FKMCD-Oxitec Public Educational Webinar #13

The FKMCD-Oxitec Mosquito Project At Launch

28 April 2021

FLORIDA Mosquito Control DISTRICT KEYS

OXITEC

Introductions – Panelists With You Today

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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 after the event.
- All questions relating to the webinar topic(s) will be answered (some in batches if questions are similar).
- If time runs out, we will accept questions in writing via florida@oxitec.com.
- Questions and answers will be published in writing after the event with external or related online resources/references.

Upcoming: Our webinar series continues in May!

Welcome to Webinar #13!

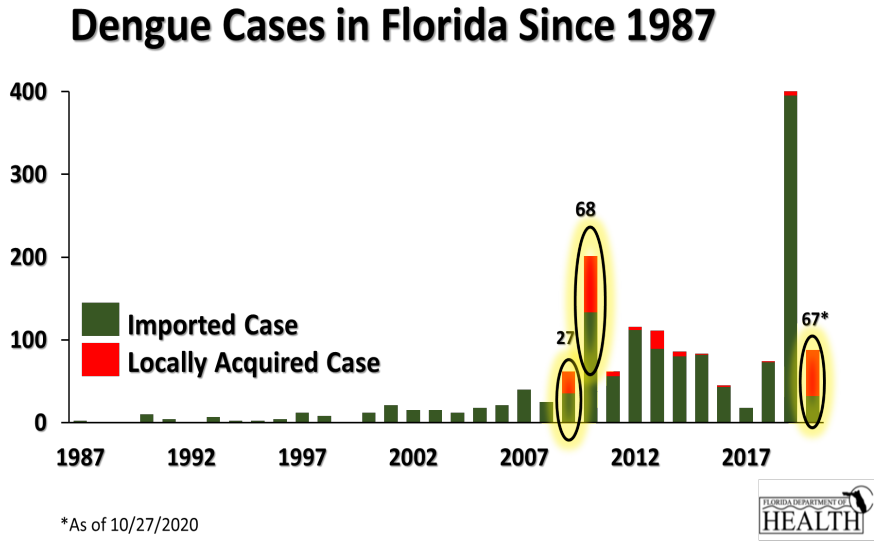
Today's Agenda:

- Project deliverables
- How the success of the project will be measured
- What to expect now and through the summer
- Your Questions Answered

Documentation, resources, references, and other information are available at keysmosquitoproject.com

Why now, Why the Florida Keys? – Health and the Environment

- Dengue is an ongoing challenge with over 65 confirmed locally-acquired cases in Monroe County in 2020
- The threat of other diseases such as Zika, chikungunya and yellow fever persists
- Insecticide resistance in local mosquitoes
- Need more tools in our toolbox

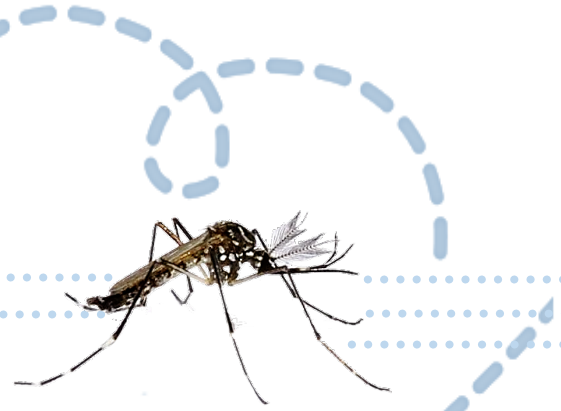


- Environmental impact is a major consideration, including for human health
- Using species-specific tools minimizes harmful impacts
- Nine national and state agencies concluded Oxitec male mosquitoes pose no risk to human or environmental health

Endangered Schaus' swallowtail butterfly lives near the recent dengue outbreak

Oxitec's Aedes aegypti Mosquito Technology ("OX5034")

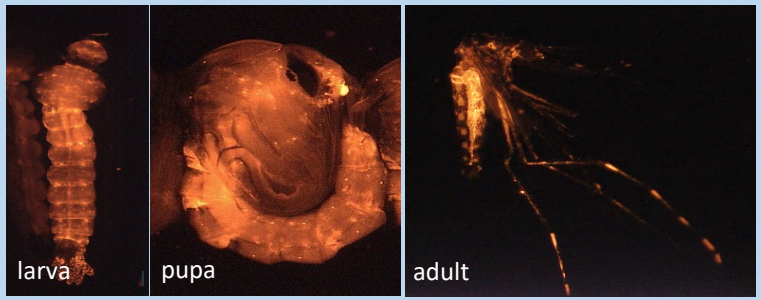
OXITEC'S *AEDES AEGYPTI*



- ✓ 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 ✓

- No females produced
- Low-tech, egg-based devices

- Easy track-and-trace in the field
- Non-toxic, non-allergenic



How Oxitec Manages Field Pilots & Data Collection

1

Regulatory Pilots

Small | high statistical power | protocol approved by regulators | biology/efficacy measured

2

Demonstration Pilots

Larger pilot to demonstrate area-wide performance | designed w/ regulator | compared with control

3

Operational Deployment

Deployed as vector control tool to suppress vector population over an area

How We Measure Performance

OX5034 performs like a larvicide.

It only kills female larvae of the next generation.

METRIC	DESCRIPTION	USEFUL FOR
Abundance	The number of wild *Ae. aegypti* in a trap	Checking baseline population levels and changes
Overflooding ratio	The ratio of Oxitec males to wild males	Achieving optimal dose rate
Mating fraction	The proportion of females mated by Oxitec	Evaluating the proportion of the population treated
Efficacy	The percentage of treated females that die	Confirming 100% effective against treated females

How We Collect Data

1 Egg Collection Ovitraps

Small plastic cups

Monitors the numbers of eggs laid by *Ae. aegypti* females

2 Adult Mosquito Collection

Captures adults

Monitors ratios and numbers of *Ae. aegypti* adults

3 Lab-based Monitoring/QC

Stereo microscopes

Used to track performance and confirm quality

FKMCD-Oxitec Pilot Project

Purpose

1. Broaden the toolbox to protect communities against invasive species and diseases
2. Preserve both the quality of life for residents and the delicate Florida Keys ecosystem
3. Evaluate this safe, innovative tool for fighting *Aedes aegypti*

Project: Evaluate Oxitec's Aedes aegypti Just Add Water Technology

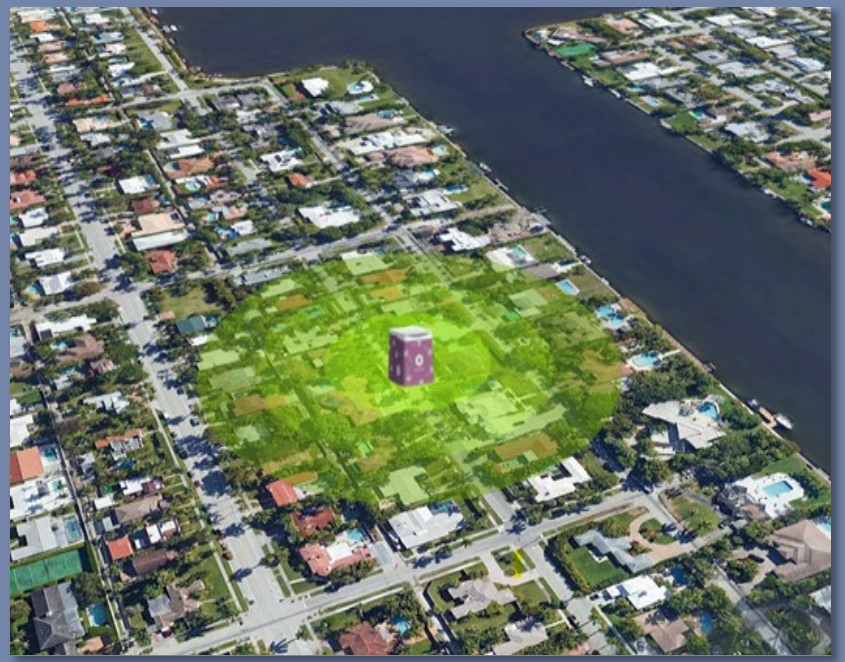
Project Components

1. Community Engagement
2. Project A: Single-point Releases
3. Mark-Release-Recapture
4. Project B: Area-wide Releases

Trial Locations and Mosquito Releases

PROJECT A

SINGLE POINT RELEASE



Regular device placements in 6 small areas
~12 weeks
~12,000 mosquitoes per week across all areas

LOCATIONS

Project A: RAMROD KEY, CUDJOE KEY (x2), VACA KEY (x3)

TRAP TO COLLECT MOSQUITO EGGS

TRAP TO COLLECT MOSQUITO ADULTS

PROJECT B

MULTIPLE RELEASE POINTS

Small number of devices placed per week in up to 6 areas

~16 weeks

Project A: What's Happening This Week?

- Mosquito Boxes placed in yards
- Male OX5034 mosquitoes will start to emerge ~14 days after placement
- After 28 days, the Box is replaced with a new one
- Adult and egg traps around release sites

Evaluation Elements

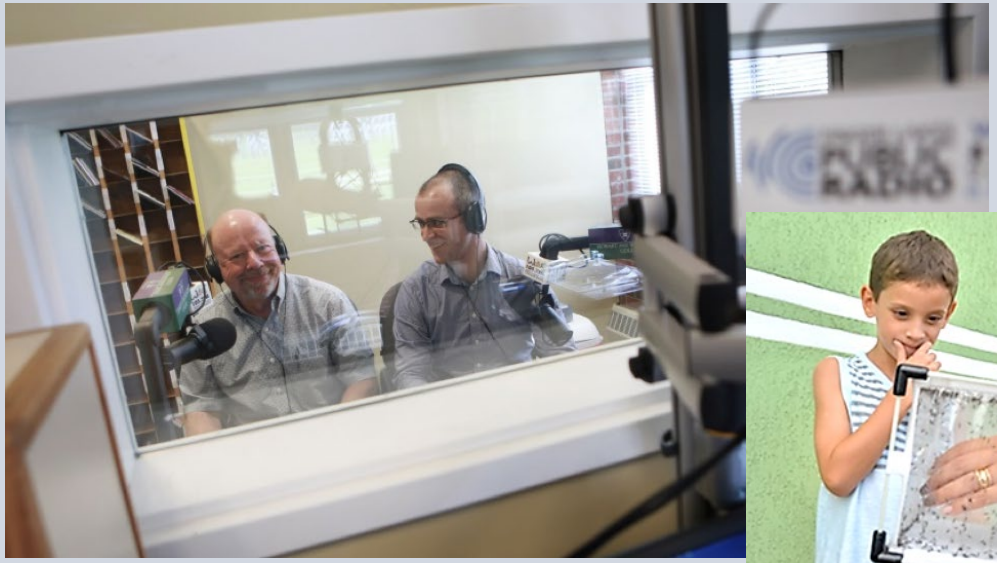
- Duration of effect (residual activity)
- Male flight range and longevity
- % kill of female mosquitoes
- % of the wild population treated
- 6 Release Sites and 3 Control Sites

What To Expect Throughout The Summer

- Project A will last for approximately 12 weeks
- Project B will place multiple boxes in small neighborhood release areas
- After releases end, areas will be monitored until no OX5034 mosquitoes remain
- Following the end of mosquito releases, full data analysis will be completed and shared with regulators

10 Years of Florida Keys Engagement

Working together, FKMCD and Oxitec will continue engaging, listening and sharing with communities in the Florida Keys.



Community Approach:

- Full coordination between FKMCD and Oxitec
- Transparency and robust information sharing
- Listening and learning from communities and stakeholders
- Inclusive engagement programs specific to community members and groups
- Broad view of stakeholders – citizens, communities, businesses, experts
- Multiple avenues for anyone to contact and engage

Recent Community Engagement

FKMCD - #Oxitec Public Educational Webinar #12

30 views • 3 weeks ago

FKMCD - #Oxitec Public Educational Webinar #11

72 views • 1 month ago

FKMCD - #Oxitec Public Educational Webinar #10:...

81 views • 2 months ago

FKMCD - #Oxitec Public Educational Webinar #9:...

109 views • 4 months ago

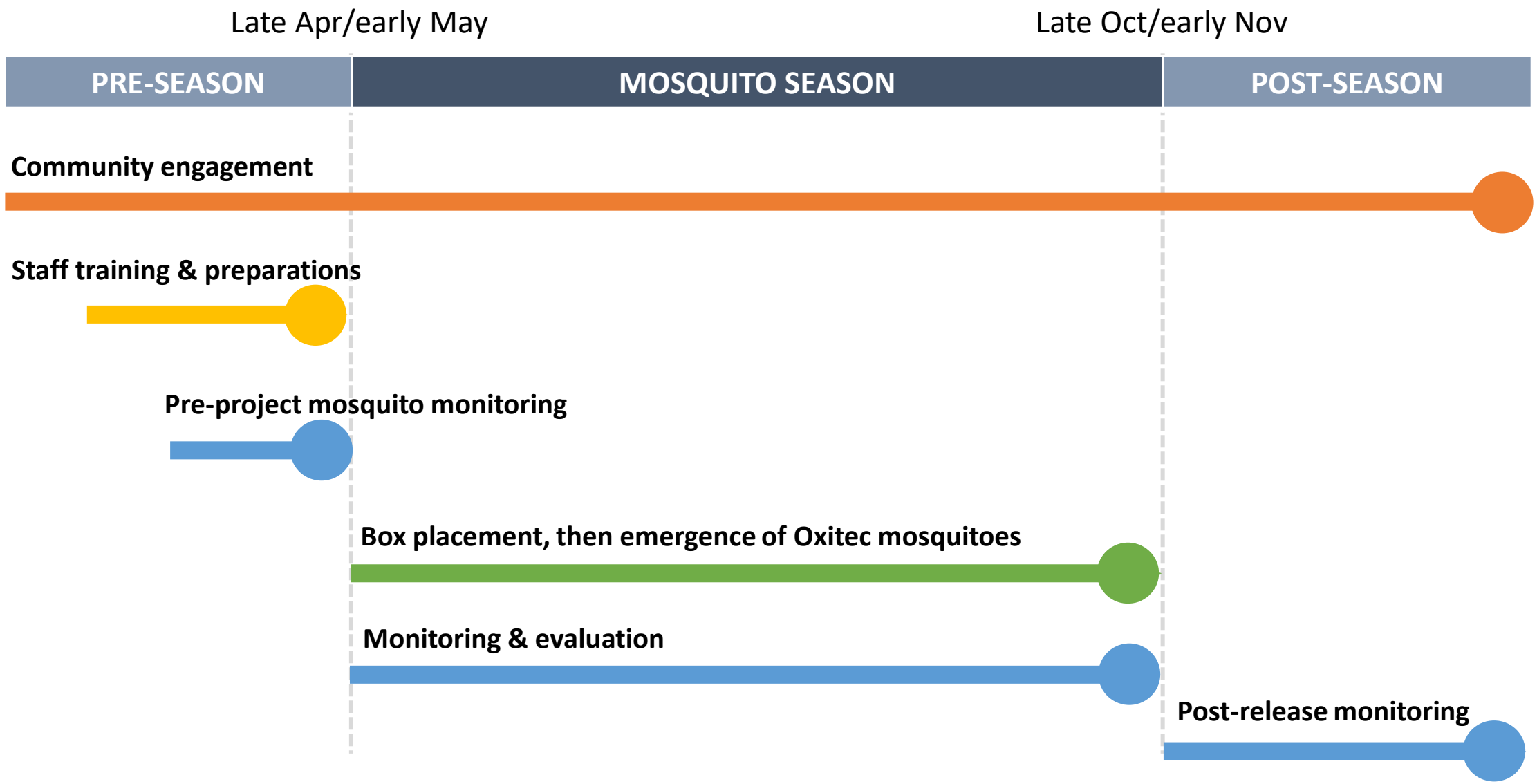
FKMCD - #Oxitec Public Educational Webinar #8:...

128 views • 5 months ago

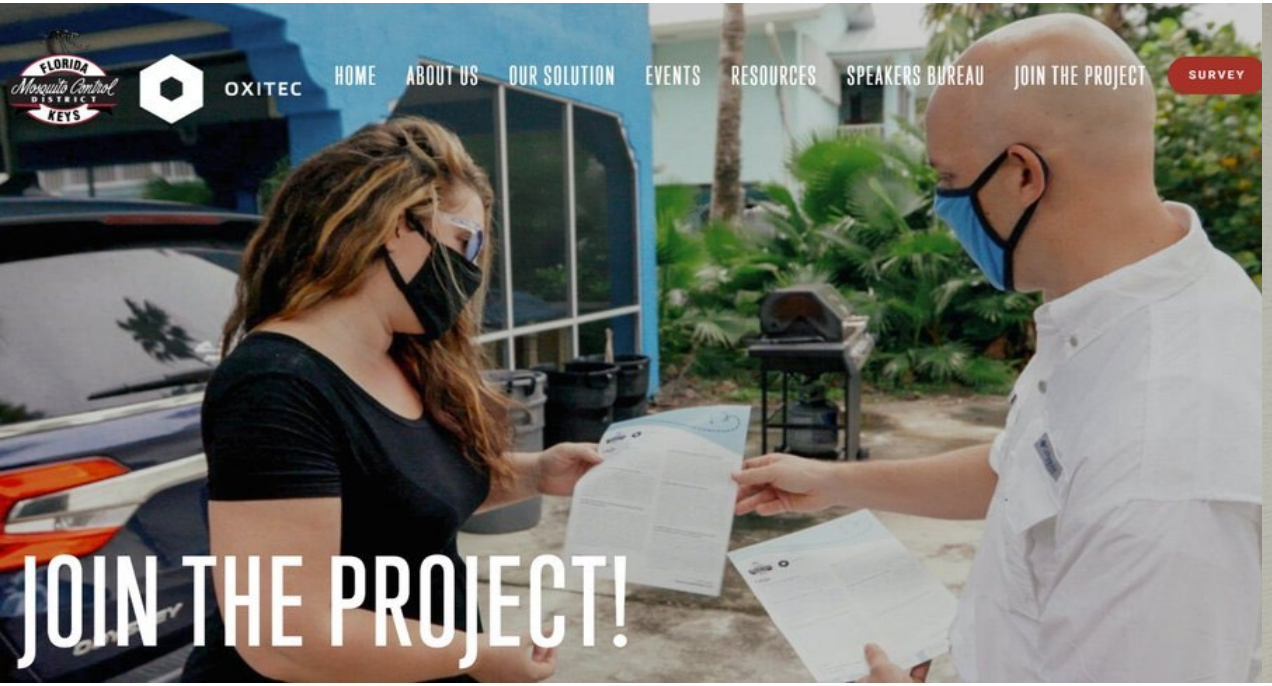
Virtual Tour: Inside #Oxitec Labs Worldwide

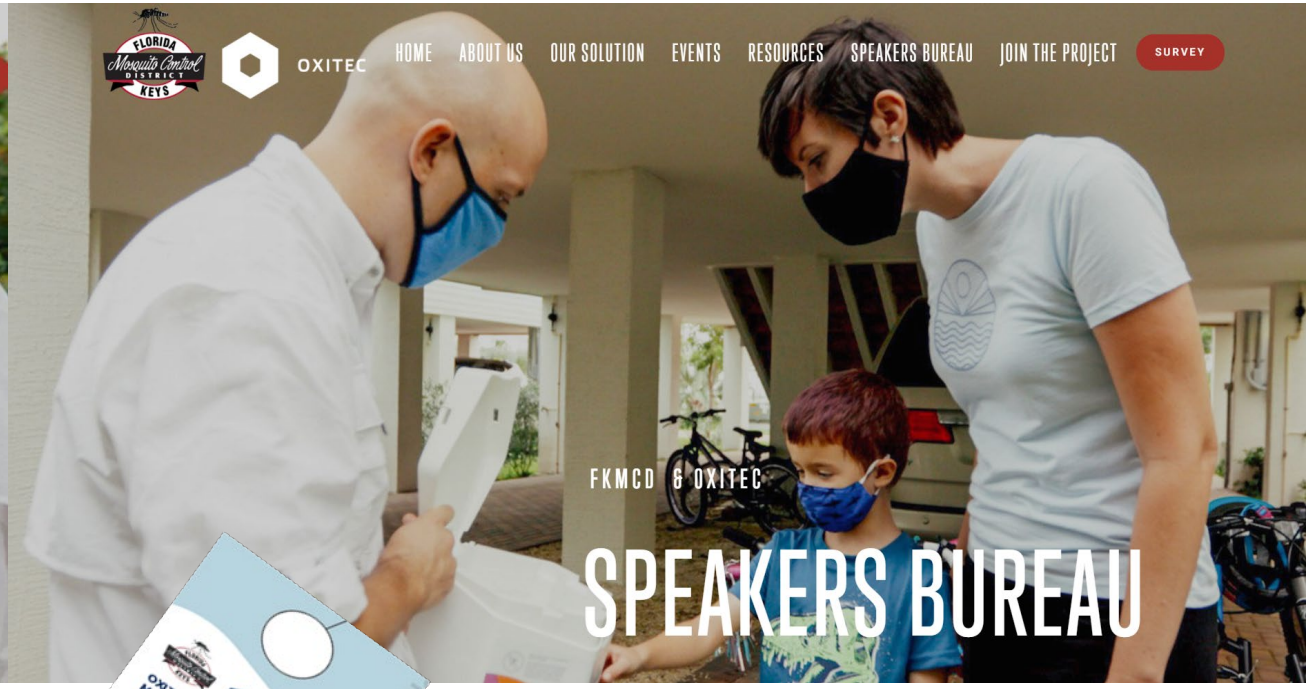
689 views • 5 months ago

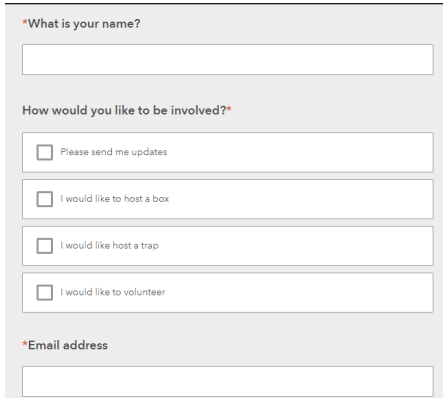
Florida Keys Pilot Project Timeline - 2021



Get Involved!







- ✓ Request a box
- ✓ Request a trap
- ✓ Sign up for updates
- ✓ Volunteer as a Project Ambassador

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 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 and keysmosquitoproject.com)