

# American Mosquito Control Association's Report on 2006 Activities

The following report summarizes the environmental stewardship activities during 2006 by the seven core members of the AMCA's PESP Working Group:

- California Mosquito and Vector Control Association (CMVCA)
- Florida Mosquito Control Association (FMCA)
- Louisiana Mosquito Control Association (LMCA)
- North Carolina Mosquito Control Association (NCMCA)
- New Jersey Mosquito Control Association (NJMCA)
- Northeast Mosquito Control Association (NEMCA)
- Northwest Mosquito and Vector Control Association (NWMVCA)

It has been assembled from individual reports prepared by each member association.

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## **Activity 1: Working with Managers of Public Lands**

As part of the AMCA's IMM (Integrated Mosquito Management) approach to pesticide risk reduction, the AMCA will work with managers of public lands to implement focused and environmentally sound early intervention strategies to control mosquitoes. These interventions will typically include appropriate source reduction methods and use of biorational pesticides on targeted mosquito larvae. In specific cases, highly focused and target specific applications of mosquito adulticides may be employed. The overriding goal in selecting strategies will be to reduce risk by intervening at critical points, thereby preventing or mitigating mosquito development on (or dispersal from) public lands.

- 1.1 Descriptions of IMM Projects on Public Lands
  - 1.2.1 Source Reduction
  - 1.2.2 Acres Surveyed
  - 1.2.3 Acres Targeted
- 1.3 Outcomes of IMM Projects on Public Lands

### **California Mosquito and Vector Control Association 01:**

#### **Descriptions of IMM Projects on Public Lands (1.1)**

California Department of Fish & Game (DFG) - Grizzly Island Wildlife Refuge (GIWR), Suisun, CA. Best Management Practice (BMP): Replacement of worn flashboard risers in the following ponds: Pond 1A (100 ac. floodable)/Pond 2 (108 ac. floodable) plus swale excavation/ Pond 11B (105 ac. floodable)/Pond 22C (98 ac. floodable).

**Source Reduction (1.2.1)** - Acres of source reduction: total floodable acreage involved is 411 acres.

**Surveyed (1.2.2)** - Acres under larval surveillance: 411 acres project work is done out of 3,837 floodable acres.

**Targeted (1.2.3)** - Acres with targeted applications: potential for areas listed is 411 acres. The amount treated varies annually 1.3 exact effects on Pond 1A unknown at this time because pond was flooded year-round. No aerial pesticide application was necessary in 2006. Follow-up investigations are to be done. Initial comparisons with Pond 2 did show a marked reduction in acreage treated when compared to 2005. Follow-up investigations are to be done. Initial comparisons with Pond 11B also showed a marked reduction in the acreage treated when compared to 2005 there was no reduction in the acreage treated in Pond 22C because the pond was flooded approximately 1 month earlier this year. Multiple treatments were required. Additional information: It has been the goal of the Solano County, California Mosquito Abatement District (MAD) to find ways to reduce the amount of chemical applications made on the Grizzly Island Wildlife Refuge when-ever possible. The decreasing buffer between residential developments and the GIWR in conjunction with the arrival of West Nile Virus has made this an ever-increasing challenge. The advent of AB1982 Funding is an important part accomplishing this endeavor. The Solano MAD has worked cooperatively with staff and management of the Grizzly Island Wildlife Area in efforts to minimize mosquito production through water management when-ever possible. More BMP work is to be completed during 2007 as are follow-up. Work was done under AB1982 Funding for Best Management Practices on DFG Properties. More work was planned but not completed for various reasons. Unfinished work will be completed during 2007.

### **California Mosquito and Vector Control Association 02:**

1.1 Mosquito control in Compton Creek using Vectored WDG (a natural bacteria pesticide).

1.2.1 Acres of source reduction: N/A

1.2.2 Acres under larval control: 1 acre

1.2.3 Acres with targeted applications: 1 acre

1.3 This is an ongoing project

### **CMVCA 03:**

1.1 IMM on the Sutter National Wildlife Refuge 1.2.1 Acres of source reduction: N/A

1.2.2 Acres under larval surveillance: 1800 acres 1.2.3 Acres with targeted applications: 25 acres

1.1 IMM on the Sutter National Wildlife Refuge includes a highly targeted approach using biopesticides. Irrigation structures have been updated and augmented, resulting in a quicker “flood-up” during spring and fall irrigation. Water also leaves the ponds quicker after the spring irrigation. Vegetation management has been employed to reduce mosquito breeding. These strategies have reduced mosquito abundance. Consequently, fewer mosquitoes migrate from the Refuge into urbanized areas, which has led to less adulticiding.

#### CMVCA 04:

##### 1.1 IMM in Placer County, California

1.2.1 Acres of source reduction: N/A 1.2.2 Acres under larval surveillance: 1000 + acres

1.2.3 Acres with targeted applications: 1000 + acres 1.3 Advice is provided to responsible agency or owner regarding source reduction in terms of vegetation management, cultural practices, or physical control to reduce mosquito habitat. The responsible agency or owner then undertakes the maintenance and makes necessary changes. Over 1,000 acres of public land is under larval surveillance and treated as necessary.

#### CMVCA 05:

##### 1.1 IMM in Ventura County Watershed Protection District/Arroyo Simi, Moorpark, California

1.2.1 Acres of source reduction: 2-20 acres annually

1.2.2 Acres under larval surveillance: 30-50 acres annually

1.2.3 Acre with targeted applications: 1-10 acres annually

1.3 During 2005 & 2006, source reduction was completed by Ventura County Watershed Protection District while Moorpark Vector Control used biopesticides for effective larval control. No adulticides were used in Moorpark, California during 2005 & 2006

#### CMVCA 06:

##### 1.1 IMM in Santa Monica Mountains Conservancy (SMMC)/Serenata Vernal Pool area, Moorpark, California

1.2.1 Acres of source reduction: 0 1.2.2 Acres under larval surveillance: 1-4 acres/year

1.2.3 Acre with targeted applications: varies annually 1.3 SMMC conducted larval surveys during 2005 & 2006. No mosquito breeding was found because the source had dried up. No adulticides were used in Moorpark, California during 2005 & 2006

#### Florida Mosquito Control Association 01:

1.1 The Indian River Mosquito Control District (IRMCD, Vero Beach, Florida) works cooperatively with the U.S. Fish and Wildlife Service (USFWS) on their Pelican Island National Wildlife Refuge (PINWR). Similarly, the Brevard County Mosquito Control District (BCMCD, Titusville, FL) works in conjunction with the Merritt Island National Wildlife Refuge (MINWR) in the management of their refuge impoundments many of which are managed both for wildlife and mosquito control considerations. In both locations this work includes targeted salt-marsh mosquito larviciding with Bti on refuge salt marshes when needed. At the PINWR in Indian River County, as part of these cooperative efforts, each year during the Winter/Spring months, IRMCD manages one of their impoundments for wading bird feeding opportunities.

1.3 Source reduction on PINWR lands has reduced mosquito breeding which has led to less need for insecticides. This is evident in nearby non-impounded areas which typically require 10-15 aerial larviciding treatments per year. Also larviciding in non-impounded refuge lands has reduced adulticiding needs in nearby communities.

#### Florida Mosquito Control Association 02:

1.1 For the past several years, the Florida Keys Mosquito Control District has coordinated with the USFWS on mosquito control management within their District. In particular, they worked to demonstrate that allowing aerial larviciding with Bti on refuge islands resulted in the need for reduced adulticiding in nearby residential areas.

1.3 The initiation of aerial larviciding on refuge islands in some refuge areas in the Florida Keys has resulted in a greatly decreased need for adulticiding in nearby communities.

#### Florida Mosquito Control Association 03:

1.1 Throughout Florida, mosquito control offices work with the Florida Department of Environmental Protection (FDEP) in mosquito control management on State-owned lands. This is accomplished through the development of an Arthropod Control Plan by the mosquito control office which then must be approved by FDEP. These plans typically incorporate an IMM approach encouraging the use of source reduction and larviciding, rather than adulticiding.

1.3 By mosquito control offices adhering to Arthropod Control Plans on State-owned lands administered by the FDEP, in many locations adulticiding treatments are not necessary because of control through source reduction and by larviciding with the biopesticides Bti and methoprene.

#### FMCA COMBINED RESULTS:

1.2.1 Acres of source reduction: 30,000 acres

1.2.2 Acres under larval surveillance: 60,000 acres

1.2.3 Acres with targeted applications: 60,000 acres

LMCA 01:

1.1 Waddill Wildlife Area in East Baton Rouge Parish, Louisiana.

1.3 In cooperation with Louisiana State Wildlife and Fisheries, our control efforts have increased outdoor youth activities and programs at the site. Control efforts continue each year strengthening relations between agencies that heretofore had no interaction. The project will continue to help develop a permanent working partnership. LMCA 02: 1.1 Big Branch Marsh National Wildlife Refuge, Lacombe, Louisiana. A cooperative study is being conducted by Tulane University School of Tropical Medicine, U.S. Fish and Wildlife Service, and St. Tammany Parish Mosquito Abatement District to determine the indirect effects of the aerial application of Naled on the Red Cockaded Woodpecker.

1.3 The project is ongoing within the 15,000 acre site, but mainly in the Pine Forested portion of the Refuge. LMCA COMBINED RESULTS:

1.2.1 Acres of source reduction: N/A

1.2.2 Acres under larval surveillance: 1,430 acres

1.2.3 Acres with targeted applications: 325 acres

NCMCA 01: 1.1 US Army Corps of Engineers (COE) (Wilmington District) works closely with and funds local mosquito control on COE managed lands in Brunswick and New Hanover Counties, North Carolina.

1.2.1 Acres of source reduction: 1800

1.2.2 Acres under larval surveillance: 1800

1.2.3 Acres with targeted applications: Varies with weather conditions and flooding for maintenance dredging

1.3 This is an ongoing project. About 1800 acres are surveyed and treated. Using larvicides, water management and biological control with larvivorous fish, has dramatically reduced the need for adulticiding in and near the city of Wilmington and adjacent areas. Cooperation of the COE with local agencies in funding, site access and water management during dredging have led to the reductions.

NEMCA 01: 1.1 Connecticut - S.B. McKinney NWR - A wetland restoration/mosquito source reduction project was completed. The need to larvicide has been eliminated in the area that was treated. 1.3 Larviciding decreased this year as the project neared

completion. Continued monitoring has allowed documentation of changes in larval production.

NEMCA 02: 1.1 Massachusetts - Griswold Wetlands Park - Planning and development in partnership with the City of Revere allowed incorporating the cities flood storage concerns and our mosquito control concerns. 1.3 This project will resolve a persistent mosquito problem in a thickly settled residential area, reduce flooding and provide open space.

NEMCA 03: 1.1 Massachusetts - Open Marsh Water Management on select salt marshes in the City of Quincy. The project was to reduce and/or eliminate larval development of salt marsh mosquitoes. 1.3 It is estimated that the project totally eliminated larval development over targeted acreage. The actual reduction is to be verified following next season's larval counts. NEMCA COMBINED RESULTS: 1.2.1 Acres of source reduction: 2,000 1.2.2 Acres under larval surveillance: 200,000 acres 1.2.3 Acres with targeted applications: 100,000 acres NJMCA 01: 1.1 Five major projects of maintenance origin are ongoing. These projects are conducted by county agencies in cooperation with New Jersey Department of Environmental Protection (NJDEP) and US F&W. 1.3 Regarding large projects, there was a substantial reduction in salt marsh mosquito habitat. NJMCA 02: 1.1 Thousands of ditches and streams are cleaned each year by 21 county mosquito programs to reduce larval mosquito production. 1.3 A substantial reduction of mosquito habitat in manmade structures (detention ponds, etc) has been noted. Some reduction of habitat in stream corridors has occurred. NJMCA 03: 1.1 Source reduction is used first and foremost to reduce larval production. Results are measured by various surveillance techniques. 1.3 Source reduction has substantially reduced the need to conduct adult mosquito control. For example, effective reduction in larval salt marsh mosquitoes reduced the need for area wide spraying of adult mosquitoes. The result is decreased pesticide applications. NJMCA COMBINED RESULTS: 1.2.1 Acres of source reduction: 14,293 1.2.2 Acres under larval surveillance: 141,190 acres 1.2.3 Acres with targeted applications: 33,838 acres NWMVCA 01: 1.1 The Oregon Vector Control Association worked cooperatively to design a MOU between the Oregon Department of Fish & Wildlife (ODFW) and Oregon Vector Control Districts. 1.3 A 50%-60% reduction in adult mosquito trap counts was achieved. NWMVCA 02: 1.1 The Oregon Department of Fish & Wildlife Irrigon Wildlife Area Mitigation Project - ODFW deepened and removed cattails and Russian olive trees. 1.3 The project reduced larval breeding sites and adult mosquito harborage which was reflected by a 50%-60% reduction in adult mosquito trap counts. NWMVCA 03: 1.1 USFWS Umatilla National Wildlife Refuge Mitigation Project. The USFW improved the dike system and removed overgrown vegetation. 1.3 The project reduced larval breeding sites and adult mosquito harborage as reflected by a 50%-60% reduction in adult mosquito trap counts. NWMVCA 04: 1.1 Public catch basin treatment project. 1.3 The project resulted in record lows in mosquito trap numbers. NWMVCA 05: 1.1 Mosquito fish *Gambusia affinis* distribution (monitored by ODFW) project. 1.3 There was a noted reduction or elimination of mosquito larvae in private ponds. NWMVCA 06: 1.1 Umatilla Indian Reservation Wildlife Refuges. In Cooperation with the Confederated Tribes of the Umatilla Indian Reservation, Bti was used to treat wildlife refuges managed by the

Tribes. 1.3 Mosquitoes in these areas were reduced to a more tolerable level for the residents who are affected by them. MWMVCA COMBINED RESULTS 1.2.1 Acres of source reduction: 1,500 acres 1.2.2 Acres under larval surveillance: 111,480 1.2.3 Acres with targeted applications: 15,327

**ACTIVITY TWO: TRAINING MOSQUITO CONTROL WORKERS** - The AMCA believes that the greatest strides in reducing mosquito control pesticide risk are achieved through the continuing education of mosquito control workers. Consequently, numerous states around the country have educational programs, which lead to workers being able to achieve certification in "Public Health Pest Control" (or some similar title). The AMCA will continue to strongly encourage the implementation and enhancement of such education/certification programs.

**2.1 QUESTION ONE: NUMBER OF WORKERS RECEIVING MOSQUITO CONTROL TRAINING** CMVCA 787 FMCA 569 LMCA 74 NCMCA 420 NEMCA 161 NJMCA 309 NWMVCA 60

**2.2 QUESTION TWO: TYPE OF TRAINING RECEIVED (SEE 2.2.1 -2.2.5 BELOW)**

**2.2.1 NUMBER ATTENDING RECERTIFICATION (REGIONAL) TRAINING** LMCA 24 NCMCA 130 NEMCA 45 NJMCA 309 NWMVCA 21

**2.2.2 NUMBER ATTENDING STATE ANNUAL CONFERENCE** LMCA 48 NCMCA 83 NJMCA 140 NWMVCA 8

**2.2.3 NUMBER ATTENDING REGIONAL ANNUAL CONFERENCE** LMCA 1 NCMCA 11 NEMCA 200 NJMCA 22 NWMVCA 11

**2.2.4 NUMBER ATTENDING NATIONAL ANNUAL CONFERENCE** LMCA 12 NCMCA 6 NEMCA 5 NJMCA 27 NWMVCA 5

**2.2.5 NUMBER ATTENDING PERTINENT COLLEGE COURSES** MEMCA 4 NJMCA 7 NWMVCA 4

**2.2.6 NUMBER ATTENDING SPECIAL TRAINING SESSIONS/OTHER** LMCA 24 NCMCA 300 NEMCA 37 NJMCA 58 NWMVCA 50

**2.3 QUESTION THREE: NUMBER OF CERTIFIED WORKERS (CERTIFICATIONS)** CMVCA 1221 FMCA 1605 NCMCA 509 NEMCA 220 NJMVA 97 NWMVCA 61

**2.4 QUESTION FOUR: NUMBER OF NEW CERTIFIED WORKERS (NEW CERTIFICATIONS)** CMVCA 292 FMCA 317 NCMCA 6 NEMCA 22 NJMCA 3 NWMVCA 16

**2.5 QUESTION FIVE: ADDITIONAL INFORMATION** FMCA: 145 workers hold Public Health Aerial Pesticide Application Licenses, 86 workers have passed the Public Health Pest Control Director's Exam, 46 Training opportunities, approved for Florida Continuing Education Units, were provided during 2006 in Public Health Pest Control

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### **Activity 3: Disease Surveillance**

The AMCA believes that important strides in reducing pesticide use are achieved through careful surveillance for mosquito-transmitted pathogens of public health significance (e.g., the viruses that cause St. Louis encephalitis, West Nile encephalitis, eastern equine encephalomyelitis, western equine encephalomyelitis). If surveillance data indicates the presence of a pathogen, appropriate actions can be taken which can include more carefully directed pesticide applications.

**3.1 QUESTION ONE: PATHOGEN SURVEILLANCE METHODS** FMCA: A variety of surveillance techniques were used in Florida. Vector mosquito populations were monitored with CDC traps (some baited with CO<sub>2</sub>), bait cans (baited with chickens or dry ice), New Jersey traps, gravid traps, suction traps, and truck traps. Mosquito pools were tested for WNV via PCR, VecTests, RAMP

tests and cell cultures. Sentinel chicken flocks were used in 30+ counties to monitor for SLE, EEE, and WNV. Initial screenings were with HI tests. Subsequent confirmations were by IgM Elisa and/or serum neutralization tests. Dead wild birds were tested for WNV via PCR and cell cultures. Weekly reports were provided by the Florida Department of Health. LMCA: Many Louisiana districts use CO2 baited CDC light traps and gravid traps to collect mosquitoes throughout the parish. Mosquitoes are identified, pooled by location and tested for WNV, SLE, and EEE. Many are getting away from sentinel chickens. NCMCA: Surveillance consisted of sentinel flocks (20 in 16 North Carolina counties), mosquito pooling (500+ trap nights in 36 counties with about 55,000 mosquitoes trapped and identified to species) as well as follow up on veterinary reports of EEE?WNV positive animals. NEMCA: New Hampshire's arboviral testing for humans includes WNV, EEE, and LE. Depending upon availability of reagents, human specimens may also be tested for LE and Powassan virus. Mammalian, avian, and mosquito samples are tested for WNV and EEE only. New Hampshire does not conduct wild bird serology or sentinel bird testing. The Connecticut Department of Public Health made the decision in 2006 to halt the routine collection testing of wild birds for WNV. The Connecticut Department of Public Health lab and University of Connecticut Pathobiology Lab have the capability to test suspect birds if desired in the future. NJMCA: New Jersey Mosquito Control Association members collected mosquitoes with a variety of surveillance methods (e.g. CO2 baited traps, etc) and are tested using RT-PCR, ELISA and RAMP assays.

3.1.1 NUMBER OF MOSQUITO POOLS TESTED CMVCA 24,507 FMCA 1,261 LMCA 11,202 NCMCA 3,024 NEMCA 26,855 NJMCA 6,207 NWMVCA 2,604

3.1.2 NUMBER OF SENTINEL FLOCKS MAINTAINED CMVCA 245 (122 WNV +) FMCA 277 LMCA 77 NCMCA 20 NJMCA 16 NWMVCA 15

3.1.3 NUMBER OF DEAD BIRDS RECORDED CMVCA 46,138 LMCA 590 NEMCA 4,554 NJMCA 620 NWMVCA 127

3.1.4 NUMBER OF DEAD BIRDS TESTED CMVCA 6,507 LMCA 127 NEMCA 547 NJMCA 198 NWMVCA 56

3.1.5 NUMBER OF WILD BIRD SERA TESTED CMVCA 5,939 LMCA 2,796 NWMVCA 1

3.1.6 NUMBER OF MAMMALIAN SAMPLES TESTED CMVCA 516 Horses LMCA 1 NEMCA 30 NWMVCA 1

3.2 QUESTION TWO: OVERVIEW OF PATHOGEN SITUATION

FMCA: When ground or aerial treatments are made, it is usually a local decision, one which is based on surveillance data - sentinel chickens and other animal sera results, vector mosquito population data, etc. Most individual mosquito control offices responded to the WN and EEE threat with adulticide applications (both ground and aerial) totaling several hundred thousand areas treated. The adulticides used include permethrin, naled and malathion. Due to several hurricanes impacting Florida during the Summer of 2005, much early 2006 adulticiding was in response to these storms and to try and head off a disease outbreak. Larviciding was conducted by many mosquito control offices on a need basis (both ground and aerial). Larvicides used include Bti, methoprene (Altosid), temephos (Abate), Agnique, Vectolex (Bs) and Golden Bear Oil. As stated above, the hurricanes caused the need for much higher than normal larviciding in many locations

LMCA: Statewide WNV transmission to humans was low and wide spread. Ascension Parish, located just south of East Baton Rouge Parish, recorded the most cases. The northern part of the state had fewer numbers than previous years. During the first two weeks in November, after the main transmission season for WNV had passed, the state experienced significant rain resulting in enormous floodwater species hatch. Ground and



aerial adulticiding decisions were made based on known WNV risk factors and actual virus activity as determined by surveillance. Truck mounted equipment included LECO and London brands. At least four of Louisiana districts have Britten-Norman Islander aircraft equipped with Micronair rotary spray systems. Reporting members accounted for over 2 million acres sprayed by air and ground units. The primary pesticide used for ground adulticiding was Scourge/Oil mix. Naled (Dibrom) was the chemical of choice for aerial adulticiding. A combination of Bti products (granular and liquid) were used for 1st through 3rd instars, while light Oils were used for 4th and pupae during the height of the WNV season. NCMCA: Very light season with minimal arboviral activity. LaCrosse encephalitis is still out number one problem. NEMCA: For the first time, Atlantic Mosquito Control submitted speciated mosquito specimens to the State of Maine, CDC on August 24, 2006 for testing. Traps that were utilized were CDC Light traps and Gravid Traps (hay infusion water). Surveillance took place at the physical address of Atlantic Mosquito Control of 1903 Portland Road, Arundel, ME from August 22, 2006 until September 29, 2006. A total of 158 mosquitoes were captured and speciated. Atlantic had a total of 65 pools and ten (10) of the speciated pools were tested for WNV and EEE. All laboratory test results were negative for virus. A total of 16 species were identified. In Connecticut, positive EEE pools were isolated pools of bird-biting (Culiseta) mosquitoes. No adulticiding activity was conducted as a result. NJMCA: WNV positive mosquito (mostly Culex spp) pools were collected throughout New Jersey.

3.2.1 HUMAN CASES – WEST NILE VIRUS (WNV) CMVCA 290 FMCA 3 (Acquired out of state) LMCA 99 NCMCA 1 NEMCA 12 NJMCA 5 NWMVCA 3

3.2.2 HUMAN CASES – ST LOUIS ENCEPHALITIS (SLE) NEMCA 1 (Acquired out of country)

3.2.3 HUMAN CASES – EASTERN EQUINE ENCEPHALITIS (EEE) LMCA 1 NCMCA 1 (Suspected) NEMCA 5

3.2.4 HUMAN CASES – LACROSSE ENCEPHALITIS (LE) LMCA 2 NCMCA 18

3.2.5 HUMAN CASES – WESTERN ENCEPHALITIS (WE) None Reported

3.2.6 HUMAN CASES – MALARIA CMVCA 147 (thru Nov 2006) 3.2.7 HUMAN CASES – DENGUE CMVCA 9 (thru Nov 2006) 3.2.8 AVIAN CASES WNV – NUMBER OF POSITIVE DEAD BIRDS CMVCA 1,446 LMCA 40 NEMCA 90 NJMCA 43 NWMVCA 2 3.2.9 AVIAN CASES WNV – NUMBER OF POSITIVE WILD BIRDS FMCA 40 LMCA 15 3.2.10 AVIAN CASES – NUMBER OF SENTINELS CONVERTED CMVCA 640 FMCA 30 LMCA 80 NCMCA 2 3.2.11 AVIAN DATA SLE – NUMBER OF POSITIVE DEAD BIRDS None Reported 3.2.12 AVIAN DATA SLE - NUMBER OF POSITIVE WILD BIRDS LMCA 2 3.2.13 AVIAN DATA SLE – NUMBER OF SENTINELS CONVERTED FMCA 40 3.2.14 AVIAN DATA EEE – NUMBER OF POSITIVE DEAD BIRDS None Reported 3.2.15 AVIAN DATA EEE - NUMBER OF POSITIVE WILD BIRDS FMCA 120 NEMCA 5 3.2.16 AVIAN DATA EEE – NUMBER OF SENTINELS CONVERTED FMCA 79 NCMCA

35 3.2.17 AVIAN DATA WE – NUMBER OF POSITIVE DEAD BIRDS FMCA 1 (CA Group) 3.2.18 AVIAN DATA WE - NUMBER OF POSITIVE WILD BIRDS None Reported 3.2.19 AVIAN DATA WE – NUMBER OF SENTINELS CONVERTED CMVCA 14 3.2.20 MOSQUITO DATA WNV – NUMBER OF POSITIVE POOLS CMVCA 833 LMCA 770 NEMCA 269 NJMCA 264 NWMVCA 25 3.2.21 MOSQUITO DATA SLE – NUMBER OF POSITIVE POOLS LMCA 30 3.2.22 MOSQUITO DATA EEE – NUMBER OF POSITIVE POOLS NEMCA 200 NCMCA 5 NJMCA 1 3.2.23 MOSQUITO DATA WE – NUMBER OF POSITIVE POOLS CMVCA 18 FMCA 7 (CA Group) 3.3 QUESTION THREE: ADDITIONAL INFORMATION - If pesticide applications were targeted for a mosquito-transmitted disease threat during the past year, please explain how the application decisions were made, what equipment was used (e.g., ground or aerial ULV, ground or aerial larviciding), the approximate acreages treated and the chemical(s) used. CMVCA: 58 WNV+ horses & 32 WNV+ squirrels LMCA: For Louisiana in general, we believe emphasis on surveillance or WNV across the state and work being conducted by Louisiana State University students can be used to make the point that we are working to reduce pesticide use by better defining our target and making applications based on real time data. LMCA has awarded scholarships in support of at least 3 LSU students for their projects designed to give more information on the bionomics of WNV in Louisiana and this should help us narrow our targets, which will result in less pesticide use. A few districts maintain acres of roadside public right-of ways that are surveyed twice per week and are treated as needed. These areas are largely floodwater species with significant breeding that we believe enhance WNV activity in those areas. Although *Culex quinquefasciatus* is the primary target species for WNV, these treatments assist in controlling other potential vectors, ultimately reducing repeated adulticiding treatments.