Public Health Notification

Zika Virus Outbreak

National Park Service
U.S. Department of the Interior

Subject: **Zika Virus – Information and Recommendations Issued by:** NPS Office of Public Health (support from NPS Natural Resource Stewardship and Science and Office of Risk Management)

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Affected Locations: Parks/Offices located in Puerto Rico, the U.S. Virgin Islands, and American Samoa

Locations at Potential Risk: Parks/Offices located in areas where mosquito species that can transmit Zika virus are found. Highest risk locations include warm climates that support year-round mosquito populations including Florida, Hawaii, and areas along the U.S.-Mexico border.

Other Locations: Information Only

Summary: This notification is part of a series of updates regarding the ongoing international outbreak of Zika Virus Infection – a disease primarily spread though the bite of infected *Aedes* species mosquitos. This document provides background information and guidance to assist park/office managers in reducing the risk of Zika transmission to employees and the visiting public.

Additional Information: Public Zika website (https://www.nps.gov/articles/zika-virus.htm)
Zika Guidance on InsideNPS/Public Health
(http://inside.nps.gov/waso/custommenu.cfm?lv=2&prg=44&id=11818)

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What is Zika Virus?

Zika virus is an emerging infectious disease threat. Zika virus is an introduced virus that can cause a mild illness that usually goes away without treatment or complications. However, some cases of Zika infection can result in severe complications including microcephaly (smaller than expected head size) in infants born to infected women, and Guillain-Barré Syndrome, a paralyzing, potentially fatal condition.

How is Zika Virus Spread?

Zika virus is primarily transmitted to people through the bite of an infected Aedes species mosquito – the same type of non-native mosquitoes that spread dengue fever and the chikungunya virus. These mosquitoes prefer to feed on humans any time of day and breed in man-made water containers. Zika can also be spread from a pregnant woman to her fetus during pregnancy, which may result in severe brain damage in the fetus. Zika can also be spread by contact with blood and other body fluids (including sexual contact).

What are the Symptoms of Zika Infection?

Most people infected with Zika (4 in 5) do not develop symptoms and are not aware that they have the disease. For those that develop symptoms, the most common symptoms include fever, rashes, joint pain, and/or red eyes. Other common symptoms include muscle pain and headache – similar to the flu. The time from exposure to symptoms is not known, but is likely a few days to a week. Symptoms are usually mild and go away in 2-7 days. Most people don't get sick enough to seek medical care and deaths are very rare. Zika remains in the blood of an infected person for at least a week, but Zika can remain in other body fluids (including semen) for much longer periods. Once a person is infected with Zika, he/she will likely be protected from future infections.

How is Infecton Zika Treated?

Currently, there is no vaccine to prevent Zika and there are no specific medications to treat the infection, only supportive care can help reduce symptoms. Infected people should rest and drink fluids to prevent dehydration. Over-the-counter strength acetaminophen (Tylenol) can be used to reduce pain and fever. However, aspirin and other non-steroidal anti-inflammatory drugs (NSAIDS) should be avoided due to the risk of complications from uncontrolled bleeding. Individuals with known infections should take precautions to prevent spreading the disease.

How do I Protect Myself Against Zika?

The best way to prevent Zika virus is to prevent mosquito bites and other exposures. Use insect repellents and wear clothing that covers your arms and legs while outdoors. Eliminate standing water from containers around your home and at work. Keep windows and and doors screened. Avoid or delay unecessary travel to areas with known outbreaks. If you are potentially exposed to the blood or body fluids of an infected person (or don't know if the person is infected), take appropriate precautions.

Risk Reduction Recommendations

The following guidance is provided for parks/offices in areas with known local mosquito-borne transmission of Zika virus (Puerto Rico, the U.S. Virgin Islands, and American Samoa) and areas at increased risk for development of local transmission (Florida, Hawaii, and areas along the U.S.-Mexico border). To date, all cases reported within the continental United States have been associated with overseas travel. However, the two mosquito species known to carry Zika virus (Aedes aegypti and Aedes albopictus) are found in at least 30 states. The potential for Zika transmission exists in every NPS region except Alaska.

1. **Refer to Up-To-Date Information on the Zika Outbreak.** Additonal information is avaible at the following websites. This information is reviewed an updated regularly.
   - Centers for Disease Control and Prevention (CDC)
   - National Institute for Occupational Safety and Health (NIOSH)
   - Occupational Safety and Health Administration (OSHA)
   - Pan American Health Organization (PAHO)
   - World Health Organization (WHO)

2. **Encourage Employees, Vistors, and Partners to learn about Zika.** The park/office can inform employees (including family members who live in park housing), visitors, and partners about the risks of exposure to Zika through mosquito bites and exposure to blood and body fluids through our website and materials. The park/office could also provide training on protective measusres for employees who routinely work outdoors, provide healthcare or emegency services (i.e. workers with increased risk of exposure to blood or other body fluids), and those who perform maintenance or other tasks that increase their risk for exposure to mosquito habitats such as resource managers, law enforcement personnel, and wildland firefighters. For factsheets and posters visit the NPS Office of Public Health Zika Virus website or the Office of Public Health intranet site.

3. **Support Employee and Visitor Mosquito Bite Prevention Measures.** Consider providing CDC-recommended, EPA-approved insect repellents to staff. Park IPM Coordinators must obtain approval through PUPS (the NPS Pesticide Use Proposal System) for the purchase of repellents using government funds. Consider educating staff (including volunteers, partner organizations, contractors, and concessioners) about the importance of supplying and using CDC-recommended repellents. We encourage inclusion of mosquito prevention measures in job hazard analyses and prioritizing maintenance work orders (e.g. installing/fixing screens) that can reduce risk for mosquito bites. For detailed guidance about employee protection (including the proper type and use of repellents, follow these NIOSH/OSHA recommendations. Direct employee questions to the Office of Risk Management.

4. **Reduce Manmade Mosquito Breeding To Reduce the Risk of Mosquito Transmission.** To do this, follow NPS Mosquito Management guidance by:
   - Conduct a systematic survey of human-occupied areas of the park. For parks with habitats that support large mosquito populations, consider having an entomologist lead the survey and train park staff.
   - Identify and document locations of, and eliminate (in accordance with NPS policies) manmade standing water. While conducting survey, document locations where mosquito larvae are found. Larvae are also called “wigglers” because of their characteristic motion in water.
   - Develop a system/checklist for periodically reviewing and mitigating areas at risk for standing water.
   - Educate and train staff about the importance of eliminating standing water.
   - Consider working with universities, local mosquito control agencies, or other partners to establish mosquito surveillance in parks to help guide management decisions.

5. **TreatManmade Standing Water that Cannot Be Eliminated**. Manmade water that cannot be eliminated could be treated with IPM-approved larvicides. Consider the following:
   - Areas of standing water that cannot easily be eliminated may include storm water retention ponds, catchment tanks, oil-water separators, and other large equipment/structures. If feasible, these areas can be covered, modified, and/or treated with long-lasting larvicides, which are more effective and less toxic than adult mosquito sprays/fogs.
   - Consider the use *of Bacillus thuringiensis israelensis* (Bti), a commonly-used larvicide and a naturally-occurring soil bacterium that can kill mosquito larvae. Bti is very specific for mosquitoes and black flies and has minimal impacts on non-target species, humans, or the environment. Bti cannot be used for drinking water sources.
   - All larvicides, including Bti, must first be approved for use by the NPS IPM Program. Contact your regional IPM coordinator to discuss other larvicide options.
   - The use of ovitraps (mosquito egg traps) may be considered in human-occupied areas.