

## MOSQUITO CONTROL IN KEY WEST

Following a Dengue Fever outbreak in 2009 the Key West Mosquito Control District ramped up their domestic mosquito control program to target the *Aedes aegypti* mosquito which is also the mosquito most responsible for spreading the Zika Virus. Kelly Jordan, USA TODAY



Florida Keys Mosquito Control District field inspector Patti Sprague checks a fountain for mosquito larvae in Key West, Fla., April 12, 2016. Inspectors go house to house checking properties for standing water, the breeding ground for many species of mosquito.(Photo: Kelly Jordan)

As mosquito season descends on millions of Americans who live on the Gulf Coast and in Southern states, the United States has no coordinated, national plan to control the insect that transmits Zika virus.

With no approved Zika vaccine or treatment, experts said the best way to prevent the spread of the virus is to control the mosquito, a species called *Aedes aegypti*. The stakes are high: If the virus gains a foothold in the USA as it has in Brazil and elsewhere in Latin America, children born of infected mothers could suffer catastrophic birth defects. The virus may also increase the risk of Guillain-Barre syndrome, which causes paralysis.

Fighting mosquitoes is fundamentally a local battle led by a patchwork of 700 mosquito-control districts and more than 1,000 other programs within local governments. In some cities, mosquito control is handled by sophisticated professionals with multimillion dollar budgets. In other communities, mosquito control is more of an afterthought, tacked onto other programs, such as the parks and recreation.

More than 60 million Americans live in the five states along the Gulf Coast — Florida, Alabama, Mississippi, Louisiana and Texas — which could bear the brunt of Zika outbreaks.

Communities along the Gulf and elsewhere must control their own mosquito populations and cannot depend solely on federal public health agencies, such as the Centers for Disease Control and Prevention, said Michael Osterholm, director of the University of Minnesota's Center for Infectious Disease Research and Policy.

"There's not going to be some national team to come in and save you," Osterholm said. "The CDC doesn't have the resources to be in every community. It's not the national health department. That would be like asking the FBI to provide local police service."

President Obama asked Congress for nearly \$1.9 billion in emergency Zika funding in February, but Congress has not approved the request. As an emergency measure, Obama transferred \$510 million in unspent Ebola funds to the Zika fight, but public health officials said the country will need much more to prepare for and respond to Zika.

The CDC wants communities to draw up Zika action plans and has set up a model program for communities to reference. It will release millions of dollars in grants for Zika planning and response but only to states that submit a "checklist of readiness activities," CDC spokesman Tom Skinner said.

No one has a specific measure on whether or how well localities are preparing for possible Zika cases, at least until all those action plans come in.

"It is hard to know how ready we are as a country, because there is no one dashboard" to track progress, said Ron Klain, who served as Obama's Ebola "czar" during the Ebola crisis.



Keys Mosquito Control District field inspector Patti Sprague sprays a live mosquito before she checks for standing water in the backyard of a home in Key West, Fla. (Photo: Kelly Jordan)

Many cities are ramping up mosquito control.

- New York City said last week it will spend \$21 million over three years to fight *Aedes aegypti*, which also spread West Nile Virus. A pillar of the plan is to reduce the mosquito population, Mayor Bill de Blasio said. "We're going to, of course, work very closely with our federal and state partners, but this goes in the category of 'God bless the child that's got his own,'" de Blasio said. "We have to protect ourselves."

- In Key West, mosquito inspectors go door to door, inspecting flowerpots, birdbaths and other containers for larvae, which may be treated with chemicals. Mosquito inspectors pass out mosquito-eating fish, which devour larvae that hatch in cisterns and decorative fountains.
- In New Orleans, officials will work with non-profit groups to clean up neighborhoods and eliminate trash that can collect standing water, where mosquitoes breed, said Claudia Riegel, director of the New Orleans Mosquito, Termite and Rodent Control Board. If residents call 311 to report standing water, mosquito-control staff will respond in three days.

Even the best mosquito-control programs have limitations, said Michael Doyle, executive director of the Florida Keys Mosquito Control District. In most cities, mosquito control is seriously underfunded, he said.



Florida Keys Mosquito Control District field inspector Patti Sprague checks for mosquitoes under a home in Key West April 12, 2016. Inspectors go house to house, checking properties for standing water where mosquitoes breed. (Photo: Kelly Jordan)

Almost no one tests mosquito populations to see if they're infected with Zika because the process is so labor-intensive, Doyle said. That means Zika could spread unnoticed among mosquitoes for weeks or months. Communities may not learn they have Zika-carrying mosquitoes until a case is diagnosed in humans.

Mosquito-borne diseases have hit the USA before, but a combination of mosquito control, air conditioning and window screens has been enough to contain them, Doyle said. An outbreak of dengue, a viral disease also spread by *Aedes aegypti*, hit Hawaii in September, sickening 263 people over the next six months. Dengue broke out along the Texas-Mexico border in 2005 and in Key West in 2009 and 2010.

During Key West's dengue outbreak, mosquito control teams inspected every home once a week, Doyle said. Inspectors poured chemicals into discarded tires to kill larvae breeding in rain water. Every two days, helicopters sprayed Key West with chemicals to kill adult mosquitoes.

Key West limited its dengue outbreak to 88 people because the city spent a lot of money on a relatively small area with unique geography, Doyle said.



The Florida Keys runs one of the most intensive mosquito-control programs in the country. There are 41 inspectors for a community of 75,000 at a cost of \$10 million a year, Doyle said. Mosquito-control officials in some of the largest Gulf Coast cities, such as Houston and New Orleans, said they don't have the staff to visit every house.

Keeping mosquitoes at bay preserves the health of both residents and the region's tourism-heavy economy, Doyle said. If Zika comes to Key West, inspectors will be just as aggressive, he said. Inspectors would clean up trash not just at a sick person's home but in a one-block radius around the home. Mosquito control staff would spray insecticides on bushes, under porches and other places where mosquitoes hide.

"Most places in the U.S. have low funding for large areas," Doyle said. "What we do can't be replicated in the vast majority of the U.S."

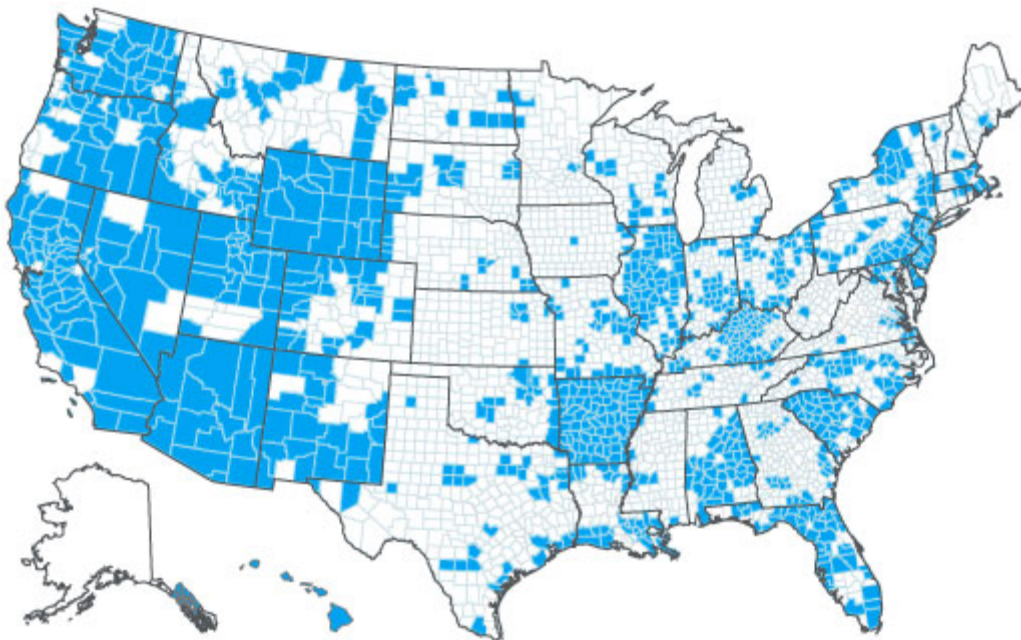


The Florida Keys Mosquito Control District is fighting the Zika Virus with a tiny fish called gambusia or mosquitofish. The gambusia eat the larvae of the *Aedes aegypti* mosquito which is the one most responsible for the spread of the Zika Virus. Kelly Jordan, USA TODAY

# MOSQUITO CONTROL

Although the Zika epidemic has been declared an international emergency, fighting the mosquitoes that spread the virus is a local effort in the USA. Mosquito control efforts are led by a patchwork of more than 700 local mosquito-control districts, with no national agency coordinating their efforts.

● Counties with mosquito-control districts



SOURCES: Centers for Disease Control and Prevention, American Mosquito Control Association.

Karl Gelles, USA TODAY

