

## **2012 Thundershirt Cat Anxiety Survey**

### **The Cat Anxiety Problem: Size, Scope, and Solutions**

Anxiety and fear are widely recognized issues for cats when traveling and during vet visits; however, little research has been done regarding how widespread these issues are or what other fears and anxieties cats have. The purpose of this survey is to investigate what causes anxiety in cats, how common anxiety is, along with the solutions, if any, cat owners are using to combat the problem.

#### **Sources of Anxiety**

Thundershirt Company has sponsored this survey, which was conducted and analyzed by independent third parties.

This survey was of the general cat population in the United States. Conducted in June 2012, 1000 cat owners with 1727 cats were surveyed. The respondents were spread across the United States geographically and covered a very wide variety of cat breeds. This large sample is statistically representative of the overall cat population in the United States.

The Survey was conducted by GMI Inc, a Washington based survey company. Founded in 1999, GMI is a global market research company providing services to many of the largest business enterprises and researches around the world.

The survey data was analyzed by Kirsten Doehler, an Assistant Professor of Statistics at Elon University. Mrs. Doehler earned her Ph.D. in Statistics from North Carolina State University.

The key findings from the survey are summarized below. The related tables are provided in the Appendix.

#### **Key Findings from the General Cat Population Survey**

The following findings are based on the general cat population survey of 1000 cat owners and 1727 cats, along with data from the 2009-2010 APPA National Pet Owners Survey. The APPA survey data was used to determine the number of cats and cat owning households in the United States.

- 24% of all cats suffer from at least one anxiety or fear issue, around 22.5 million cats in the United States alone. Over 20% of all cats suffer from multiple anxiety and/or fear issues.
- 67% of all cats suffering from anxiety, or around 15 million cats in the United States, are not treated in any way for their anxiety or fear.
  - 39% of cat owners do not feel that treating the problem is necessary
  - 34% of owners do not think that there are any viable solutions for their cat's anxiety
  - 11% of cat owners felt the available solutions are too expensive

- 36% of all cat-owning households have at least 1 cat with anxiety or fear issues. This translates to over 13.7 million households in the United States alone who are dealing with cat anxiety or fear issues.
- Over \$470 million is spent each year attempting to deal with anxiety and fear in cats
  - Over \$162 million of this is spent on damaged property
  - Over \$140 million is spent on veterinarian visits
- Over half of cats experience some type of anxiety associated with veterinarian visits (travel, crating, during the actual visit)
- The most common anxiety or fear issues among cats in the US are:
  - Fear of the veterinarian- Over 15% of all cats, or over 14 million cats
  - Noise Anxiety- Over 14% of all cats, or over 13 million cats
  - Travel Anxiety- Over 10% of all cats, or over 9 million cats
  - Reactivity towards People- Over 10% of all cats, or over 9 million cats
- The most common types of noise anxiety are:
  - Vacuum Cleaners- 12% of all cats
  - Thunderstorms- 8% of all cats
  - Fireworks- 7% of all cats
- The incidence rate of anxiety does not appear to change with the cat's age until 11+ years, when it jumps to 29% of all cats
- Female cats have a slightly higher rate of anxiety than male cats, with females at 26% and males at 22%
- Cats in single cat households are significantly more likely to have anxiety or fear issues than cats who live in multi cat households.
  - Single cat- 33%
  - Multi cat- 20%
- 10% of owners with cats suffering from anxiety or fear issues have spent an average of \$1449 on those issues. \$692 on damaged property, and \$508 on visits to the veterinarian
- The most common treatments attempted are:
  - Behavior modification and Training- 46%
  - Environmental Management- 45%
  - Music Therapy- 21%
  - Drugs- 20%
- As the age of the owner increases, the incidence rate of anxiety in cats decreases
- 39% of cats who have experienced a move also experience anxiety or fear
- 30% of cats who have had a new human join the household experience anxiety or fear
- Items of note that do not appear to effect anxiety and fear rates are:
  - Spaying/Neutering
  - Declawing
  - Weight/Size

## Appendix: General Cat Population Survey Tables

<b>Table A. Incidence of Cat Anxiety based on # of Dogs in Household*</b>					
	<b>0 Dogs in Household</b>	<b>1 Dog in Household</b>	<b>2 Dogs in Household</b>	<b>3 Dogs in Household</b>	<b>Total</b>
No Anxiety	719	339	180	75	1313
Yes Anxiety	240	116	46	12	414
Total	959	455	226	87	1727
% of Cats with Anxiety	25.0%	25.5%	20.4%	13.8%	24.0%
Margin of Error (+/- at 95%)	2.7%	4.0%	5.2%	7.2%	2.0%

\*Base is total cats across survey respondents

<b>Table B. Incidence of Anxiety based on Age of Owners*</b>								
	<b>Under 18</b>	<b>18-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Total</b>
No Anxiety	0	161	204	237	290	276	145	1313
Yes Anxiety	0	62	110	78	73	73	18	414
Total	0	223	314	315	363	349	163	1727
% of Cats with Anxiety	---	27.8%	35.0%	24.8%	20.1%	20.9%	11.0%	24.0%
Margin of Error (+/- at 95%)	---	5.9%	5.3%	4.8%	4.1%	4.3%	4.8%	2.0%

\*Base is total cats across survey respondents

<b>Table C. Incidence of Anxiety based on Owner Income*</b>								
	<b>&lt;\$35,000</b>	<b>\$35,000- \$49,999</b>	<b>\$50,000- \$74,999</b>	<b>\$75,000- \$99,999</b>	<b>\$100,000- \$124,999</b>	<b>\$125,000- \$149,999</b>	<b>\$150,000+</b>	<b>Total</b>
No Anxiety	169	291	359	219	141	65	69	1313
Yes Anxiety	65	79	135	62	40	15	18	414
Total	234	370	494	281	181	80	87	1727
% of Cats with Anxiety	27.8%	21.4%	27.3%	22.1%	22.1%	18.8%	20.7%	24.0%
Margin of Error (+/- at 95%)	5.7%	4.2%	3.9%	4.8%	6.0%	8.6%	8.5%	2.0%

\*Base is total cats across survey respondents

<b>Table D. Incidence of Anxiety based on Cat Weight*</b>					
	<b>0-10 pounds</b>	<b>11-20 pounds</b>	<b>21-30 pounds</b>	<b>30+ pounds</b>	<b>Total</b>
No Anxiety	484	712	102	15	1313
Yes Anxiety	149	222	40	3	414
Total	633	934	142	18	1727
% of Cats with Anxiety	23.5%	23.8%	28.2%	16.7%	24.0%
Margin of Error (+/- at 95%)	3.3%	2.7%	7.4%	17.2%	2.0%

\*Base is total cats across survey respondents

**Table E. Incidence of Anxiety based on Cat Time Spent Outdoors\***

	<b>Always Indoors</b>	<b>0-2 Hrs/Day Outside</b>	<b>3-5 Hrs/Day Outside</b>	<b>5-6 Hrs/Day Outside</b>	<b>Cat comes and goes as desired</b>	<b>Total</b>
No Anxiety	870	153	62	21	207	1313
Yes Anxiety	270	56	18	7	63	414
Total	1140	209	80	28	270	1727
% of Cats with Anxiety	23.7%	26.8%	22.5%	25.0%	23.3%	24.0%
Margin of Error (+/- at 95%)	2.5%	6.0%	9.2%	16.0%	5.0%	2.0%

\*Base is total cats across survey respondents

**Table F. Frequency of Vet Visits\***

<b>Vet Frequency</b>	<b>Count</b>	<b>Percent</b>
Once every 2-3 months	42	2.4%
Once every 6 months	273	15.8%
Once every year	791	45.8%
Once every 2 years	171	9.9%
Never unless cat is sick	450	26.1%
Total	1727	100.0%

\*Base is total cats across survey respondents

Table 1. Incidence of Anxiety by Clinical Category*												
Mentioned	Fear of the Vet	Fear of Noise or Noise Anxiety	Separation Anxiety	General Anxiety	Travel Anxiety	Reactivity towards people	Reactivity towards cats	Litter box Problems	Repetitive or Compulsive Behavior	Crating Anxiety	Grooming Anxiety	Other
No	148	166	328	321	234	239	305	341	388	289	365	397
Yes	266	248	86	93	180	175	109	73	26	125	49	17
Total	414	414	414	414	414	414	414	414	414	414	414	414
Incidence % Among Cats with Anxiety	64.3%	59.9%	20.8%	22.5%	43.5%	42.3%	26.3%	17.6%	6.3%	30.2%	11.8%	4.1%
Margin of Error (+/- at 95%)	4.6%	4.7%	3.9%	4.0%	4.8%	4.8%	4.2%	3.7%	2.3%	4.4%	3.1%	1.9%
Incidence % Among All Cats	15.4%	14.4%	5.0%	5.4%	10.4%	10.1%	6.3%	4.2%	1.5%	7.2%	2.8%	1.0%
	1.7%	1.7%	1.0%	1.1%	1.4%	1.4%	1.1%	0.9%	0.6%	1.2%	0.8%	0.5%

\*Base is cats that suffered from some form of anxiety

Table 2. Incidence of Noise Anxiety by Type*				
Mentioned	Fear of Thunderstorms	Fear of Fireworks	Fear of Vacuum Cleaners	Other Noise Fear
No	104	129	42	209
Yes	144	119	206	39
Total	248	248	248	248
Incidence %	58.1%	48.0%	83.1%	15.7%
Margin of Error (+/- at 95%)	6.1%	6.2%	4.7%	4.5%

<b>Table 3. Incidence of Anxiety by Gender</b>			
	<b>Male</b>	<b>Female</b>	<b>Total</b>
No Anxiety	653	660	1313
Yes Anxiety	186	228	414
Total	839	888	1727
% of Cats with Anxiety	22.2%	25.7%	24.0%
Margin of Error (+/- at 95%)	2.8%	2.9%	2.0%

\*Base is total cats across survey respondents

<b>Table 4. Incidence of Anxiety based on # of Cats in Household</b>					
	<b>1 Cat in Household</b>	<b>2 Cats in Household</b>	<b>3 Cats in Household</b>	<b>4 Cats in Household</b>	<b>Total</b>
No Anxiety	329	524	265	195	1313
Yes Anxiety	165	158	62	29	414
Total	494	682	327	224	1727
% of Cats with Anxiety	33%	23%	19%	13%	24%
Margin of Error (+/- at 95%)	4.2%	3.2%	4.2%	4.4%	2.0%

\*Base is total cats across survey respondents

**Table 5. Incidence of Trying Solution by Anxiety Type\***

<b>Anxiety Category</b>	<b>Total Cases that were treated</b>	<b>Total Cases where no solution was tried</b>	<b>Total # of Anxiety Cases</b>	<b>Percentage of Anxiety Cases Treated</b>	<b>Margin of Error (+/- at 95%)</b>
Noise Anxiety	58	190	248	23.4%	5.3%
Separation Anxiety	30	56	86	34.9%	10.1%
General Anxiety	26	67	93	28.0%	9.1%
Travel Anxiety	52	128	180	28.9%	6.6%
Vet Anxiety	57	300	357	16.0%	3.8%
Crating Anxiety	18	107	125	14.4%	6.2%
Litter Box Problems	52	21	73	71.2%	10.4%
Reactivity Problems	25	200	225	11.1%	4.1%
Grooming Anxiety	11	38	49	22.4%	11.7%
Total	329	1107	1436	22.9%	2.2%

\*Base is total cat anxiety cases



**Table 6. Percent of Cats Treated for Anxiety by Solution\***

<b>Treatment</b>	<b>% Tried</b>	<b>% Have Not Tried</b>	<b>Total</b>	<b>Margin of Error (+/- at 95%)</b>
Drugs (e.g. Fluoxetine, Clomipramine, Benzodiazepines, etc.)	20.7%	79.3%	100%	5.9%
Pressure Wrap (e.g. Thundershirt, Anxiety Wrap, Ace Bandage, etc.)	15.6%	84.4%	100%	5.3%
Natural / Homeopathic Supplements / Acupuncture	17.3%	82.7%	100%	5.5%
Cat Pheromones	17.9%	82.1%	100%	5.6%
Behavior Modification and Training	46.4%	53.6%	100%	7.3%
Environmental Management - Avoiding Sights and Sounds	45.8%	54.2%	100%	7.3%
Products for Sound Reduction (e.g. Sound Reduction Housing)	13.4%	86.6%	100%	5.0%
Products for Sight Reduction	12.3%	87.7%	100%	4.8%
Products for Desensitization (e.g. CD / Recordings, etc.)	13.4%	86.6%	100%	5.0%
Products for Static Reduction	6.7%	93.3%	100%	3.7%
Music Therapy	21.2%	78.8%	100%	6.0%

\*Base is 179 cats that have received some form of treatment for anxiety

**Table 7. Cat Owner Time Spent Addressing Anxiety Issue\***

<b>Amount of Time</b>	<b>Count</b>	<b>Percent</b>	<b>Margin of Error (+/- at 95%)</b>
Less than 1 Hour	149	41.3%	5.1%
1-10 Hours	110	30.5%	4.7%
11-40 Hours	64	17.7%	3.9%
40-80 Hours	13	3.6%	1.9%
>80 Hours	25	6.9%	2.6%
Total	361	100.0%	NA

<b>Table 8. Average Expenditures Per Cat to Address Anxiety Issues*</b>		
<b>Expenditure Category</b>	<b>Spending Per Cat</b>	<b>Margin of Error (+/- at 95%)</b>
Damaged Property	\$70.84	\$54.66
Veterinarian Visits	\$61.00	\$22.47
Behaviorist Visits	\$7.40	\$9.61
Medications	\$16.79	\$7.78
Natural Products	\$12.20	\$4.88
Cat Trainer Fees	\$6.00	\$9.52
Other	\$8.07	\$11.93
<b>Total Spending per Cat</b>	<b>\$182.31</b>	<b>\$72.29</b>

\*Base is 414 cats suffering from anxiety

<b>Table 9. Average Expenditures Per Cat to Address Anxiety Issues – Top 10%*</b>	
<b>Expenditure Category</b>	<b>Spending per Household</b>
Damaged Property	\$692.56
Veterinarian Visits	\$508.61
Behaviorist Visits	\$74.73
Medications	\$160.80
Natural Products	\$112.93
Cat Trainer Fees	\$60.64
Other	\$81.54
<b>Total Spending per Household</b>	<b>\$1,449.15</b>

\*Base is the top 10% of expenditures per cat in terms of spending for each category\*

<b>Table 10. Incidence of Anxiety by Current Age*</b>							
	<b>0 to 1 years</b>	<b>2 to 3 years</b>	<b>4 to 5 years</b>	<b>6 to 7 years</b>	<b>8 to 10 years</b>	<b>11+ years</b>	<b>Total</b>
No Anxiety	129	271	226	201	222	264	1313
Yes Anxiety	33	77	72	58	66	108	414
Total	162	348	298	259	288	372	1727
% of Cats with Anxiety	20.4%	22.1%	24.2%	22.4%	22.9%	29.0%	24.0%
Margin of Error (+/- at 95%)	6.2%	4.4%	4.9%	5.1%	4.9%	4.6%	2.0%

\*Base is total cats across survey respondents

<b>Table 11. Distribution of Cats by Number of Anxieties Suffered*</b>			
<b># of Anxieties</b>	<b># of Cats</b>	<b>% of Total**</b>	<b>% of Cats with Anxiety***</b>
0	1313	76.0%	NA
1	62	3.6%	15.0%
2	91	5.3%	22.0%
3	76	4.4%	18.4%
4	69	4.0%	16.7%
5	52	3.0%	12.6%
6 or More	64	3.7%	15.5%
Grand Total	1727	100.0%	NA
Total with Anxiety	414	NA	100.0%

\*Base is total cats across survey respondents

\*\*Margin of Error is 2.0% or less (+/- at 95% confidence)

\*\*\*Margin of Error is 4.0% or less (+/- at 95% confidence)

<b>Table 12. Reasons for Not Trying Solution for Anxiety*</b>				
	<b>Didn't seem necessary for the cat or me</b>	<b>Not enough time</b>	<b>Too expensive</b>	<b>Nothing looked like a solution that would work</b>
Not Mentioned	251	382	367	272
Mentioned	163	32	47	142
Total	414	414	414	414
Percentage**	39.4%	7.7%	11.4%	34.3%

\* Base is total survey respondents that answered the question "If you have not tried any solutions for your cat's anxiety or fear issue(s), why not?" with something other than "Other reason" or I have tried cat anxiety solutions"

<b>Table 13a. Incidence of Anxiety in Male Cats versus Neuter Status*</b>			
	<b>Neutered</b>	<b>Not Neutered</b>	<b>Total</b>
No Cat Anxiety	596	57	653
Yes Cat Anxiety	172	14	186
Total	768	71	839
% with Anxiety	22.4%	19.7%	22.2%
Margin of Error (+/- at 95%)	2.9%	9.3%	2.8%

\* Base is total male cats across survey respondents

<b>Table 13b. Incidence of Anxiety in Female Cats versus Spay Status*</b>			
	<b>Spayed</b>	<b>Not Spayed</b>	<b>Total</b>
No Cat Anxiety	592	68	660
Yes Cat Anxiety	208	20	228
Total	800	88	888
% with Anxiety	26.0%	22.7%	25.7%
Margin of Error (+/- at 95%)	3.0%	8.8%	2.9%

\* Base is total female cats across survey respondents

<b>Table 14. Anxiety Status based on Breed*</b>				
<b>Breed Name</b>	<b>No Anxiety</b>	<b>Yes Anxiety</b>	<b>Total</b>	<b>% with Anxiety</b>
Mixed	712	240	952	25.2%
American Shorthair	201	66	267	24.7%
Other	167	50	217	23.0%
Siamese	59	14	73	19.2%
Maine Coon Cat	34	8	42	19.0%
Siamese	34	2	36	5.6%

\*Base is breeds with 25 or more cats in the sample

**Table 15. Anxiety Status based on Cat Origin\***

	<b>Breeder</b>	<b>Friend/Family</b>	<b>Shelter</b>	<b>Rescue Group</b>	<b>Stray</b>	<b>Pet Store</b>	<b>Other</b>	<b>Total</b>
No Anxiety	59	390	280	118	321	46	99	1313
Yes Anxiety	17	97	93	38	110	24	35	414
Total	76	487	373	156	431	70	134	1727
% of Cats with Anxiety	22.4%	19.9%	24.9%	24.4%	25.5%	34.3%	26.1%	24.0%
Margin of Error (+/- at 95%)	9.4%	3.5%	4.4%	6.7%	4.1%	11.1%	7.4%	2.0%

\*Base is total cats across survey respondents

**Table 16. Anxiety Status based on Age at which Cat was Acquired\***

	<b>0</b>	<b>1</b>	<b>2 to 3</b>	<b>4 to 5</b>	<b>6 to 7</b>	<b>8 to 10</b>	<b>11+</b>	<b>Total</b>
No Anxiety	746	215	169	67	52	39	25	1313
Yes Anxiety	227	82	49	20	12	9	15	414
Total	973	297	218	87	64	48	40	1727
% of Cats with Anxiety	23.3%	27.6%	22.5%	23.0%	18.8%	18.8%	37.5%	24.0%
Margin of Error (+/- at 95%)	2.7%	5.1%	5.5%	8.8%	9.6%	11.0%	15.0%	2.0%

\*Base is total cats across survey respondents

**Table 17. Cat Origin compared to Whether or Not Anxiety Began After Receiving Cat\***

Age that Cat was Acquired	Always had the anxiety issue	Issue began after we received cat	Total	% of Cats whose anxiety began after receiving cat	Margin of Error (+/- at 95%)
Breeder	12	5	17	29.4%	21.7%
Friend/Family (non-breeder)	63	34	97	35.1%	9.5%
Shelter	59	34	93	36.6%	9.8%
Rescue Group	24	14	38	36.8%	15.3%
Stray	72	38	110	34.5%	8.9%
Pet Store	12	12	24	50.0%	20.0%
Other	20	15	35	42.9%	16.4%
<b>Total</b>	<b>262</b>	<b>152</b>	<b>414</b>	<b>36.7%</b>	<b>4.6%</b>

\*Base is total cats with anxiety

**Table 18. Counts of # of Cats in Household vs. # of Cats with Anxiety in Household\***

# of Cats in Household	# of Cats in Household with Anxiety					Row Totals
	0	1	2	3	4	
<b>1</b>	329	165	x	x	x	494
<b>2</b>	209	106	26	x	x	341
<b>3</b>	65	28	14	2	x	109
<b>4</b>	36	14	4	1	1	56
<b>Column Totals</b>	<b>639</b>	<b>313</b>	<b>44</b>	<b>3</b>	<b>1</b>	<b>1000</b>

\*Base is total survey respondents

**Table 19. Moved Homes after Cat Joined Family**

<b>536 (31.0%) said YES – they had moved homes after cat joined family</b>		<b>1191 (69.0%) said NO – they had NOT moved homes after cat joined family</b>
This event caused anxiety-related issues	This event did NOT cause anxiety-related issues	1191
210 (39.2%)	326 (60.8%)	

\*Base is total cats across survey respondents

**Table 20. New Person Moved into House**

<b>424 (24.5%) said YES – a new person had moved into the house after cat joined family</b>		<b>1303 (75.5%) said NO – a new person had NOT Moved into the house after cat joined family</b>
This event caused anxiety-related issues	This event did NOT cause anxiety-related issues	1303
125 (29.5%)	299 (70.5%)	

\*Base is total cats across survey respondents



**Table 21. Anxiety Symptoms in Cats with an Anxiety Issue**

<b>Anxiety Symptom</b>	<b># of Anxious Cats who experienced Symptom</b>	<b>Percentage of Cats who experienced Symptom</b>
Overall Change	412	99.5%
Shaking, Trembling, Cowering	285	68.8%
Restless or Will Not Settle (e.g. pacing, running around, etc.)	290	70.0%
Destructive Scratching or Chewing	152	36.7%
Aggressive Behaviors (e.g. growling, hissing, snapping, biting, etc.)	234	56.5%
Hiding (e.g. in tub, under bed, behind owner, etc.)	373	90.1%
Inappropriate Elimination (e.g. urinating, defecating, vomiting, etc.)	173	41.8%
Bolting or Trying to Escape	331	80.0%
Repetitive or Compulsive Behavior (e.g. spinning, licking, etc.)	109	26.3%
Clinging to Owner(s) - Attention Seeking	241	58.2%
Easily Startles	298	72.0%
Other (e.g. yawning, loss of appetite, etc.) (specify)	64	15.5%

\*Base is the 414 cats who experienced some type of anxiety. Note that at least 2 observations were missing from each symptom category.