



Technical Bulletin – Heartworm Statistics Update

The following information indicates the method of testing, the results, and the history of travel from all animals tested at Phoenix Central Laboratory from 2006 through 2017.

Number of Dogs and Cats Tested for Dirofilariasis

Year	Negative Adult Antigen (Ag)	Positive Adult Antigen (Ag)	Negative Microfilaria	Positive Microfilaria	Negative Feline Antibody	Positive Feline Antibody
2006 ²	3,784	145 (3.8%)	1,086	40 (3.5%)	N/A	N/A
2007	2,387	36 (1.5%)	657	16 (2.4%)	116	3 (2.5%)
2008	3,171	42 (1.3%)	806	17 (2.1%)	176	3 (1.7%)
2009	3,340	52 (1.5%)	1,006	31 (3.0%)	50	1 (2%)
2010	2,613	39 (1.5%)	647	9 (1.4%)	52	0 (0%)
2011	2,853	30 (1.1%)	674	9 (1.3%)	46	0 (0%)
2012	2,436	37 (1.5%)	710	9 (1.3%)	37	0 (0%)
2013	2,305	34 (1.5%)	689	9 (1.3%)	72	0 (0%)
2014	2,784	52 (1.8%)	777	12 (1.5%)	80	3 (3.6%)
2015	3,120	67 (2.1%)	905	20 (2.2%)	66	3 (4.3%)
2016	3,091	55 (1.7%)	788	19 (2.4%)	60	2 (3.2%)
2017	2,944	84 (2.9%)	783	32 (4.1%)	41	2 (4.8%)
2018	1945	68 (3.3%)	579	13 (2.2%)	32	0

Travel History for Positives:

2006: One native WA case; 5% had known history of travel; remainder Katrina rescue.

2007: 3 native WA cases; 67% had known history of relocation from Gulf Coast.

2008: 50% with known travel history to Gulf States; 26% born or relocated from other states/countries (California, Indiana, Hawaii, Illinois, Tennessee, Arkansas, Minnesota, Taiwan, South America); 14% native but travel outside Washington State, 10% unknown travel history.

2009: 50% with known travel to Gulf States; 21% born or relocated from other states/countries (South Carolina, Georgia, Colorado, Michigan, Illinois, Arizona, Missouri, Mexico); 29% unknown travel history, or animal has passed away.

2010: 39% with known travel history to Gulf States; 28% born or relocated from other states/countries (North Carolina, Hawaii, Kansas, Arizona, California, Tennessee, Taiwan, Mexico) 5% rescues with unknown travel history, 28% unknown travel history or passed away.

2011: 7 born or traveled to South/Gulf States (Texas, Louisiana, Mississippi, Alabama, Florida, Tennessee); 6 born or traveled to Southwest (California, Arizona, Mexico); 1 rescue; 1 passed away, 11 unknown, 2 Taiwan, 1 Alaska, and 1 Eastern Washington.

2012: Two native, 22 born or traveled to South/Gulf States (Texas, Louisiana, Mississippi, Alabama, Florida, Tennessee, Georgia, North Carolina); 8 unknown, 7 California, 2 died, 2 Indiana, 2 Japan, 1 Puerto Rico.

2013: 2 native, 1 Out-of-State, 12 born or traveled to South/Gulf States, 5 California, 1 East Coast, 1 Ohio, 1 Puerto Rico, 1 China, 2 Taiwan and 8 unknown.

2014: 14 Gulf States, 1 Oregon, 2 Eastern Washington, 3 California, 3 Georgia, 1 South Carolina, 1 North Carolina, 1 Virginia, 1 Michigan, 1 Korea, 1 Guatemala, 1 Oklahoma, 1 Eastern USA, 1 Puerto Rico and 6 unknown. Follow-up testing has not been included in travel history statistics.

2015 Jan - July: 14 traveled to South/Gulf states; 5 California, 2 Korea, 1 Mexico, 1 Illinois, 10 unknown.

2016: Travel to: 37 - South/Gulf States (Texas, Louisiana, Mississippi, Alabama, Florida), 2 - North Carolina, Kansas, Georgia, 1 - Virginia, Tennessee, Missouri, California, American Samoa, Japan, 9 - unknown, 2 - native.

2017: Travel history to: 32- South/Gulf States, 5-California, 3-Tennessee, Honduras, 2- Arkansas, South Korea, 1-Georgia, Mexico, Costa Rica, 27-unknown, 0-native

Heartworm Test Performance Characteristics: The feline heartworm antibody test used by Phoenix Lab is reported to have 96% sensitivity and 98% specificity to *D. immitis*. The canine heartworm antigen test sensitivity is dependent on worm load and sex of worm; 85% positive with one female adult worm, 95% with two, and nearly 100% positive with 3 or more female adult heartworms present. Specificity for the antigen kit is reported to be 100%.