



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 2015.

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%)

Travel History for Positives:

- **2006²:** 1-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, and 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); and 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, and 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 South-west (California, Arizona, Mexico); 1-rescue; 1-passed away, 2-Taiwan, 1-Alaska, 1-Eastern Washington, and 11-unknown.
- **2012:** 2-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, and 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:** Traveled to or Born In: 28-South/Gulf states; 5-California, 10-Korea, 1-Mexico, 1-Illinois, 1-Pennsylvania, 2-Arizona, 1-Oregon, 1-American Samoa and 14-unknown.

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%.