



**19<sup>th</sup> FKMCD-Oxitec Public Educational Webinar:  
Mosquitoes & Climate Change  
Tuesday, July 26<sup>th</sup> 2022**

# Introductions – Panelists With You Today



**Andrea Leal**  
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# FKMCD-Oxitec Public Educational Webinar Series

**FKMCD and Oxitec are hosting a series of public educational webinars to share information with residents of the Florida Keys and provide forums to answer questions.**

- Webinars are **open to everyone**.
- Webinars are **recorded and made available for everyone (published online)** after the event.
- **Questions relating to the webinar topic(s)** will be answered during a Q&A session at the end.
- If time runs out, **we accept questions in writing** via [florida@oxitec.com](mailto:florida@oxitec.com).
- All **questions and answers will be treated anonymously**.

# FKMCD & Oxitec Public Educational Webinars

Welcome to Webinar #19!

## Today's Agenda:

- Global climate change & health risks
- Evidence for a hotter, wetter future
- Climate change and invasive species
- Impacts for mosquitoes
- Your questions, answered

Documentation, resources, references, and other information are available at [keysmosquitoproject.com](https://keysmosquitoproject.com)

# Global Climate Change and Health Risks

- World Health Organization predicts 250,000 more deaths globally per year due to malnutrition, vector-borne disease and heat stress
- There are impacts in other ways too including food and water availability

Photo by [Raphael Wild](#)

# NASA Predicts More Intense Climatic Events



- Global climate models predict hurricanes will cause more intense rainfall
- Have an increased coastal flood risk
- Hurricanes that form are more likely to be damaging

Photo by [Jonas](#)

# Evidence for a Hotter, Wetter Future

- The U.S., Europe and China are experiencing some of the hottest temperatures on record
- In some U.S. cities the heat has reached dangerous levels affecting millions of Americans
- In many regions wildfires are more prevalent and destructive than they used to be



# Invasive Species and a Hotter, Wetter Future

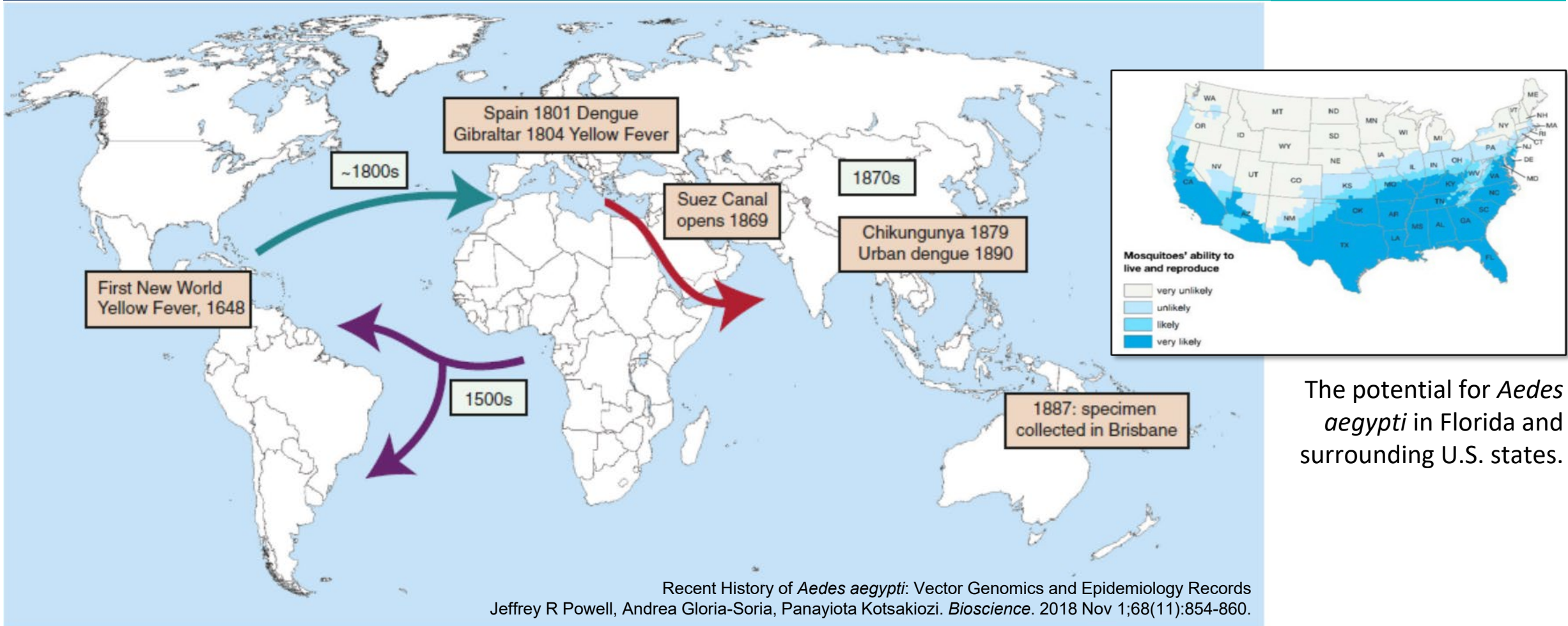
- Many invasive tropical or sub-tropical species may benefit from warmer environments
- Their range is likely to expand northwards as the climate permits year-round establishment

Photo by [Slawek K](#)



# *Aedes aegypti* in the United States

*Aedes aegypti* introduced to the Americas about 500 years ago. In the U.S. it has been spreading north and westward.

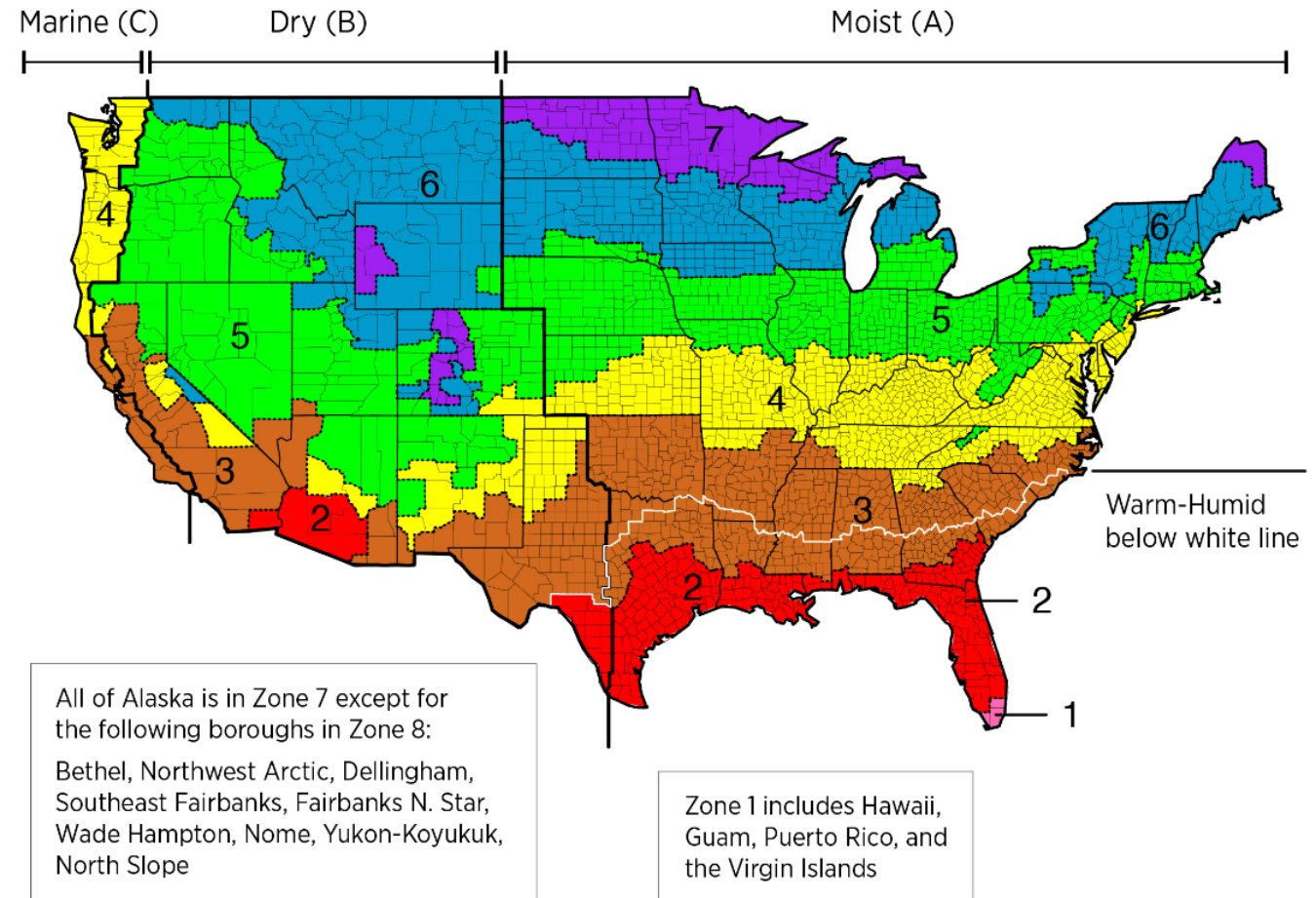


The potential for *Aedes aegypti* in Florida and surrounding U.S. states.

Recent History of *Aedes aegypti*: Vector Genomics and Epidemiology Records  
 Jeffrey R Powell, Andrea Gloria-Soria, Panayiota Kotsakiozi. *Bioscience*. 2018 Nov 1;68(11):854-860.

# *Aedes aegypti* in the United States

- Climate zones reflect *Aedes aegypti* prevalence
- Climate zones 1 and 2 are most at risk from *Aedes*-borne diseases
- Broward, Miami-Dade and Monroe are the only three counties on the mainland in climate zone 1
- *Aedes aegypti* can now be found even in part of climate zone 4
- Since 2013, it has established and expanded 20 counties in California



# A Warmer Climate Means More Infectious Bites

- Higher temperatures lead to more generations per season
- Higher temperatures means faster virus development and more infectious females
- Warmer regions will promote the spread of mosquitoes
- Higher rainfall means more places to lay eggs

Photo by [Lucas van Oort](#)

# Climate Change May Affect Mosquito Hosts Too!

- Many birds and mammals are important reservoirs for mosquito-borne viruses
- Many birds serve as reservoirs for mosquito-borne viruses – such as crows, jays, robins, sparrows, finches
- The same is true for deer, squirrels, chipmunks and rabbits
- We don't know what effect climate change could have on individual and population health of these animals



# Urbanization Compounds the Threat of *Aedes aegypti*

- *Aedes aegypti* prefers humans as hosts and is almost exclusively found in and around our homes
- Increasing urbanization and human population densities promote establishment and expansion of this potentially dangerous mosquito



Photo by [Scott Webb](#)

# Biological Control using Oxitec *Aedes aegypti* Males

✓ TARGETED SUPPRESSION

✓ SAFE, NON-TOXIC, NON-ALLERGENIC

✓ PROVEN EFFECTIVENESS



MALE-ONLY RELEASES  
(male mosquitoes do not bite)

TRACEABLE IN THE FIELD

SELF-LIMITING IN THE ENVIRONMENT



This combination of unique characteristics of Oxitec's mosquito technology distinguish it from other mosquito control methods

# Question and Answers

Any and all questions on this evening's topics are welcome!

*(If we run out of time tonight, email [florida@oxitec.com](mailto:florida@oxitec.com) and we will attempt to answer your question if it isn't included in the growing FAQ or post-event summary we publish online at [oxitec.com/florida](http://oxitec.com/florida) and [keysmosquitoproject.com](http://keysmosquitoproject.com))*

# THANK YOU!

For more information, please visit us at [oxitec.com/florida](http://oxitec.com/florida) and [keysmosquitoproject.com](http://keysmosquitoproject.com)



Photo by [Shelly Collins](#)