

EYE GNATS IN SAN DIEGO COUNTY

INTRODUCTION

Counties in central and southern California are home to a genus of fly known as the eye gnat (*Hippelates spp*). The eye gnats are very small flies (1.5-2.5mm long) that frequently congregate around the eyes, as well as mucous and sebaceous secretions, pus, and blood. Some species are attracted to the genital organs of mammals; *Hippelates spp* flies often hover around the body orifices of calves, yearlings, pregnant heifers, and lactating cows. They feed on lacrimal fluid, fatty body secretions, milk droplets, and on secretions at the tips of the teats of animals. Eye gnats also serve as vectors for *Arcanobacterium pyogenes* (summer mastitis) and *Moraxella bovis* (pinkeye).¹

The 2009/2010 San Diego County Grand Jury (Grand Jury) conducted a study of the effects of eye gnats and current efforts to control the problem in San Diego County (County). Citizens complain that an infestation of eye gnats has a severe negative effect on the quality of life in County communities from Escondido to Jacumba. Some of the negative effects are: the suffering of pets unable to defend against the eye gnat swarms; severe limits on outside activity like sports, outdoor cooking, and gardening; limits on outdoor school ground activities including physical fitness and lunch time meals; and economic loss to business like prevention or delay of residential and commercial development, and reduced real estate property values.

During 2008/2009, University of California researchers determined that a major source of eye gnat infestation is organic farming. Techniques employed in organic farming provide a combination of soil, moisture, and fertilizer that eye gnats thrive in.²

This Grand Jury study found that eye gnat infestation is a long-standing pest problem. The economic and recreational damage this problem causes are not easily solved.

INVESTIGATION

The Grand Jury interviewed affected residents, school officials, County officials, subject matter experts, and business operators. Site visits were conducted at County locations that generate eye gnat infestation complaints. Research revealed that existing County ordinances and State law relating to pest control and the abatement of public nuisances appear to provide sufficient authority to local agencies to intervene in the eye gnat issues. Additionally, the Grand Jury researched pest control efforts in other California counties to determine if their vector control programs or similar departments have authority over the control of eye gnats.

The San Diego County Vector Control Program (VCP) is a branch within the San Diego County Department of Environmental Health. The VCP works to monitor and control

¹ The Merck Veterinary Manual, <<http://www.merckvetmanual.com/mvm/htm/bc/71717.html>>

² Bryan Vander Mey and James Bethke, 2008-2009 Jacumba Eye Gnat Research Project (University of California Cooperative Extension San Diego County)

vectors and the diseases the vectors carry. The VCP has been reducing and controlling mosquitoes and other vectors since the 1930's.

The San Diego County Department of Agriculture/Weights and Measures (AWM) regulates the use of pesticides and certain organic farming. The County Farm and Home Advisor provides information on agriculture practices to growers.

Riverside County formed the Coachella Valley Mosquito Abatement District in 1928 to control the eye gnat. *“During the mid 1920s, eye gnats (Hippelates spp) had become a significant problem in the Coachella Valley. Mass meetings were held resulting in petitions sent to the University of California, the State and County Boards of Health and Federal Government asking for immediate assistance. The concern was, not just the nuisance that eye gnats were causing, but that eye gnats are potential mechanical vectors of conjunctivitis (“pink eye”).”* The District evolved to become the Coachella Valley Mosquito and Vector Control District (CVMVCD). Today, the CVMVCD considers eye gnats to be vectors in general. The eye gnat is included in the CVMVCD's vector control efforts.³

California Health and Safety Code, §2002 (k) defines a vector as any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates.

Until October 21, 2009 San Diego County Code of Regulatory Ordinances section 64.204.-*Definitions*-included “flies” in the definition of a vector and a public nuisance.⁴

On October 21, 2009, The San Diego County Board of Supervisors adopted Ordinance # 10019 (N.S.) amending Title 6 of the San Diego County Regulatory Code (SDCCRC) relating to vector abatement and control. The changes in the County Ordinance were proposed to “cleanup and clarify existing regulations and update County regulations to make them consistent with State Law”. The amended ordinance, in Section 64.201 resolved to delegate “vector” control duties to the Department of Environmental Health. SDCCRC section 64.202.-*Definitions*-amended the definition of a vector and public nuisance as follows:

(e) *Public nuisance* means any of the following:

- (1) Any property, excluding water that has been artificially altered from its natural condition so that it now supports the development, attraction or harborage of a vector. The presence of vectors in their development stages on a property is prima facie evidence that the property is a public nuisance.
- (2) Any water that is a breeding place for vectors. The presence of vectors in their development stages in the water is prima facie evidence that the water is a public nuisance.

³ Coachella Valley Mosquito Abatement District. (2009). <http://www.cvmvcd.org>

⁴ Ordinance 9273 (N.S.) adopted 11-15-00. (San Diego County Code of Regulatory Ordinances)

- (3) Any activity that supports the development, attraction or harborage of vectors or that facilitates the introduction or spread of vectors.
- (f) “Vector” means an animal capable of transmitting the causative agent of human disease.

SDCCRC section 64.203-*Scope and Authority*- states, in part, that the Director of the County’s Department of Environmental Health when acting pursuant to this chapter may exercise the following powers on any property located in the unincorporated area of the County or in any incorporated city in the County:

- (a) Conduct surveillance programs and other appropriate studies of vectors and vector borne diseases.
- (b) Take any necessary and lawful action to prevent the occurrence of vectors and vector borne diseases.
- (c) Take any necessary and lawful action to abate or control vectors and vector borne diseases.⁵

The limitation of the definition of “vector” in SDCCRC section 64.202(f) through reference to disease transmission casts some doubt on whether the non-disease nuisance impacts of eye gnats are sufficient to trigger the nuisance abatement authorities of the County Vector Control Program. However, the County and each city within its incorporated area, have the authority to abate public nuisances under sections 3479 and 3490 through 3496 of the California Civil Code. The definition of “nuisance” that applies for purposes of this authority includes “anything ... that is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property ...” This nuisance abatement authority is applicable to nuisances caused by eye gnats regardless of whether those gnats are actually transmitting the causative agent of human disease.” Further, researchers indicate that the eye gnat is capable of transmitting human disease.

AWM and VCP personnel responded to specific complaints of eye gnat infestation. The complaints date back over five years. A common complaint is that eye gnats immediately swarm individuals as they step outside. Eye gnats also swarm farm animals and pets. The eye gnats attempt to enter any available orifice on the person or animal. AWM and VCP personnel met with complainants in the affected areas to gather information and provide strategies to combat eye gnats. AWM and VCP personnel met with owners and managers of organic farms. The County personnel met with the growers to encourage best management practices to reduce eye gnat infestation. They also supported the University of California Cooperative Extension Eye Gnat study.

Eye gnats are very common in warm, dry regions. They primarily develop in light, well drained, sandy soils, that are freshly plowed, and contain abundant organic matter (such as cover crops or manure) and sufficient moisture. Additionally, the eye gnat requires undisturbed locations for breeding and maturing. Growers constructed low barriers surrounding the agricultural fields. Growers also deployed traps in an effort to reduce the number of eye gnats. The growers continue to develop and employ different strategies to

⁵ Ordinance No. 10019 (N.S.) adopted 10-21-09. (San Diego County Code of Regulatory Ordinances)

combat the problem. Persons interviewed by the Grand Jury describe the 2009 summer eye gnat infestation, in terms of numbers of eye gnats, as more severe than any previous year. Area residents attribute the increase to the increase in acreage of nearby organic farming.

FACTS AND FINDINGS

Fact: Eye gnat infestation occurs in certain areas of San Diego County.

Fact: Animals capable of producing human discomfort or injury are included in the State of California Health and Safety Code definition of a vector.

Finding 01: There is a negative impact on the quality of life for persons and animals living in areas of eye gnat infestation.

Finding 02: Efforts by the County of San Diego to address eye gnat infestation have not reduced the number of complaints or the severity of the eye gnat infestation as described by residents in the affected areas.

Finding 03: The County of San Diego has the ability and authority, through existing County regulatory codes, to increase the focus and effectiveness of efforts to control the eye gnat problem.

RECOMMENDATIONS

The 2009/2010 San Diego County Grand Jury recommends that the Chief Administrative Officer of San Diego County direct that:

- 10-20: The Director of Environmental Health include and designate the eye gnat a priority in the efforts of the Community Health Division's Vector Control Program.**

- 10-21: The Director of Environmental Health assure that the Vector Control Program specifically require facilities that may generate an eye gnat infestation include the vector abatement protocols as an element in the use permit process, if one is required, and for any other location, regardless of the need for a permit.**

- 10-22: The Director of Environmental Health direct the Vector Control Program to require the owners of such facilities to notify the residents impacted by any eye gnat infestation as well as any corrective actions to be taken.**

- 10-23: The Director of Agriculture/Weights and Measures require that all existing, newly established or proposed, and closed or discontinued agricultural developments, control and correct any source of vector harborage or breeding impacting the community at large.**

REQUIREMENTS AND INSTRUCTIONS

The California Penal Code §933(c) requires any public agency which the Grand Jury has reviewed, and about which it has issued a final report, to comment to the Presiding Judge of the Superior Court on the findings and recommendations pertaining to matters under the control of the agency. Such comment shall be made *no later than 90 days* after the Grand Jury publishes its report (filed with the Clerk of the Court); except that in the case of a report containing findings and recommendations pertaining to a department or agency headed by an elected County official (e.g. District Attorney, Sheriff, etc.), such comment shall be made *within 60 days* to the Presiding Judge with an information copy sent to the Board of Supervisors.

Furthermore, California Penal Code §933.05(a), (b), (c), details, as follows, the manner in which such comment(s) are to be made:

- (a) As to each grand jury finding, the responding person or entity shall indicate one of the following:
 - (1) The respondent agrees with the finding
 - (2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefor.
- (b) As to each grand jury recommendation, the responding person or entity shall report one of the following actions:
 - (1) The recommendation has been implemented, with a summary regarding the implemented action.
 - (2) The recommendation has not yet been implemented, but will be implemented in the future, with a time frame for implementation.
 - (3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a time frame for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This time frame shall not exceed six months from the date of publication of the grand jury report.
 - (4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefor.
- (c) If a finding or recommendation of the grand jury addresses budgetary or personnel matters of a county agency or department headed by an elected officer, both the agency or department head and the Board of Supervisors shall respond if requested by the grand jury, but the response of the Board of Supervisors shall address only those budgetary or personnel matters over which it has some decision making authority. The response of the elected agency or department head shall address all aspects of the findings or recommendations affecting his or her agency or department.

Comments to the Presiding Judge of the Superior Court in compliance with the Penal Code §933.05 are required from the:

<u>Responding Agency</u>	<u>Recommendations</u>	<u>Date</u>
Chief Administrative Officer, County of San Diego	10-20 through 10-23	8/11/10