



# Coachella Valley Mosquito and Vector Control District

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Date: July 14, 2010

Subject: Comments on the subject of the Public Notice/Application No.: SPL-2010-00142-LLC - Notice of Intent to Prepare Draft EIS/EIR and Hold a Public Scoping Meeting

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## BACKGROUND

The Coachella Valley Mosquito and Vector Control District (the District) staff and I have attended in the past several meetings, since July 1999, addressing the Salton Sea matter. At those meetings we expressed our concern by means of public comments or letters to the Salton Sea Authority regarding proposed measures for restoration of the Salton Sea. The major concern is related to the possible increase of mosquito populations at the north and south end of the Salton Sea caused by restoration efforts and proposed wetlands that will provide a breeding habitat for the primary vector mosquito, *Culex tarsalis* Coquillett. It is well known that constructed wetlands become extremely productive for mosquitoes after a short time of usage. The District is also concerned with the fact that proposed project did not suggest measures for mitigation of the problem that will affect public health caused by the increase of mosquito populations.

The District staff is directly involved in the control of mosquitoes that are vectors of West Nile (WN), Saint Louis encephalitis (SLE) and western equine encephalomyelitis (WEE) viruses. According to surveillance program data, these viruses have been active in southern California, especially in the Coachella and Imperial Valleys. The University of California Davis, Center for Vector-borne Disease Research data indicates that shoreline habitats along the Salton Sea are the focus of yearly virus amplification. The breeding habitat for the primary vector species, *Culex tarsalis*, covers a wide range of water quality, from fresh to very high salinity, up to 35 parts per thousands (ppt). Due to the highly adaptable nature of *Culex tarsalis* any shallow standing water should be considered as a potential breeding site. There is no question that control has played a major role in

the decrease of human cases of vector-borne diseases, however, the viruses are still here in their enzoonotic cycles between the mosquitoes and wildlife-birds.

#### WEST NILE VIRUS

West Nile virus is a single-stranded RNA flavivirus within the Japanese encephalitis antigenic complex that includes Japanese encephalitis virus in Asia, St. Louis encephalitis virus in North and South America, and Kunjin and Murray Valley encephalitis viruses in Australia. In nature, West Nile virus is maintained in a mosquito-bird-mosquito transmission cycle involving primarily *Culex* species mosquitoes. Birds are the natural reservoir hosts for the virus. Transmission occurs in a continuous cycle characterized by amplification during episodes of adult mosquitoes feeding on avian hosts. Infected birds commonly survive their infection; however, in North America, crows and blue jays have suffered significant mortality. Migratory birds use four major migratory routes (Pacific, Central, Mississippi, and Atlantic flyways) in North America. The Salton Sea and the wetlands along its shoreline are a critical part of the *Pacific Flyway* (a major migratory avian corridor) providing permanent habitat and seasonal refuge to millions of birds, representing hundreds of species. Most migratory game bird populations are monitored through the cooperative efforts of biologists from state, federal, and provincial agencies. West Nile virus has been detected in at least 138 species. Although birds, particularly crows and jays, infected with WN virus can die or become ill, most infected birds do survive. Based on the detection of WNV specific antibodies in these birds, scientists are seeing an increasing number of birds that have been exposed to and survived infection with WNV.

West Nile virus is an important public health problem in North America. In the last 10 years, the Center for Disease Control (CDC) received 29,681 reports of human disease cases due to WNV. Of these, over 12,000 were central nervous system (CNS) disease cases, and the others were either West Nile fever or clinically uncharacterized. Of the cases of WNV disease of the CNS, 1,163 were fatal. In addition, many survivors have experienced short-term or long-term sequelae. Since the mid-1990s, the frequency and apparent clinical severity of WNV outbreaks have increased.

The severe symptoms in humans can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.

- When the central nervous system (CNS) is affected, clinical syndromes ranging from febrile headache to aseptic meningitis to encephalitis may occur. About 60% to 75% of people with neuroinvasive WNV infection reportedly have encephalitis or meningoencephalitis, which is characterized by altered mental status or focal neurological findings.
- West Nile meningitis usually involves fever, headache, and stiff neck. Pleocytosis is present. Changes in consciousness are not usually seen and are mild when present.
- West Nile encephalitis, the most severe form of neuroinvasive West Nile viral disease, involves fever and headache, but there are more global symptoms. There is usually an

alteration of consciousness, which may be mild and result in lethargy but may progress to confusion or coma.

- West Nile poliomyelitis, a flaccid paralysis syndrome associated with WNV infection, is less common than meningitis or encephalitis. This syndrome is generally characterized by the acute onset of asymmetric limb weakness or paralysis in the absence of sensory loss.

During 1993-1994, a study by UC Davis was initiated to determine the seroprevalance of antibodies to WEE and SLE in residents of the Southern Coachella Valley. Outpatients attending the El Progreso del Desierto Family Health Center (1993-1994) and the Progressive Health Clinic (1994) in Coachella and the Indio Health Center (1994) in Indio. Overall, 19 (2.6%) and 118 (16.4%) sera were positive to antibodies to WEE and SLE, respectively. Significantly more patients from the Indio Health Center (4.5%) were WEE seropositive, whereas more patients from the El Progreso del Desierto Family Health Center (20.5%) were SLE-seropositive. All sera indicated that patients probably were not infected with WEE or SLE during 1993 or 1994, but have developed a certain level of immunity to both viruses.

#### **THE COACHELLA VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT ROLE**

The primary function of the Coachella Valley Mosquito and Vector Control District is to maintain a healthy living environment through the prevention of vector-borne diseases in this area. Under present conditions, the District has managed to control mosquitoes around the Salton Sea. The proposed project increases our concerns for public health, especially with the new virus, West Nile virus (WNV) that was first identified in the summer of 1999, in New York City, and in 2003, in California.

The most effective means for limiting the risk of any mosquito-borne virus infection is through elimination of mosquito breeding sites. Regrettably, the proposed projects dramatically increase the potential breeding area for mosquitoes. Additionally, none of the proposals provide data on:

- a. Specific type for the construction of a shallow habitat pond complex
- b. Increase of currently 50-70 acres of productive mosquito breeding habitats to potentially over 2,000 acres
- c. Possible measures of mitigation that will affect public health caused by the increase of mosquito populations.
- d. Participation of a local health or vector control institutions as a consultant for the proposed project.

Proposals concerning the restoration of the Salton Sea must address issues of public health that involve mosquito-borne diseases. Because Application No.: SPL-2010-00142-LLC - Notice of Intent to Prepare Draft EIS/EIR does not address the potential increase of mosquito populations in the area or present substantial evidence of measures of mitigation to reduce the effect on public health, the Coachella Valley Mosquito and Vector Control District cannot support the Application.

Additionally, the California Department of Public Health Best Management Practices for mosquito control is available on their website for your review.

[www.cdph.ca.gov/HealthInfo/.../CDPHBMPMosquitoControl16\\_08.pdf](http://www.cdph.ca.gov/HealthInfo/.../CDPHBMPMosquitoControl16_08.pdf)

If you have further questions please feel free to contact General Manager, Branka B. Lothrop, PhD, or Scientific Operations Manager, Jeremy Wittie, MS, at (760) 342-8287. The District office hours are 7:30 am – 4:30 pm, Monday through Friday.

Sincerely,



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