Investigation of the Mosquito Abatement and Vector Control District

Introduction

In the early 1980s, citizens of Supervisorial Districts 2 and 4 were logging complaints to the Board of Supervisors about the annoying mosquito problem. In 1983, the Board of Supervisors established the Mosquito Abatement and Vector Control District (MAVCD). Supervisorial Districts 1, 3, and 5 did not have the same difficulty and were not included in the MAVCD.

The MAVCD investigates complaints by locating the breeding ground of the mosquito infestation and eliminating it. The MAVCD is funded through a property tax assessment to properties in the district. Its services are free to the public. People who live outside the district must contact a private company and pay for these services.

There are fifteen different types of mosquitoes in the County of Santa Cruz and three are known carriers of the West Nile Virus. The MAVCD monitors several sites near known mosquito breeding grounds. The MAVCD lays traps and counts the type and number of mosquitoes in each trap. The MAVCD freezes the trapped mosquitoes and sends them to the state Viral and Rickettsial Disease Laboratory (VRDL) at UC Davis for analysis. A second method of monitoring is done by taking blood samples twice a month from a flock of chickens located at Watsonville High School, which is located in the MAVCD. The high school was chosen for the site of the chickens for two reasons. The first is because the school is located between several bodies of water (the sloughs and Pinto Lake). The second reason is that the chickens are used as an educational tool for the students at the high school. The samples are submitted to the state VRDL and analyzed for traces of infectious diseases including the West Nile Virus. These monitoring methods alert the county to increases in the mosquito population and potential health threats.

To control the mosquito population, the Mosquito Abatement and Vector Control District:

- conducts educational programs at schools, fairs, and other public events
- distributes mosquito-eating fish to residents of the district
- applies three types of larvicides: microbial, oils, and an analog of juvenile hormone

Larvicides prevent the mosquitoes from developing beyond the adolescent stage, before they are capable of breeding. Microbials and analogs are not hazardous to humans and wildlife. Oils are potentially harmful to fish and other aquatic organisms and are not used in environmentally sensitive areas. The MAVCD is responsible for not altering the ecological balance. The use of larvicides allows birds, lizards, and other creatures to continue to feed on the mosquitoes.

The Mosquito Abatement and Vector Control District is responsible for locating, monitoring, and controlling the mosquito population in Supervisorial Districts 2 and 4, the southern part of the county, primarily to prevent the spread of disease. The West Nile Virus was first detected on the east coast of the United States in 1999. As of January 2003, the virus has killed 259 humans,

hundreds of birds, and an unknown quantity of other animals such as horses in the United States of America. The MAVCD, Santa Cruz health officials, and the Center for Disease Control (CDC) expect the West Nile Virus to spread throughout the entire county by the end of 2003. Although the West Nile Virus is a cause of consternation for health officials in Santa Cruz, malaria and encephalitis pose greater threats to public health.

Scope

Concerns over the West Nile Virus led the 2002-2003 Grand Jury to investigate the Mosquito Abatement and Vector Control District. The Grand Jury investigation included:

- how the district monitors the mosquito population
- the extent of the threat posed by the West Nile Virus
- whether the district should be expanded to cover the entire county

Sources

The Grand Jury interviewed personnel from the MAVCD, the County Department of Environmental Health Services, the County Department of Agriculture, and people who have used the services of the MAVCD. The committee reviewed the 1999-2000 Biennial Report of the Santa Cruz County Mosquito Abatement and Vector Control District. The committee also reviewed the following websites:

- Center for Disease Control (CDC) (www.cdc.gov)
- Mosquito Buzz (www.mosquitobuzz.com)
- U.S. Environmental Protection Agency (EPA) (www.epa.gov)
- National Pesticide Information Center (NPIC) (npic.orst.edu)

Findings

1. The purpose of the MAVCD is to monitor breeding grounds, regulate the mosquito population, and control the spread of mosquito borne disease. The district carries out these duties by:

    a) conducting various educational programs
    b) monitoring known breeding grounds
    c) sending frozen mosquitoes to UC Davis for testing
    d) sending chicken blood samples to the VDRL state lab for disease testing
    e) applying larvicides and distributing mosquito eating fish

2. West Nile Virus and other forms of mosquito borne diseases are a threat to all of Santa Cruz County according to the CDC and Santa Cruz health officials.

3. The south portion of the county, Supervisorial Districts 2 and 4, is currently included in the MAVCD.

4. The MAVCD is funded by a property tax assessment.

5. The cost of extending the MAVCD to the unincorporated areas of Supervisorial Districts 1, 3, and 5 is expected to be $340,000 the first year to increase the staff from 3 to 6 and to purchase new equipment. The annual future cost is estimated to be $270,000.

6. The combined cost for the three cities (Capitola, Santa Cruz, and Scotts Valley) not currently covered by the MAVCD should be approximately $220,000 a year.

7. The cost to cover all of Santa Cruz County (unincorporated areas and the cities) as of March 17, 2003 will be paid by an estimated property tax assessment of $8 to $10 per parcel.

Conclusions

1. The MAVCD is doing an outstanding job of controlling potentially deadly pests in the southern portion of the county.

2. Extending the district to the entire county would benefit the northern portion of the county.

Recommendations

1. The Board of Supervisors should extend the Mosquito Abatement and Vector Control District to the entire county.

Responses Required

Entity	Findings	Recommendations	Respond Within
Santa Cruz County Board of Supervisors	1-7	1	60 Days (Sept. 2, 2003)