

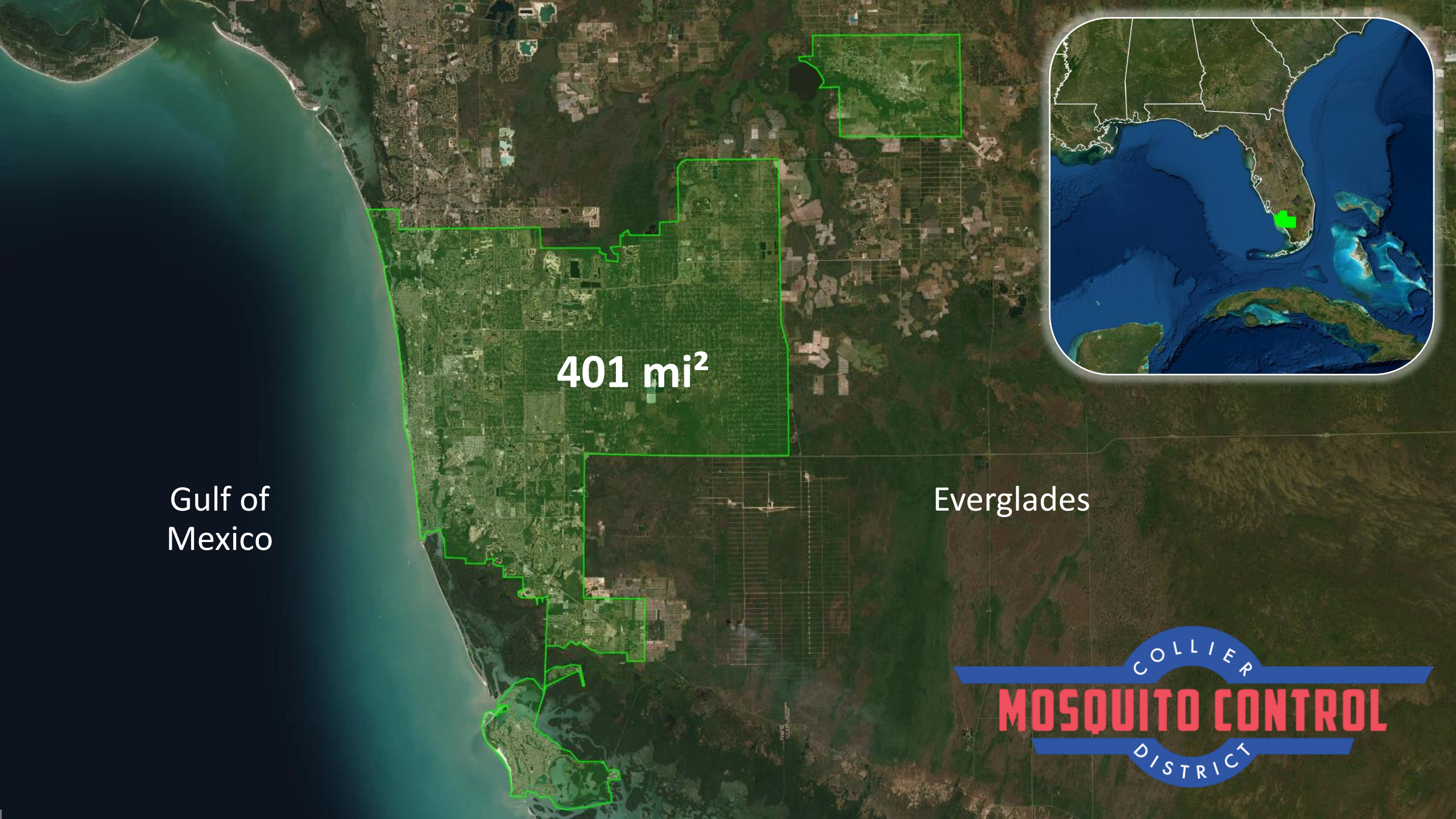
Evaluating BG-Counter performance in surveilling Collier County's diverse mosquito populations

Atom Rosales, Noe Pineda, Robert Straser, Keira Lucas, Rebecca Heinig

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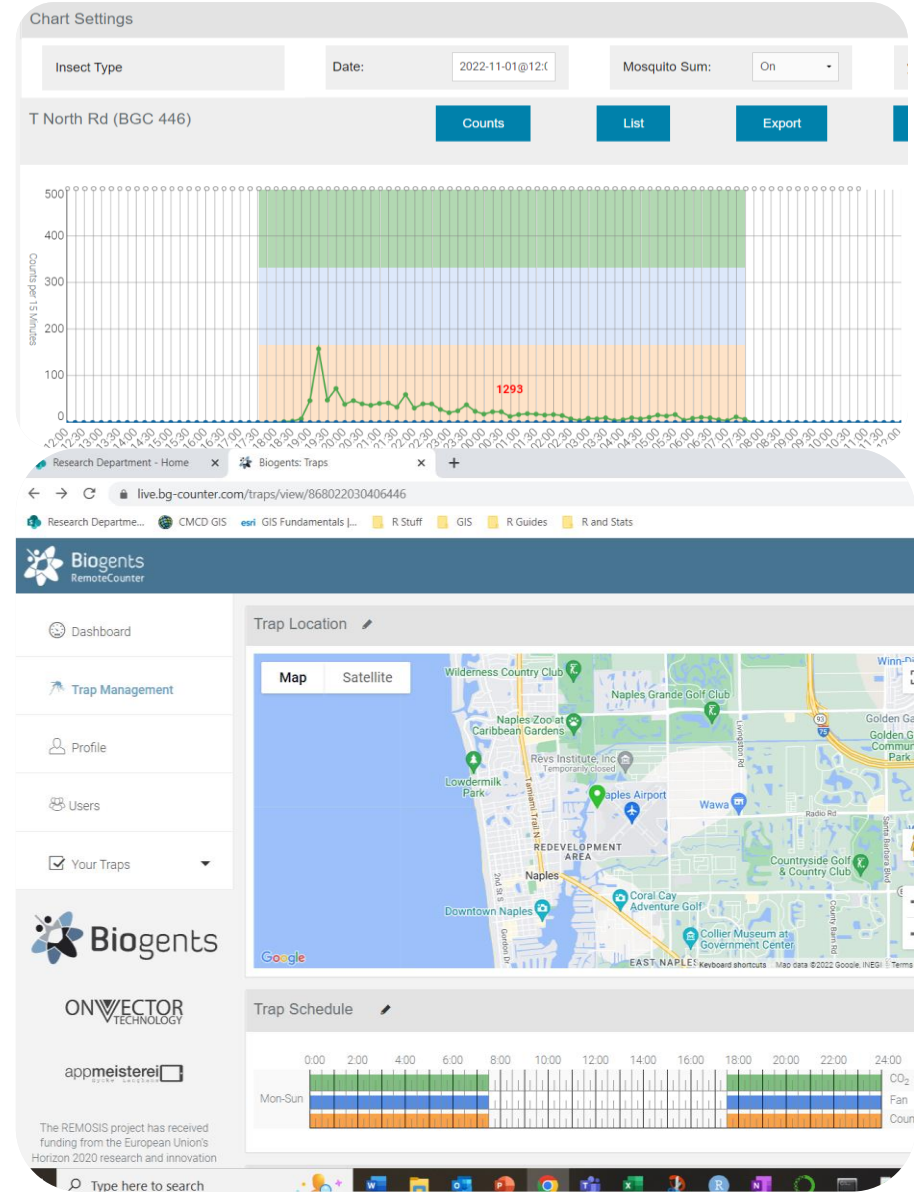
401 mi²

Gulf of Mexico

Everglades

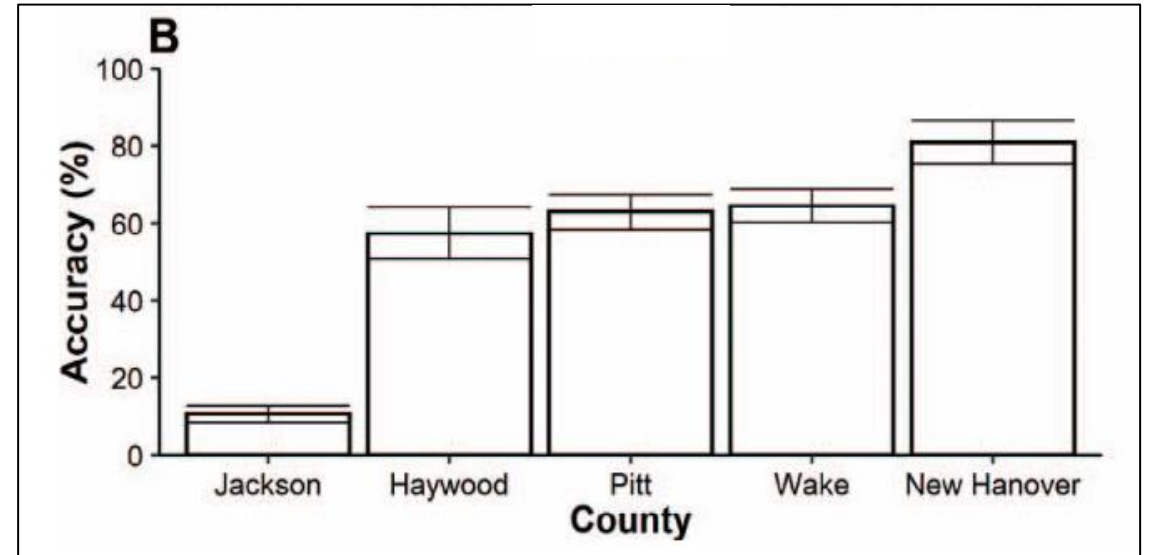


What is the BG-Counter?



What is Known about the BG-Counter's Performance?

- Accuracy context-dependent (mean daily accuracy ranged from 80.1% to 9.4%)
- More accurate when there is a higher abundance and proportion of mosquitoes to non-targets



Day et al. 2020, Fig. 2B

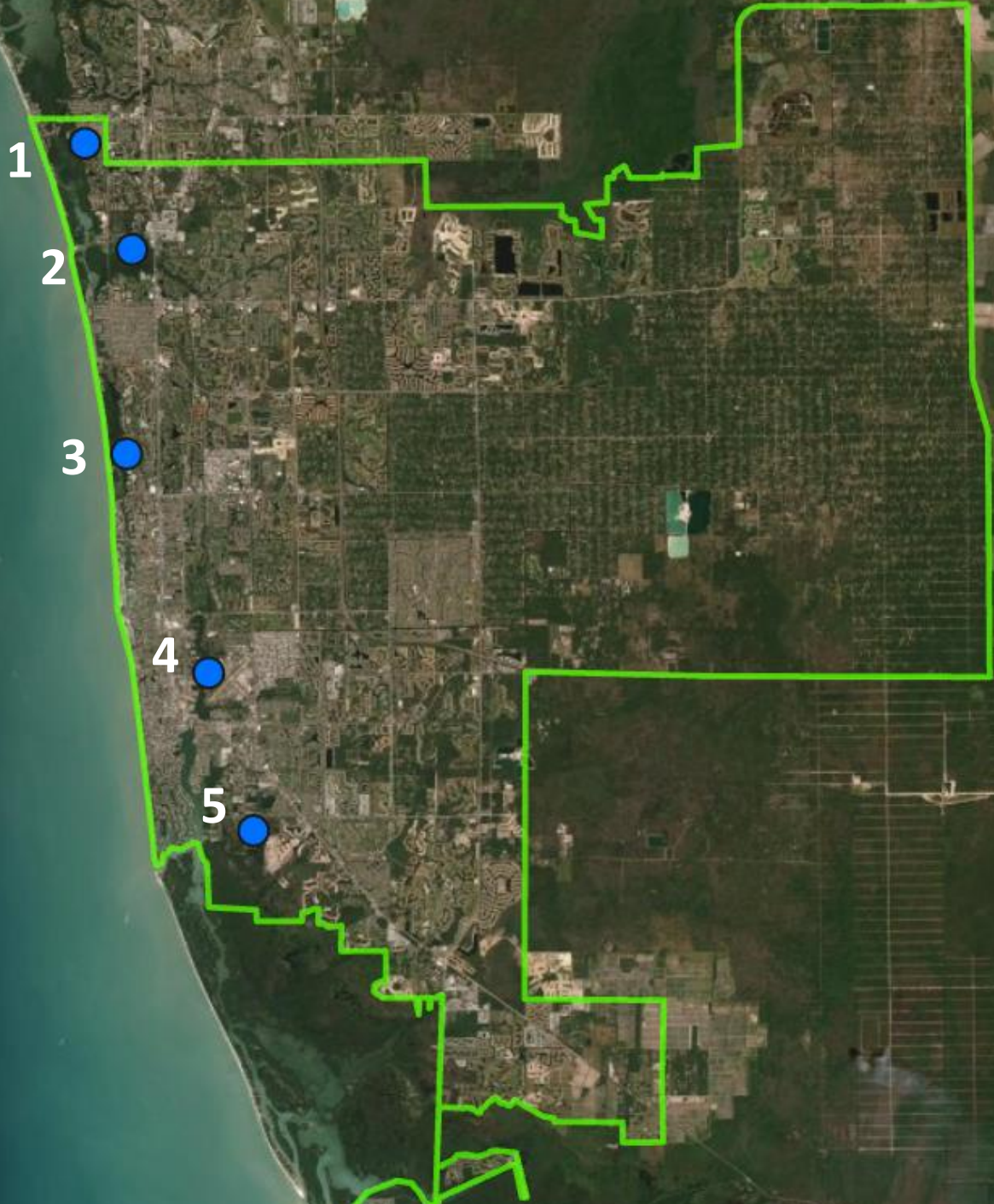
What about CMCD's diverse and abundant mosquito populations?

Research Questions

How accurate are BG-Counter traps in the District?

What species are BG-Counter traps capturing?

BC-Counter Study Locations



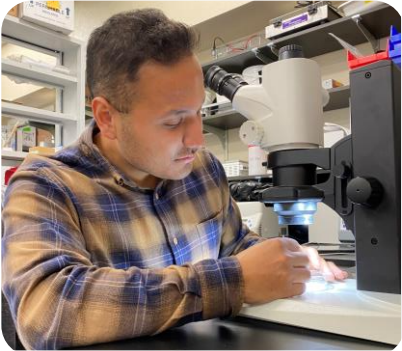
Methodology



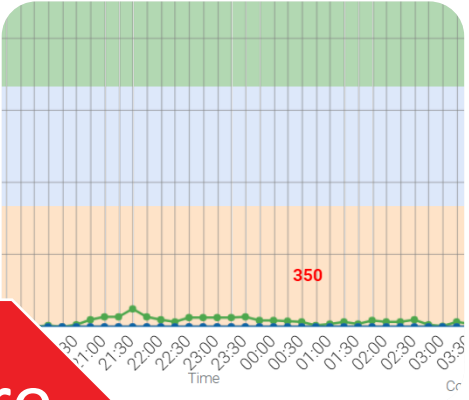
Capture



Collect



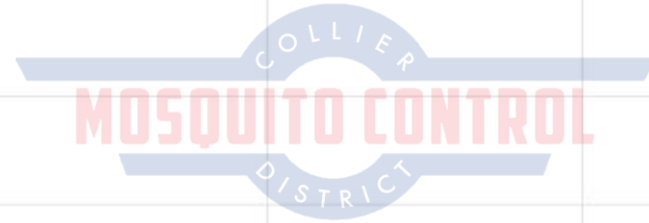
Count





Compare

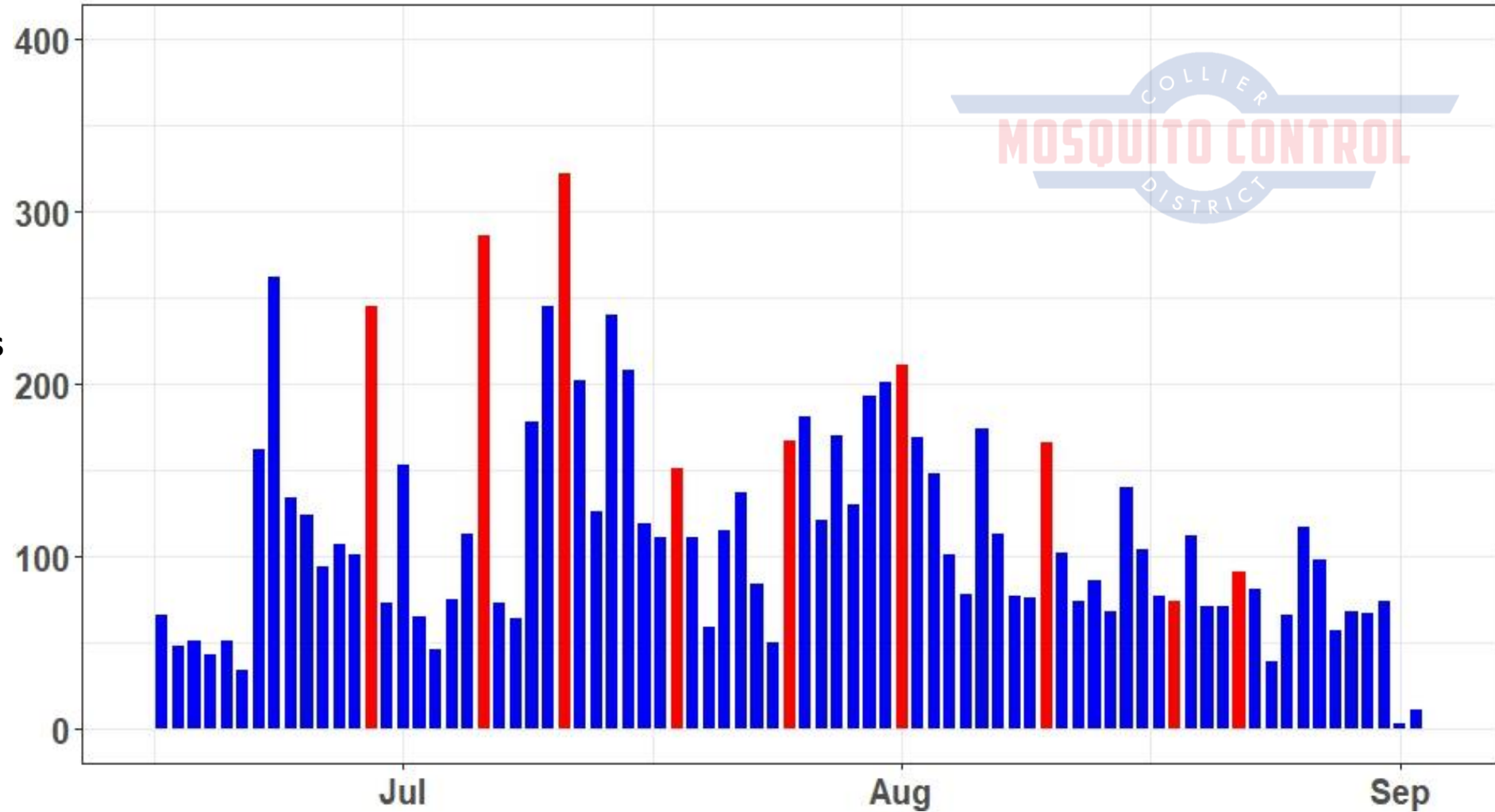


Site 1



-  BGC Mosquitoes
-  Collection

Mosquitoes per night



Month

39

Collections

544

BG-Counter Hours

10K

Mosquitoes
Counted

25

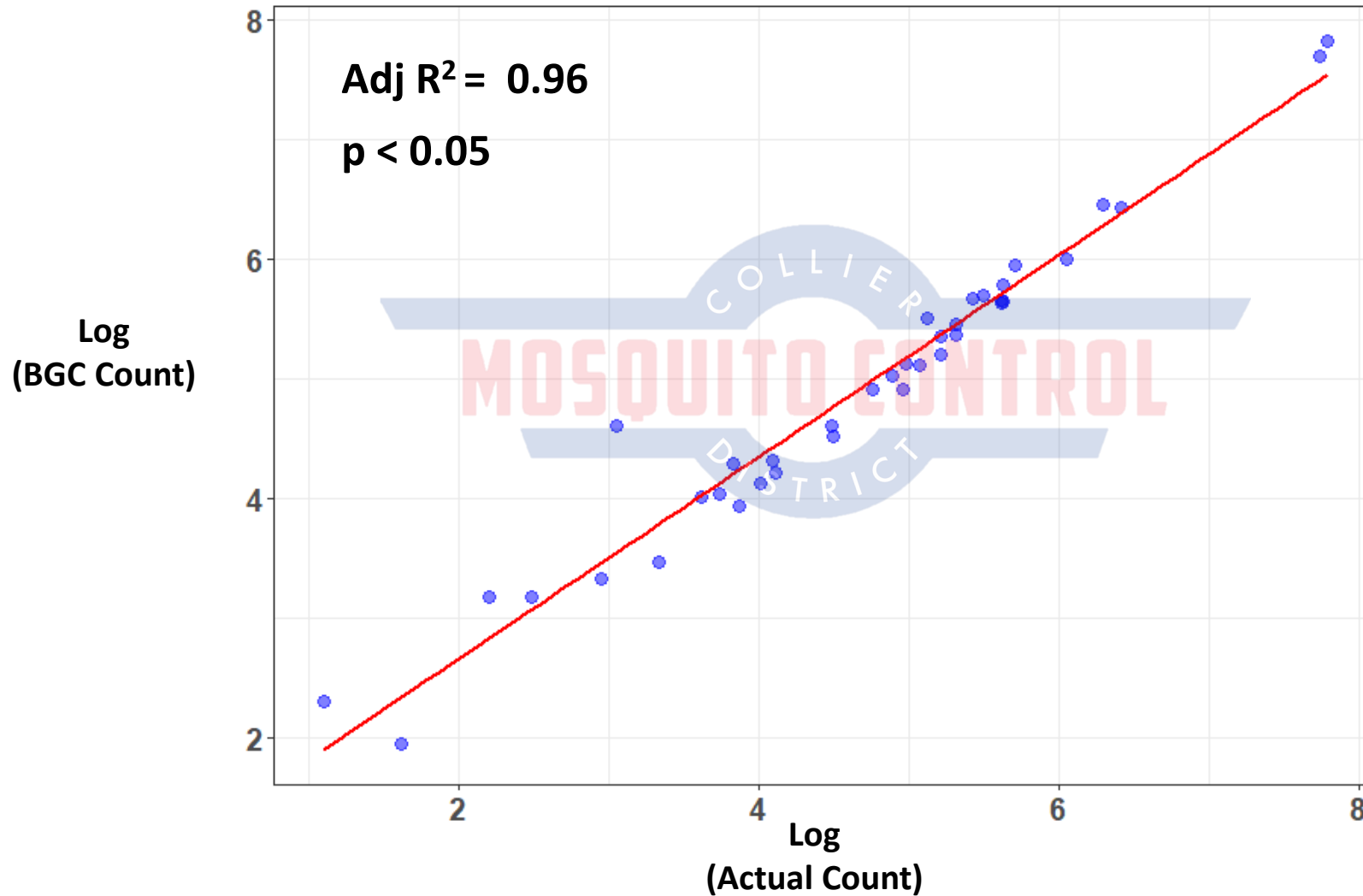
Species Identified

>99%

Identified to Species

How accurate are BG-Counter traps in the District?

Actual mosquitoes a strong
predicator of BG-Counter counts

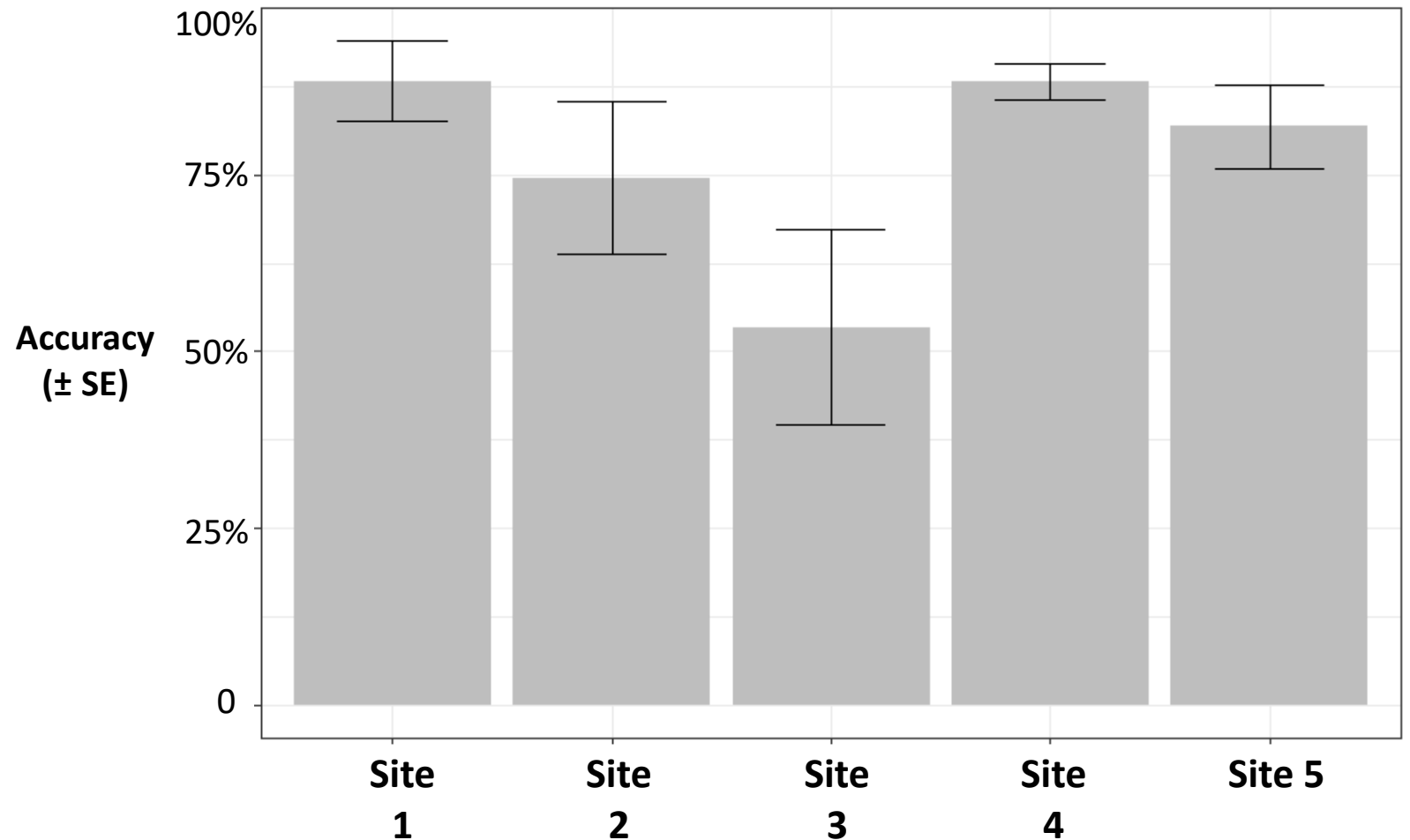


BG-Counters were generally accurate

Day et al. accuracy metric: **BG-Counter mosquito counts that could be attributed to actual mosquitoes captured by the BG-Sentinel**

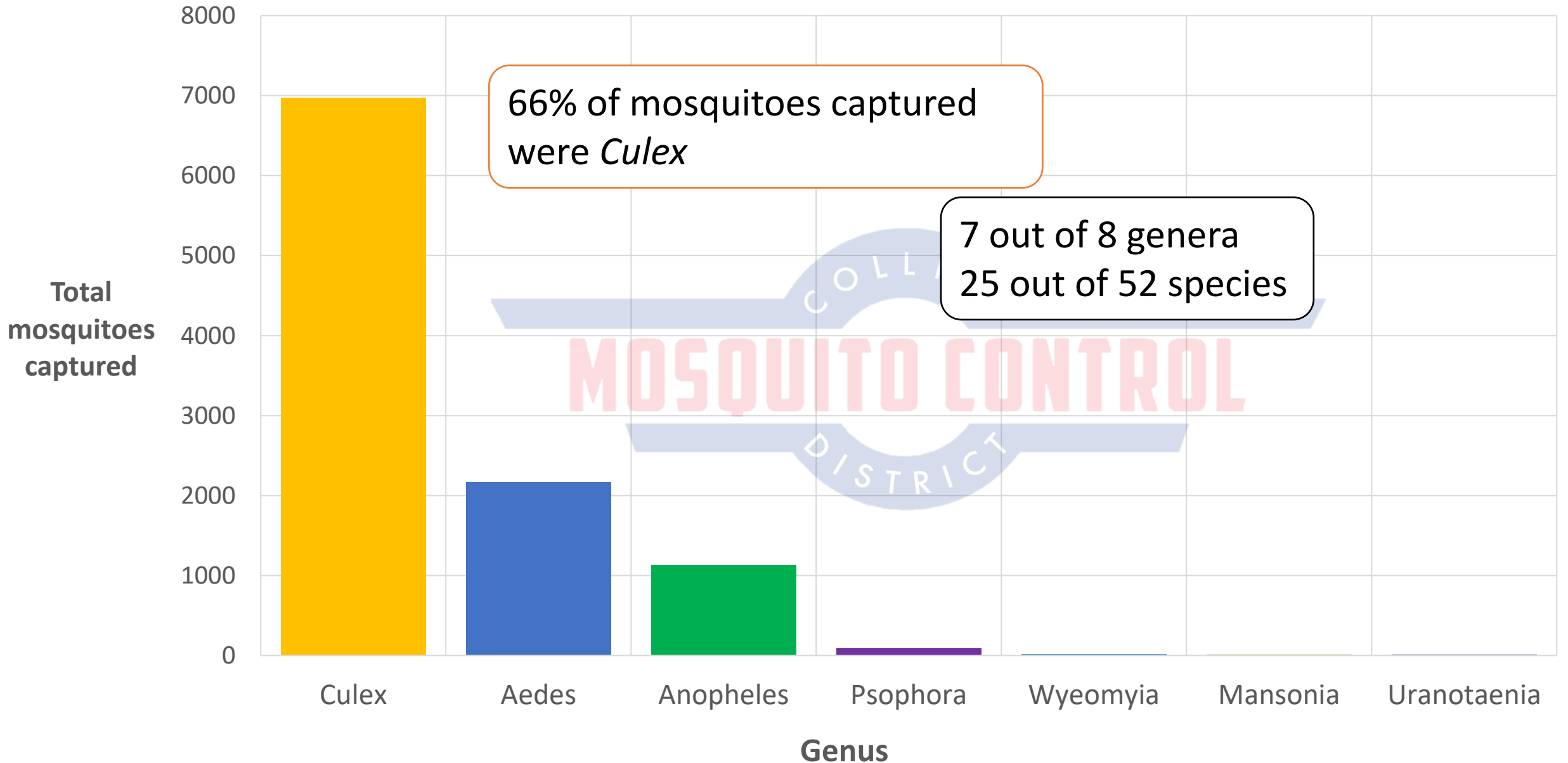
- Mean agreement for all sites was 80% (20-99%)
- Median agreement for all sites was 86%

BG-Counter Mean Nightly Accuracy

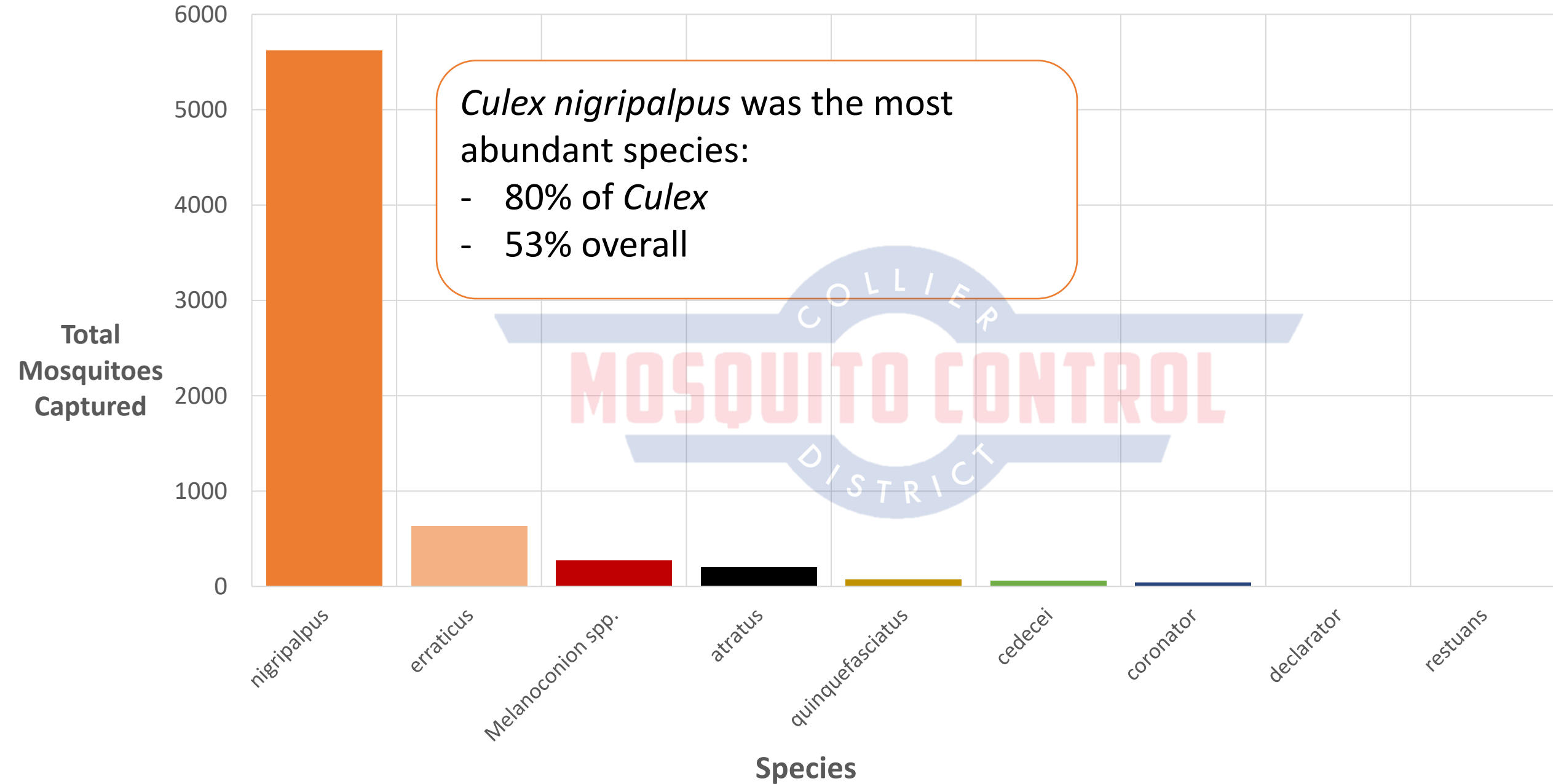


What species are BG-Counter traps capturing?

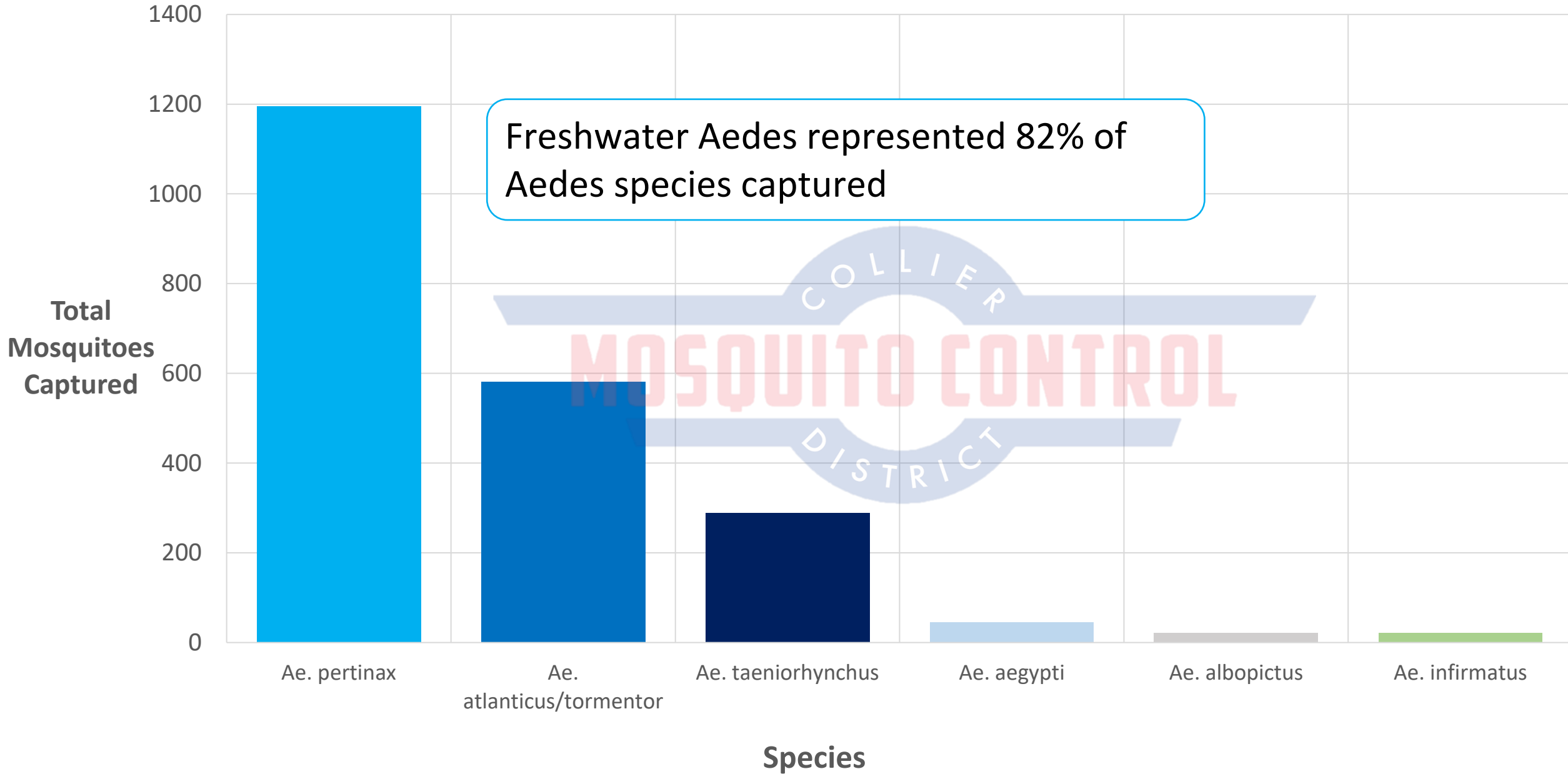
Total Mosquitoes Captured in BG-Counter Traps by Genus



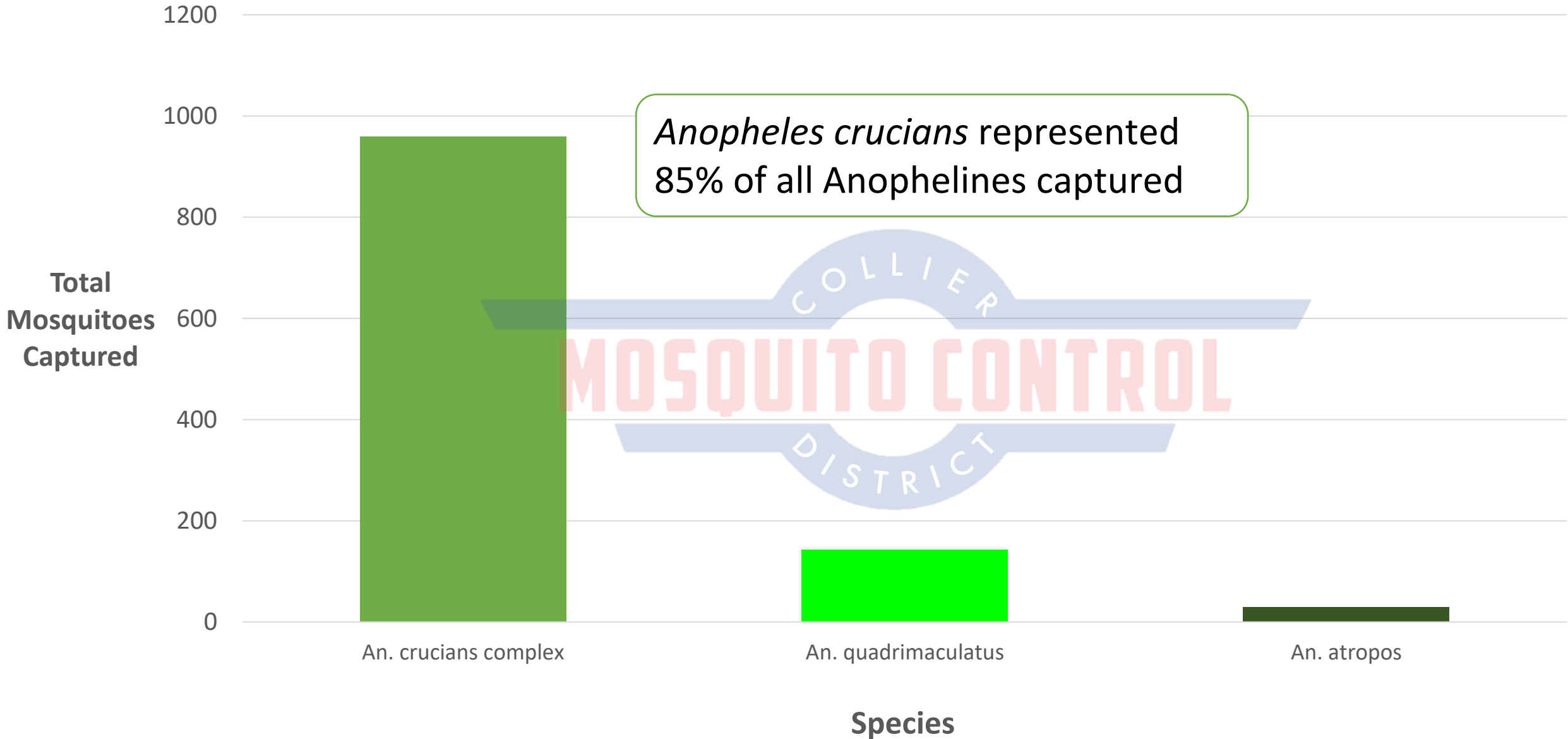
Culex Species Captured in BG-Counter Traps



Aedes Species Captured in BG-Counter Traps

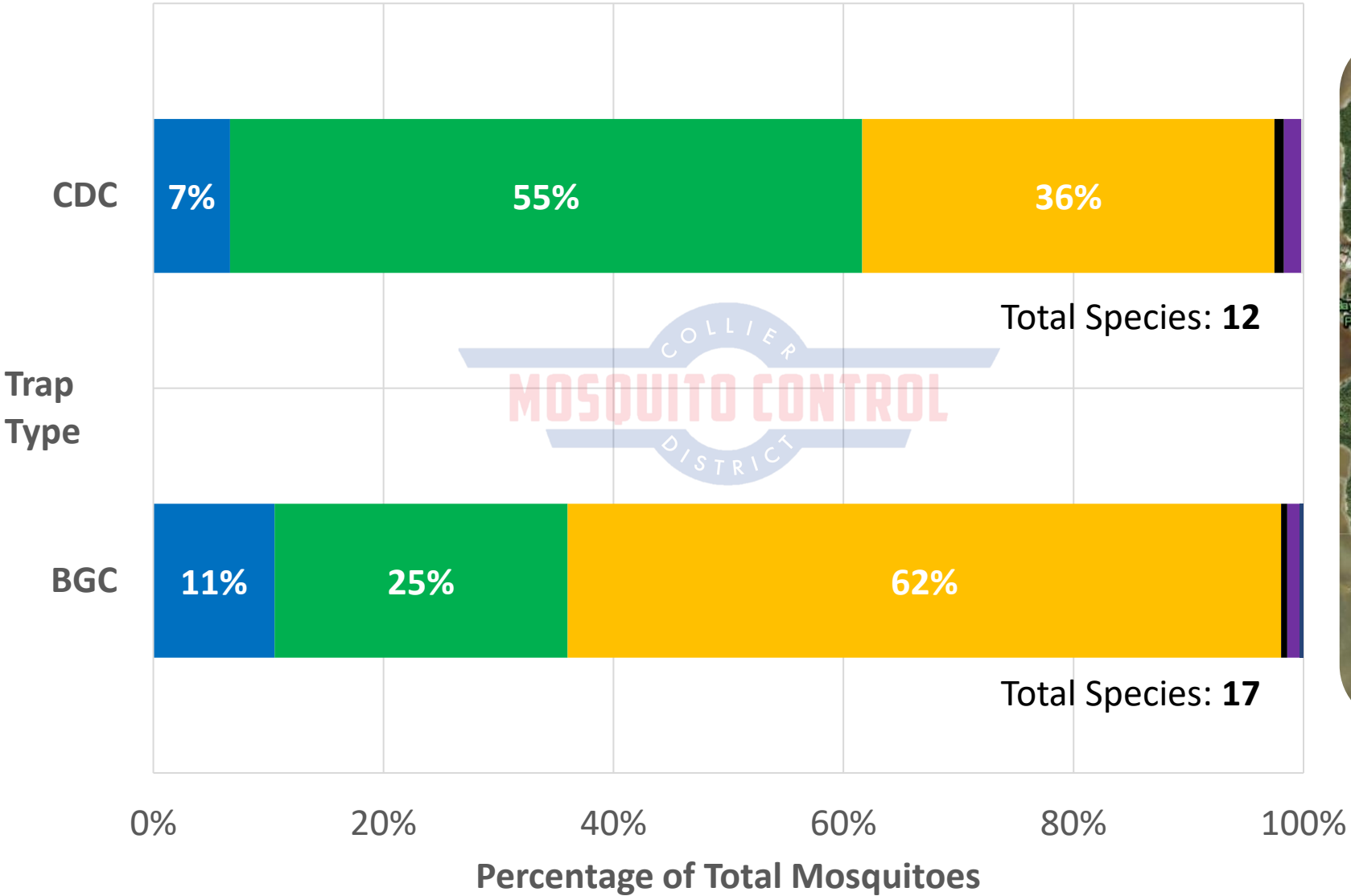


Anopheles Species Captured in BG-Counter Traps



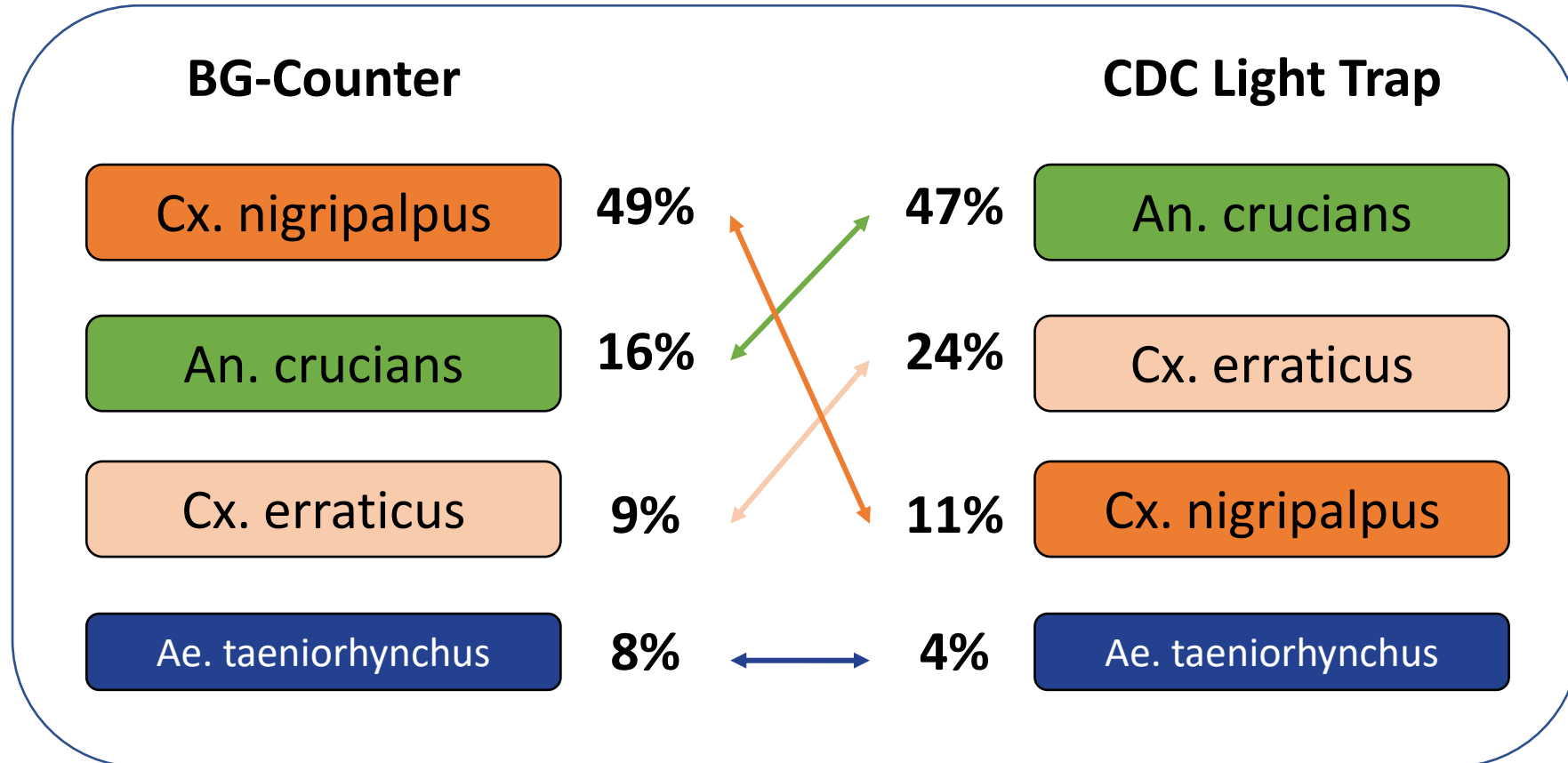
Bonus: How do these results compare to CDC light traps?

Genus Comparison



■ Aedes
 ■ Anopheles
 ■ Culex
 ■ Mansonia
 ■ Psophora
 ■ Uranotaenia
 ■ Wyeomyia

Species Comparison (Top 4)



Total Mosquitoes: 1491

Total Mosquitoes: 2536

Conclusion

- BG-Counter traps accurately quantify mosquito abundance within the District
- Traps capture a broad spectrum of the District's mosquito species (25/52)
- Preliminary observations suggest that BG-Counter species may be comparable to those from CDC light traps

Acknowledgements

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Questions?

