

NATURAL DISASTERS – PSYCHOLOGICAL CHALLENGES AND INTERVENTIONS

Presented by:

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HUMAN-ANIMAL INTERACTION
SECTION 13 OF DIVISION 17 OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

LORI KOGAN

Session Chair



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NATURAL DISASTERS

- More frequent and extreme natural disasters
- More people living in areas of high risk – especially vulnerable populations
- Impact the entire family – including animals
- Slow evolution - interventions that include *all* family members
- Following presentations illustrate some of the work that is being done in this critical area



LISA M. BROWN

Natural disasters and homeless populations: Risks and needs



HUMAN-ANIMAL INTERACTION
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CHERYL TRAVERS, CHRIS DEGELING,
MELANIE ROCK

Emergency services and pet owners:
Assigning and taking responsibility
for pets in natural disasters



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YAHAIRA SEGARRA-GONZALEZ
LIZA MELENDEZ & URSULA ARAGUNDE

Natural disasters: Puerto Rico's
hurricanes and their threat to health
and safety



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Introduction

This presentation will:

- Describe findings from two studies examining disaster preparedness of homeless people and the complex relationship between homeless, unsheltered people and their companion animals
- Review key considerations when planning for sheltering or evacuation, risk factors for adverse outcomes, and challenges in conducting outreach





Why is this Important?

Homeless people have risk factors and needs that are rarely addressed in disaster plans.

Photo courtesy of Dan Lee and Pets of the Homeless



Not All Disasters are Alike:

Disaster Plans Need to be Developed for Local Hazards

- Some disasters offer
 - advance warning and a long time to take action – hurricanes
 - little warning and a short time to take action – tornados and earthquakes
- Some disasters require readily available transportation to survive
 - fires
 - floods
- Disasters can occur simultaneously – consider Hurricane Sandy – wind, rain, floods, fires, gas explosions, snow.
- In addition, people can be ill at the same time a natural disaster is taking place or become ill as a result of a natural disaster (e.g., unsanitary water from flooding, extreme heat or cold, insect infestation).



Not All Homeless People are Alike

- Some homeless people do not self-identify as homeless although they are couch surfing and do not own or have access to their own housing
- Some homeless people choose to be homeless and do not desire to use shelter services. Some live:
 - in the jungle/woods alone or in groups (encampments)
 - on the streets
 - in a shelter
- Some have legal/financial problems that keep them from passing a background check to obtain a rental property
- Some have mental health problems

Source: Google images



RISK FACTORS

- Homeless people are often prone to chronic and communicable diseases, at risk for mental health issues, and have higher rates of substance abuse
- These vulnerabilities can be exacerbated by the often crowded and unsanitary conditions of homeless encampments



Risk Factors (cont'd)

- Poor socioeconomic status decreases a person's access to basic healthcare, universal precautions such as routine hand-washing, shelter from disease vectors such as fleas and ticks, and can lead to a chronically stressed and compromised immune system
- This increased vulnerability is amplified when homeless individuals have frequent contact with animals, including companion animals



Common Zoonotic Diseases

Disease	Route of Transmission	Reservoir
Leptospirosis	Contact with urine of infected animal or contaminated food or water	Rodents, raccoons, dogs, cats, feral hogs
Rabies	Direct contact with infected animal's saliva, typically through bite	Raccoons, bats; also transmitted by feral cats, dogs
Toxoplasmosis	Ingestion of fecally contaminated food, water; environmental contamination	Cats



Risk Factors (cont'd)

- Because many homeless people rarely obtain regular medical care it is not surprising that their pets often go without routine veterinary care
- Living outdoors, heightens risk of zoonotic disease transmission from animals to people with pets serving as a bridge between wildlife and humans



Beverly and her dog, Spike, are clients of the Mobile Medical Unit and unsheltered by choice



Challenges in Outreach

- With lack of access to routine medical care and adequate housing, simple health issues can go unaddressed and progress to life-threatening and death-hastening situations
- Unsheltered homeless people also tend to have higher rates of mental illness, substance abuse, and incarceration
- These vulnerabilities taken in combination with the fact that homeless people can be difficult to locate make collecting data from this population a challenge



Research Issues

- Since 2012, the Sixth Circuit Public Defender's Office has operated a Mobile Medical Unit (MMU) in Pasco County that provides basic medical care and services - treatment for minor injuries and illnesses, vouchers for prescriptions and medication, physicals for work and school, and referrals to other needed services.
- The MMU provided an optimal setting for collecting data, as it is a public environment that homeless people freely approach, rather than requiring the research team to search for people in the community and woods.



Study 1

- Though no one will contest that hurricanes can profoundly affect, and even dramatically change, the lives of Americans regardless of socioeconomic status, it is a fallacy to believe that all members of a community caught in a storm's wake are equally impacted.
- Evidence shows that the homeless are disproportionately affected because they lack resources and stability.
- A disaster can easily lead to the loss of the few possessions a homeless person may own.
- Moreover, homeless persons may not have access to receive warnings for evacuation, and if they are fortunate enough to receive the warning, they may not have transportation to evacuate.



Study 1

- For some who are homeless, there is the loss of typical social roles, that can lead to social disaffiliation.
- Compromised social relationships with friends and family can adversely affect ability to prepare, shelter, and recover from a disaster.
- Shelters designated for a particular gender or age group result in separated families and social isolation. It is not uncommon for homeless populations to be mistrustful of the systems that attempt to serve them.
- Many shelters will not allow companion pets.



Study 1

- Multi-site study
 - Pasco County
 - Pinellas County
 - Hillsborough County
- A 41-item questionnaire was developed to examine the disaster preparedness of homeless individuals living in the Tampa Bay area.
- \$5.00 Target Gift Card
- Eligibility: 18 + years and hot meal recipient
- 41,335 homeless individuals in the Tampa Bay area
- Total sample size: 656

TAMPA BAY DISASTER PREPAREDNESS QUESTIONNAIRE

Thank you for agreeing to complete this survey. Your answers are very important to us. We are interested in how you prepare for and obtain safe shelter if under a hurricane threat. The results of this survey will be used to inform services provided for people in the community who may experience a hurricane. Your answers are completely confidential and will not affect the services or support you currently receive or will receive in the future. This is part of a USF research study and is not associated with or administered by the meal site or its staff. To help us inform services for you and others, any information you give us is greatly appreciated.

1. What is your date of birth? (month/day/year)	<input type="text"/>
2. What is your sex?	<input type="radio"/> Male <input type="radio"/> Female
3. What is your Race?	<input type="radio"/> White <input type="radio"/> Black <input type="radio"/> Other (please specify): _____
4. Are you of Spanish or Hispanic descent?	<input type="radio"/> Yes <input type="radio"/> No
5. What is your primary source of transportation? (Please check only one.)	<input type="radio"/> Car (I drive) <input type="radio"/> Ride from family <input type="radio"/> Ride from friends <input type="radio"/> Public transportation <input type="radio"/> Other (please specify): _____
6. What is your present marital status? (Please check only one.)	<input type="radio"/> Single (never married) <input type="radio"/> Married <input type="radio"/> Separated <input type="radio"/> Divorced <input type="radio"/> Widowed
7. How many years of school have you completed?	<input type="radio"/> 0-8 grade <input type="radio"/> 9-12 grade <input type="radio"/> High school graduate <input type="radio"/> GED <input type="radio"/> Some college <input type="radio"/> College degree <input type="radio"/> Business or trade school
8. Are you a Veteran?	<input type="radio"/> Yes <input type="radio"/> No (skip to question 10)



Study 1

- The sample was predominantly male (75%).
- The average age was 49 years old and ranged from 23 to 76 years of age.
- Half of the sample identified as White (51%), 38% identified as Black, and 11% indicated “Other” for their race.
- More than a quarter of participants reported being homeless for a year or longer (37%).
- Half of the respondents (52%) marked Single (never married) as their relationship status. A quarter (26%) was divorced.
- Regarding the condition of their financial resources, 27% described their finances as being “fair” and 57% reported them as “poor.”
- For physical health, 255 (40%) described their health as being “good” and 159 (25%) indicated “fair” health.
- Almost a quarter of respondents indicated having only “fair” mental health (24%) and 8% claimed having “poor” mental health.



Results

Table 2-Descriptive Statistics for the Study Sample (n=656)

Question	Frequency	%
Does the respondent have a disaster plan?		
Yes	137	29.4
No	448	70.6
The respondent has a place to go to during a hurricane.		
True	353	56.2
False	274	43.6
In the event of a hurricane, the participant has available transportation to evacuate from the area.		
True	245	61.9
False	398	38.1
The participant feels very confident preparing for a hurricane.		
True	441	69.0
False	198	31.0
The respondent has a person to give them supplies during a hurricane.		
True	320	48.6
False	304	51.1
The respondent has a person to contact during a hurricane.		
True	360	43.1
False	273	56.9
Note: Inconsistencies in frequency totals are due to missing data.		



Results

Table 3-Does the participant have a disaster plan by How vulnerable the respondent feels when thinking about a hurricane

		Not at all	Not very vulnerable	Somewhat vulnerable	Very vulnerable	Extremely vulnerable	Total
Does the participant have a disaster plan?	No	96	63	94	31	119	403
	Yes	48	24	41	10	46	169
Total		144	87	135	41	165	572

Note: Inconsistencies in totals are due to missing data.

Table 4-In the past, how many hurricanes has the participant experienced by The participant feels very confident preparing for a hurricane

		The participant feels very confident preparing for a hurricane		Total
		False	True	
In the past, how many hurricanes has the participant experienced?	None	67	91	158
	One	35	59	94
	Two	25	75	100
	Three	25	71	96
	Four	17	37	54
	Five or more	26	102	128
Total		195	435	630

Note: Inconsistencies in totals are due to missing data.



Study 2

- Pasco County, Florida is a fairly rural county and has one of the highest populations of homeless individuals in the state of Florida.
- Nearly 97% of this homeless population is unsheltered. People are living in cars, abandoned buildings, or makeshift campgrounds.
- Nearly all (99%) of the unsheltered homeless population in Pasco County were chronically homeless, meaning they have been homeless for at least a year or experienced 4 episodes of homelessness in the past 3 years.
- With such a high percentage of people living in undeveloped areas for extended periods of time, interactions with wild animals are inevitable.



Study 2

- A 26-item questionnaire was developed to assess the risk of homeless individuals contracting a zoonotic disease following an animal encounter as well as how these individuals perceive the risks of zoonotic disease contraction.
- The questionnaire was administered to 99 homeless people (65% male) seeking care from a Mobile Medical Unit (MMU) that asked how many and what type of pets they owned, what animals they interacted with, how often these interactions took place, and duration of homelessness.



Study 2

- Most owned a dog (20%) or a cat (11%).
- Less than half had seen a veterinarian for companion pet care during the past year.
- Some had wild animals that they identified as pets (feral cats, raccoons) as they fed them and interacted with them.



Study 2 Results

Where did you sleep last night?	
My Own Apartment/House	5%
Friend/Family Apartment/House	15%
Shelter/Temporary Housing	15%
Outdoors in the woods	30%
Outdoors on Street	25%
Abandoned Building	0%
Hospital	0%
Prison/Jail	0%
Car	5%
Other	5%

How many pets do you own?	
0	33.3%
1	50%
3	8.3%
25	8.3%



Study 1 & 2 Limitations

- Only those using hot meal services or care from a MMU participated in the study
- Convenience sample
- Missing data if people did not answer all items
- No post-disaster follow-up – did people do what they intended?
- Cross-sectional study
- No formal mental or physical health evaluation. We cannot determine the accuracy of these self--reports. It is possible that participants overestimated the quality of their health.



Disaster Planning for Sheltering

- Not all homeless people may be willing or able to use public shelters
- Many shelters will not allow non-service animals
 - Liability insurance to cover for potential lawsuits from bites, allergic reactions, and animal feces are key issues that have to be addressed.
 - Not all dogs and cats are up-to-date on their vaccinations and can pose a threat to other people and service animals in the shelters.
 - Our research revealed that some homeless people who endorsed that they owned pets actually were caring for wild raccoons, squirrels, rabbits and other small animals.
 - Some homeless people will refuse to use available shelters if their companion pet is not allowed to enter the facility



Disaster Planning for Evacuation

- Public transportation (i.e., buses) that is made available to people who need to evacuate often will not transport companion pets as the animals' disease status and immunization records are unknown and pose a potential threat to public health
- Overcrowding of available modes of transportation does not allow for moving animals.
- People are understandably reluctant to leave their few possessions behind.
- People are even more reluctant to leave behind their companion pets.



Research Issues

Collecting data at a MMU increases safety for the researchers, as well as decreasing the time and money needed to administer a survey to this population



Thank you

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CHERYL TRAVERS, CHRIS DEGELING,
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Emergency services and pet owners:
Assigning and taking responsibility
for pets in natural disasters



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Pets are Family

- 62% of Australian homes have at least one pet (US = 65%)
- 91% of Australians feel 'very close' to their pet(s)
- Over 80% are 'very likely' or 'somewhat likely' to risk their lives to save them



Building Resilience

Animals and Communities Coping in Emergencies

Australian Animal Welfare Strategy (AAWS)
World Society for the Protection of Animals (WSPA)



Presented by:
AAWS
WSPA
October 2012

Integrating pets in emergency management

Key barriers for emergency services:

- Lack of understanding of owner behavior towards pets
- Owners don't take responsibility for their pets

http://www.australiananimalwelfare.com.au/app/webroot/files/upload/files/Building_Resilience_Workshop_2012_Report.pdf



Companion Animals in Natural Disasters: A Scoping Review of Scholarly Sources

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ABSTRACT

During a disaster, people may make evacuation decisions based on their companion animal's welfare, therefore exposing themselves, their companion animals, and emergency responders to increased risk for injury or death. The loss and suffering of companion animals in disasters causes deep distress, diminishing people's capacity to rebuild their lives. This scoping review presents scholarly research studies and reviews relating to people and their companion animals in the context of disasters, with an aim of informing researchers, policymakers, and practitioners and providing direction for future research. Using the Arksey and O'Malley framework, articles in scholarly journals from 2004 to 2014 are discussed. Analysis included 38 articles: 20 research studies, 12 reviews, and 6 editorials. Findings revealed 2 central themes: companion animals as a risk factor to human health and safety and companion animals being "at risk" them

KEYWORDS

Human–animal bond; companion animal; natural disaster; emergency; scoping review



Study Aim



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To better understand the relationship between emergency services and pet owners with emphasis on the notion of responsibility for pets in natural disasters



Red October, New South Wales (NSW) fires, 2013

100+ fires burning across NSW

A state of emergency was declared empowering firefighters to force evacuation

The Blue Mountains area was hardest hit:

- 203 homes destroyed; 286 damaged
- No human lives lost
- 100s of pets died



<https://www.independent.co.uk/news/world/australasia/in-pictures-sydney-bushfires-8888605.html?action=gallery>



Blue Mountains, October 2013 Firestorms



Three Sisters, Blue Mountains <http://www.genkin.org/cgi-bin/photo.pl/landscapes/alpine-mountains/blue-mountains-nsw/three-sisters-blue-mountains-0004>



Methodology

Semi structured interviews:
13 emergency service responders
(rescue workers)
11 pet owners who experienced the
2013 Blue Mountains fires with pets

Thematic analysis

Responsibility				
Agency, Owner	Shift, Assign share?	Systems	Operational response	Values, Beliefs
<i>Willing Able</i>	<i>b/w agency & owners</i>	<i>Rules, policy</i>	<i>Save, Abandon, Leave in-situ</i>	<i>Bond; stay or leave, trust</i>

Are you a pet owner living in the Blue Mountains?



Did you and your pet experience the Blue Mountains bushfires of October 2013?

The University of Wollongong is conducting a study on the experiences people and their pets went through during and after this natural disaster. We would like to hear from you.

To find out more:



0400 858 141



cat983@uowmail.edu.au



Responsibility: Responder Perspectives



For their sake...
Know your risk and make a plan

This summer, know your bush fire risk and make a plan
for all your family.
For more information visit www.rfs.nsw.gov.au

PREPARE → ACT → SURVIVE

Bush Fire Information Line
1800 679 737 (1800 NSW RFS)
www.rfs.nsw.gov.au



Your family, your responsibility
Emergency service ethos is
humans first

Operational responsibility:

- protect pets is not a given
- protect pets to protect people

Sharing responsibility by capacity
building in 'peace time'



Responsibility: Owner Perspectives

- Owner responsibility



- Pet owner ethos is **more-than-human**
- **Solidarity** in ‘being there’ for *all* of the family
- Emergency service responsibility – mixed views
- Complex attitudes and values on position of role in pets in multi-species households

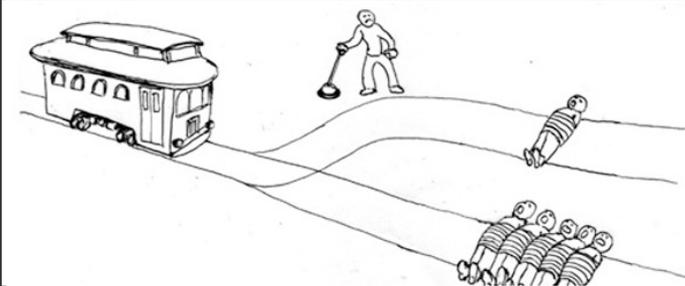


More-than-solidarity in owner evacuation decisions (n=11)

Initial decision*	No.	Reasons	Actions
Leave early on advice	2	Pets were safe	#1: Collect people's pets and keep safe #2: Facebook - reunite owners and pets
Stay at home	1	Monitor, prepare	Trapped through inability to act Facebook – support to others
Stay at home	4	Trapped	Trapped by fire. Focus on keeping pets safe
At work, returned home	1	For pets	Got pets; cat escaped, they left
Road block - obeyed	2	Fire too intense	Tried to reach trapped family and pets
Road block - ignored	1	To save pets	Removed her pets to parent's home



Three points of interaction for responders and owners



DOOR KNOCKS and 'STAY OR LEAVE'

The responder risks the life of one to save the many?
It's the owner's decision



FORCED EVACUATION and ABANDONED PETS

Responders can force evacuation leaving pets behind;
Against the wishes of the owner



ROAD BLOCKS and RESTRAINED FREEDOMS

Police will enforce;
Pet owners will resist

Psychological impacts and challenges of pets post disaster

part of our family... always there

Love

bring you through ...the heartache and the misery ... when you've lost everything

the guilt and the pain (of their death)

Cuddles

she would have never recovered from it

a lot of support

A sense of normalcy

my rock

Keep you calm



Moving forward

- Acknowledge and respect the shift to kinship relationships
- Emergency management engaging with community on responsibilities
- More psychological, multi-disciplinary research
- Understand psychological impacts of owner choices to build capacity



References

- Australian Companion Animal Council. (2010). *Contribution of the pet care industry to the Australian economy*. 7th Ed. <https://www.paws4play.com.au/pdfs/2010-Bis-Shrapnel-EconomPet-Benefits.pdf>
- Hall, M. J., Ng, A., Ursano, R. J., Holloway, H., Fullerton, C., & Casper, J. (2004). Psychological impact of the animal-human bond in disaster preparedness and response. *Journal of Psychiatric Practice*, 10(6), 368-374.
- Heath, S. E., & Linnabary, R. D. (2015). Challenges of managing animals in disasters in the US. *Animals*, 5(2), 173-192. doi:10.3390/ani5020173
- Pendlebury, G. 2014 *Where's my dad? Where's my dad? An ordinary persons account of the 2013 Blue Mountains bushfires*. Snap Printing Penrith. Gordon Pendlebury.
- Pet Industry Association. (2018). Australian pet ownership statistics. <https://piaa.net.au/australian-pet-ownership-statistics/>
- Robinson, S. (2018). *How can psychology inform disaster research?* Paper presented at the 7th International Conference on Building Resilience; Using scientific knowledge to inform policy and practice in disaster risk reduction, ICBR2017, 27 – 29 November 2017, Bangkok, Thailand.
- Rock, M. J., & Degeling, C. (2015). Public health ethics and more-than-human solidarity. *Social Science & Medicine*, 129, 61-67. doi: 10.1016/j.socscimed.2014.05.050 RSPCA Knowledge Hub <https://kb.rspca.org.au/knowledge-base/how-many-pets-are-there-in-Australia/>
- Squance, H., Johnston, D., Stewart, C., & Riley, C. (2018). An integrative review of the 2017 Port Hill fires' impact on animals, their owners and first responders' encounters with the human-animal interface. *Australasian Journal of Disaster and Trauma Studies*, 22.
- Tanaka, A., Saeki, J., Hayama, S.-i., & Kass, P. H. (2019). Effect of pets on human behavior and stress in disaster. *Frontiers in Veterinary Science*, 6. doi:10.3389/fvets.2019.00113
- Taylor, M., Lynch, E., Burns, P., & Eustace, G. (2015). The preparedness and evacuation behaviour of pet owners in emergencies and natural disasters. *Australia Journal of Emergency Management*, 30(2).
- Thompson, K., Every, D., Rainbird, S., Cornell, V., Smith, B., & Trigg, J. (2014). No pet or their person left behind: Increasing the disaster resilience of vulnerable groups through animal attachment, activities and networks. *Animals*, 4(2), 214-240.
- Travers, C., Degeling, C., & Rock, M. (2017). Companion animals in natural Disasters: A Scoping Review of Scholarly Sources. *Journal of Applied Animal Welfare Science*, 1-20. doi:10.1080/10888705.2017.1322515
- Trigg, J., Thompson, K., Smith, B., & Bennett, P. (2016). A moveable beast: Subjective influence of human-animal relationships on risk perception, and risk behaviour during bushfire threat. *The Qualitative Report*, 21(10), 1881.
- White, S. (2009). Companion animals—members of the family or legally discarded objects? *University of New South Wales Law Journal*, 32, 852-878.



A special thanks to...



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Blue ARC – Animal Ready Communities

HUFF – Heads Up For Fire and Any Emergencies

City of Blue Mountains Local Emergency Management Committee

Emergency service participants

Pet owner/guardian participants **AND**

Pets/Companion animal participants



<https://www.bucketlist127.com/goal/visit-blue-mountains-australia>



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Natural disasters: Puerto Rico's
hurricanes and their threat to health
and safety



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Puerto Rico's hurricanes and their threat to health and safety

THE IMPACT OF
HURRICANES IRMA &
MARIA IN PUERTO
RICO IN TERMS OF
THE HUMAN-ANIMAL
RELATIONSHIP

Dr. Yahaira Segarra, Dr. Liza
Meléndez & Dr. Úrsula Aragunde



Puerto Rican context and the human-animal bond

›Population: 3.4 million 

›About 4 % of the population—130,000—left after Maria (United States Census Bureau)

›2/3 of households own at least 1 pet (Law 154).

›The average number of dogs per family is 1.4 and it is the most common pet (Ipsos-Asi, 2010).

›Average of pets 3.8 per owner (Aragunde, 2016).





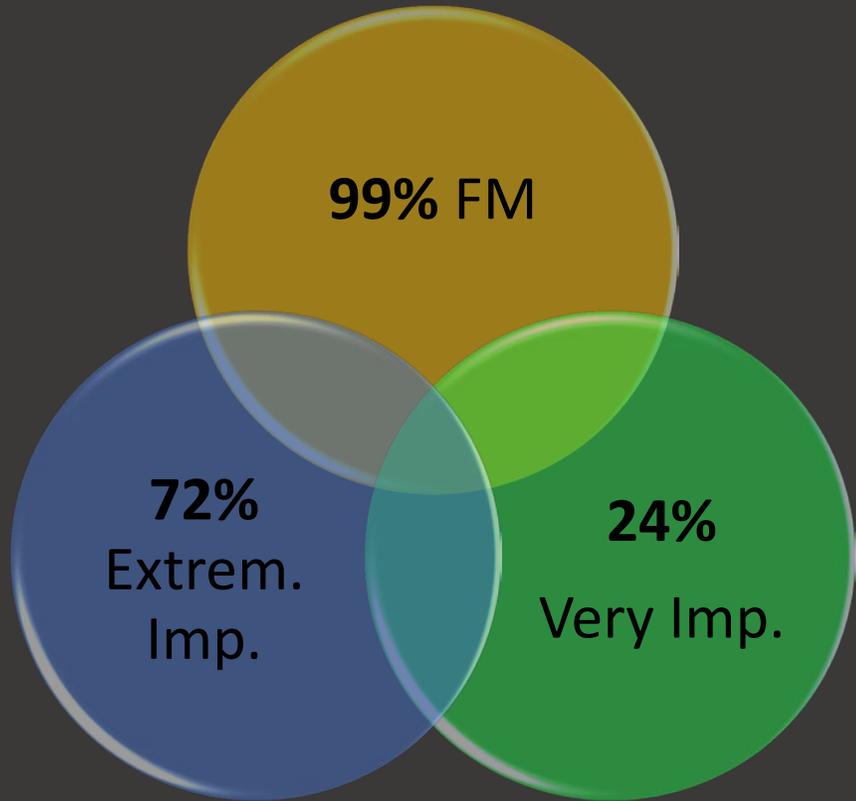
Our Reality

An estimated 100,000+ animals residing in the streets suffering from hunger, thirst and diseases (Márquez, 2011).

Approximately 25,000 stray animals (Dogs, Cats, Horses and Sheep) (UPR Humacao Census, Ríos 2019; Alvarado, 2019).

HSPR - 75 to 100 pets are surrendered daily and that the average adoption rates across Puerto Rico are a low 2-3% contrasted against staggeringly high euthanasia rate of 94% (2011).





(Aragunde, 2016) (n = 1,436)

Puerto Rico: Research



91% Companionship



92% Play with them



41% security



88% talk with them



Evacuating or staying before hurricanes

SEPTEMBER 2017



Ricardo Rosselló ✓

@ricardorossello



A las 5am, contamos con 11229 refugiados y 580 mascotas.

♡ 200 5:16 - 20 sept. 2017



Las Piedras habilitó refugio exclusivamente para animales

Bryan Eloy García, Especial para EL VOCERO 19/09/2017 1



Some municipalities habilitated temporary shelters for cats & dogs



Some decided to stay with their companion animals above all risks

Jesús Rivera compartió una divertida imagen junto a su mascota en las redes sociales

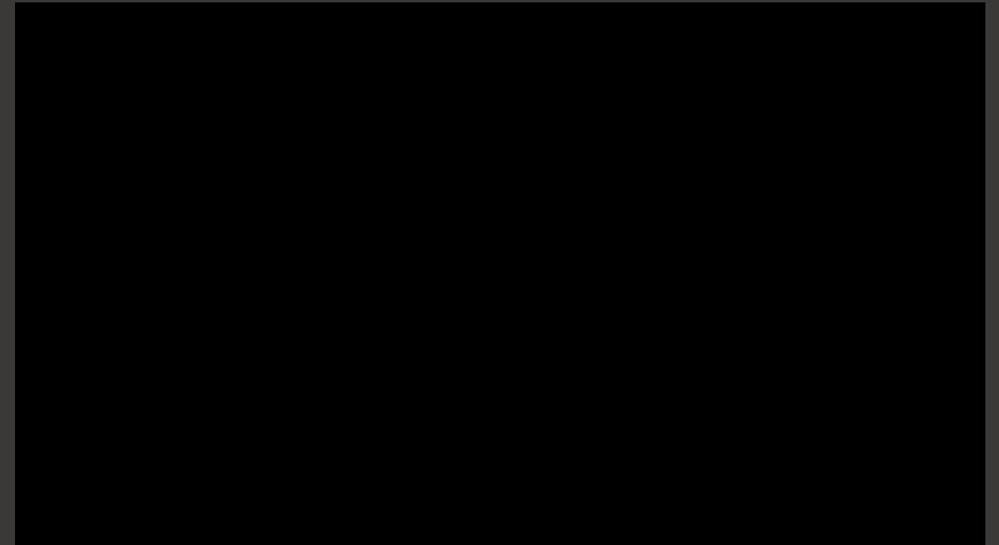
miércoles, 6 de septiembre de 2017 - 6:21 PM

Por Brenda Peña López

Nota de archivo: Este contenido fue publicado hace más de 90 días



Jesús Rivera y su yegua. (Captura / Facebook)



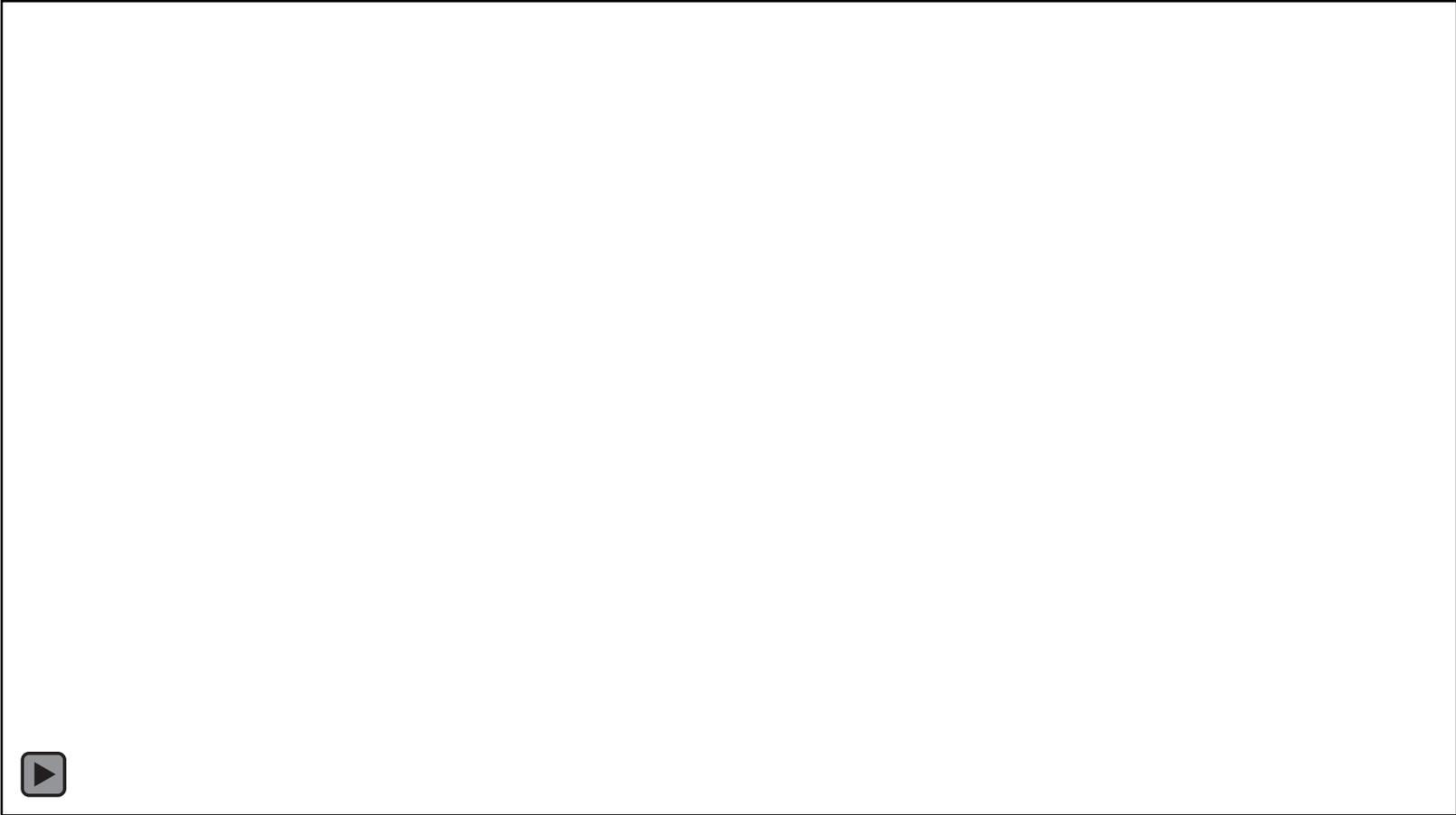
Irma & Maria's Landfall

SEPTEMBER 2017



Saint Francis of Assis Animal Sanctuary

Cabo Rojo, P.R.



The Aftermath Hurricane Maria



rez, age 29, and her son, Yonel Calera, age 4 have not received any aid one w
Maria. The roof of their home is gone and they have very little to eat. Carol
y Images



Human-Animal Relationship Impact



Livestock and Agriculture

- 15% of the food consumed by Puerto Ricans is grown. 85% - are imported.
- Estimated Damages: \$2,000 million (Includes losses of Irma and Maria)
- Another \$1.8 billion in which includes chicken ranches, milking areas in dairy farms, packing machinery, roads, fences and irrigation equipment.
- Only 33% of the Island's farmers are insured





Nature and Autochthonous Animals



Mental Health Impact of Disasters

Depression, stress and anxiety

Strains on social relationships

Complicated grief

Substance Abuse

Post-traumatic stress disorder

Loss of personal identity

Helplessness, fatalism and suicide



Clayton, S., Manning, C. M., Krygsman, K., & Speiser, M. (2017)



“They have heart palpitations, sweating, catastrophic thoughts. They think ‘I’m going to drown,’ ‘I’m going to die,’ ‘I’m going to lose everything” said Dr. Carlos del Toro

Emotional Toll in Puerto Ricans

She had begun to have disturbing thoughts and worries that she might act on them. “Like what?” the doctor asked. Like swallowing a bottle of pills, she said, “never waking up, and not feeling pain anymore.” “When it starts raining, they have episodes of anxiety because they think their house is going to flood again”

Emotional Toll After the Storm



Many Puerto Ricans reported intense feelings of anxiety and depression **for the first time** in their lives. And people who had mental illnesses before the storm, have seen their conditions deteriorate.



Many pharmacies were closed, meaning antidepressants, antipsychotics and other medications were unavailable (Lybarger, 2018).



Returning to a routine is the most important step toward overcoming trauma but for most Puerto Ricans, logistical barriers like **scarce water and electricity**, as well as closed schools and businesses, make that impossible.



Death Toll

There has been disagreement about the exact death toll.

Estimated 2975 to 4645 deaths.



2 Months after Landfall



More than 2,000 calls have overwhelmed an emergency hotline for psychiatric crises maintained by the Puerto Rican health department — double the normal number.

Suicides had increased — **32 have been reported since the storm** — and many more people than normal have been hospitalized after being deemed dangerous to themselves or others.





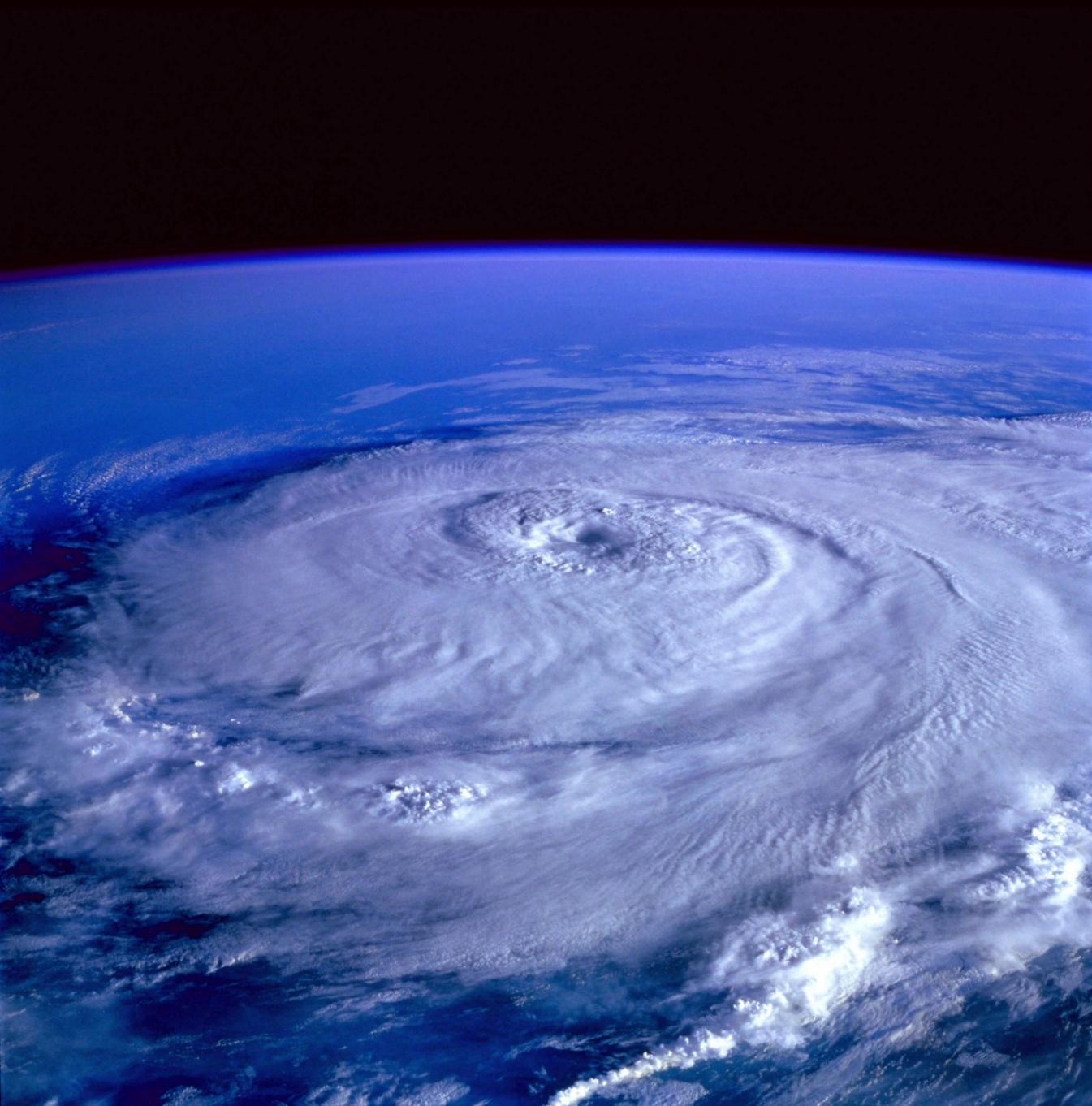
1 in 14 Puerto Rican schoolchildren experienced PTSD after Hurricane Maria

(Orengo-Aguayo, Stewart, & Arellano, 2019)

1 in 4 suffered anxiety

(Instituto Desarrollo Jeventud, 2019)





**ADD A NATURAL
DISASTER TO AN
ALREADY
OVERWHELMED
COMMUNITY**



Emotional Toll in Puerto Ricans

Puerto Rico **was already struggling with an increase in mental illness** amid a 10-year recession that brought soaring unemployment, poverty and family separation caused by migration.

Public health officials and caregivers say that **Maria has exacerbated the problem**. Including an **exodus of medical professionals** to the mainland.

Approximately **7.3%** of Puerto Rico's population has a serious mental illness (AMMSCA, 2016).

Because of the **fiscal crisis**, patients have to wait longer to receive mental health services, which may help explain **why 1/3 of island residents are not currently receiving** treatment.



Adding the Psychological Impact of the HAB



Forced abandonment of a companion animal during an evacuation adds considerably to the **acute trauma**, thereby increasing the risk of long-term **PTSD** (Hunt, Al-Wadi & Johnson, 2008)



Acute loss of the pet as well as the continued absence of the pet itself that **contributes to depressive symptom severity** (Hunt, Al-Wadi & Johnson, 2008).



Grief, depression, and posttraumatic stress disorder are associated with pet abandonment during an **evacuation** (Chadwin, 2017).



Veterinary Services

- In the immediate aftermath of Maria, veterinary services in Puerto Rico entered a triage phase.
- There were a lot more **trauma cases**. We were dealing with only emergency cases and cases that required immediate attention.
- Dozens of people are suspected of having contracted **leptospirosis**, and at least **two deaths are confirmed to have been linked to the bacterial infection**.
- Veterinarians fanned out across the island, vaccinating thousands of animals at no charge.



The Aftermath: HAB in Puerto Rico



- More than **200,000** Puerto Ricans have fled for the mainland, a few leaving pets tied up in empty homes with a bag of food.
- Others who **remain on the island** sometimes find **they can no longer afford a pet or have no place to keep animals** because they are staying with friends or neighbors as they wait for power to return.
- Some **animals are just left behind on roadsides or in empty homes**, to be found eventually by crews from FEMA.

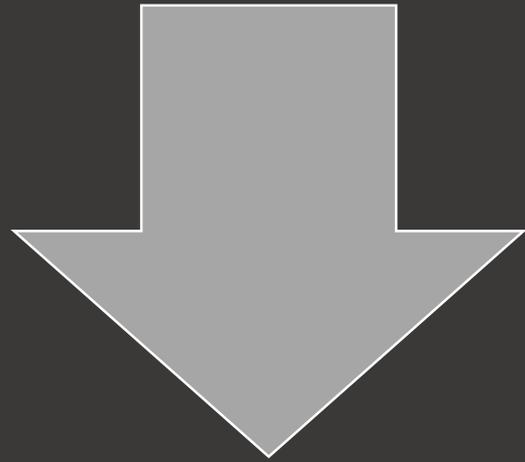


The Aftermath: HAB in Puerto Rico



- “**The situation is horrible.** They want to turn in pets every single day. There are a lot of animals being abandoned when we tell them our shelter is full and that there’s a waiting list.” Claribel Pizarro-**Humane Society of Puerto Rico.**
- Hundreds of dogs, cats and even the occasional pet pig and fighting cock have been left at shelters as **people flee hardships on the U.S. territory or find they can no longer cope with animals.**
- Many animals **are just left to fend for themselves** in the streets





**BIG
NEED**



**FEW
RESOURCES**



The Emotional
Toll of Animal
Welfare
Organizations



Animal Welfare Organizations Help



- In the immediate aftermath of the hurricane, a variety of groups flew more than 1,000 animals to no-kill shelters on the U.S. mainland, but overburdened shelters were again running out of space and resources and reported a drop-in adoptions.
- The number of stray animals increased after the hurricane because many shelters were closed.
- Also the notice a sudden jump in the number of puppies due to the interruption in spay and neuter operations

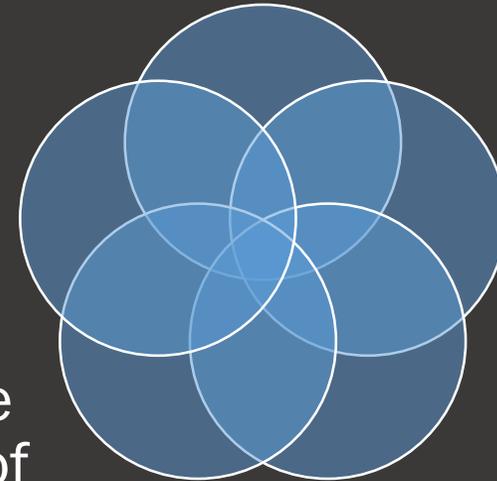




Wings of
Rescue

Among
many
others...

The Sato
Project



Humane
Society of
US

PETA



Emotional Reencounter with their Pets





Future Direction of Emergency Planning

Emergency planning for companion animals during disasters is a global need in communities with a significant pet population and will increase resilience and improve public health (Chadwin, 2017).



Prepárate con la Cruz Roja

Seguridad para las mascotas en caso de desastres

Las mascotas enriquecen nuestra vida en innumerables aspectos. A cambio, su seguridad y bienestar dependen de nosotros. La mejor forma de proteger a tu familia es preparar un plan para casos de desastre. Si tienes mascotas, el plan las incluye también. Estar preparados puede ayudar a salvar vidas.

Aprende primeros auxilios para mascotas

Los perros y gatos son algo más que mascotas, son parte de la familia. Al igual que cualquier otro integrante de la familia, las mascotas merecen cuidado y protección. A tal fin, la Cruz Roja Americana elaboró guías integrales de primeros auxilios para perros y gatos que incluyen todo lo que los dueños necesitan saber para mantener a sus mascotas sanas y a salvo. Las guías ofrecen información confiable sobre las responsabilidades básicas de un dueño (como esterilización, castración y administración de medicamentos), y sobre emergencias respiratorias o cardíacas y la preparación para desastres. Comunícate con la Cruz Roja local para comprar las guías y botiquines de primeros auxilios o visita la tienda virtual de la Cruz Roja.

¿Cómo me preparo?



Haz planes para llevar las mascotas contigo si debes desalojar el lugar. Si el lugar es peligroso para ti, también lo será para los animales domésticos.

- Averigua cuáles hoteles sobre tu ruta de salida te aceptarán con tus animales domésticos en caso de emergencia. Llama para reservar si sabes que es posible que tengas que irte. Si no aceptan mascotas, pregunta si las aceptarían en una emergencia.
- La mayoría de los refugios de la Cruz Roja no pueden aceptar mascotas por consideraciones de salud y seguridad y otros motivos. Los refugios de la Cruz Roja aceptan animales de servicio que sirven de guías para las personas con discapacidad.
- Pregúntale a tus amigos, familiares, lugares de alojamiento para mascotas y veterinarios si podrían cuidar de tus animales domésticos en una emergencia. Haz una lista con sus números telefónicos.
- Aunque estén más cómodos juntos, prepárate para alojar a los animales por separado si es necesario.
- Incluye a tus mascotas cuando practiquen simulacros de desalojo para que se acostumbren a entrar y viajar en sus jaulas con tranquilidad.
- Asegúrate de que las mascotas tengan sus vacunas actualizadas y de que los perros y gatos tengan puestos sus collares con placas de identificación. Muchos refugios para mascotas exigen comprobantes de vacunaciones actualizadas para limitar la transmisión de enfermedades.
- Tal vez quieras pedir a tu veterinario que le pongan un microchip a tu mascota.

¿Qué hago?



Prepara un equipo portátil con provisiones de emergencia para tus mascotas.

- Guarda los siguientes artículos en un recipiente fácil de cargar y de rápido acceso:
- Correas resistentes, ameses y jaulas para transportar a las mascotas sin peligro y asegurar que no se escapen
- Comida, agua para beber, recipientes, caja con arena para gatos y abrelatas manual
- Medicamentos y copias de documentos médicos en un recipiente impermeable
- Botiquín de primeros auxilios
- Fotos recientes con tus mascotas en caso de que se pierdan. Muchos animales se parecen y las fotos ayudarán a eliminar errores y confusión.
- Información sobre horarios de alimentación, problemas médicos o de comportamiento y el nombre y número del veterinario en caso de que haya que alojar a tus mascotas en otro lugar.
- Camas y juguetes de las mascotas, si son fáciles de transportar.

Prepárate ante el desastre inminente.

- Es común que los avisos se den a conocer horas, incluso días antes. Ante el primer indicio de un desastre, actúa para proteger a tu mascota.
- Llama con anticipación para confirmar los arreglos en el refugio de emergencia para ti y tus mascotas.
- Asegúrate de que todas tus mascotas lleven puestos collares bien sujetos con placas de identificación actualizadas.
- Entra a las mascotas a la casa para no tener que buscarlas si deben salir de prisa.

¿Y después del desastre?



Es posible que las mascotas cambien mucho su comportamiento después de una catástrofe. Tal vez se vuelvan agresivas o estén a la defensiva. Ten en cuenta su bienestar y protéjalas de los peligros para cuidar la seguridad de otra gente y otros animales.

- Vigila de cerca a los animales y mantenlos bajo tu control directo, ya que las cercas y puertas podrían estar dañadas.
- Las mascotas pueden desorientarse, en especial si el desastre cambia puntos de referencia que normalmente ayudan a los animales a ubicar su hogar mediante el olfato.
- Protege la nariz, patas o pezuñas de los animales de los escombros, productos químicos derramados, fertilizantes y otras sustancias que tal vez no parezcan peligrosas para los humanos.
- Consulta a tu veterinario si los problemas de comportamientos perduran.

Los planes de emergencia familiar deben incluir a todos tus animales.

Infórmate más sobre la planificación ante desastres y las medidas de emergencia relacionadas con ganado, caballos, pájaros, reptiles u otros animales pequeños que hamsters o gerbos. Visita nuestro sitio web en cruzrojaamericana.org, el de la Sociedad Protectora de Animales de los EE.UU. en www.HSUS.org o el del Departamento de Seguridad Nacional en Listo.gov.

Avisa a tus familiares que estás a salvo

Si ocurre una catástrofe en tu comunidad, anótate en el sitio web "Sano y salvo" de la Cruz Roja Americana en cruzrojaamericana.org para avisar a tus familiares y amigos

Plan Manejo de Animales en caso de emergencias y desastres naturales.

1 de 2
er en caso de que
sabado y fiesta
nales u otro lugar



Secretaría Auxiliar para
Salud Ambiental y
Laboratorio de Salud Pública

OFICINA ESTATAL PARA EL CONTROL DE ANIMALES (OECA)

PO BOX 70184
SAN JUAN PR 00936-8184
(787) 765-2929



- Identifique su mascota puede ser por microchips, tatuajes, chaps, etc.
- Prepare un kit a prueba de agua que contenga fotos, documentos y record de vacunas, entre otros.
- Mantenga las vacunas de su mascota al día.
- Tenga una jaula portátil o caja de transporte.
- Prepare una caja o maleta con comida suficiente para varios días, medicinas si su mascota lleva algún tratamiento médico, botellas de agua, toallitas húmedas, bolsas de basura, platos y juguetes favoritos de su mascota.
- Identifique un lugar donde puedan cuidar su mascota en caso de ser desalojados de su casa.
- Haga un listado de amigos o familiares que puedan hacerse cargo de sus mascotas por períodos largos de tiempo si usted perdiera su casa.

Recuerda, tu mascota es parte de tu familia.
Amá y Protégela

¿Qué es la Oficina Estatal para el Control de Animales (OECA)?

La Oficina Estatal para el Control de Animales por sus siglas OECA, esta adscrita a la Secretaría Auxiliar para Salud Ambiental y Laboratorios de Salud Pública. La OECA trabaja con los municipios y empresas privadas sin fines de lucro como un ente facilitador e incentivador para fomentar iniciativas dirigidas al rescate, recogido, adopción así como la creación de albergues y programas educativos dirigidos al control y la protección de los animales. La OECA brinda orientación y educación a la ciudadanía sobre el buen trato hacia los animales y las leyes de protección de animales, entre otros.

Según los establecido por ley, el plan de trabajo de la OECA consta de tres áreas básicas que son sus objetivos primordiales:

1. La creación de **reglamentación** sobre el control y la protección de los animales que mediante su implantación permita reducir la cantidad de animales reatigos y fomentar la tenencia responsable de mascotas.
2. La otorgación de **subvenciones** a los Municipios y empresas privadas bonifide para incentivar la creación de Centros de Control y Protección de Animales y campañas educativas con el propósito de crear herramientas para el manejo de la problemática de animales reatigos, entre otros.
3. La creación de **programas educativos** dirigidos al control y protección de los animales y a fomentar dueños de mascotas responsables integrando conceptos básicos como la esterilización, vacunación y adopción de mascotas, entre otros.

BASE LEGAL

La Ley 81 de 14 de mayo de 1912
Ley Orgánica del Departamento de Salud

Esta ley impone a los municipios la responsabilidad del rescate de animales reatigos y muertos en sus respectivas jurisdicciones.

Las leyes que dan paso a la creación de la OECA son las siguientes:

- **Ley 36 de 30 de mayo de 1984** conocida como **Ley de Refugios Regionales** y las siguientes enmendadas:
- **Ley 242 de 30 de agosto de 2000** para crear la Oficina Estatal para el Control de Animales (OECA).
- **Ley 427 de 22 de septiembre de 2004**, redirige el plan de trabajo de la OECA.
- **Ley 37 de 29 de julio de 2005**, redirige el uso de los fondos para las subvenciones de la OECA.

Ley 154 de 4 de agosto de 2008
Ley para el Bienestar y la Protección de los Animales.

Esta ley protege del maltrato a los animales e impone penalidades a quienes la violan y abusan de ellos garantizando su bienestar.

Después

En los primeros días después de un desastre, mantenga a sus mascotas con una correa cuando salgan. Siempre manténgalas cerca de usted. Los olores y terrenos familiares podrían estar alterados y sus mascotas podrían confundirse y perderse.

Las mascotas pueden desorientarse, en especial si el desastre cambia puntos de referencia que normalmente ayudan a los animales a ubicar su hogar mediante el olfato. Proteja la nariz, patas o pezuñas de los animales de los escombros, productos químicos derramados, fertilizantes y otras sustancias que tal vez no parezcan peligrosas para los humanos. Tenga en cuenta que las cercas y puertas pueden resultar dañadas, así que tome medidas para mantener su seguridad.

El comportamiento de sus mascotas podría cambiar después de un desastre. Vigile a sus animales de cerca y manténgalos bajo su control directo, ya que las mascotas que por lo general son calladas y amigables podrían volverse agresivas o estar a la defensiva. Tenga en cuenta su bienestar y protéjalas de los peligros, por su seguridad y de quienes los rodean. Consulte a su veterinario si los problemas de comportamientos perduran.

Los planes para desastres no solo son esenciales para la seguridad de su mascota, le pueden ayudar a usted a salvar vidas. Si usted es el responsable de animales variados, la planificación es clave.

Recursos adicionales con información sobre que hacer son sus mascotas en una emergencia:

Sociedad Protectora de Animales de Puerto Rico
Carretera #20, Km 3.8 Guaynabo PR
P.O. Box 2387
Guaynabo PR 00970
Tel. 787-720-6038

Office of Consolidated Emergency Management
www.ocecm.org
<http://www.luke5housevive.com/>

Preparación en caso de desastres y emergencias
<http://www.cruzrojaamericana.org/>

Sociedad Protectora de Animales de los E.E.U.U.
www.HSUS.org

Departamento de Seguridad Nacional
Listo.gov

Adaptado en su mayoría de:
The Humane Society of Puerto Rico
<http://www.hspu.org/ORIENTACION/>
[PreparaciondeMascotasenunaEmergencia.aspx](http://preparaciondeMascotasenunaEmergencia.aspx)

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Mayagüez, P.R. 00681-9000
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<http://redsismica.uprm.edu>

Departamento de Geología
Geología, Desastres y
Muestreo de Camalote
Puerto Rico Seismic Network, University of Puerto Rico, Mayagüez, Camalote



Preparación para mascotas en caso de desastres

- Red Cross
- Puerto Rico Seismic Network
- OECA – Animal Control
- Law 225 – 2018 (P. del S. 647) “Law on Animal Shelters during Emergencies or Natural Disasters”
- PETS ACT



Dr. Frances Piñero, president-elect of the Puerto Rico VMA, monitors recovering patients during the Spayathon for Puerto Rico. (Photo by R. Scott Nolen)



Spay-athon 2018-2019

A memorandum of understanding was struck among the **Puerto Rican government, HSUS, PRVMA, and Puerto Rico Board of Veterinary Medical Examiners** to implement Spayathon for Puerto Rico with a goal of spaying and *neutering more than 21,000 animals within an 18-month period.*

(Nolen, 2019)





Puerto Rico Rises Up



THANK YOU FOR YOUR TIME!

