

The larval ecology of invasive *Aedes notoscriptus* in the San Gabriel Valley, CA

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San Gabriel Valley Mosquito & Vector Control District

Population

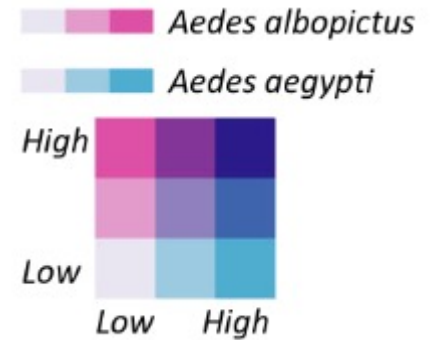
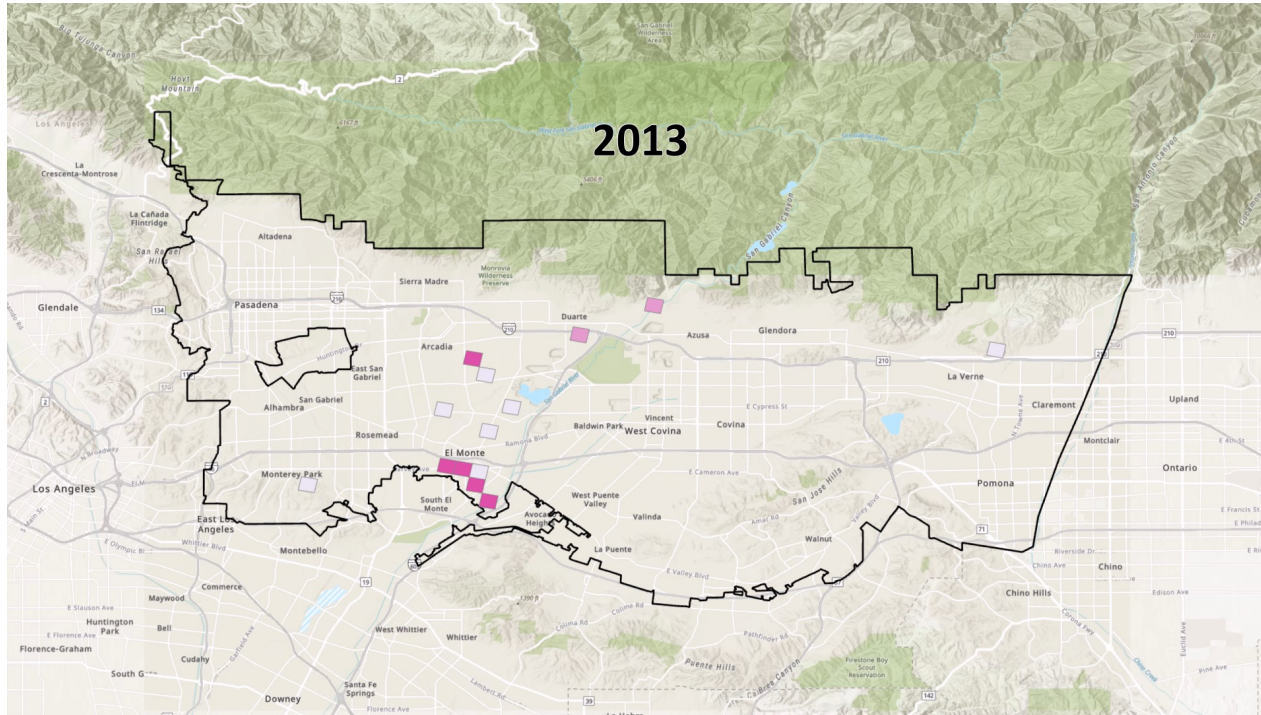
- 26 cities and unincorporated LA County communities in San Gabriel Valley
- 1.5 million residents!

Size

- 287 square miles



Invasive *Aedes* in the SGV



Public Health Importance

- *Aedes aegypti* and *Ae. albopictus*
 - DENV
 - CHIKV
 - Zika
 - YF
 - Nuisance biters
- *Aedes notoscriptus*
 - Barmah Forest virus
 - Ross River virus
 - Dog heartworm
 - Nuisance biter

Public Health Importance

- *Aedes aegypti* and *Ae. albopictus*

- DENV
- CHIKV
- Zika
- YF
- Nuisance biters

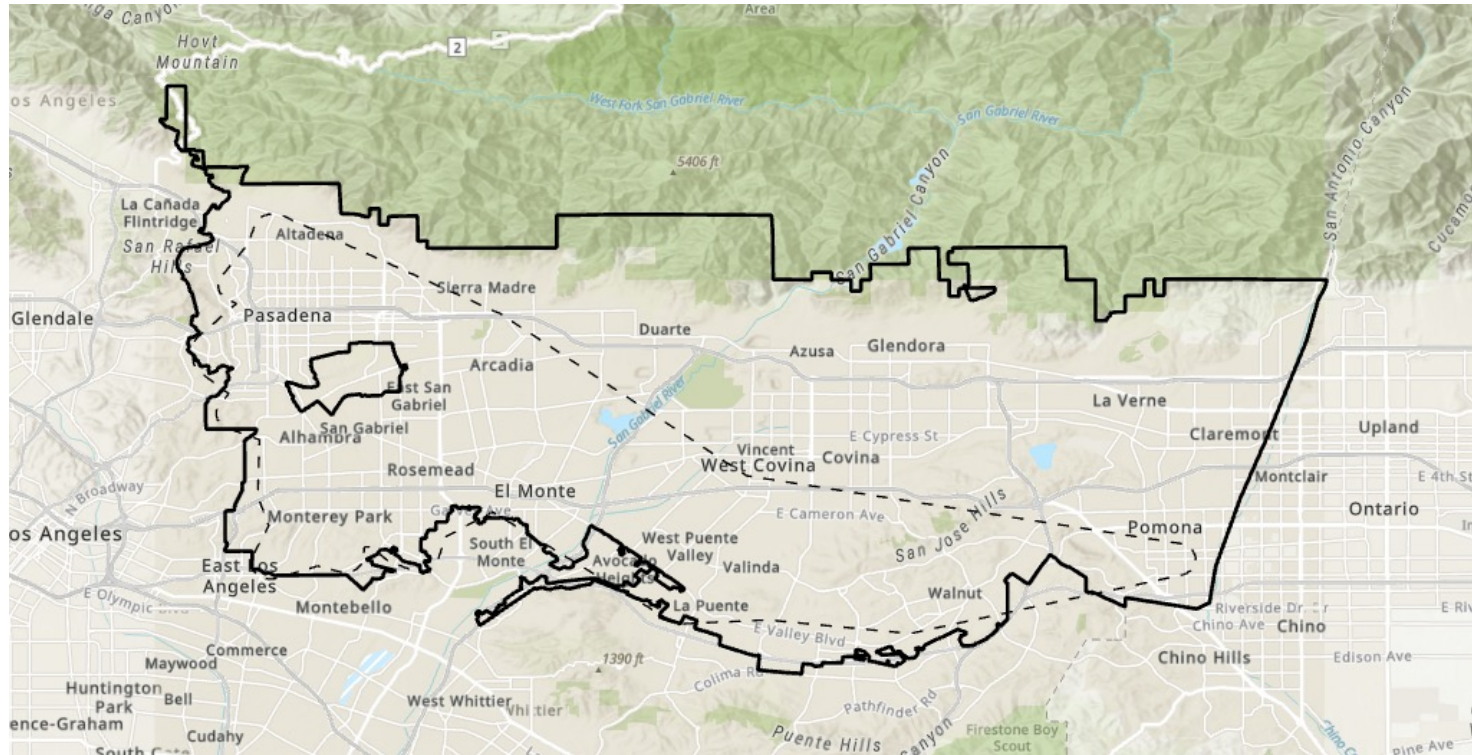
- *Aedes notoscriptus*

Disease Transmission

Limited evidence of competency for Japanese encephalitis virus, Rift Valley fever virus, CHIKV, and YF

Nuisance Biter

Aedes notoscriptus in the SGV



Cryptic larval habitat



Questions

- Does *Aedes notoscriptus* share larval habitat with *Ae. aegypti* and *Ae. albopictus*?
- Does *Aedes notoscriptus* utilize different oviposition strategies in areas with *Ae. aegypti* and *Ae. albopictus*?

Methods

Sites

- 3 sites in areas either dominated by *Ae. aegypti* or *Ae. albopictus*

Egg paper surveillance

- Bamboo infusion
- Distilled water

Height

- Set ovicups at 0m, 1m, 2m, and 3m



Methods

Sites

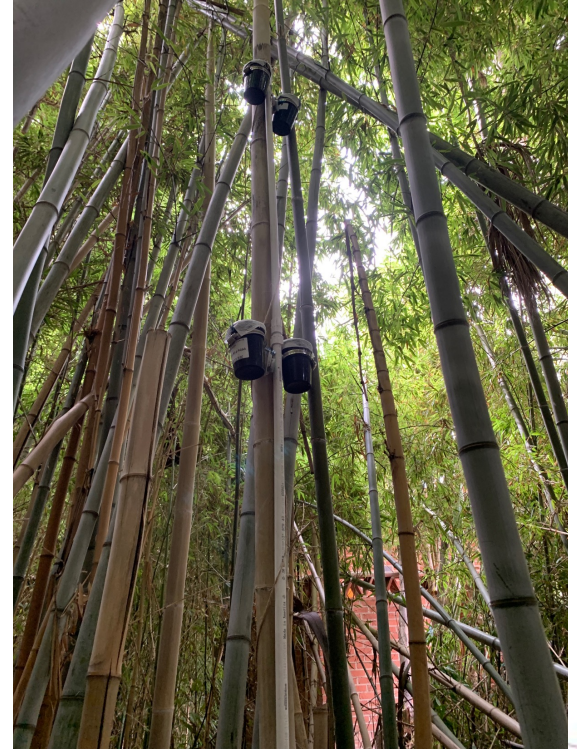
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Egg paper surveillance

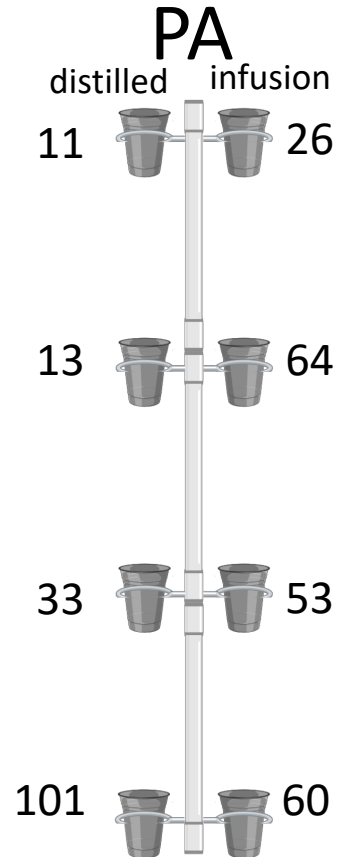
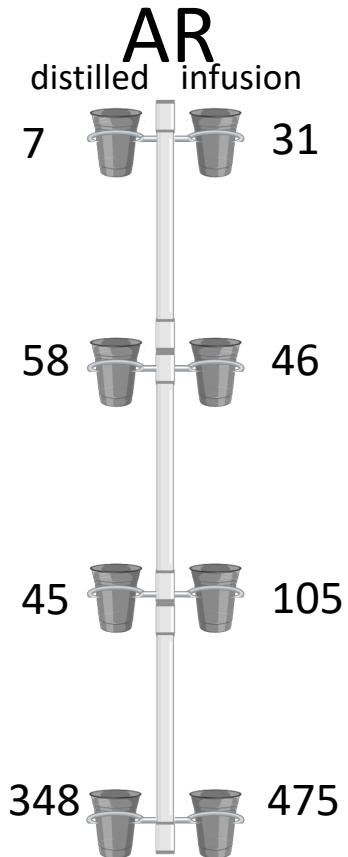
- Bamboo infusion
- Distilled water

Height

- Set ovicups at 0m, 1m, 2m, and 3m





Results







Site AR



Ae. albopictus

distilled infusion

4   18



37   32

16   68

31   282



Ae. aegypti/notoscriptus

distilled infusion

3   3

13   18

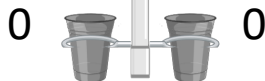
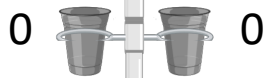
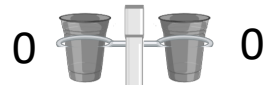
34   26

207   168

Site PA

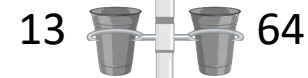
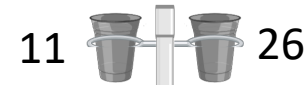
Ae. albopictus

distilled infusion

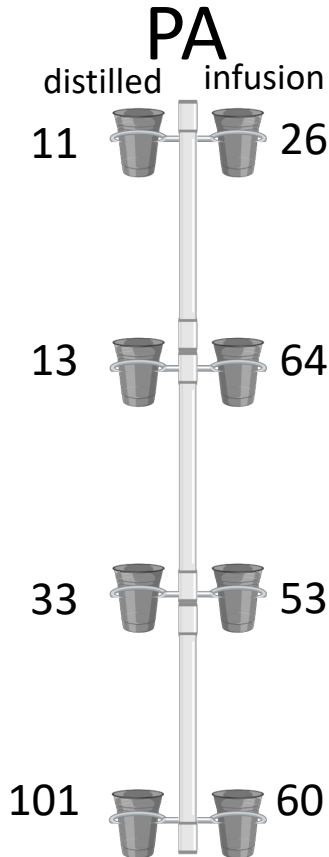
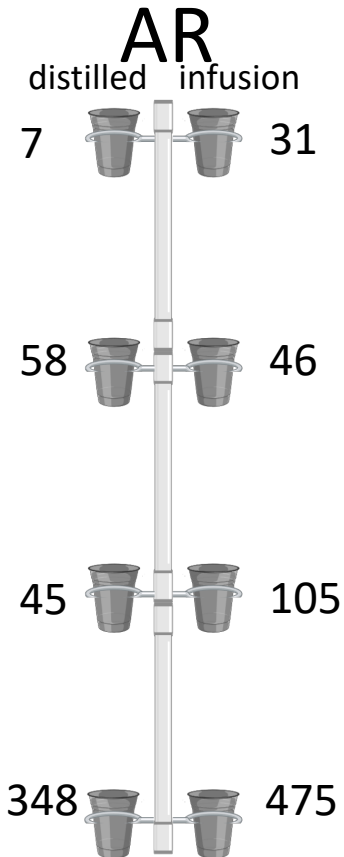


Ae. aegypti/notoscriptus

distilled infusion



Discussion and Conclusions



Future directions

Egg paper surveillance

- Develop a bamboo infusion recipe for wider use
- Expand rearing capabilities
 - Direct observation of *Ae. aegypti* and *Ae. albopictus* oviposition

Larval surveillance

- Increase surveillance of cryptic natural containers, especially in ornamental and landscaping plants
- Incorporate heightened surveillance of natural containers with existing surveillance of artificial containers found around residences

Future directions

What is the relationship between *Ae. notoscriptus* and *Ae. albopictus* larvae?

- Will one eventually outcompete the other?
- When together, do these species outcompete *Ae. aegypti*?

What is the relationship between *Ae. notoscriptus* and *Ae. aegypti* larvae?

- Will one eventually outcompete the other?
- What effect does the presence of the one species have on the overall abundance and selection of larval habitat in the other?

What are the public health impacts of changing dynamics between invasive *Aedes spp.* in the San Gabriel Valley?



Questions?



References

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THANK YOU

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Aedes notoscriptus



