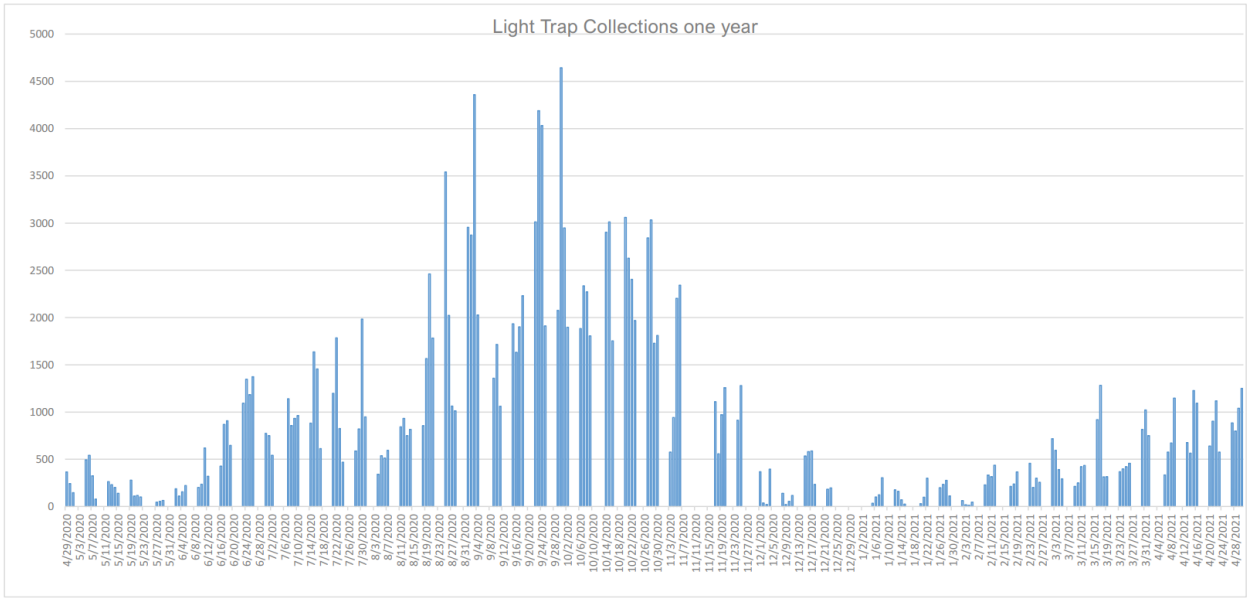
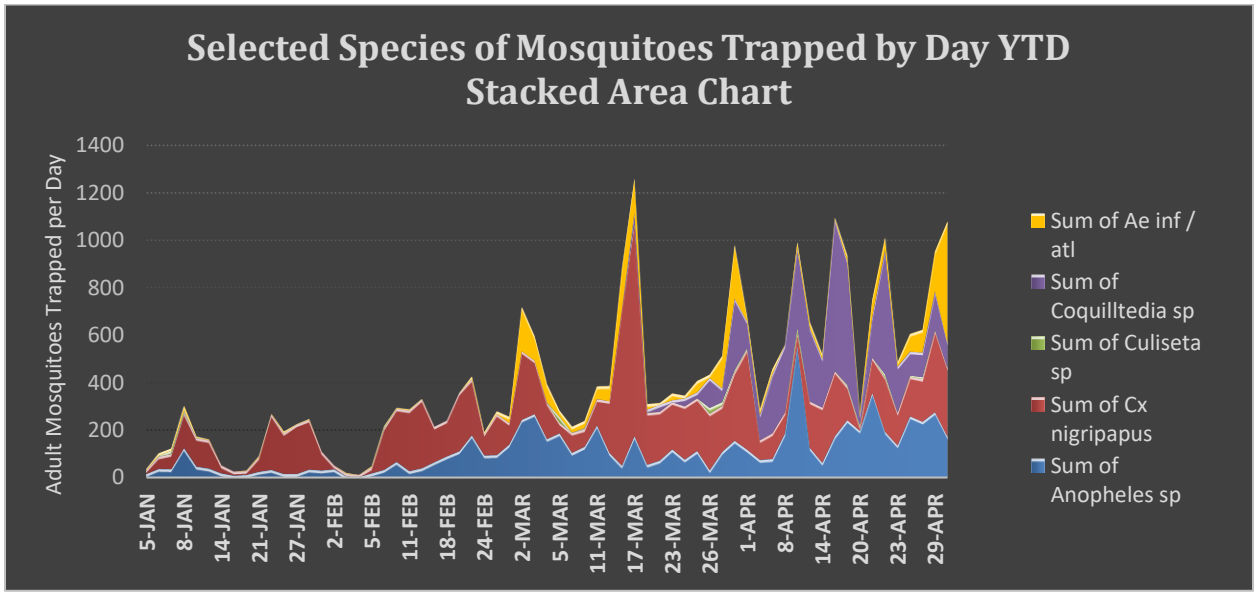
Week of 4/26/2021 Operations Update

The total mosquito population has remained at a consistent level for the past five weeks. However, Friday's trap data showed a significant increase in *Aedes infirmatus*. The bar graph below shows the total adult mosquitoes from all traps in the District for the past year (TTM).

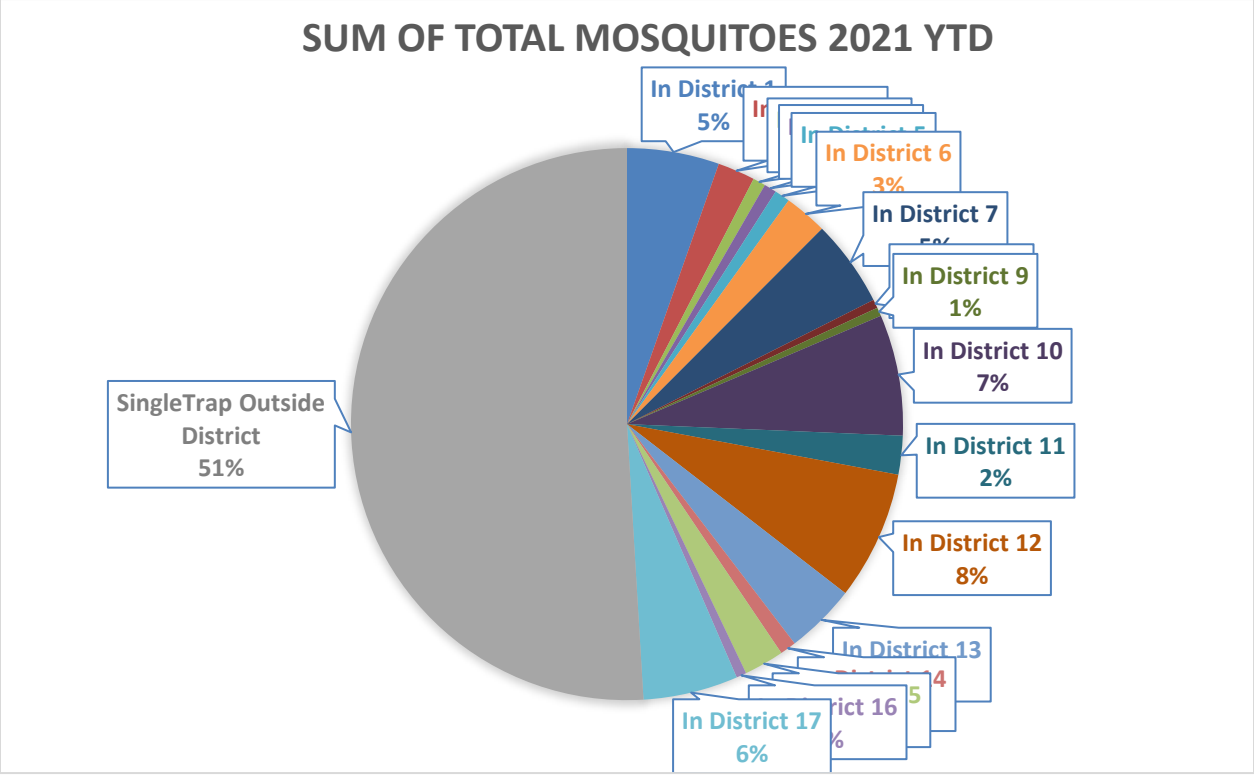


At almost two weeks after the last major rain event (4/17- 4/18) we finally saw sharp increase in the flood water species *Aedes infirmatus on* 4/30 (Chart Below). During the summer months we would expect to see adult mosquitoes emerge from flood waters in about seven days. Lower temperatures, however, can slow the metabolism and thus development of mosquito larvae into adults.



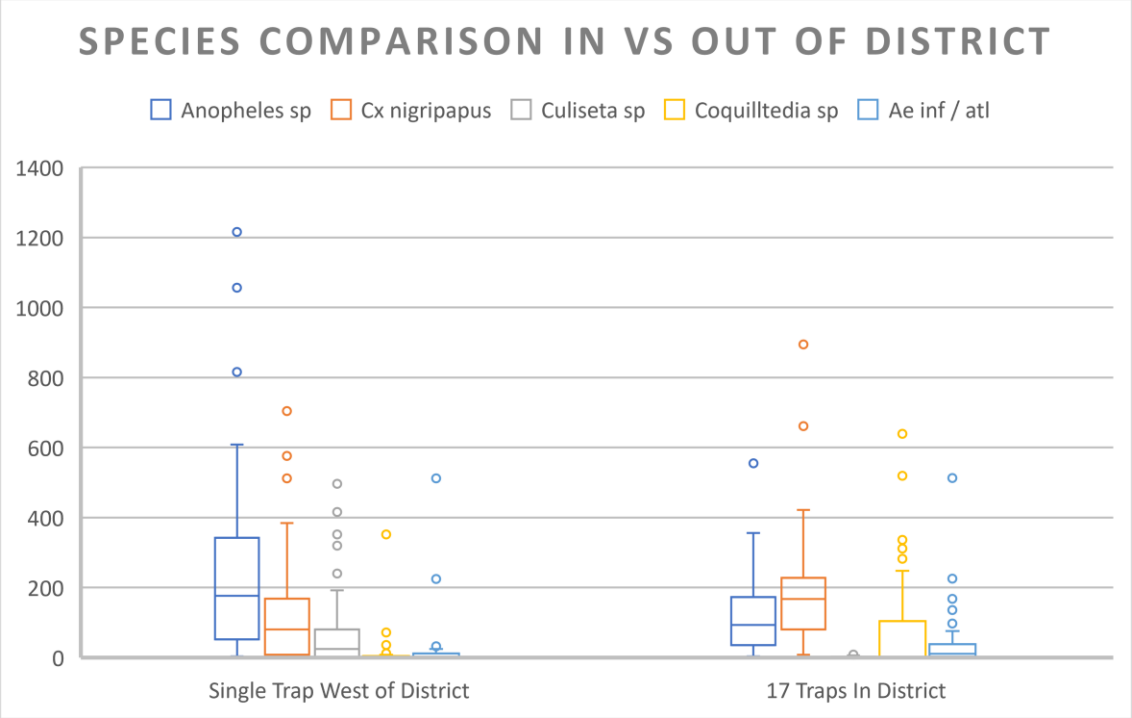
The District monitors a network of mosquito traps within our geographical boundaries daily so that once mosquitoes show up, we can detect them and apply pesticides in response. We also keep one trap West of the District as both an early warning system for mosquitoes entering the District and to provide data for reimbursement from FEMA emergency mosquito control after hurricanes.

The one sentinel trap outside the District has caught more mosquitoes (51%) than the 17 traps (49%) kept in the District (Chart below).



The mosquito species trapped at each location reflect the adjacent breeding sites. The chart below shows the most common species trapped both in the District and outside the District so far this year, with 48 mosquito species taking up residence in Flagler County. West of the District is primarily mixed hardwood swamp, so species in this trap to the west of the District are permanent water mosquito species: *Anopholes spp., Culex nigripalpus, and Culiseta melanura. Culex nigripalpus* also makes use of habitat within the District. *Coquillettidia perturbans* breeds in open water with emergent vegetation, such as cattails, found in the southern portion of the District. And finally, *Aedes infirmatus*, the most prominent flood water mosquito species represented in the traps so far this year, breeds in temporarily flooded low-lying areas.

Aedes infirmatus has a tremendous migratory flight distance of up to ten miles and can easily make its way into the District from undeveloped areas that temporarily flood in the central and western portions of the County. Unlike permanent water mosquitoes mentioned previously that supply a steady brood of replacements, flood water mosquitoes lay their eggs in dry soil and hatch when flooded. When the mosquito larvae have matured, they emerge simultaneously and in large numbers. The box plot for this species is mostly a series of outlier data points. This is because the simultaneous emergence of so many mosquitoes all at once, termed irruptive growth, produces distinct data points.



Zones in yellow were sprayed by truck this week.