

Mosquito communities across a city

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mv_evans

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Have you heard about this Zika disease?

Yup, we've been following it since it is transmitted by mosquitoes

Are we going to get it up here?

Or in Georgia

It's probably too cold to be worried where you are

Your mom ordered this just in case

Hasika Hasika Mosquito Body Suit / Bug Jacket /Mosquito Repellent Clothing

★★★★★ 24 customer reviews | 3 answered questions

Price: \$68.00
Sale: \$32.99 prime
You Save: \$35.01 (51%)

Color: Gray

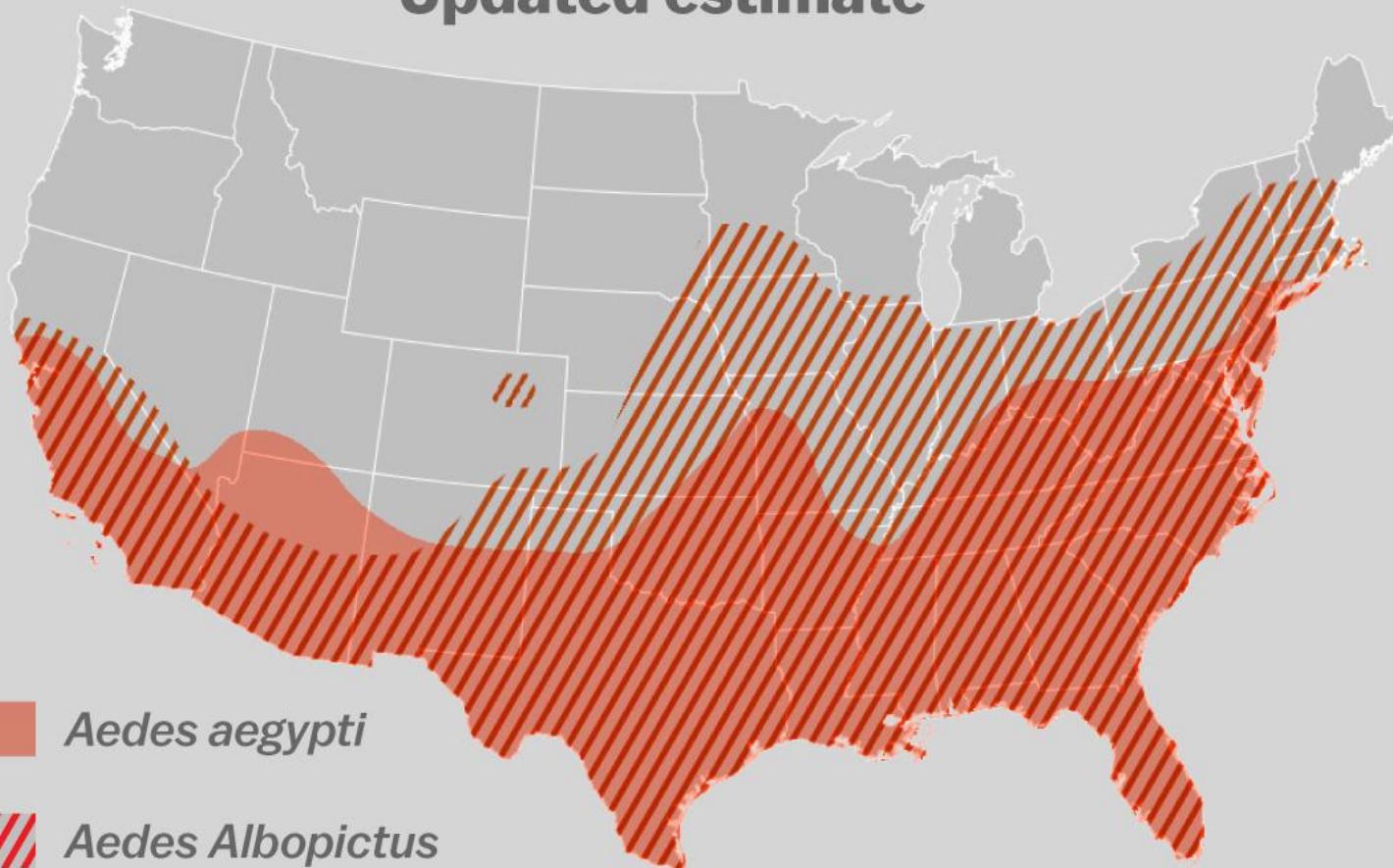
Size:

Select ▾

Roll over image to zoom in

- Treatment Repels Mosquitos Treatment Repels Mosquitos
- Zippered jacket, head net, pants and Anti-mosquito Gloves
- Elastic at the cuffs and ankles
- Suitable for hunting,fishing,camping,hiking,beekeeping and gardening
- excellent breathability and ventilation in all directions, and keep you comfortable a coo

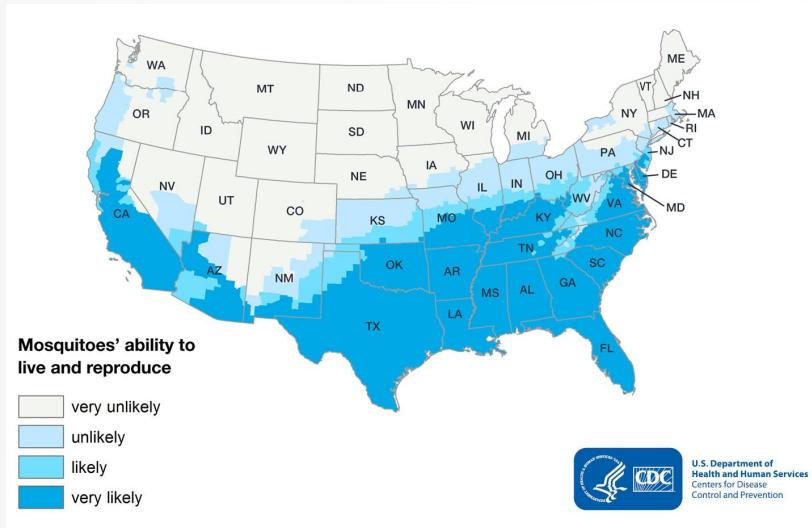
Updated estimate



Source: CDC

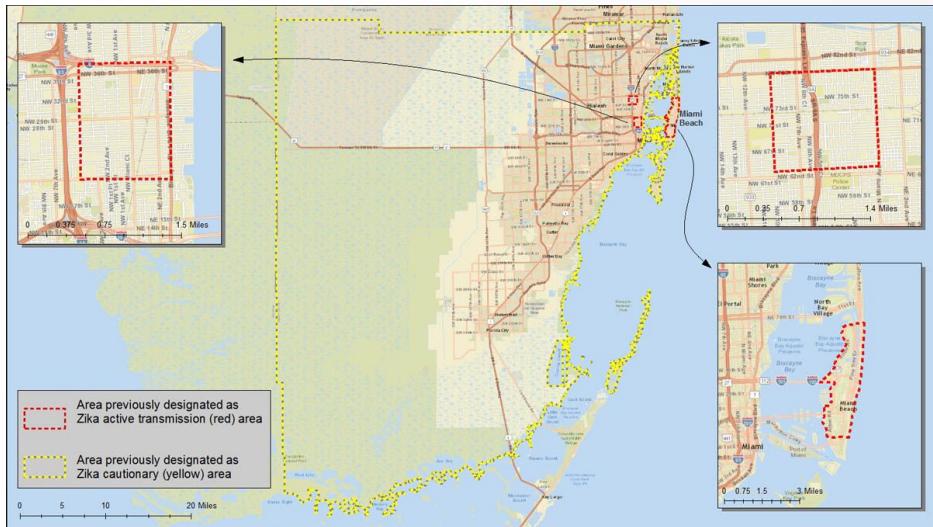
Range maps may not be relevant at fine-scales

Range of *Aedes aegypti*

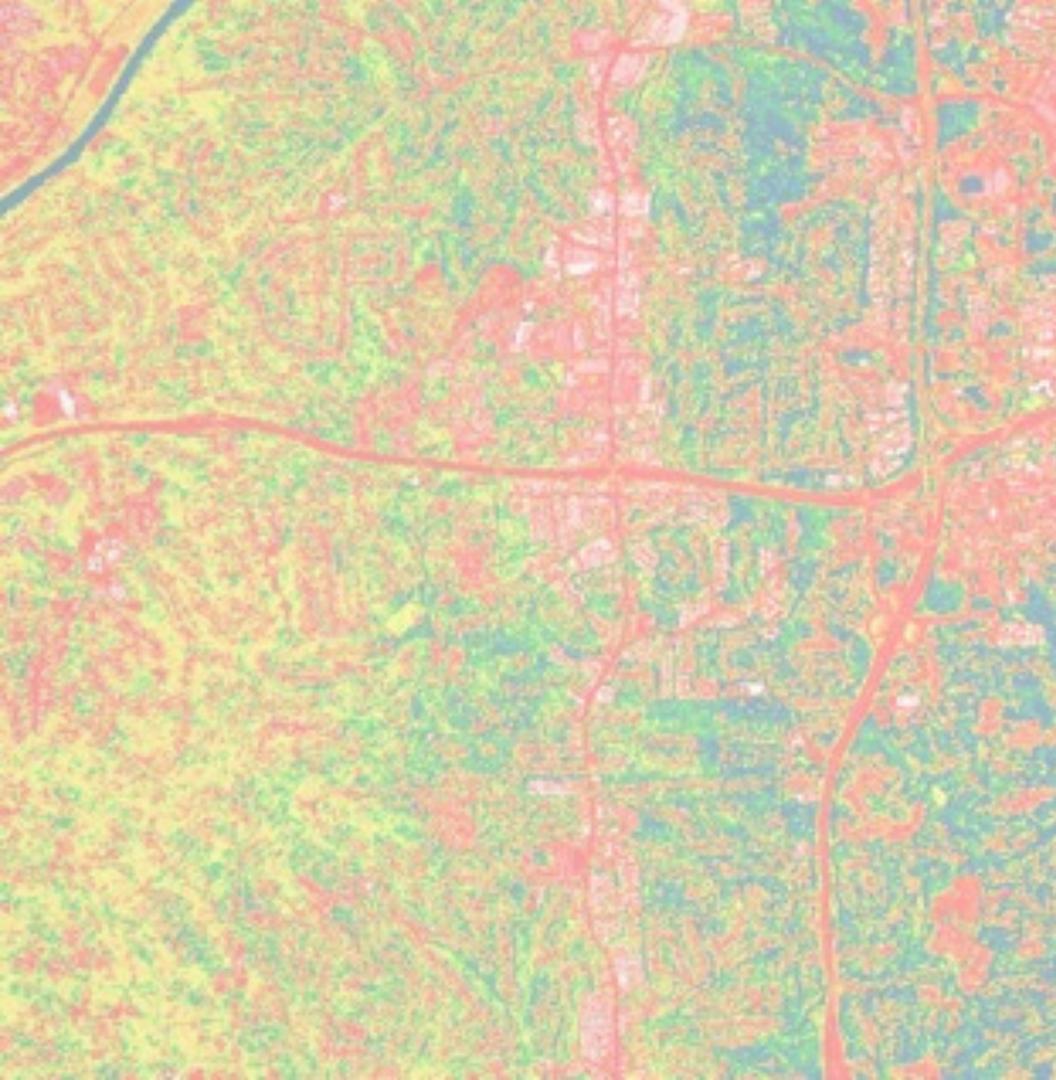


Nationwide

Extent of Zika outbreak in Miami, FL

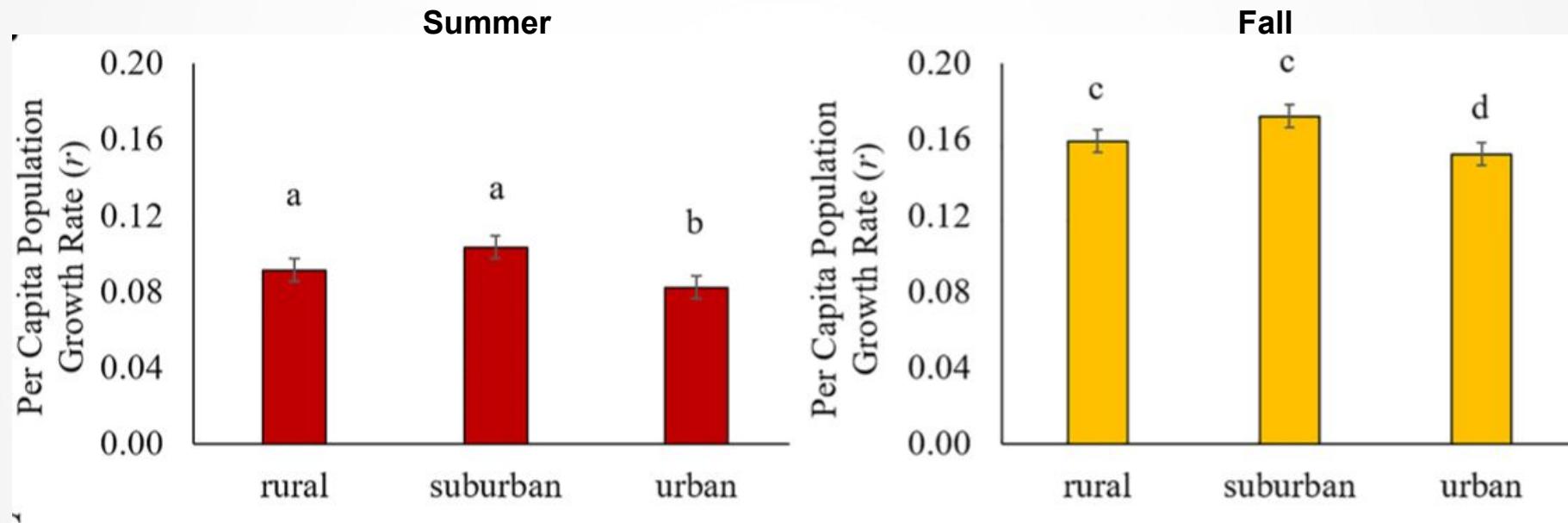


Several city blocks



How does an urban
mosquito
community change
across the
landscape?

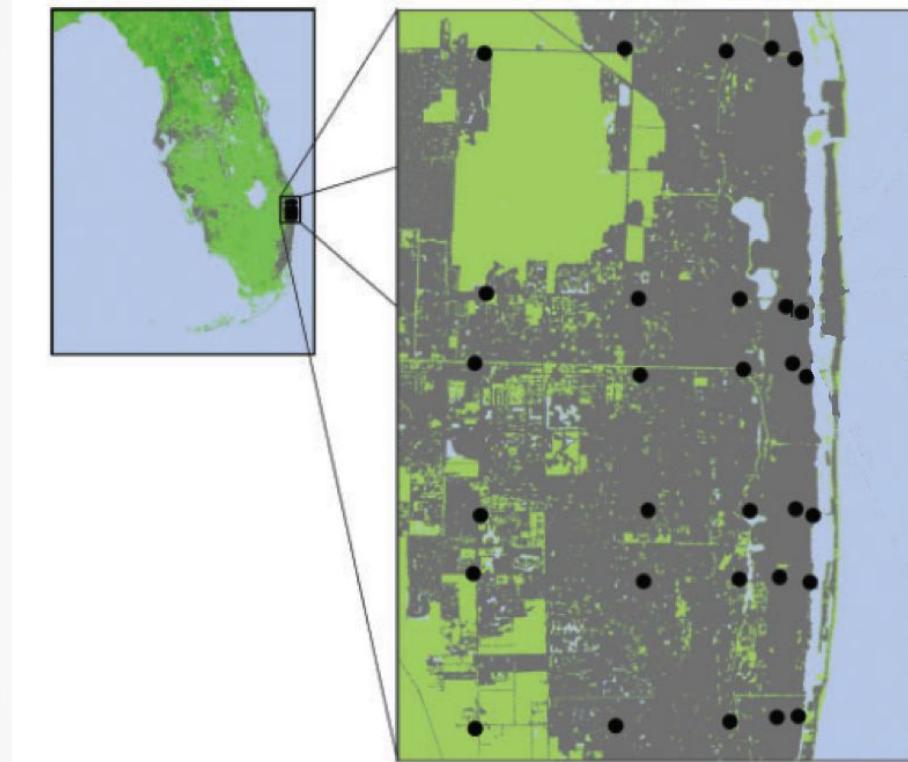
Heterogeneity in urban microclimate impacts mosquito demographics



0 100 200
KM

0 5 10 15
KM

Aedes aegypti *Aedes albopictus*



Biotic interactions can lead to habitat segregation

Hopperstad and Reiskind 2016

Mosquito **habitat** type and availability differs across an urban area



Mosquito **habitat** type and availability differs across an urban area



How does an urban mosquito community change over
the landscape?

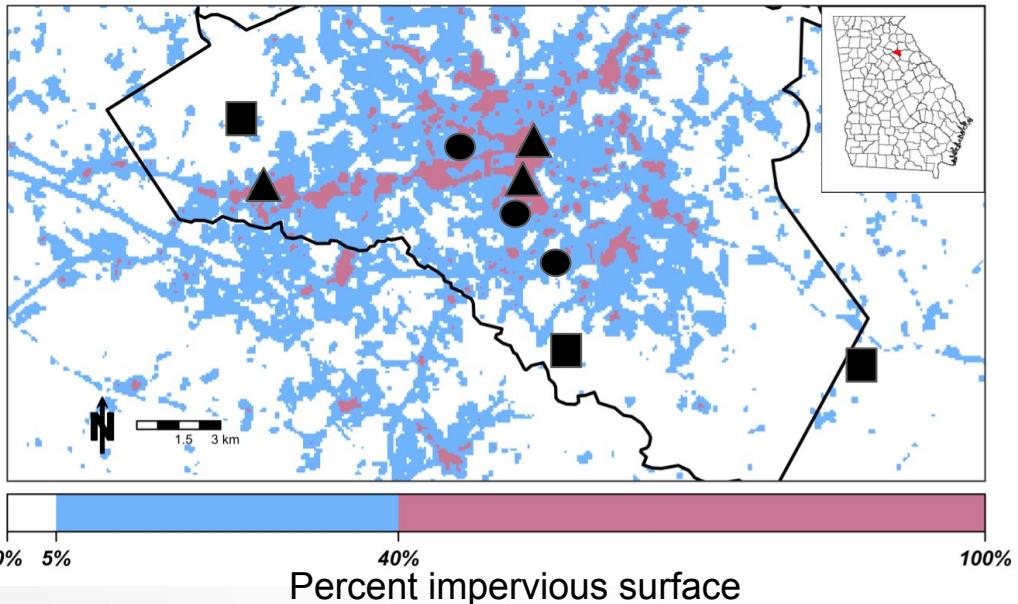
What role does seasonality play in this?

Surveyed larval habitat from June 2016 - May 2017

■ Rural

● Suburban

▲ Urban



Surveyed within 100m radius

Frequency sampling approach

Noted all standing water as potential habitat



Habitat with larvae marked as positive



Subset of larvae were reared in the lab and identified to species



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Habitat with larvae marked as positive

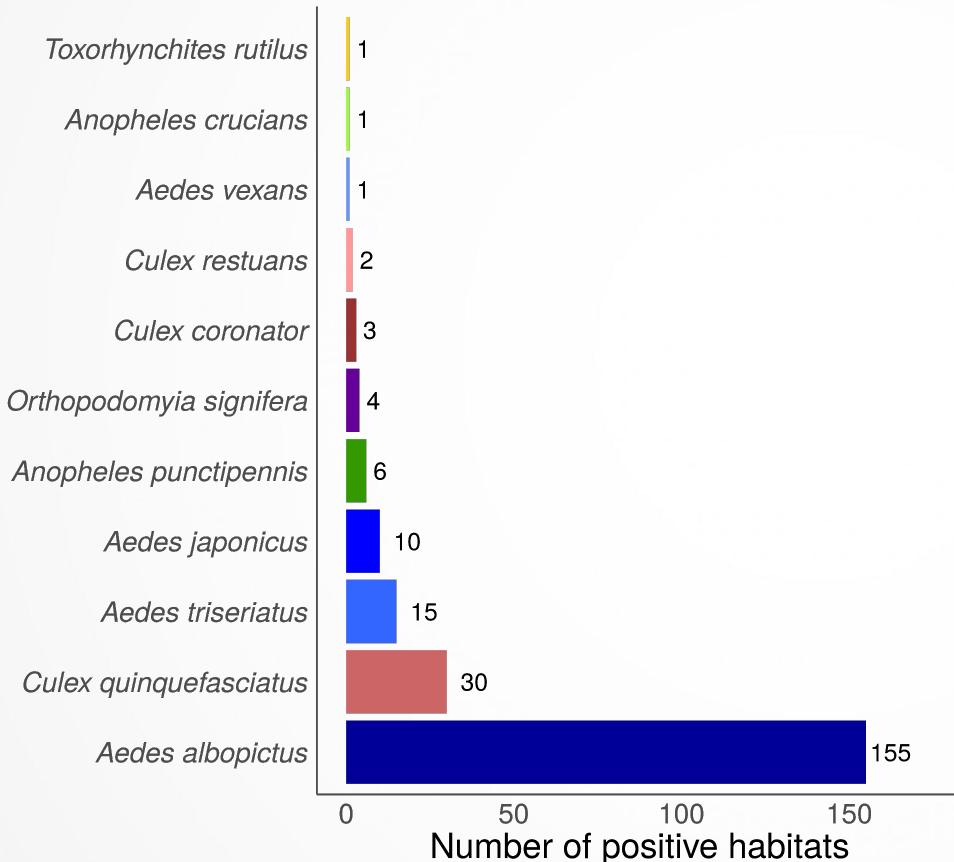


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Abundance = # of positive habitats

Mosquito community dominated by *Aedes albopictus*

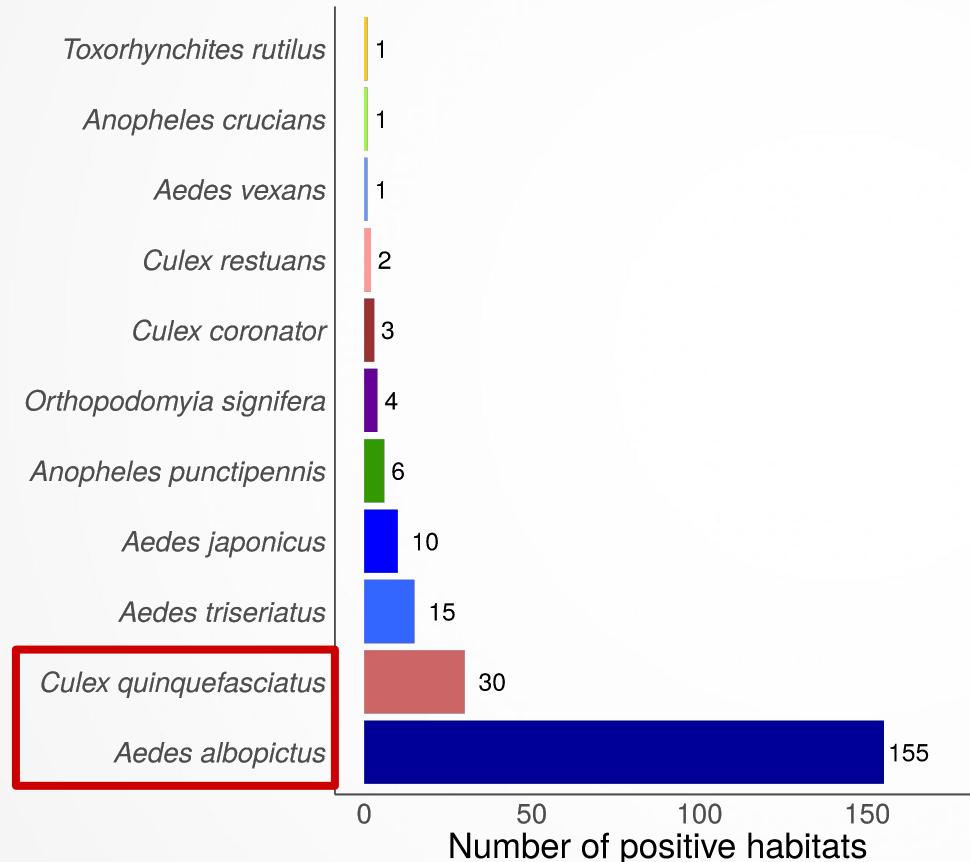


11 total species
5 genera

Aedes species most common,
particularly *Aedes albopictus*

Vector species are highly
abundant

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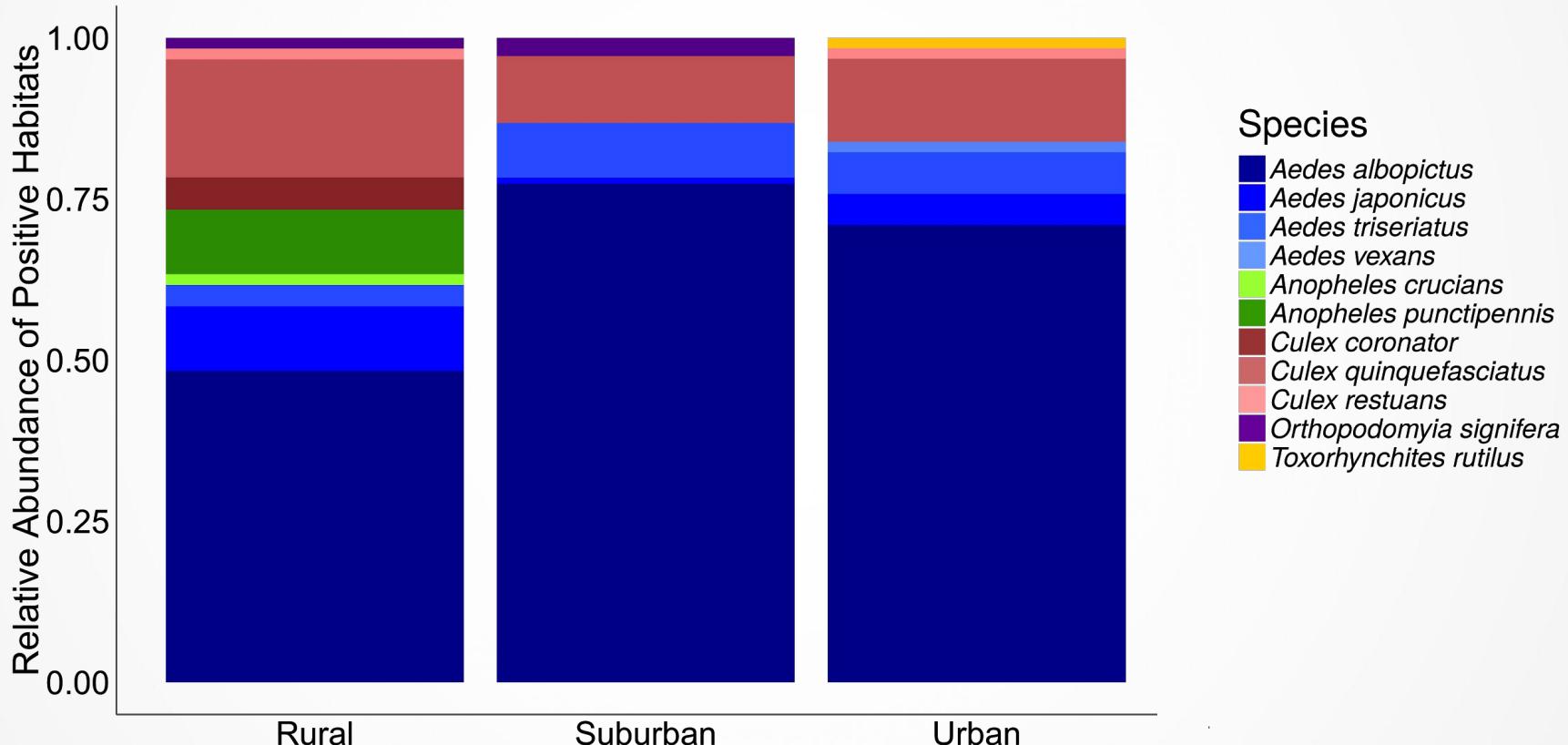


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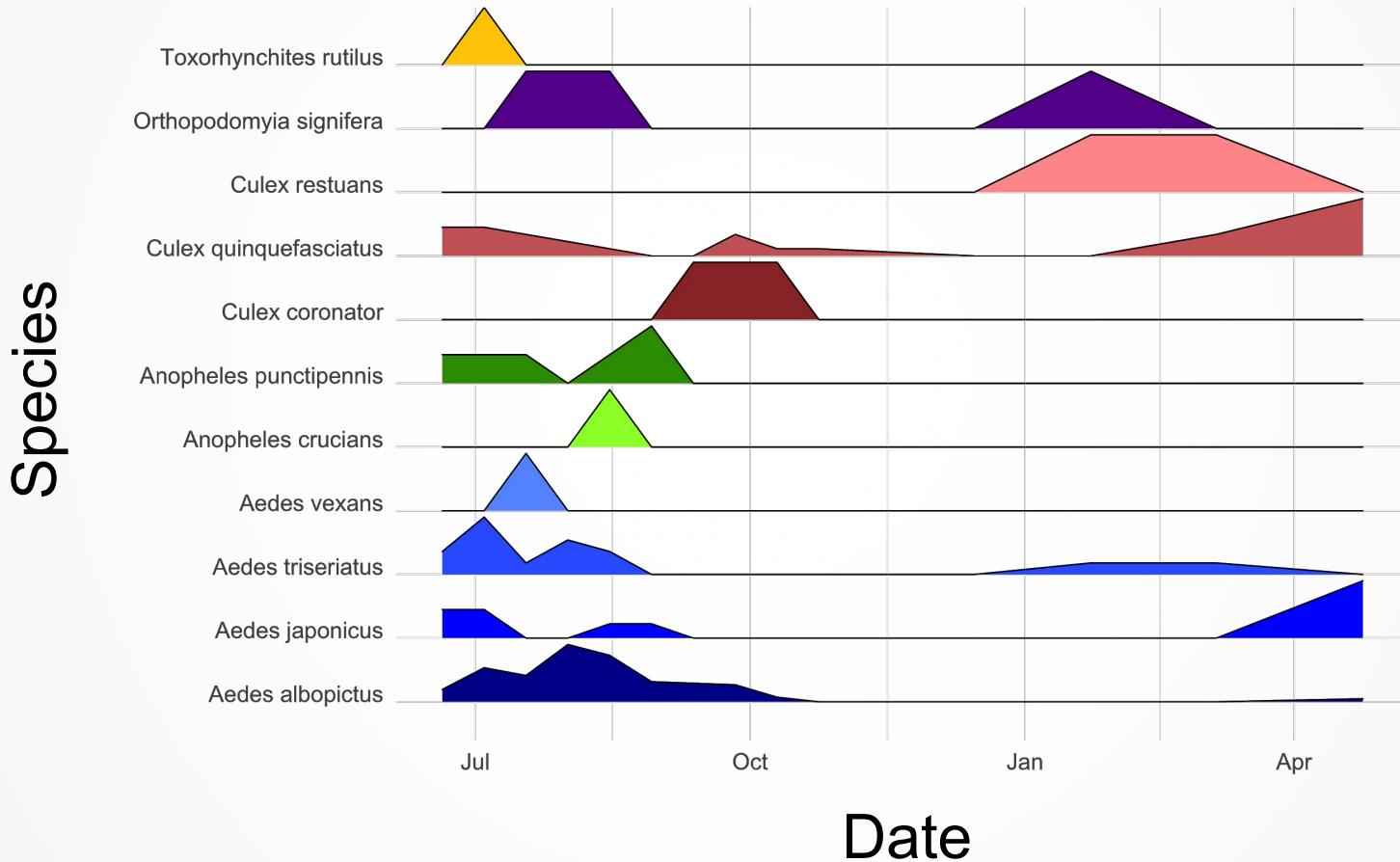
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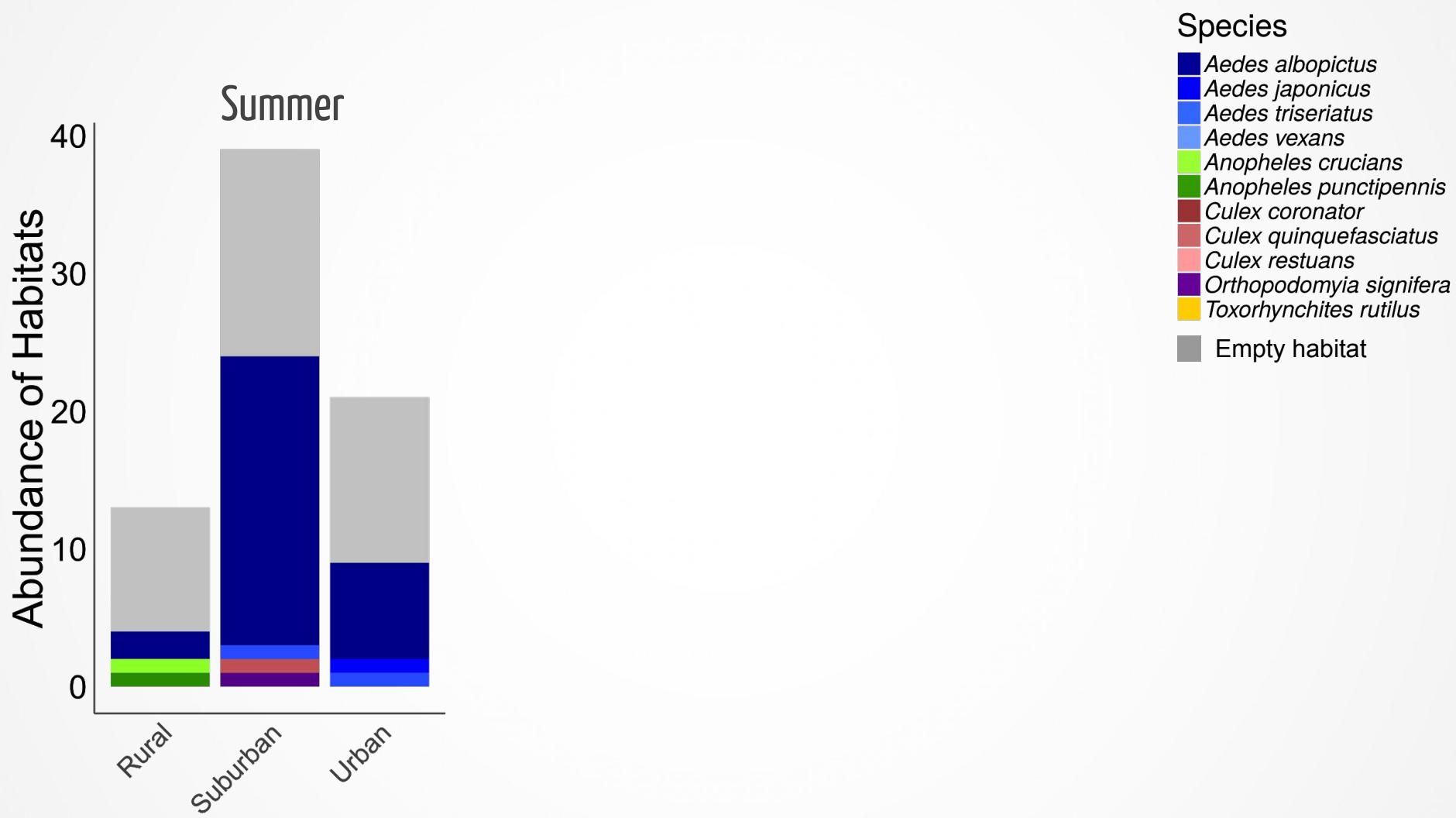
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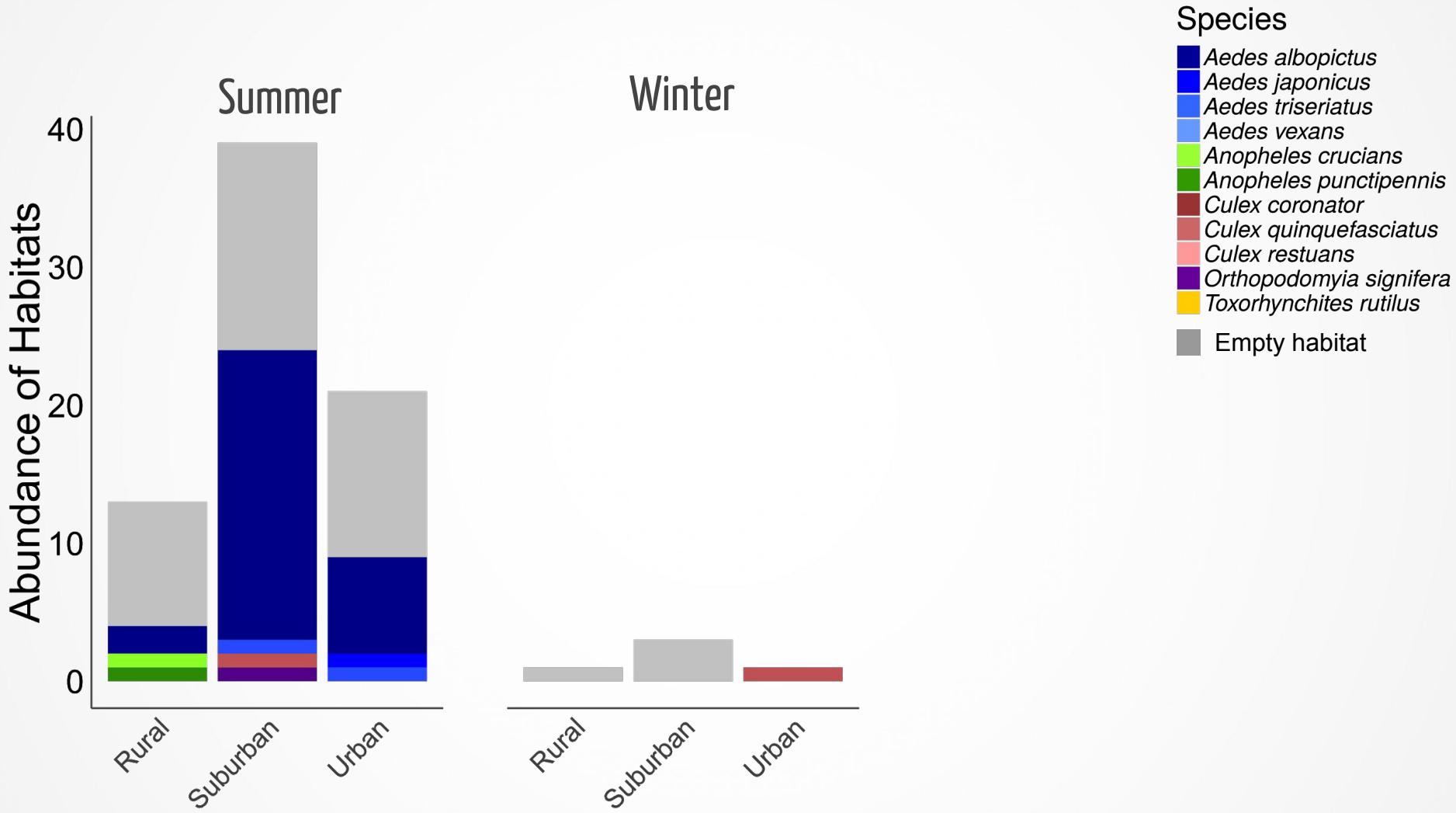
Species presence differed across land class

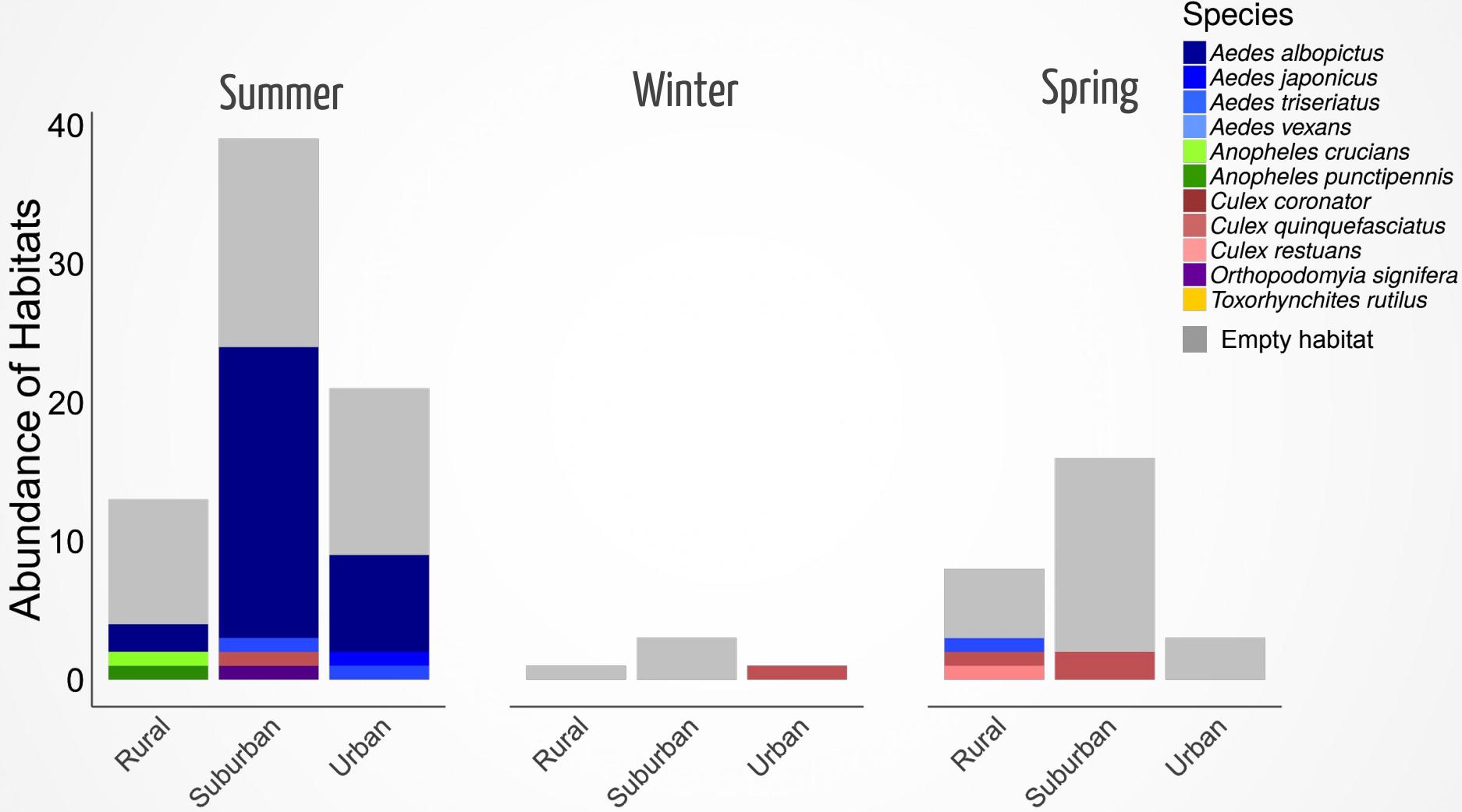


Species abundances are seasonal









How does an urban mosquito community change over the landscape?

Higher diversity in rural areas, with suburban areas dominated by container breeders

What role does seasonality play in this?

Rare species persist in spring and fall, when temperatures are too cold for dominant competitors

What about disease risk?

- Vectors of different diseases are abundant at different times of the year
- Rural areas have fewer vectors of disease year round
- Highest abundance of vectors is in the suburbs in the summer
- Clear patterns across season and land class in mosquito communities

Thank you!

The Murdock Lab



The Drake Lab



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