

JMM 615 Writing and Reporting Across Platforms

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Miami Beach Commissioner Thinks Bats Can Solve the Zika Outbreak

Kristen Rosen Gonzalez is a commissioner for Miami Beach. She has submitted a proposal to the city commission to have bat houses set up in Miami Beach so bats can eat the mosquitoes that carry the Zika virus. [Bat houses](#) are structures that attract bats because it provides a dark space for bats to sleep in during the day since they are nocturnal.

The Zika virus is transmitted by the [Aedes aegypti](#) mosquito. Zika causes a variety of [symptoms](#) like a fever and muscle pain. Miami is the [first city in the continental U.S.](#) where people became infected with the Zika virus in July 2016. The [Wynwood](#) neighborhood, located in downtown Miami, is where the first report of Zika transmission occurred by a person who was bit by the Ae. aegypti. Since then, the Zika virus has spread to other counties in Florida and other states because after a person is infected, the virus can be [transmitted from person to person](#). Florida has received a lot of attention during the Zika outbreak because it has the [most local cases of Zika transmission](#) in the U.S.

Gonzalez thought of installing bat houses in Miami Beach after she remembered doing research on bat houses for a course she took in graduate school. Bats eat mosquitoes and can be useful in getting rid of the Ae. aegypti. Gonzalez said there has been controversy of the aerial spraying of [Naled](#) in Miami to fight the Ae. aegypti, and she got contacted by environmentalists who were not in favor of the use of Naled. Aerial spraying is when an airplane disperses an [insecticide](#) like Naled into a large area where mosquitoes are located. The environmentalists brought up the idea of using bat houses, which resonated with Gonzalez and she decided to submit her bat proposal to the city commission. “It was really to placate people,” Gonzalez said.

Since bats eat mosquitoes at night and the *Ae. aegypti* are active during the day, Gonzalez realized that the idea of using bats to eat the mosquitoes may not be a permanent solution. “But what we do know about bats is that each bat can [eat up to 3,000 mosquitoes per day](#),” Gonzalez said. “So, if you have one bat house, which is free after the initial installation and you get 20 bats living in it, they can eat up to 60,000 mosquitoes per day.” People were receptive to Gonzalez’s idea and approached her saying they would like a bat house set up in Miami Beach. Gonzalez thinks people were receptive because they want environmentally-friendly solutions.

The city commission didn’t take her bat proposal seriously although they didn’t dismiss the idea. The proposal of creating bat houses got sent to the Miami-Dade County government, which is in charge of mosquito control. If Gonzalez wants to get bat houses put in neighborhoods and parks in Miami Beach, she has to lobby the mayor of Miami-Dade County.

Chalmers Vasquez is the Operations Manager and Director at Miami-Dade County Mosquito Control and has been using insecticides to fight the *Ae. aegypti*. “We’ve been working around the clock almost every day including weekends,” Vasquez said. “We managed to bring down the adult mosquito population.” Vasquez said they have been very successful in the Wynwood neighborhood of Miami and stopped the transmission of Zika in the area after four applications each of Naled and larvicide. He also said they have been successful in Miami Beach and brought down the mosquito population to very low levels with one to two mosquitoes per trap in Miami Beach after averaging 40 to 50 mosquitoes per trap when they first started putting out traps. “We are seeing the light at the end of the tunnel,” Vasquez said.

Vasquez knows the use of bats as predators to mosquitoes has been a method for many years and thinks bats are not an effective way to bring the mosquito population down. “Bats

don't specialize in eating mosquitoes," Vasquez said. He said they prefer to eat bigger insects. Vasquez thinks it's a good idea to promote the bat population with bat houses since [many bat species are endangered](#). However, he, along with some scientists who do research on mosquito control, doesn't think bats will greatly decrease the mosquito population.

Frank Ridgley is the Wildlife Veterinarian for Zoo Miami's Conservation and Research Department and has expertise in bat populations and has an opinion on if he thinks bats will be able to defeat the *Ae. aegypti*. Ridgley doesn't discourage setting up bat houses because bats are valuable and provide ecosystem services. "They provide billions of dollars in the offset of pesticide use," Ridgley said. "I always encourage it and they make everything better for residents of Florida." As far as combating the Zika virus, Ridgley feels that bats' true impact on the mosquito population is not significant because it's a small meal for them. "But, it certainly doesn't hurt," Ridgley said. "They do impact the mosquito population and if that's the main source of food, they are going to eat them." Ridgley has a concern with bat houses set up in Miami Beach because there is a lack of freshwater for the bats to drink. He thinks it's important to check out the resident bats there to see if they are doing well in that environment.

There are two species of bats that would be best in eating the *Ae. aegypti*, according to Ridgley. The [Brazilian free-tailed bat](#), also known as the Mexican free-tailed bat, would be a good choice because they form a huge colony of hundreds of bats. "They go out like an army every night across the sky eating everything they can fit in their little mouths," Ridgley said. The [evening bat](#) is the other species that would be effective because they also form a huge colony and share the same route as the Brazilian free-tailed. "Both species love bat houses," Ridgley said. "They are already out here in Miami and they just have to find the house."

Vasquez and Ridgley don't think Gonzalez's plan to use bats to combat the *Ae. aegypti* will end the transmission of the Zika virus. Gonzalez will know if her bat house proposal will become a reality on Nov. 9, 2016, when the city manager has to report to the commission about a potential pilot program of bat houses being set up in Miami Beach. Bats may become the newest neighbors for Miami Beach residents and Gonzalez's plan might work despite the doubts of Vasquez and Ridgley.