

Freaking out about Zika virus? West Nile is the real killer

September 5 2016, by Sean Cockerham, McClatchy Washington Bureau

West Nile virus landed in the United States in the summer of 1999, arriving in New York City possibly in the blood of a sick bird on a ship or via an infected mosquito on a plane. Soon it had afflicted people in Queens with brain inflammation and killed birds at the Bronx Zoo.

Four years later, the [virus](#) had migrated across the country to California, where it was to become a scourge far from Uganda, where it was first isolated in 1937. Since its arrival in California, it's killed 229 people in the Golden State and sickened nearly 5,600. Last year a record 53 people died in California of the virus, and this year has the potential to end up as bad or even worse.

While the recent arrival in the U.S. of the Zika virus is getting most of the attention, public health experts consider West Nile to be a much more potent threat in California than Zika will ever be.

The state has tallied 123 human West Nile cases in California so far this year, including a pair of deaths in Sacramento County and Yolo County. But it takes weeks for reporting and verification of West Nile cases to make it through the system. So Gary Goodman, the general manager of the Sacramento-Yolo Mosquito & Vector Control District, expects the real numbers are far higher.

"I think in terms of human cases it's going to be equal to or conceivably even worse than what we had last year," he said.

There were 783 cases of West Nile in California last year and 801 the year before that, the most in a decade.

More infected mosquitoes and birds have been found dead from West Nile this year than at this time last year, with the 398 dead birds found in Sacramento County the largest number in the state.

West Nile activity in the Sacramento area this summer appears to have peaked and begun its decline. But the peak comes later in Southern California, and the virus remains a threat into October.

It's not clear why West Nile activity has been so strong this summer. Officials blamed the high numbers in 2014 and 2015 in part on the California drought. Birds carry the virus and mosquitoes spread it through bites. The idea is that with fewer sources of available water, birds and mosquitoes crowded together at remaining water sources and spread the virus.

Goodman speculated that this year's easing of the drought led to a rebound of the mosquito population as water became more available for the first time in years - keeping West Nile activity high.

"This year we've seen some of the mosquitoes that breed in larger agricultural areas at higher numbers than usual, and I think that's explainable in part to the additional water," said Chris Barker, a specialist in the research of mosquito-borne viruses at the University of California, Davis.

Rice fields are a huge source of mosquitoes in the Sacramento area, according to public health experts. Woodland, Davis, West Sacramento and Natomas are ringed by the fields, which consist of acres of standing water and vegetation, a prime breeding ground for mosquitoes.

Goodman said the Sacramento-Yolo Mosquito & Vector Control District has sprayed over 600,000 acres for mosquitoes so far this year, mostly in rural stretches but also in Woodland and the Arden Arcade area of Sacramento. Costs for the spraying run more than a million dollars.

Most people who contract West Nile virus will have no symptoms or possibly mild infections that might include vomiting and fever. But the virus can lead to a serious neurological illness that sometimes includes coma, seizures or paralysis, with recovery taking months. Nearly 44,000 cases of West Nile have been reported in the U.S. and more than 1,900 people have died.

West Nile is particularly hard to stop because of the role that birds play in its spread. After the virus arrived in New York, migratory birds helped spread it across the country, thwarting efforts to stop it through mosquito eradication. No one was sure which birds were the carriers.

"I am not sure there would have been any way that we could have prevented West Nile from taking hold in the state," said Desiree LaBeaud, an associate professor of pediatric infectious diseases at Stanford University who specializes in viruses that are spread by mosquitoes.

The Zika virus is much different. Zika, which recently struck the U.S. with a homegrown outbreak in Florida, is primarily spread by two mosquito species - *Aedes aegypti* and *Aedes albopictus* - that have not been detected in Sacramento County. Zika can also be spread by sex.

There's no reason to think *Aedes* mosquitoes won't arrive in Sacramento. They've already been found in other areas of California, including Los Angeles, San Mateo, Madera and Fresno.

Some research also suggests that the far more common *Culex* mosquito,

which transmits the West Nile virus, might also spread Zika, which Goodman said "would definitely complicate things."

But he and other mosquito experts don't think Zika has the potential to approach the level of West Nile in California. California is a prime spot for West Nile with a bird population of corvid and jays to host the disease and an abundance of the Culex type of mosquitoes, which spread it.

The state could experience small Zika outbreaks as Californians infected elsewhere spread the virus when they come home, either through sex or being bitten by Golden State mosquitoes that then go on to bite other Californians, said UC Davis epidemiologist Barker.

"But in terms of an endemic pathogen that is going to be with us from now on, West Nile is a much bigger threat in California," he said.

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Citation: Freaking out about Zika virus? West Nile is the real killer (2016, September 5)
retrieved 6 May 2024 from

<https://medicalxpress.com/news/2016-09-freaking-zika-virus-west-nile.html>

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