

MOSQUITOES HEALTH RISKS AND METHODS OF CONTROL

Mosquitoes are sometimes present in large numbers on campus, especially during summer and fall. The University is adjacent to many water bodies; there are over 1200 acres of wetlands at Mugu Lagoon alone, another 600 acres of intermittently wet game preserve ponds, Calleguas Creek, Revolon Slough, Ventura County Park, and irrigation ditches, ponds etc. All this water provides breeding habitat for mosquitoes. Virtually all mosquitoes present on campus arrive from these off-campus breeding sites. Adult mosquitoes that arrive on campus rest on vegetation, in alcoves and other protected areas awaiting the opportunity for a blood meal.

Health Risks

Mosquitoes in this area can transmit encephalitis (Western Equine, Saint Louis) and West Nile Virus which can also cause encephalitis. Human cases of encephalitis range from mild to very severe illnesses that, in a few cases, can be fatal. Fortunately, these diseases are not common in Ventura County. Ventura County does surveillance for mosquito borne disease and in the event of a disease outbreak further actions will be taken to protect human health.

An Important Distinction

Salt Marsh Mosquitoes

In terms of health risk there is a distinction to be made between two types of mosquitoes present on campus. Salt marsh mosquitoes breed in salt water ponds left in coastal wetlands after the highest ocean tides recede. These mosquitoes can appear in very large numbers on campus several days after high tide events. They are aggressive “day biters” and account for nearly all daytime mosquito bites here on campus. There is little evidence that this type of mosquito transmits disease.

Night Biting Mosquitoes (Culex species)

The principle health threat from local mosquitoes is carried by nighttime and twilight biting species. These mosquitoes breed in fresh water and are known disease vectors.

Control

Mosquito control is most effective when mosquitoes are concentrated, immobile and accessible, i.e. during immature stages in water before they emerge and disperse as adults. This type of control is exercised by the Naval Base at Point Mugu, and the County of Ventura who have jurisdiction over the water bodies surrounding the campus. Both of the Navy and County utilize these larval stage controls as well as surveillance, source reduction and a variety of adult mosquito control strategies.

The Naval Base is the source of local salt marsh mosquitoes. The Navy performs surveillance, ground based larval control, ground based fogging to kill adults, and spraying of residual contact poisons on plants and structures. The most effective method of control is aerial spraying of larvacides, but this method has been discontinued for the protection of other species in the wetlands.

The County uses a number of techniques (e.g. mosquito bacterial pathogens, slow release pesticide briquettes) to control mosquitoes during developmental stages in local fresh water bodies. Fresh water ponds, lakes and ditches are primarily under the jurisdiction of the Ventura County Vector Control Program. The county maps all significant standing water sources and treats them at least monthly. This mapping and treatment includes the University campus proper and University Glen.

Campus Control Status

The most effective method of control is at larval development sites; this option is not available to the University because larval development sites are off campus. Thus the University been largely dependent on the mosquito control programs operated by the entities with jurisdiction over local water bodies. Even very successful control programs can not eliminate mosquitoes. These off-campus programs have had general success but salt marsh mosquitoes have been difficult to control.

Campus Control Options

The campus has a staff member who is licensed and certified for application of pesticides; this capability provides us a way to reduce the population of mosquitoes in landscaping and around building exteriors. This type of control can be effective at temporarily reducing mosquito numbers over a limited area for a limited period of time. For example we would be able to focus effort on control when waves of salt marsh mosquitoes arrive on campus, or implement control for a particular area or prior to an important outdoor event. The campus has also purchased and will evaluate mosquito traps, over the counter pesticides and area repellants.

Each of the above options must be used carefully and selectively. Traps can attract more mosquitoes, residual poisons can adversely effect both humans and wildlife, indoor use of pesticides or repellants can create poor indoor air quality. As we pursue these options we will evaluate them for effectiveness and potential negative effects and attempt to reach a balance that optimizes the health, safety and comfort of the University community.

What you can do

There are some actions that you can take to protect yourself from mosquito bites and minimize your chances of contracting mosquito borne disease. Please report any standing water you might observe to the safety office or OPC so that we can prevent local mosquito reproduction. Also to prevent mosquito bites, find out about repellants, and decrease your chances of disease please visit the following links:

http://www.cdc.gov/ncidod/dvbid/westnile/resources/WestNileInfoCard2003_small.pdf
http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm

More Information

Environmental Protection Agency information on mosquito control:
<http://www.epa.gov/pesticides/health/mosquitoes/mosquitojoint.htm>

Mosquito control in California:

<http://www.cdpr.ca.gov/docs/dept/westnile/mosqover.pdf>

Pesticides used for mosquito control:

http://www.cdpr.ca.gov/docs/dept/factshts/mosquito_control_pesticides.pdf

http://www.cdpr.ca.gov/docs/dept/factshts/safety_of_pesticide.pdf

Personal insect repellants:

http://www.epa.gov/pesticides/health/mosquitoes/ai_insectrp.htm