



Responding to Eastern Equine Encephalitis (EEE) *Lessons Learned*

Jeff Hottenstein / Regional Sales Manager
Virginia Mosquito Control Association Meeting
January 28 to 30, 2020



EEE IS NOT
WNV

PLANNING
PAYS

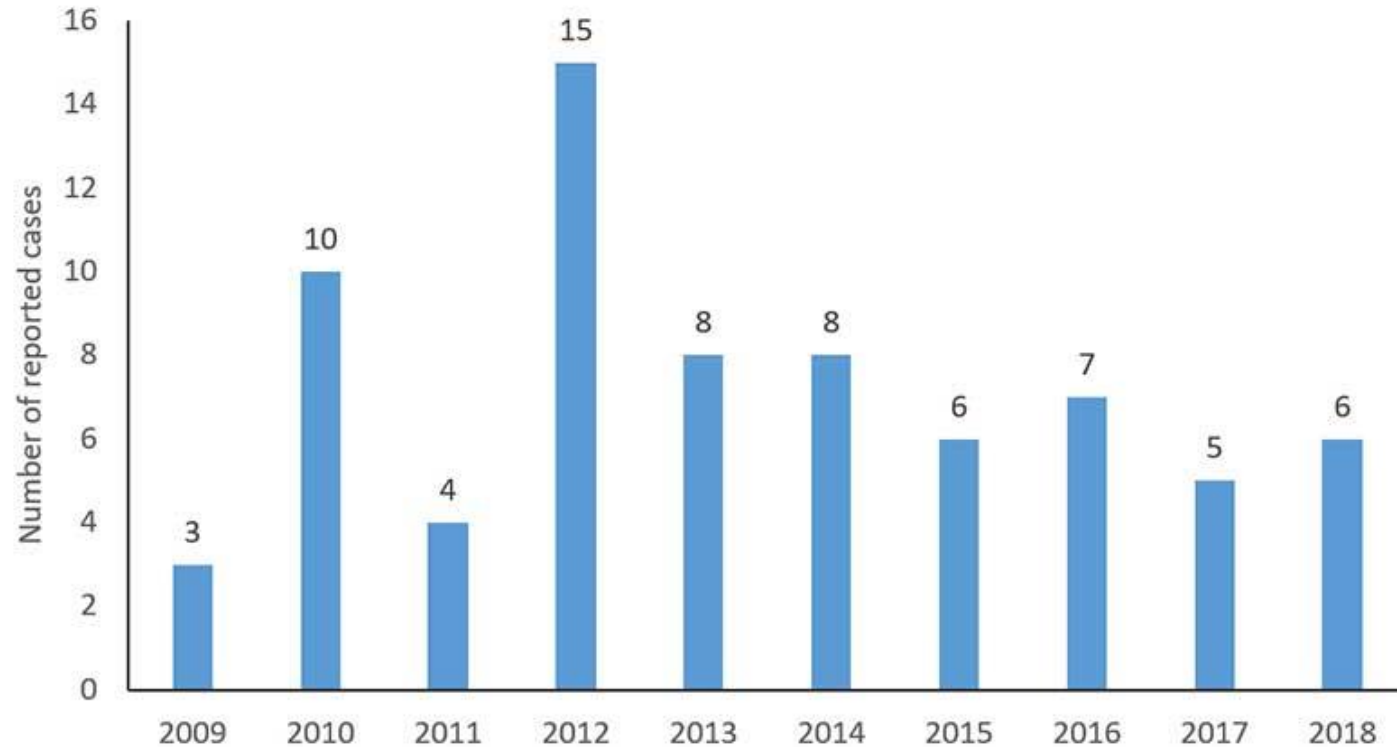
ACCOUNTABILITY
IS EVERYTHING

EEE Is *NOT* WNV

> 30% MORTALITY RATE
IN HUMANS

MORE URGENT
RESPONSE

EEE Human Case History: 2009 - 2018



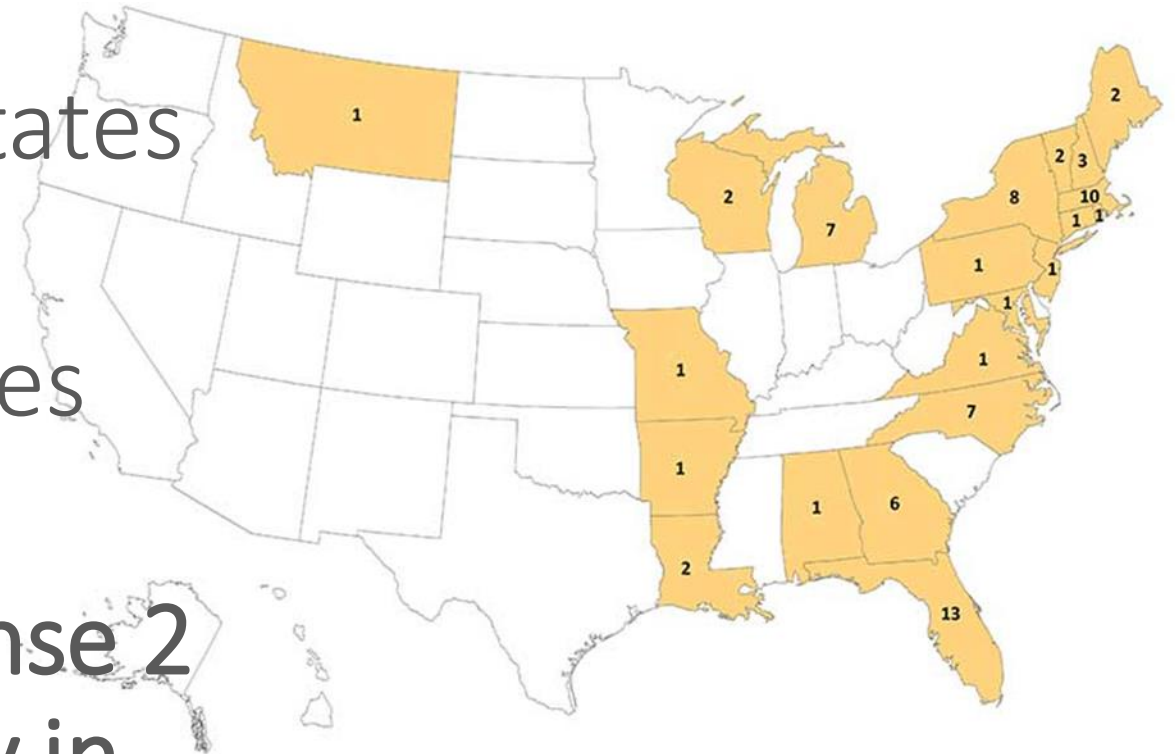
2009 – 2018: 72 EEE human cases reported to CDC

2009 – 2018: 23,039 WNV human cases reported to CDC

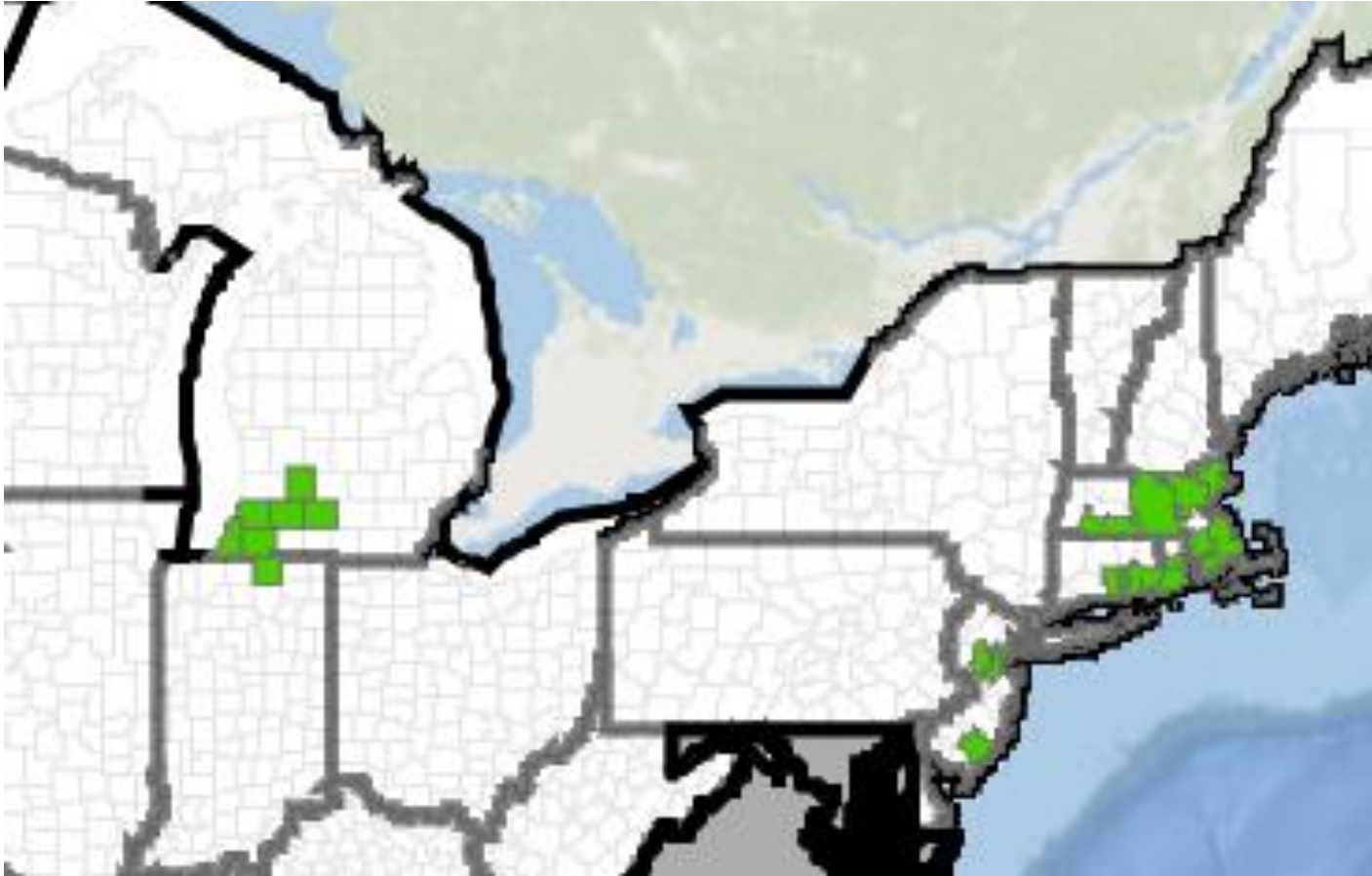


Unpredictable EEE

- In 2019, EEE spiked to 23 states from 13 in 2018
- The highest number of states over the past 10 years
- Experts advise EEE has intense 2 to 3 year cycles, so be ready in 2020!



EEE Human Cases: 2019



As of December 17, 2019, CDC has received reports of 38 human EEE cases, including 15 deaths, from the following states:

- AL - 1
- CT - 4
- GA - 1
- IN - 1
- MA - 12
- MI - 10
- NC - 1
- NJ - 4
- RI - 3
- TN - 1



EEE Impact – 2019 Michigan Case History

Tree-Mendus Fruit Farm

- Owner/Operator Bill Teichman contracted EEE August of 2019.
- *“... now at home, where his 58-year-old body is physically healthy, but the neurological effects of EEE have kept him from communicating or even holding a pencil.”*

South Bend Tribune

- Permanently closed in December 2019
- 500 acre farm, family owned & operated for 3 generations



Planning Pays

Approval to Spray-Ready Timeframes

MASACHUSETTS	RHODE ISLAND	MICHIGAN
✔ Plan in Place	✔ Plan in Place	∅ No Plan
3	2	10
DAYS	DAYS	DAYS



Response Planning

- Massachusetts had sprayed millions of emergency aerial ULV acres for EEE in 1990, 2006, 2010 and 2012
 - ✓ Surveillance and operational protocols in place
 - ✓ Rhode Island coat-tailed Massachusetts
- Michigan
 - ✓ No aerial ULV spraying for 40 years
 - ✓ 2019 – no plan in place
 - Started from scratch



Before Wheels Up . . .

Participants, Process and Communications



1. Responsibilities
2. Regulatory
3. Operational
4. Public Communications



Michigan – EEE Emergency / Questions & “To Do List”

- During those 10 days prior to application, multiple MI State agencies had to determine:
 - ✓ Who needed to be involved?
 - ✓ What had to be done? Surveillance, spray block determination, product selection & understanding of operational needs
 - ✓ Funding?
 - ✓ Public relations plan?
 - ✓ Clarke’s role
 - Provided guidance of the various tasks to be accomplished
 - We provided more integrated support than for any other emergency mission we’ve ever done!



Communications

The Key to Michigan Success

Daily – 10 days prior to first application & throughout the 8 day mission:

- 7 a.m. - Conference Calls with key Michigan Officials
- Noon - Call with Michigan Mission Lead
- 3 p.m. - Conference Call with all involved Michigan Agencies

368 Phones Calls

220 Email Responses



Michigan Support

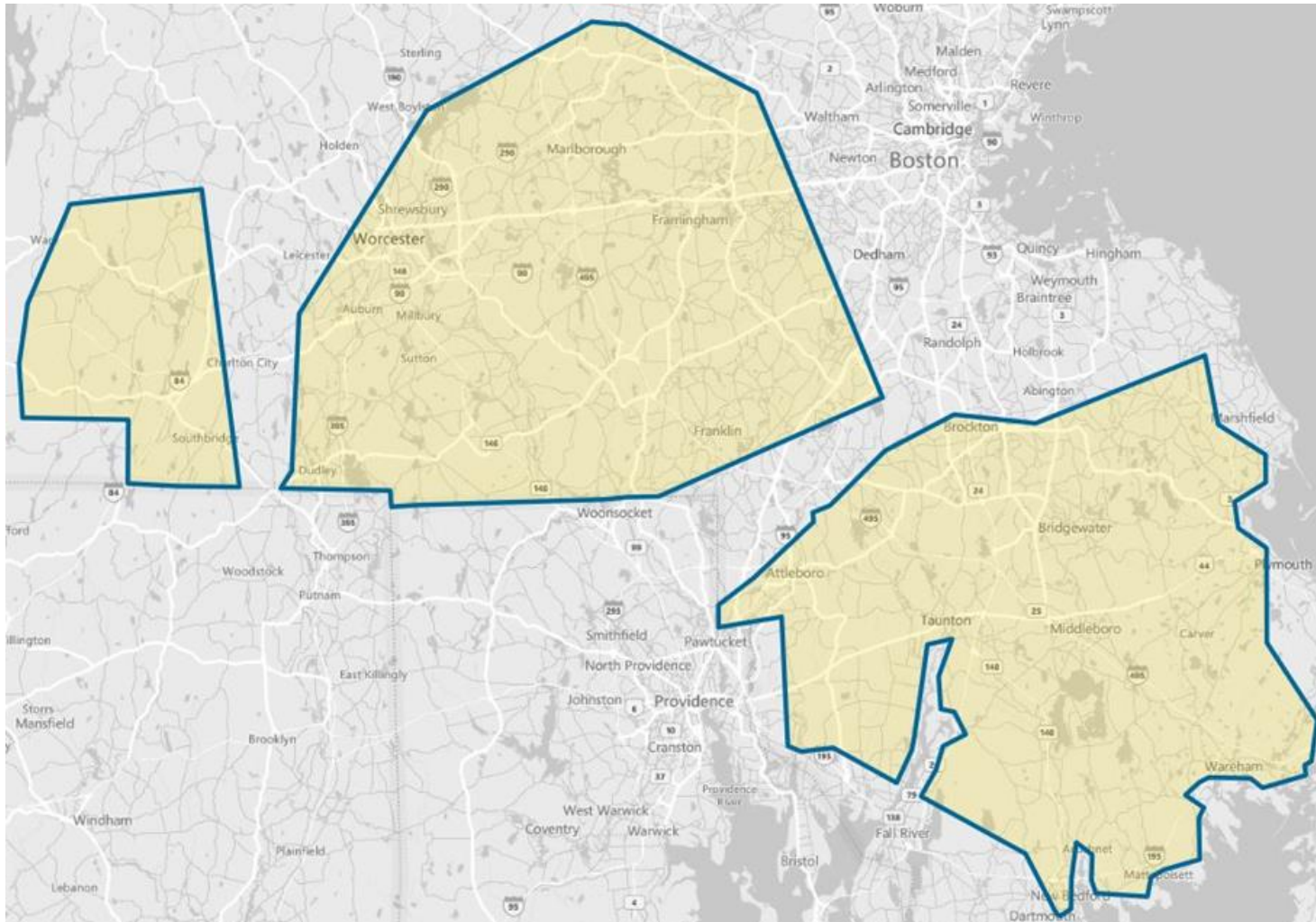
Clarke Support

- 4 person customer care support team
- 2 dedicated GIS staff
- Dedicated public relations & media management
- In-bound resident hotline
- Web content (Michigan and Clarke)
- Direct web inquiry response protocol and staff



Protocol Readiness to Operational

Massachusetts – 2019 EEE



2,048,865 Acres
Anvil 10+10

- Large blocks
*Highest average acreage /
plane / night*

Developed via in-place
surveillance by state and
county agencies



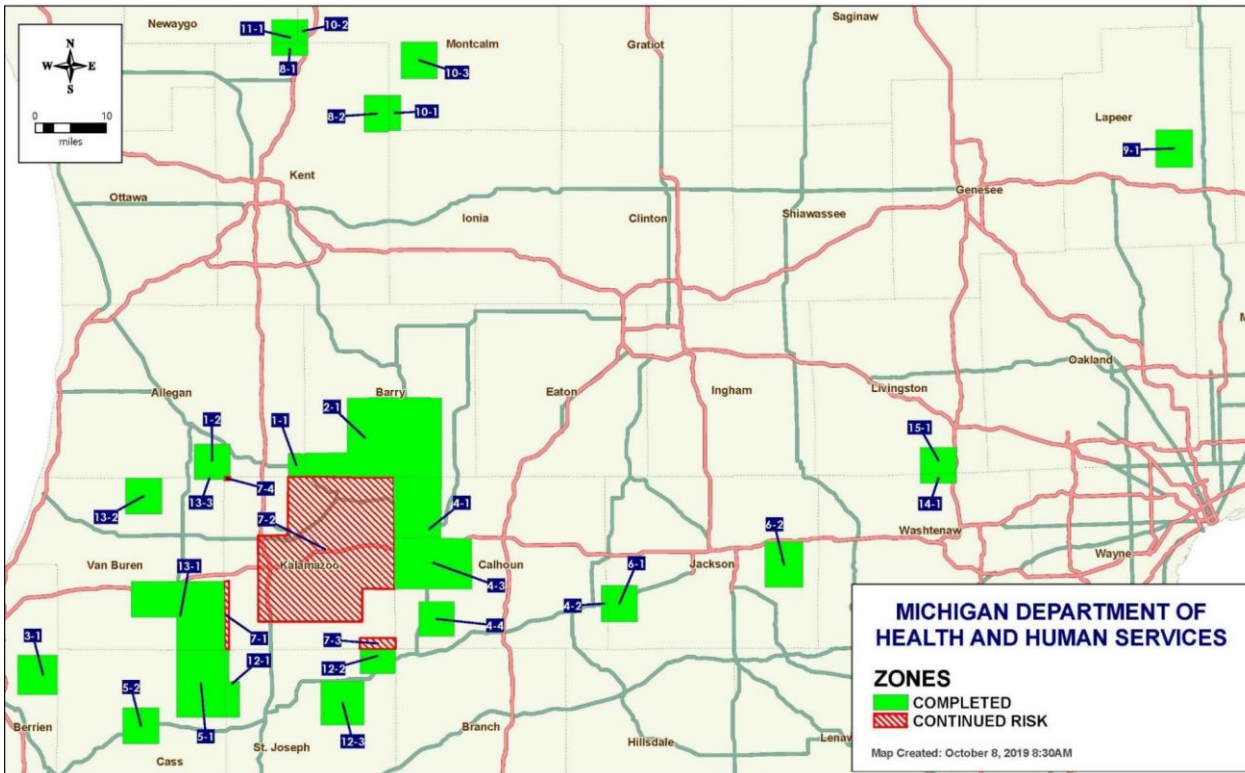
Michigan – 2019 EEE

557,382 Acres

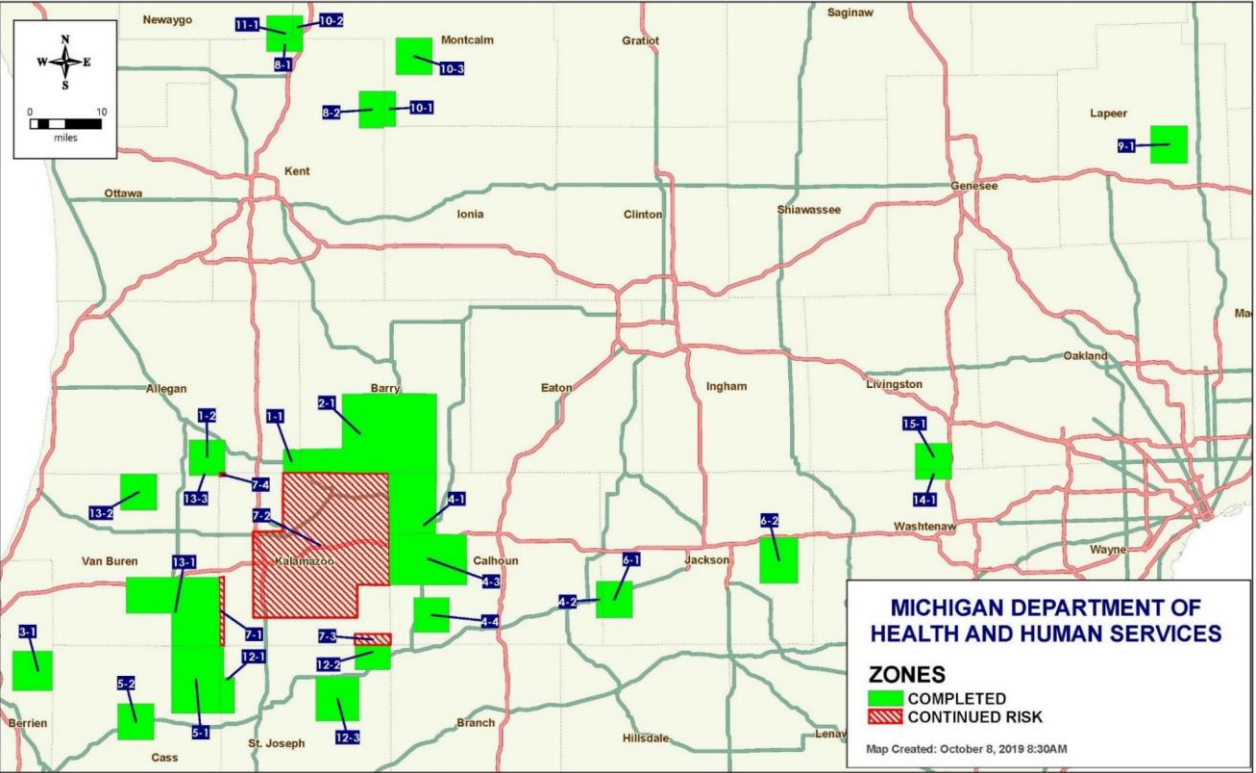
Merus

Small, scattered blocks

- Whole county approach factoring ones with horse or human cases
- Early October weather challenges
- Reduced average acreage / plane / night by ~25 – 30 %



Michigan – 2019 EEE



Is your surveillance network robust enough to uniformly monitor your district / county / state?

Michigan realized the need for statewide surveillance system to capture data uniformly across the state



Michigan – “Opt-Out Law”

ACTION ALERT

**MICHIGAN
AUDUBON
OPPOSES AERIAL
SPRAYING OF
PESTICIDE IN
RESPONSE TO EEE**

OPT OUT OF AERIAL SPRAYING



- Citizens allowed to opt-out from a pesticide application with 48 hour notice
- No state-level emergency was declared to override opt-out law
- Clarke-Dynamic GIS handled **12,000 opt-out requests** for analysis & processing into the final spray blocks



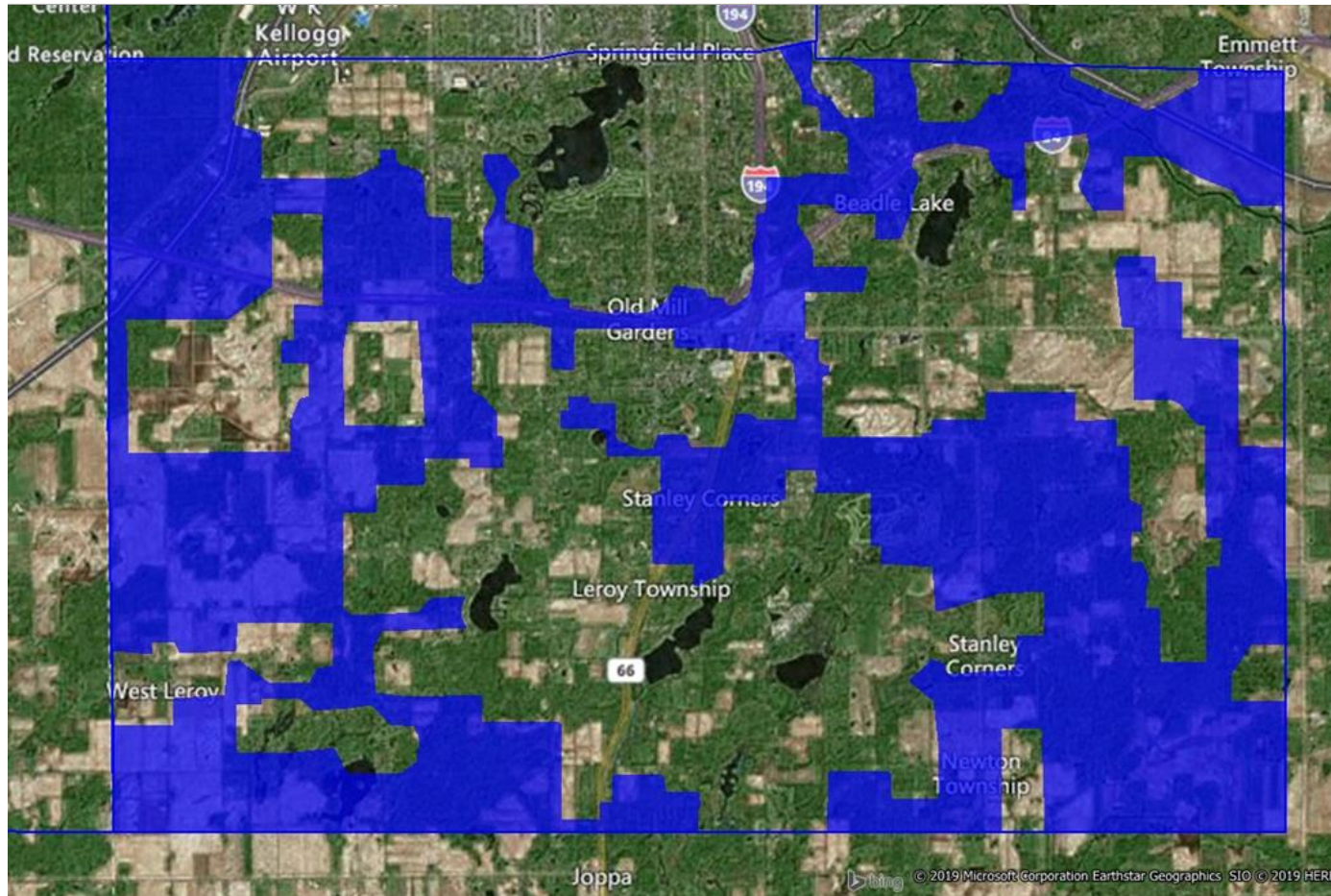
Clarke-Dynamic Opt-Out Law Logistics

- Steps to prepare final spray blocks for each night navigation system
 1. In-bound hotline (800 #) established for this project
 2. Both Clarke & MI state officials received opt-out requests daily via phone, email and website portal & documented into a state master file
 3. Public relations message to counteract special interest group misinformation
 4. Each of the 12,000 requests were mapped and plotted over spray blocks
 - a. 500 foot buffer established around each address
 - b. Confirmed back to the citizen if their address was in a block, or not
 5. Noon deadline to prepare final blocks to forward to Dynamic for final navigation system spray block files
 6. Clarke & Dynamic GIS teams worked nearly 24-7 for 8 days straight to meet the demand



Michigan – 2019 EEE

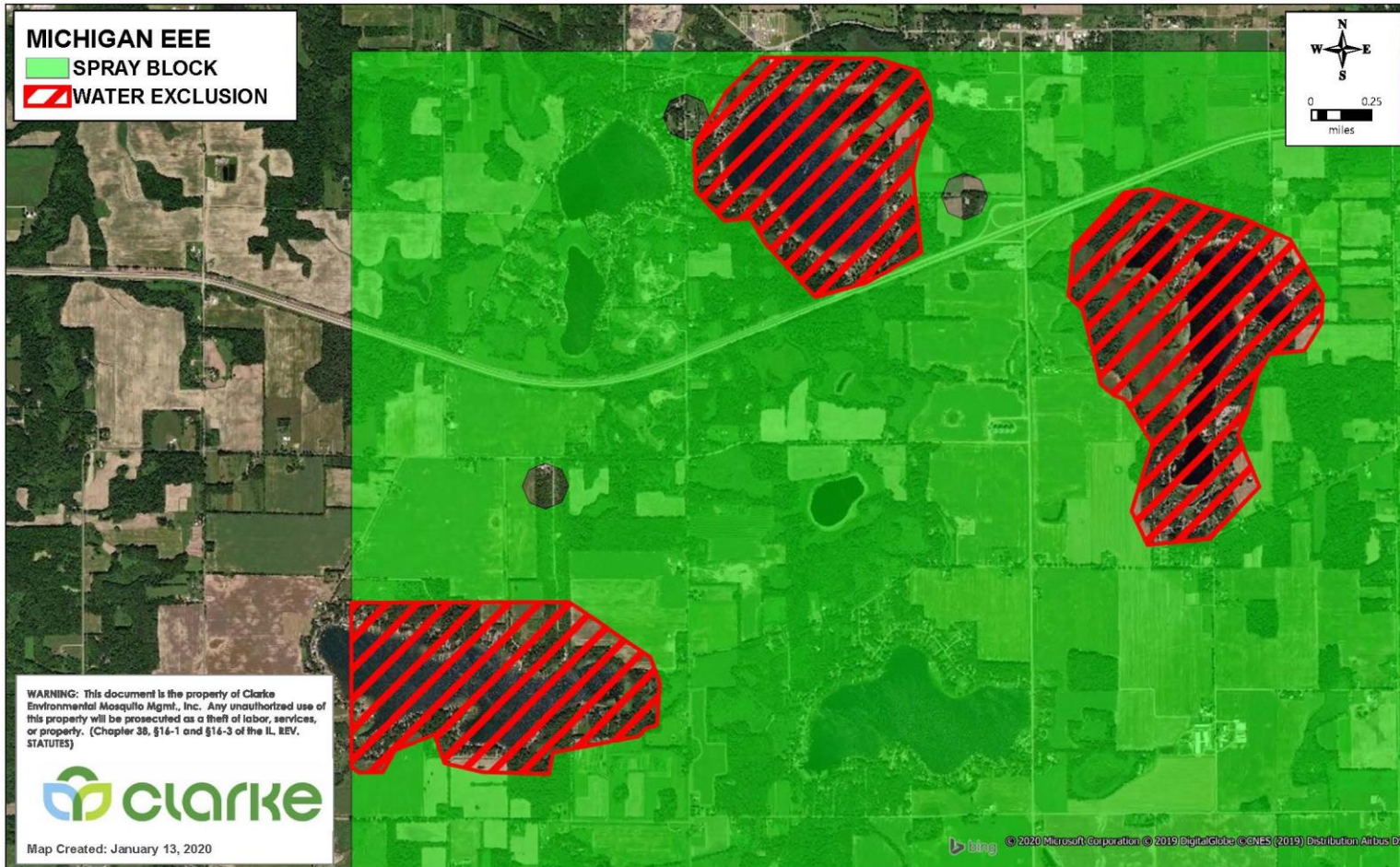
557,382 Acres
Merus



- Small, scattered & “patchy” blocks
 - Entire block was flown & navigation system automatically honored opt-out areas
 - Reduced average acreage / plane / night by ~25 – 30 %



Michigan – 2019 EEE



EXCLUSION ZONES

- Large Water Bodies
- Drinking Water Reservoirs



Rhode Island – 2019 EEE



217,547 Acres
Anvil 10+10

Small blocks

Least average acreage / plane / night

40% more flight time than Massachusetts
due to the number of required turns



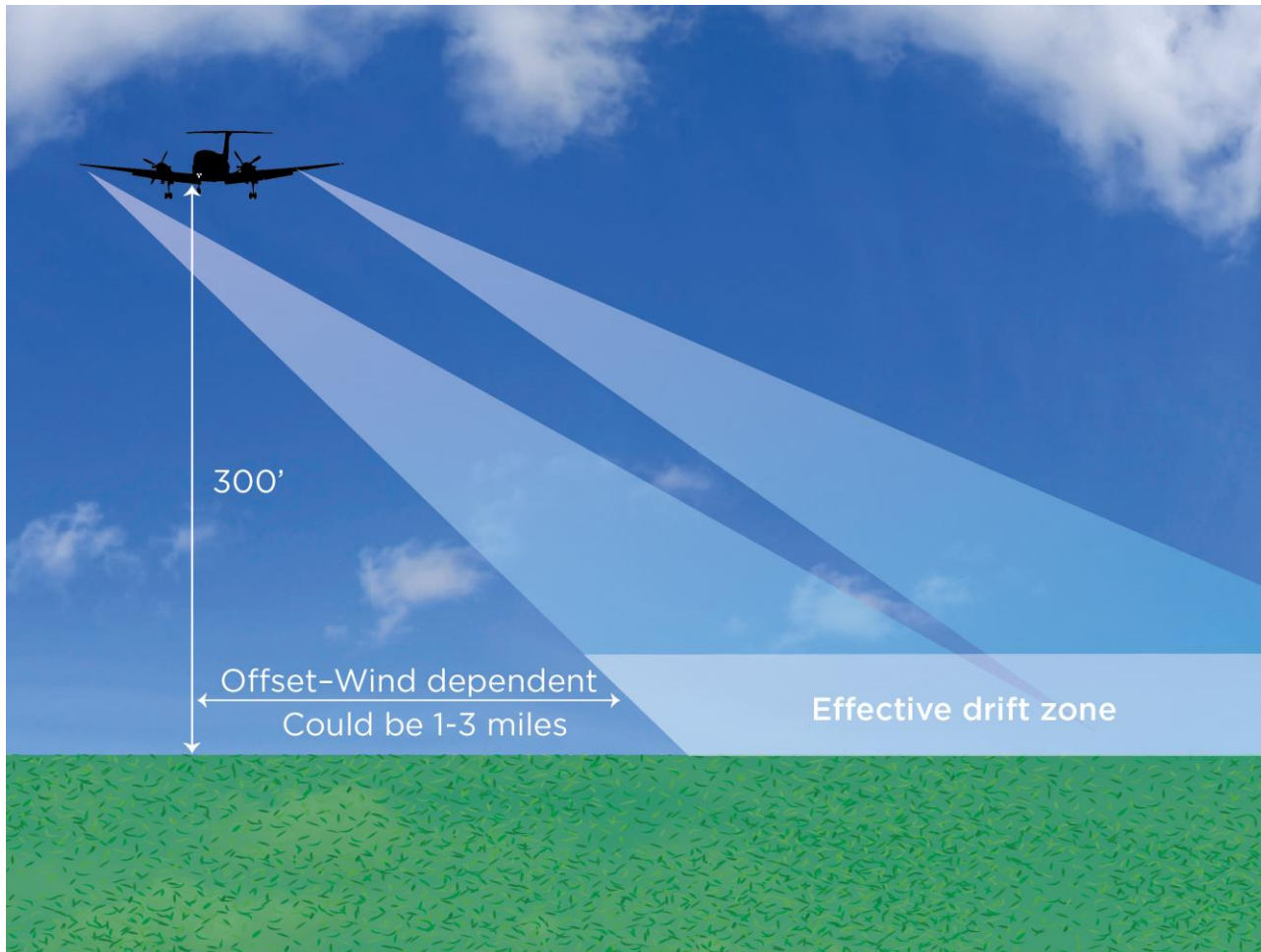
Accountability Is Everything

Mission Transparency for Emergency Programs

- Social media – monitor it & be prepared to defend everything you do!
- Massachusetts & Rhode Island
 - ✓ Public was aware of aerial ULV spraying – so far less negative social media
- Michigan – quite another story
 - ✓ No aerial spraying in 40 years
 - ✓ Special interest negative campaigns
 - ✓ Very little public familiarity of aerial or ground ULV programs
 - ✓ MI - very organic agriculture oriented state
 - Primary reason why Merus was selected – “OMRI rated” for organic agriculture



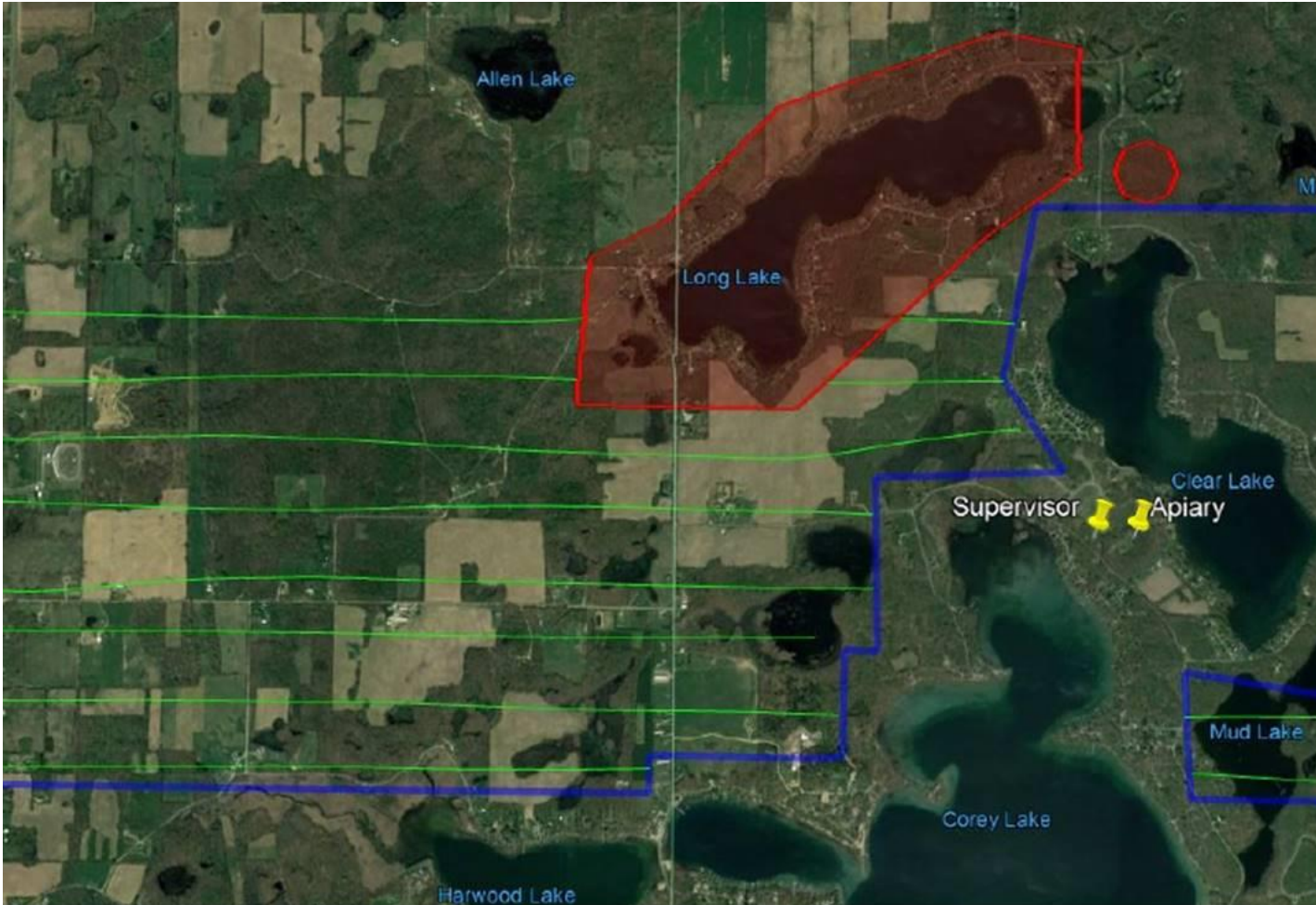
On-board GPS Spray System & OPT Files



- Citizens are quick to think a plane above means deposit below.
- Educating about plane offset and automatic spray shutoff for opt out areas reduces complaint calls significantly
- This graphic was posted on the Michigan website and provided to media



GIS Support – Post Application



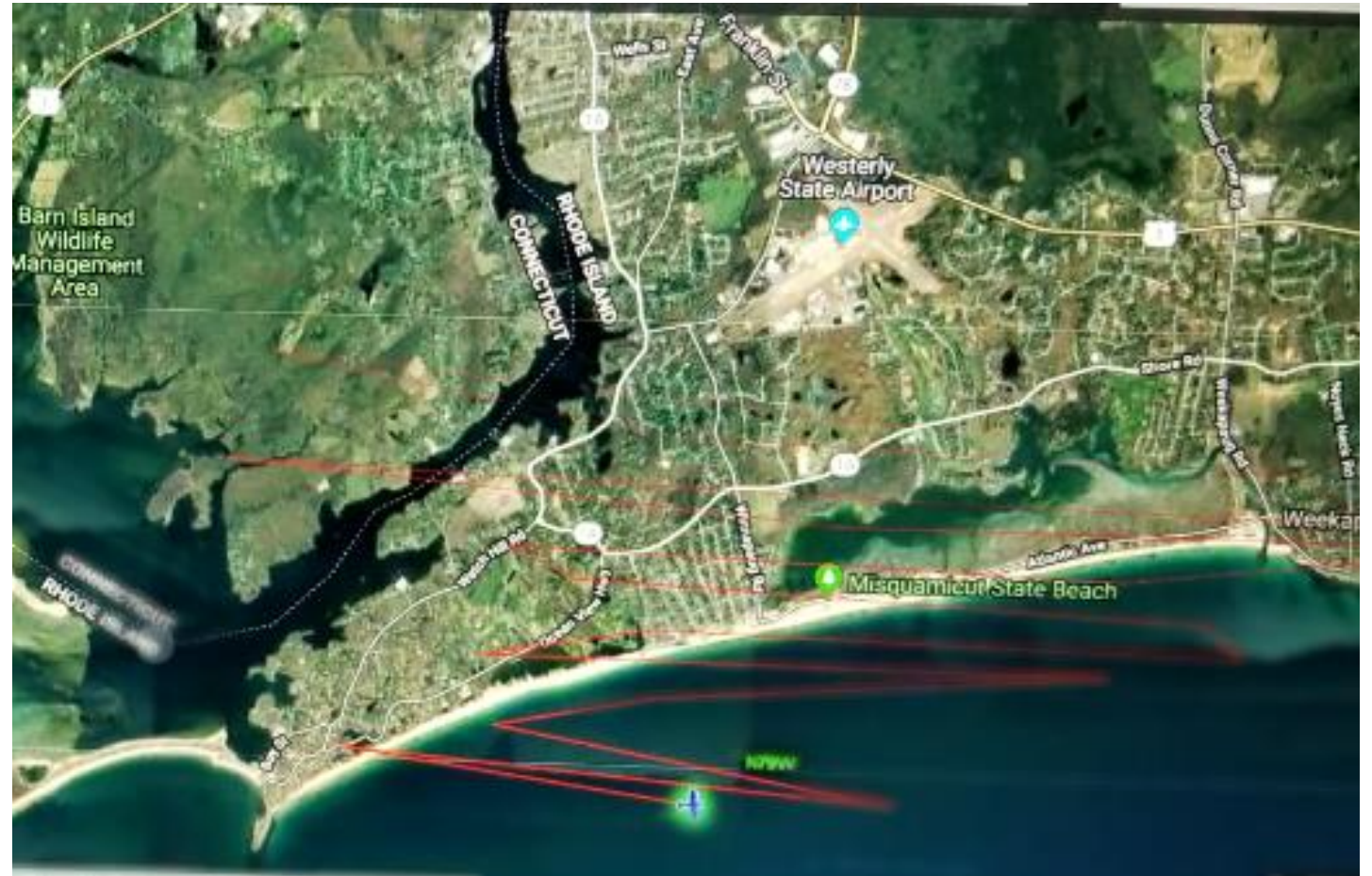
- Public official reported being treated in his opt-out location
- Clarke & Dynamic GIS teams analyzed post-mission flight data
- GIS mapping validated opt-outs were honored & not sprayed



Real-Time Aircraft Tracking

SkyConnect[®] Mission Management System enables live ground to pilot communications and tracking

- Plane's offset shown for a Rhode Island block



It's 2020 . . . They will find you.



Cell phone era!

In Michigan, twitter posts and other social media tracked our planes using the *Flight Radar 24* app.

Triggered calls and email inquires where / when we were spraying.



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Thank you!

