

HAWAII STATE DEPARTMENT OF HEALTH

DISEASE OUTBREAK CONTROL DIVISION
 ENVIRONMENTAL HEALTH SERVICES DIVISION
 STATE LABORATORIES DIVISION

West Nile Virus Surveillance Report



I. Surveillance of West Nile Virus (WNV) (Mainland United States):

As of December 31, 2006, 48 states have reported human, avian, animal, or mosquito WNV infections to the Centers for Disease Control and Prevention (CDC) ArboNET (National Mosquito-borne Disease Surveillance Database). Hawaii and Alaska are the only 2 states that have reported no activity to date. During 2006, 4180 human cases, including 149 fatalities,* have been reported in 43 states. For more detailed information, refer to the CDC website at <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>.

* National data presented in this report are obtained from the CDC's Weekly WNV Summary.

II. Hawaii's Mosquito Surveillance:

Surveillance for WNV in mosquitoes continues on all islands. In 2006, 1,787 mosquito pools (~ 50 mosquitoes per pool) in Oahu have been tested by reverse transcriptase polymerase chain reaction (RT-PCR) at the State Laboratories Division (SLD; Figure 1). **All these mosquito pools have tested negative for WNV.**

In 2006, 986 mosquito pools (12-50 mosquitoes per pool) in Maui, Kauai, and Hawaii have been tested by Rapid

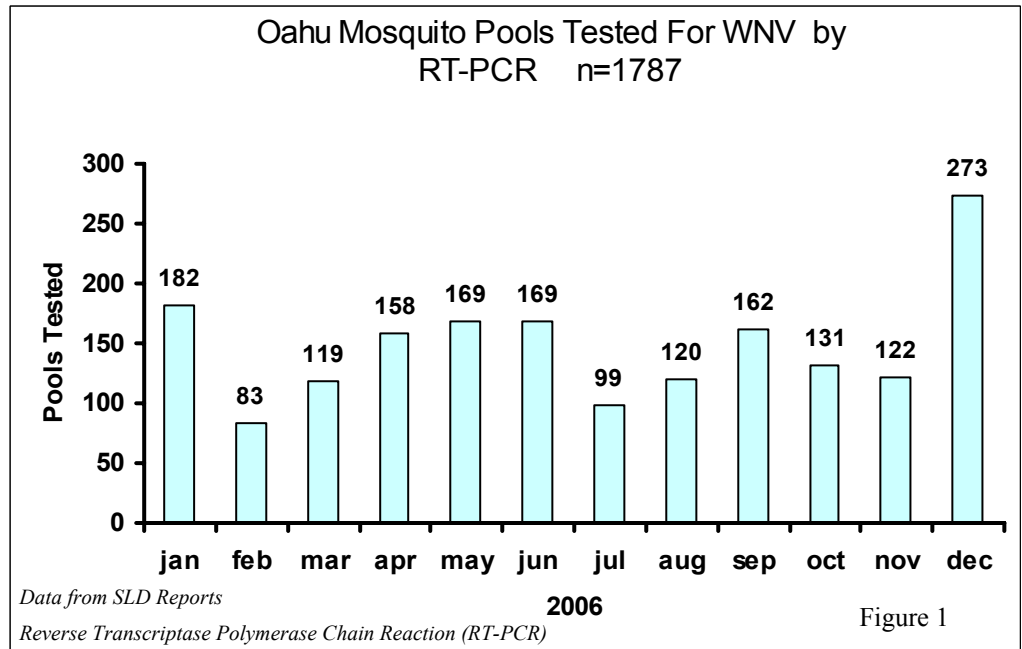
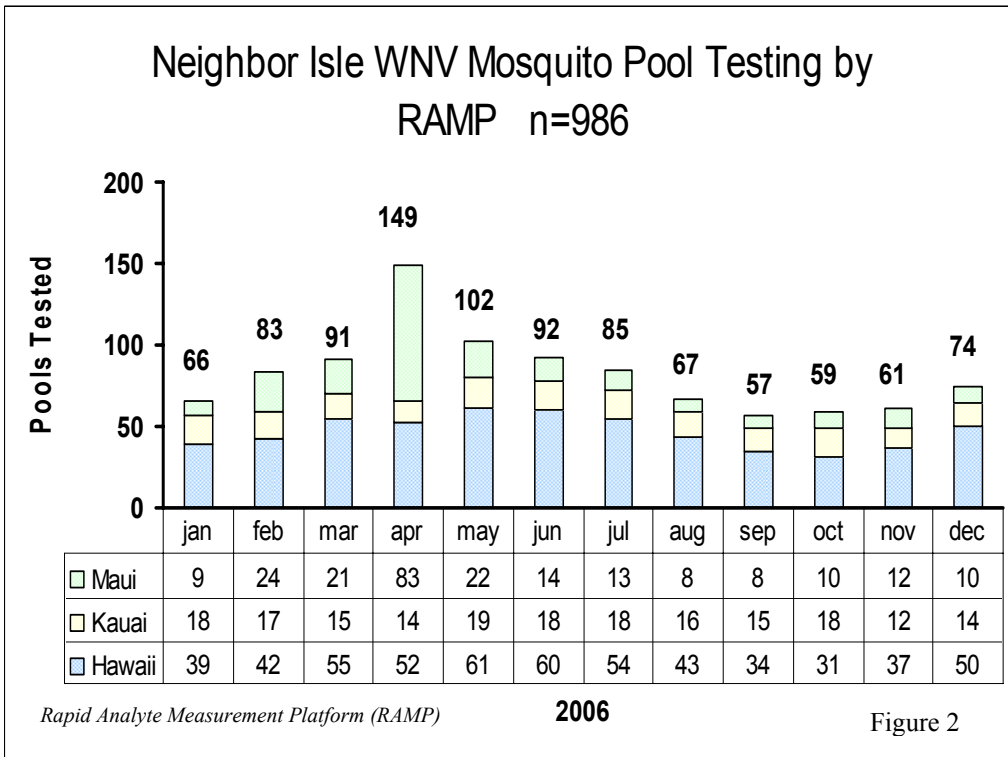


Figure 1

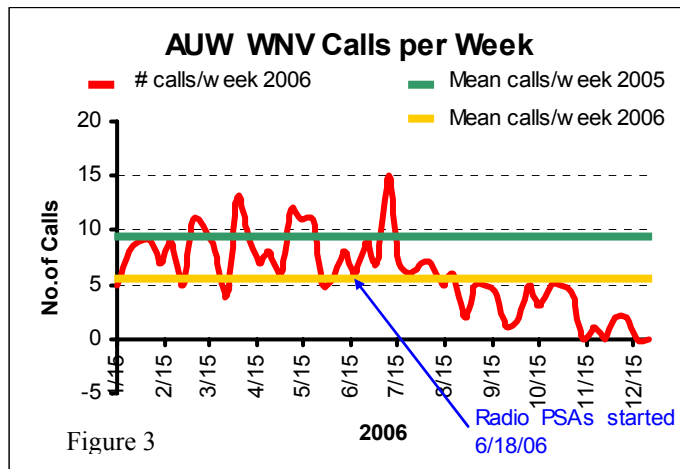
Analyte Measurement Platform (RAMP), and all have tested negative for WNV (Figure 2).



Mosquitoes are captured in special traps called gravid mosquito traps (Image 1). Gravid traps are designed to capture female mosquitoes that have had a blood meal

(a blood meal is when mosquito has bitten a person or animal and fed upon their blood) and are ready to lay their eggs. These traps are located near ports of entry, harbors, and wetlands.

III. Hawaii’s Dead Bird Surveillance:



Call
2 1 1
 To Report a Dead Bird

The public is encouraged to report dead birds via the Aloha United Way (AUW) 211 number. In 2006, AUW operators have fielded 315 calls from the public (Figure 3). This year there has been an average of 26 calls/month compared with 26 calls/month in 2005.

Dead Bird Testing:

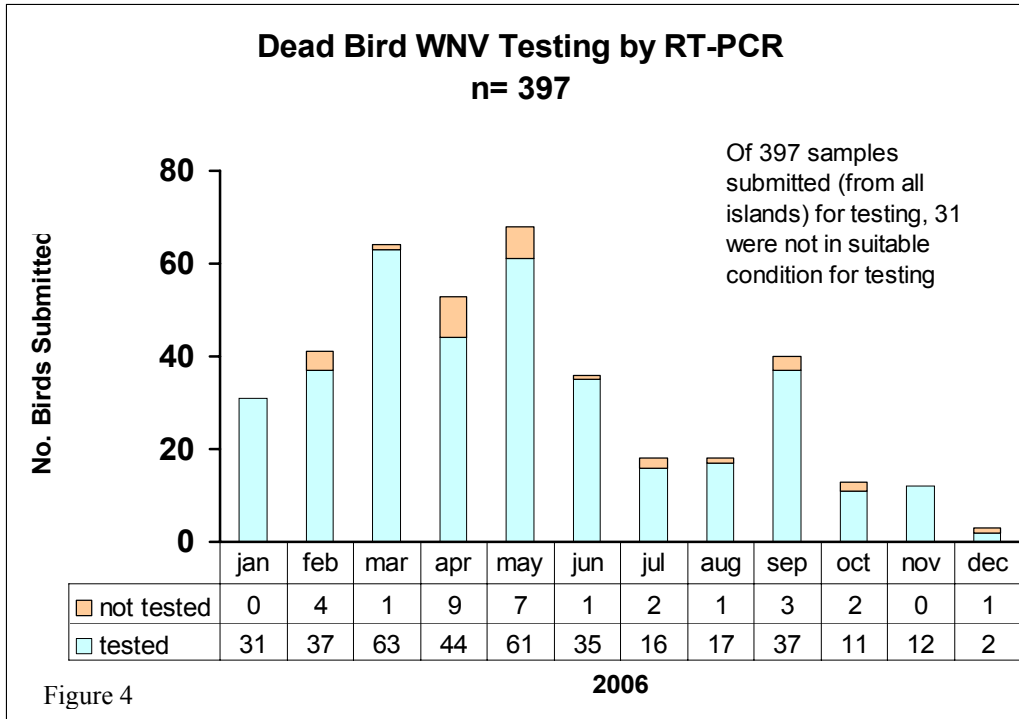


Figure 4

In 2006, the average number of dead birds submitted for WNV testing at SLD per month was 33 with a total of 397 birds submitted in comparison to an average of 35/month and a total of 426 birds submitted by in 2005 (Figure 4). **All have been RT-PCR negative.**

The predominant avian species tested in 2005 were doves and avian other (includes chickens), in which WNV does not normally cause mortality.

Since July 2006, we have focused testing to only species that are most susceptible to death when infected by WNV. The Department of Health (DOH) does not routinely test doves, pigeons, mynahs, or chickens for WNV. All other species submitted are tested. However, the public is still encouraged to report all dead birds.

Starting in mid January 2007, Oahu and Kauai Invasive Species Committees will pick up dead birds that are reported on these islands. A similar pick up system continues to operate on Maui.

IV. Live Bird Surveillance

Live bird surveillance on Oahu is limited to the major ports of entry: Honolulu Airport, Dillingham Airfield, and Barber's Point Airfield. In June 2006, testing of live birds was initiated at Maui's Kahului airport and in October of 2006 testing of live birds was also initiated at Kauai's Lihue Airport.

Live bird surveillance is a collaboration between many state and federal agencies including: the

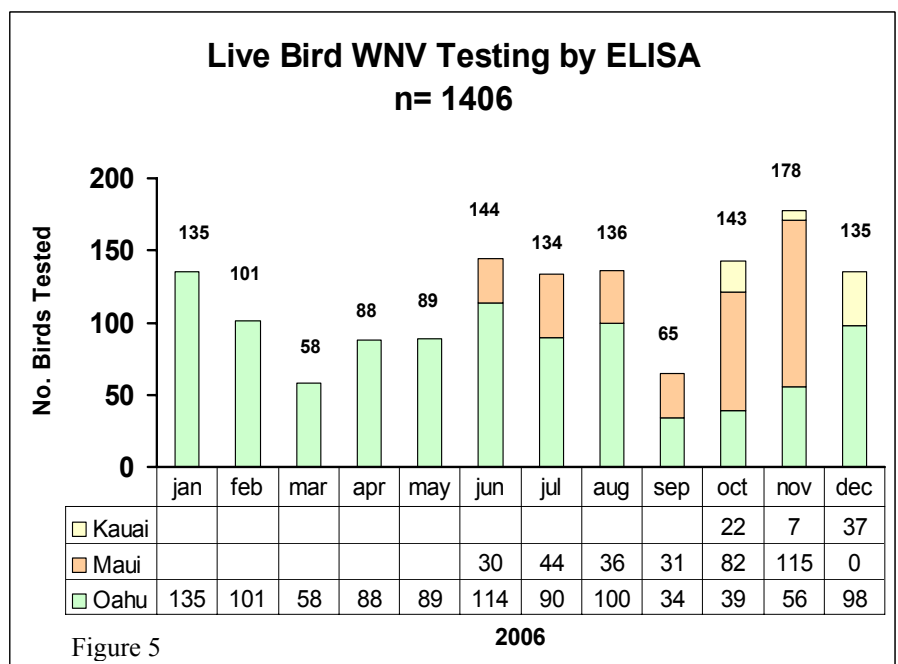
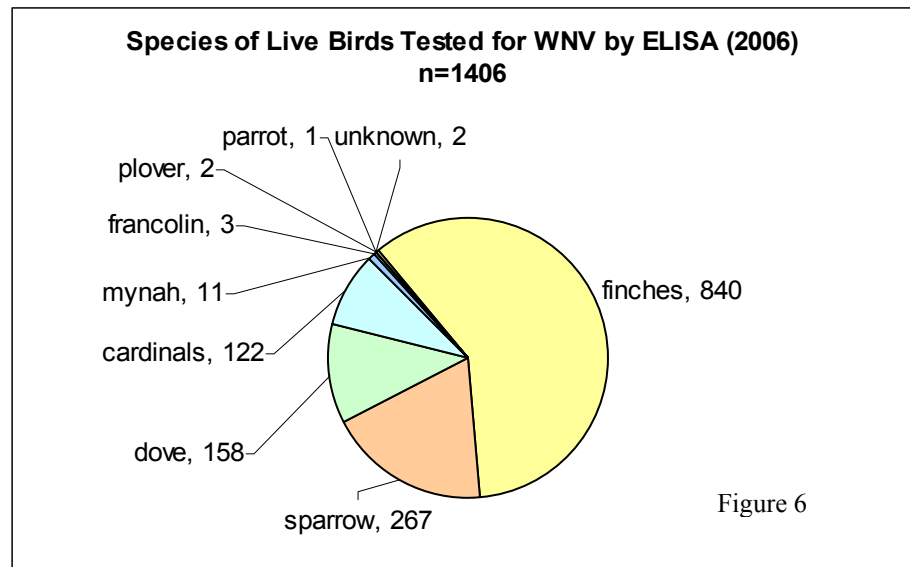


Figure 5

U.S. Department of Transportation (has a contract with the U.S. Department of Agriculture, Wildlife Services Division (USDAWS) to catch birds at all island's airports preventing birds from hitting planes), U.S. Geological Survey (on Oahu – collection of blood samples from these birds which are tested for WNV at SLD), and Division of Land and Natural Resources and the Department of Health (on Maui - draw and ship the blood samples from the birds to SLD for testing). Kauai's trapped birds are bled and samples shipped to Oahu by collaboration with USDA wildlife biologists.

Approximately 30 birds per week from each of these islands are captured, bled, and tested for WNV antibodies by a epitope-blocking enzyme-linked immunosorbent assay (ELISA) test at SLD (Figure 5). In 2006, 1406 live birds were tested for WNV antibodies as compared to 1214 live birds tested in 2005. **All tests have been negative for WNV.**

In contrast to dead bird surveillance testing, desirable species for live bird surveillance are those considered capable of surviving WNV infection. Figure 6 shows the species that were trapped and tested in 2006.



V. Equine Surveillance

The Hawaii Department of Agriculture mailed letters to all the licensed veterinarians in Hawaii working with horses and requested surveillance for horses with signs of neurological disease. Serum (blood) samples are submitted to the Hawaii Department of Agriculture by private veterinarians from horses with clinical signs of WNV and tested at SLD. In 2006, 2 samples were submitted and have tested **negative**.

VI. Human Surveillance

The DOH requests that physicians and diagnostic laboratories report neurological cases with symptoms consistent with WNV. In 2006, all 14 samples submitted have been **negative** for WNV. The Hawaii Bloodbank also tests all donated blood collected in Hawaii for West Nile virus.

VII. Summary

The State of Hawaii is **currently WNV free**. The public can help tremendously by keeping areas around homes free of mosquito breeding sites. This can be accomplished by emptying standing water in old tires, bottles, and planter overflow trays; cleaning clogged rain gutters; and using mosquito eating fish in fish

ponds and water gardens. For more information on ways you can control mosquitoes around your home visit the Vector Control web site at <http://www.hawaii.gov/health/environmental/water/vector/index.html>.

The public can also help by calling the Aloha United Way (AUW) 211 hotline to report any dead bird they might find. For more information on WNV and to report a dead bird, **call 211** or visit the HDOH website at www.hawaii.gov/health. The AUW 211 WNV hotline is operational from most land phones and many cell phones. It does not work from payphones. Alternate AUW WNV hotlines are 877-275-6569 (toll free), ASK-2000 (on Oahu), or 808-ASK-2000 (from neighbor islands).

Mosquito cartoon on first page by Michael Furuya.