

## West Nile Crippling El Pasoans, Rising Temperatures Play Role

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*West Nile survivor Elisa Sierra at her home in El Paso, Texas.*

*Credit: Ruben R. Ramirez/El Paso Times*

Elisa Sierra had just given birth to twins when she became infected with West Nile virus.

The infection left Sierra, who lives on the West Side of El Paso, Texas, with meningitis and damaged her brain.

Sierra is a clinical social worker who used to provide therapy. She's in a similar line of work following her 2015 illness, but she doesn't provide counseling any more because she's no longer confident she can think quickly enough.

"You have to be able to think on your feet," she said. "I have trouble remembering simple words."

City data shows Sierra is one of about 100 people in El Paso who have been affected by a severe form of West Nile since 2000, which was around the time it was discovered in the U.S.

As El Paso and other governments work to reduce infections, a new analysis by Climate Central shows rising temperatures have increased the number of days each year when mosquito-borne diseases are likely to be spread across the United States.

Some of the greatest increases in risk occurred in El Paso.

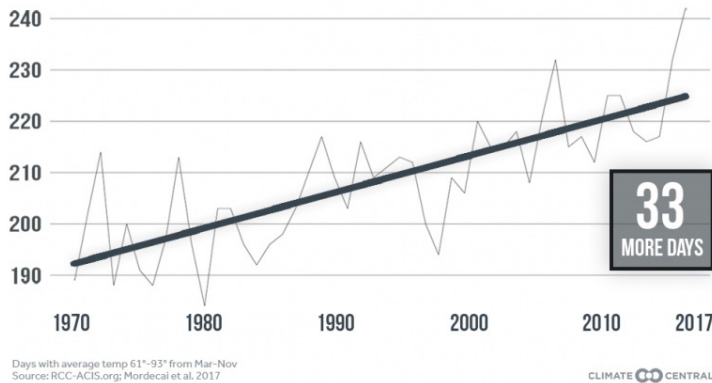
Climate Central analysts examined the number of days each year that temperatures were optimal for the transmission of mosquito-borne diseases, which is between 61°F and 93°F. There were more than 240 such days in El Paso last year.

Of the 244 cities analyzed, most were found to have experienced an increase in the average number of mosquito disease danger days each year since 1970. El Paso's increase of 33 days was a larger rise than all but four other cities

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### Disease Danger Days in El Paso

Risk of disease transmission by mosquitoes



— Reno, Nev., Las Cruces, N.M. and San Francisco and Santa Maria, Calif.

In El Paso, West Nile is the mosquito-borne disease of main concern. In other cities around the world, Zika, dengue, chikungunya, Yellow Fever and Eastern Equine Encephalitis viruses are also spreading. Each of these diseases can cause crippling health problems, and each of them depends on specific environmental conditions to thrive.

“Transmission of mosquito-borne diseases depends on a bunch of different biological processes,” said Marta Shocket, a Stanford University biologist investigating the role of temperature on the spread of diseases by mosquitoes.

“It depends on the how long the mosquitoes are living, how many mosquitoes there are, how much they’re biting,” Shocket said. “All of those processes depend on temperature.”

Temperatures are rising because of pollution from cars, power plants and logging. As the Trump Administration weakens climate protections, El Paso is among more than 1,000 cities pushing through a national association of mayors for aggressive steps to address climate change.

While risks of contracting diseases from mosquitoes have risen with temperatures, it’s difficult to measure the impacts.

Other factors also influence transmission rates, such as efforts to reduce mosquito populations, keep them out of homes and eliminate standing water. And diseases continue to emerge and spread into new areas.

An El Paso man, who asked that his name be withheld when discussing his medical history, was among 11 people in El Paso diagnosed last year with the serious neuroinvasive disease that the West Nile virus can cause.

The man said he didn’t realize he’d been bitten by a mosquito until the West Nile virus reached his brain, nearly killing him.

“I didn’t have any welts,” he said.

Following visits to an emergency care clinic as he suffered a neurological breakdown, he was hospitalized and diagnosed with the most serious form of disease the virus can cause, which occurs when the virus invades the nervous system.

He had to learn to walk again and is sensitive to light. It hurts his eyes, and sometimes exposure makes him sneeze uncontrollably. He suffers from aches and has become more vulnerable to other health problems.

“I feel like I’m forever inside a cotton ball, everything’s just fuzzy,” he said. “I wound up with a bout of Bell’s Palsy. I lost sensation in half my face, and I wasn’t able to speak anymore. I was slurring my words.”

City officials spray pesticides to control mosquito populations and urge residents to prevent the pests from breeding by checking for standing water. They also suggest using bug spray and wearing long-sleeved shirts and long pants to

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avoid being bitten, particularly around dusk and dawn.



*Credit: Dunpharlain/Wikimedia Commons*

There's a lot of people that are still susceptible."

Three years after her infection, Sierra is angry that her condition wasn't diagnosed by medical staff more quickly. She's also frustrated that it's hard to find specialists who can help her.

"Before I got the disease, I figured it only affects babies and old people," Sierra said. "It's important for people to understand that it doesn't matter your age. You need to protect yourself."

Sierra is slowly recovering from the disease, but she expects it will affect her for the rest of her life.

"I had to learn how to write again," Sierra said. "I lost brain matter."

*This story was produced through a partnership with the El Paso Times. It has been corrected to indicate that 11 people in El Paso were diagnosed last year with the serious neuroinvasive disease.*