

A close-up photograph of a mosquito on human skin. The mosquito is positioned in the center, with its head and thorax clearly visible. Its legs are spread out, and its wings are partially visible. The skin is a warm, reddish-brown color. The background is a soft, out-of-focus green. A white banner with a torn edge is overlaid on the bottom right of the image, containing the text 'FIGHT THE BITE AND WEST NILE' in large, bold, sans-serif capital letters. Below this, in smaller, black, sans-serif capital letters, is 'SANTA CLARA COUNTY VECTOR CONTROL DISTRICT'.

FIGHT THE BITE AND WEST NILE

SANTA CLARA COUNTY VECTOR CONTROL DISTRICT

DID YOU KNOW?



Mosquitoes. They're one of the most hated pests in the world. But aside from being a nuisance to them, many people don't know a lot about mosquitoes. Here are some interesting and informative facts about these insects that you may not have heard before:

- Mosquitoes are the most dangerous animal in the world. More than one million human deaths occur from mosquito-borne illnesses, such as malaria, every year.
- They can lay their eggs in just a thimbleful of water. Standing water is the ideal breeding ground for mosquitoes, and it only takes a very small amount.
- Female mosquitoes are the ones that bite. Since protein is needed for eggs, female mosquitoes must take a blood meal to reproduce.
- Not all mosquito species feed on people. Some mosquito species prefer to bite other animals, like birds, instead.
- Mosquitoes can detect carbon dioxide from several feet away. When searching for a blood meal, female mosquitoes look for carbon dioxide, which all humans and animals exhale.
- Different mosquitoes transmit different diseases. The *Culex* mosquitoes transmit West Nile virus. They prefer to live in standing water in swimming pools and other big containers. The *Aedes* mosquitoes can transmit chikungunya and dengue. They normally lay eggs near the water in small containers like pot saucers and plants (bromeliads).

UNDERSTANDING THE ENEMY



Many diseases rely on vectors to spread. Vectors are insects, spiders or animals that pick up diseases from an infected host and spread them to humans and other animals. The most troublesome vector in Santa Clara County is the mosquito.

"Because they feed multiple times, they can keep a virus circulating in the environment," says District Manager Denise Bonilla. "Many mosquitoes don't just bite humans. They bite birds, and large mammals like coyotes. There's a lot of opportunity for the mixing of different pathogens."

West Nile virus is carried by certain species of mosquitoes and can be transmitted to humans or other mammals by the bite of a mosquito. There is no vaccine for the virus,

so the best prevention is to control mosquito populations and avoid being bitten. West Nile virus is a yearly threat for the county, but it's not the only one.

"For WNV, humans are dead-end hosts. Once we get the virus, we can't give it back to another mosquito," Bonilla says. "So the virus circulation stops. But there are other viruses out there, like dengue fever and chikungunya, that once a human gets it, an infected human can infect a mosquito and pass it on to another human."

These diseases aren't native to the region, but foreign mosquitoes that can transmit them, like the Asian tiger mosquito, have been found and eradicated in Santa Clara County in 2001 and 2003 after they hitched a ride in transported

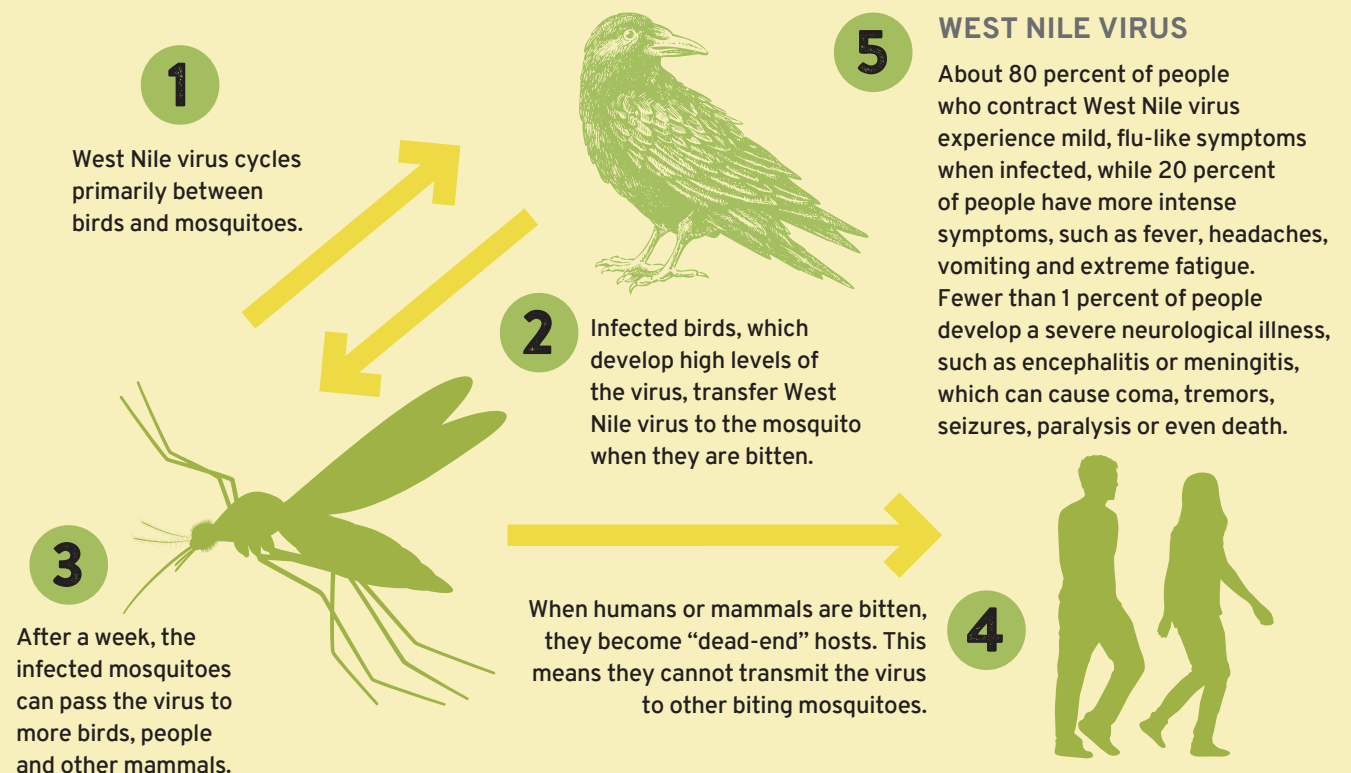
water and plants. More recently, in 2013, *Aedes aegypti*, another mosquito capable of transmitting these emerging viral diseases, was detected in San Mateo County.

"We have a surveillance program to detect non-native mosquitoes. We keep an eye on the mosquitoes because we need to get rid of them before we start having dengue and chikungunya here in the county. That has happened in other places in the United States. But in both of our historical county introductions, we were able to stop the mosquito population from breeding," Bonilla says.



District Manager
Denise Bonilla
PHOTO BY BJ MARTIN

WEST NILE VIRUS TRANSMISSION CYCLE



Source: The Centers for Disease Control and Prevention



OFFENSE IS THE BEST DEFENSE



SURVEILLANCE: The district has 38 employees dedicated to vector prevention. Many are field technicians who go out year-round to known sources of mosquito breeding, like ponds, pools and marshes. The technicians take samples of the water and if immature mosquitoes are found, they kill the young mosquitoes on the spot. “We never want a mosquito to fly,” says District Manager Denise Bonilla.



MOSQUITOFISH: These ravenous little creatures are one of the county’s biological agents to combat mosquitoes. They become mature and able to reproduce within a few weeks, laying up to 60 eggs at a time. Although they only grow to about 7 centimeters, a mature adult female can eat hundreds of mosquito larvae in one day. They thrive in still waters, such as decorative ponds and noncirculating pools. The district offers them free to anyone who requests them. A vector control employee will even come to your house to ensure you have a suitable environment and place the fish for you.



COMMUNITY PRESENTATIONS: Santa Clara County wants to inform as many people as possible about mosquitoes. You can find the district at fairs, school events and many other places. “We’re happy to give an informational talk to any group on any vector-related matter,” Bonilla says.



FOGGING: Even after all these preventive measures, a trapped mosquito occasionally tests positive for West Nile virus. In these cases, an area will be fogged with a mosquito pesticide during the middle of the night. The pesticide has been rigorously tested and is administered in small doses, so it’s deadly to mosquitoes, but has negligible effects on other living things. Residents will be given ample warning via email, social media, robocalls and door hangers. During that period, a phone line is activated to answer fogging-related questions.

WHAT YOU CAN DO



The Santa Clara County Vector Control District can’t do it all alone. It relies on the public to help fight mosquitoes. Here’s how you can help.

COVER WATER STORAGE: In drought conditions many people conserve water through methods like collecting rain in barrels for irrigation. If you are storing water, cover it with a lid or screen so mosquitoes are unable to use it for breeding.

SOURCE REDUCTION: In perfect conditions, some mosquito varieties can develop from larva to adult in a week. If you have a pool or decorative pond, keep the water circulating so mosquitoes cannot lay their eggs on the surface. If possible, drain all standing water. But if not, inquire about mosquitofish with the county or ask the district for a free inspection and treatment.

REPORT PROBLEMS: If you see a green pool or a murky pond, report it to the county so they can ensure that it is not a breeding ground for mosquitoes. If you see a dead bird, report it so lab technicians can check if it is infected with West Nile virus. Reporting is not limited to mosquitoes, if you have any animal or insect problem, the county has resources and information to help you find a solution and protect yourself in the future.

DOWNLOAD THE APP: The Santa Clara County Vector Control District Mobile App allows you to place a service request, report a vector problem in your neighborhood, receive notifications of mosquito fogging, find informative resources and send pictures of vector specimens, breeding areas or damage.

PROTECT YOURSELF: Despite all these measures, some mosquitoes will make it to adulthood. Whenever outside during peak hours, wear FDA-approved repellent containing DEET, picaridin, oil of lemon eucalyptus or IR3535, along with long sleeves and pants.



SCAN
TO GET
THE
APP

HELP US FIGHT THE BITE!

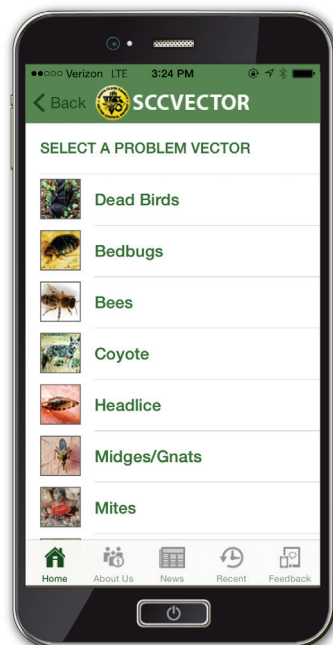
Mosquitoes are more than just a nuisance. They are a public health concern because of the diseases they spread, most notably West Nile virus. Help Santa Clara County Vector Control District fight the bite by learning what you can do to reduce mosquito breeding areas around your property. If you have other pests, the district can provide information on what you need to do to prevent and control them.

DOWNLOAD THE APP

The Santa Clara County Vector Control District has a mobile app for smart phones that allows you to report problems and get help dealing with mosquitoes, rodents, fleas, lice and other pests. Check it out at SCCvector.org/app.

CONTACT THE DISTRICT

Santa Clara County Vector Control District
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San Jose, CA 95112
Phone: 408-918-4770
Fax: 408-298-6356
Email: vectorinfo@deh.sccgov.org
Website: www.SCCvector.org



SCAN
TO GET
THE APP

MORE THAN MOSQUITOES



The Santa Clara County Vector Control District does more than just control and monitor mosquitoes. From raccoons and opossums to bedbugs and other pests, contact the district to help identify, control and prevent future problems in and around your home.



HUMAN LICE

These small, blood-sucking insects infest human hair, skin and other areas of the body. Lice are spread from person to person from close contact and are most commonly passed by young school-aged children to each other. Contact the district for more information about lice and how to prevent further infestation.



BEDBUGS

These small, parasitic insects feed on the blood of humans, leaving itchy welts. An infestation is hard to control and often requires professional pest control measures. The district provides free bedbug identification and educational services.



RODENTS

Mice and other rodents are an ongoing problem for many Santa Clara County residents, infesting homes regardless of socioeconomic boundaries. Contact the district for a free inspection and recommendations if you suspect a rodent infestation in your home.



STINGING INSECTS

Honey bees, yellow jackets, and other wasps can all cause painful stings if provoked. The district currently assists Santa Clara County Parks in destroying nests. For information on how to control stinging insects around your property, contact the district.



WILDLIFE

Outward urban growth and environmental changes have led to more interaction with wildlife than in previous years. Wild animals, such as coyotes, raccoons, opossums, mountain lions, snakes and bats, may become aggressive or defensive if encountered. The district can send a specialist to survey your property and provide recommendations on how to reduce the chance of wildlife regularly visiting your property.



ENTOMOLOGIST

Don't know what insect you have? Send a picture or visit the Santa Clara County Vector Control District. An entomologist will help identify the species and tell you more information about it and how to control it.