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Fever Pitch: Mosquito-Borne Dengue Fever Threat Spreading in the Americas

Dengue (or “breakbone”) fever is a mosquito-borne disease that may worsen with global warming. Dengue has increased over the past several decades, likely because of urbanization and population growth, rapid international travel and trade, and widespread poverty, along with a changing climate. Its symptoms include high fever, rash, and severe headache with aching bones, joints, and muscles.

Currently, dengue fever and its complications cause 50 to 100 million infections, a half-million hospitalizations, and 22,000 deaths annually in more than 100 countries. Dengue has increased 30-fold in the last 50 years.¹ By 2085, an estimated 5.2 billion people are projected to be at risk for dengue because of climate change–induced increases in temperature and humidity.² As temperatures rise, the potential for transmission of this dangerous disease may increase in vulnerable parts of the United States.

A new NRDC analysis identifies regions of the United States where there is increased vulnerability to dengue fever. Our analysis also shows that dengue fever has increased substantially since the 1970s in many parts of the Western Hemisphere, rising to more than 900,000 cases in 2007. Epidemic outbreaks in Brazil, Mexico, Honduras, Paraguay, Costa Rica, Bolivia, and Guyana affected hundreds of thousands.

Nearly 4,000 cases of imported and locally transmitted dengue were reported in the United States to the Centers for Disease Control and Prevention between 1995 and 2005. When cases in the Texas-Mexico border region are included, the number rises to 10,000.

Two species of mosquitoes capable of transmitting dengue fever now occur across at least 28 states and the District of Columbia. As temperatures rise, the potential for transmission may increase in vulnerable parts of the United States, as warmer temperatures and changing

rainfall conditions expand both the area suitable for the mosquito vectors and the length of the transmission season. An estimated 173.5 million Americans live in counties with one or both of the mosquito species that can transmit dengue fever.

Inevitable climate change impacts are projected for the next 50 to 100 years. Investing now in enhanced environmental monitoring and improved health reporting can help strengthen preparedness, both now and for the future.

Avoiding Dengue Fever When You Travel

Travelers can reduce their risks by sleeping in well-screened or air-conditioned hotels. Travelers should apply an insect repellent with 20 to 30 percent DEET in the morning and early evening, and wear loose, long-sleeved shirts and long pants. Before traveling, find out what parts of the world are currently experiencing dengue outbreaks by visiting <http://www.cdc.gov/ncidod/dvbid/dengue/index.htm>.

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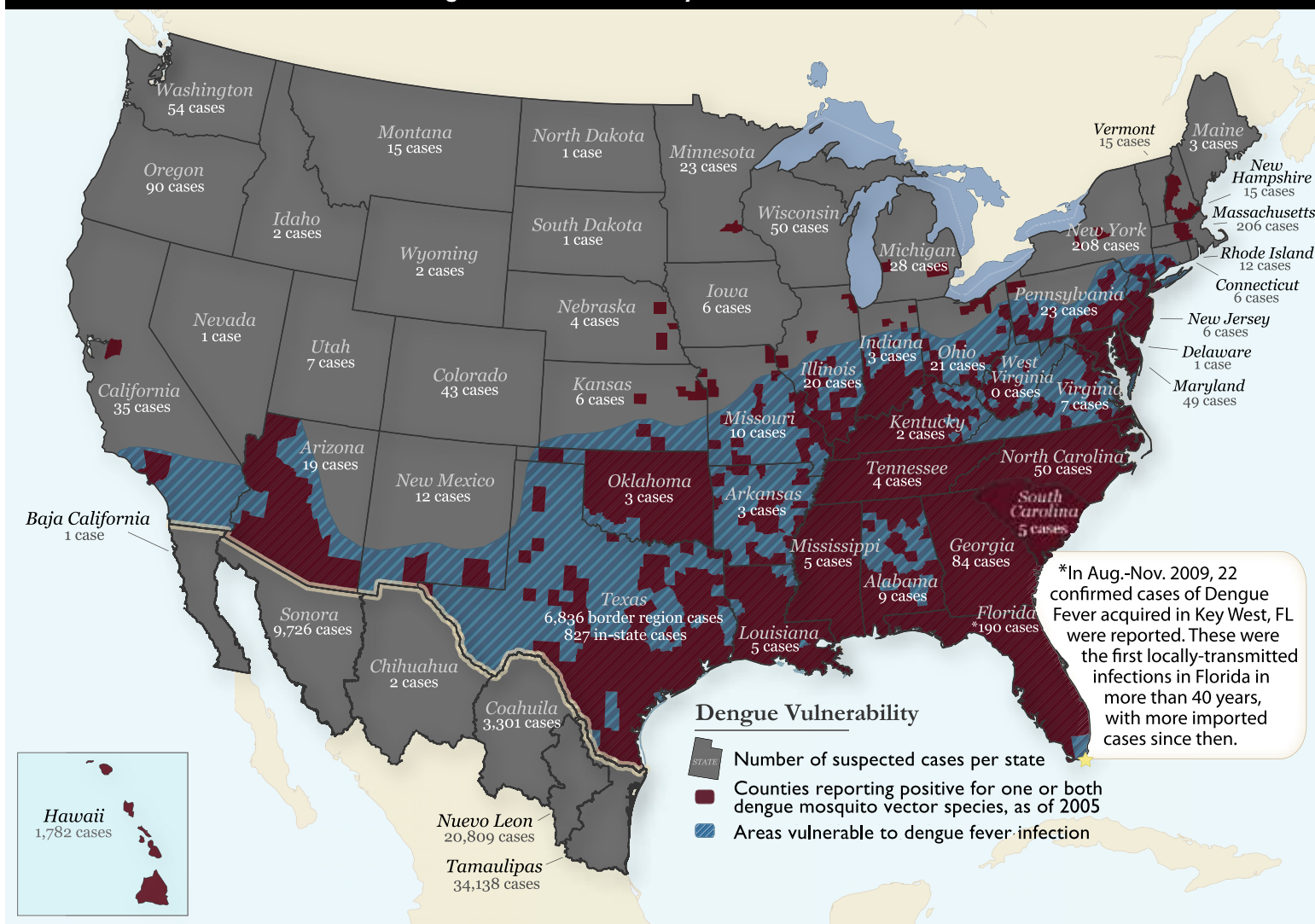
Recommendations to Help Limit the Spread of Dengue Fever

- Improve mosquito tracking programs and mosquito larval control.
- Make dengue a nationally notifiable disease and educate clinicians on how to identify it.
- Upgrade housing and municipal services in poor communities. When storms, hurricanes, or

floods damage homes, timely response can help reduce infectious disease risks.

- Address global warming at its source by enacting mandatory emissions reductions legislation.
- Provide information for travelers visiting high-risk dengue areas. The CDC estimates that 1 in 1,000 travelers to dengue-endemic countries become ill.

Dengue Fever Vulnerability in the United States



¹ Phillips, M.L. (2008), "Dengue reborn: widespread resurgence of a resilient vector," *Environ Health Perspect* 116(9):A382-A388.

² Hales, S., N. de Wet, and J. Maindonald, et al. (2002), "Potential effect of population and climate changes on global distribution of dengue fever: an empirical model," *Lancet* 360: 830-34.