

Impacts of the Eaton fire on mosquito abundance, species diversity, and distribution in the San Gabriel Valley

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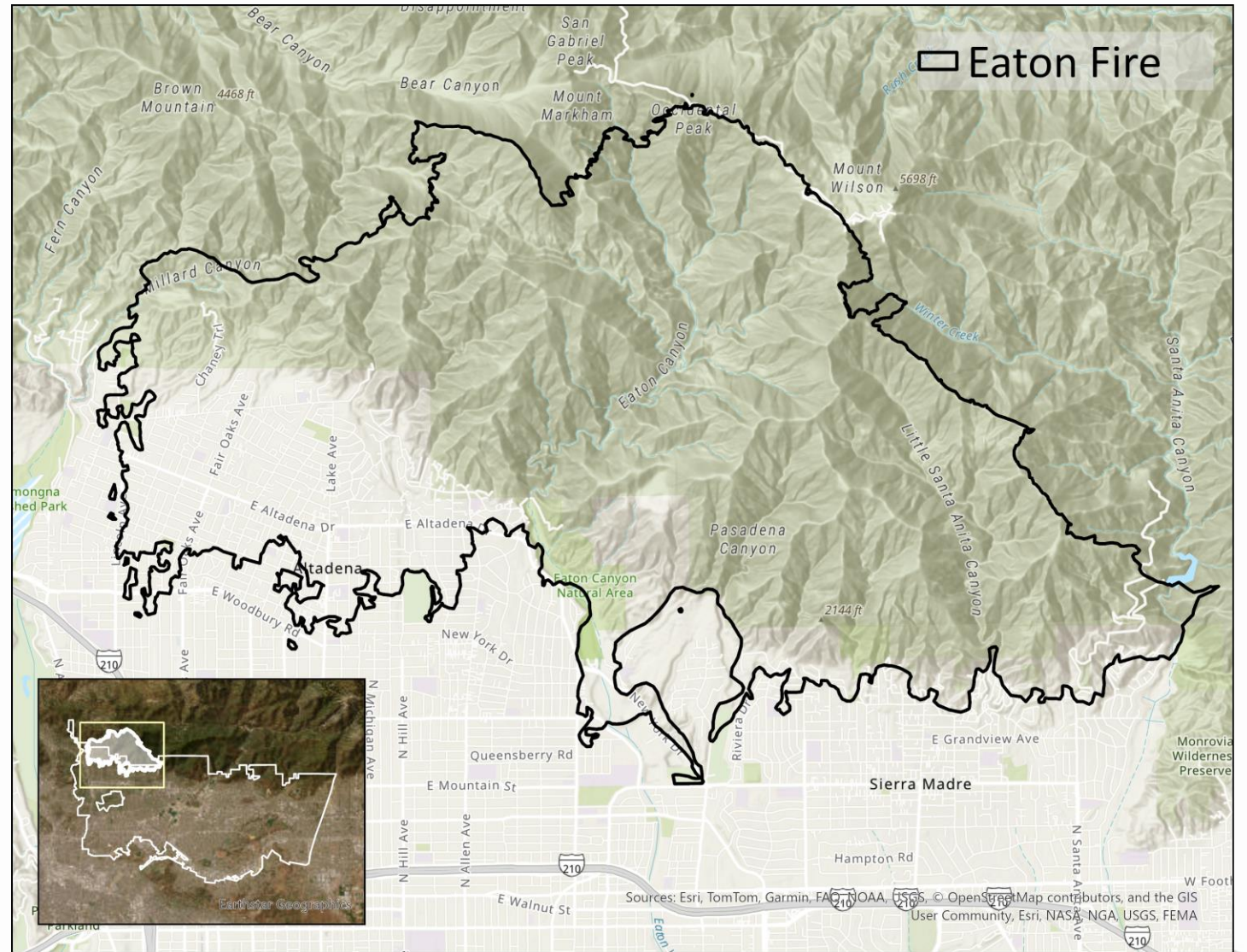
Vector Ecologist

San Gabriel Valley Mosquito and Vector Control District



Introduction

- Eaton fire
 - 1/7/25 to 1/31/25
 - Over 14,120 acres
 - Over 9,000 structures
- Swimming pools
 - Over 2,800 suddenly unmaintained swimming pools
 - Prior to the fire, there were 14 unmaintained pools in the area
- Emergency
 - Unmaintained swimming pools are larval habitat for several medically important species
 - By late April, 75% of all inspected pools contained larvae



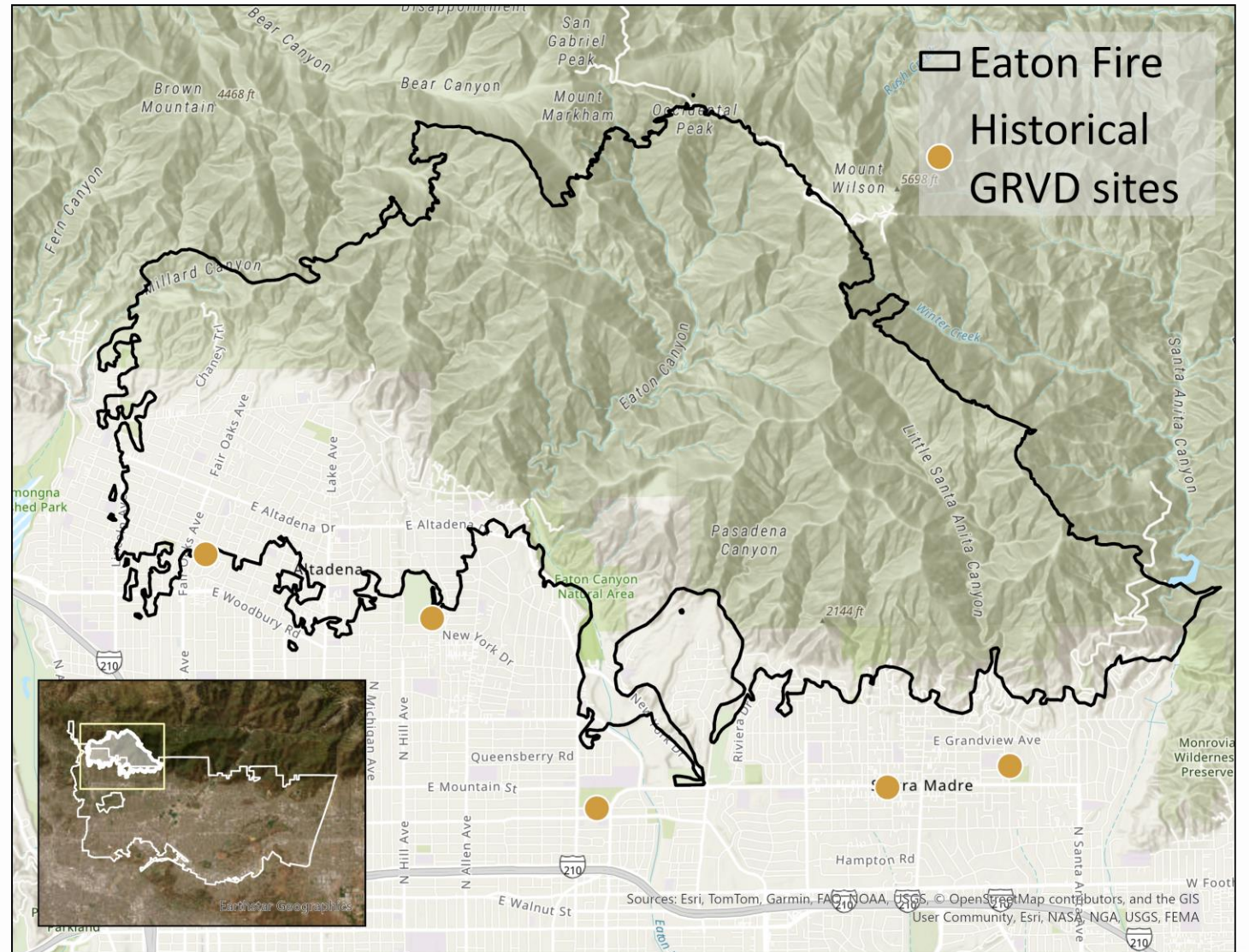
Role of surveillance in an emergency

- Compare 2025 data with historical data
- Monitor changes in distribution or abundance of mosquito vector species
- Assess impact of control measures
- Understand long-term impacts

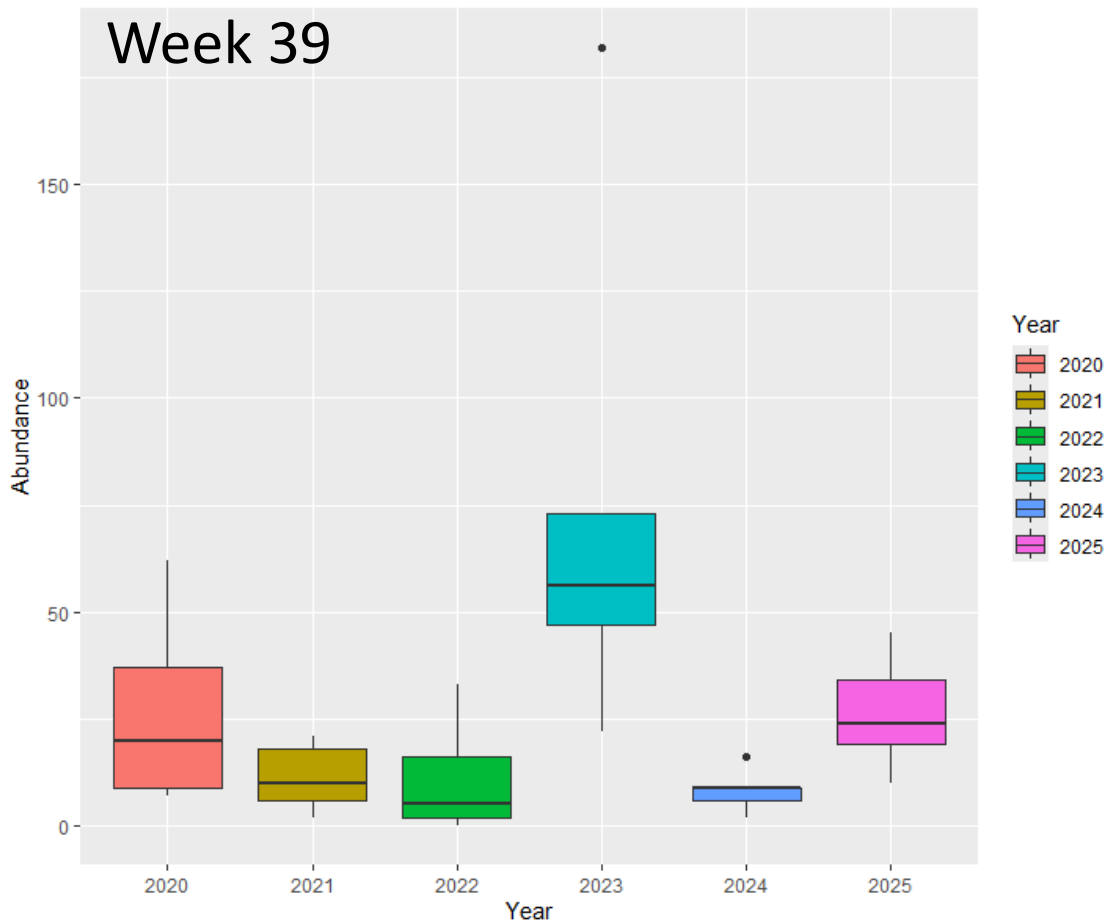


Historical Surveillance

- Routine surveillance
 - Regular collection of *Culex quinquefasciatus* via modified Reiter style gravid traps
 - Abundance comparison
 - Compare abundance each week with the same epiweek in previous years
 - Infection rate comparison
 - Compare arboviral testing results for WNV



Weekly analysis



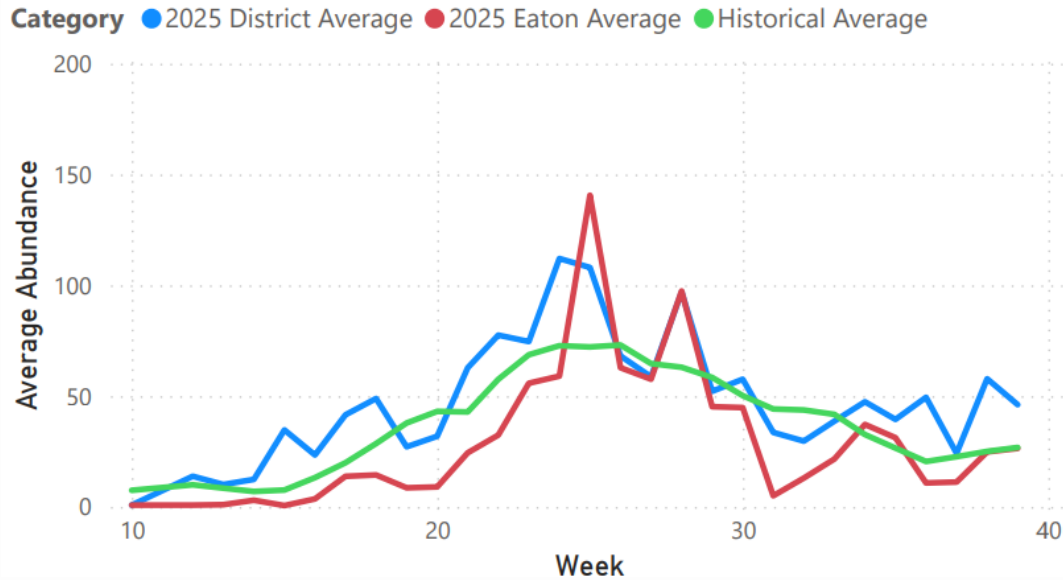
- Abundance comparison
 - *Culex quinquefasciatus* abundance at historic sites compared to the same week in previous years
 - Statistical comparison with repeated measures ANOVA

Sharing weekly surveillance data

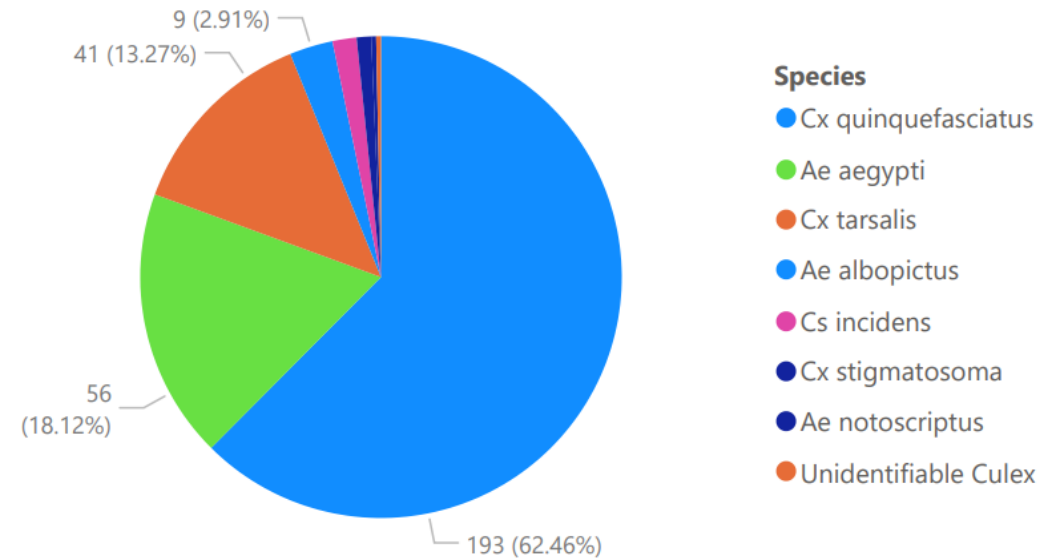
Eaton Burn Area Traps: Female *Culex quinquefasciatus*

Week
39

This week's abundance is not higher than expected.

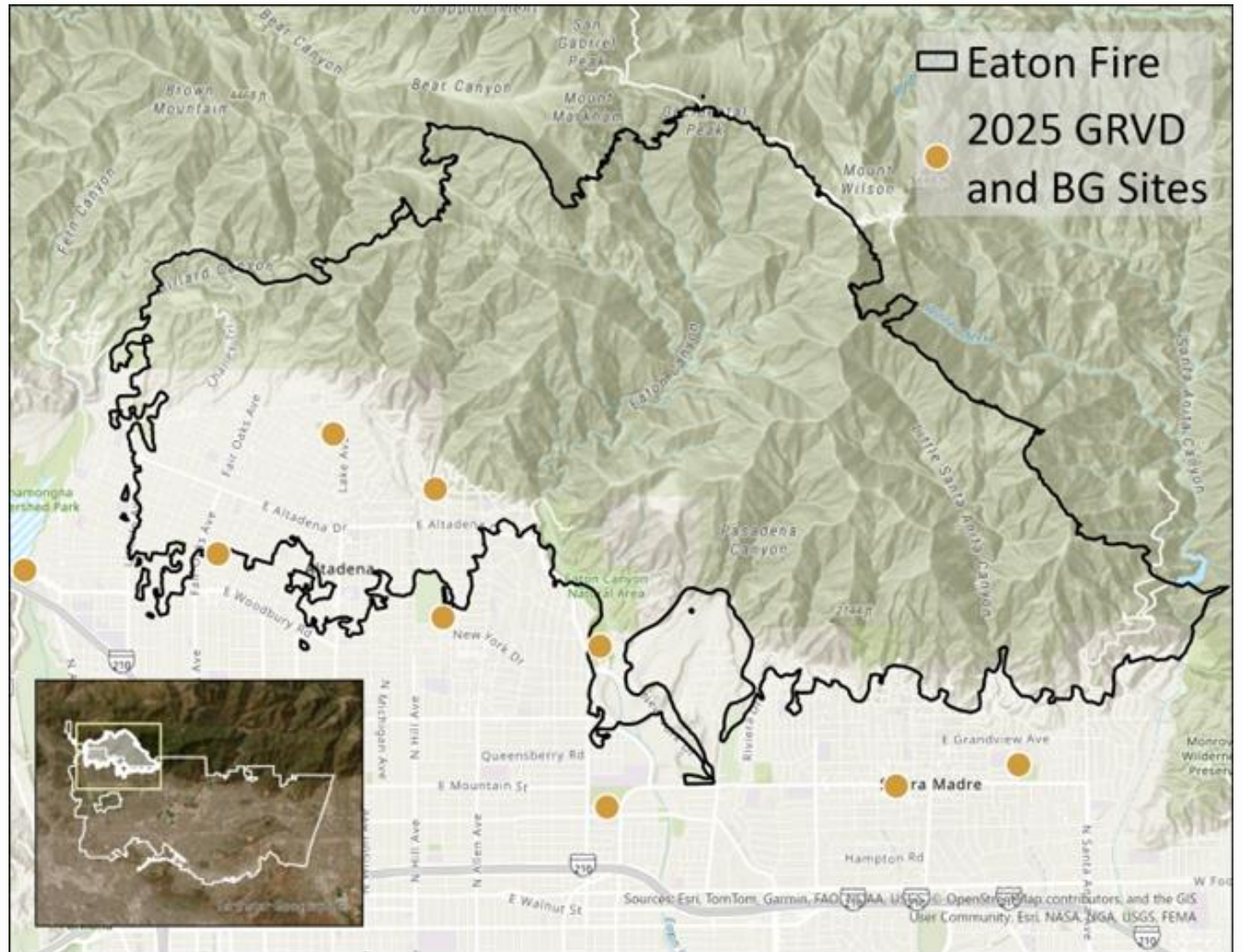


Eaton Area Species



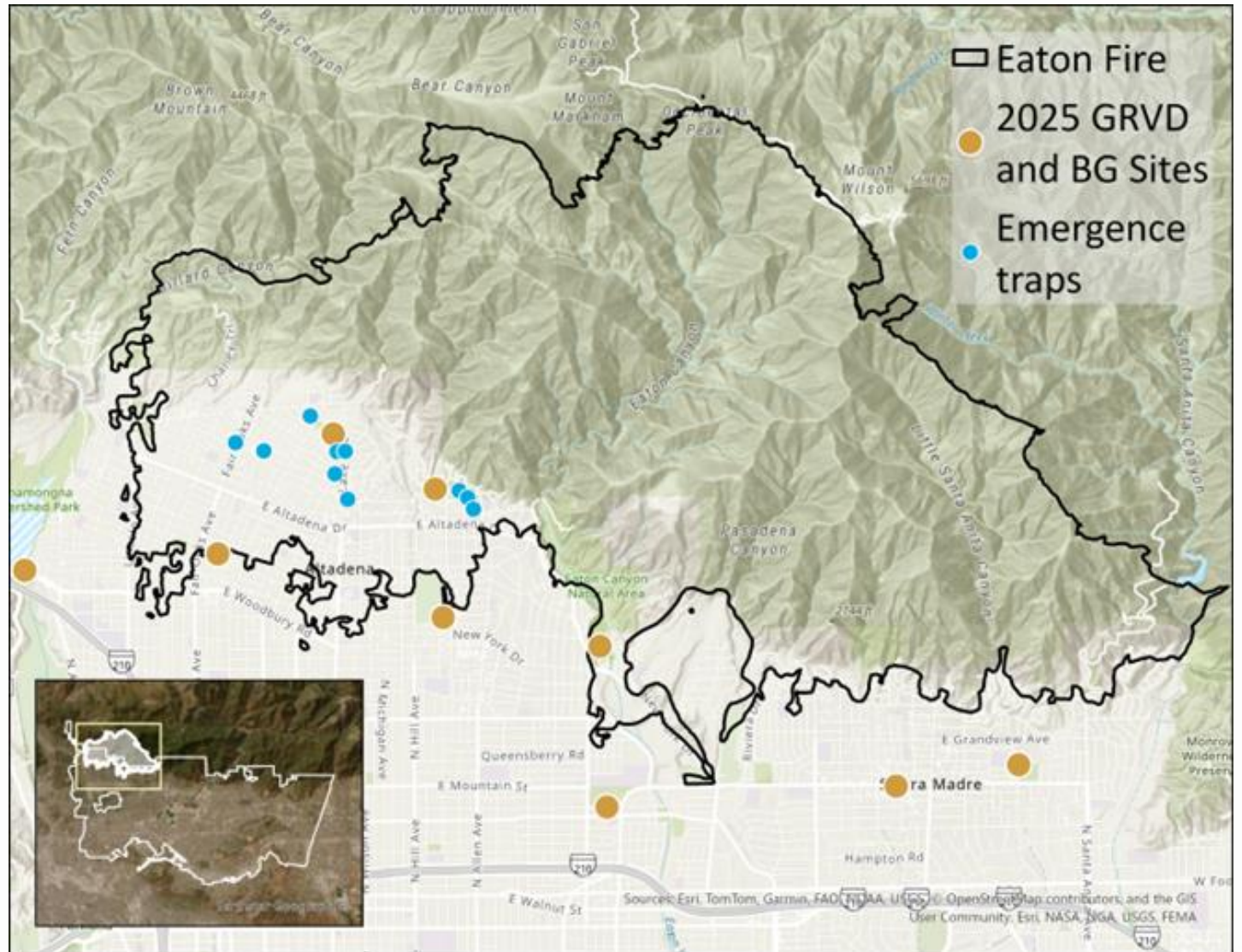
Surveillance Expansion

- Gravid traps
 - 4 sites in addition to historical sites
- BG Sentinels
 - All 9 gravid trap sites



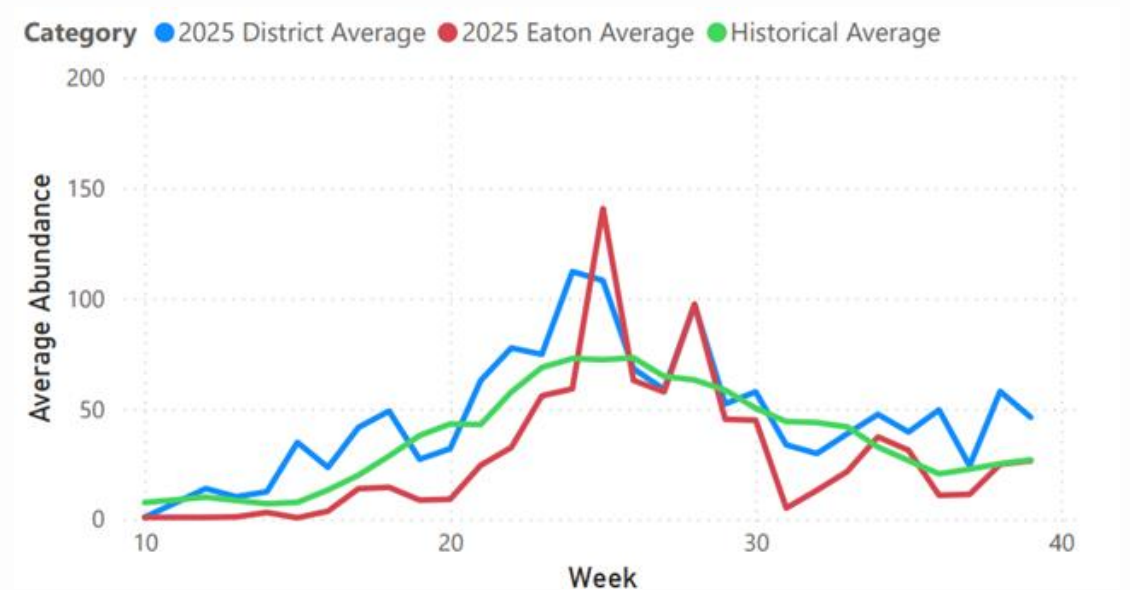
Surveillance Expansion

- Gravid traps
 - 4 sites in addition to historical sites
- BG Sentinels
 - All 9 gravid trap sites
- Emergence traps
 - Placed in unmaintained swimming pools
 - Pools treated individually with mosquitofish, Altosid XR, or Natular XRT



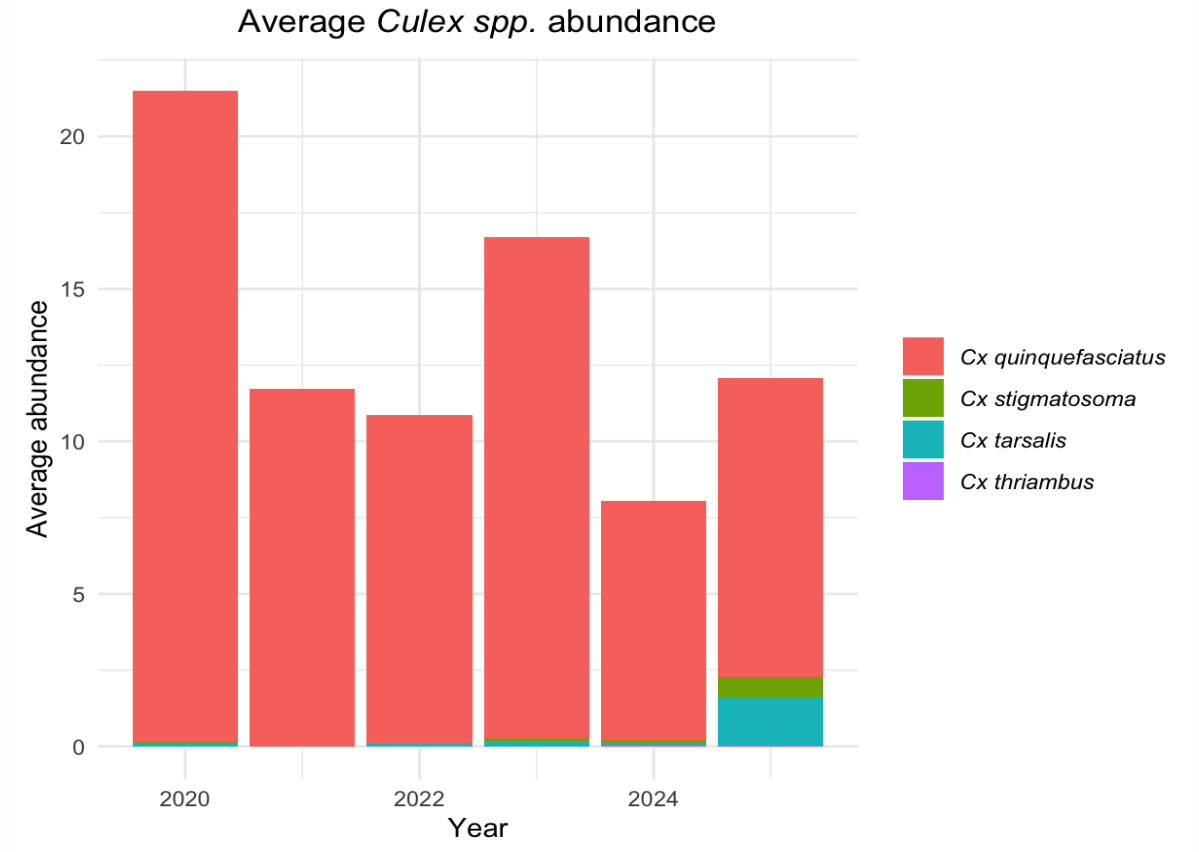
Results

- Weekly analysis
 - *Cx. quinquefasciatus* abundance was never higher than the expected range
 - No arboviral positives



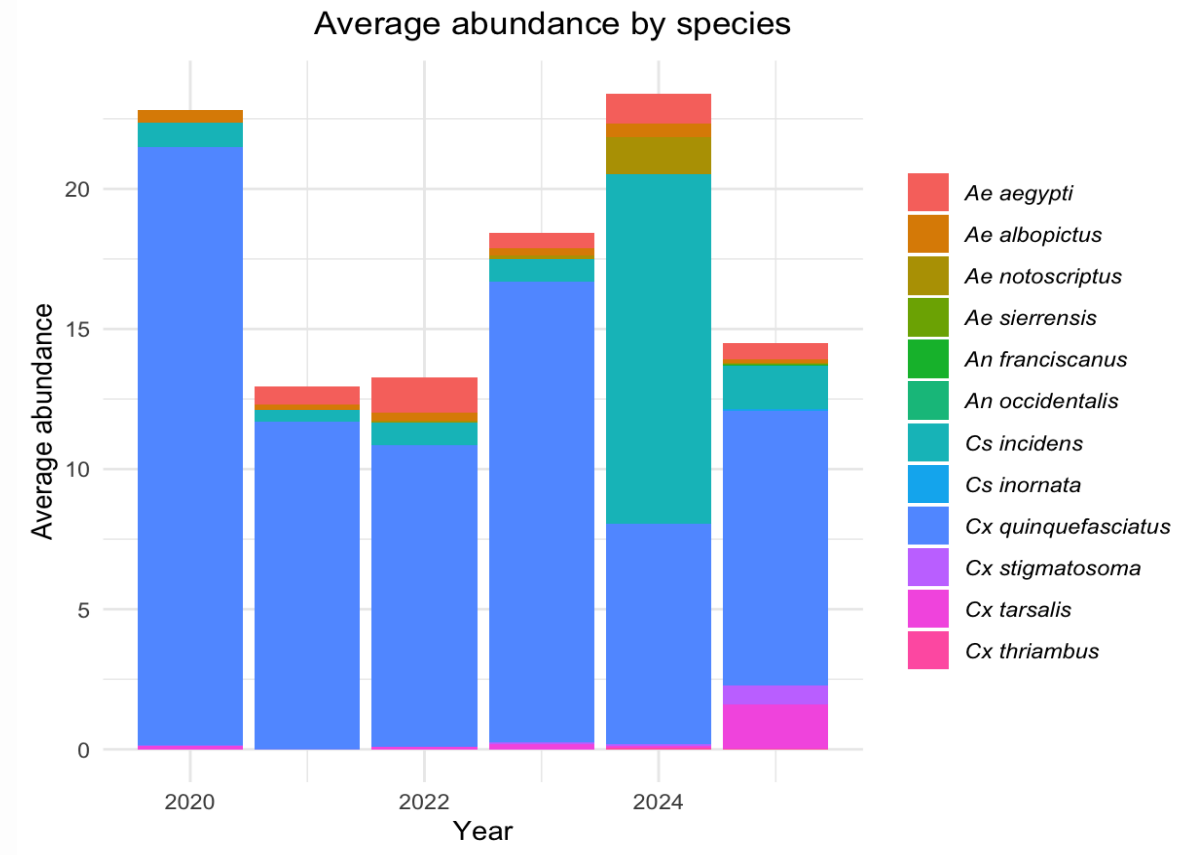
Results

- Expanded surveillance
 - Higher abundance of WNV vector species
 - *Culex tarsalis*
 - *Culex stigmatosoma*



Results

- Expanded surveillance
 - Range expansion
 - *An. franciscanus*
 - *An. occidentalis*
 - *Ae. notoscriptus*
 - Change in abundance
 - *Ae. notoscriptus*
 - *Cs. incidens*



Lessons learned and looking forward

- Years of historical surveillance data give context to the present
- Increased species diversity reflects the change in larval habitat
- Continued surveillance is necessary for understanding the lasting impacts of the Eaton fire



<https://stpmad.org/emergence-traps/>



THANK YOU

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