

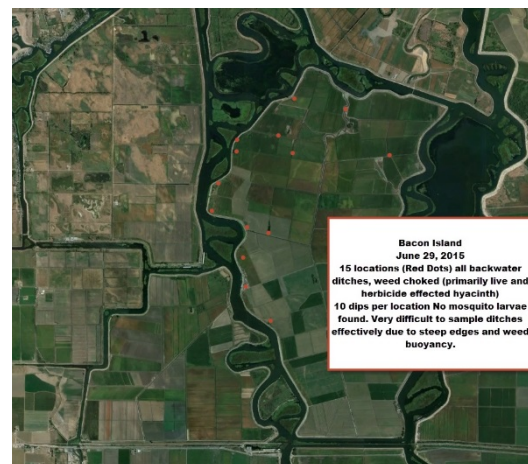
Progress Report CCMVCD February 2018

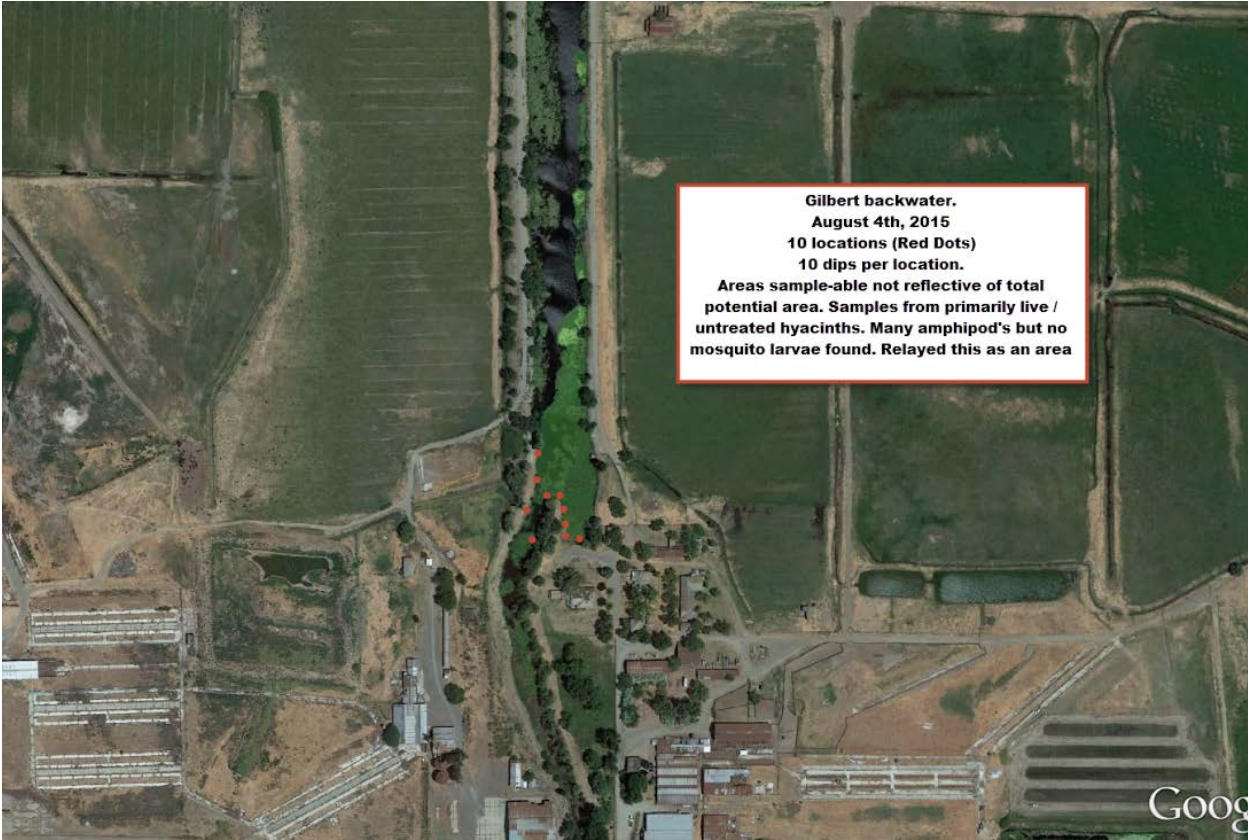
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Collaborating DRAAWP Agencies: USDA-ARS, UC-Davis Department of Entomology and Nematology

Collaboration assessing aquatic weed distribution and abundance in the Sacramento/San Joaquin River Delta and to help develop improved methods of estimating their effects in mosquito populations

In 2014 and 2015 the Contra Costa Mosquito and Vector Control District (CCMVCD) assisted USDA-ARS staff in locating water hyacinth locations that could be potential habitat for mosquito populations in Contra Costa County and that could be subject to mosquito control treatments. Since 2015, CCMVCD has sampled water hyacinth-infested backwater and canal sites for the presence of mosquito larvae. In 2015 extensive sampling was conducted on the proximities of Bethel Island, Bacon Island, Jersey Island, and Oakley. Mosquito larvae were not found in floating aquatic weed-infested edges of sloughs, or in non-navigable waterways such as irrigation ditches and ag return water ditches covered with healthy water hyacinth. The conclusion was made that healthy floating aquatic weeds do not harbor large populations of mosquito larvae. It was also realized that sampling from a boat causes disturbance of the water surface prior to sampling, potentially reducing mosquito larvae counts below what would naturally occur in the absence of this disturbance.





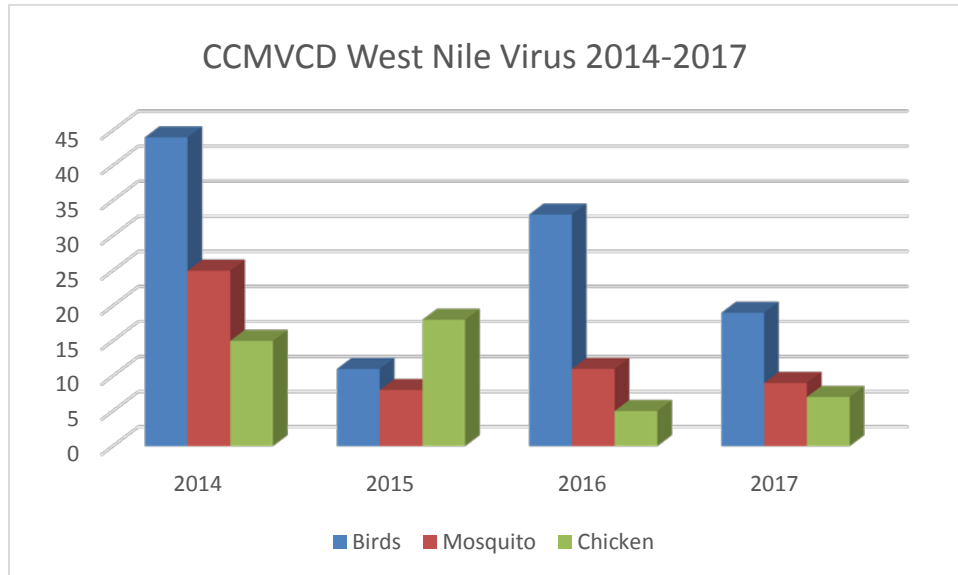


Collaboration to provide mosquito immatures for tank studies of effects of aquatic weeds

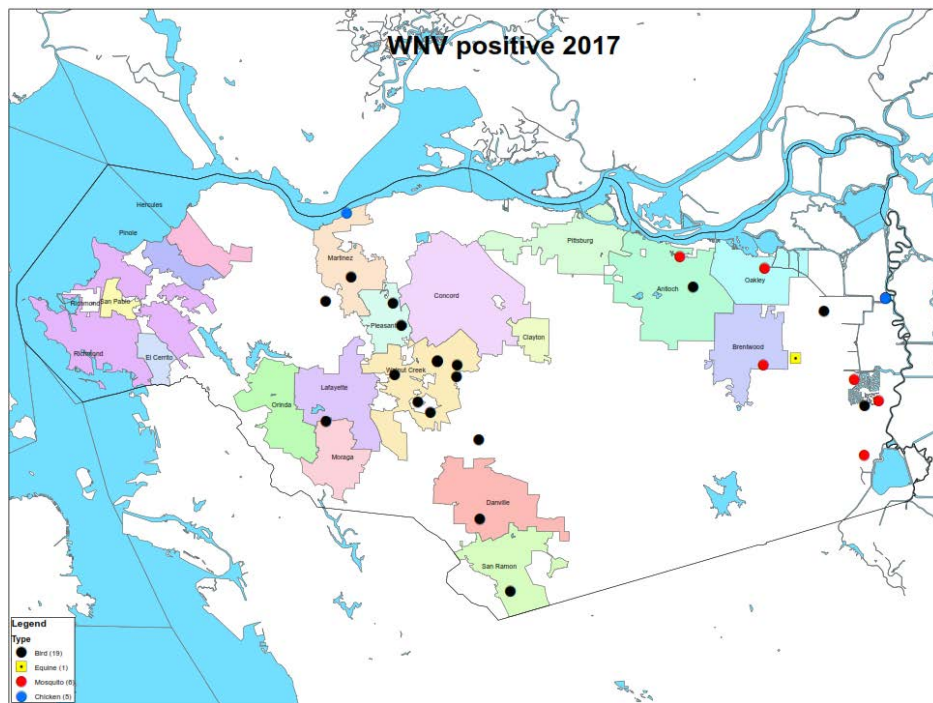
In 2015, the CCMVCD provided about 500 egg rafts of *Culex* mosquitos for a Ph.D. student, (now) Dr. Rakim Turnipseed, then a student in the Dept. of Environmental Science and Policy, UC-Berkeley and USDA-ARS intern. These were used for a study of the effects of floating water hyacinth, floating and rooted water primrose, and submersed Brazilian waterweed in tanks on survival of the mosquito larvae resulting from egg hatching.

Regular surveys for West Nile Virus-vectoring mosquitos

In general, 2017 was a mild year for mosquito populations and West Nile virus activity in the county. Dense patches of aquatic weeds, which would be more of a concern for mosquito populations in peri-urban areas, were not as observed as previous years, maybe due to the winter of 16-17, and also improved aquatic weed management by the Division of Boating and Waterways-CA Parks.



In 2017, all positive West Nile virus mosquito samples were found in the East part of the county. Non-navigable waters, backwater sloughs, any areas where dense weed patches can occur, and areas difficult to access for treatment continue to be problematic for conducting mosquito surveillance and control.



Assisting with the rearing and release of new biological control methodologies for invasive

aquatic plants in the Delta.

Since April 2015 the CCMVCD has hosted two colonies of the water hyacinth planthopper in the fisheries greenhouse to assist the USDA-ARS with its efforts to release the planthopper at new sites in and near the Delta. In 2016 the CCMVCD provided 16,000 planthoppers for a release at one new site in the San Joaquin River watershed, in the Central Valley (Turlock area). In 2016-2017 the CCMVCD provided about 15,000 planthoppers for laboratory studies of toxicity of aquatic weed herbicides to the planthopper, and also studies of the toxicity of the planthopper itself as food for threatened and endangered fish species in the Delta.

