typically in care	24.3 (24.3)	0 - 120
Number of cats typically in care	7.4 (7.7)	0 - 47
Number of horses typically in care	0.0 (0.2)	0 - 1
Number of other animals typically in care	1.0 (2.5)	0 - 15
Number of total animals in care 3-5 days prior to Hurricane Gustav	25.9 (25.6)	1-115

Figure 4. Number of responses from zip codes in study area.



Research Question #1: What preparations did respondents make in advance of Hurricane Gustav?

This research question focused on how well-prepared pet care professionals were for Hurricane Gustav and hurricanes in general. Following Hurricane Katrina, a law was enacted in Louisiana to ensure that pet care professionals had emergency plans. Therefore, we expected respondents from the state of Louisiana to be better prepared than might be the case in other areas. For this reason, surveys were also sent to pet care professionals in the three Mississippi coastal counties. Several questions gauged respondents' preparedness for Hurricane Gustav. Respondents from Mississippi were first asked whether they had an emergency plan for disasters "like Hurricane Gustav." Respondents in Louisiana were not asked if they had a plan due to ethical considerations, but they were subsequently asked *about* their plan. Out of seven Mississippi responses to this question, four stated that they did have an emergency plan prior to

Hurricane Gustav. Every respondent except the three that stated they did not have an emergency plan went on to answer additional questions about their plans. When asked specifically whether their emergency plan included a way to evacuate animals should it be necessary, just over half (59.6%) responded affirmatively.

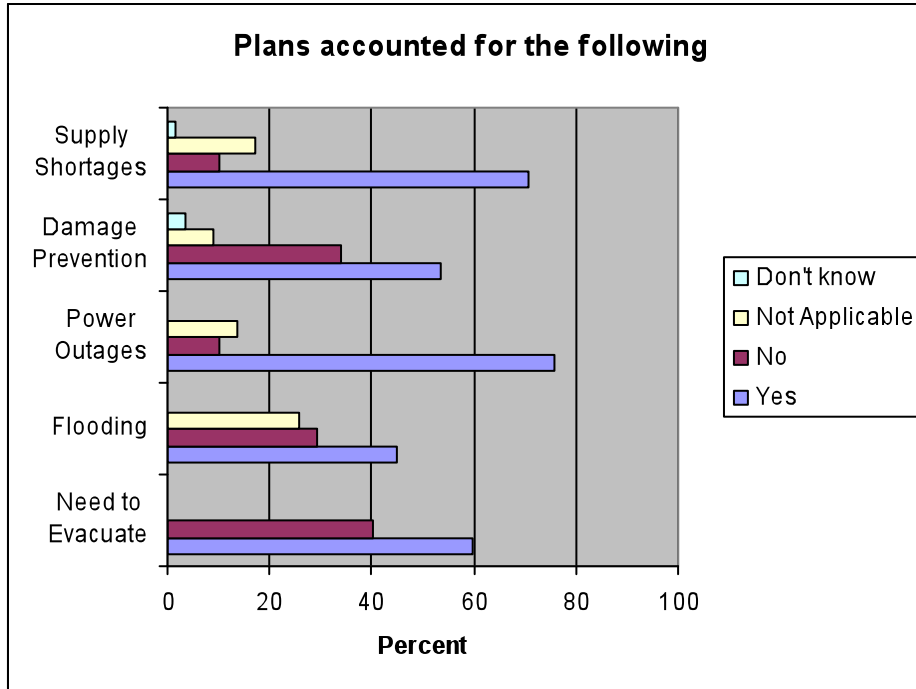
Those respondents who indicated their plans included a way to evacuate the animals were then asked to elaborate on their means for transporting the animals and for providing housing for the animals after evacuation. These questions were open-ended, so the responses vary, but three primary answers emerged from the responses. Most common responses included that there was no need to transport any animals or that transporting animals would not be the first option because their emergency plan was to contact owners to come pick up their pets. Thirteen respondents specifically mentioned this in response to the question about transporting pets. Contacting the owners to pick up pets was also often offered during the survey interviews apart from this specific question. Several times this was mentioned in the context of what was learned during Hurricane Katrina. This will be discussed further below. Most other responses indicated that animals would be transported via some sort of vehicle, with approximately half specifically identifying the vehicle. Many also mentioned crates or carriers. Some responses were very detailed, though most were not. One of the more detailed responses explained that the animals would be evacuated by an air-conditioned trailer and mobile veterinary unit. Most respondents listed personal vehicles, or clinic pickup trucks. A few said they planned to rent vehicles, and others mentioned vehicles they had purchased after Hurricane Katrina. Two respondents explained that plans included micro chipping in case the animals got lost during evacuation or freed during the storm. One other respondent recommended this practice for his clients. This was only mentioned during the interviews as none of the mail survey responses included micro chipping.

Respondents were also asked to describe where they planned to house any animals they evacuated. The most common responses to this question involved taking animals to another veterinary facility or another boarding facility, typically well outside the New Orleans area. These locations were mentioned in 16 responses. Some of the respondents had clearly made arrangements with these locations. Three respondents listed a hotel that allows pets as their destination. These respondents identified themselves as grooming facilities, pet sitters and a “dog hotel.” None of the veterinary offices listed a hotel as a location for housing animals, but one

expressed concern for her clients' ability to find hotels that would accept their pets without charging high fees. Other locations listed as destinations for evacuated pets included an emergency shelter (2 responses), a friend or relative's home (4), in carriers or kennels (7), or simply some place safe or out of harm's way (3). Four respondents specifically stated that animals would be sent home with their owners, while four responses detailed that animals would be taken home by staff. One issue that surfaced during the interviews was the fact that even though a facility's emergency plan may require the owner or an emergency contact to come pick up the pet in the event of evacuation, a facility may still be left with animals to care for. When many of the employees have animals of their own and also need to evacuate, caring for clients' animals places a burden on the pet care professionals, many of whom are in the pet care business because they themselves care about animals and do not wish to leave the animals at the facility. Two facilities interviewed had existing relationships with the Society for the Prevention of Cruelty to Animals (SPCA)—one agreed to serve as a triage unit for SPCA after a hurricane and the other arranged for SPCA to evacuate any animals not picked up by owners or contacts.

In addition to the open-ended questions about evacuating the animals, respondents were also asked whether their plans specifically took into account four hurricane impacts; flooding, a prolonged power outage, damage and a shortage of supplies. Figure 5 shows the percentage of respondents who took each of these factors into account. Out of 58 who responded to these questions, the highest number of respondents accounted for the possibility of a prolonged power outage (44), followed by the possibility of a shortage of supplies (41). The fewest number of respondents indicated that their plan accounted for the possibility of flooding (26), but a relatively large number believed this was not applicable (15). The hurricane impact with the largest number of respondents not including it in their plan was damage prevention (19).

Figure 5. Impacts taken into account by emergency plans.

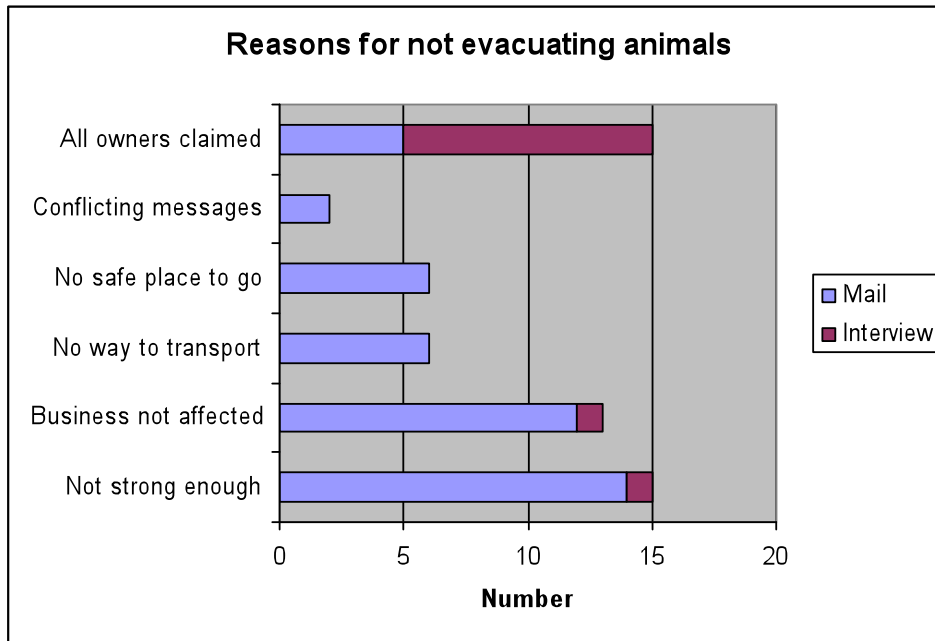


Research Question #2: What actions did respondents take during and after Hurricane Gustav?

One of the primary concerns of this research is whether pet care professionals evacuate their animals during a hurricane and if they can accomplish this with their own resources or whether they have need for additional resources. The first action in response to Hurricane Gustav about which respondents were asked was whether they had any animals in their care in the 3-5 days before Hurricane Gustav made landfall and if they evacuated any of these animals. Over 80% of the respondents had animals in their care during the 3-5 days prior to Hurricane Gustav making landfall that were not their personal pets (51 out of 61). Of these respondents, only 19 (37.3%) reported attempting to evacuate any of the animals to a safer place. When asked why they did not evacuate any of the animals (see Figure 6), ten of the interview respondents offered that the animals they had prior to the storm were all claimed by their owners. This had not originally been a choice in the survey, but was added as a choice in the mail survey. However, only half as many selected this choice when it was offered to them in the mail survey. Because all the animals were claimed by their owners and the storm was not strong enough were the two reasons for not evacuating with the highest frequency (15 responses). The only other

reason for not evacuating animals with a comparably high number of responses was that the belief that their business would not be affected (13 responses). Response frequencies differ greatly between the mail survey, which displayed all the answer choices, and the interview, where respondents were asked to provide their own answers which were coded by the interviewer. Only one interview respondent mentioned any reasons other than owners coming to claim their pets as a reason why he did not evacuate any of the animals. His reasons were that the storm was not strong enough and that his business would not be affected. Additionally, this individual offered that he was not the owner of the building and was not concerned about the structure, but did classify the storm as “somewhat dangerous.”

Figure 6. Reasons why respondents did not evacuate animals



Respondents during the interviews did not generally list characteristics most closely related to the storm (i.e. not strong enough or would not affect business) as reasons for not evacuating, but each respondent was asked to evaluate how dangerous they thought Hurricane Gustav was at the time evacuations were ordered. The highest percentage believed the hurricane was “very dangerous” (46%). Only 22% believed it was “not dangerous at all,” and 30% thought it was “somewhat dangerous.” Additionally, 70.6% of respondents identified their facility as being located in an evacuation zone. These two factors may shed some additional light on

respondent’s perceptions about the hurricane and why they did or did not evacuate. The cross-tabulation of responses from questions about whether a respondent evacuated and how dangerous he/she believed the storm was or whether the respondent was located in an area ordered to evacuate shows that there is an association between evacuating and these two other variables (see Table 2). Respondents who evacuated animals rated the hurricane as “very dangerous” more than any other category, and rated the hurricane “not dangerous at all” much less frequently than those who did not evacuate. Respondents who did not evacuate rated the hurricane not dangerous at all and very dangerous about equally, which coincides with several previous research studies that have found that people are more likely to take protective action if they perceive a real threat to themselves and their loved ones (Burnside et al. 2007; Drabek 1999; Baker 1991; Fitzpatrick and Mileti 1991; Perry 1979). Similarly, respondents who evacuated animals much more frequently lived in an area that was ordered to evacuate. This coincides with the finding of Baker (1991) that suggested people who hear, or believe they hear, official evacuation advisories or orders are more than twice as likely to leave.

A recent survey of New Orleans area residents by Burnside et al. (2007) found that people that had a definite evacuation plan prior to a hurricane would be more likely to evacuate than those who do not. A cross-tabulation of responses from the questions about whether a respondent evacuated and whether or not they had an emergency plan for evacuating the animals in their care prior to Hurricane Gustav are shown in Table 2. The pet care professionals surveyed in this study had a similar response to the individuals surveyed by Burnside et al. (2007), with 84.2% of those who did evacuate indicating they had an emergency plan for evacuating the animals in their care prior to Hurricane Gustav while only 34.3% of those who did not evacuate reported having such a plan.

Table 2. Cross-tabulation of responses for evacuation, danger and evacuation order.

Evacuated animals vs. how dangerous was storm				
Evacuated animals	Not dangerous at all	Somewhat dangerous	Very dangerous	
Yes	0	6	13	
No	11	9	10	

Chi square = 10.7, significance = 0.01

Evacuated animals vs. located in area “ordered to evacuate”

Evacuated animals	In evacuation zone	Not in evacuation zone
Yes	17	1
No	19	11

Chi square = 5.8, significance = 0.05

Evacuated animals vs. had an evacuation plan that specifically included plans to evacuate animals.

Evacuated animals	Had evacuation plan	Didn't have evacuation plan
Yes	16	2
No	11	18

Chi square = 11.8, significance = .003

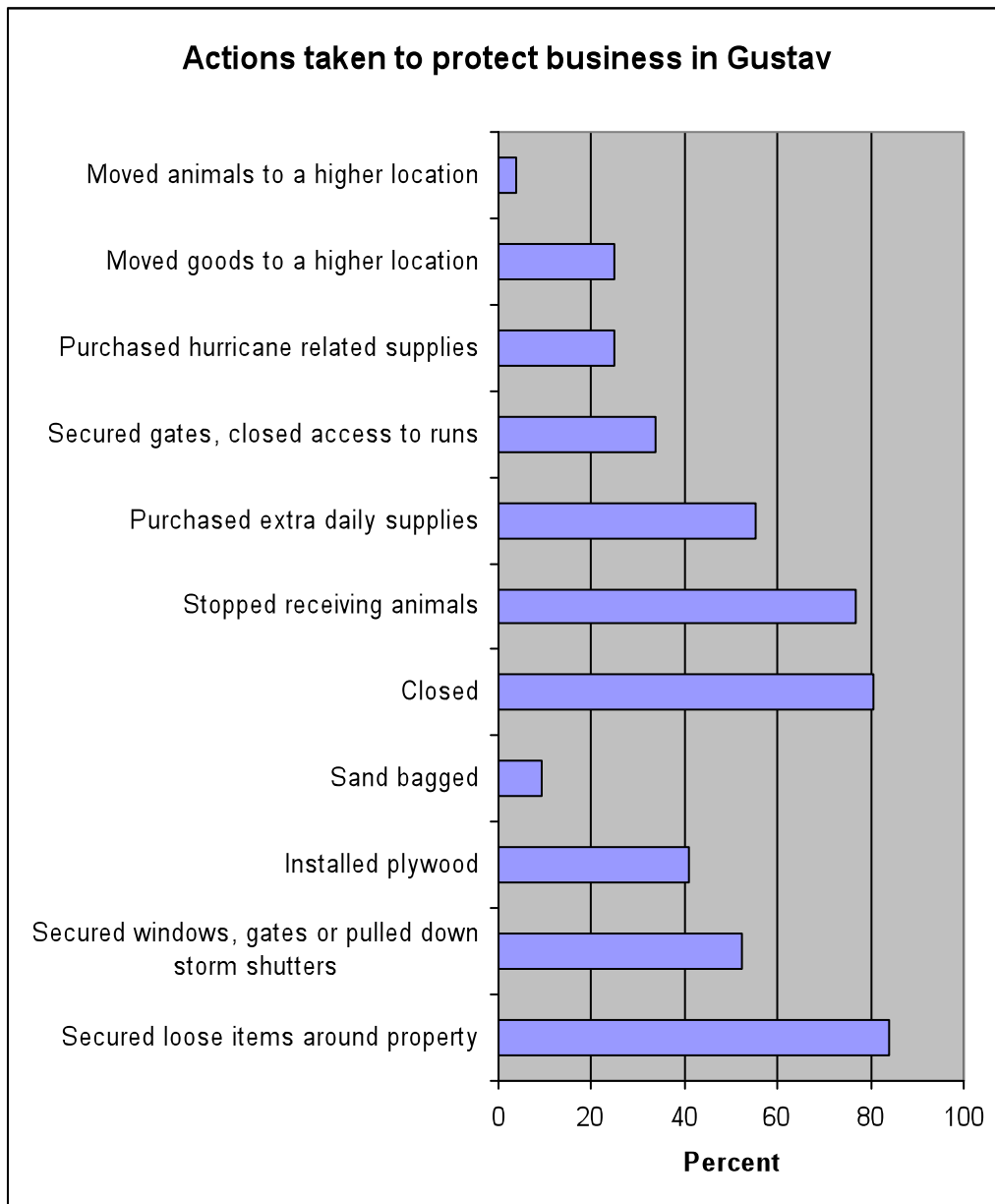
Respondents who evacuated were also asked when they evacuated and what percentage of the animals they evacuated. The most common time to begin evacuations was Saturday, August 30 (11 out of 18). Not surprisingly, most respondents reported evacuating all the animals (14 out of 18). Three evacuated less than half and one evacuated more than half, but not all of the animals. The three interview respondents that indicated less than half of their animals were evacuated answered this way because some of the animals were picked up by their owners and did not need to be evacuated. The interview respondent who stated that more than half, but not all the animals were evacuated also answered this way because about half of the animals were picked up by their owners. The animals that remained were evacuated to another related facility located in a different state. Of the respondents who stated that they evacuated some but not all of the animals in their care—none of these respondents left animals unattended while the facility evacuated. The “unevacuated” animals were not really left behind, but rather they were claimed by owners.

After evacuation, a second action of concern was how pet care professionals prepared their business for Hurricane Gustav. While only a small majority of pet care professionals in the sample had included damage prevention in their emergency plan, a large majority took some action to prevent damage to their facility (73.8%) or to lessen the impacts of the hurricane on their business (88.5%) (Figure 7). The greatest number of respondents (37 out of 44) aimed to prevent damage to their facility by securing loose items around their property. The only other action taken by the majority of respondents to prevent damage was the securing of gates,

windows or pulling down storm shutters (23 out of 44). Of the 56 respondents who took some action to prepare their business for the impacts of Hurricane Gustav, the highest number closed (45), followed by 43 who stopped receiving animals. Hurricane Gustav made landfall over Labor Day weekend, so it is possible that some businesses that reported closing during the hurricane may have planned to be closed anyways for the holiday. It is also possible that certain types of pet care professionals, such as boarders and pet sitters, would be more likely to be open during the holiday and would have had a larger than average number of reservations due to pet owners' Labor Day travel plans. Although it is likely that the timing of Hurricane Gustav had some impact on responses to this question, it is difficult to determine the direction, let alone the potential magnitude, of this impact.

While it was not specifically asked in the survey, several of the interview respondents also went on to discuss when they stopped taking in additional animals. When facilities stopped taking in new animals varied quite a bit. One stopped at the close of business on Saturday, while another reported taking in no new animals on the Wednesday or Thursday before the storm hit. Since this was not a question on the survey, there is no way to quantify an average time. Several of the respondents did provide the interviewers additional information about how they reached this decision. One facility contacts owners once New Orleans is located in the 72-hour, or 3-day cone of error. Three other facilities had a similar policy, stating that once they were located "in the cone" they would contact owners to come retrieve animals or stop taking in new animals. One small facility that expressed frustration with owners who were unable to pick up their animals before the hurricane was considering allowing no boarding during the months of August and September. Just over half of the respondents also purchased additional daily supplies such as food or medicine. While interviewing one respondent the research team noted a large pile of bagged dog food that had been purchased in preparation for Hurricane Gustav. Another respondent specified that her facility purchased extra sedatives for the animals.

Figure 7. Actions taken to prepare business for impacts or protect from damage from Gustav



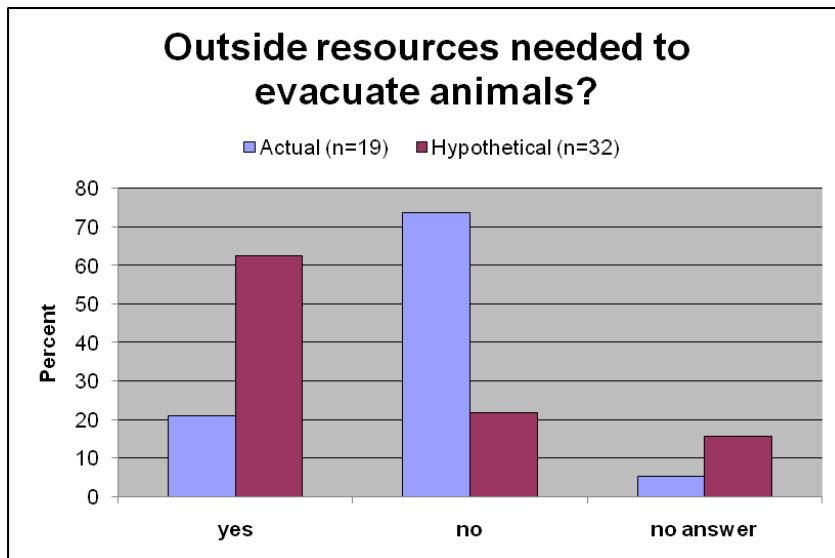
Research Question #3: What resources did pet care professionals need or anticipate needing to evacuate the animals in their care during Hurricane Gustav?

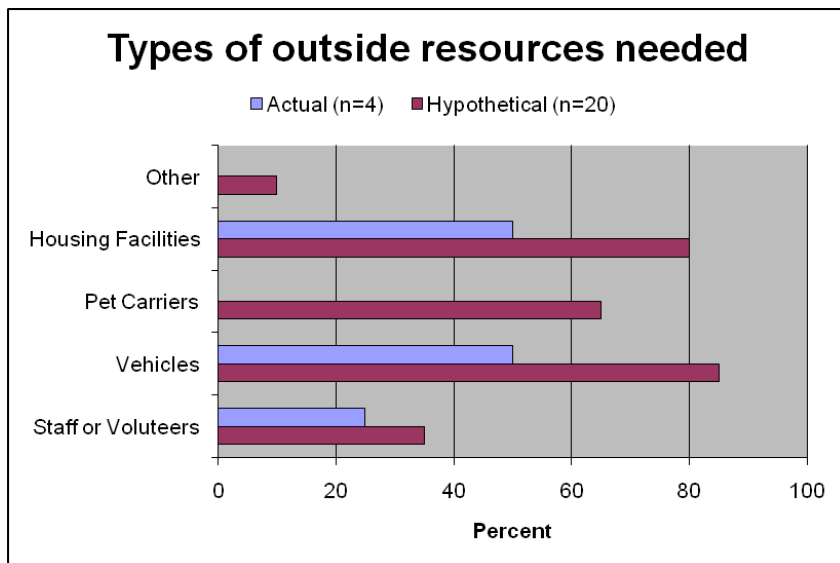
In addition to risk perception and social influence, Riad et al. (1999) determined that access to resources in one of the most important influences on evacuation decisions of individuals. Having to evacuate multiple pets in the face of a hurricane is a daunting task, requiring various resources such as pet carriers and vehicles suitable for transporting animals that

pet care professionals may or may not need to acquire from outside sources. In order to assess pet care providers' needs for and access to these various resources during Hurricane Gustav, respondents were asked a series of questions regarding their resource utilization prior to and during the hurricane.

As discussed in the previous section, 19 of the 51 (37.3%) respondents with animals in their care in the 3-5 days prior to landfall attempted to evacuate some or all of the pets in their care. Of those that attempted to evacuate, only 4 (21.1%) indicated that they used outside resources, supplies or services that their company does not regularly have on hand (Figure 8, left). The types of resources respondents used from outside sources included vehicles for transporting animals and housing facilities for animals, which were each used by half of these four respondents. One respondent (25.0%) also reported using extra staff and volunteers (Figure 8, right). Of the two respondents using housing facilities, one obtained them from friends or family and the other from a fellow pet care professional. One respondent obtained a vehicle from friends and family while another rented a vehicle from a rental company. The one response stating extra staff or volunteers were acquired indicated they were obtained from friends and family.

Figure 8: The percentage of respondents who did and did not evacuate who used or would have needed to use outside resources (top), and the types of resources used (bottom).





In an attempt to also gather information from the other 32 respondents who did not attempt to evacuate any of the animals in their care, a set of hypothetical questions were posed similar to those asked of evacuees. These questions asked pet care professionals what outside resources, supplies or services, if any, they would have needed if they had attempted to evacuate animals prior to Hurricane Gustav. In contrast to answers given by respondents that did actually evacuate, a majority of responses (20 or 62.5%) from those posed with this hypothetical scenario indicated that they would need outside resources if they had chosen to evacuate (Figure 8, left). The resources most respondents anticipated needing from outside sources included vehicles for transporting animals (85.0%), housing facilities for animals (80.0%), and extra pet carriers or crates (65.0%, Figure 8, right). Seven pet care professionals also suggested they would need additional staff or volunteers from other sources. Two responses of “other” were given, with one of these two specifying additional food and water bowls would be needed as well.

A smaller percentage of respondents who actually did attempt to evacuate reported using resources from outside sources (21.1%) than those that were asked to gauge what resources they would have needed in a hypothetical evacuation scenario (62.5%). If we consider the need for outside resources as a gauge of self-sufficiency, where pet care professionals who do not need to acquire resources or help from outside sources can be thought of as more self-sufficient than those who do, this trend suggests that respondents who evacuated animals were more frequently self-sufficient in terms of resource needs. Cross tabulation of responses from the question about evacuation response and respondents’ actual or perceived need for outside resources confirm this

association, and are shown in Table 3. In light of results presented in the previous section that link evacuation actions and respondents' perceptions about the hurricane, dependency on outside resources may add yet another aspect to consider when attempting to predict the evacuation response of pet care professionals.

Table 3: Cross-tabulation of responses for evacuation response and need for outside resources.

Evacuated animals vs. need for outside resources

Evacuated animals	Used/would use outside resources	Didn't/wouldn't use outside resources
Yes	4	14
No	20	7

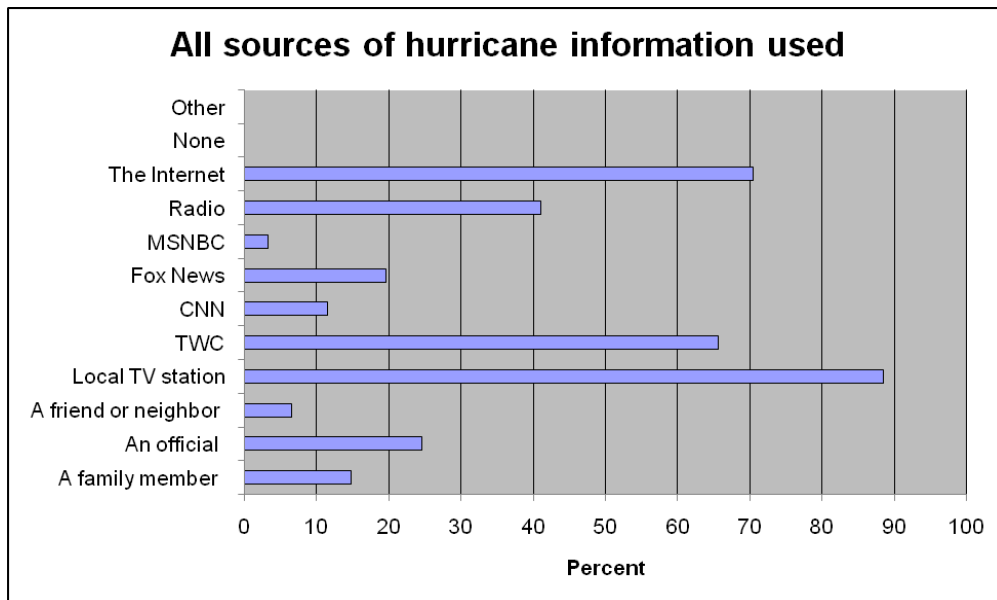
Chi square = 11.7, significance = 0.003

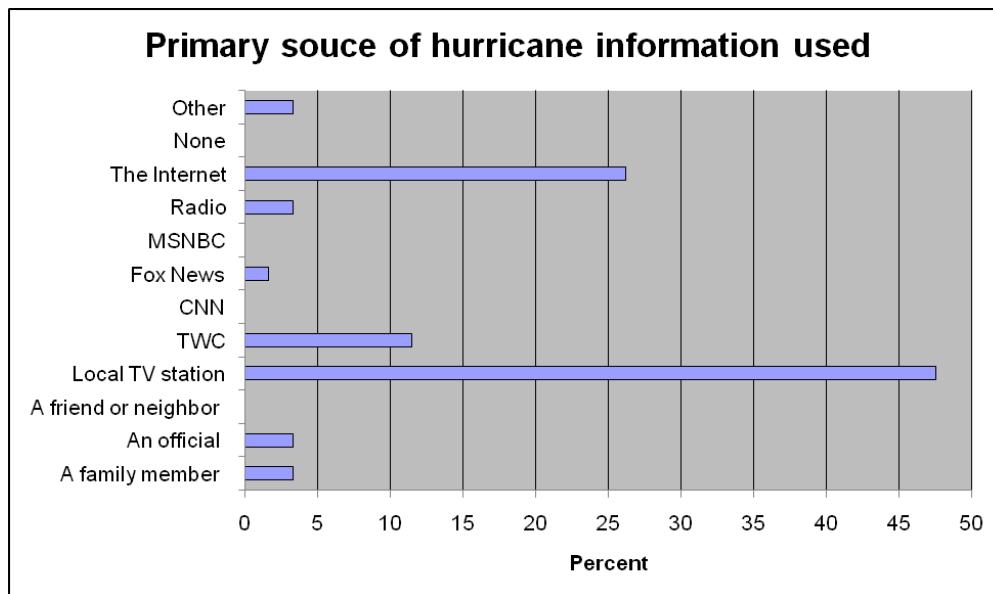
Research Question 4: Where did pet care professionals obtain weather and emergency information before and during Hurricane Gustav?

This research question focused on the sources from which professional pet care providers obtained hurricane-related information in the 3-5 days prior to Hurricane Gustav. Respondents were asked to list all of the information sources they used and then were asked to choose their primary source. Many previous studies have indicated the media to be an important source information for people preparing to evacuate (Baker 1991; Gladwin and Peacock 1997). This can also be said for the population surveyed here, with an overwhelming majority of respondents reported obtaining weather information from local television (88.5%), with both the internet (70.5%) and the Weather Channel (65.6%) being used by a majority of respondents as well (Figure 9). When asked to give only one answer as their primary source of hurricane information, almost one half of respondents (29 out of 61 responses) chose local television (47.5%, see Figure 9). The next most frequent response was the internet (26.2%), followed by the Weather Channel (11.5%). Two respondents selected multiple information sources (local television, the Weather Channel, the internet, Fox News, and radio) despite being asked to choose only one answer. The 17 respondents who chose the internet as their primary source of information, including the one respondent who listed multiple sources including the internet, were asked to choose the one primary source of online information they used. Six of these 17 indicated the National Hurricane Center website (37.5%) as their primary online source, five

chose the Weather Underground website (31.3%), and four chose “other” which included responses of Fox and Yahoo and various local television websites and NOLA.com. If all responses regarding source of internet information were considered, including those for whom the internet was not their primary source of information, the National Hurricane Center would still have the majority of responses with 10 of 32 (31.3%). The next largest response rate of 15.6% would be shared by the Weather Channel, Weather Underground, local television websites, and “other”. During interviews, several respondents said that they relied on television and internet prior to landfall, but relied most on radio during and after landfall due to fact that they were either in their cars evacuating or had lost power.

Figure 9: The sources of hurricane information used 3 to 5 days prior to Hurricane Gustav.





Research Questions #5: Did anything pet care professionals experience during 2005’s Hurricane Katrina influence what they did during Hurricane Gustav?

As the costliest and third deadliest tropical cyclone to make landfall along the U.S. mainland in documented history (1851-2006, Blake et al. 2007), Hurricane Katrina is arguably one of the most famous hurricanes of the present day. Hurricane Gustav was the first hurricane to make landfall in the vicinity of New Orleans since 2005’s Katrina, affording us the opportunity to ask pet care professionals if their experiences during Katrina influenced their response to Gustav. Of the 61 pet care professionals asked this question, 49 (80.3%) responded in the affirmative. Those that answered yes were then asked to describe how their prior experience influenced what they did during Hurricane Gustav. Open-ended responses were sought to allow respondents to elaborate on their experiences during Hurricane Katrina and to share any lessons they had learned from that disaster.

The most frequent influence respondents reported was the decision to limit the number of animals they would care for during Hurricane Gustav (21 of 49 responses). This was achieved by limiting the number and types of pets they would care for during the hurricane or by refusing to take any pets and requiring owners or their emergency contacts to come and pick up the pets prior to Hurricane Gustav. During interviews, many of these respondents indicated that they had accepted pets during Hurricane Katrina and would never do it again. They indicated that extended power outages and supply shortages had made it very difficult to properly care for the

animals, and that some evacuees who had left their animals had never come back to reclaim them. One individual relayed the story of a business that had taken on a larger than usual number of animals only to have the entire staff forced to evacuate and leave the animals behind unattended, with tragic consequences.

The next most frequent response received was that respondents had decided to stock up provisions prior to Hurricane Gustav. Some had purchased large-scale provisions such as transport vehicles and generators (12 of 49 responses) after Katrina which they had ready to use during Gustav. Many said that they stocked up on food, water, medicine and other daily supplies. Experiences during Hurricane Katrina prompted several respondents to update their boarding policies, rewrite their paperwork, and become more diligent about acquiring up-to-date contact information for all clients and employees. One boarding facility specified that they more strictly enforced vaccination documentation requirements after having issues with transporting pets across state lines during Katrina. Two respondents stated that they had started suggesting all animals in their care be micro chipped to facilitate reuniting pets with their owners should an evacuation be necessary. Two responses indicated they decided to take action sooner to prepare for Hurricane Gustav. One respondent mentioned that their location had not flooded during Katrina so they knew they would not flood during Hurricane Gustav, while another respondent reported that their location had flooded prior and hence they had decided to evacuate for Gustav. Two respondents mentioned the large financial burden they incurred during Hurricane Katrina, and one had decided to make customers pay deposits during hurricane season.

Conclusions

Several conclusions can be drawn from the responses to this questionnaire. Nearly all pet care professionals surveyed had a plan for Hurricane Gustav. When asked to elaborate on any plans to transport or house animals during an evacuation, the respondents showed different degrees of specificity in their responses. In agreement with previous studies, factors such as perceived risk and having a plan for evacuation were found to be related to the evacuation behavior of this subset of the population. A large portion of the respondents who indicated they had evacuated animals in their care *did not need* to use any additional resources they did not have, while a majority of respondents who did not evacuate animals stated that they *would need* to use outside resources during an evacuation. This may indicate a tendency to overestimate in a

hypothetical scenario. However, despite the use of a similar hypothetical scenario, the survey used by Burnside et al. (2007) yielded responses that confirmed several relationships between certain predictors and evacuation response that correspond well with existing literature. As such, it is possible that those with the resources already in place to handle an evacuation are more likely to do so, fitting in with other research on hurricane evacuation by the general population.

Another finding that corresponds well with results of prior general population studies is the importance of the media as the main source of hurricane information. In particular, television was found to be the primary source of information for respondents in the 3-5 days prior to Hurricane Gustav's landfall. This agrees with Gladwin and Peacock (1997), whose work indicated that television was the most important source of information of those studied as they prepared for evacuation. However, in this survey the internet was also found to be an important source of hurricane-related information. This is most likely a reflection of the increasing availability and use of the internet but many individuals. Its importance as an information source suggests further work is needed to understand this relatively new communication medium and its potential impact on evacuation behavior of pet care professionals and the general population as a whole.

Finally, the most frequent influence of Hurricane Katrina mentioned, the decision to limit the number of animals prior to landfall, leads to one of the most important suggestions from this research. Several respondents indicated that they had become very strict about making individual pet owners accept responsibility for their own pets during hurricanes. They did so by refusing to take any more pets for boarding several days prior to Hurricane Gustav, requiring pet owners to leave information for a local emergency contact who could come retrieve and care for their pets, calling emergency contacts and having them retrieve animals prior to Gustav, and threatening to charge large fees of those owners who did not arrange for someone to retrieve their animal from the pet care professional's care prior to the hurricane. This mentality is akin to recent campaigns by the Humane Society of the United States and the American Society for the Prevention of Cruelty to Animals to encourage pet owners to take their pets with them when they evacuate prior to or during a disaster. Whether or not this mentality is shared by pet care professionals in other coastal regions, especially those who have not experience a major hurricane landfall in the last decade, requires further study.

As a final note, responses regarding the actions respondents took during and after the hurricane and how well they followed their emergency plans show that despite the best made plans and efforts, a facility may still be left with some number of animals to care for during an evacuation. With 14 (38.8%) of the 36 respondents who reported being ordered to evacuate indicating they did not have a plan for evacuating the animals in their care prior to Hurricane Gustav, it is apparent that there is some segment of this population that could be better prepared for this eventuality. We hope this preliminary finding, as well as others discussed in this report, will promote future research focused on understanding the specific needs and behavior of this specialized population, and that these efforts will help local communities and national organizations include them in future disaster planning and education.

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Appendix: The Survey

The survey developed for this study consisted of a total of 39 questions that attempted to address each of the five research questions discussed in this report. Three of these questions were open-ended while the remaining questions were of the multiple choice form. The last 6 questions (#34-39) gathered demographic information about the respondents that included the primary purpose of their facility, business and home zip code, number of employees, number of animals typically in their care, and the sex of the respondent. During in-person interviews, the survey questions were read aloud and responses, along with any side comments, were recorded on tablet PCs and in notebooks by the interviewers. A hard copy version of the survey was also developed that could be filled in by subjects and returned to the research team. The hard copy surveys were either left with or mailed to pet care professionals that we did not have the chance to interview in person.

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