

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 Lab from 2005 through *2016 (January through August).

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
*2016	2,516	36 (1.4%)	647	11 (1.7%)	44	1 (2.2%)
2015	3,120	67 (2.1%)	905	20 (2.2%)	66	3 (4.3%)
2014	2,784	52 (1.8%)	777	12 (1.5%)	80	3 (3.6%)
2013	2,305	34 (1.5%)	689	9 (1.3%)	72	0 (0%)
2012	2,436	37 (1.5%)	710	9 (1.3%)	37	0 (0%)
2011	2,853	30 (1.1%)	674	9 (1.3%)	46	0 (0%)
2010	2,613	39 (1.5%)	647	9 (1.4%)	52	0 (0%)
2009	3,340	52 (1.5%)	1,006	31 (3.0%)	50	1 (2%)
2008	3,171	42 (1.3%)	806	17 (2.1%)	176	3 (1.7%)
2007	2,387	36 (1.5%)	657	16 (2.4%)	116	3 (2.5%)

Travel History for Positives:

- **2016:** 26-traveled to or born in South/Gulf States, 1-Kansas, 1-American Samoa, 1-Japan, and 4-unknown.
- **2015:** 28-traveled to or born in South/Gulf States, 5-California, 10-Korea, 1-Mexico, 1-Illinois, 1-Pennsylvania, 2-Arizona, 1-Oregon, 1-American Samoa, and 14-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.
- **2013:** 2-native, 1-out-of-state, 12-traveled to or born in South/Gulf States, 5-California, 1-East Coast, 1-Ohio, 1-Puerto Rico, 1-China, 2-Taiwan, and 8-unknown.
- **2012:** 2-native, 22-traveled to or born in South/Gulf States (Texas, Louisiana, Mississippi, Alabama, Florida, Tennessee, Georgia, North Carolina); 8-unknown, 7-California, 2-died, 2-Indiana, 2-Japan, and 1-Puerto Rico.
- **2011:** 7-traveled to or born in South/Gulf States (Texas, Louisiana, Mississippi, Alabama, Florida, Tennessee), 6-born or traveled to Southwest (California, Arizona, Mexico), 1-rescue, 1-passed away, 2-Taiwan, 1-Alaska, 1-Eastern Washington, and 11-unknown.
- **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, and 28% unknown travel history or passed away.
- **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); and 29% unknown travel history, or animal has passed away.
- **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, and 10% unknown travel history.
- **2007:** 3-native WA cases; 67% had known history of relocation from Gulf Coast.

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%.