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 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!
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
Tree-Mendus Fruit Farm

- “. . . 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

<table>
<thead>
<tr>
<th>State</th>
<th>Approval Status</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>Plan in Place</td>
<td>3 days</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Plan in Place</td>
<td>2 days</td>
</tr>
<tr>
<td>Michigan</td>
<td>No Plan</td>
<td>10 days</td>
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</tbody>
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**Plan in Place** indicates the plan is ready to go. **No Plan** indicates the plan is not ready to go.
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 %
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”

- 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
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.
EEE IS NOT WNV

PLANNING PAYS

ACCOUNTABILITY IS EVERYTHING
Thank you!