# App tracks harmful mosquitos with help from crowdsourced science

November 1 2021, by Elizabeth Thompson

Aedes aegypti, pictured here, is a species of mosquito capable of transmitting several diseases. The GLOBE Mosquito Habitat Mapper program allows volunteers to track and reduce potentially harmful mosquito populations. Credit: James Gathany/CDC

Mosquito-borne diseases, including malaria and dengue, kill more than 1 million people each year. Scientists track mosquito populations to predict and combat disease outbreaks, but local communities in infected

areas also have a vital role to play in mosquito research.

Global Learning and Observations to Benefit the Environment, or GLOBE, began more than 25 years ago as a program designed to educate students—and the public—about Earth system research and to allow people to participate in research in a meaningful way. In 2017, the program's GLOBE Observer (GO) app introduced the Mosquito Habitat Mapper tool, allowing volunteers to share on-the-ground observations about mosquito populations, including habitat documentation, larvae counts, and photos of habitats and specimens.

The Mosquito Habitat Mapper program is designed to gather meaningful data regardless of a volunteer's ability or interest level. Volunteer scientists can record observations without an Internet connection, and they can complete as many or as few questions as they like at a given time. An "I'm not sure" option reduces errors from guessing.

Low et al. describe results from the Mosquito Habitat Mapper tool's first three years, organize the data, and demonstrate that data sets sourced from the public make a valuable contribution to scientific research. The authors also point out that because methods and various details are carefully documented, scientists have enough information to decide whether this data source will work for a given experiment. More than 24,000 observations were reported during the tool's first three years.

The program not only is a useful tool for scientists but also benefits app users' communities. The tool educates volunteers about the science surrounding mosquito life cycles, giving them a knowledgeable voice in local mosquito management decisions. In addition, the Mosquito Habitat Mapper encourages participants to fight mosquito populations directly. It encourages mitigation, such as covering or dumping out containers of standing water to prevent mosquito larvae from becoming bloodsucking adults. This widely used, user-friendly app creates an army of locals with

the keys to participate in the most important part of mosquito disease mitigation.

**More information:** Russanne Low et al, GLOBE Mosquito Habitat Mapper Citizen Science Data 2017–2020, *GeoHealth* (2021). DOI: 10.1029/2021GH000436

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