



GLOBE
**mosquito
habitat
mapper**



Empowering Armies of Citizen Scientists to Reduce Mosquito-borne Diseases

Dorian Janney
NASA/GSFC/ADNET
dorian.w.janney@nasa.gov



- The recently released GLOBE Observer *Mosquito Habitat Mapper* has been selected to form the core of the International *Global Experiment* for the next year.
- Museums, science centers, libraries, parks, and other interested groups of citizens will learn how to use the MHM and how to access NASA data sets to conduct research to determine how certain environmental variables impact the onset of mosquito-borne diseases.
- This presentation will describe this worldwide effort and share information about how to get groups involved in your region.



Initiative Empowers National Networks, Stakeholders and Governments to Generate and Access Real-time Data and Tools through UN Electronic Platform ‘Environment Live’

Geneva, 8 May, 2017 – A new alliance of citizen-science organizations and UN Environment will be launched, Monday, in an effort to escalate the global fight against mosquito-borne diseases, responsible for killing close to 2.7 million people annually, mostly in Africa and Latin America. Overall mosquito borne cases are estimated at 500 million every year.

The new initiative, launched under the name ‘**Global Mosquito Alert**’, brings together thousands of scientists and volunteers from around the world to track and control mosquito borne viruses, including Zika, yellow fever, chikungunya, dengue, malaria and the West Nile virus. It is the first global platform dedicated to citizen science techniques to tackle the monitoring of mosquito populations.

The programme is expected to move forward as a collaboration involving the European, Australian and American Citizen Science Associations as well as the developing citizen science community in Southeast Asia.

Agreement to launch the initiative was reached at a two-day workshop that took place in Geneva earlier this month, organized by UN Environment, the Wilson Center’s Science and Technology Innovation Program (STIP), and the European Citizen Science Association (ECSA).

Director of Science at UN Environment Jacqueline McGlade said “The Global Mosquito Alert

GLOBAL EXPERIMENT

Using a new GLOBE app to track mosquitoes and mosquito borne diseases

The mosquito is the most dangerous animal in the world. While there are more than 3,500 species of mosquitoes, only about 200 species—and only their females—carry the diseases that are so harmful to humans. Some of these mosquitoes are responsible for spreading the Zika virus, which is implicated in serious birth defects found in thousands of babies in South America alone. Mosquito borne diseases kill close to 2.7 million people annually.



The good news is that we can make a difference in working together to eradicate these killers from our neighborhoods through awareness and action. The **GLOBE** Observer (GO) Program just released a tool enabling citizen scientists worldwide to use their mobile devices for identifying and eliminating potential mosquito breeding sites. Using the mobile application, GO Mosquito Habitat Mapper, citizen scientists will also be able to identify the mosquito species responsible for transmitting Zika, dengue, yellow fever, and chikungunya. They will



NASA–GLOBE will also share the research that is taking place to identify the spread of mosquito borne diseases, which includes the use of satellite technology to identify environmental conditions that enable mosquitoes to thrive.

Each institution participating in the Global Experiment can identify the mosquito season for its region prior to the activity, so it can host events during the time when mosquitoes are active locally and can determine the level and kind of involvement that matches its programming objectives.



The Mosquito Habitat Mapper

To get the app, go to the **App Store** and search for **“globe observer”**.

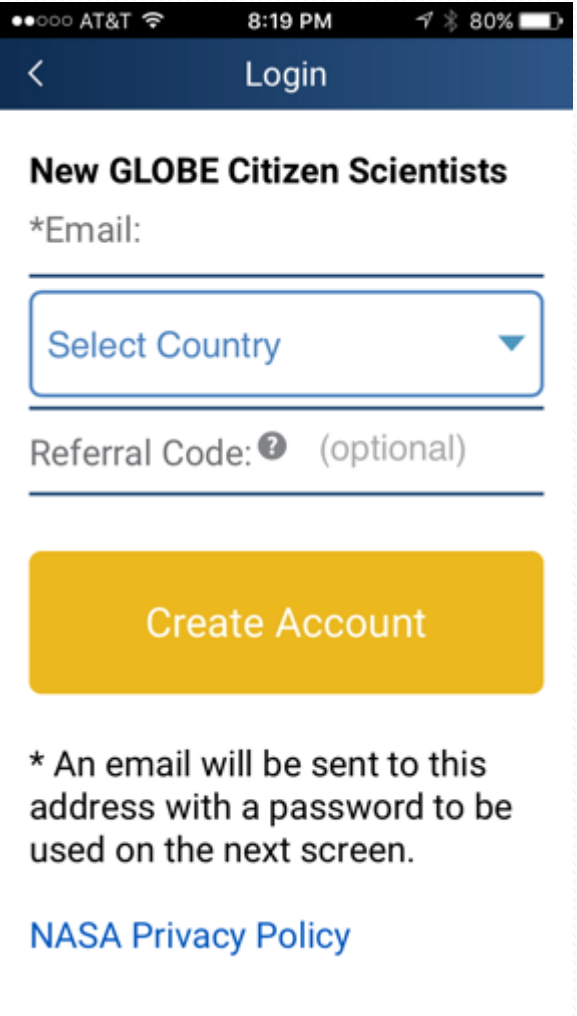


Open the app, and click on “Login/Create an Account”





You will need to enter your email to receive the password.



To get the password, you need to go to your email. It usually only takes a few minutes for the password to arrive.

You will only need to enter the password the first time you use the app.

For the Global Experiment, use the referral code **2468** so we can see how many observations are related to this effort!

- Identify potential breeding sites
- Sample and Count larvae
(these cannot hurt you nor transmit disease!)
- Identify larvae
- Eliminate breeding sites

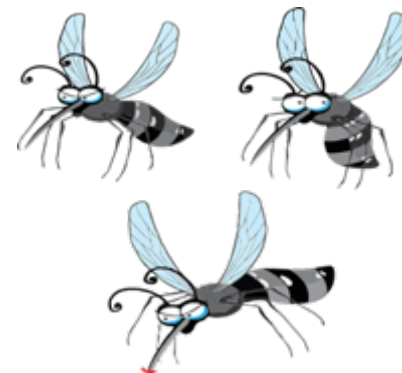




Why is NASA interested in mosquitoes?

NASA studies many aspects of the Earth system, and we assist scientists around the world- Citizen Scientists too- in using NASA data in their research.

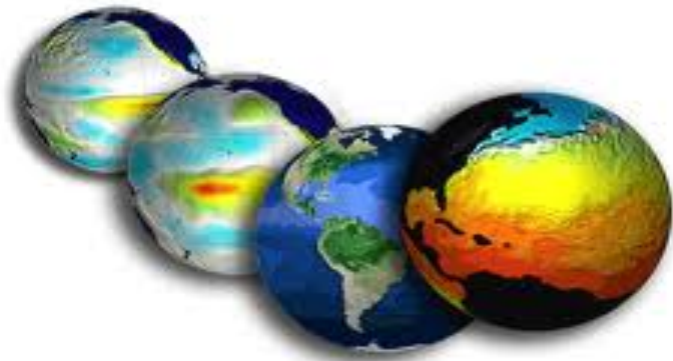
What types of data do you think NASA missions are able to collect that would be useful to people studying mosquitoes?



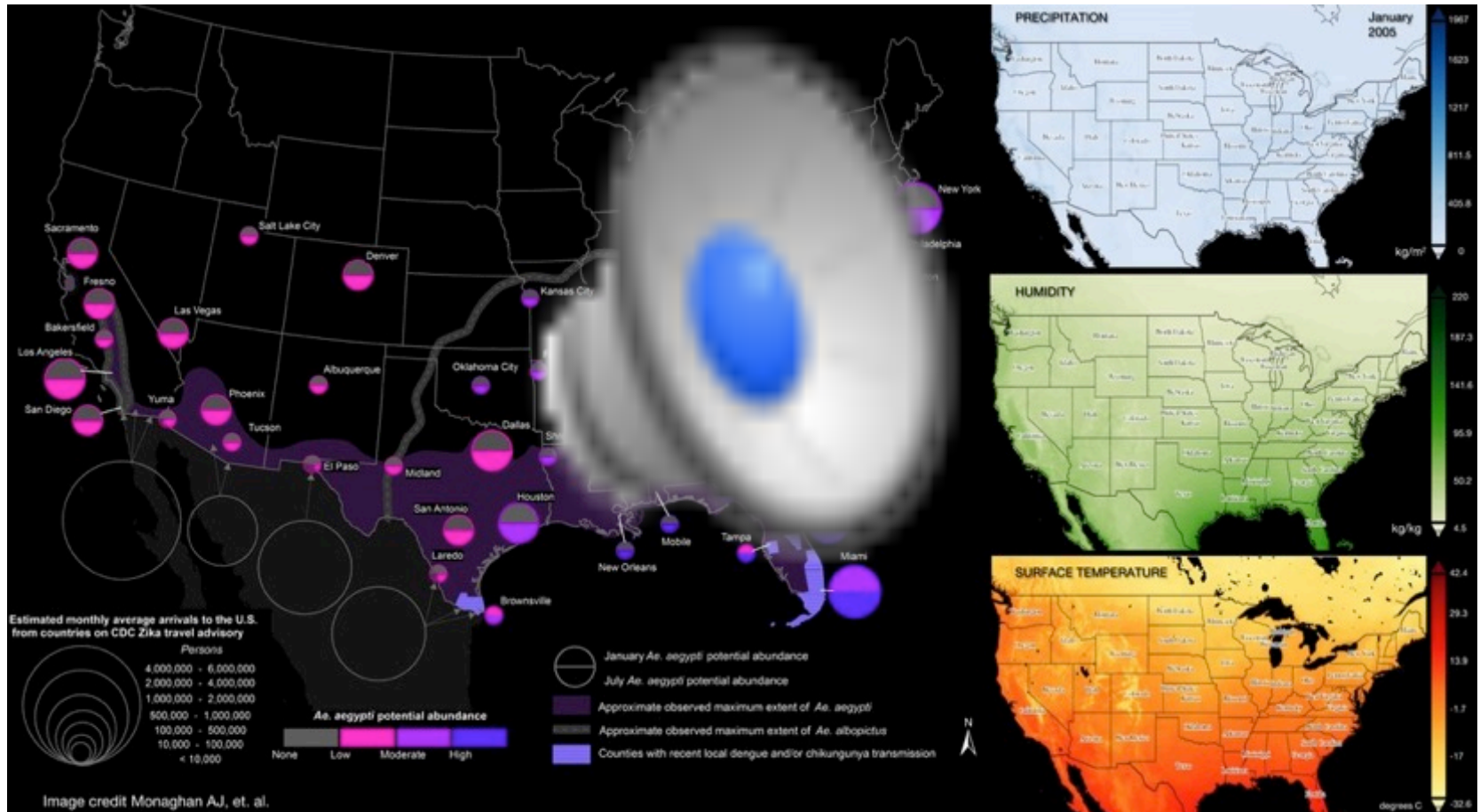


NASA data that is used includes:

- Precipitation
- Soil moisture
- Vegetation types
- Surface temperature

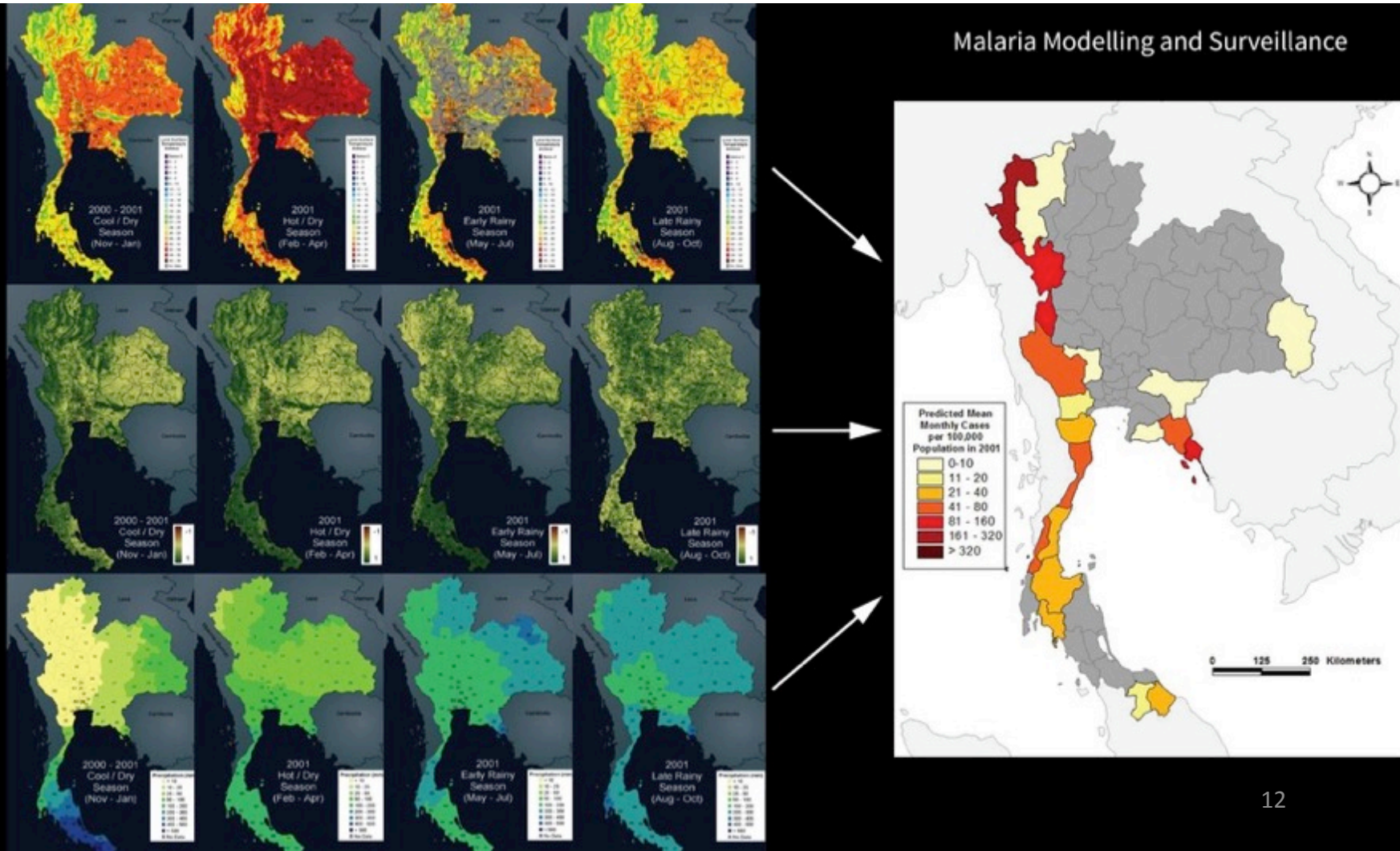


Seasonal Occurrence and Abundance of Zika Virus Mosquito



Malaria Modeling and Transmission

remote sensing data products which are input to malaria model





Join the Global Experiment!

- Access a suite of resources to assist science centers and science museums in training and responding to the Global Experiment.
- Learn which mosquito borne diseases have been found in an institution's country and region using World Health Organization, U.S. Centers for Disease Control, and local health records.
- Find out when and where outbreaks of mosquito borne diseases have occurred in an institution's region.



- See how many potential mosquito breeding sites science center and science museum visitors can identify and eliminate; keep a tally and images of breeding locations (natural and human made) and how these were eliminated.
- Use global precipitation measurement data to see how much precipitation fell in the three months preceding mosquito borne disease outbreaks to see if there is a correlation between precipitation amount and the onset of mosquito borne illnesses in humans.
- Explore data to see if there is a correlation between soil moisture and the onset of mosquito borne illnesses in humans.



- Use surface temperature data to see what the surface temperature conditions were like in the three months preceding the disease outbreaks, and use this data to see if institutions' visitors can determine a correlation between the surface temperature and the onset of mosquito borne illnesses in humans.
- Connect with local scientists and health professionals, and engage them in training sessions and local programming.
- Remember to have participants use the referral code 2468 so we can keep track of how many participants around the world are using this app as a result of your efforts!