

# Heat, rainfall affect pathogenic mosquito abundance in catch basins

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University of Illinois pathobiology professor Marilyn O'Hara Ruiz, right, and graduate student Allison Gardner identified the physical factors associated with increased numbers of disease-carrying mosquito larvae in Chicago catch basins. Credit: L. Brian Stauffer

(Medical Xpress) -- Rainfall and temperature affect the abundance of two mosquito species linked to West Nile Virus in storm catch basins in suburban Chicago, two University of Illinois researchers report.

Marilyn O'Hara Ruiz, a professor of pathobiology, led the study with graduate student Allison Gardner.

The study was conducted using [mosquito larvae](#) collected from catch basins in Alsip, a southwest suburb. The researchers examined weather factors that influenced the levels of mosquito larvae in the basins. They found that low rainfall and high temperatures are associated with high numbers of larvae.

The study appears in the *Journal of Medical Entomology*.

Checking storm water catch basins for mosquito larvae of the type that carries West Nile virus is particularly important in tracking the disease in populated areas, Ruiz said.

“Catch basins are important breeding sites for the vector of West Nile Virus – the Culex [mosquitoes](#),” Ruiz said.

The [West Nile Virus](#) first appeared in Illinois in 2002, with 884 human infections statewide that year. That remains the highest number of recorded human cases in Illinois. The disease still is found in humans, birds and mosquitoes in the state.

The researchers found that rainfall was the primary factor in determining the presence of larvae, with low [rainfall](#) associated with greater numbers of larvae. The studies showed that while some rain is necessary for the larvae to develop, excess rain flushes out the premature larvae.

High temperatures also appeared to contribute to more larvae in the basins. The researchers found that the larvae developed more quickly when subject to both high air and water temperatures.

According to Ruiz, this analysis should allow for further research into the environmental factors affecting the abundance of WNV-carrying mosquitoes, as weather variability may not affect all catch basins equally. The results also may help those hoping to lessen populations of disease-carrying mosquitoes to properly treat catch basins to eradicate potentially harmful [larvae](#).

**More information:** The paper, “Weather Variability Affects Abundance of Larval Culex (Diptera: Culicidae) in Storm Water Catch

Basins in Suburban Chicago,” is available [online](#).

Provided by University of Illinois at Urbana-Champaign

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