FY 2023 – 2024 Annual Operations Report

EAST FLAGLER MOSQUITO CONTROL DISTRICT

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Operations Overview

This report will discuss operations for the fiscal year beginning October 1, 2023, through September 30, 2024.

Seasonal Overview

At the beginning of the fiscal year, in October, the mosquito population reached the highest numbers in calendar year 2023. Aerial adulticiding was required in two separate weeks with an intervening week with no spraying between broods. It is not unusual for there to be high levels of mosquitoes in October whether produced by a Hurricane or just a large rain event. Fortunately, there were no Hurricanes that impacted the District during this year of operation. However, Hurricane Milton impacted the area on 10/10/2024, but that will be covered in next year's reporting.

Also not unusual, a spike in floodwater mosquitoes in January prompted truck adulticiding of about 20,000 acres (Week 4). The saltmarsh was in a dry-down phase over winter and to prevent the emergence of saltmarsh mosquitoes in Spring, the first larvicide pretreatment was done the second week of March. This was the earliest larvicide treatments began in the District in at least ten years, and possibly ever.

By the first week of April *Coquilletidia perturbans* had begun emerging. This was a comparatively strong emergence for this species for early in the season when compared to the past 5 years. From week 16 to week 36 low and moderate mosquito activity predominated. This lull in activity was punctuated with an almost non-existent mosquito population in mid-June.

Between May and August the population of mosquitoes collected in daily traps in the District were below a thousand. This low level of overall mosquito activity was due to high temperature and low rainfall amounts, essentially eliminating much of the breeding habitats available to various mosquito species. One curious outcome was that after mid-June the population *Anopheles spp.* never recovered fully and lagged the other main permanent-water species of mosquitoes in the District, *Culex nigripalpus,* the remainder of the season.

August saw more rain and a building mosquito population. In September the District conducted aerial adulticide missions each week. A hurricane's worth of rain was received over the course of September producing multiple broods of mosquitoes that emerged at different times and in different parts of the District. Each part of the District was treated by air three times over four weeks. The population of floodwater mosquitoes was brought down just in time the week of October 7, with no spraying that week, and Hurricane Milton arriving on October 10.

Suppression of Mosquito-borne Diseases

Despite the prevalence of mosquito-borne disease around the state this year our operations were consistent. The primary means to abate mosquito disease is by suppressing the mosquito population. This is because preventing the continued presence of high numbers of species that are vectors of disease reduces the incidence of disease transmission. For people living in or visiting areas in the District, the prevalence of mosquito-borne disease elsewhere in the state has little

bearing, as the District is self-sufficient in controlling mosquitoes and can quickly reduce the mosquito population to prevent disease transmission.

While there are several mosquito-borne diseases that remain a threat to the human population in Florida such as West Nile Virus, Eastern Equine Encephalitis, and more recently Dengue. Last year (2023) there were 175 cases of locally acquired Dengue in Florida, occurring in Miami-Dade, Broward, Hardee, Palm Beach and Polk Counties. In 2024 at the end of September (week 40), 45 cases of locally acquired dengue have been reported in Florida. Counties reporting locally acquired Dengue were Broward, Hillsborough (3), Manatee, Miami-Dade (28), Monroe (3), Orange (2), Palm Beach (2), and Pasco (5) counties with onset in January (3), February, March (2), April, June (11), July (8), August (13), and September (6).

Dengue remains a primary concern. This is because the disease was prevalent in South America and the Caribbean. So much so it has it's own page on Wikipedia: https://en.wikipedia.org/wiki/2024_dengue_outbreak_in_Latin_America_and_the_Caribbean

Puerto Rico declared a Public Health Emergency at the end of March 2024 and in response we met with officials from the Florida Department of Public Health in Flagler County to discuss strategy. The species of mosquitoes that vector Dengue are backyard mosquitoes, meaning they do not reproduce in the natural environment, but instead use primarily containers commonly found around homes. Because of this, a simple strategy of applying pesticides is not sufficient.

Instead, a laborious sweep of neighborhoods where local transmission occurs to find and eliminate containers is the most effective means of permanently eliminating these mosquitoes. To supplement limited staff, we set up training for community volunteers to perform this function with the help of the local emergency operation center.

A significant contributor to the prevalence of Dengue in South America and the Caribbean is that all serotypes of the disease were found to be circulating. This means even when people had previously been infected by one of the four serotypes of Dengue, they remain susceptible to the other serotypes. Many more people were thus susceptible to the disease than in a typical year.

The Florida Department of Health monitors mosquito-borne diseases around the state and a summary graphic for the year is included in this report (Figure 6).

Weekly Operations Summaries and Analysis

In the weekly operations updates that are part of this report we examine the mosquito population, which is tracked year-round (Figure 1), and its relationship with weather, as well as explain how control measures are applied in response to elevated mosquito populations. These reports emphasize control responses to adult mosquito populations. Controlling adult mosquitoes is highly weather dependent and there is more variability in the output of adulticides from year to year (Figure 2).

The District works to prevent mosquitoes from emerging in the saltmarsh in the first place by proactively applying pesticides. These pesticides work by targeting mosquito larvae that hatch in saltmarsh areas that flood intermittently, in elevations above the intertidal zone. Surveilling and

preemptively treating areas that produce mosquitoes in the saltmarsh constitute the bulk of the District's day-time operations.

Controlling immature mosquitoes using pretreatment larvicide is less weather dependent with output variability stemming from extended dry periods or extensive flooding in the saltmarsh (Figure 3). These conditions allow us to forgo treatments for longer periods and reduce the total applications as it is the oscillation of wet and dry periods that allow the saltmarsh mosquito species to lay eggs in exposed soil and then hatch when flooded to complete the life cycle. The trend has been to increase the amount we are larviciding, while the adulticiding trend remains virtually flat (Figure 4).

Targeting the immature mosquitoes while they are still in the water means less pesticide is needed and control is more complete. Using an extended-release product means operations can be planned in advance and require less equipment as more time is available. In undeveloped areas away from the saltmarsh, breeding sites are too numerous for this strategy and a reactive approach is necessary.

The use of pesticides to kill adult mosquitoes is always on as needed basis with more abundant and widespread populations necessitating a greater response. More area in terms of zones is then treated in response (Figure 5).

Accomplishments

Services were expanded to include the newly added areas to the District. The Flagler County Board of Commissioners formally approved expansion of district boundaries in December of 2022. The County had requested the District expand to developing areas to aid in economic growth of the County. The cost of serving the expanded areas will exceed collected revenues at the beginning, but over time will likely contribute more to the tax base.

An additional field technician was brought on in 2023 to complete training ahead of the start of services, bringing the total number of employees to fourteen. Mosquito control can operate with a small number of employees because it makes use of specialized equipment to treat large areas quickly in response to the verified presence of mosquitoes.

The largest part of preparing for expanded services was increasing our ability to aerial adulticide additional areas. The District's previous helicopter was purchased in 2005 and was budgeted for replacement in fiscal year 2025/2026. However, keeping the current almost twenty-year-old helicopter until then would have limited our ability to respond quickly to surges in mosquito population now that more area would need to be treated. The Board began exploring options to increase aerial capacity and ultimately decided to replace the helicopter ahead of schedule with a larger capacity model.

The District began utilizing the recently purchased Airbus H-125 specifically equipped for mosquito control purposes in June of 2024. The aircraft performed its mission as intended and was a welcome addition to the District's capabilities. The equipment used to apply pesticides for this aircraft is also much larger than the previous model and several pieces of equipment were

designed and manufactured in-house to enable it to be reconfigured quickly and safely depending on the mission set.

The District placed an order for a new treatment drone that will replace a unit that is no longer allowed to be used by Florida law over concerns of Chinese terrorism. Additionally, a grant from the CDC, and administered by the Florida Department of Agriculture and Consumer Services, was obtained to purchase 3 ATVs, a drone support trailer, and various other equipment. We appreciate the assistance from these agencies in providing financial assistance to accomplish our goals.

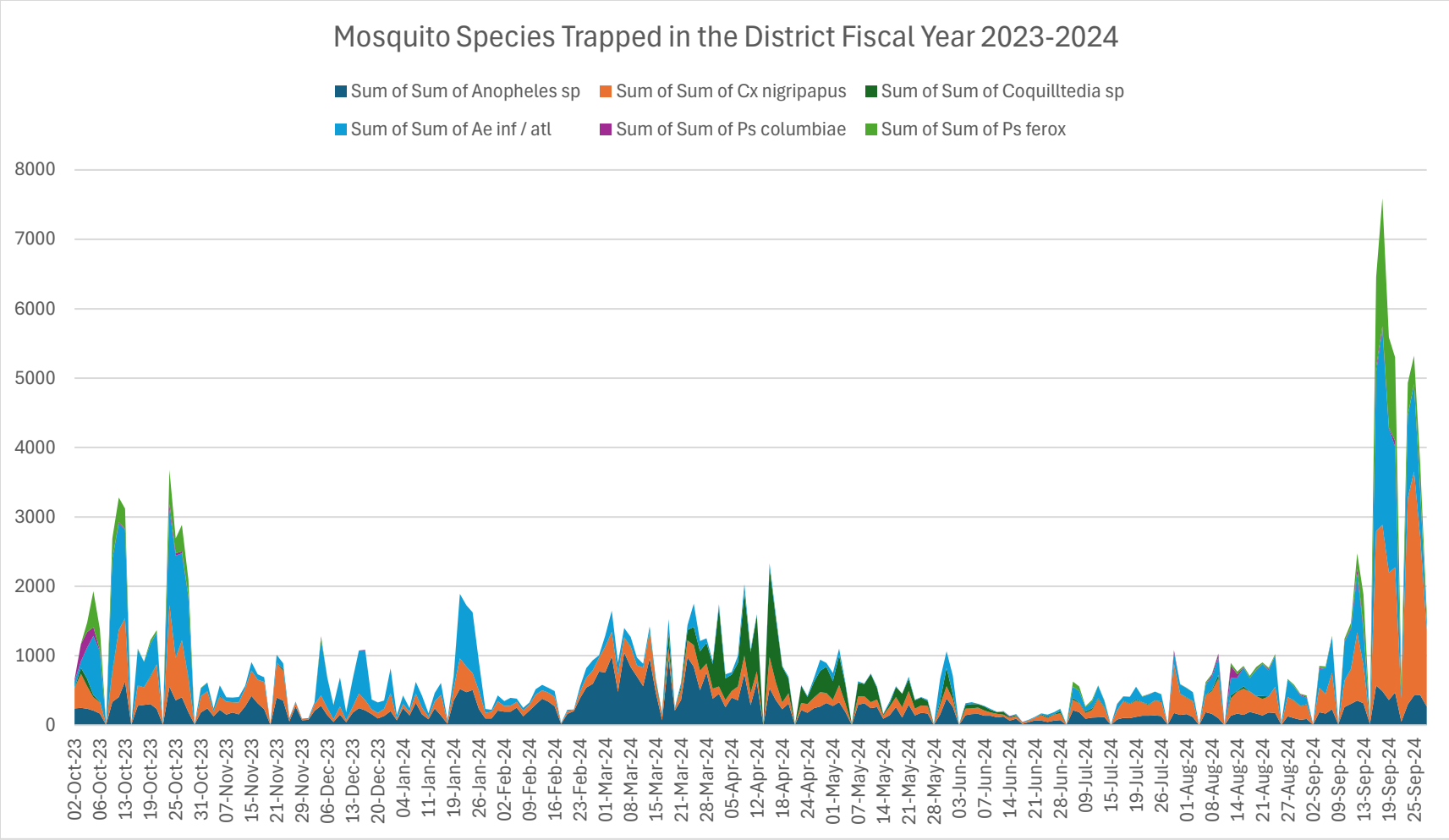


Figure 1. The District maintains a network of traps that are monitored daily on a year-round basis. This information provides the required justification for applications to control adult mosquitoes.

Pesticide Usage by Fiscal Year

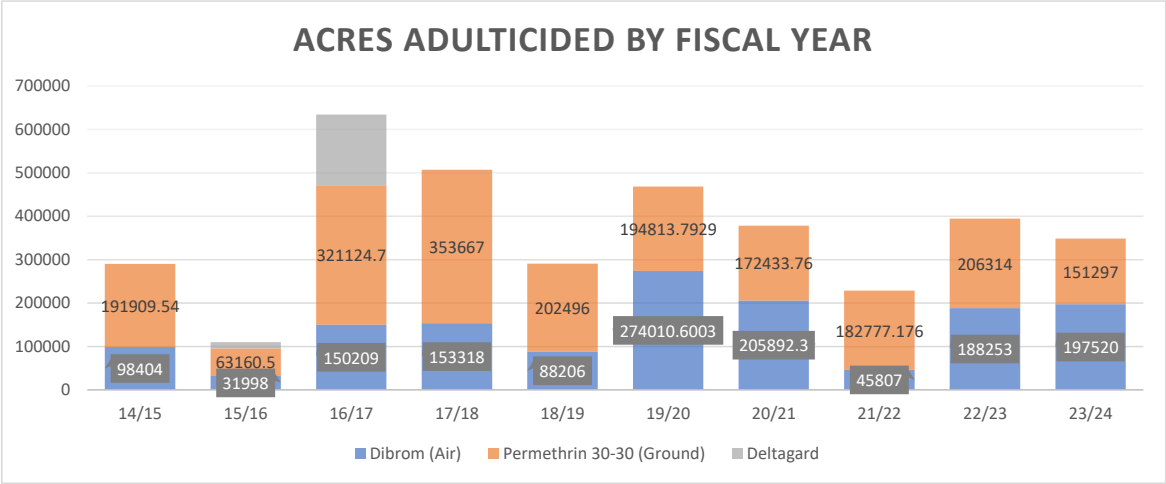


Figure 2. Controlling adult mosquitoes is highly weather dependent and there is more variability in the output of adulticides from year to year.

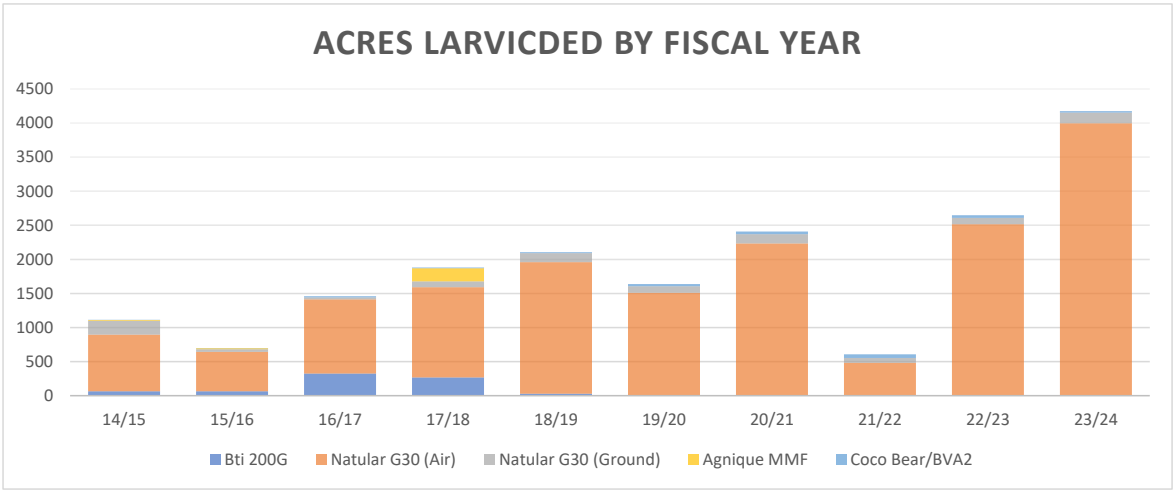


Figure 3. Controlling immature mosquitoes using pretreatment larvicide is less weather dependent with output variability stemming from extended dry periods or extensive flooding in the saltmarsh.

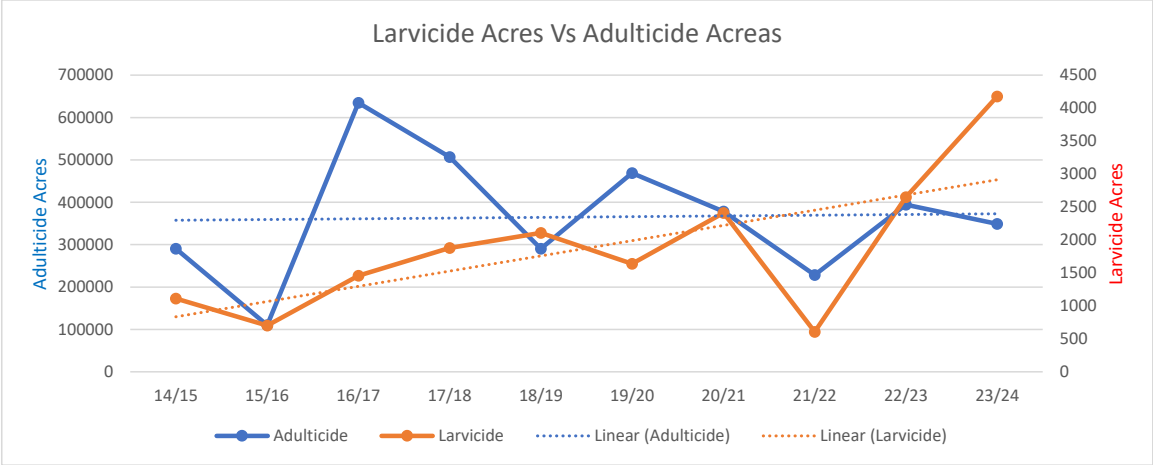


Figure 4. The trend has been to increase the amount of area larvicided in advance of emergence, while the adulticiding trend remains virtually flat.

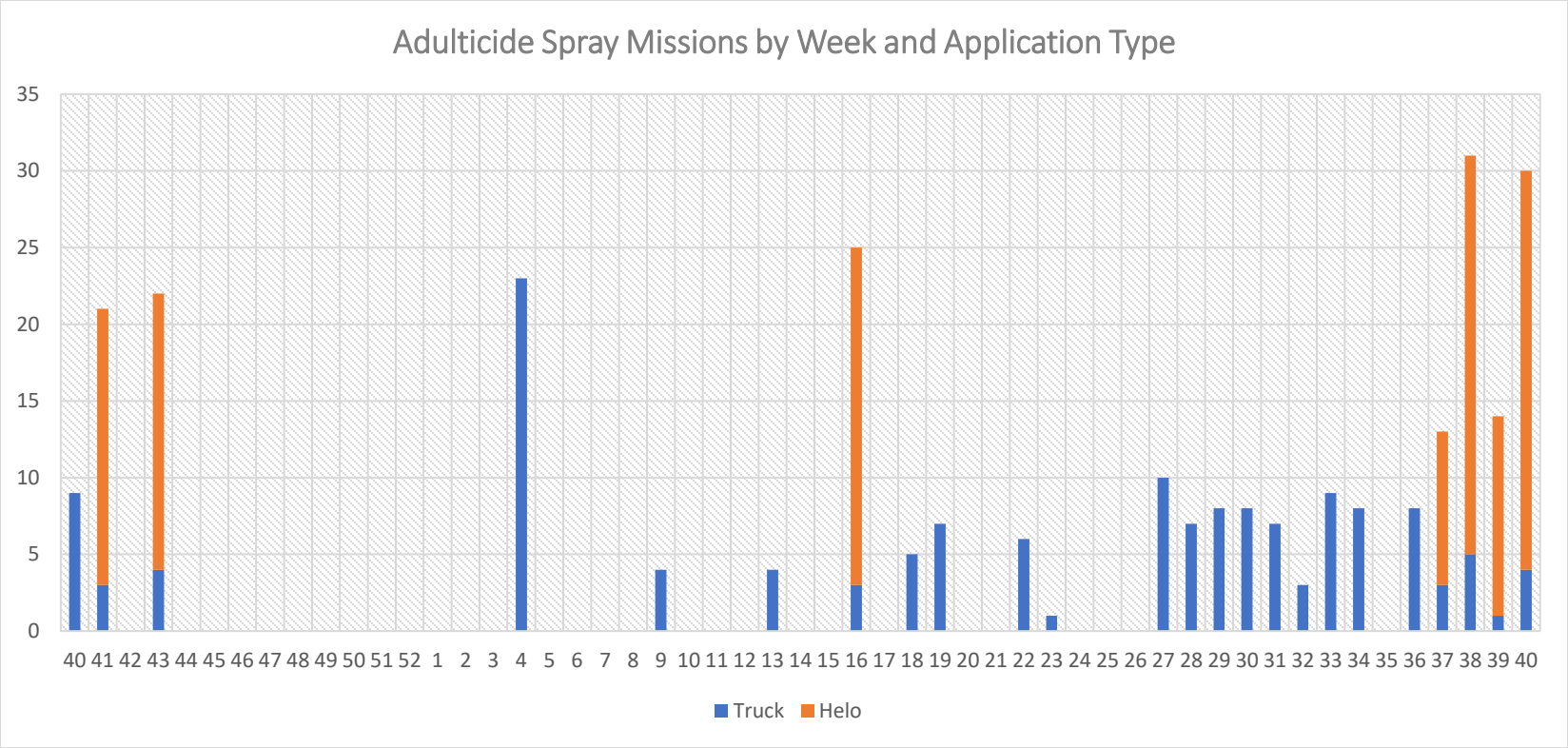


Figure 5. The use of pesticides to kill adult mosquitoes is always on as needed basis with more abundant and widespread populations necessitating a greater response. More area, in terms of zones, is then treated in response to a greater abundance of mosquitoes. No spray missions are conducted when the mosquito population is at low levels.

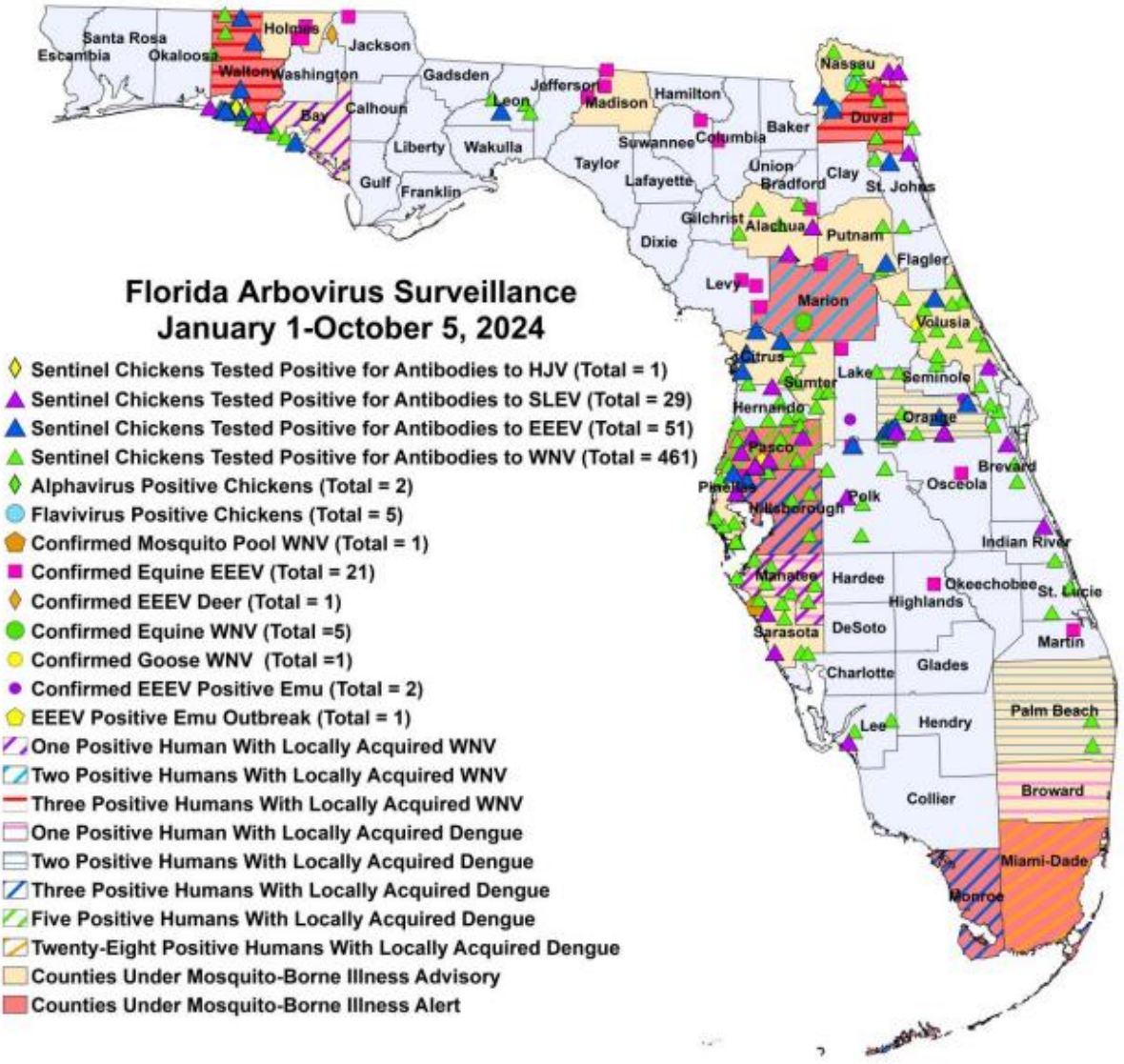
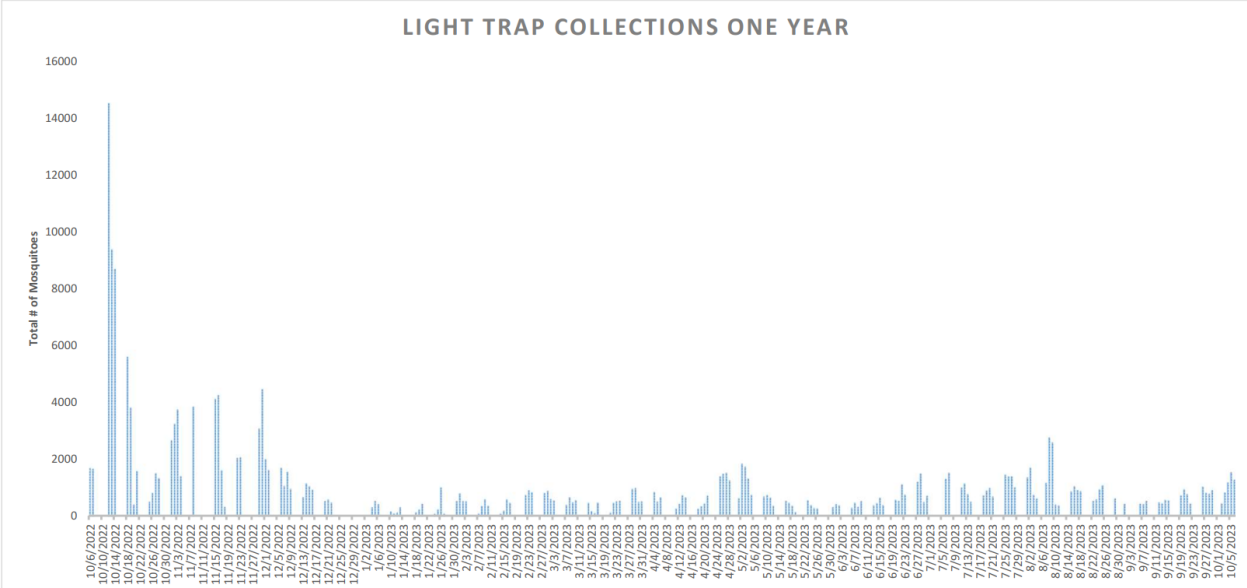


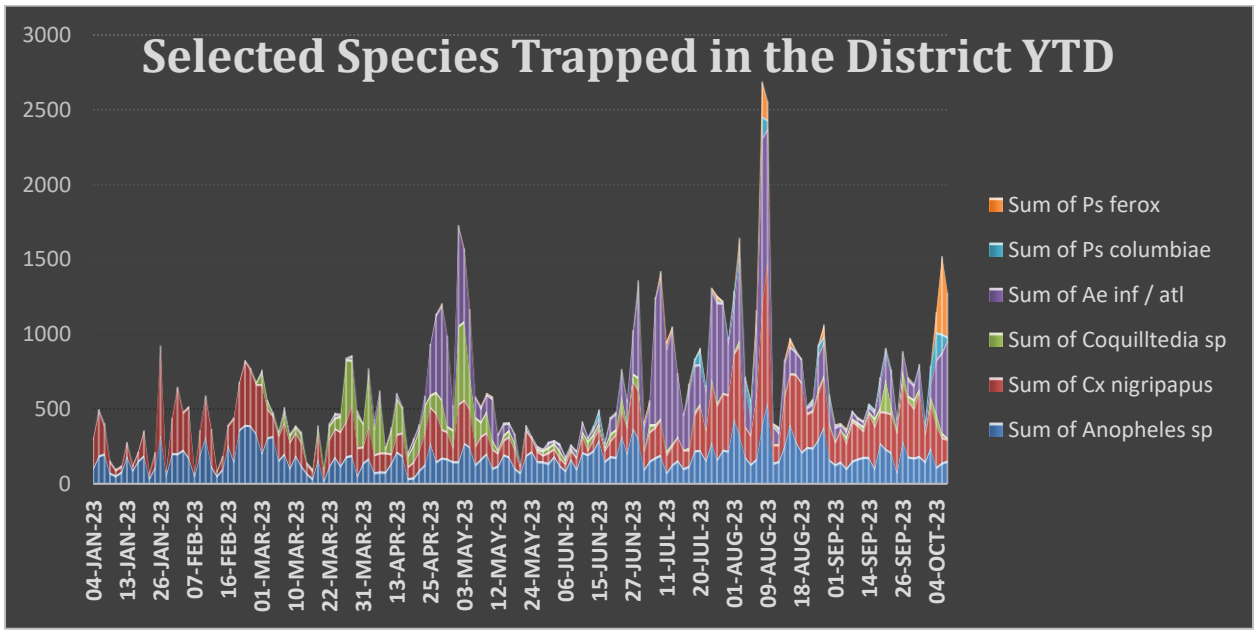
Figure 6. From the Florida Department of Health Weekly Arbovirus Surveillance Report, Week 40 https://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/_documents/2024-40-arbovirus-surveillance.pdf

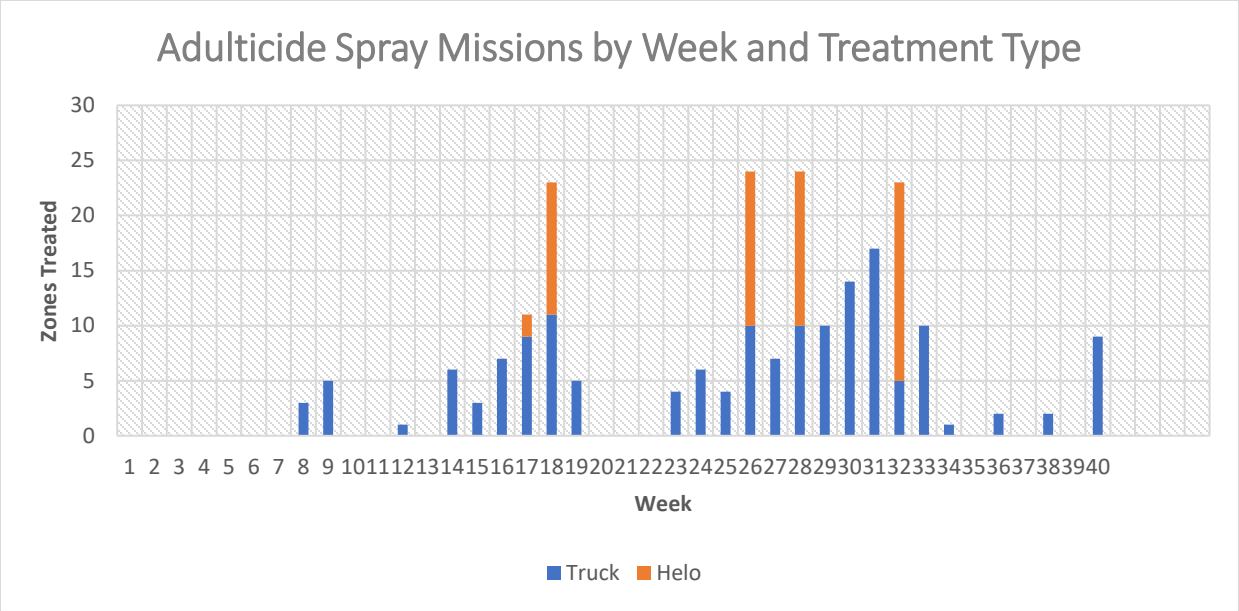
Week of 10/2/2023 Operations Update (40)

Mosquito activity was elevated for the third week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



Spray operations were mainly in the North and Central inland portions of the District where the most rain was received the previous week.





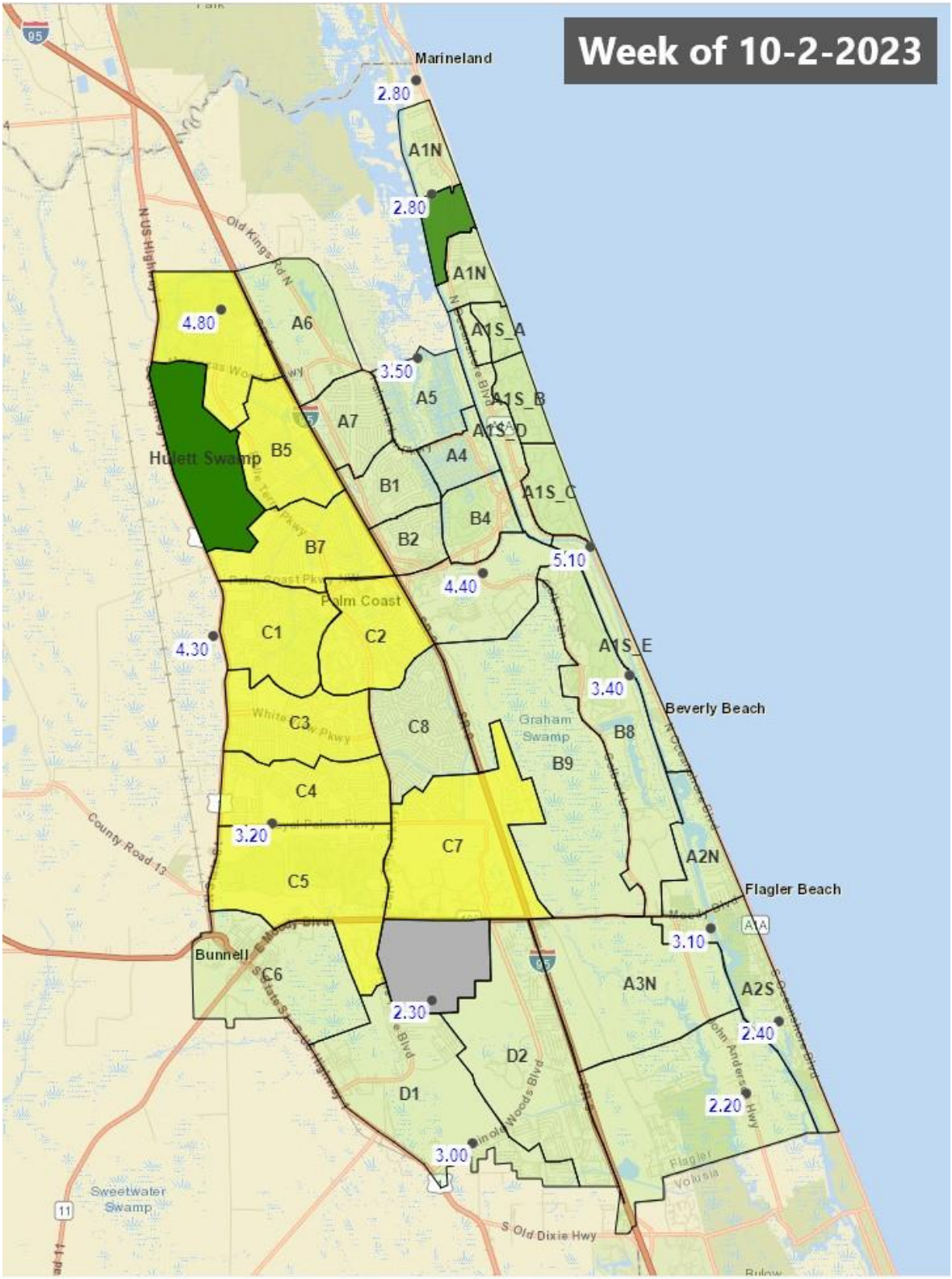
WNV activity: One human case of WNV infection was reported this week in Okaloosa County.

Dengue Cases Acquired in Florida: Fifteen cases of locally acquired dengue were reported this week.

Advisories/Alerts: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, and Miami-Dade counties are currently under a mosquito-borne illness alert.

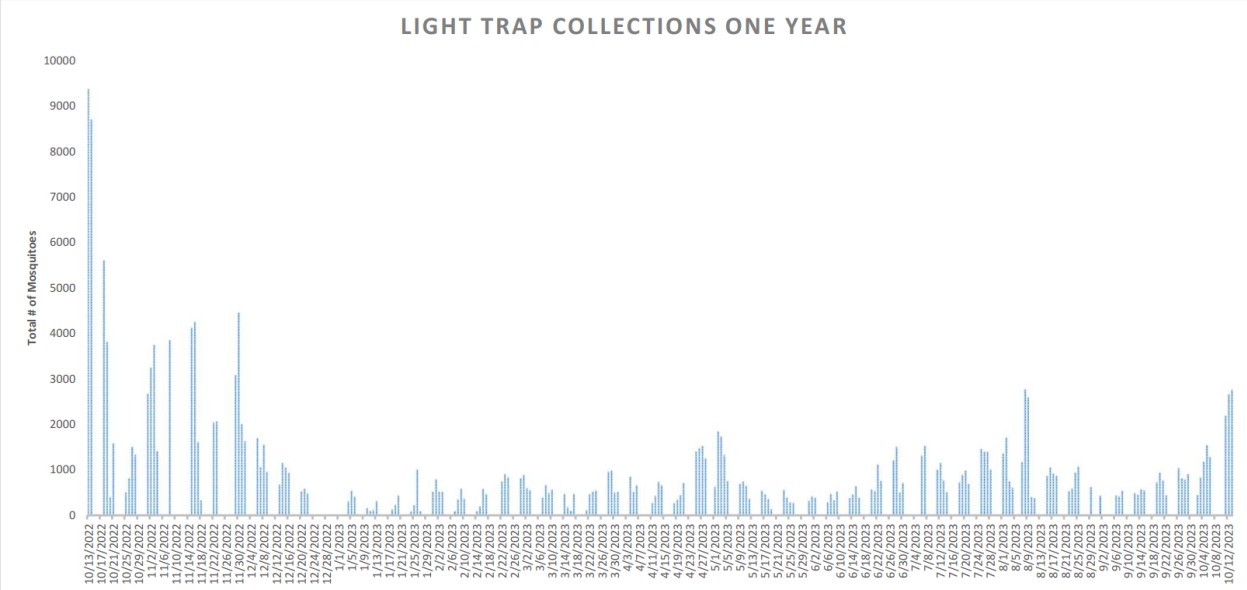
See the full DOH Report

Zones highlighted in yellow were sprayed by truck this week.

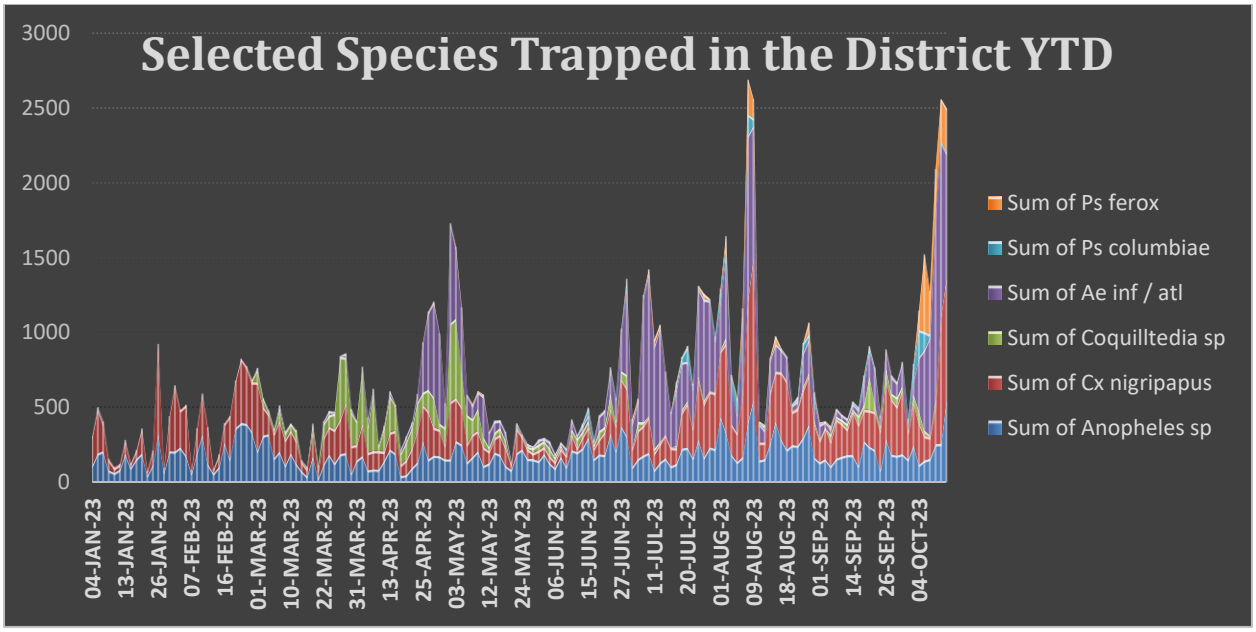


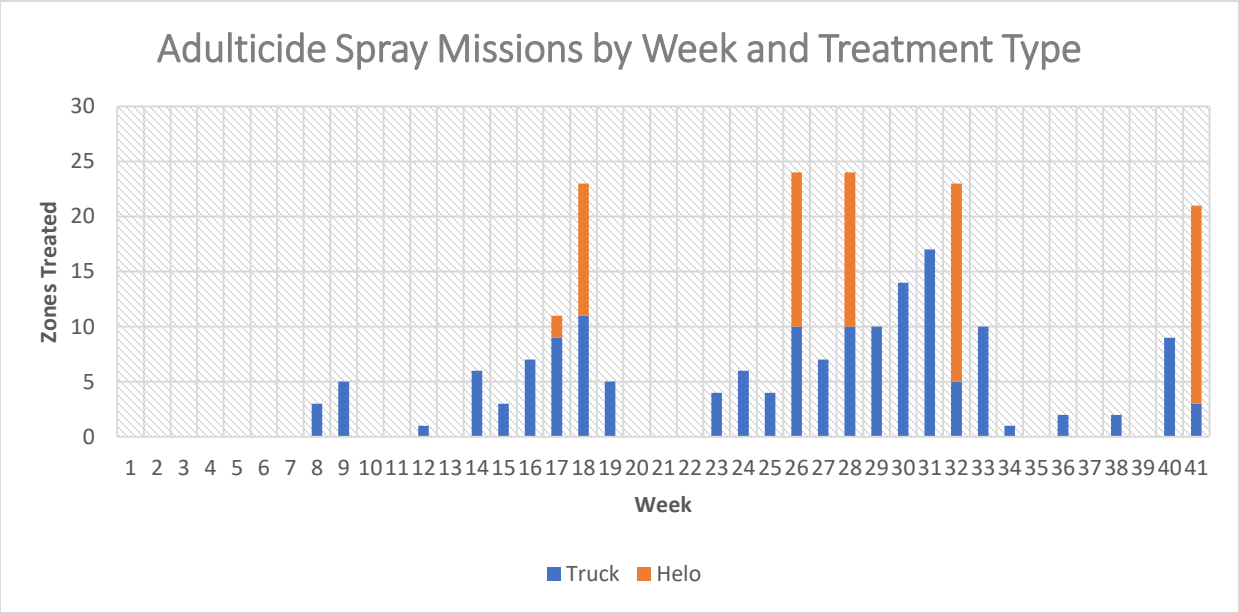
Week of 10/9/2023 Operations Update (41)

Mosquito activity significantly increased this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



District-wide aerially spraying was completed this week, but was interrupted when a major inland storm passed through the area Wednesday.





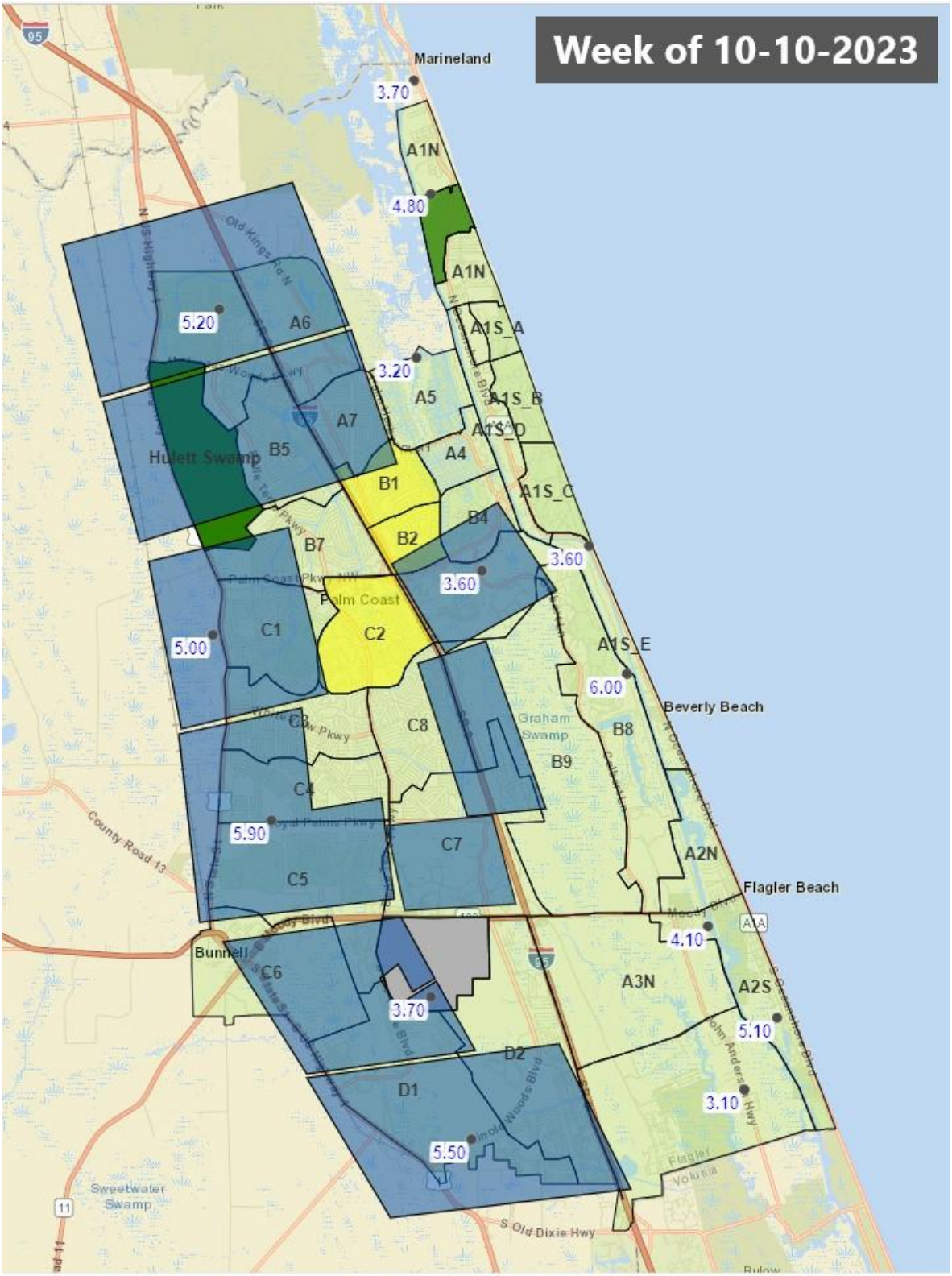
WNV activity: One human case of WNV infection was reported this week in Sarasota County.

Dengue Cases Acquired in Florida: Fifteen cases of locally acquired dengue were reported this week.

Advisories/Alerts: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, Sarasota, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, and Miami-Dade counties are currently under a mosquito-borne illness alert.

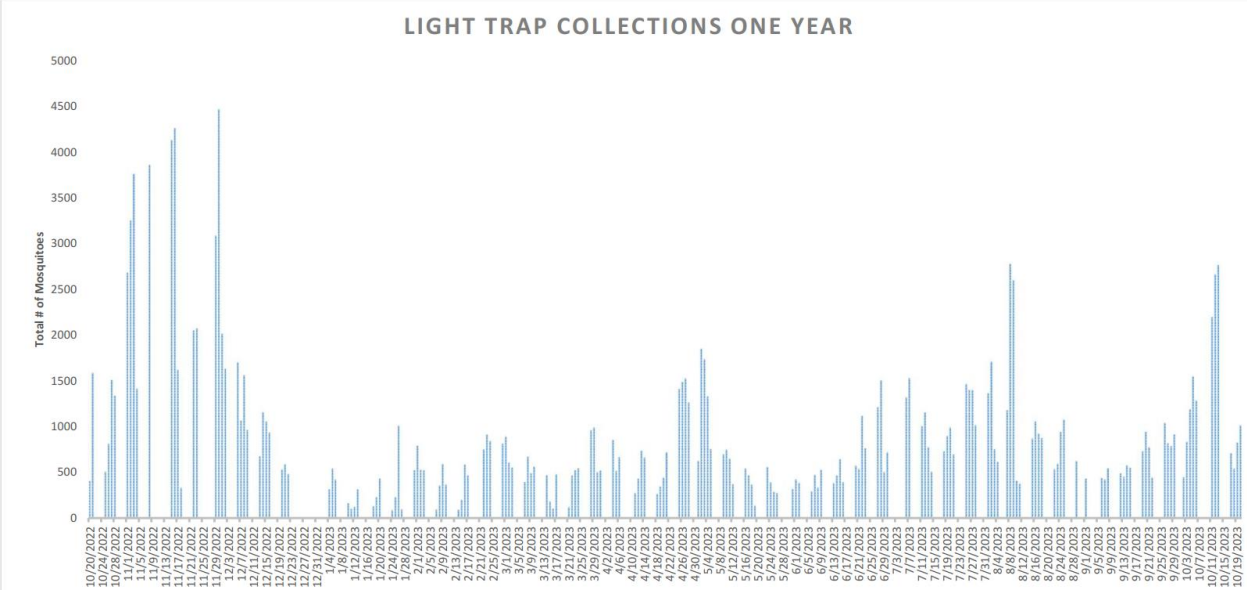
See the full DOH Report

Zones highlighted in yellow were sprayed by truck, blocks in blue were treated by helicopter this week. Blue numbers are accumulated rainfall for the week.

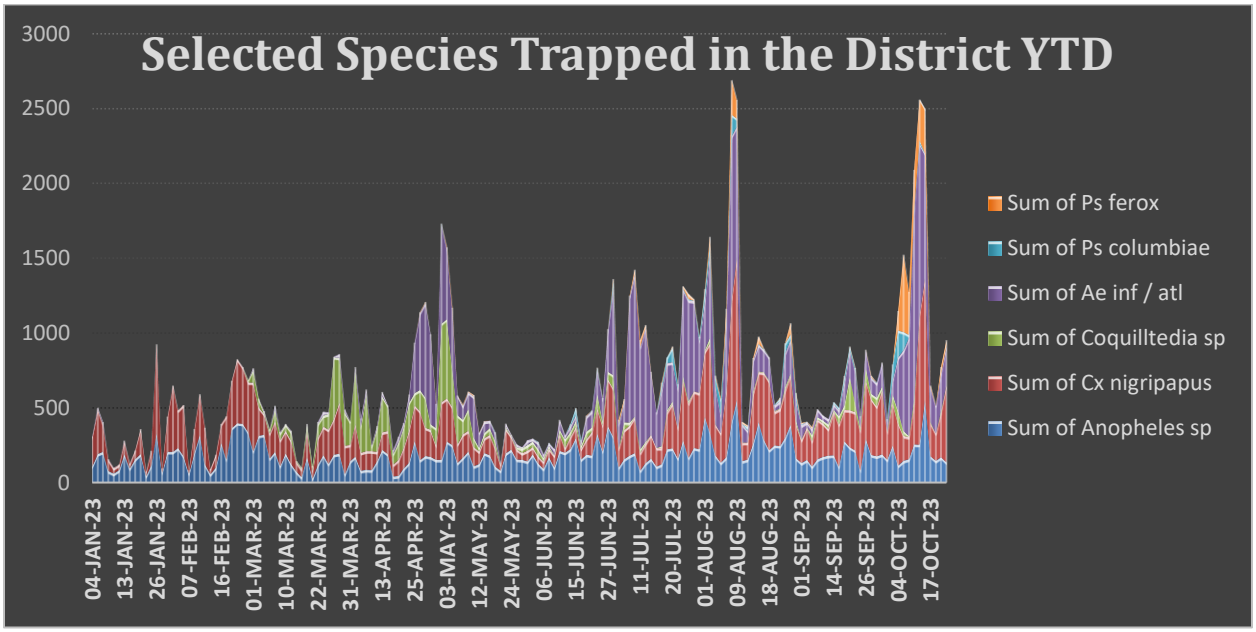


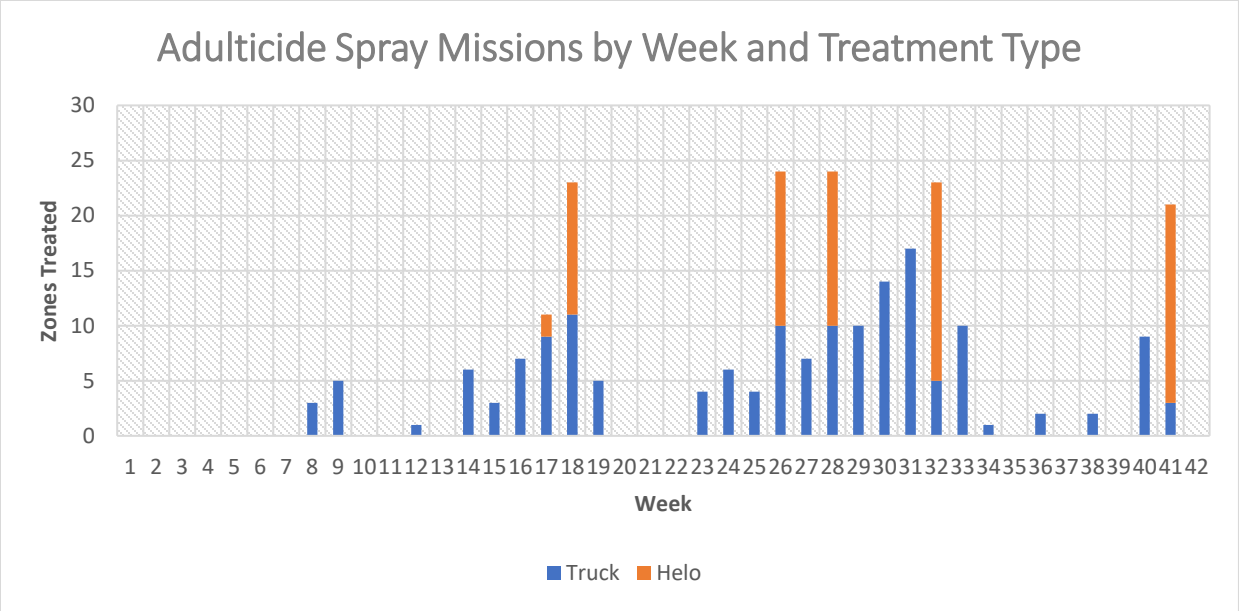
Week of 10/16/2023 Operations Update (42)

After a round of aerial adulticiding last week, mosquito activity was reduced but with significant amounts of flood water species present. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



The mosquito population was much reduced this week but rebuilding quickly.





WNV activity: One human case of WNV infection was reported this week in Walton County.

Dengue Cases Acquired in Florida: Ten cases of locally acquired dengue were reported this week.

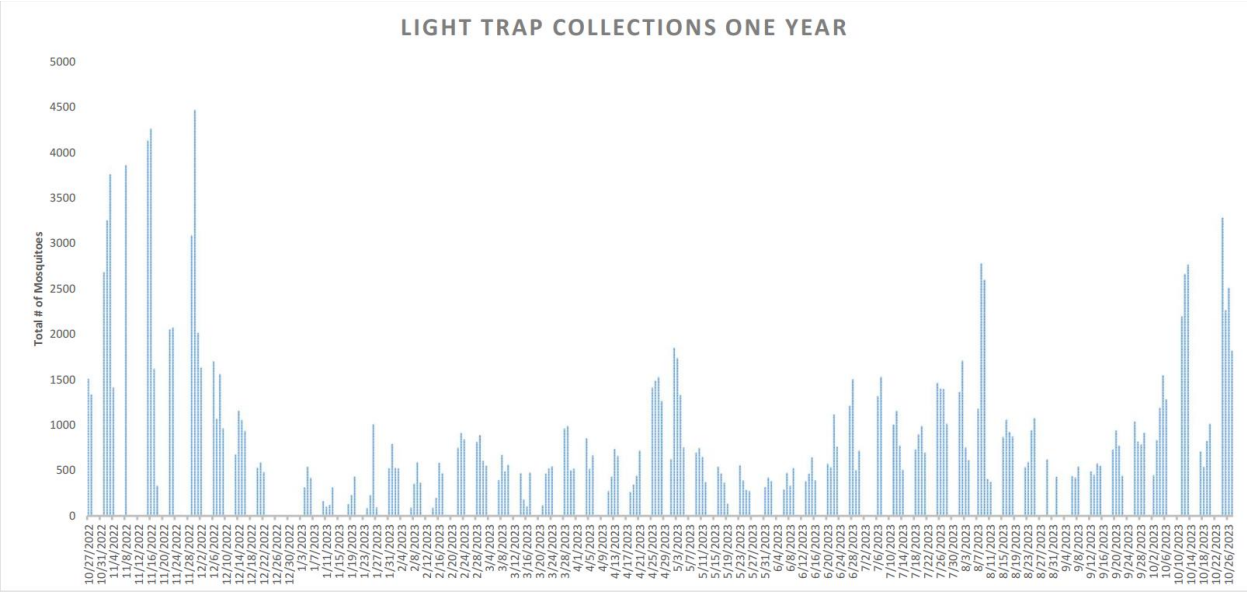
Advisories/Alerts: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, Sarasota, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. 2 Broward, Escambia, and Miami-Dade counties are currently under a mosquito-borne illness alert.

See the full DOH Report

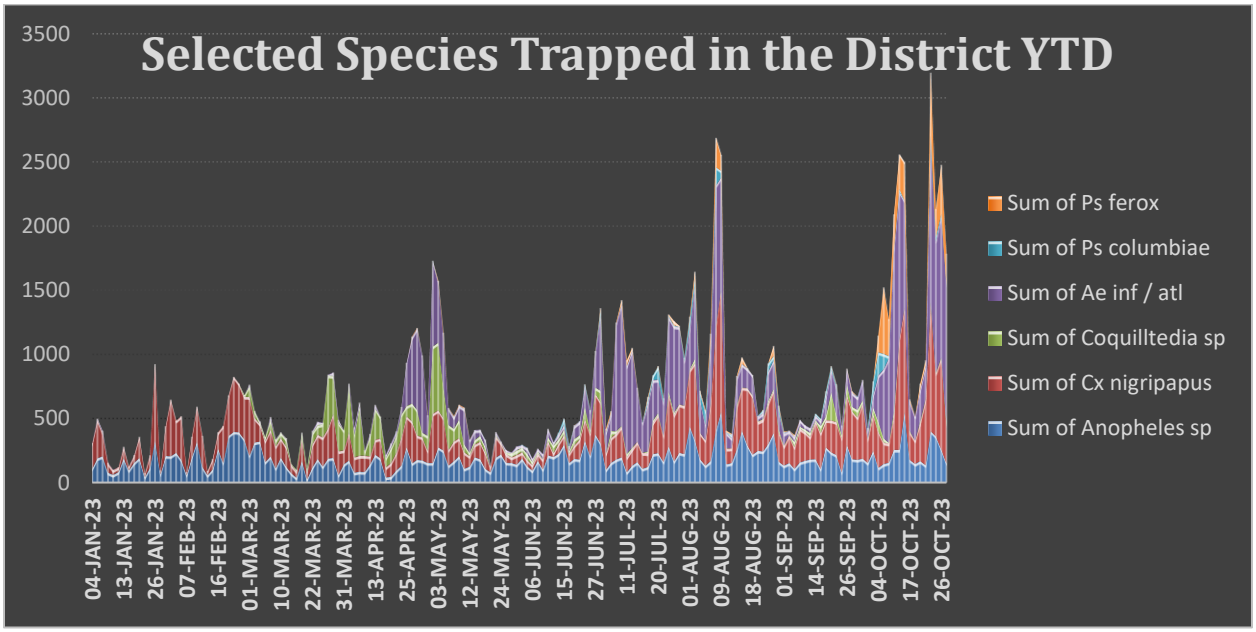
No spraying this week.

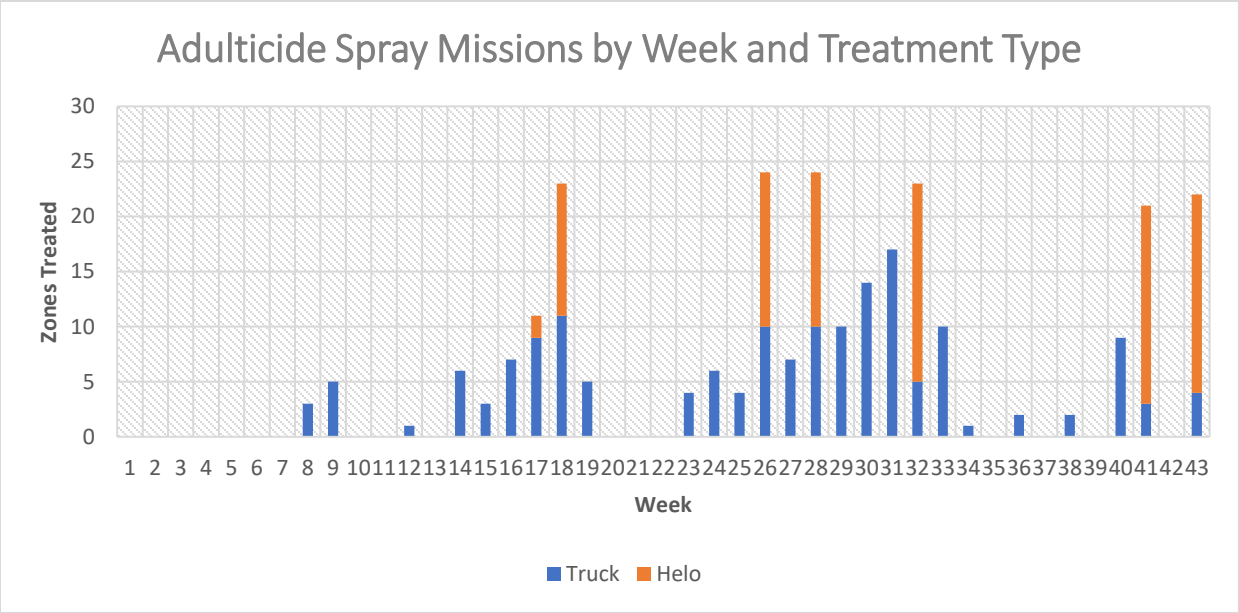
Week of 10/23/2023 Operations Update (43)

This week was the highest mosquito activity for the calendar year. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



The population of mosquitoes approached highs typically seen after a hurricane, necessitating a second round of aerial adulticiding this month.



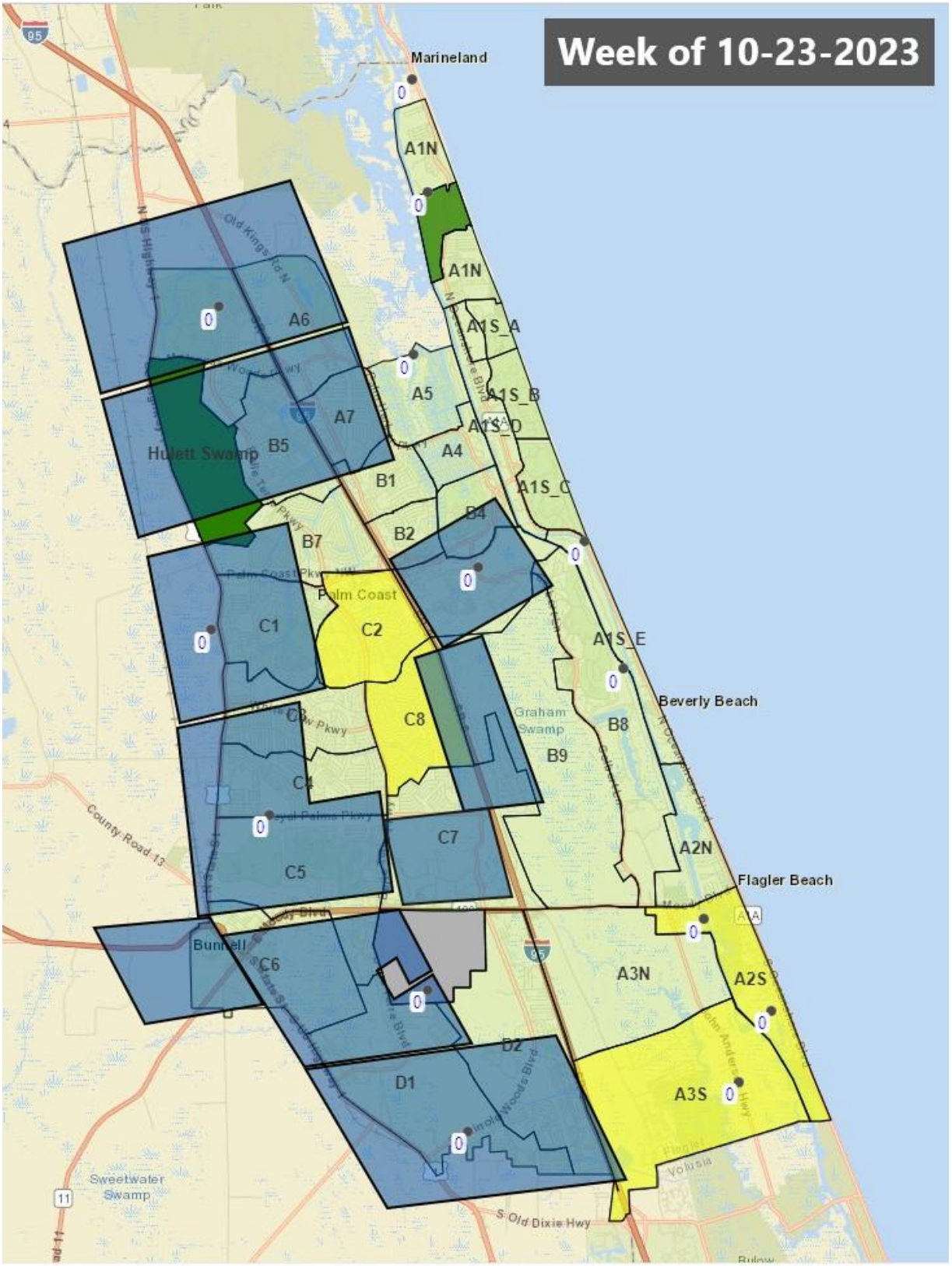


Dengue Cases Acquired in Florida: Twenty cases of locally acquired dengue were reported this week.

Advisories/Alerts: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, Sarasota, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, and Miami-Dade counties are currently under a mosquito-borne illness alert.

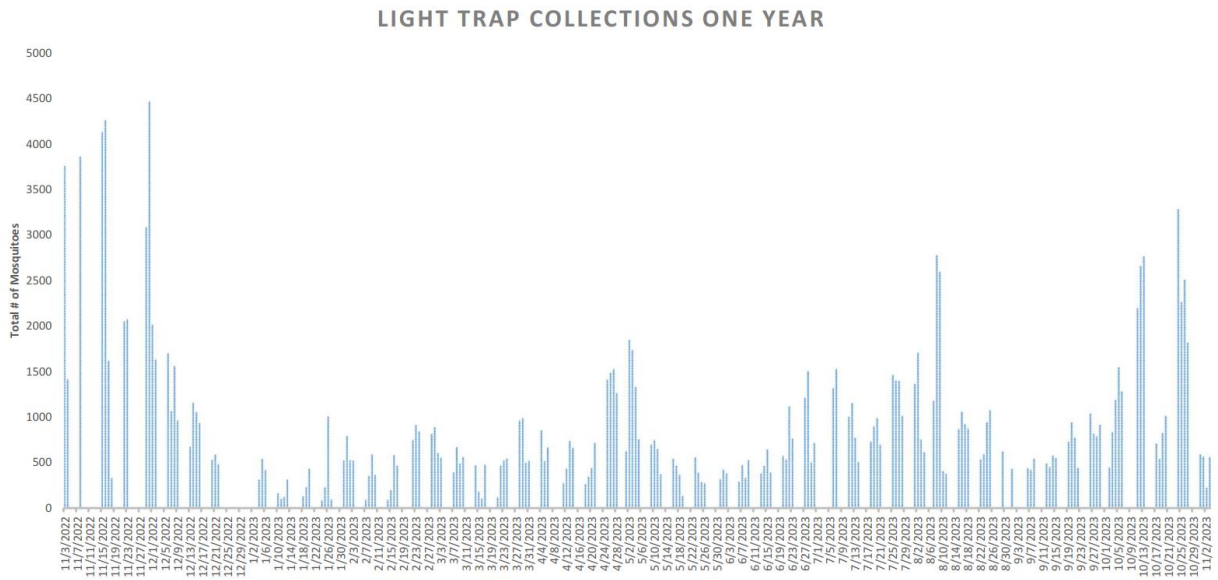
See the full DOH Report

Zones highlighted in yellow were sprayed by truck, blocks in blue were treated by helicopter this week.

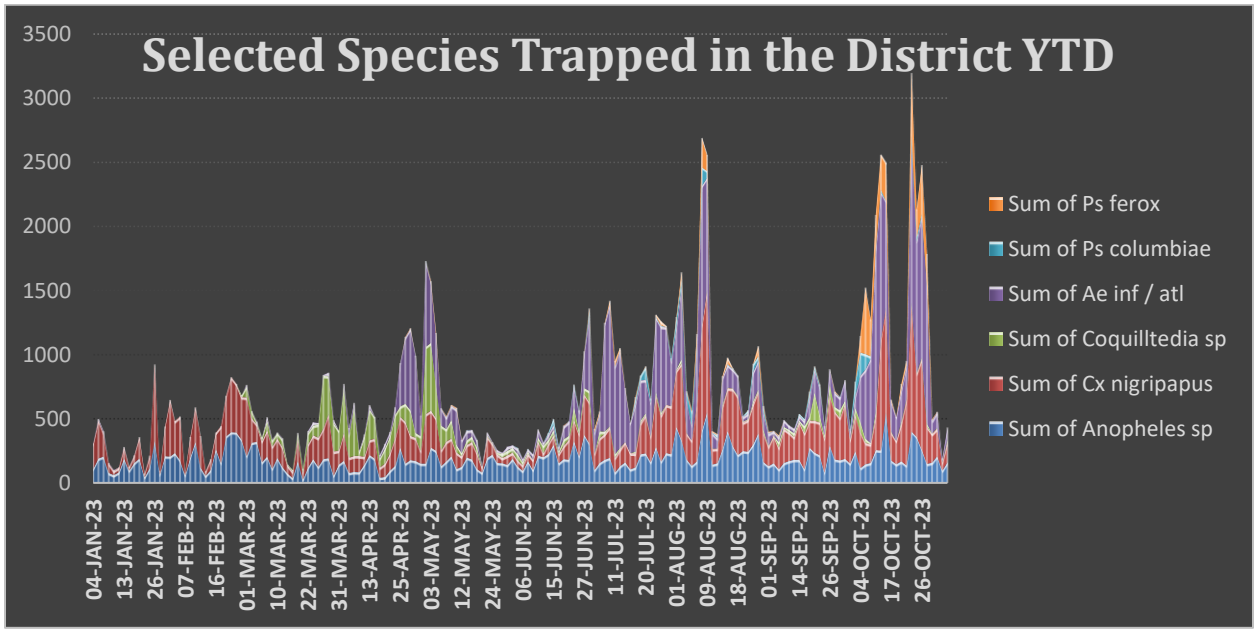


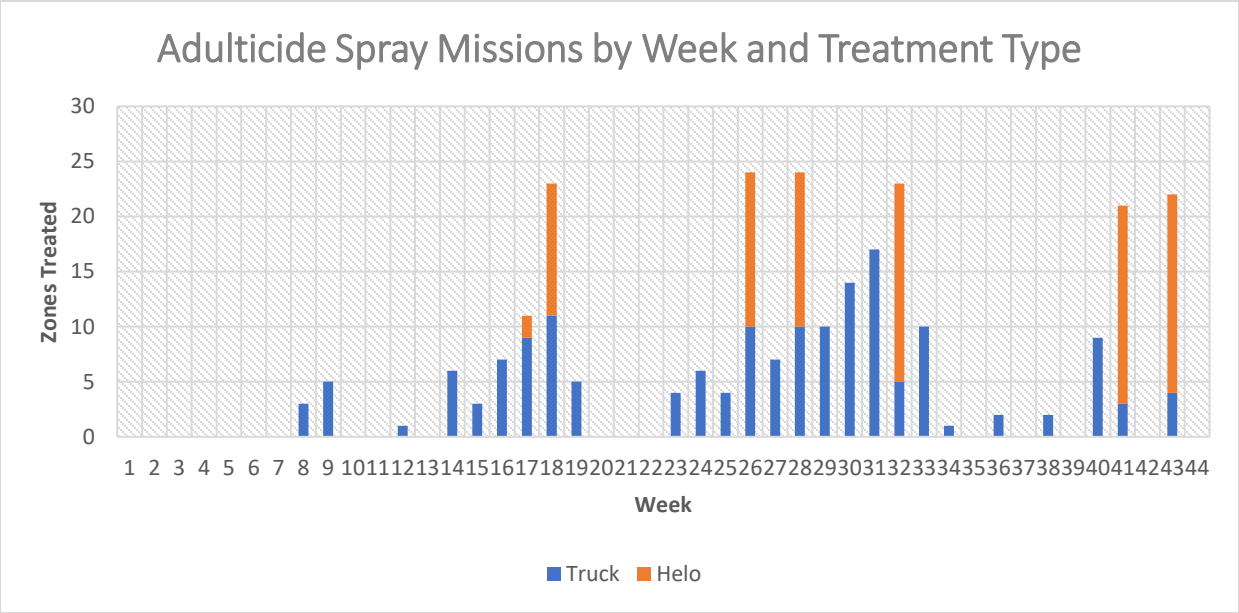
Week of 10/30/2023 Operations Update (44)

Low mosquito activity this week after a round of aerial applications last week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



The mosquito population was vanquished following control applications last week.





Dengue Cases Acquired in Florida: Twelve cases of locally acquired dengue were reported this week

Advisories/Alerts: Bay, Hardee, Hillsborough, Jefferson, Nassau, Okaloosa, Orange, Palm Beach, Polk, Sarasota, St. Johns, Suwannee, and Walton counties are currently under a mosquito-borne illness advisory. Broward, Escambia, and Miami-Dade counties are currently under a mosquito-borne illness alert.

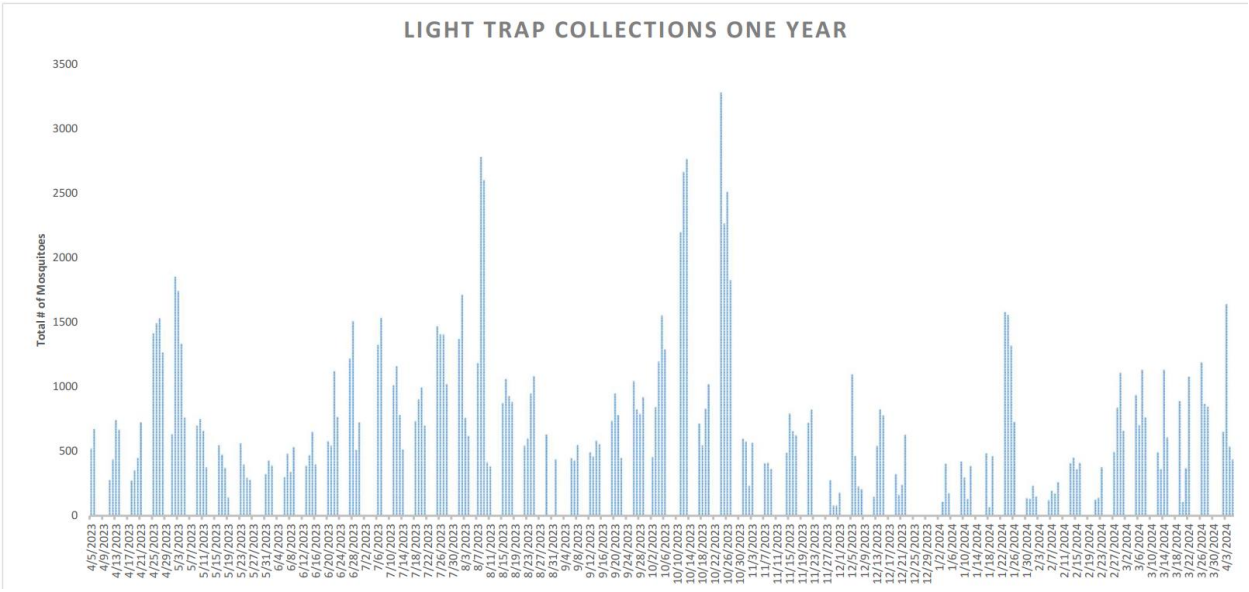
See the full DOH Report

No spraying this week.

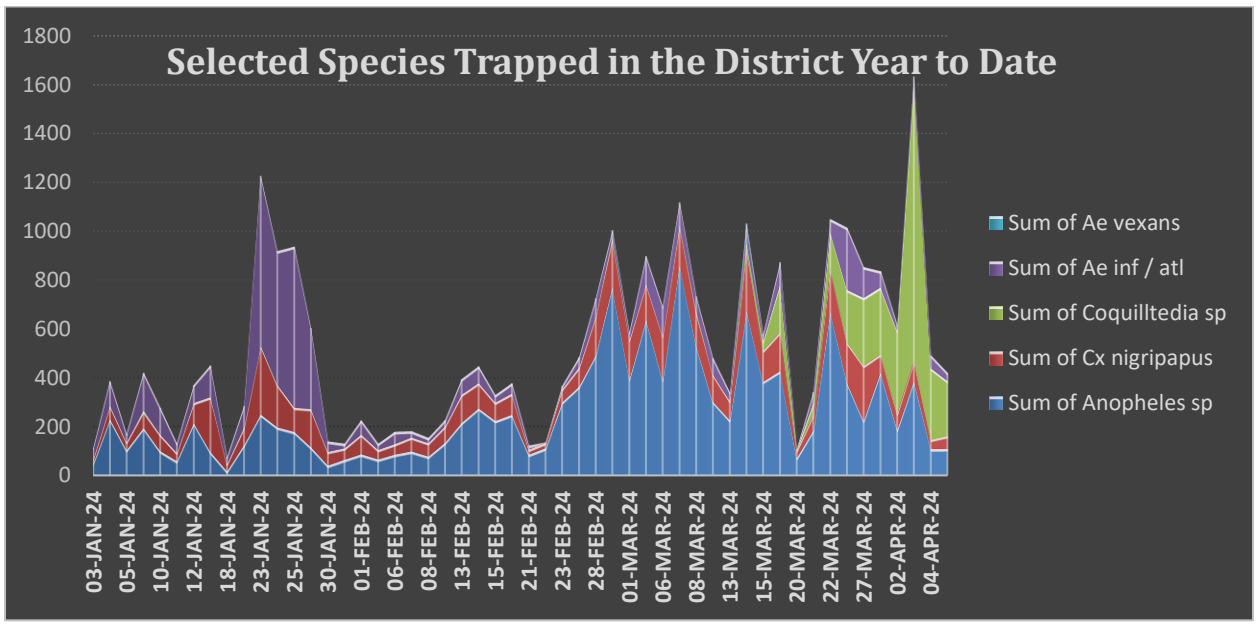
This will be the last weekly operations report for the year. The District continues monitoring and controlling mosquitoes year-round, but we only produce a weekly report from April though October.

Week of 4/1/2024 Operations Update (14)

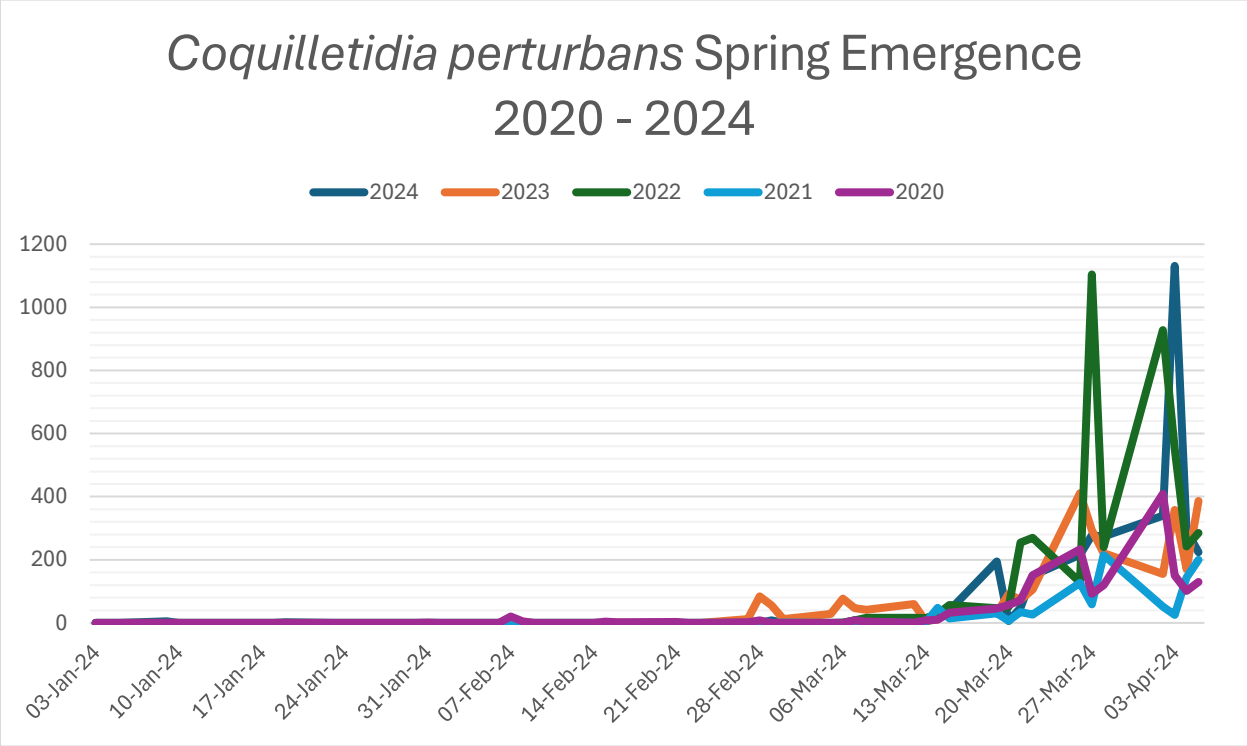
Mosquito activity peaked this week to the highest overall numbers this year due to a spike in the numbers of *Coquilletidia perturbans*. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



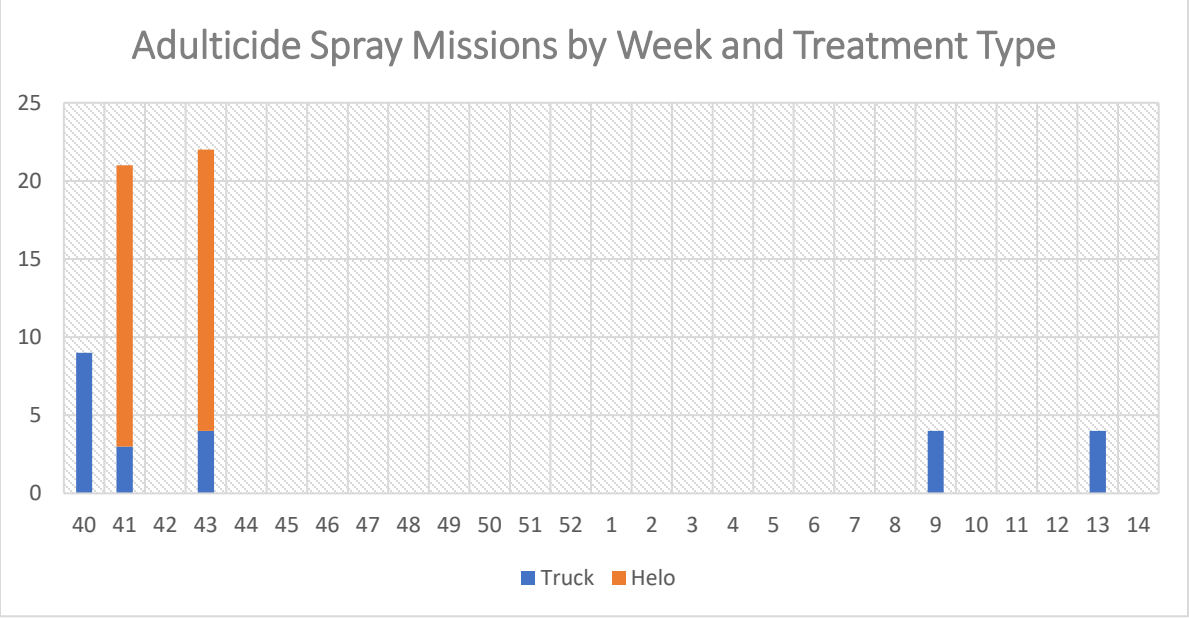
Beginning in spring, whether it rains or not, this species emerges from the freshwater swamps after surviving the winter as larvae (Chart below). This species is an important bridge vector of Eastern Equine Encephalitis. It spreads this disease by feeding on infected birds that live in freshwater swamps, the mosquito then becomes infected with the virus and can spread it to humans. Keeping the population of this mosquito in check minimizes the chances of humans becoming infected in populated areas.



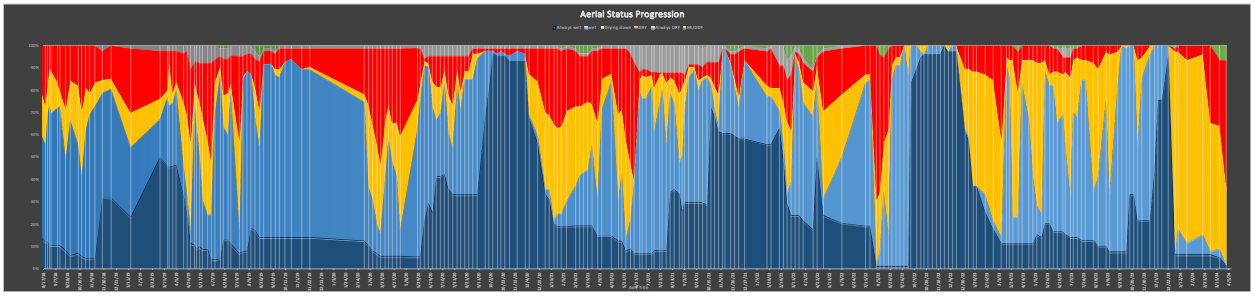
We're off to a pretty good start with *Coquilletidia perturbans*. It's not the earliest, but it's a very big spike early in the year compared to the past 5 years.



Week 14 had cooler temperatures and postponed aerial adulticiding operations until overnight temperatures are above 60 degrees Fahrenheit.



Due to unusually dry conditions in the saltmarsh (graph below), aerial larvicide pre-treatments began March 8. Since then, low tides and a lack of rainfall have dried down the saltmarsh further.



Dengue Cases Acquired in Florida: No cases of locally acquired dengue were reported this week. In 2024, five cases of locally acquired dengue have been reported in Miami-Dade (4) and Pasco counties with onset in January (3), February, and March.

Advisories/Alerts: Pasco County is currently under a mosquito-borne illness advisory. Escambia, Hardee, and Miami-Dade counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

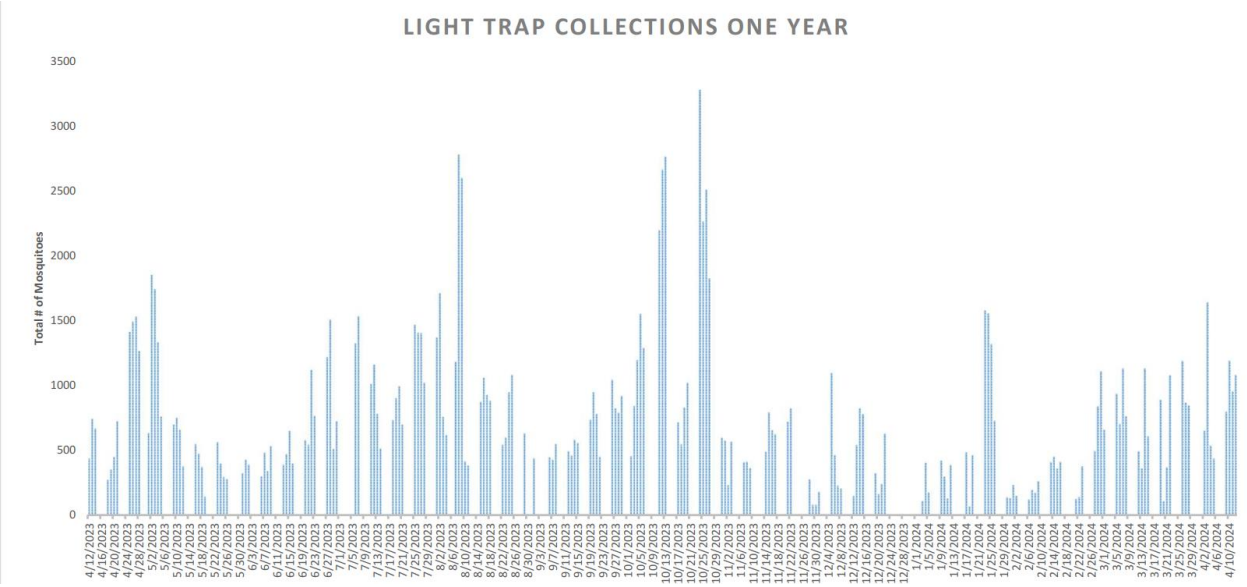
See the full DOH Report

No spraying this week due to adverse weather conditions.

This is the first weekly operations report for the year. The District continues monitoring and controlling mosquitoes year-round, but we only produce a weekly report from April through October. You can read last year's annual Operations Report here

Week of 4/8/2024 Operations Update (15)

Mosquito activity declined slightly this week due to windy conditions. The elevated population of *Coquilletidia perturbans* was still evident despite the high winds. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



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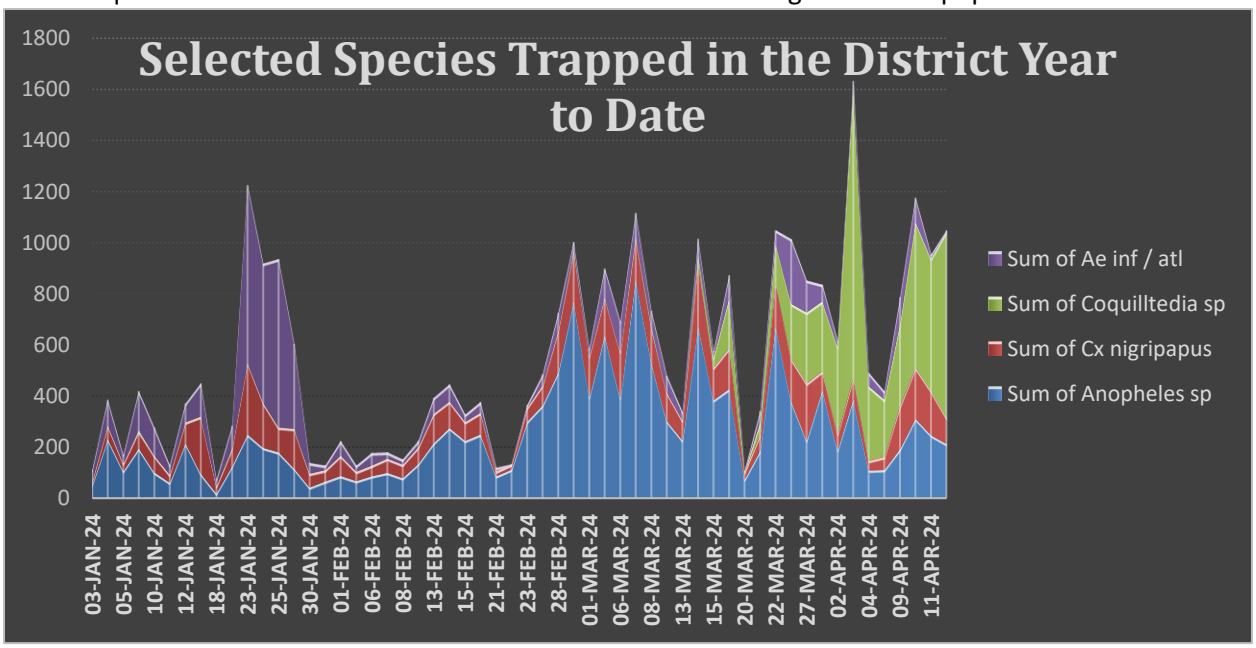
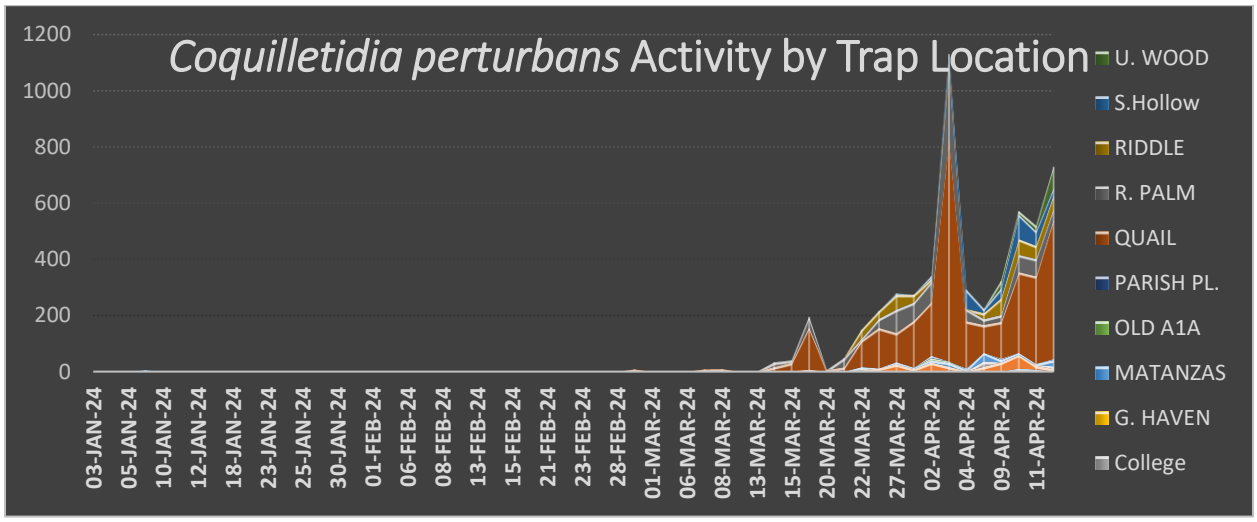
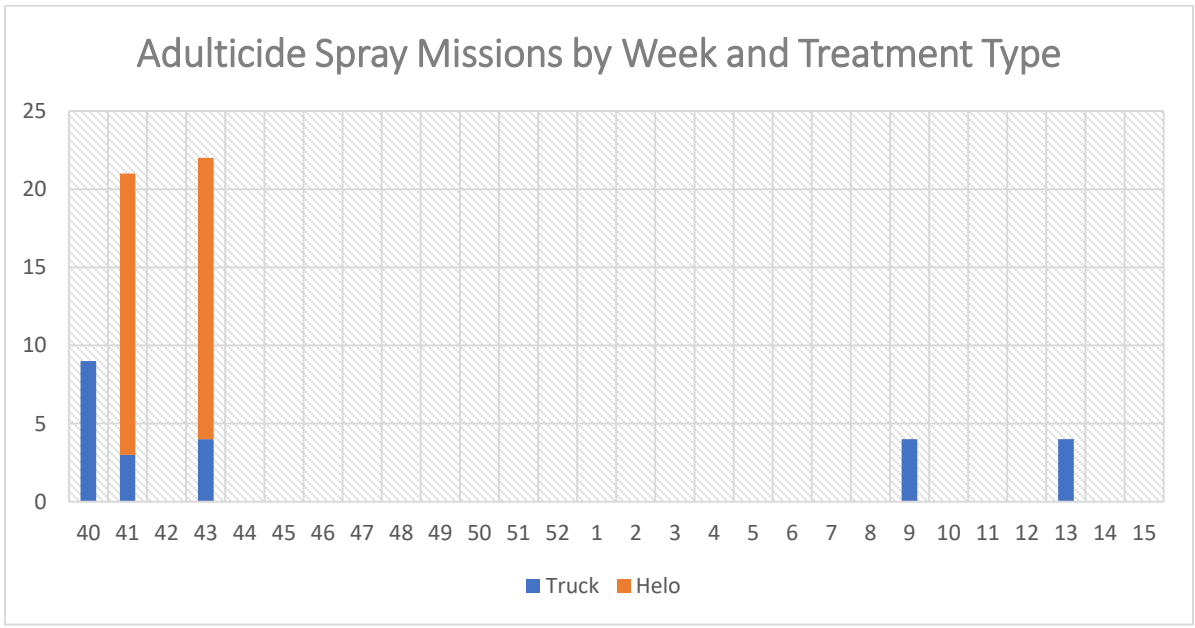


The population of *Coquilletidia perturbans* was centered around Quali Hollow and was beginning to increase at Town Center (Chart below). However, this species will eventually plague most areas of the District West of Old Kings.



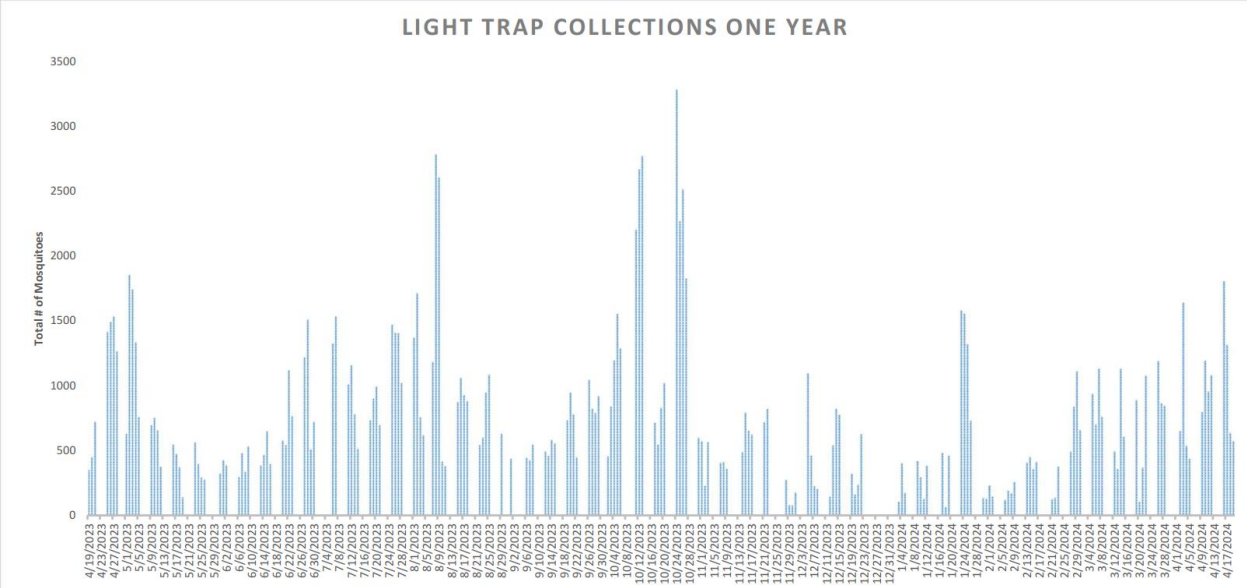
Winds were high this week. This prevented the application of pesticides but also slightly lowered mosquito activity, which is likely why the trap counts declined instead of continuing to increase without control measures. Of course, once the wind dies down the true population will be more apparent.



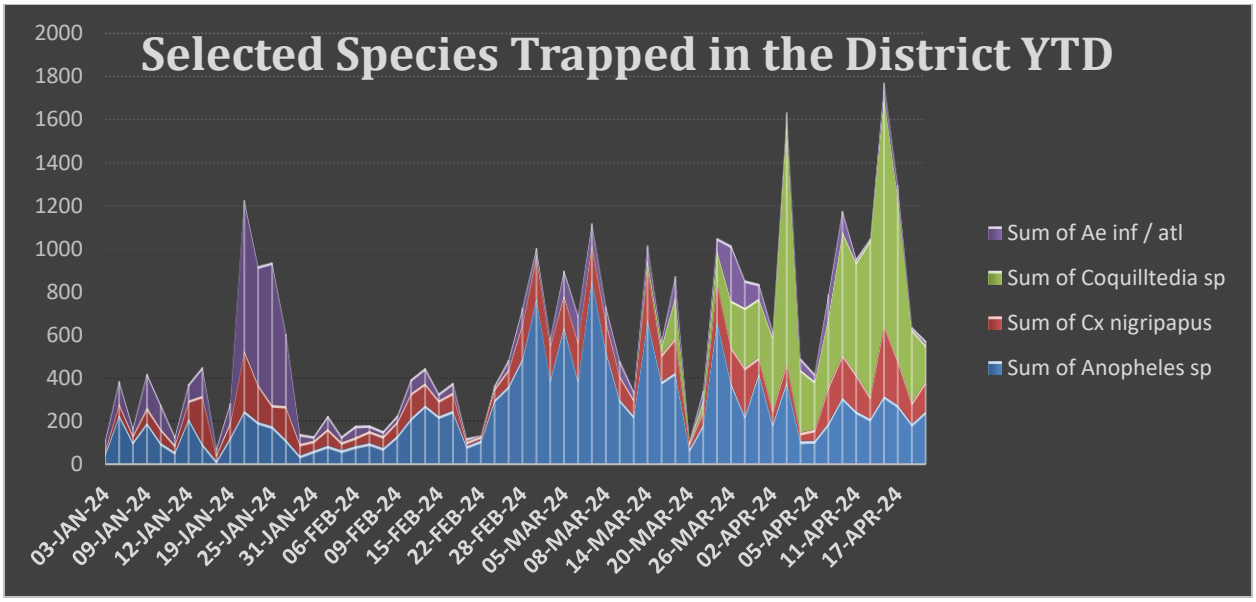
No spraying this week due to adverse weather conditions.

Week of 4/15/2024 Operations Update (16)

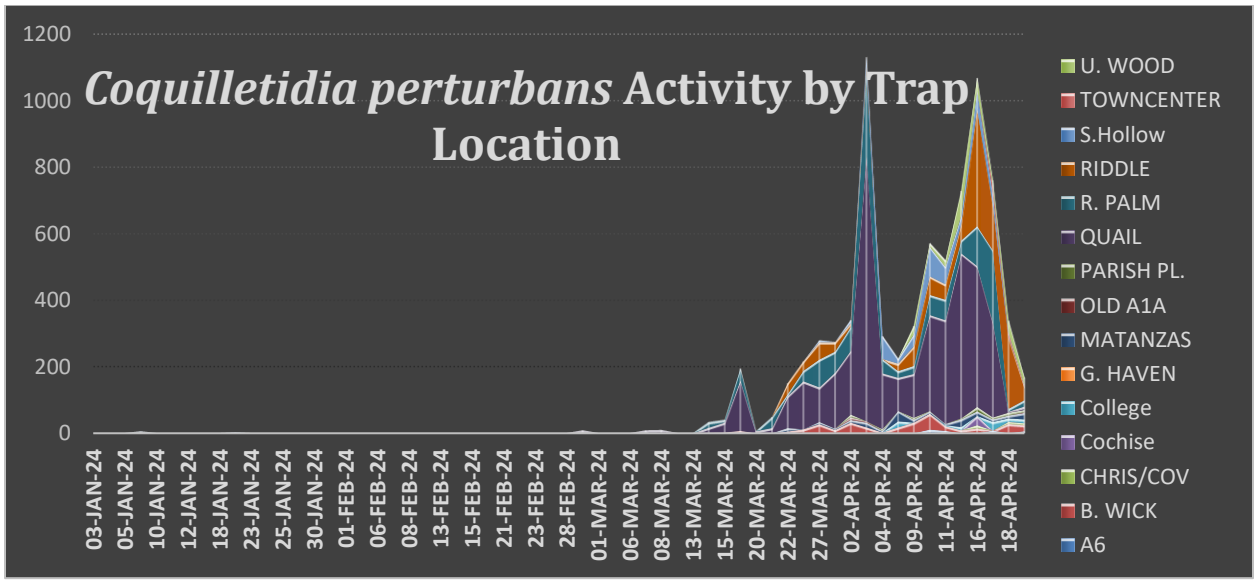
Mosquito activity was elevated this week, primarily due to emergence of *Coquilletidia perturbans* from cattail ponds both in and outside the District. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).

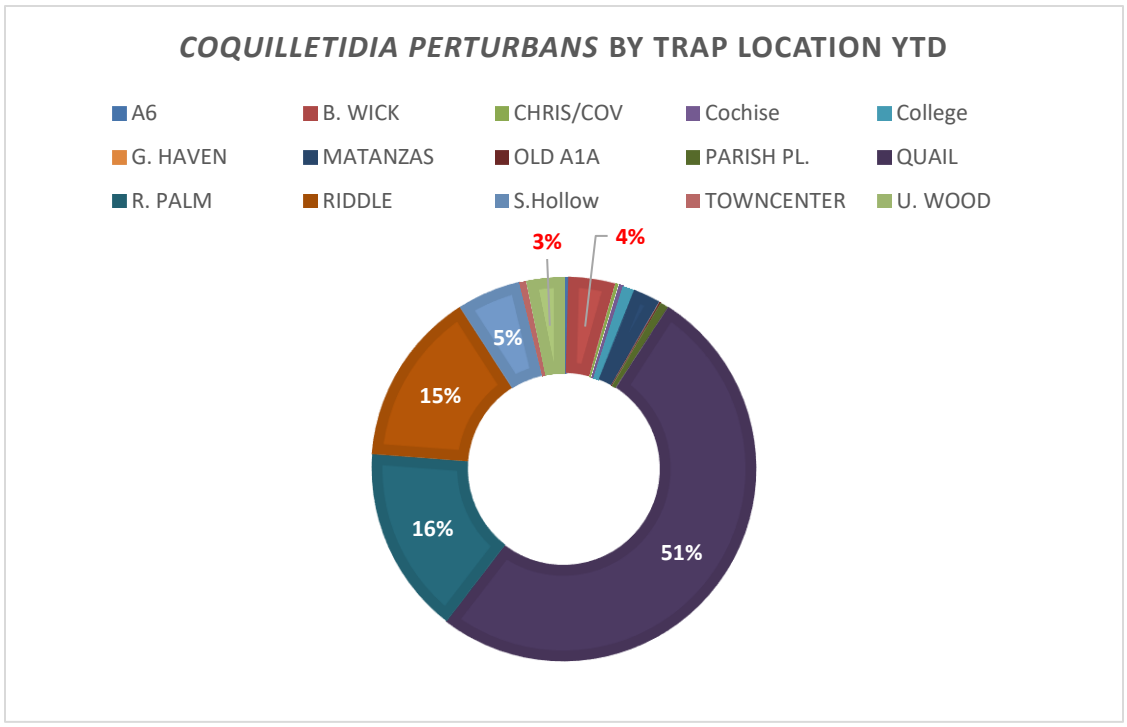


Beginning in spring, whether it rains or not, this species emerges from the freshwater swamps after surviving the winter as larvae (Chart below). This species is an important bridge vector of Eastern Equine Encephalitis. It spreads this disease by feeding on infected birds that live in freshwater swamps, the mosquito then becomes infected with the virus and can spread it to humans. Keeping the population of this mosquito in check minimizes the chances of humans becoming infected in populated areas.

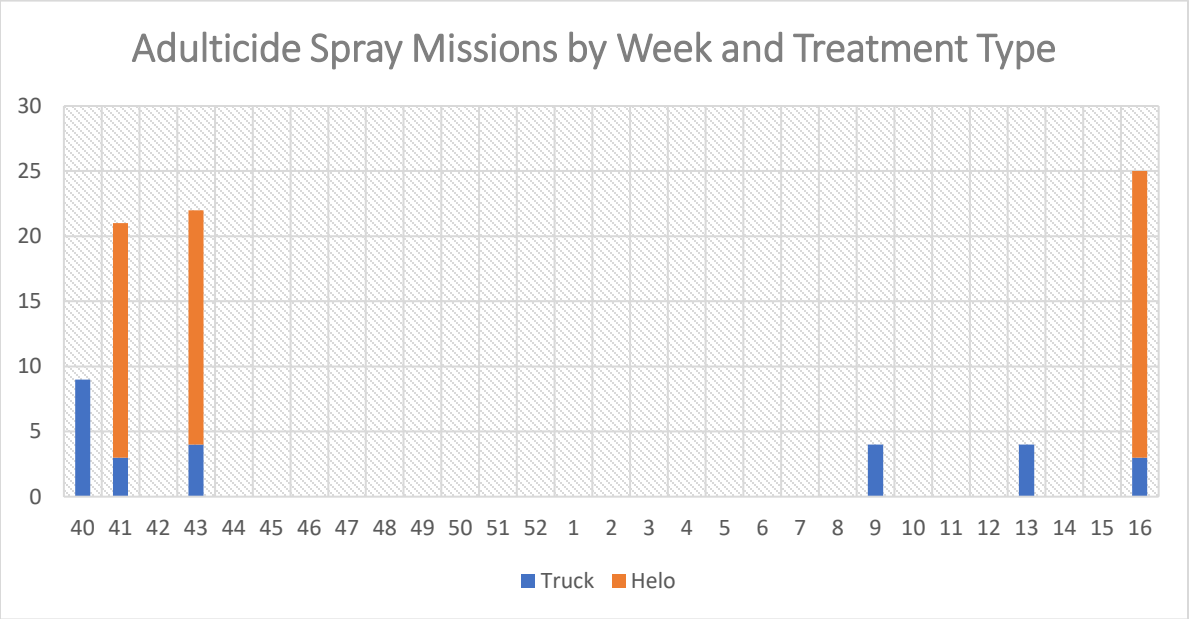


The population of *Coquilletidia perturbans* was centered around Quali Hollow for some weeks, began to emerge last week in Town Center (Trap listed as R. Palm in Chart below) and began emerging this week at Riddle (Chart below). However, this species will eventually plague most areas of the District West of Old Kings.

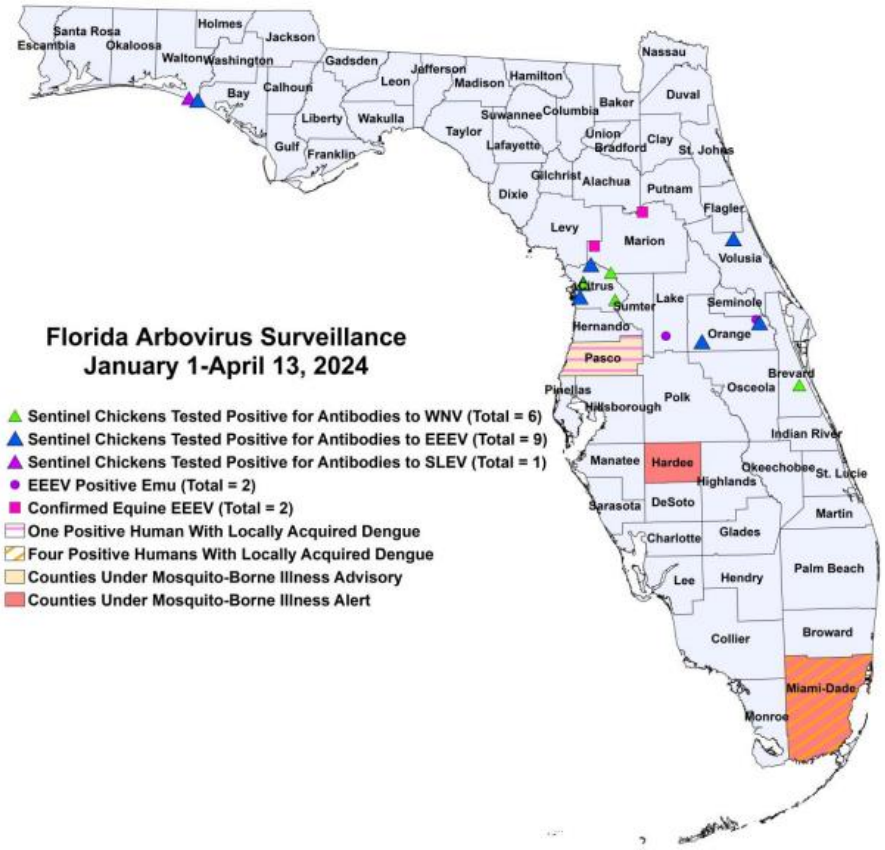




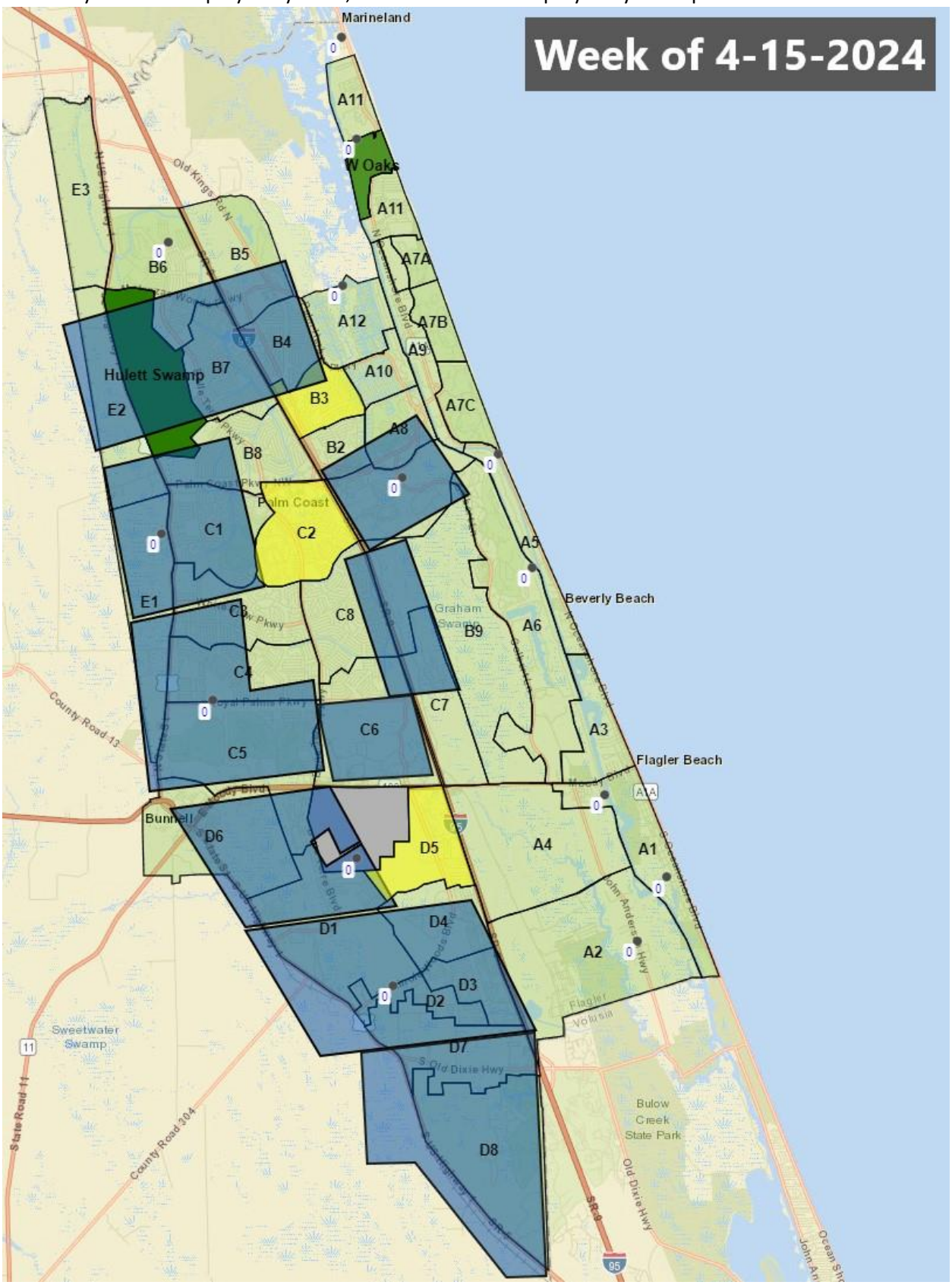
Windy weather conditions prevented the application of adulticides last week. Conditions were appropriate for spraying this week.



Florida Arbovirus Surveillance Week 15: April 7-13, 2024 [View the full report]

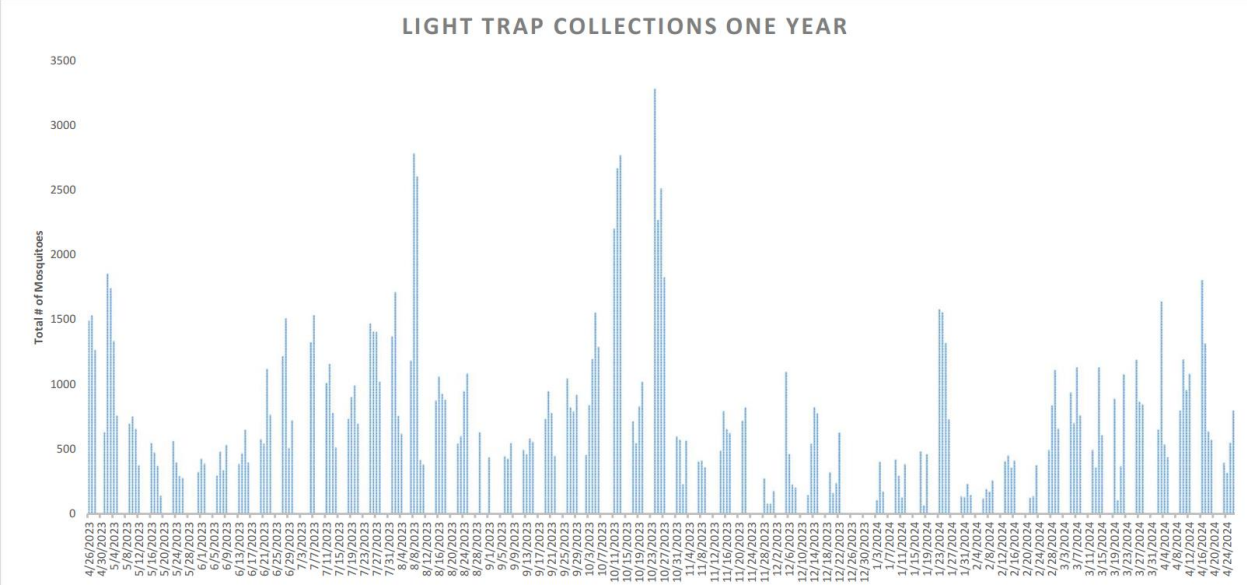


Zones in yellow were sprayed by truck, blocks in blue were sprayed by helicopter.

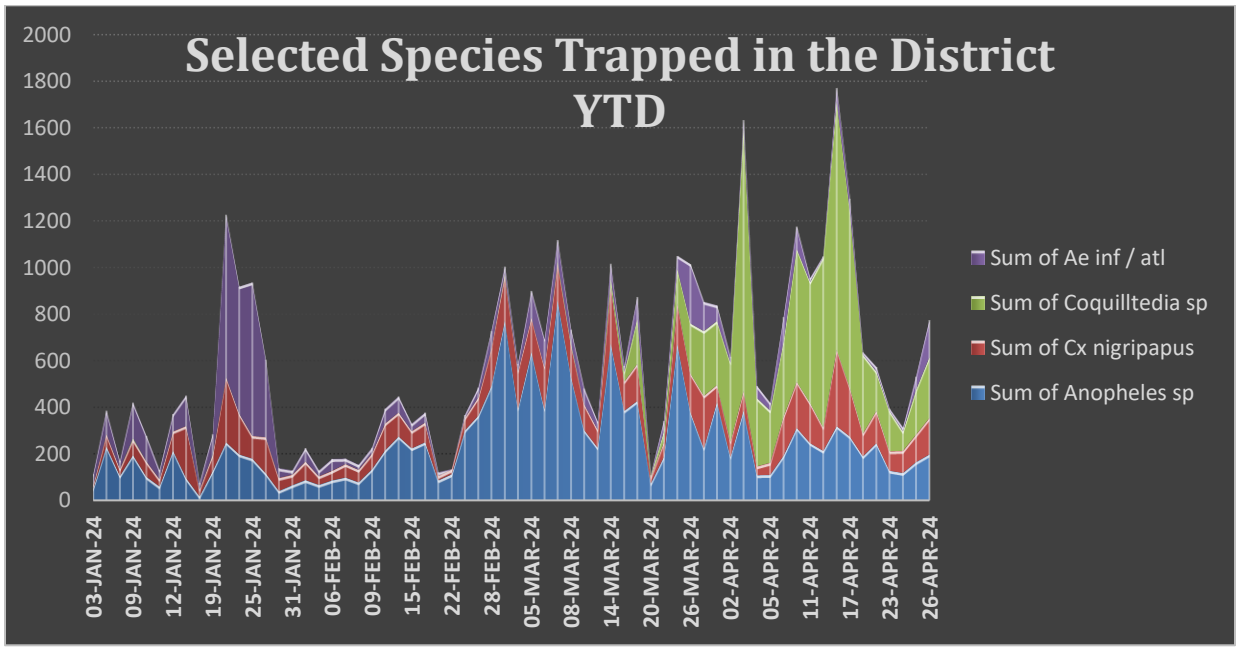


Week of 4/22/2024 Operations Update (17)

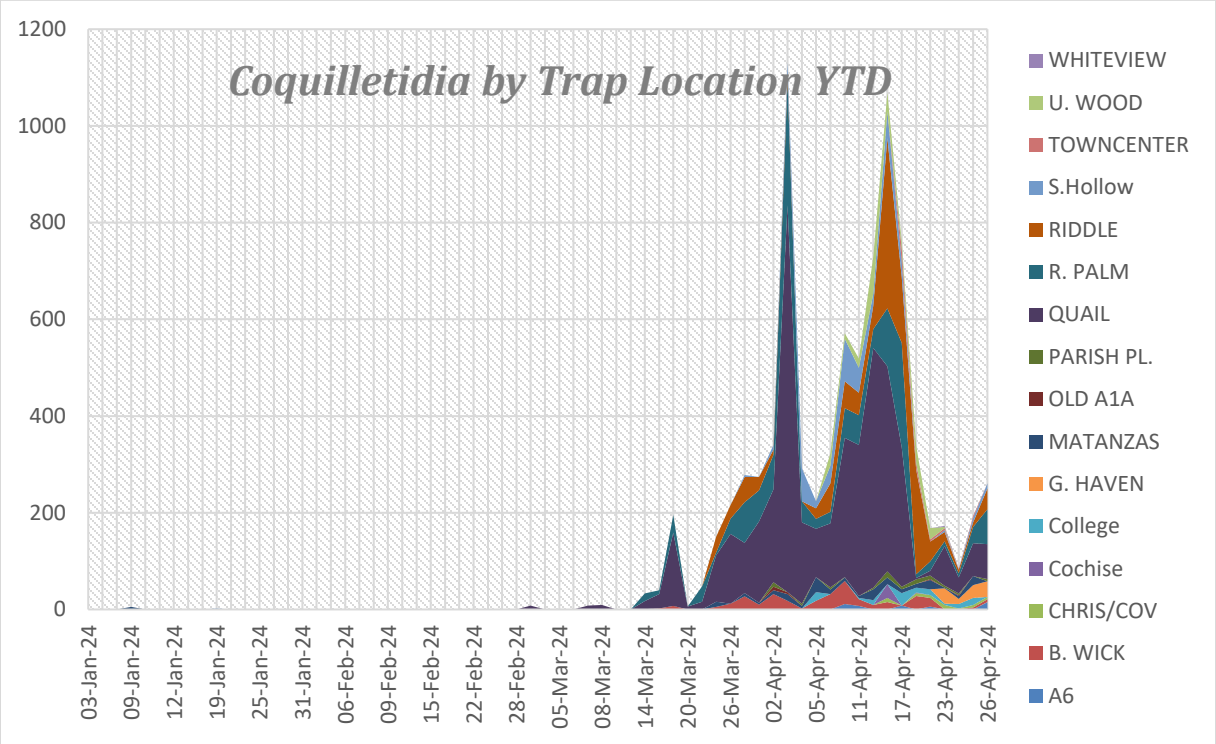
Mosquito activity started off low this week, but was rebounding. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



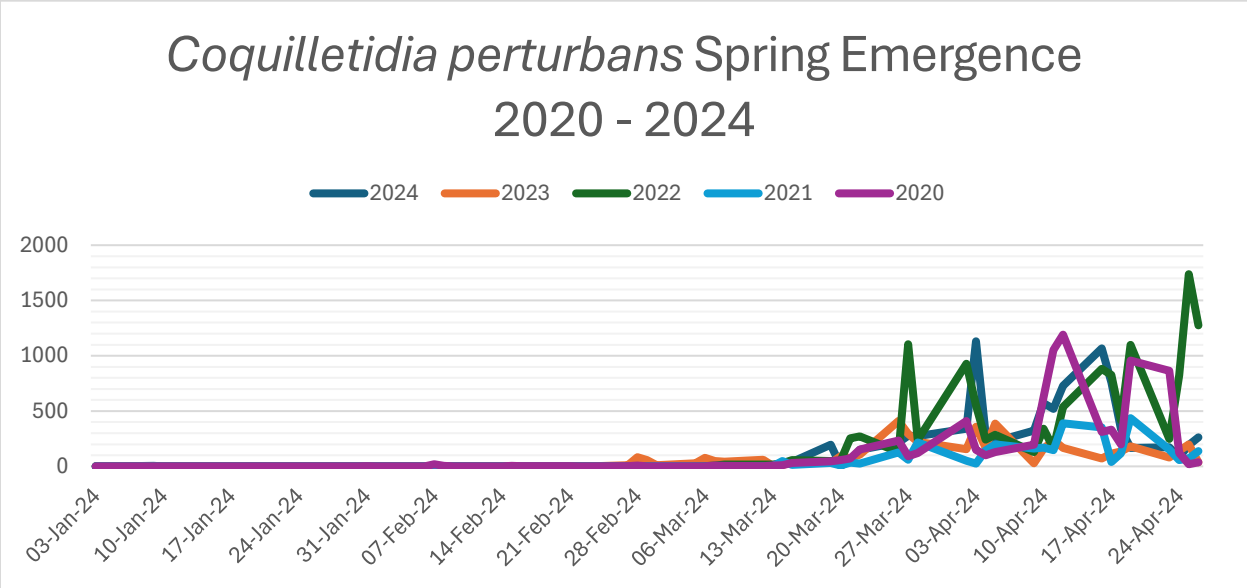
Mosquito activity started off low this week after last week's extensive aerial adulticide treatments but increased as the week progressed as permanent water species *Anopheles* and *Culex* normalized and *Coquilletidia perturbans* continued to emerge from cattail ponds both in and outside the District. Additionally, *Aedes infirmatus* surged around the Town Center area, possibly due to the effects of flooding from many construction projects in the area.



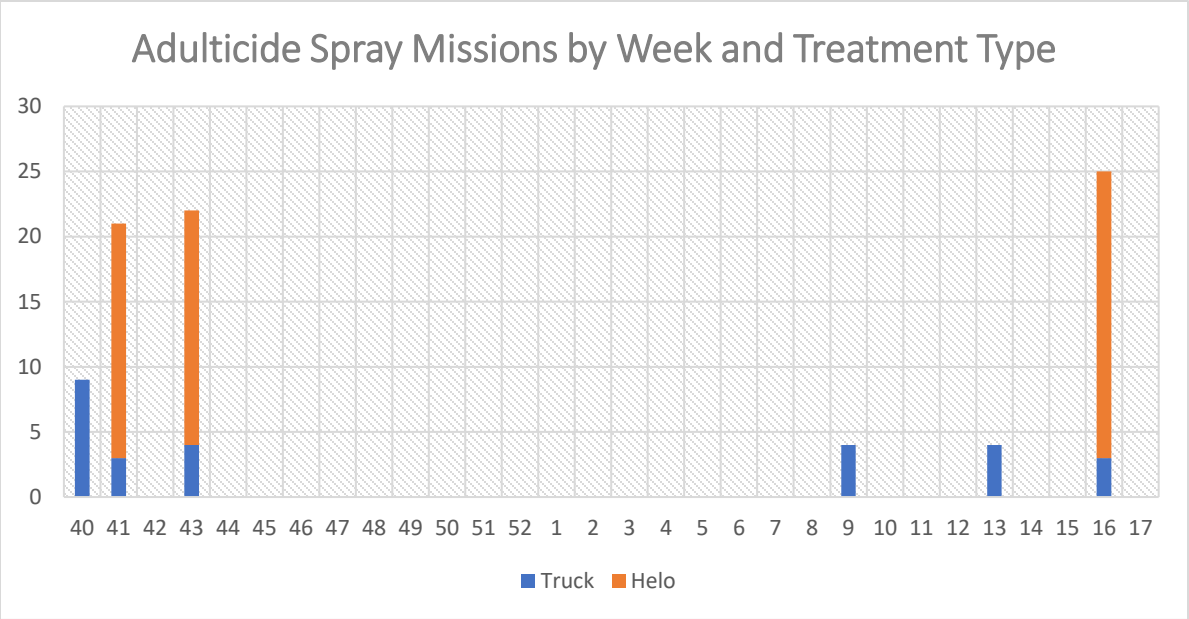
The population of *Coquilletidia perturbans* was centered around Quail Hollow for some weeks, began to emerge in Town Center (Trap listed as R. Palm in Chart below) and then began emerging at Riddle (Chart below). This week the population of this species is more evenly distributed geographically and while still primarily concentrated South of Royal Palms Parkway.



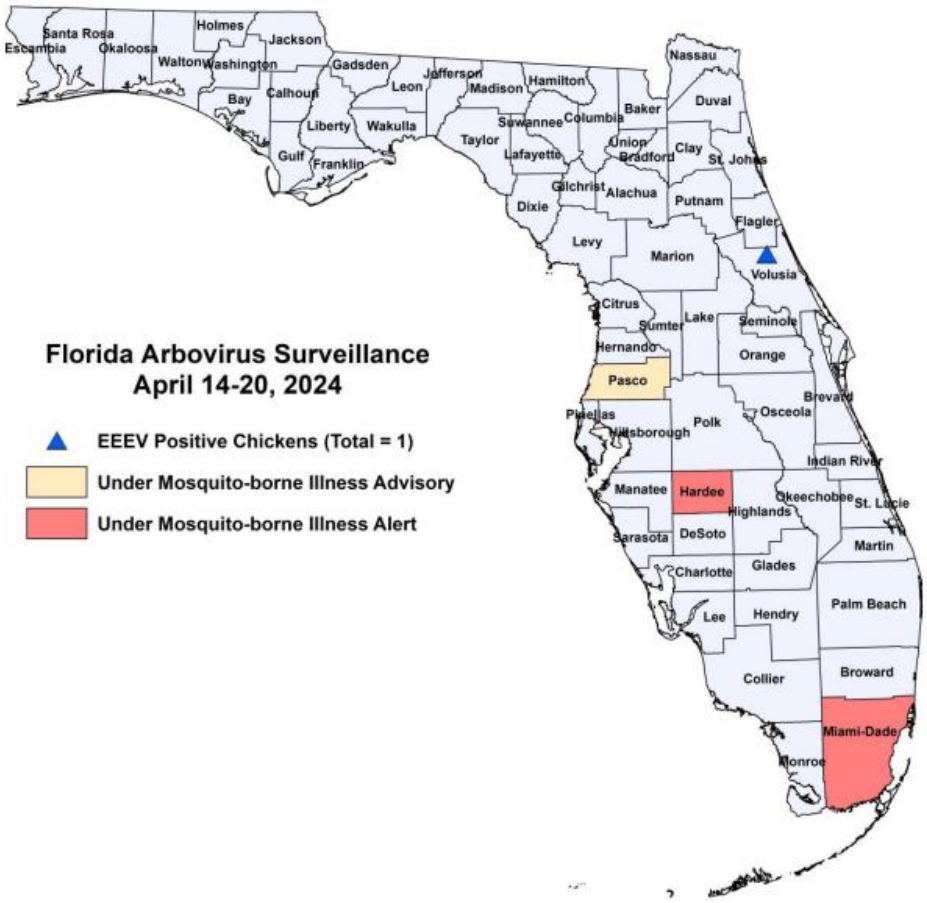
Looking back over several years, we can see the population of this species tends to rebound several times over the Spring emergence period.



No spraying this week.

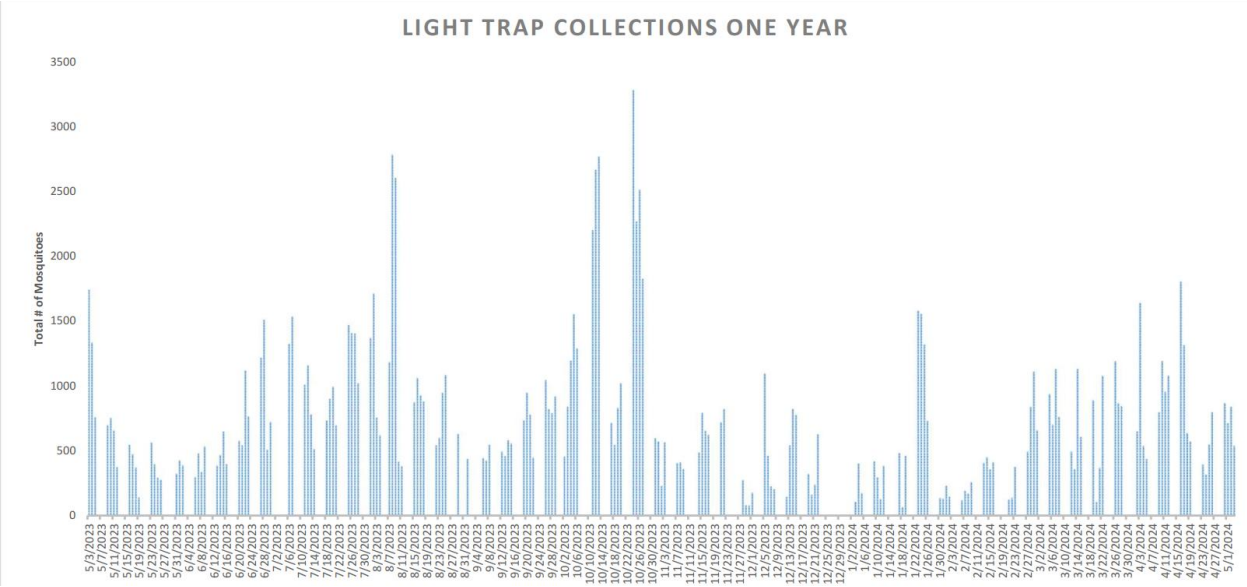


Florida Arbovirus Surveillance Week 16: April 14-20, 2024 [View the full report]

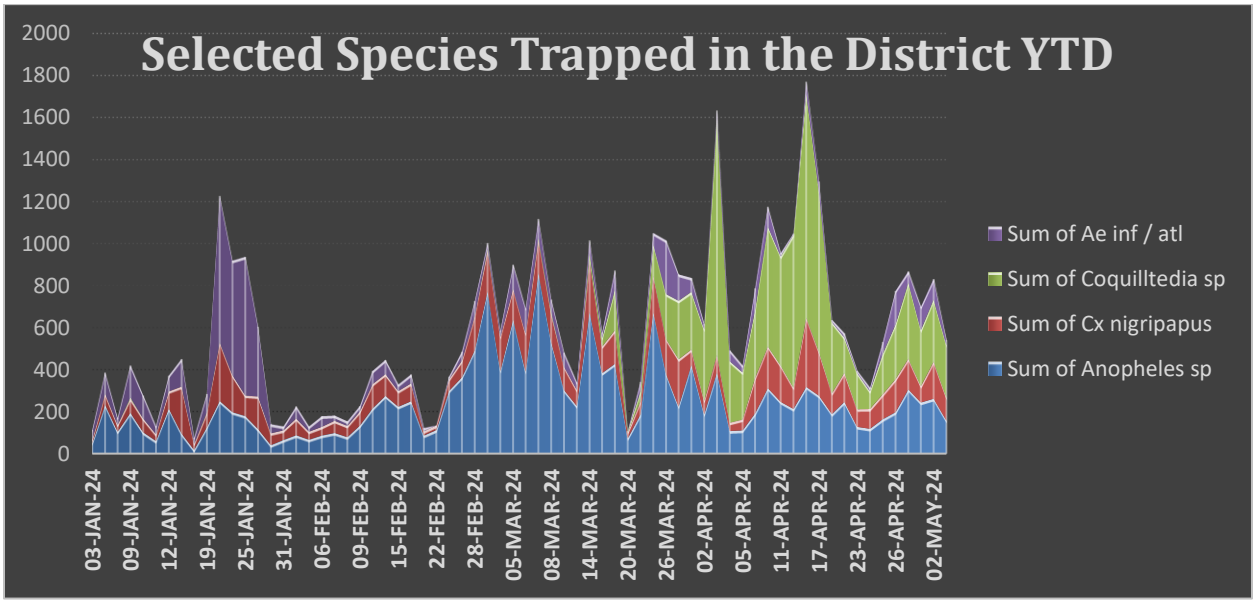


Week of 4/29/2024 Operations Update (18)

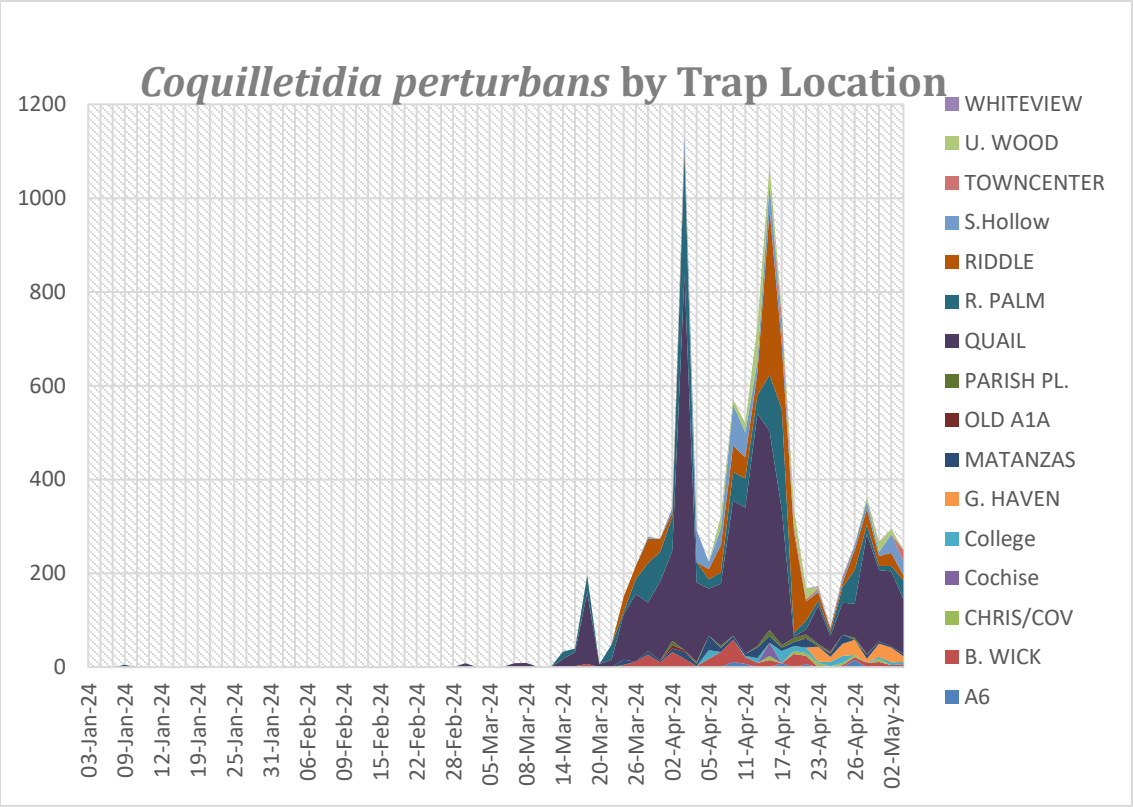
After rebounding last week, mosquito activity trended towards baseline by week's end. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



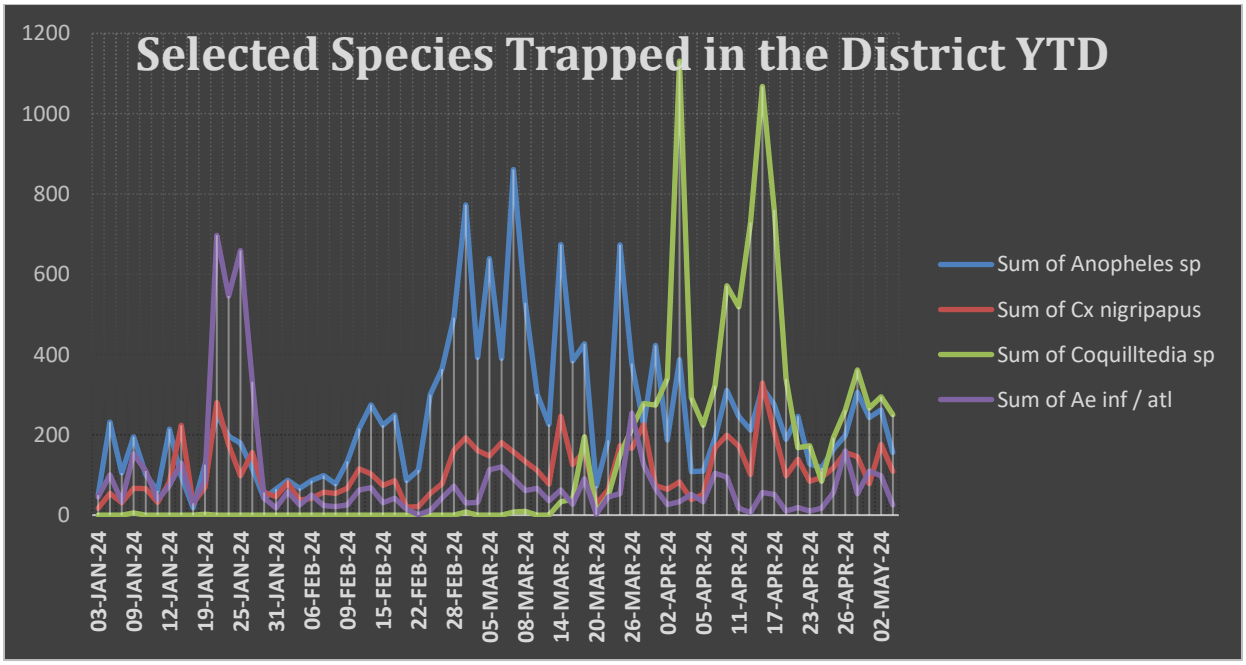
Coquilletidia perturbans will continue to emerge from cattail ponds both in and outside the District but were most abundant in one location – Quail Hollow.



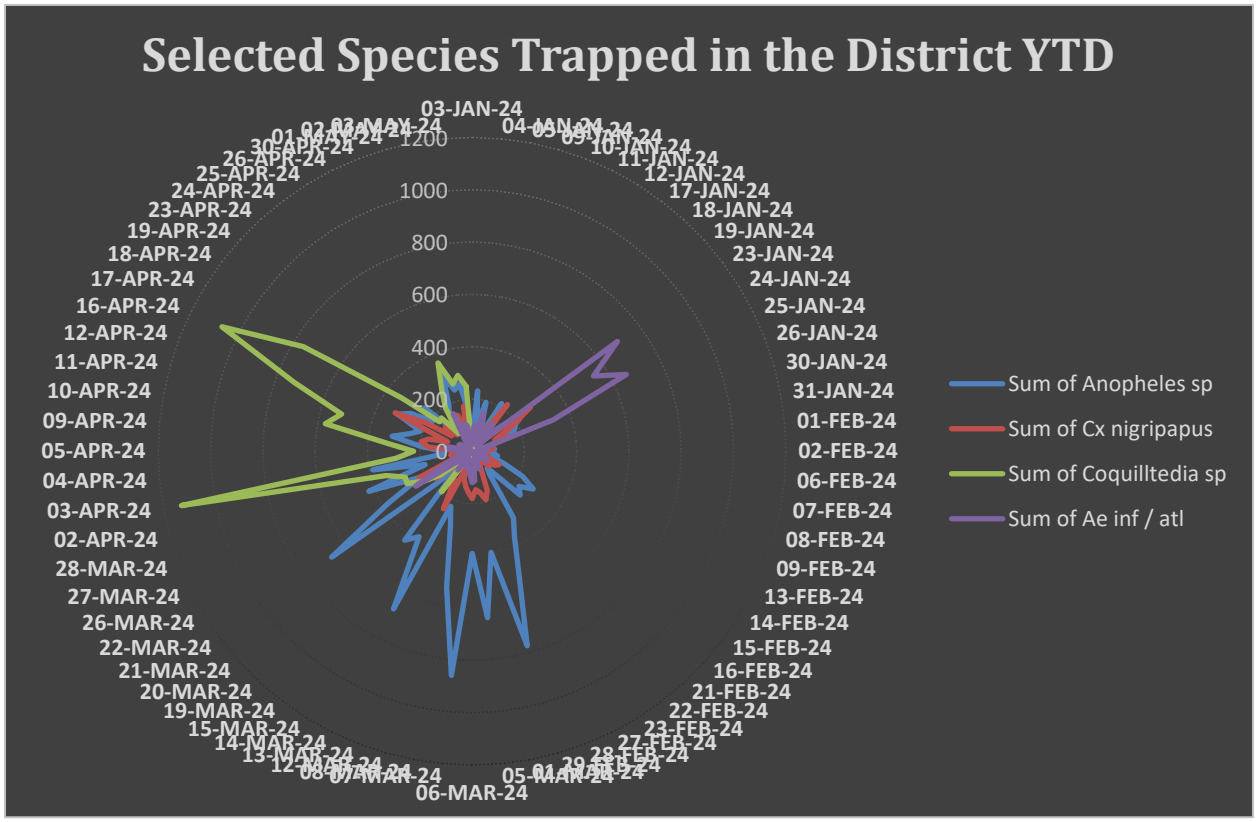
Abundant breeding sites for this species exist in the location of the Quail Hollow subdivision.



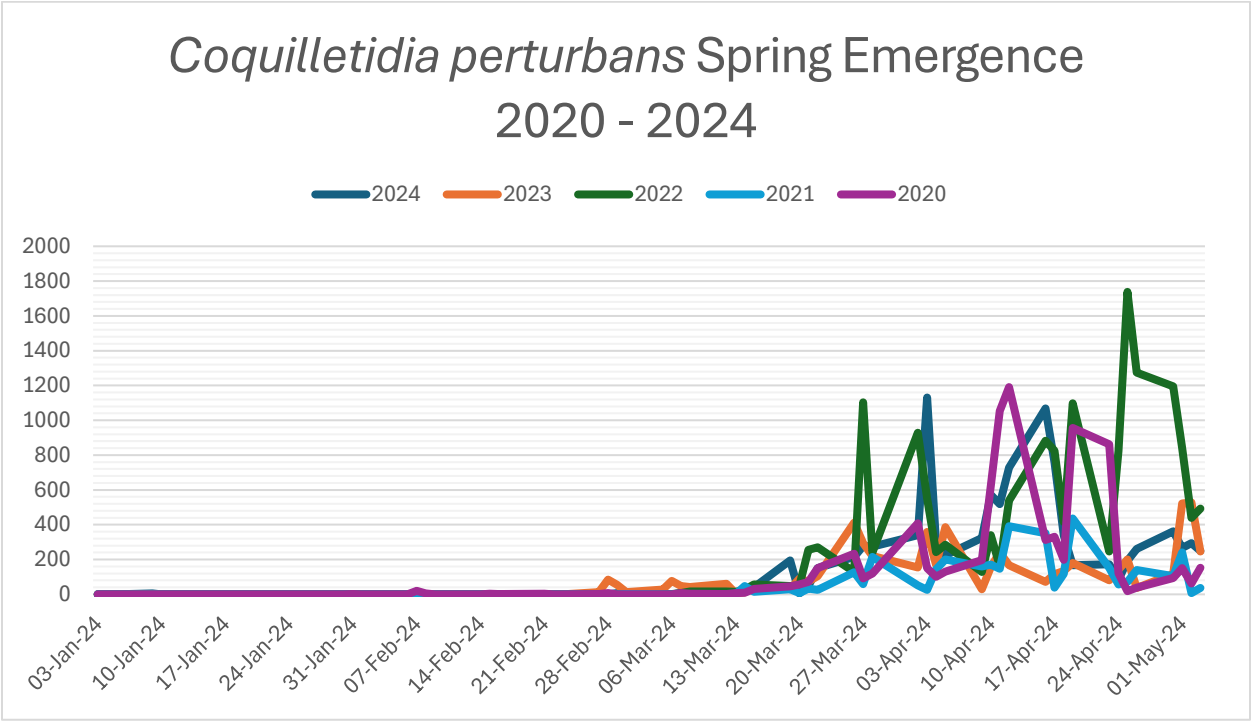
Unlike the other species of mosquitoes shown in the graph below, the population of *Coquilletidia perturbans* was barely registering in our traps until mid-March. That is because this species overwinters as larvae. The population of other species of mosquitoes has fluctuated, even in the winter months, and are always present.



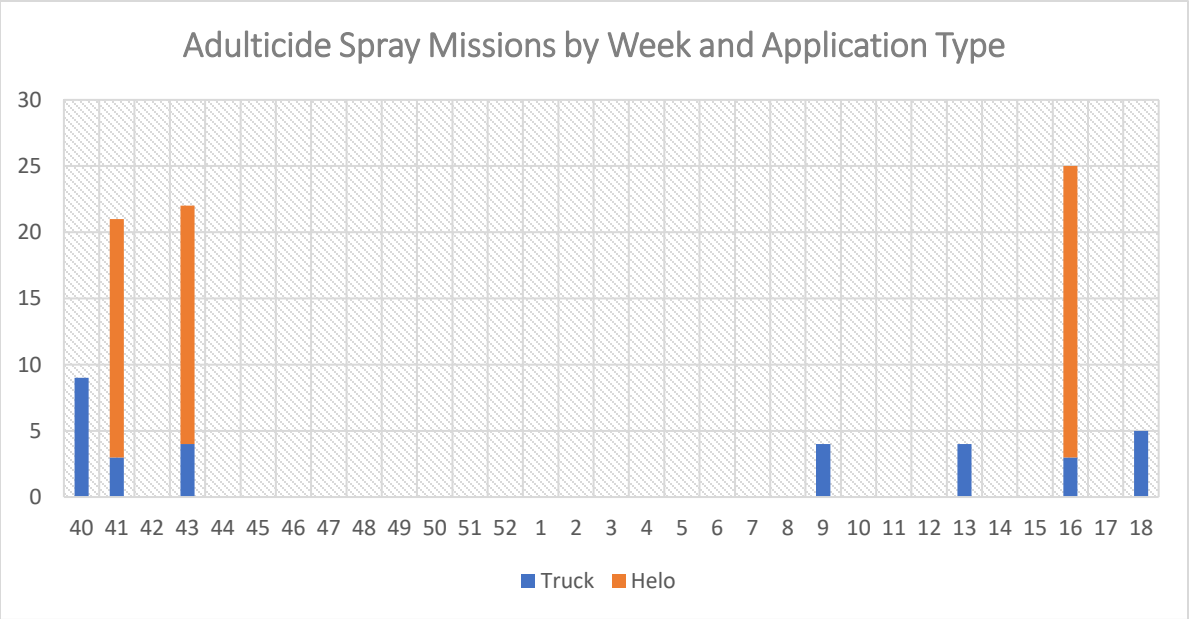
The radar chart below best shows how different species dominate over different time periods.



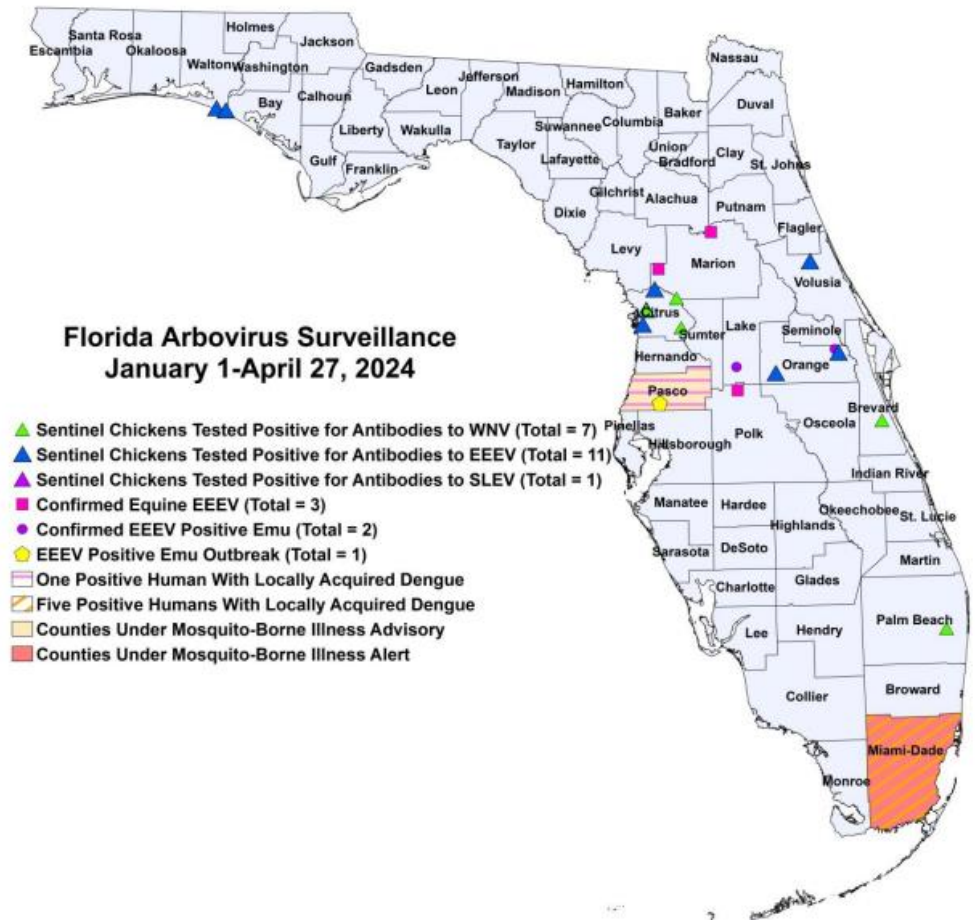
Looking back over several years, we can see the population of *Coquilletidia perturbans* tends to rebound several times over the Spring emergence period, and is currently at a low state of abundance.



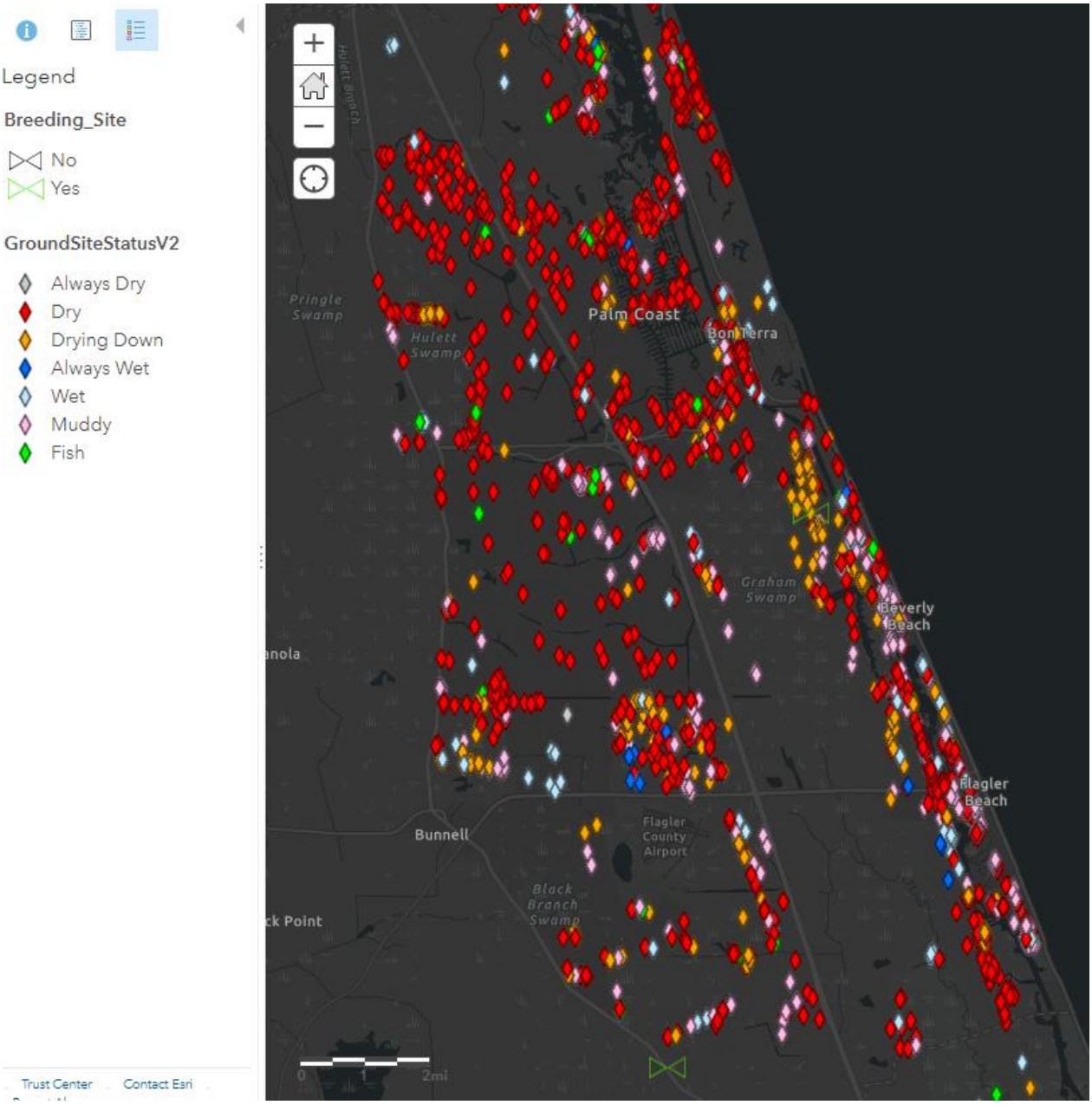
Adulticiding by truck was conducted only in the southern portion of the District.

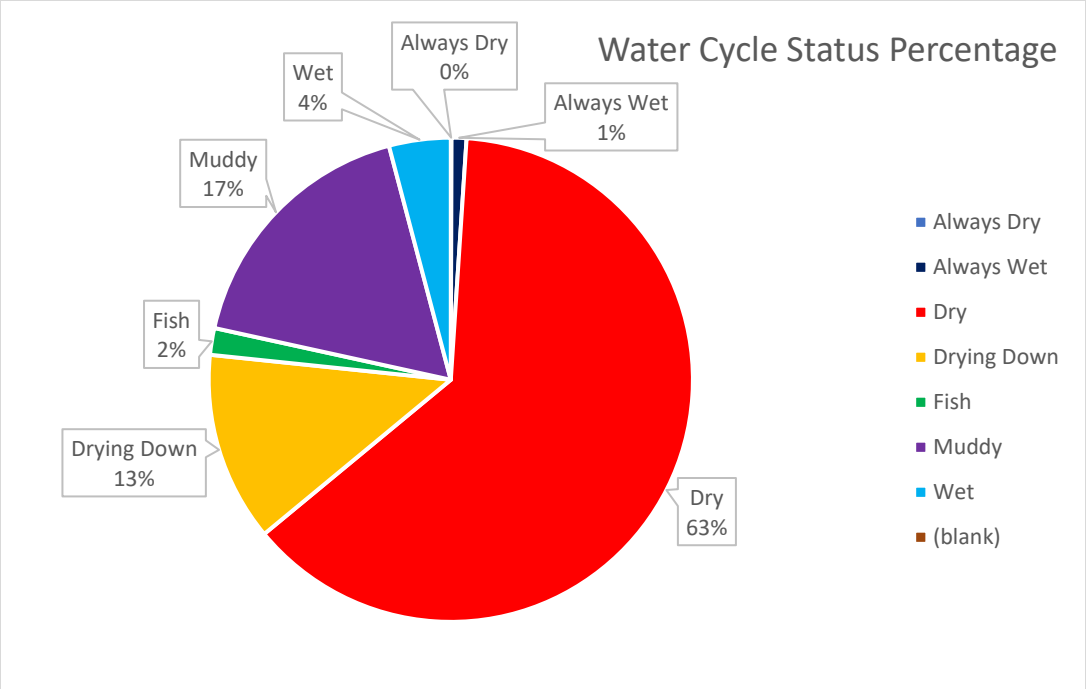


Florida Arbovirus Surveillance Week 17: April 21-27, 2024 [View the full report]

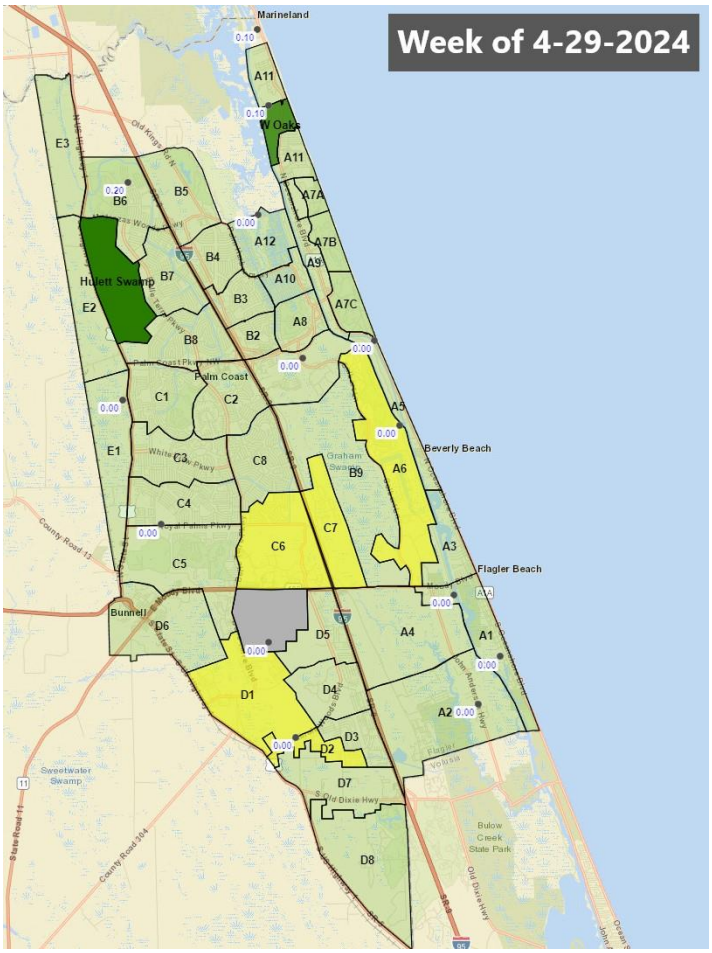


Ground surveillance is a major portion of the operations of any mosquito control program. Currently, most sites that breed mosquitoes are dry or drying down. By keeping tabs on conditions on the ground we can better estimate the timing of adult mosquito emergence and optimize the application of preventitive larvicides in certain habitats.



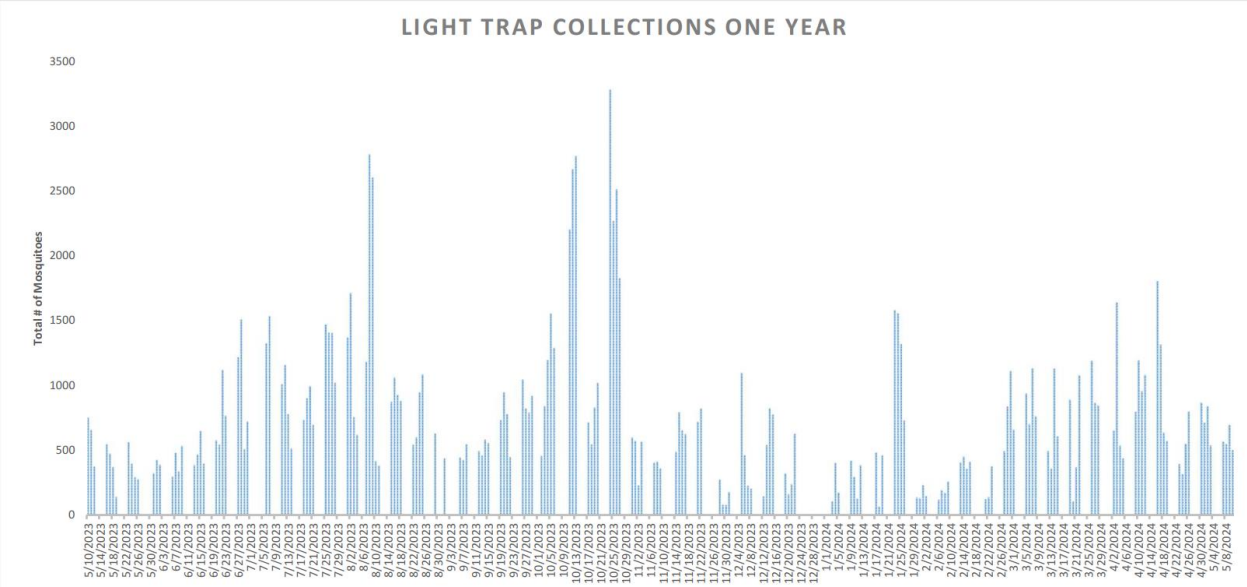


Zones in yellow were sprayed by truck this week.

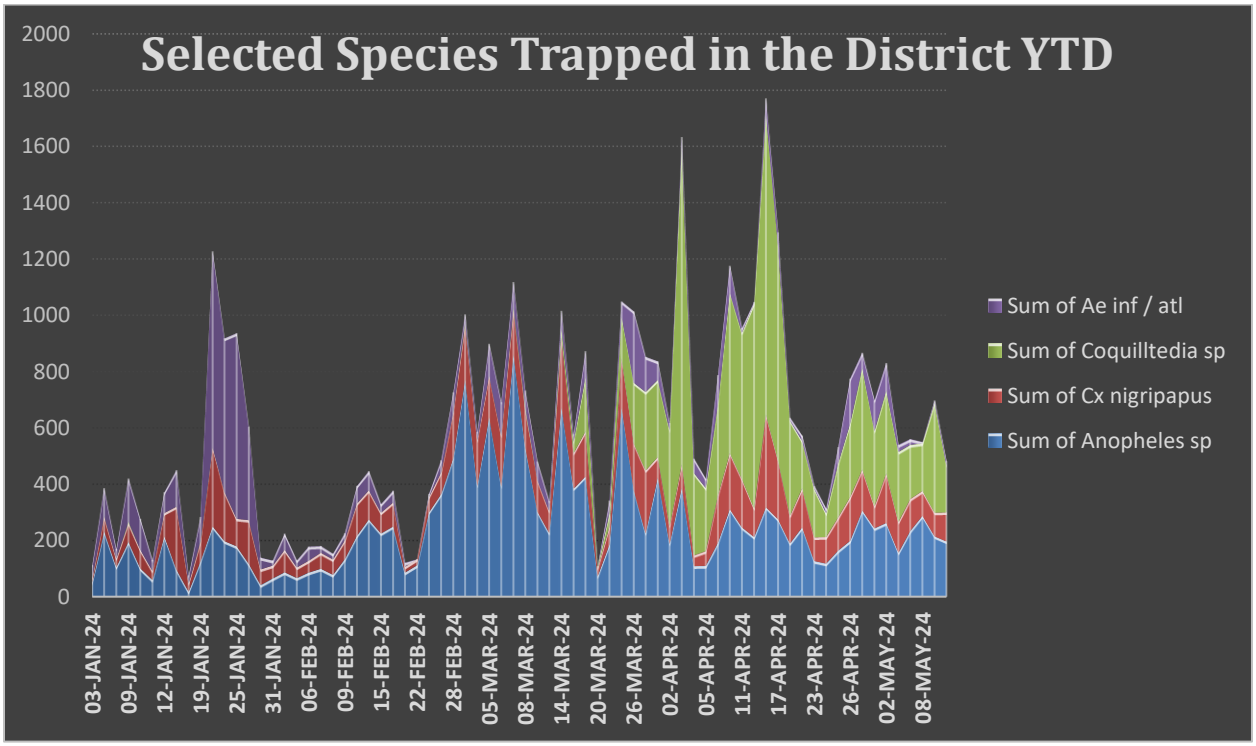


Week of 5/6/2024 Operations Update (19)

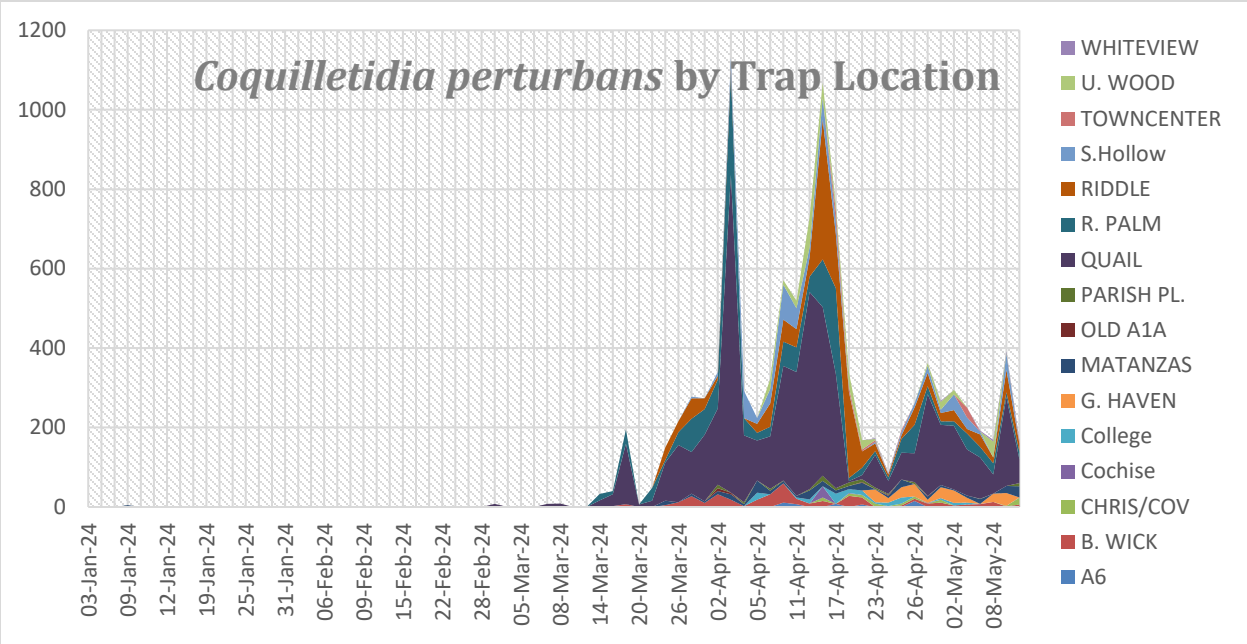
Permanent water species of mosquitoes *Anopheles spp.* and *Culex spp.* are at baseline levels, *Coquilletidia perturbans* is elevated in the Quail Hollow location. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



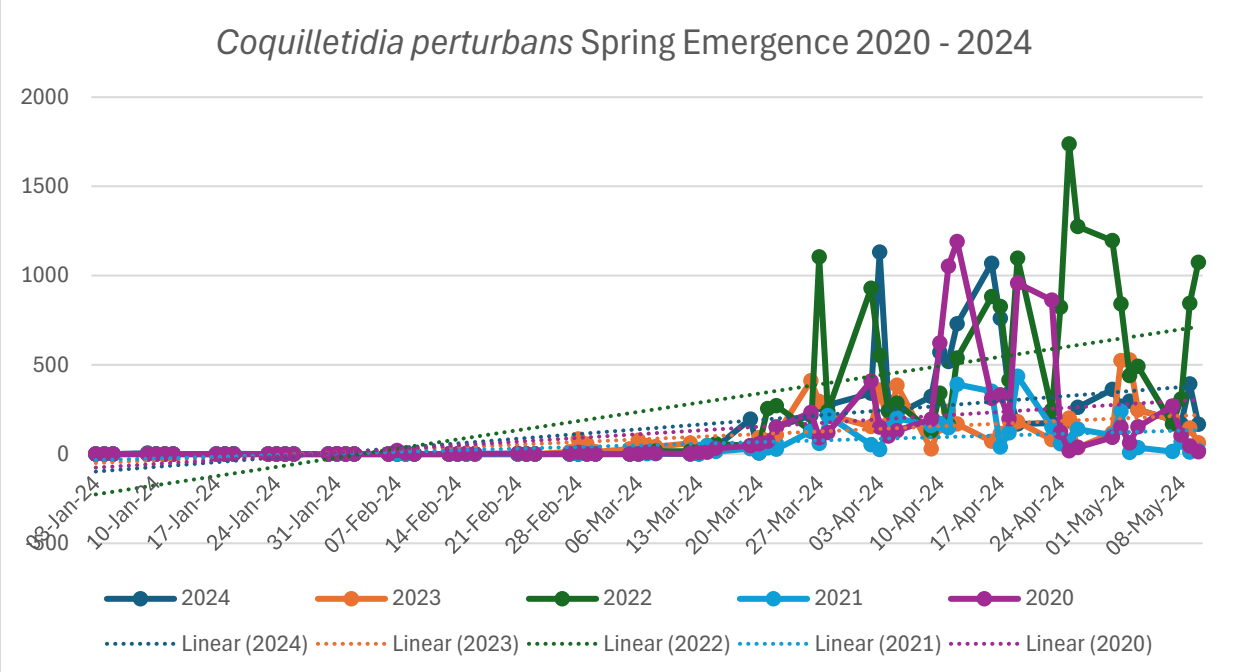
Coquilletidia perturbans will continue to emerge from cattail ponds both in and outside the District but was most abundant in one location – Quail Hollow.



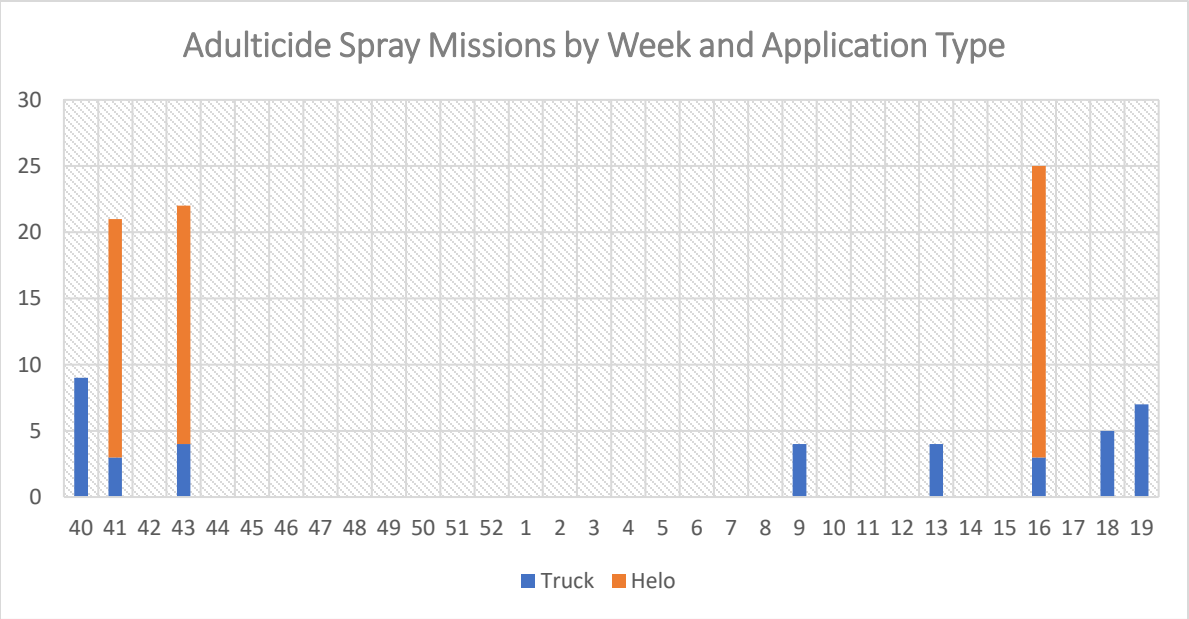
Abundant breeding sites for this species exist in the location of the Quail Hollow subdivision.



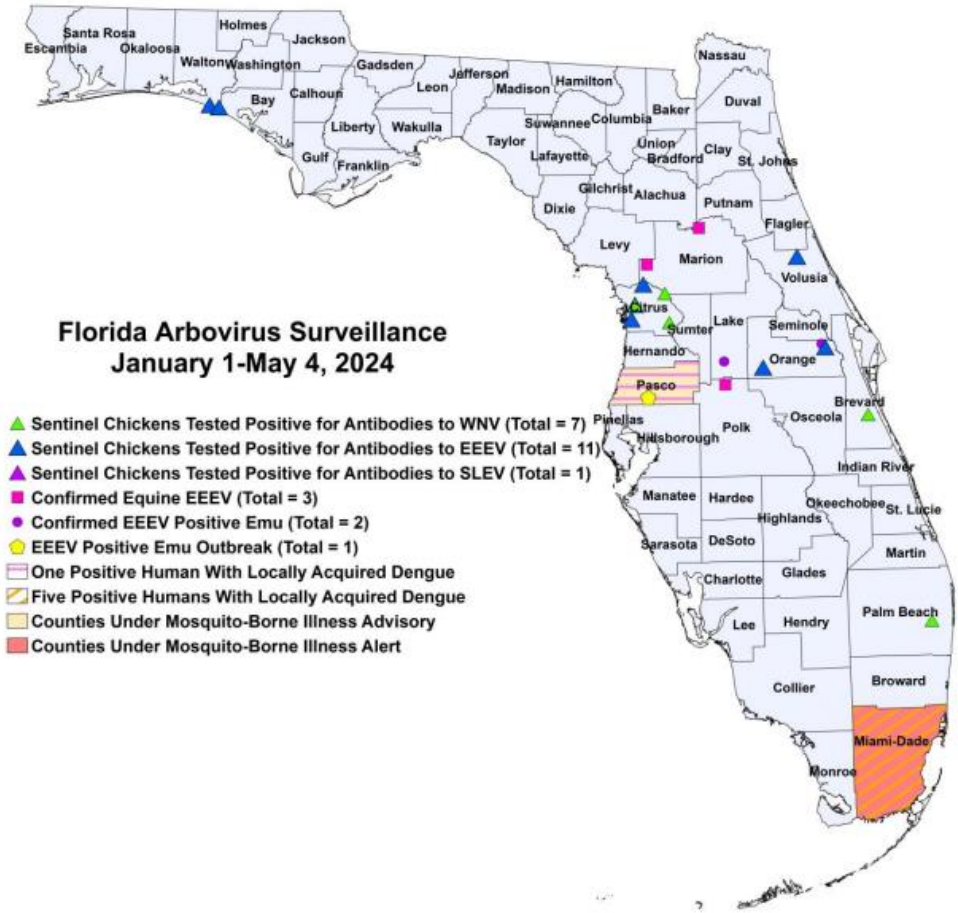
Looking back over several years, we can see the population of *Coquilletidia perturbans* tends to rebound several times over the Spring emergence period and is currently at a low state of abundance. A simple linear regression can be applied to the data set to get a sense of the rate of emergence. While there is not a linear relationship at play with the emergence of this species, varying wind dispersal direction and speed, application of control measures to reduce the population, and environmental factors influencing the emergence, all impact the measured activity in mosquito traps.



Limited adulticiding by truck was conducted this week.

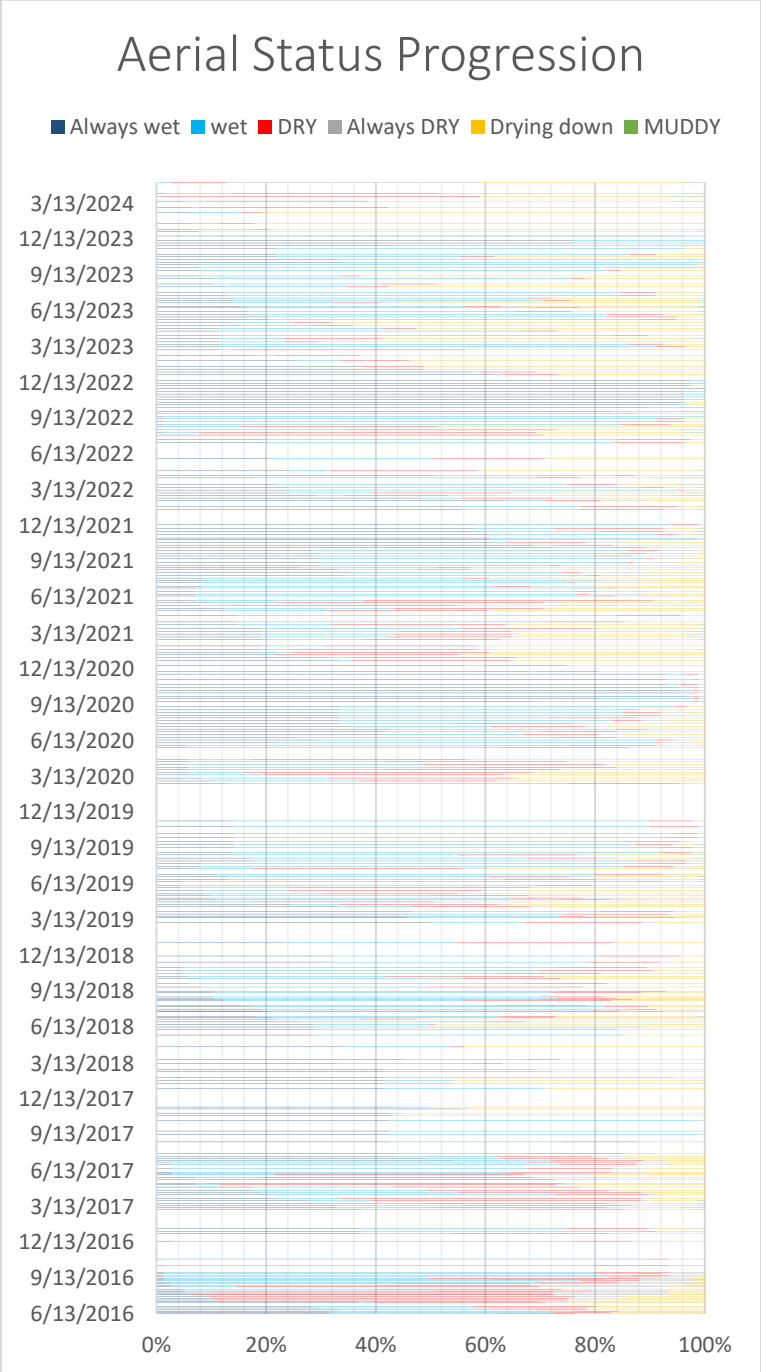


Florida Arbovirus Surveillance Week 18: April 28 – May 4, 2024 [View the full report]

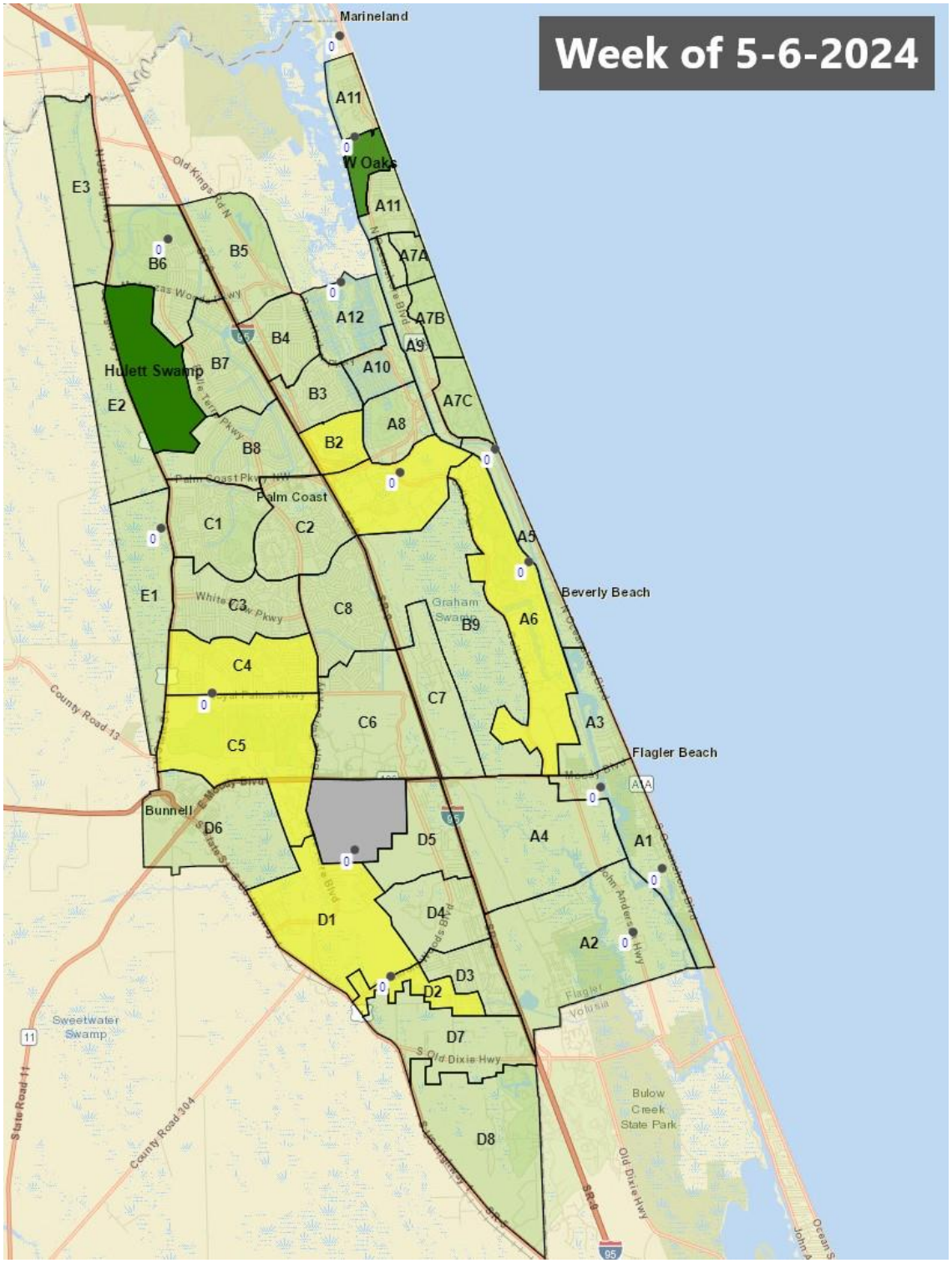


Larger or more remote breeding sites in the saltmarsh are monitored either by remote monitoring equipment or by helicopter. Rain and tide periodically flood breeding sites above the intertidal areas. Each wet and dry cycle allows for the depositing of eggs in dry soil by either of two saltmarsh mosquito species, which once the area is flooded again hatch and produce mosquito larvae. We prevent larvae from becoming adult flying mosquitoes by pretreating areas that produce these types of mosquitoes.

The absence of rain as well as storms in the Atlantic producing a higher-than-average tide has led to an extensive dry down of saltmarsh mosquito breeding sites. The last time the saltmarsh was this dry was August 2022, but it did not stay as dry for as long as the current dry-down period.

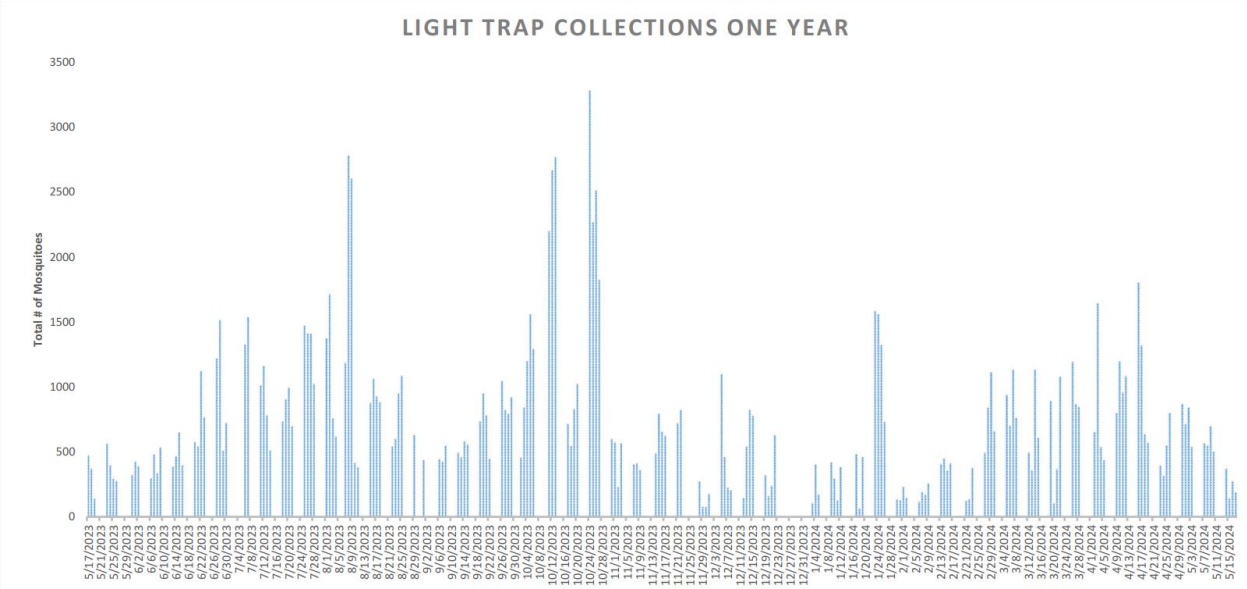


Zones in yellow were sprayed by truck this week.

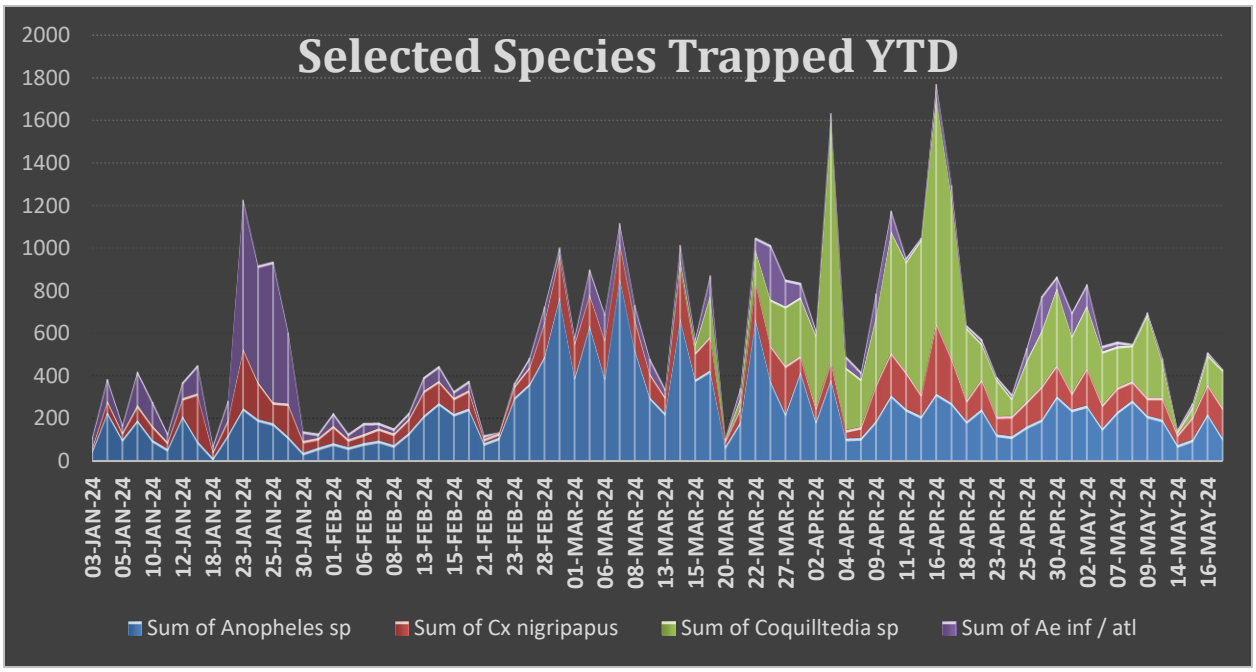


Week of 5/13/2024 Operations Update (20)

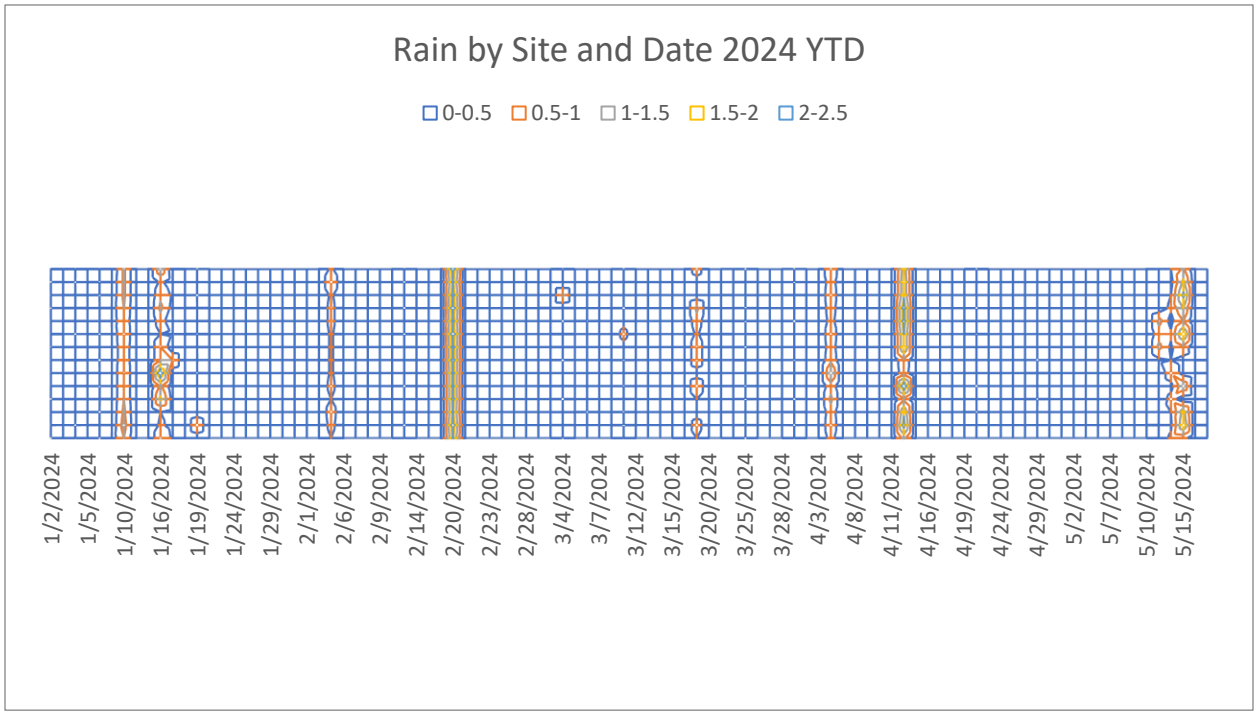
Dry conditions are currently suppressing mosquito production. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



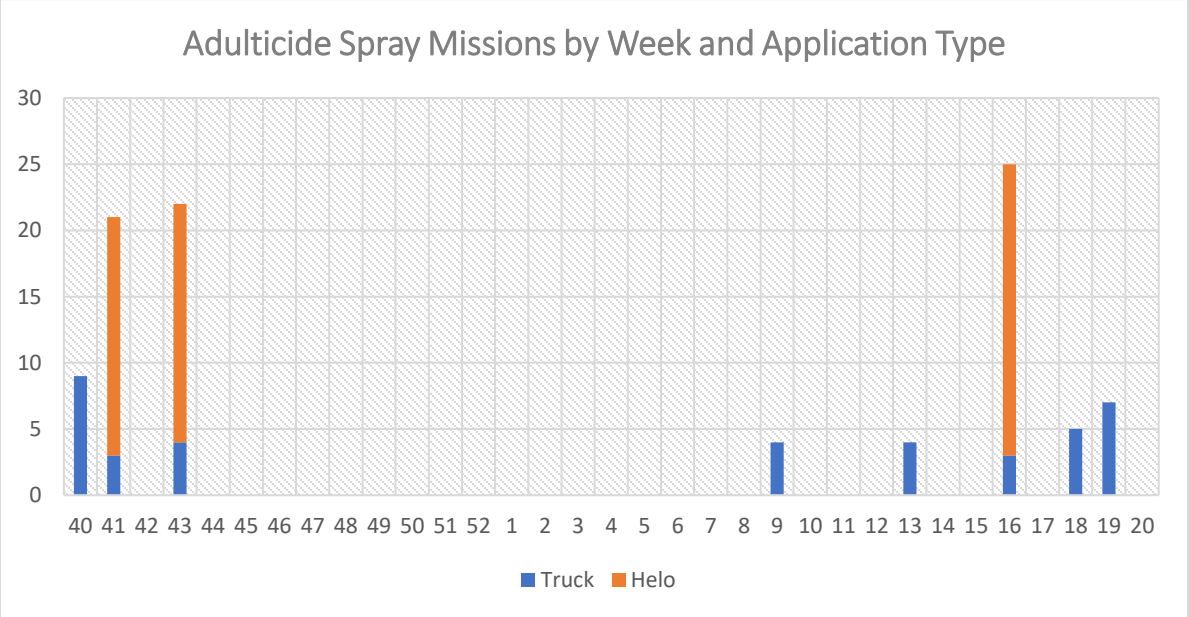
Floodwater species of mosquitoes were at very low numbers, barely registering on the graph below. Permanent-water species of mosquitoes are also in decline from the extended lack of rainfall.



The first significant rainfall in weeks was recorded on May 15 from the previous day's storm.



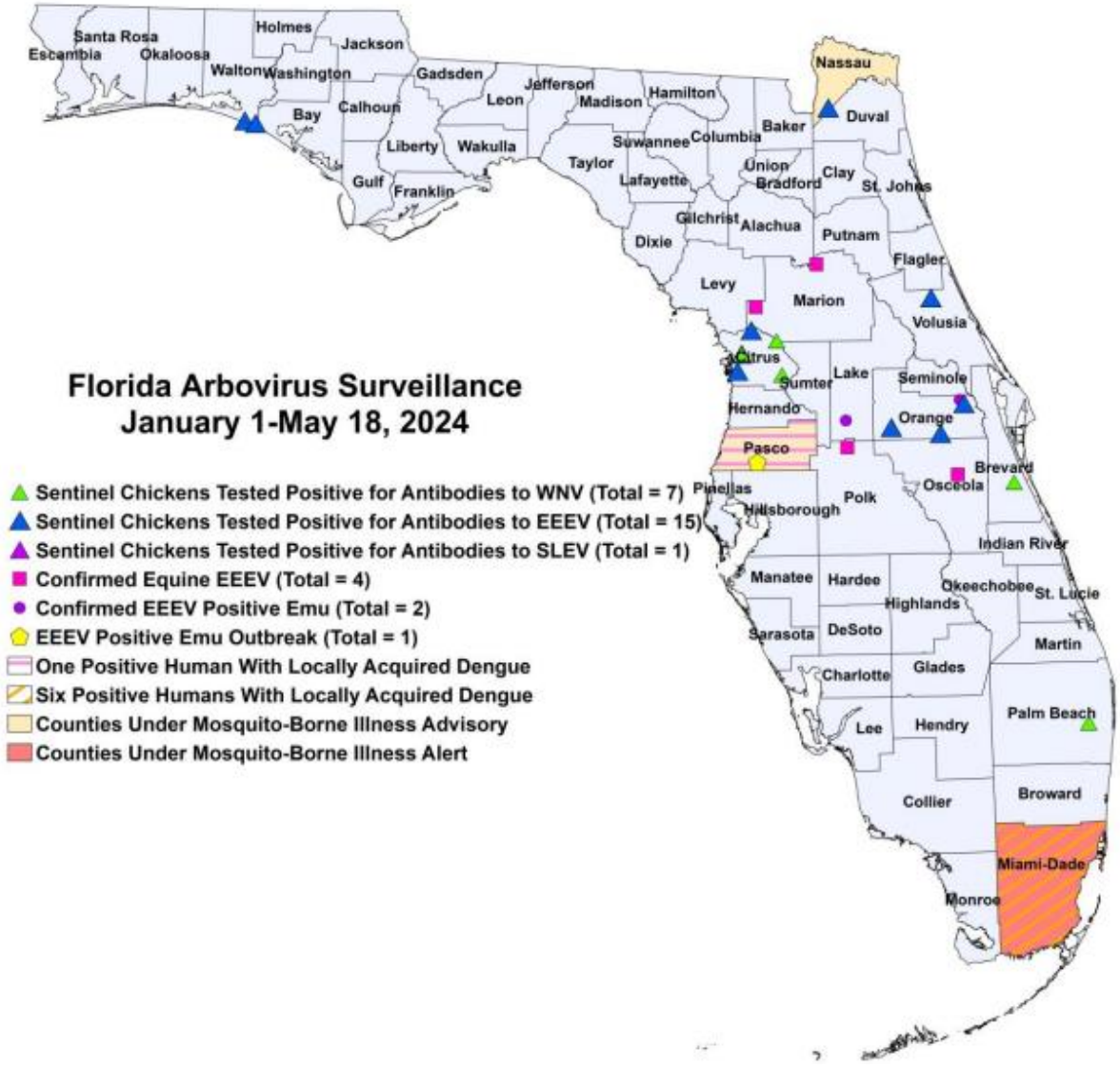
No spray operations this week.



Florida Arbovirus Surveillance Week 20: May 12 - 18, 2024 View the full report

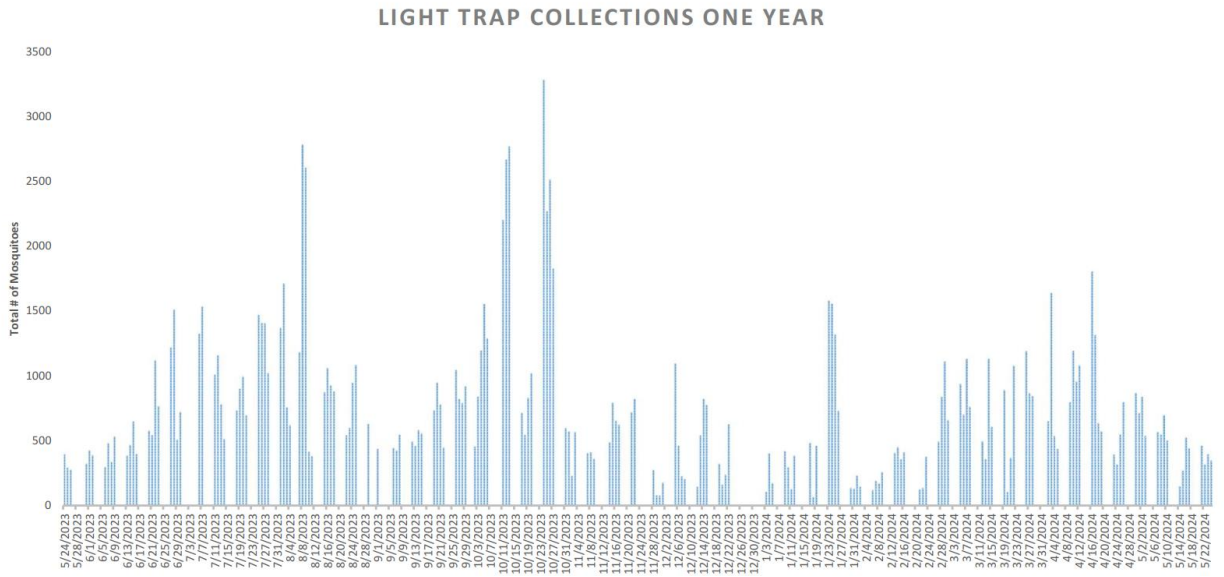
EEEV activity: No human cases of EEEV infection were reported this week. One horse with EEEV infection was reported this week in Osceola County. Four sentinel chickens tested positive for antibodies to EEEV this week in Nassau and Orange counties.

Dengue Cases Acquired in Florida: One case of locally acquired dengue was reported this week. In 2024, seven cases of locally acquired dengue have been reported from two counties.

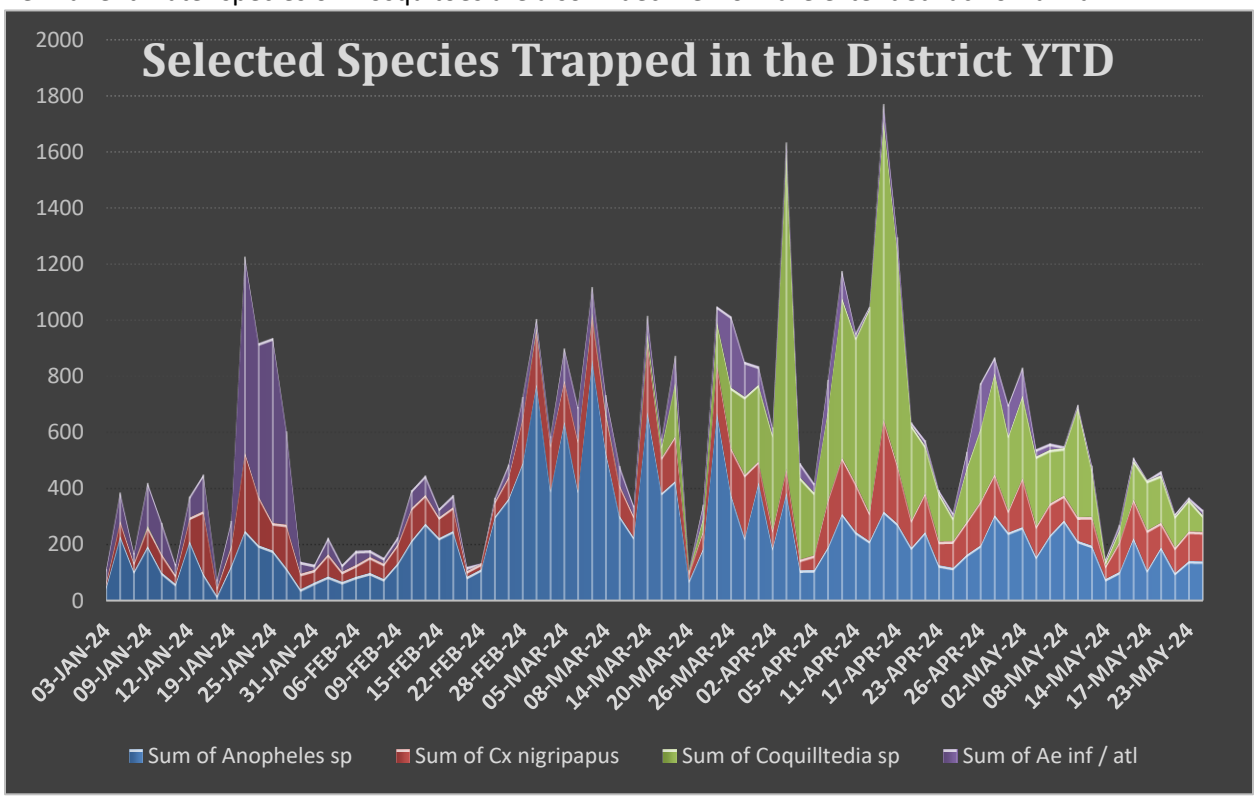


Week of 5/20/2024 Operations Update (21)

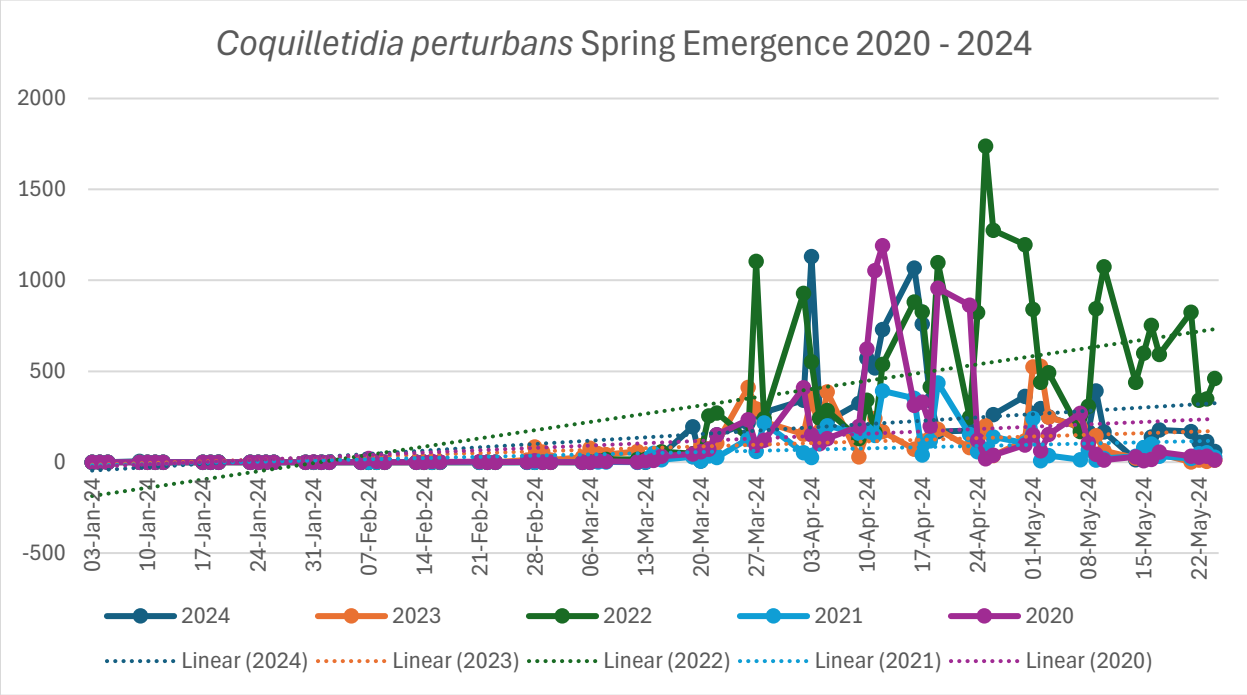
Dry conditions still prevail, second week of no spraying. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



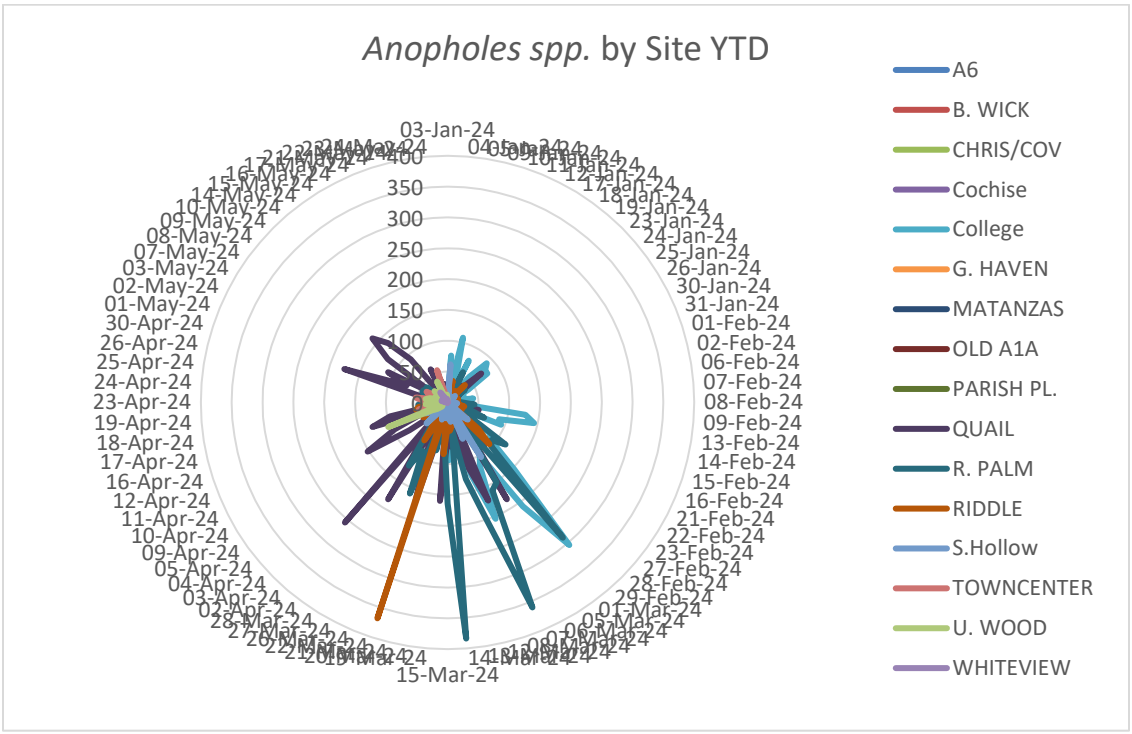
Floodwater species of mosquitoes were at very low numbers, barely registering on the graph below. Permanent-water species of mosquitoes are also in decline from the extended lack of rainfall.



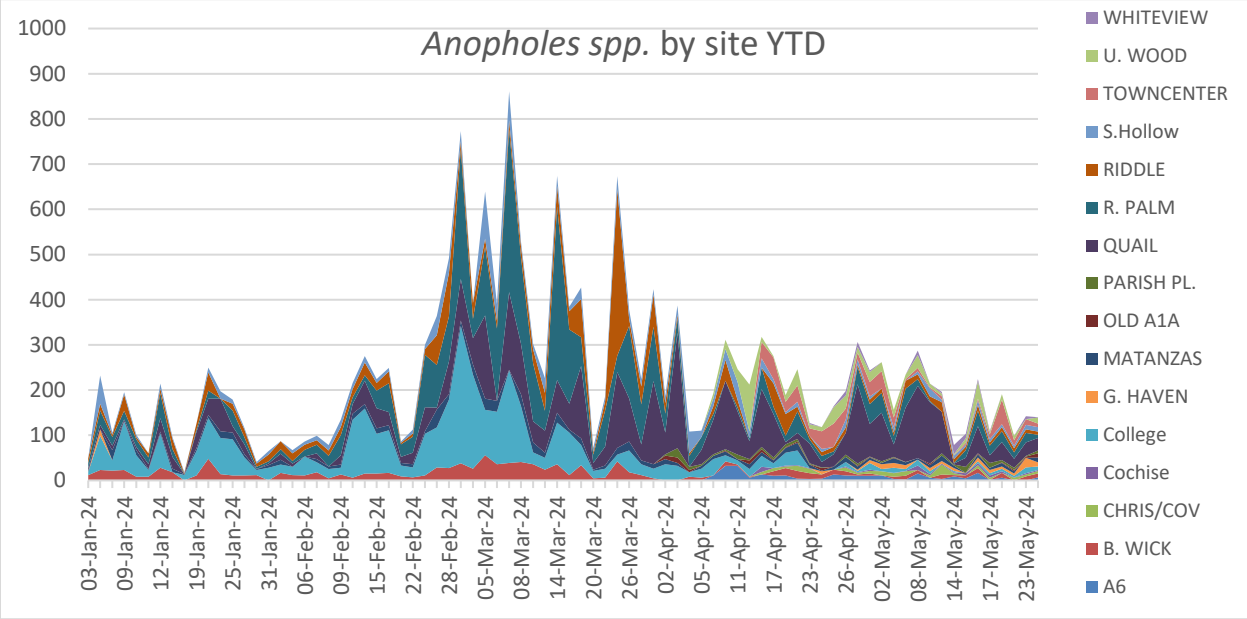
Coquillettidia perturbans had dominated the traps for the past two months, but now have decreased in line with what is typical for this time of year.



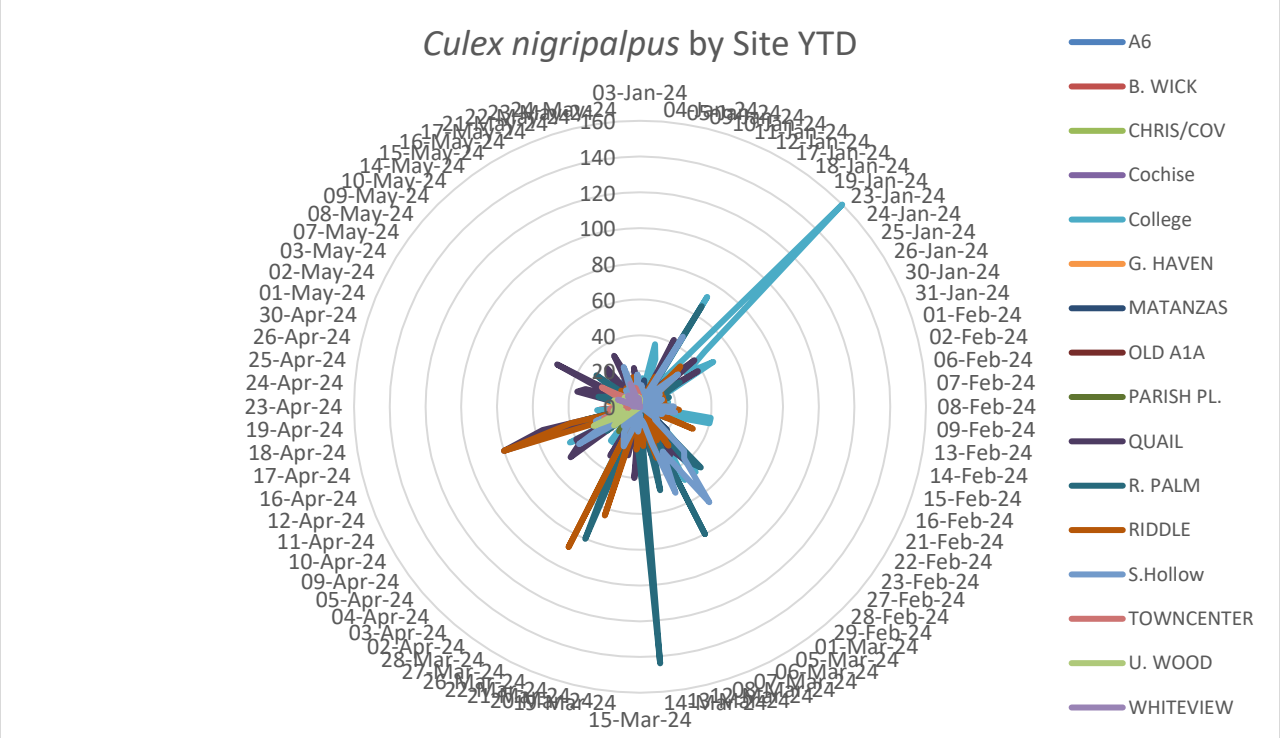
In previous reports we compared data by site to illustrate the geographic abundance of *Coquillettidia perturbans*. Let's do the same with the two most abundant permanent water species of mosquitoes individually. You can see from the radar chart below that the population of *Anopheles spp*. spikes in different areas at different times.



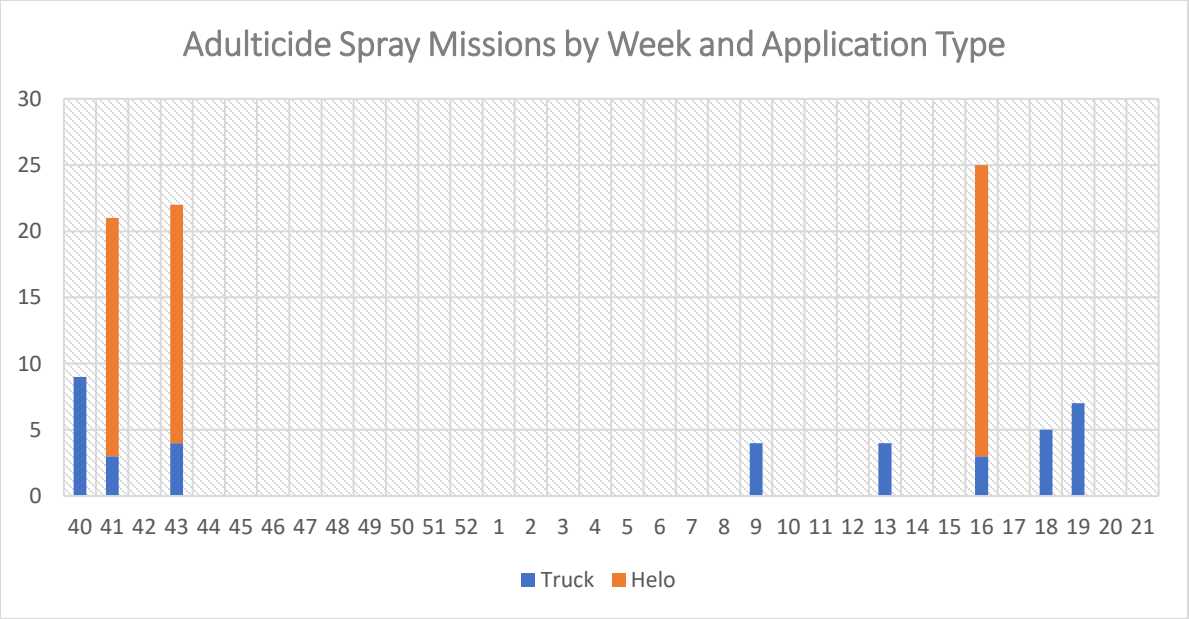
More recently, you can see in the chart below that Quail Hollow has the greatest consistent abundance. This location has the least amount of road density (making truck mounted treatments less effective) and the highest proportion of wetlands (more breeding sites). Over the past couple of weeks, the wetlands have dried further to the point that only a residual level of mosquito activity is recorded. Earlier in the year College, Royal Palm, and Riddle had surges in this species population.



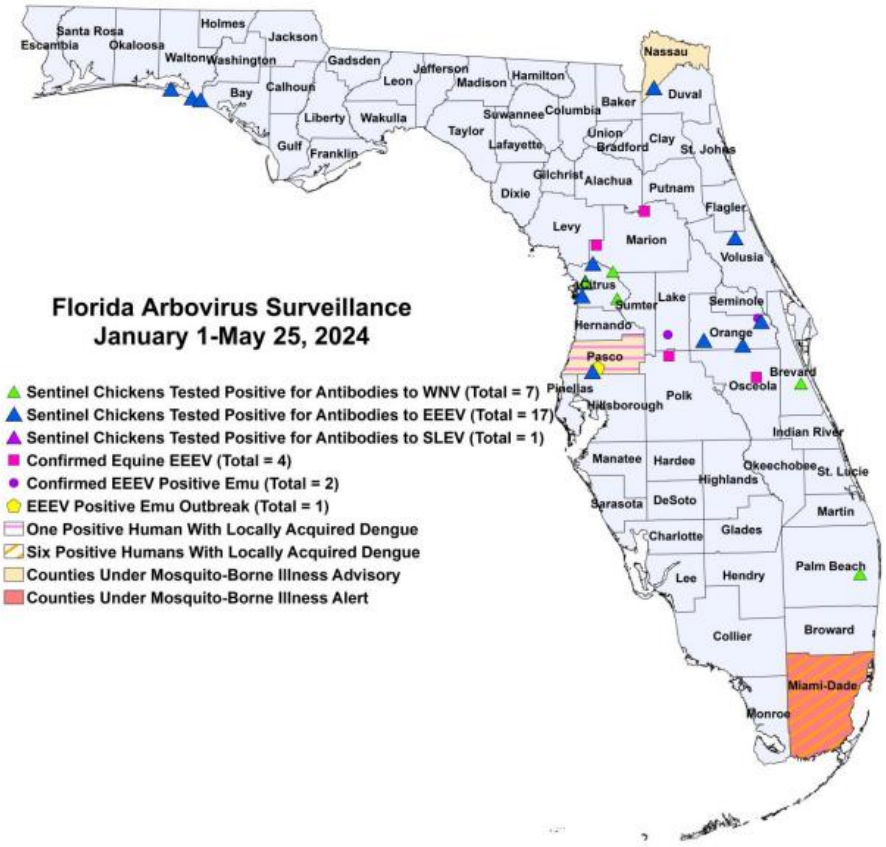
Looking at the second permanent-water species, *Culex nigripalpus*, we can see a similar distribution, i.e. College, Royal Palm, and Riddle had similar surges in this species population, although at different times.



No spray operations this week.

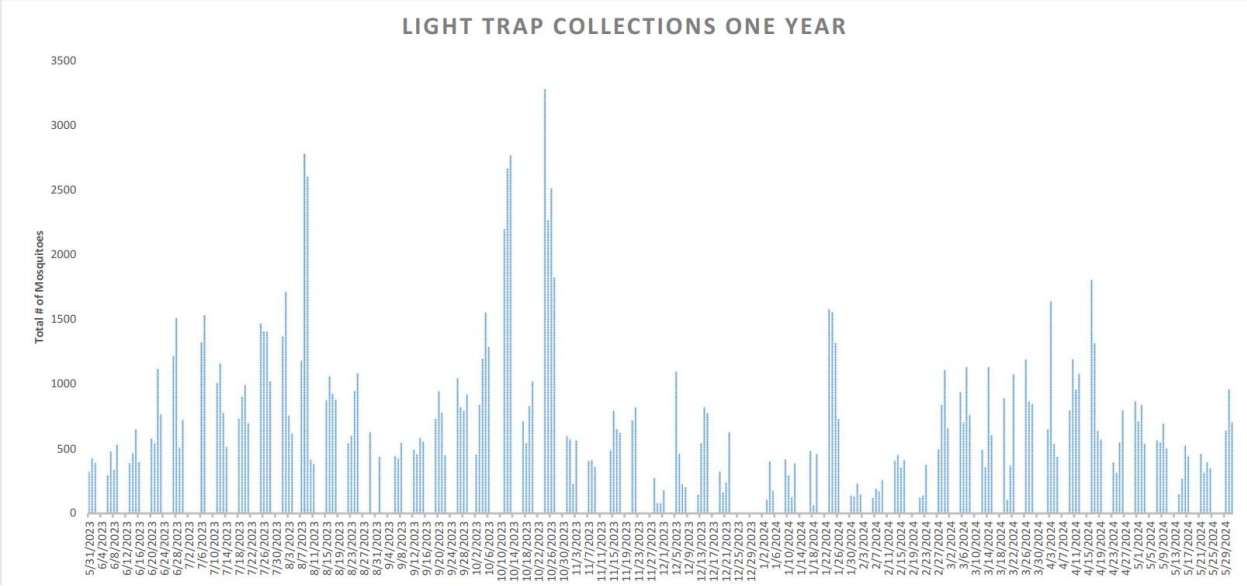


Florida Arbovirus Surveillance Week 21: May 19 - 25, 2024 [View the full report]

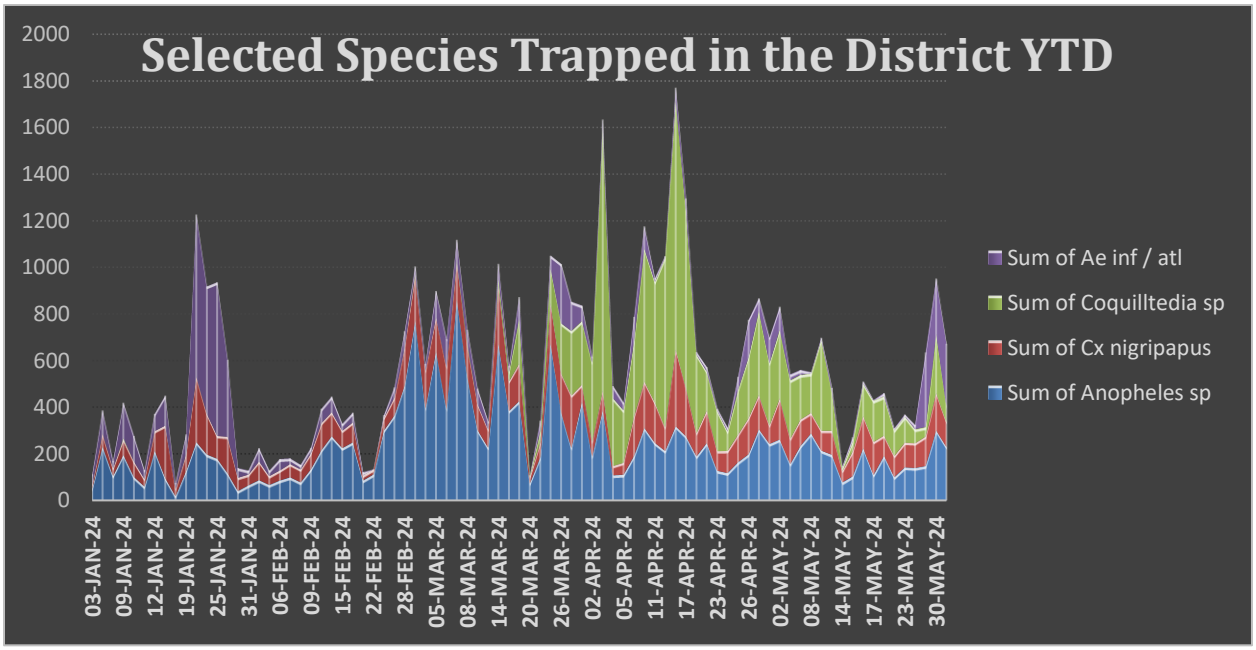


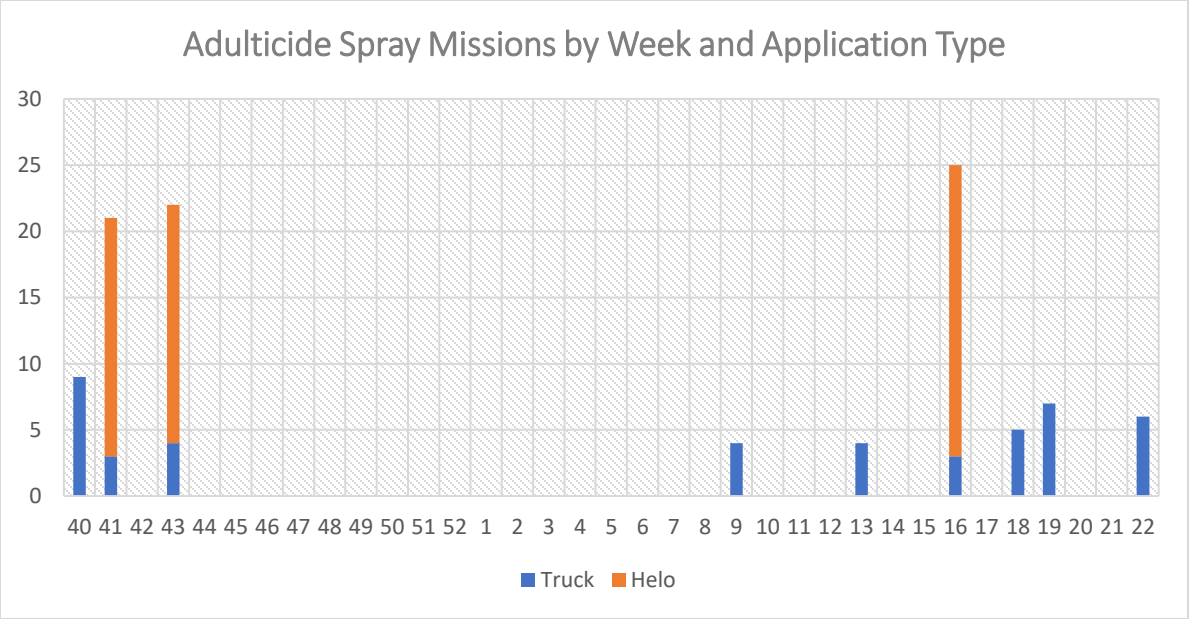
Week of 5/27/2024 Operations Update (22)

Limited adulticide spraying this week in response to isolated *Aedes infirmatus* and *Coquilletidia perturbans*. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).

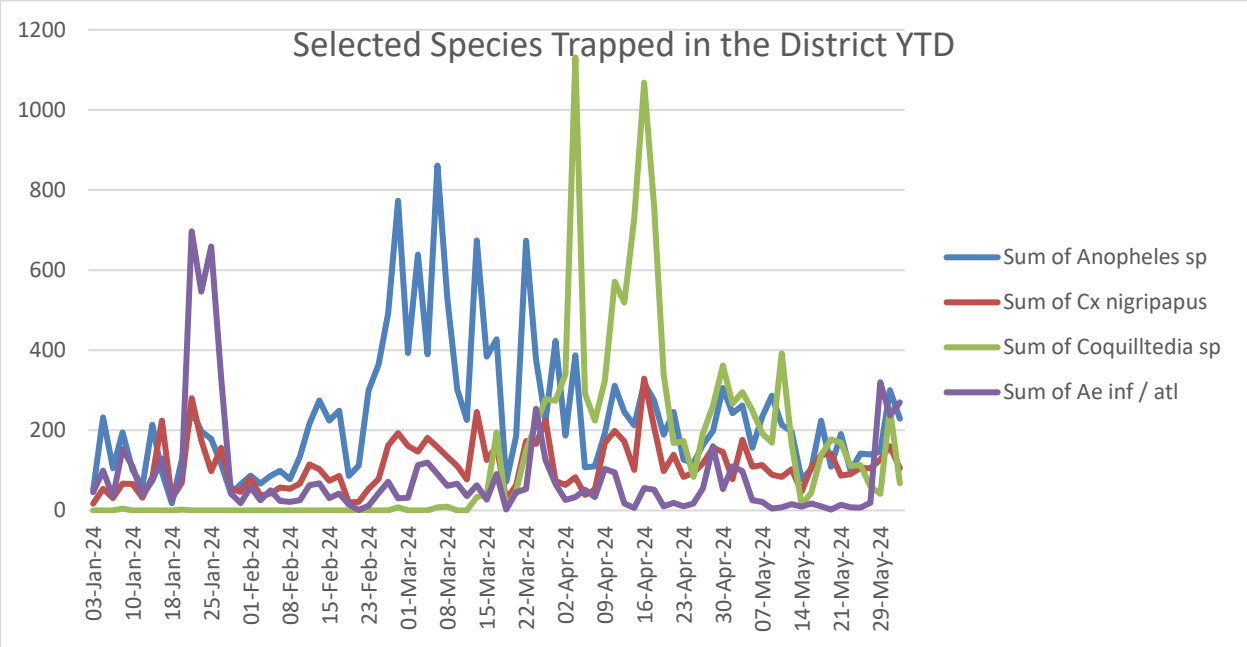


Limited rainfall has kept the mosquito population low since mid-April. Nonetheless, several species of mosquitoes increased in number this week.



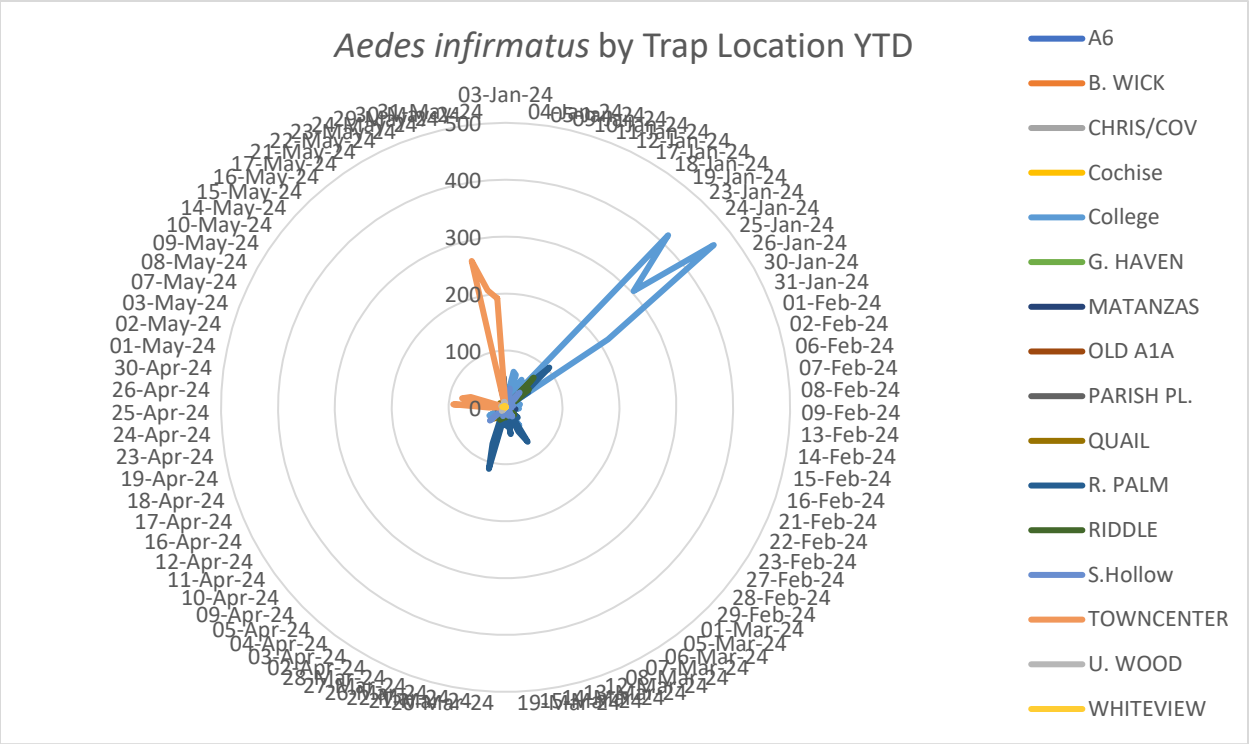


There was a late season surge of *Coquilletidia perturbans* this week near Quail Hollow where the majority of this species has been abundant this season. This species breeds in permanent water and does not require additional rain to reproduce.

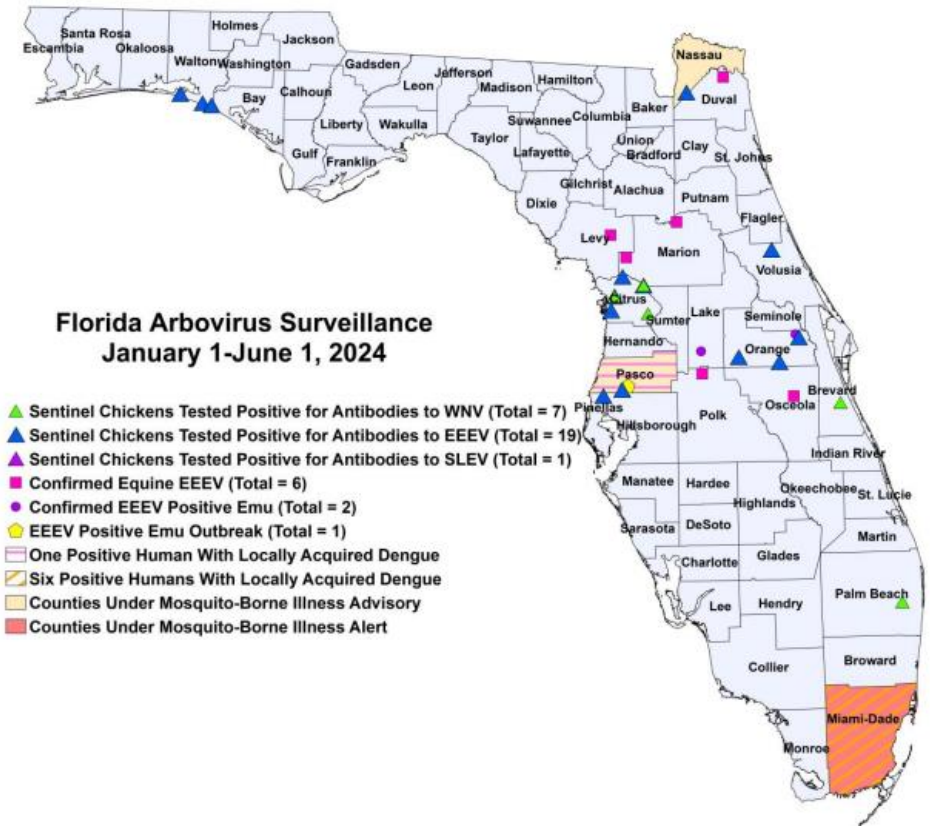


Aedes infirmatus on the other hand is a floodwater species of mosquito and requires rainfall to reproduce. This species has a flight range of 5-10 miles, and with widespread rainfall events tends to be in multiple locations when it is prevalent from an abundance rain. From the graph above you can see this species has not been overly abundant yet this season, having its highest population so far in January. The surge likely stemmed from manmade flooding related to construction in and around Town Center including the new BJ's facility and a new development North of Royal Palms Parkway near Old Kings Highway.

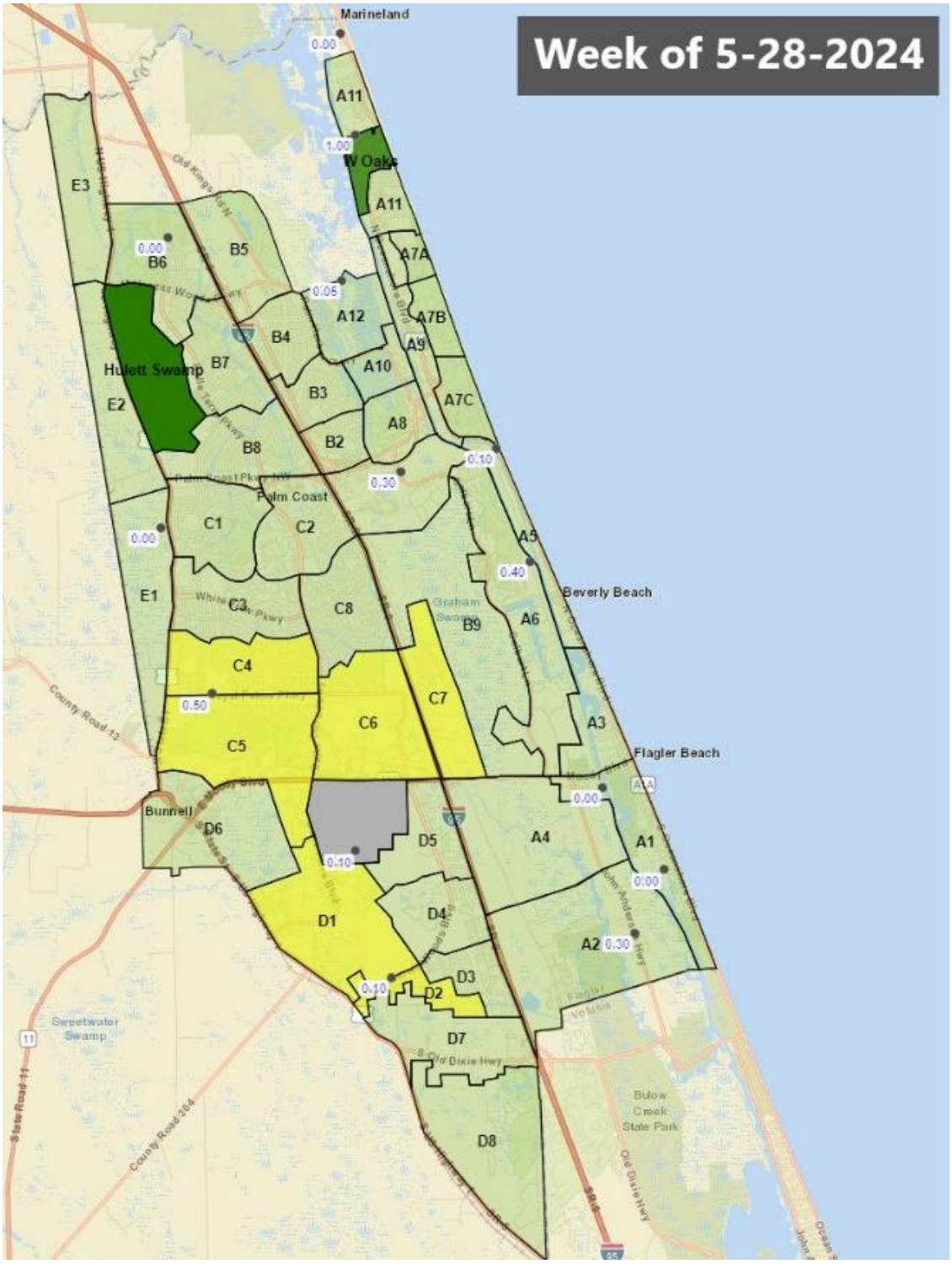
You can more clearly see the contribution of each trap site from the radar chart below.



Florida Arbovirus Surveillance Week 22: May 26 – June 1, 2024 [View the full report]

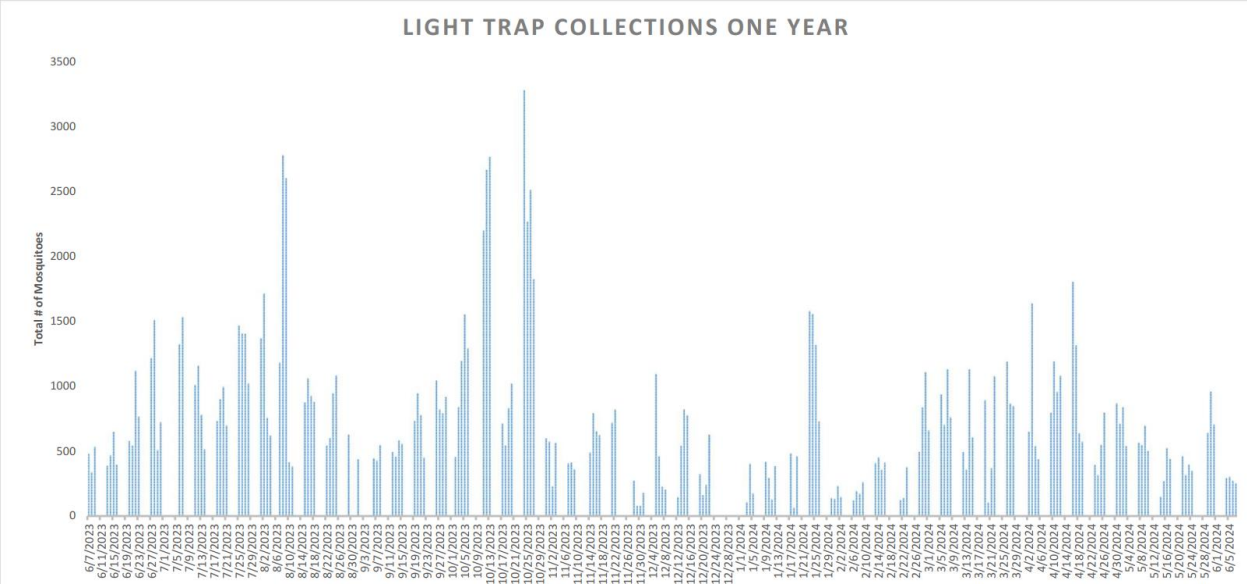


Zones highlighted in yellow were sprayed by truck this week .

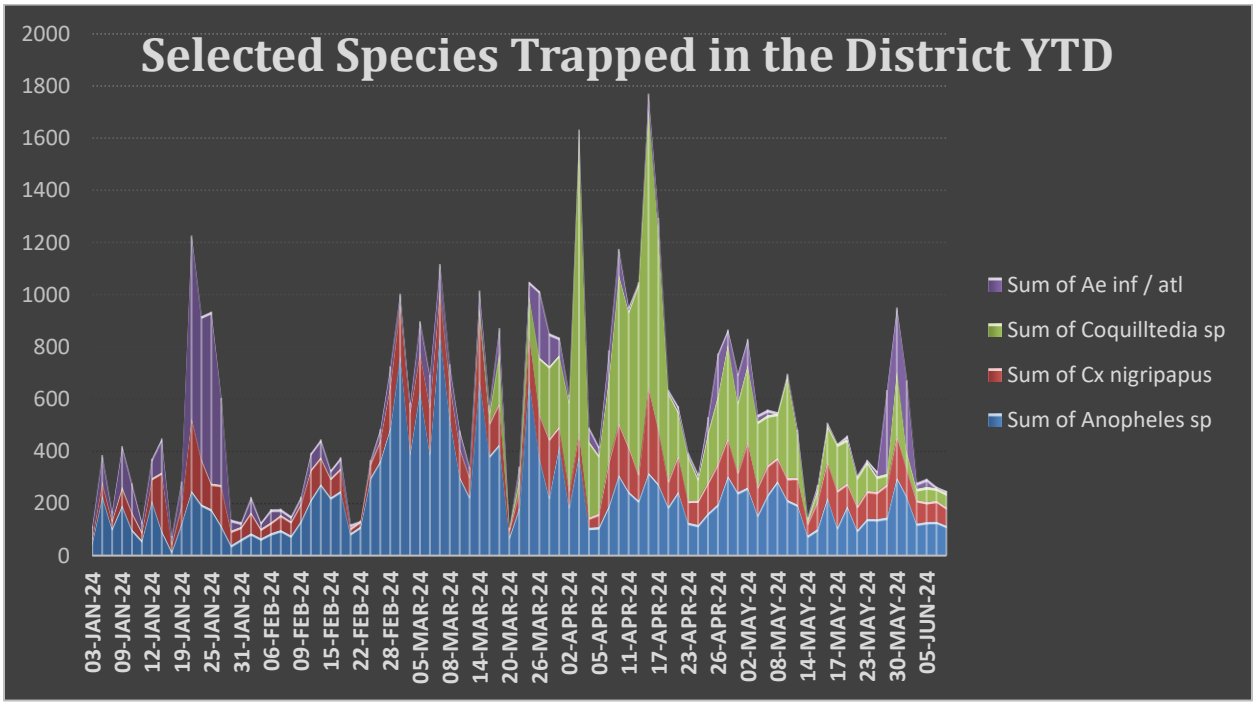


Week of 6/3/2024 Operations Update (23)

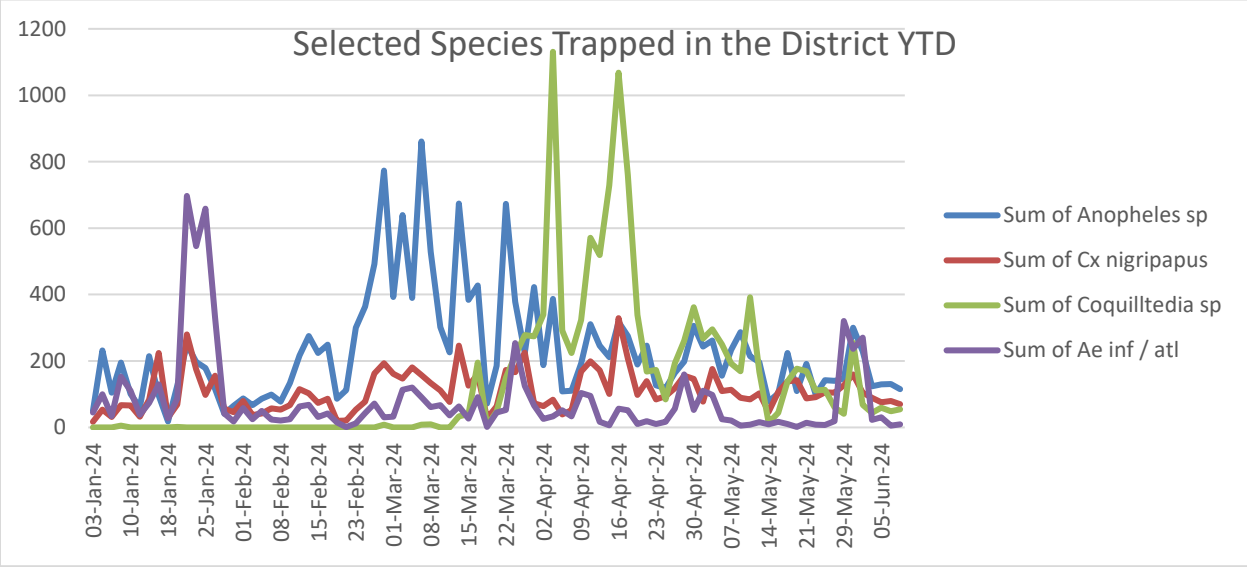
A Local State of Emergency and county-wide burn ban went into effect this week due to wildfire hazard. The presence of a heat dome has created extreme heat and dry conditions. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



Limited rainfall has kept the mosquito population low since mid-April. Mosquito activity the past two weeks has been unrelated to rainfall.



Last week we saw an isolated emergence of *Aedes infirmatus* in the south end of Town Center, likely due to the construction of the BJ's store. We also saw an uptick in *Anopheles spp.* last week, which likely resulted from the drying down of breeding habitats forcing the larval population to leave the water as adults. The population of permanent-water species has "flat-lined", while flood-water species have disappeared from the traps almost entirely.

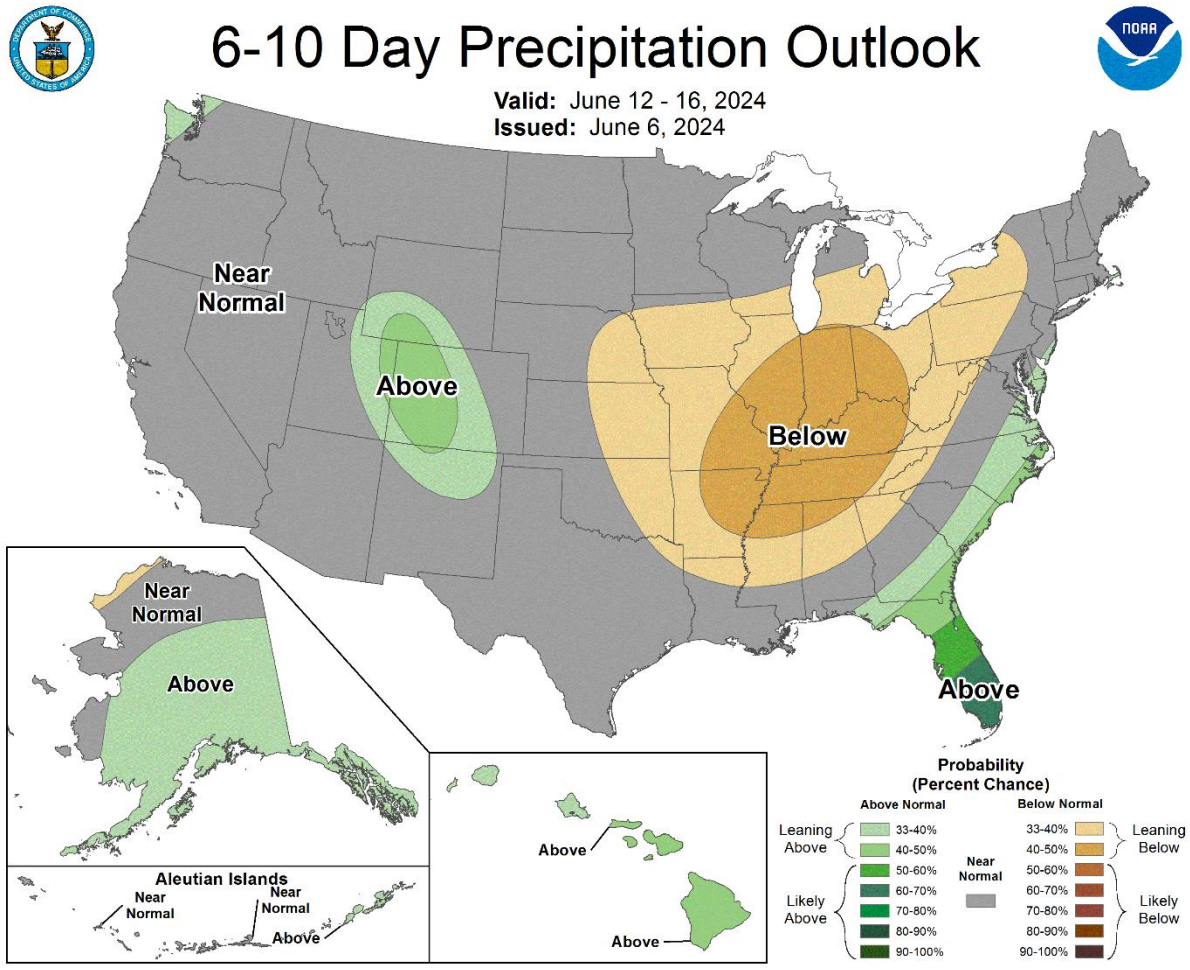


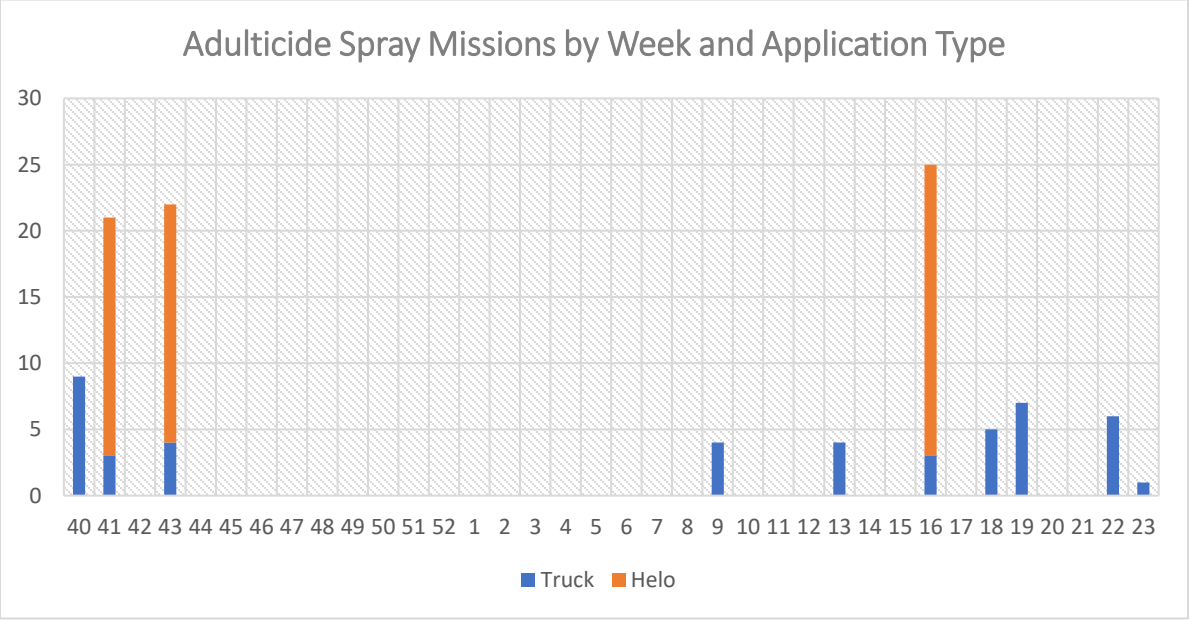
The only mosquito activity registered in the District this week originated from the City of Palm Coast's waste-water treatment plant. This facility produces saltmarsh mosquitoes when it floods treatment ponds allowing the eggs laid when the ponds dry down to emerge in huge swarms. This species of mosquito, *Aedes sollicitans*, is an aggressive biter and can fly up to twenty miles. The District controls this species with pre-application of larvicides by helicopter and other ground operations to known breeding sites in the saltmarsh. This is a very effective strategy when we can monitor rainfall patterns and tides and time the application of pesticides to get ahead of mosquito production in the saltmarsh habitat. However, due to the operations at the City owned facility, this strategy is not feasible in this case.

Additionally truck mounted "ULV" spraying is not the best tool as roads are limited around the waste-water facility, rendering sufficient coverage with pesticides to impact the mosquito population impossible. This is not a new situation. However, development is now adjacent to the waste-water treatment facility and the impacts of mosquito production are apparent to residents nearby.

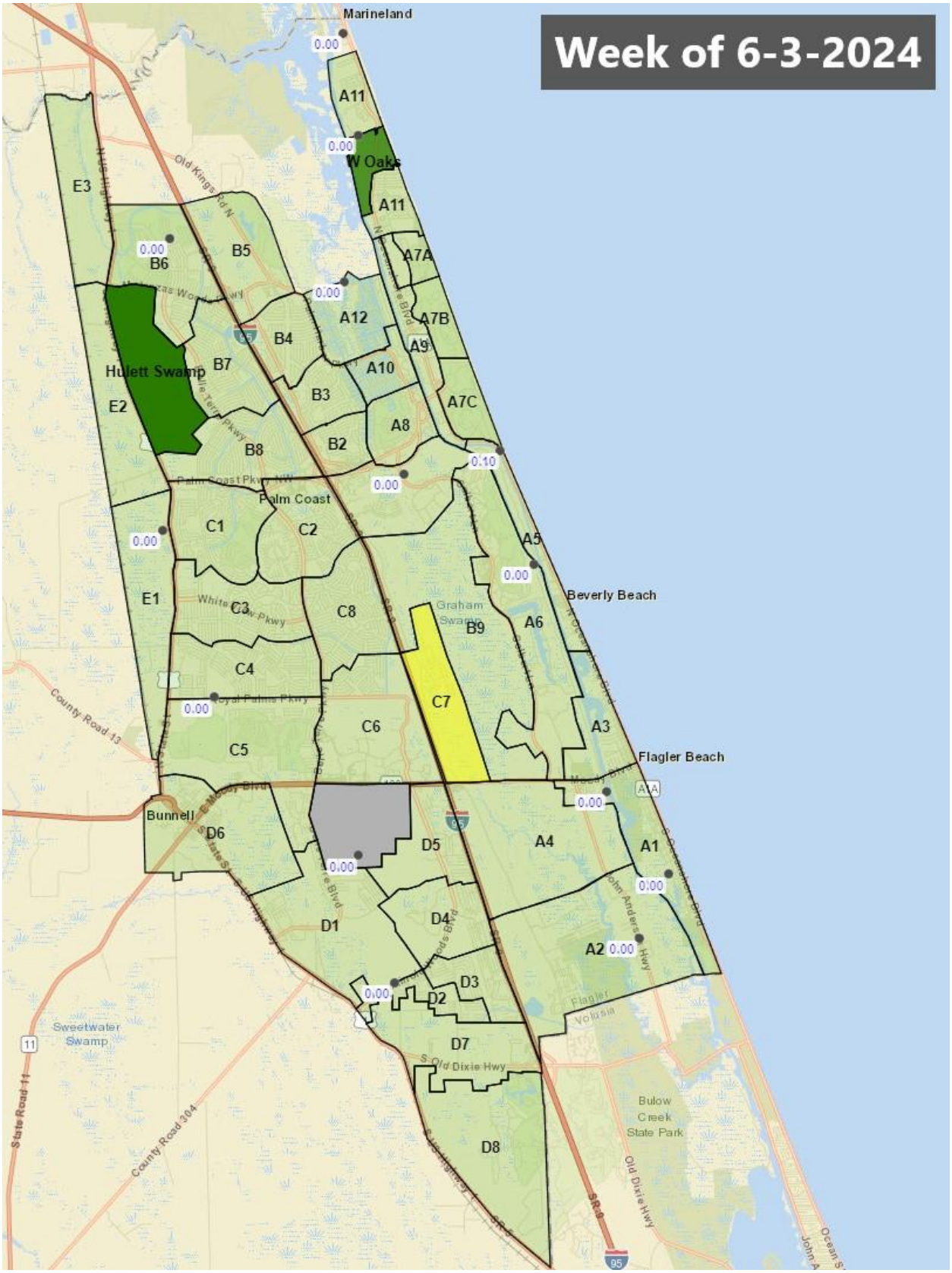
Possible solutions to prevent the production of mosquitoes at this facility include: injecting pesticides into the finished waste-water product so that as soon as the mosquito eggs hatch in the flooded soil they are eliminated; keeping the ponds wet to prevent egg-laying that occurs in the dry soil between cycles; reducing the flood period to less than three days so mosquitoes cannot complete the lifecycle; and not flooding the settling ponds. District officials have met with waste-water managers to discuss these options, but no action has been taken by the City as of yet.

Completed third round of aerial larviciding pre-treatments in the saltmarsh ahead of predicted rain fall.



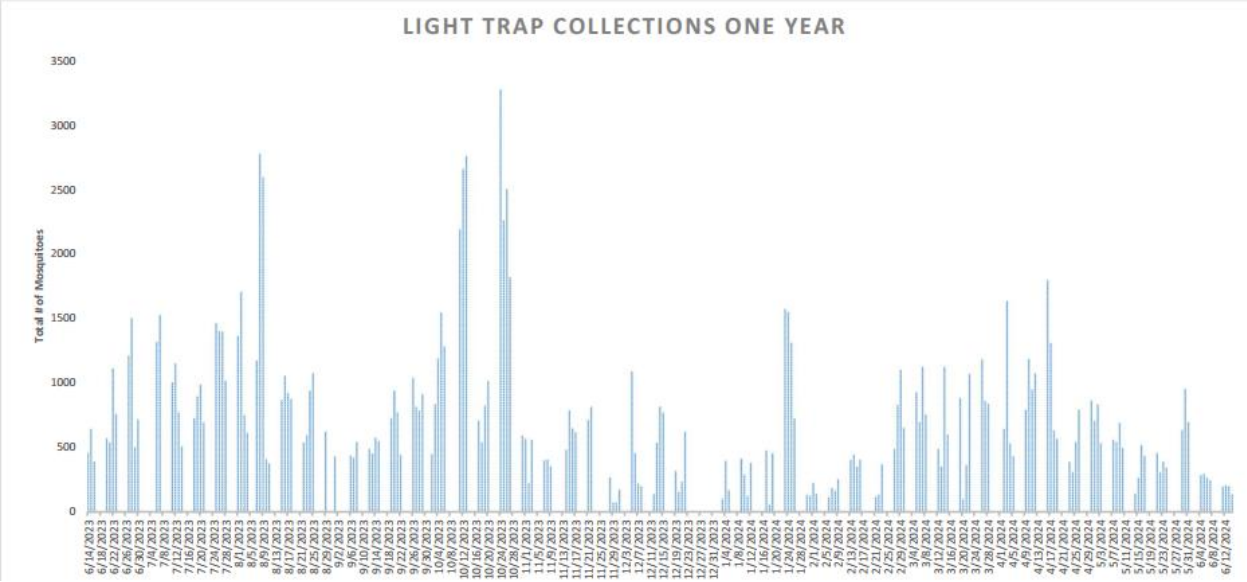


Zones highlighted in yellow were sprayed by truck this week.

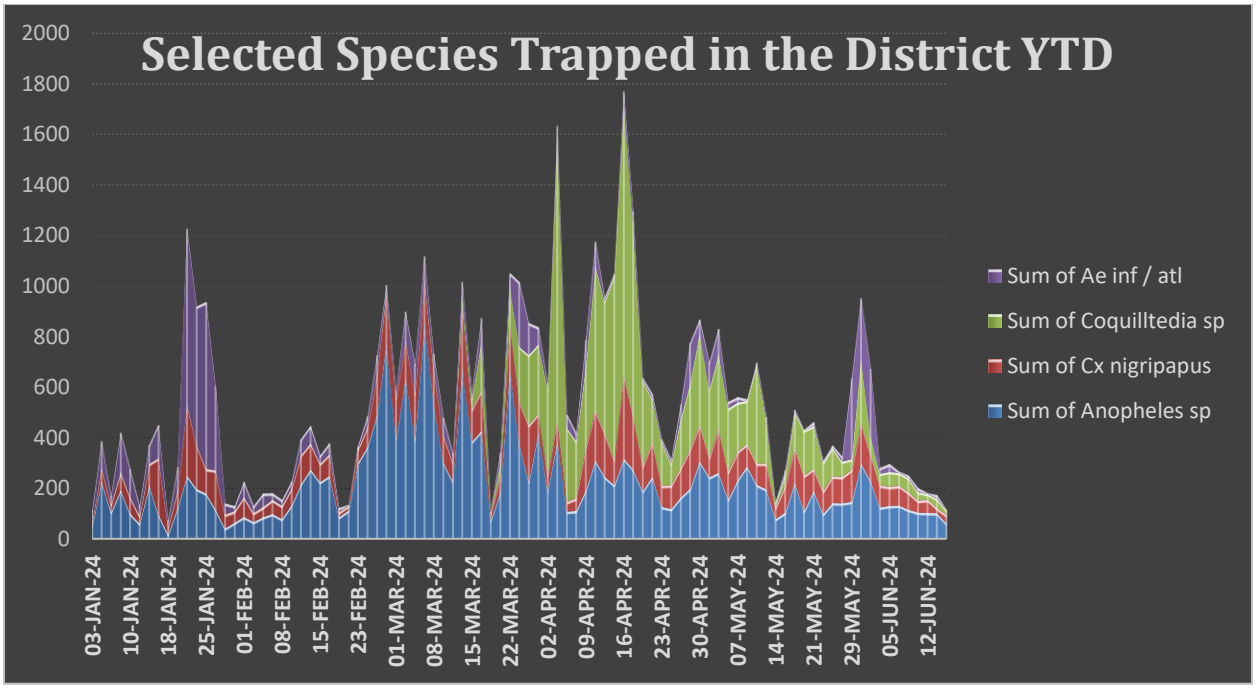


Week of 6/10/2024 Operations Update (24)

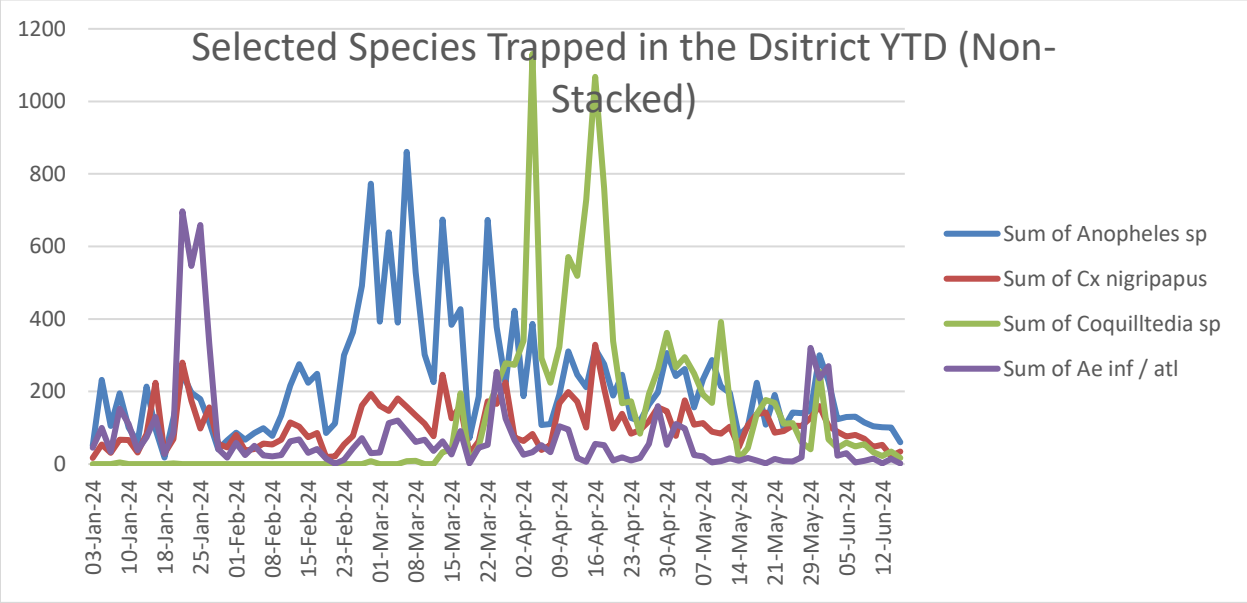
The mosquito population is low and getting lower. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



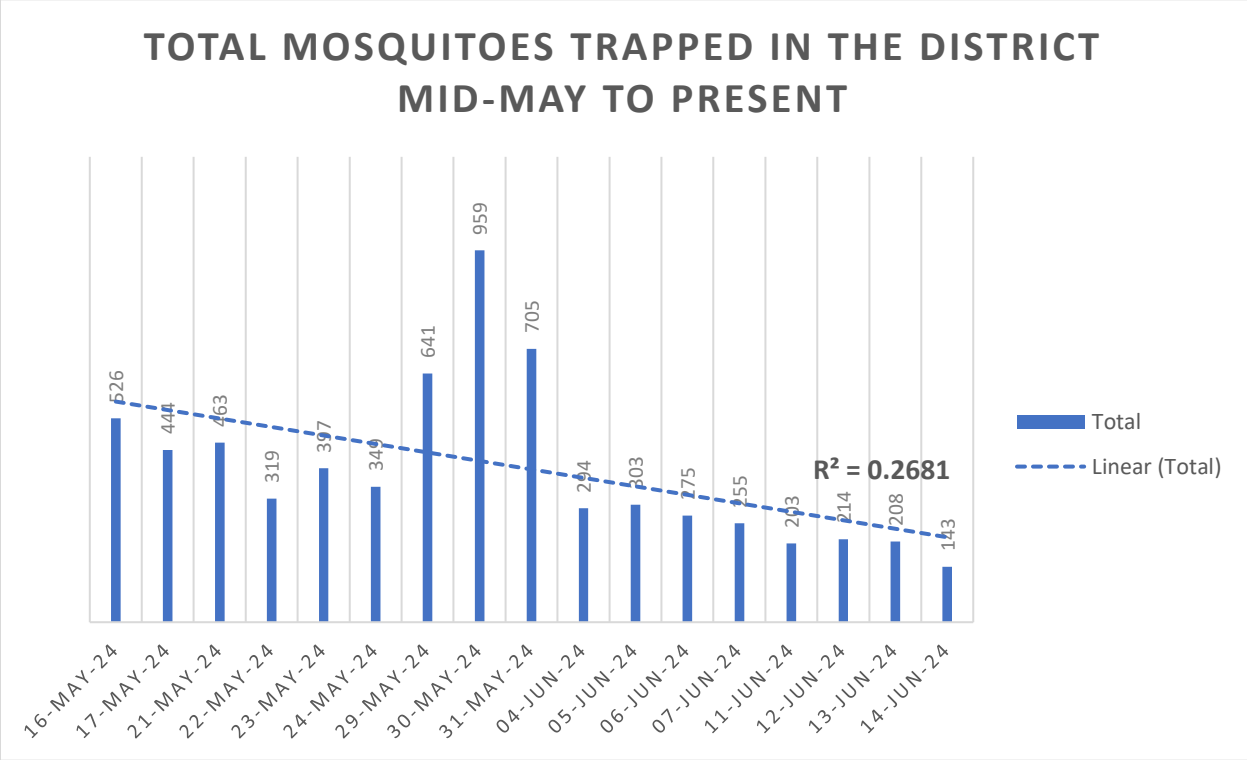
Limited rainfall has kept the mosquito population low since mid-April. Mosquito activity the two weeks prior has been unrelated to rainfall. This week the population of mosquitoes is extremely low.



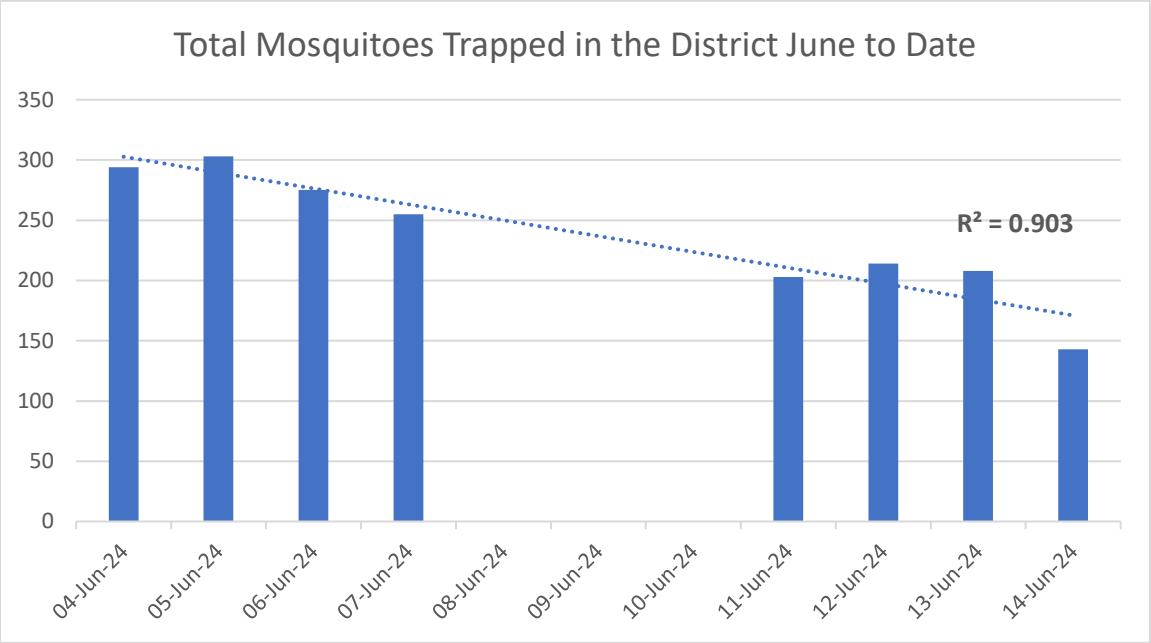
Week 22 saw an isolated emergence of *Aedes infirmatus* in the south end of Town Center, likely due to the construction of the BJ's store. We also saw an uptick in *Anopheles spp.* in week 22, which likely resulted from the drying down of breeding habitats forcing the larval population to leave the water as adults. Week 22 also saw the last uptick in *Coquilletidia perturbans* from the cat-tail swamps near the Quail Hollow trap.



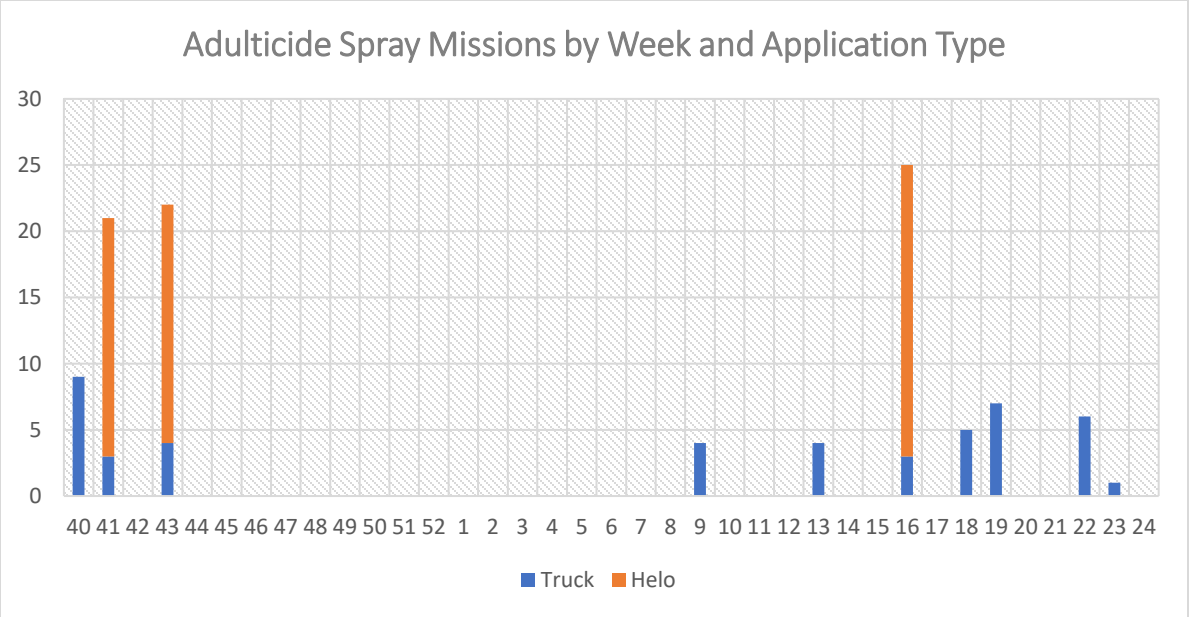
A general pattern of decline in the mosquito population District-wide in the past month is apparent but not statistically accurate due to the exceptions noted above (low R^2 value for linear trend line).



However, if we look at just the past two weeks, after the non-rain influenced spikes in mosquito population had been controlled, then the data does fit very well between the passage of time and decline in mosquito population (high R^2 value for linear trend line). The mosquito population replenishes itself almost constantly in subtropical Florida even in the winter months. However, there has not been significant rainfall to generate flooding conditions for flood-water mosquitoes and dry conditions along with high heat have caused many permanent water sites to dry down so that permanent-water species appear unable to replenish effectively.

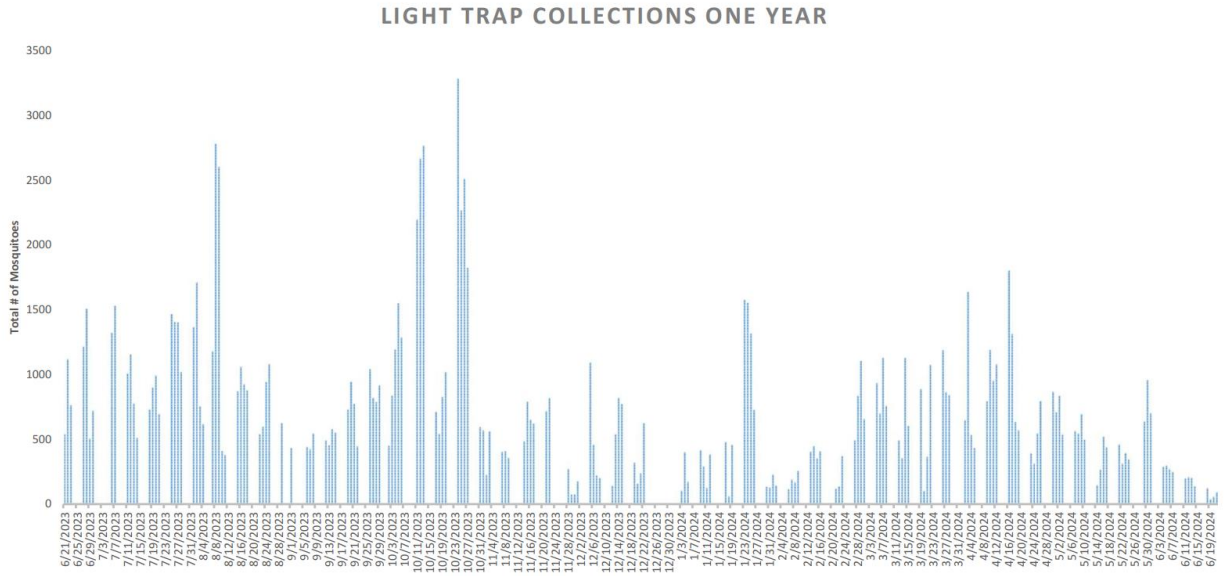


No spraying this week for adult mosquitoes.

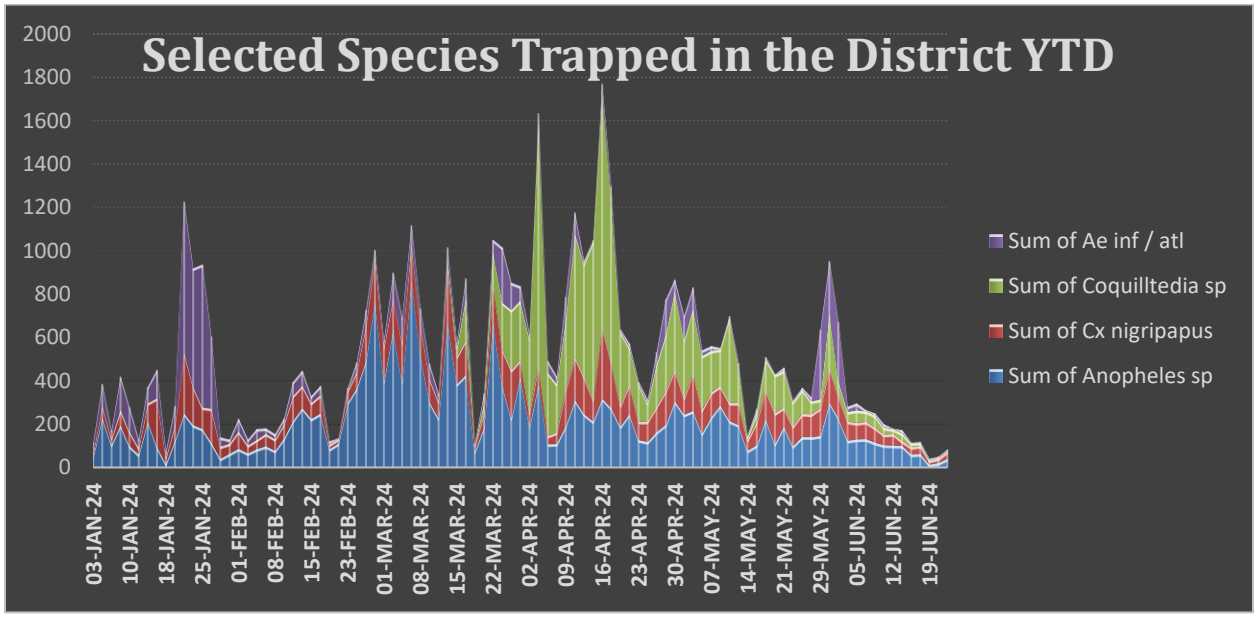


Week of 6/17/2024 Operations Update (25)

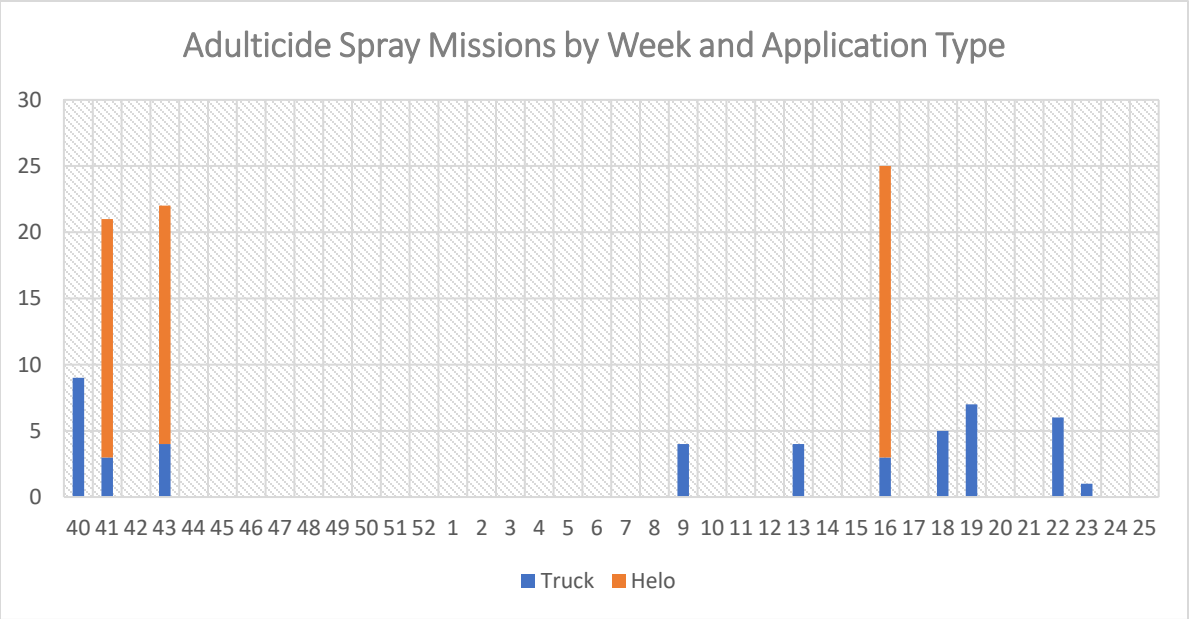
The mosquito population barely registered this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



Limited rainfall has kept the mosquito population low since mid-April. The mosquito population remains extremely low and declined to almost non-existent. Strong winds also played a role in decreasing mosquito activity this week.



No spraying this week for adult mosquitoes.



Florida Arbovirus Surveillance Week 25: June 16 - 22, 2024 View the full report

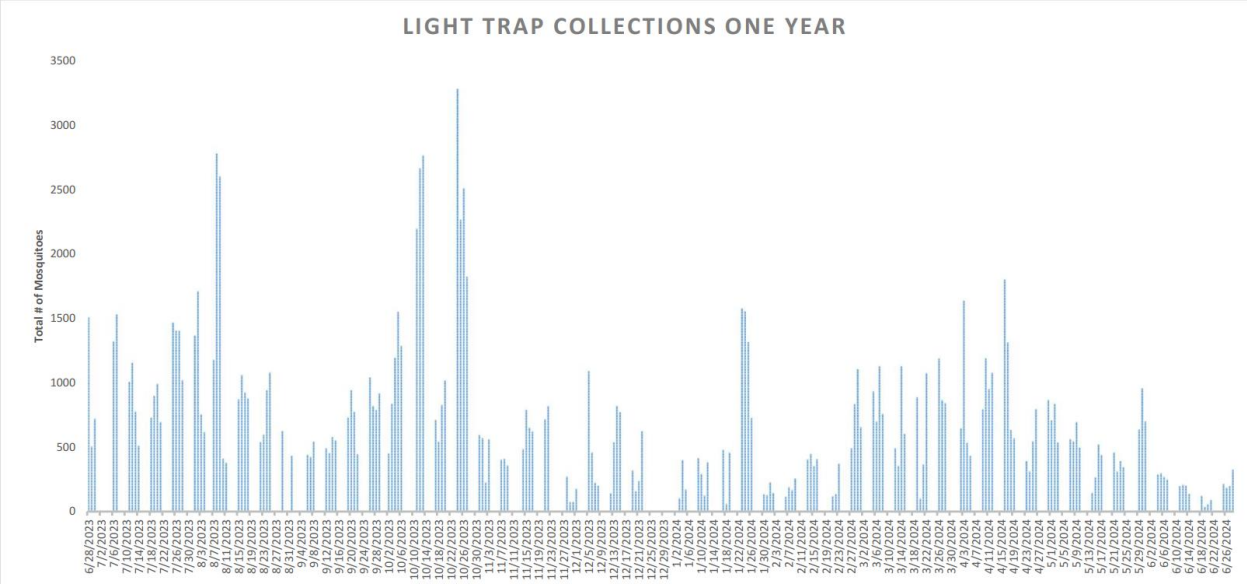
Advisories/Alerts: Hillsborough, Nassau, and Pasco counties are currently under a mosquito-borne illness advisory. Miami-Dade County is currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

2024 Dengue Cases Acquired in Florida: In 2024, eight cases of locally acquired dengue have been reported in Hillsborough, Miami-Dade (6) and Pasco counties with onset in January (3), February, March (2), April, and June. Six cases have been serotyped by PCR. Please see the table below for a breakdown of cases by county and serotype.

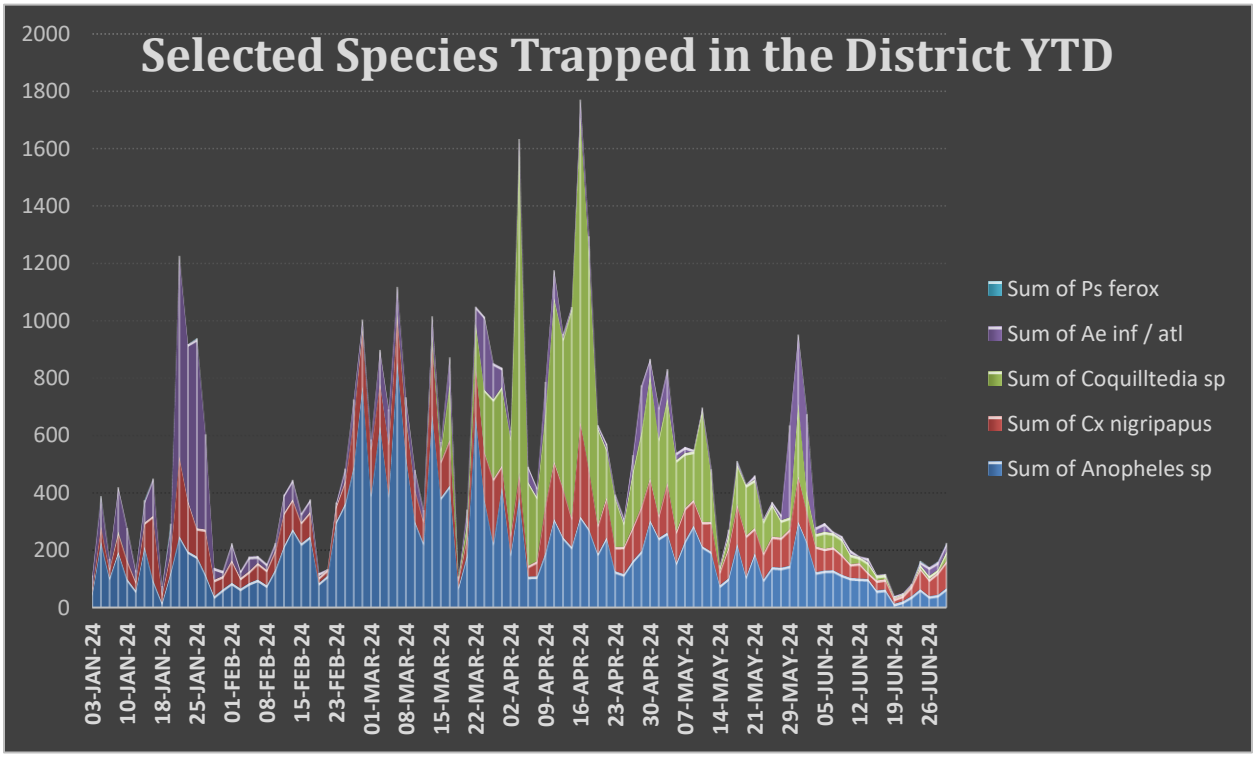
County of Exposure	DENV-1	DENV-3	Unknown	Total
Hillsborough	1			1
Miami-Dade		4	2	6
Pasco		1		1
Total	1	5	2	8

Week of 6/24/2024 Operations Update (26)

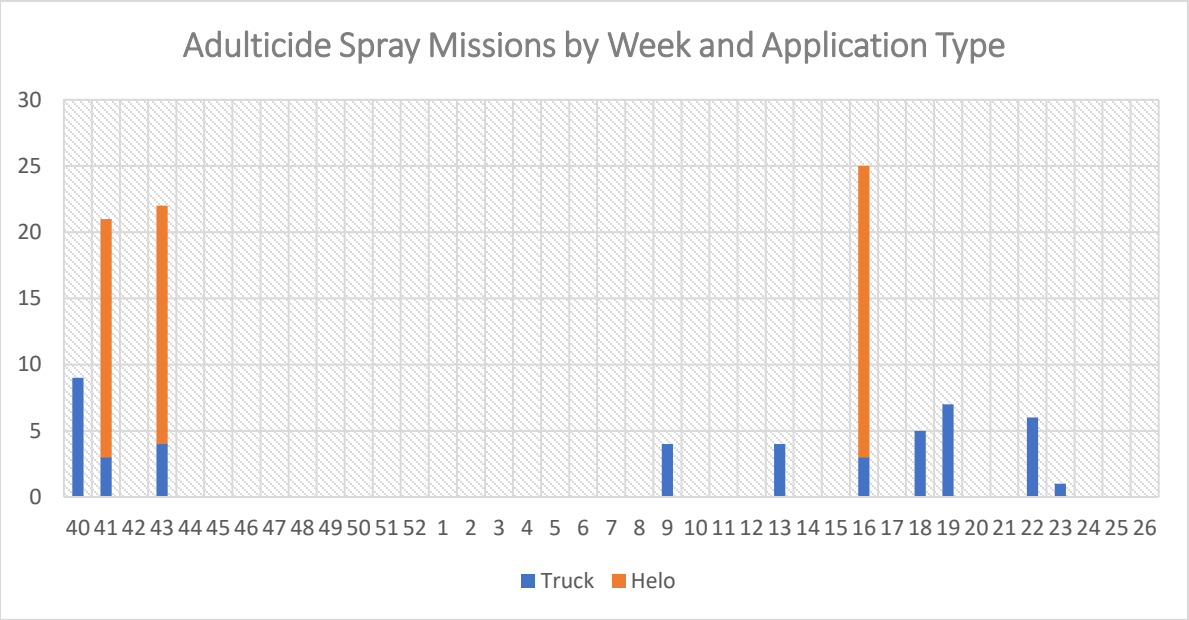
The mosquito population was on the rebound this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



Limited rainfall has kept the mosquito population low since mid-April. The mosquito population was extremely low and declined to almost non-existent before changing direction this week, with permanent water mosquito species returning to baseline.



No spraying this week for adult mosquitoes.



Florida Arbovirus Surveillance Week 26: June 23 - 29, 2024 View the full report

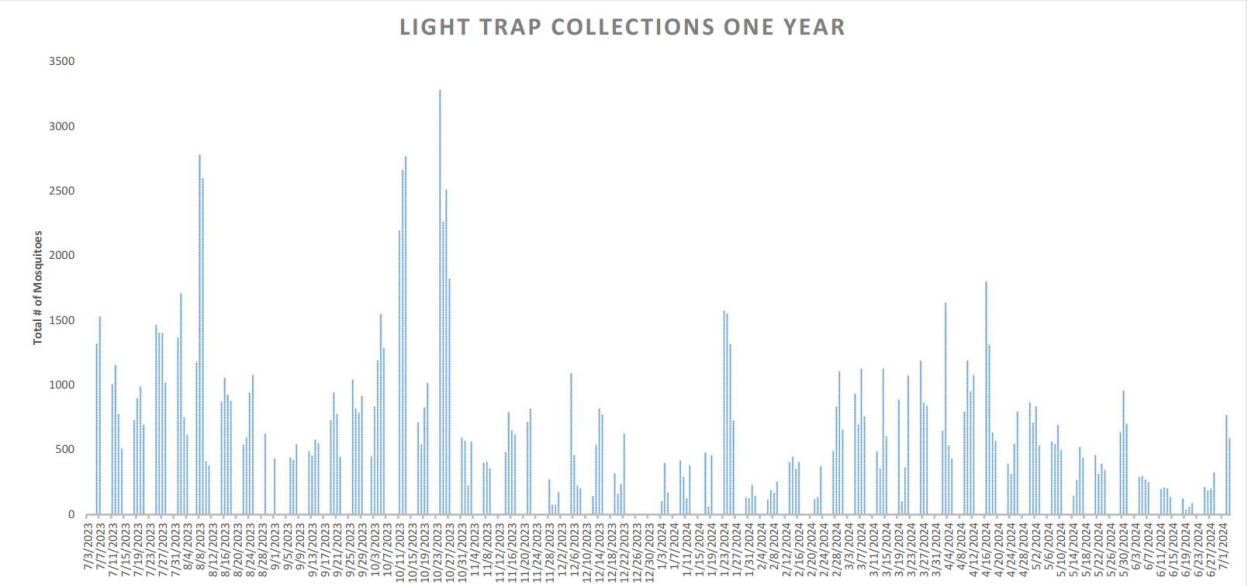
Advisories/Alerts: Hillsborough, Holmes, Nassau, and Pasco counties are currently under a mosquito-borne illness advisory. Miami-Dade and Monroe counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

2024 Dengue Cases Acquired in Florida: In 2024, 10 cases of locally acquired dengue have been reported in Hillsborough, Miami-Dade (6), Monroe (2), and Pasco counties with onset in January (3), February, March (2), April, and June (3). Eight cases have been serotyped by PCR. Please see the table below for a breakdown of cases by county and serotype.

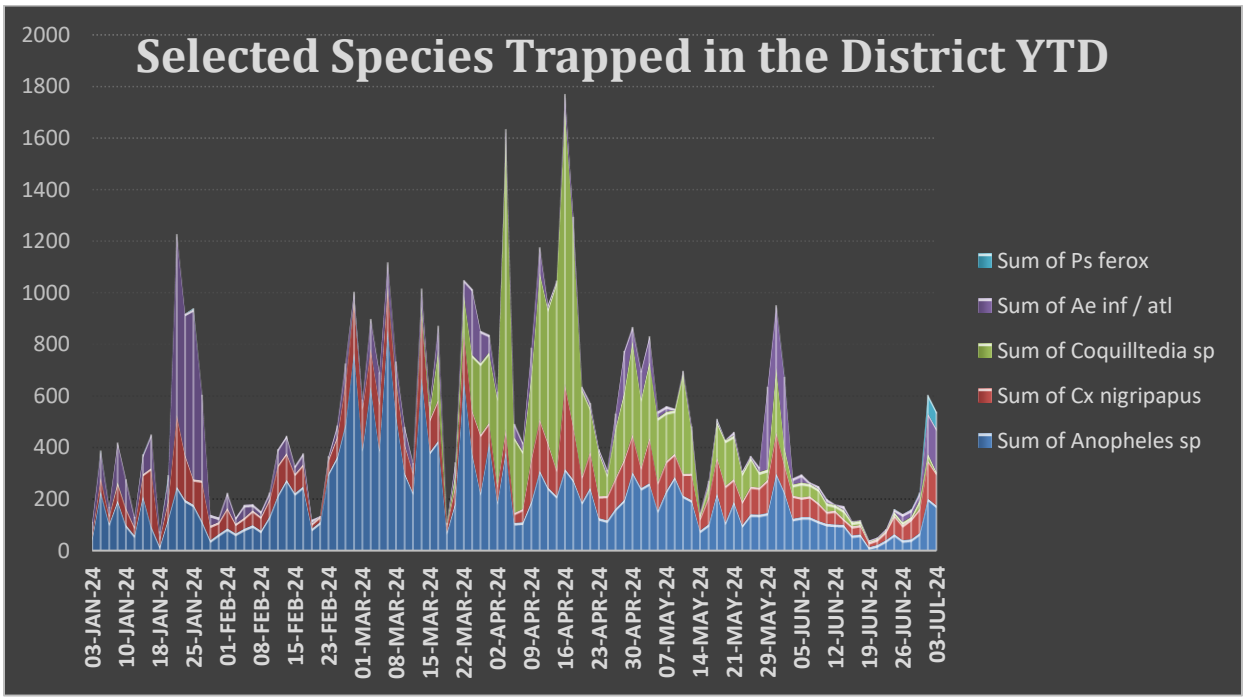
County of Exposure	DENV-1	DENV-3	Unknown	Total
Hillsborough	1			1
Miami-Dade		4	2	6
Monroe	2			2
Pasco		1		1
Total	3	5	2	10

Week of 7/1/2024 Operations Update (27)

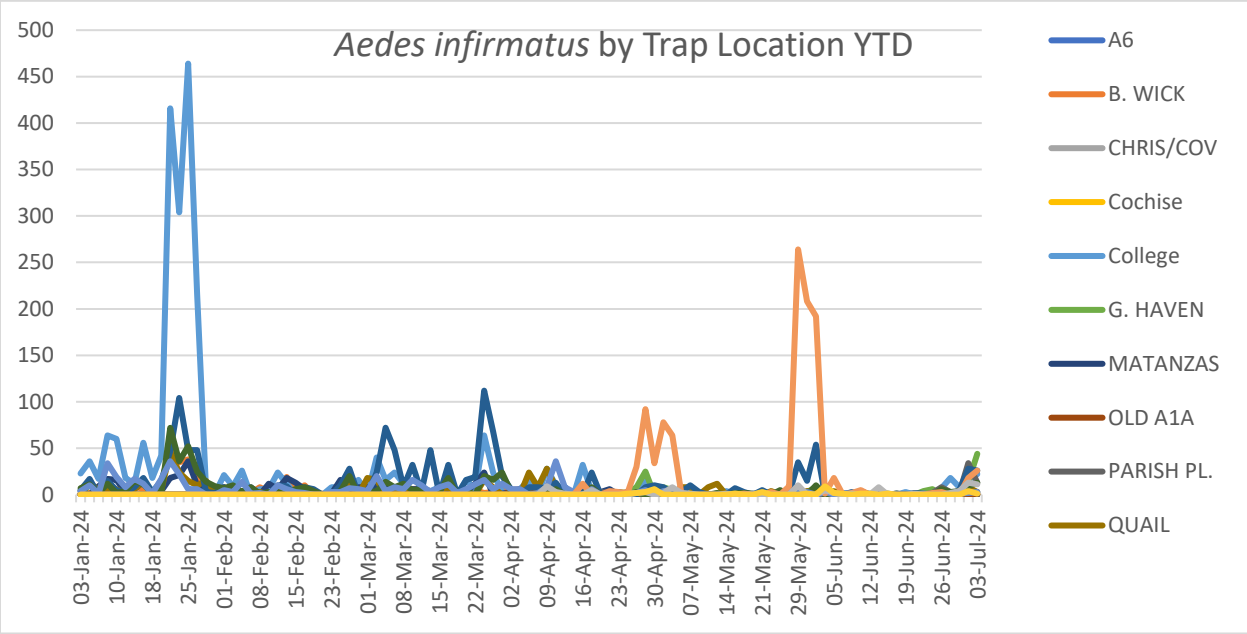
The mosquito population was on the rebound this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



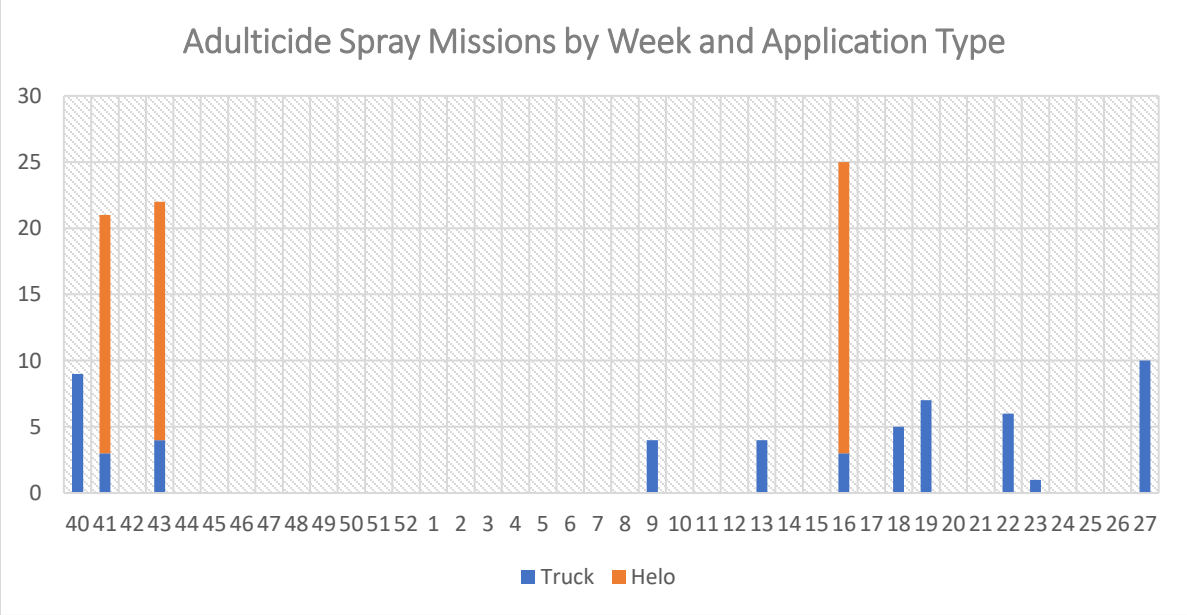
Floodwater species of mosquitoes returned to actionable levels this week while permanent-water species of mosquitoes stayed steady at baseline levels.



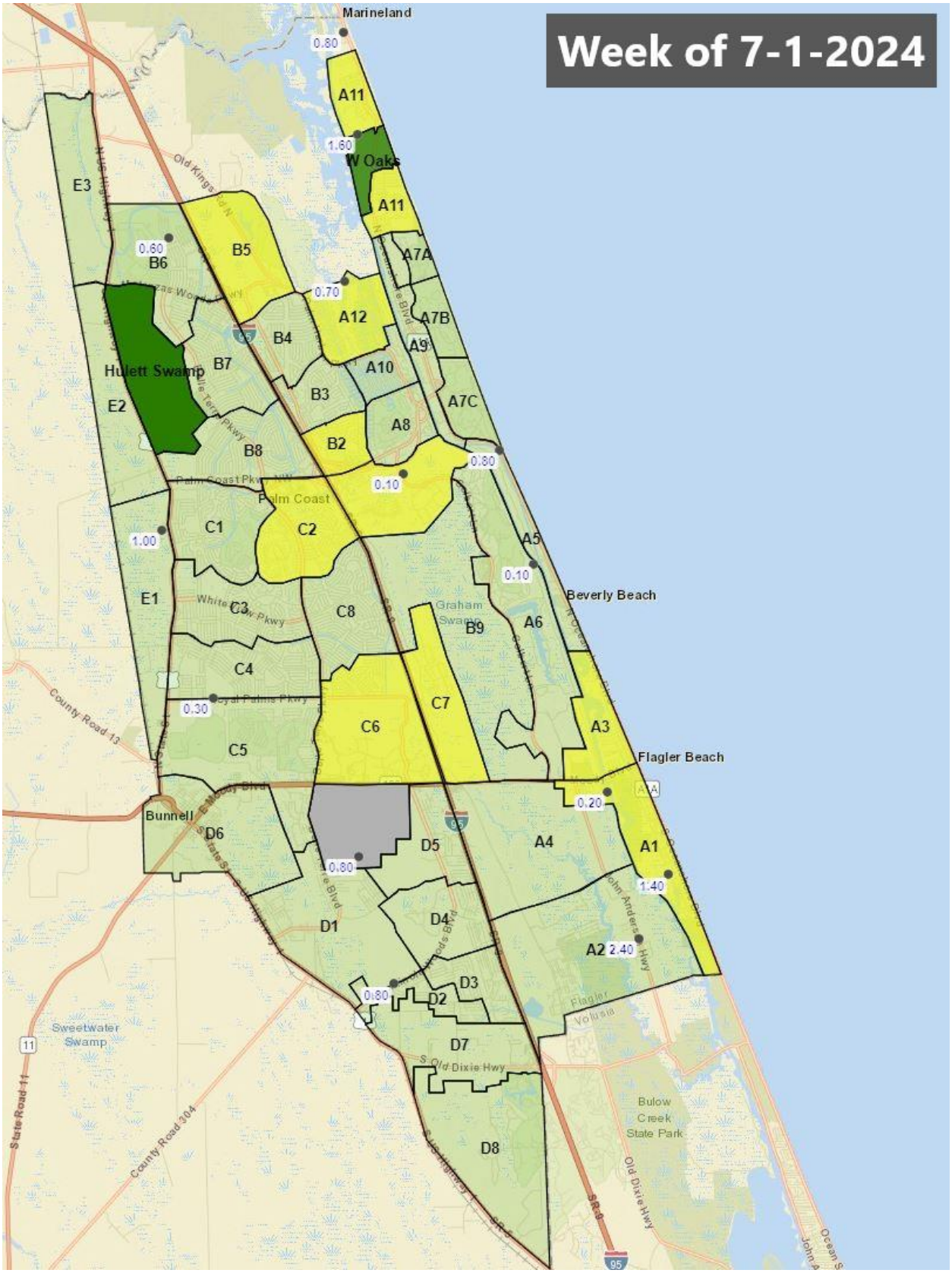
Aedes infirmatus has been a prominent pest in the Town Center (Zone C6), but also appeared in the vicinity of Grand Haven. Another species of floodwater mosquito, *Psorophora ferox*, was also found in the Town Center as well as at it's usual breeding grounds at the College trap location. Saltmarsh mosquitoes were also a problem. The saltmarsh dried down extensively previous to the rainfall we have received over the past two weeks. That means many areas that typically remain flooded in the saltmarsh and do not normally breed mosquitoes did produce mosquitoes as these areas are not pre-treated with larvicide to prevent the production of mosquitoes in the saltmarsh.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.

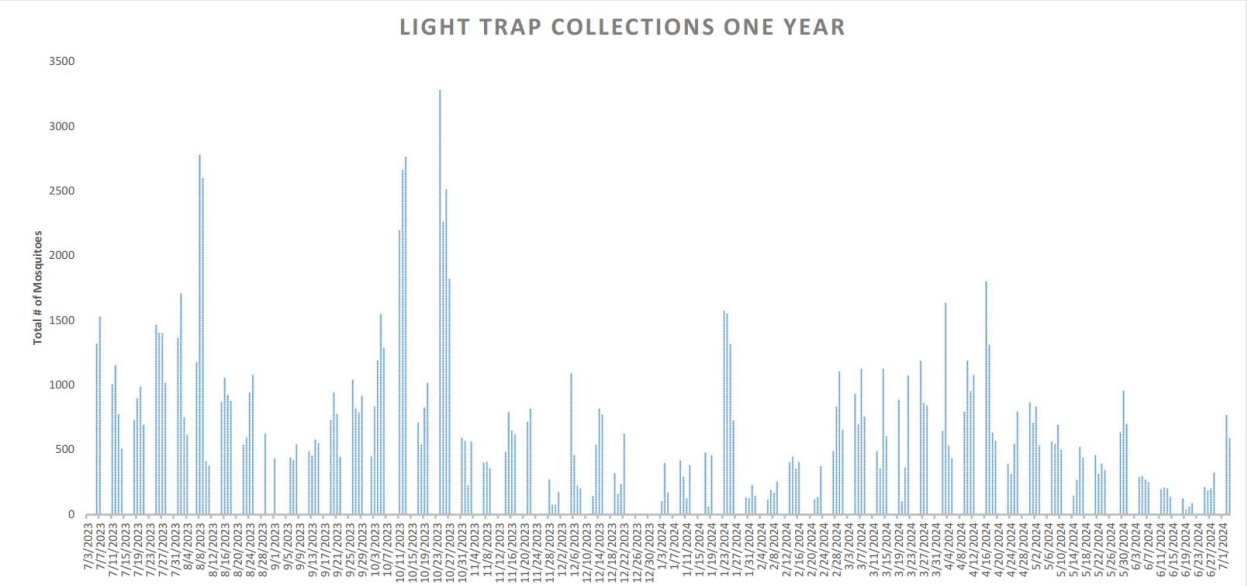


Zones highlighted in yellow were treated by truck this week.

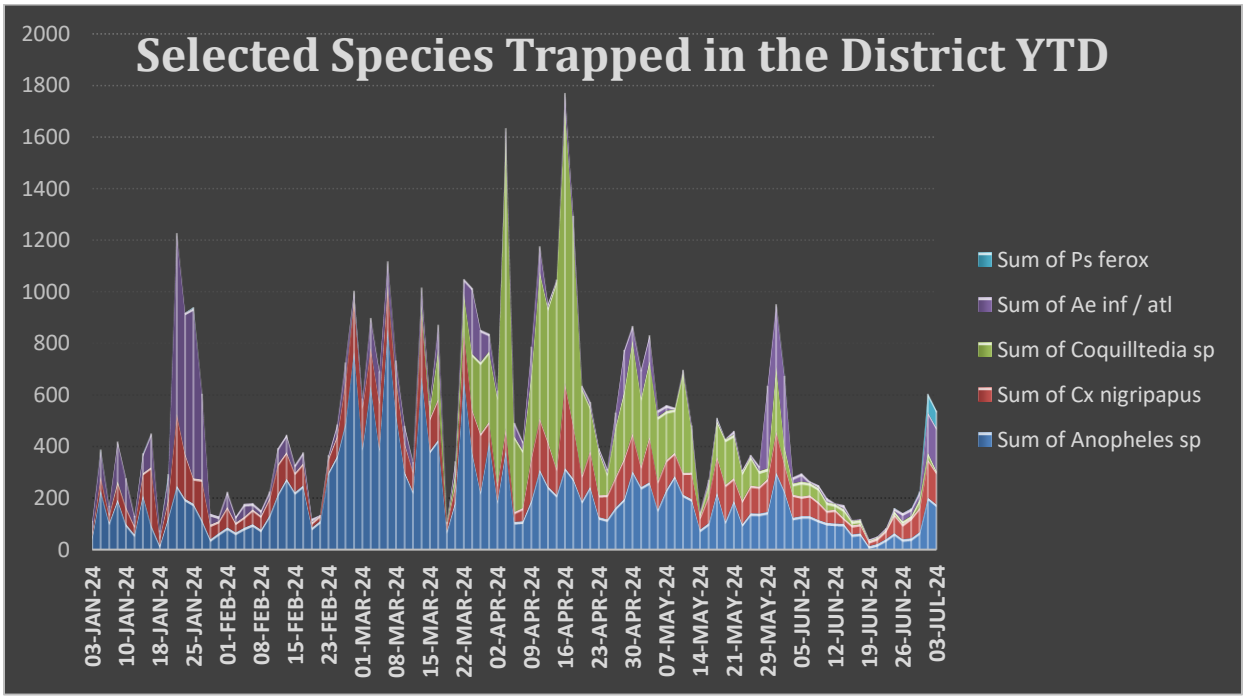


Week of 7/1/2024 Operations Update (27)

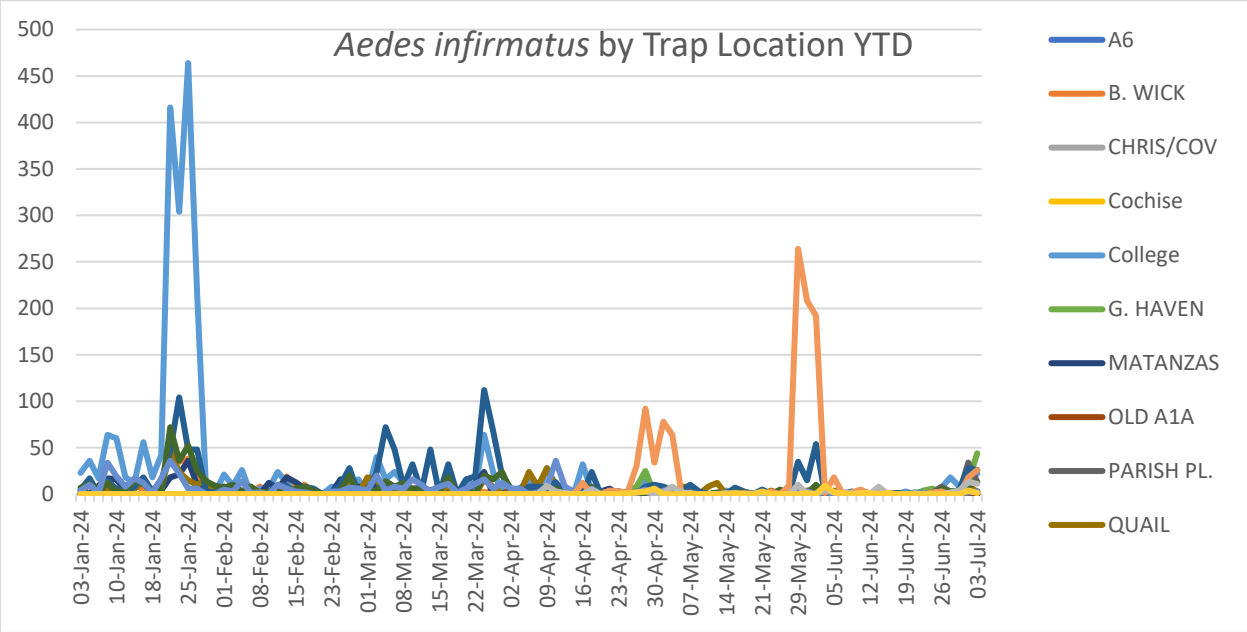
The mosquito population was on the rebound this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



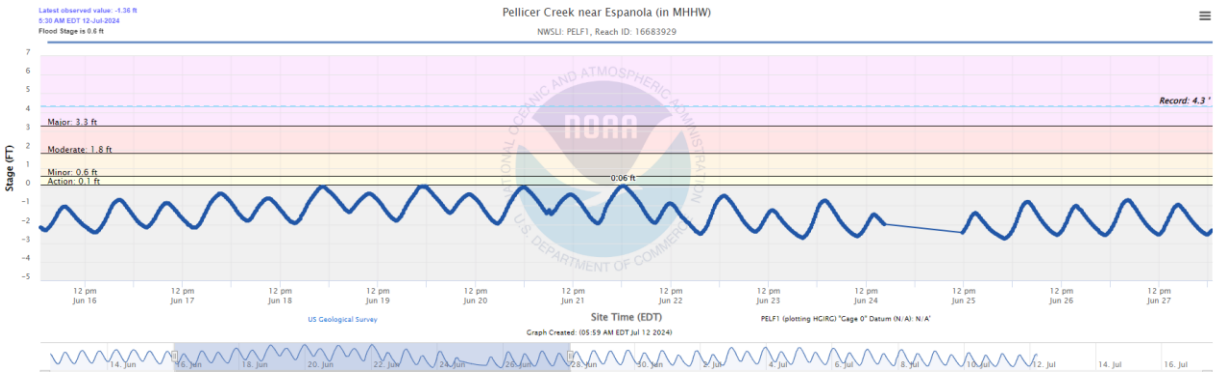
Floodwater species of mosquitoes returned to actionable levels this week while permanent-water species of mosquitoes stayed steady at baseline levels.



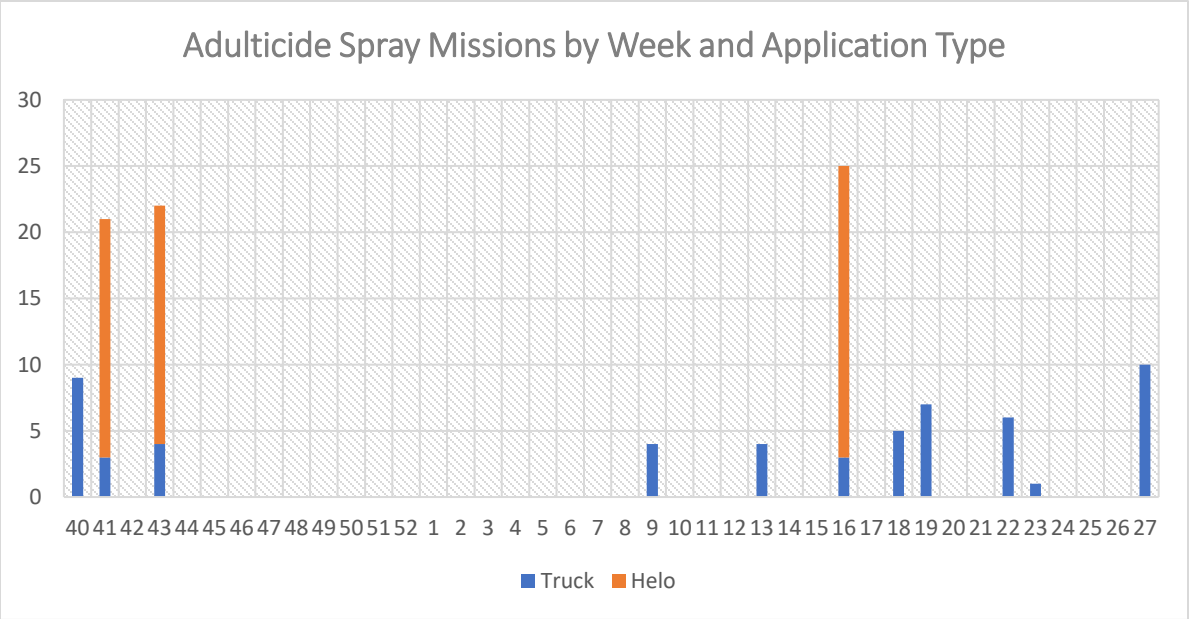
Aedes infirmatus has been a prominent pest in the Town Center (Zone C6), but also appeared in the vicinity of Grand Haven. Another species of floodwater mosquito, *Psorophora ferox*, was also found in the Town Center as well as at it's usual breeding grounds at the College trap location.



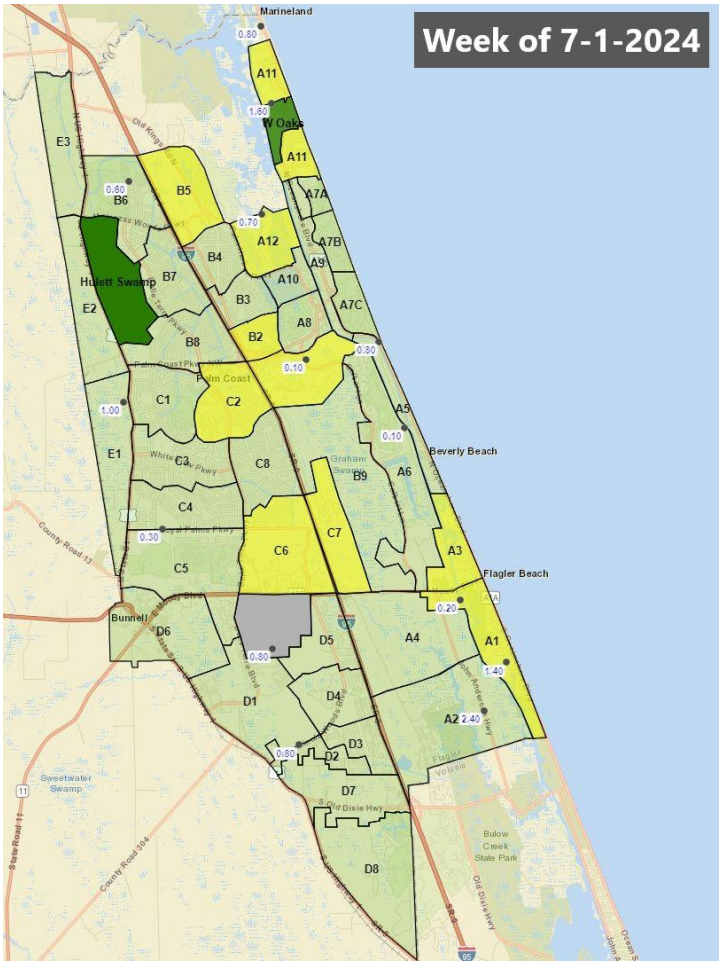
Saltmarsh mosquitoes were also a problem.The saltmarsh dried down extensively previous to the rainfall we have received over the past two weeks and high tides June 18 - 21. That means many areas that typically remain flooded in the saltmarsh and do not normally breed mosquitoes did produce mosquitoes as these areas are not pre-treated with larvicide to prevent the production of mosquitoes in the saltmarsh.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.

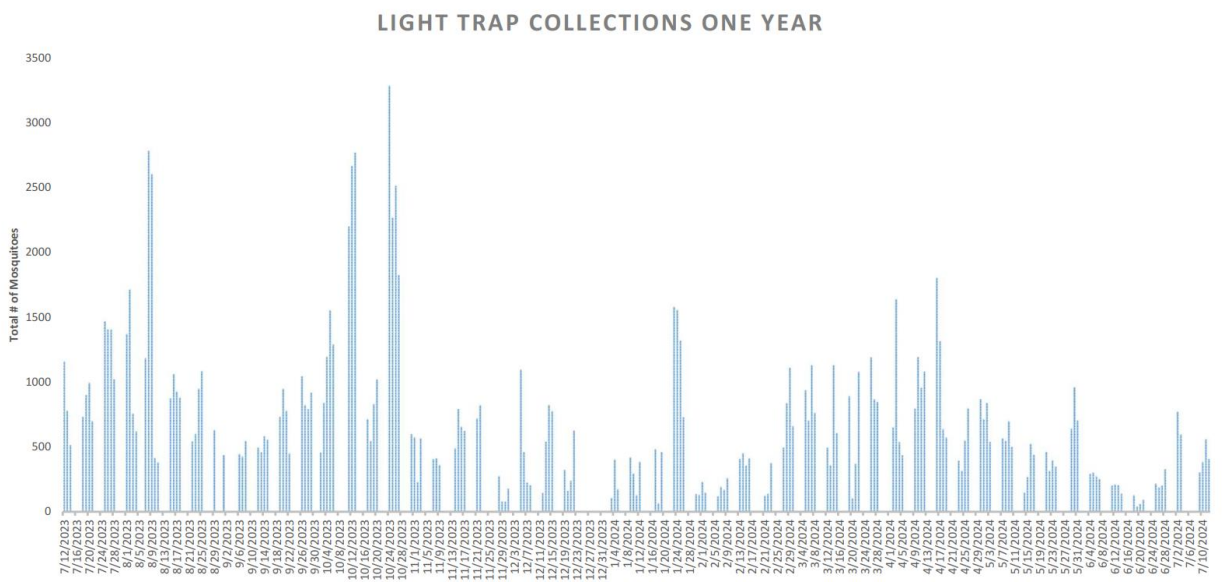


Zones highlighted in yellow were treated by truck this week.

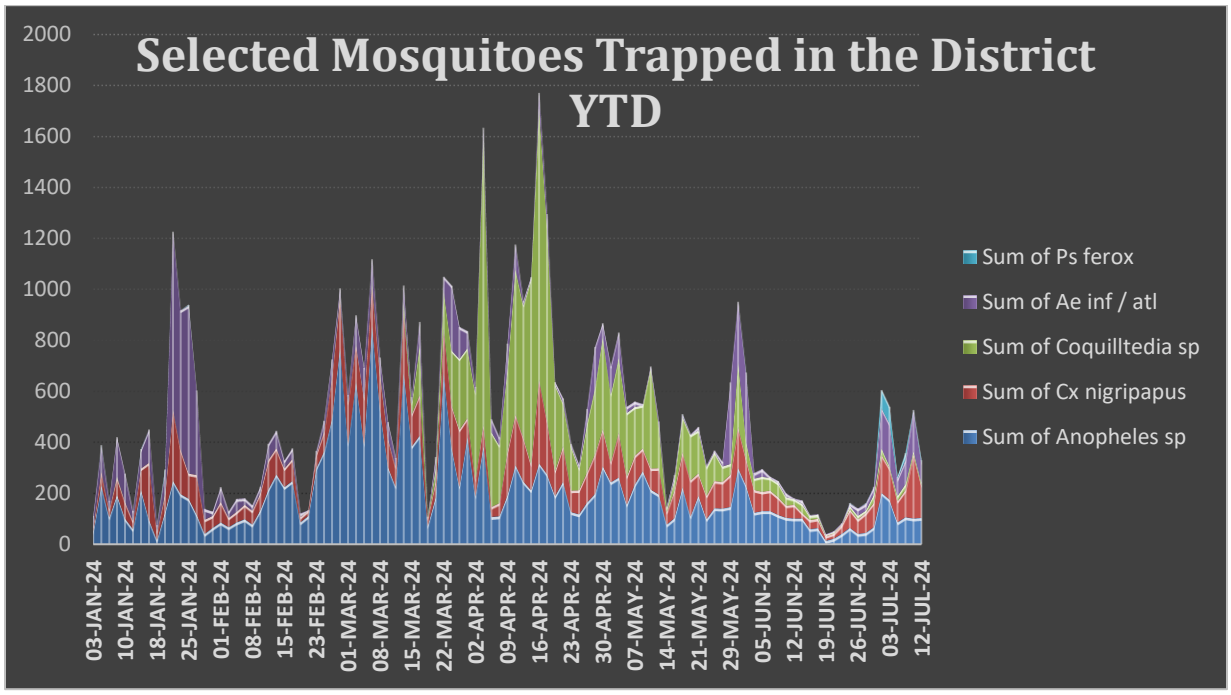


Week of 7/8/2024 Operations Update (28)

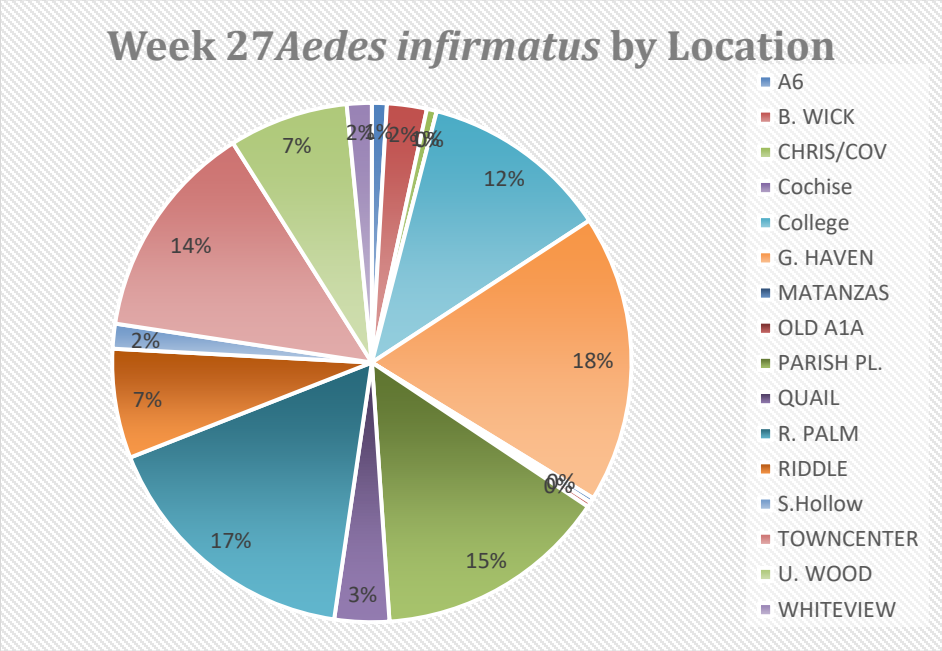
A moderate level of floodwater mosquitoes this week. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).

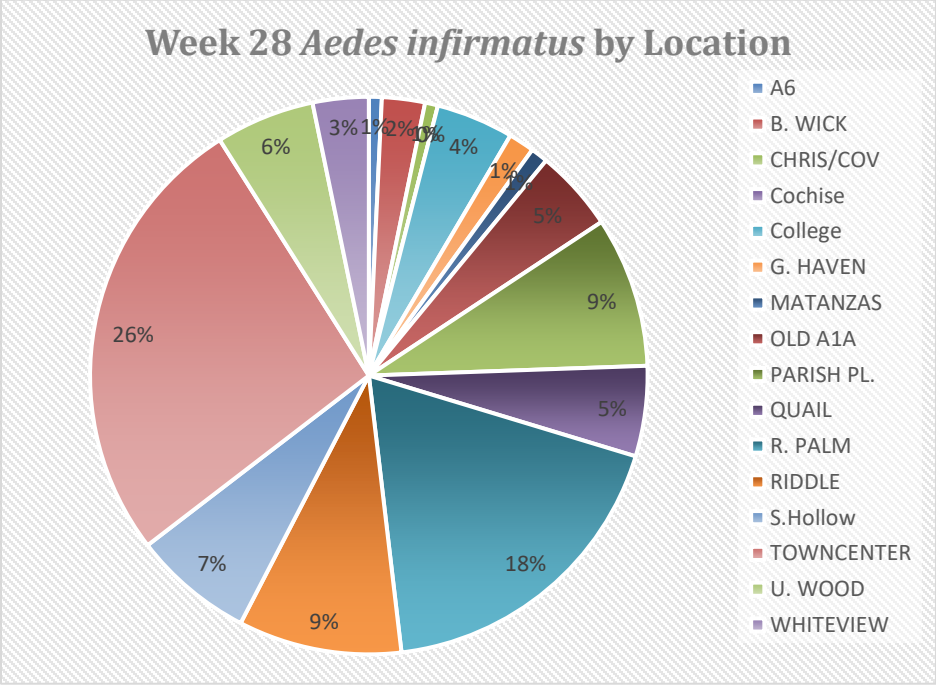


Floodwater species of mosquitoes returned to actionable levels last week and stayed at roughly the same levels, albeit at varied abundance at different locations. Permanent-water species of mosquitoes stayed steady at baseline levels after rebounding from almost non-existent, although *Anopheles spp.* declined.

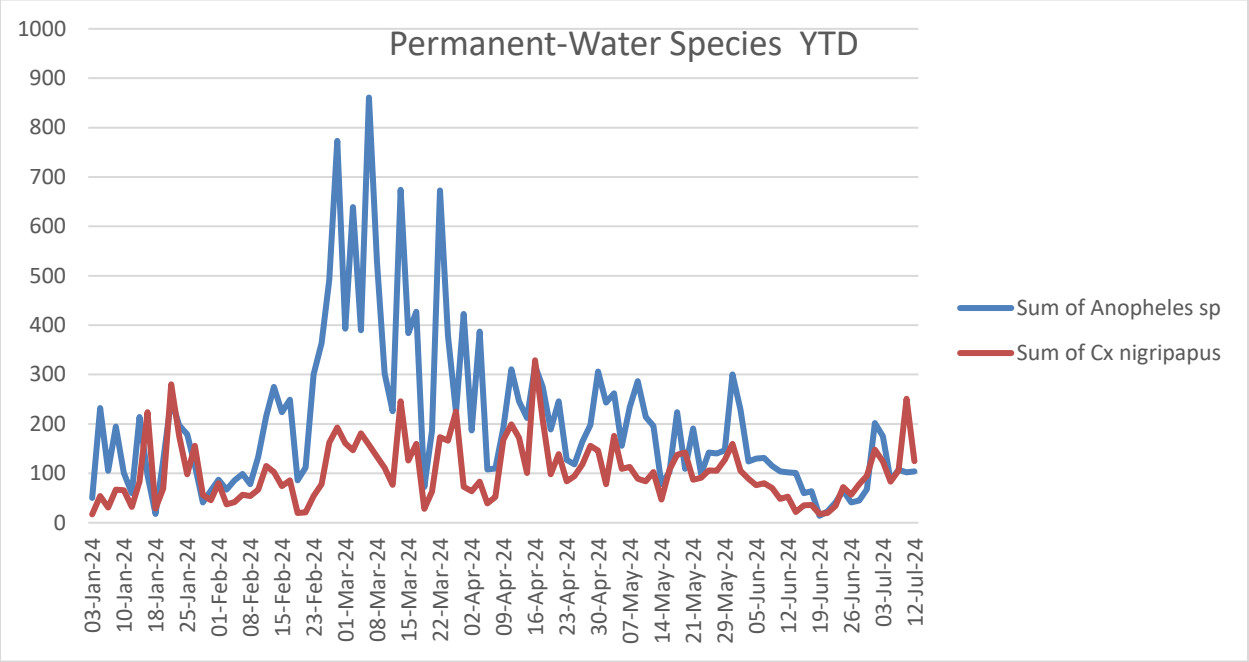


Last week (27) *Aedes infirmatus*, the most prevalent floodwater species in Flagler County, was most abundant in Grand Haven, Royal Palm (North Town Center), Parrish, and Town Center (South Town Center). This week (28) it was Town center locations accounting for nearly half of the population, with Riddle being an adiditional hot-spot. Primarily mosquito populations of this species fluctuate by location as differing amounts of rain fall accumulate, driving the growth of mosquitoes.

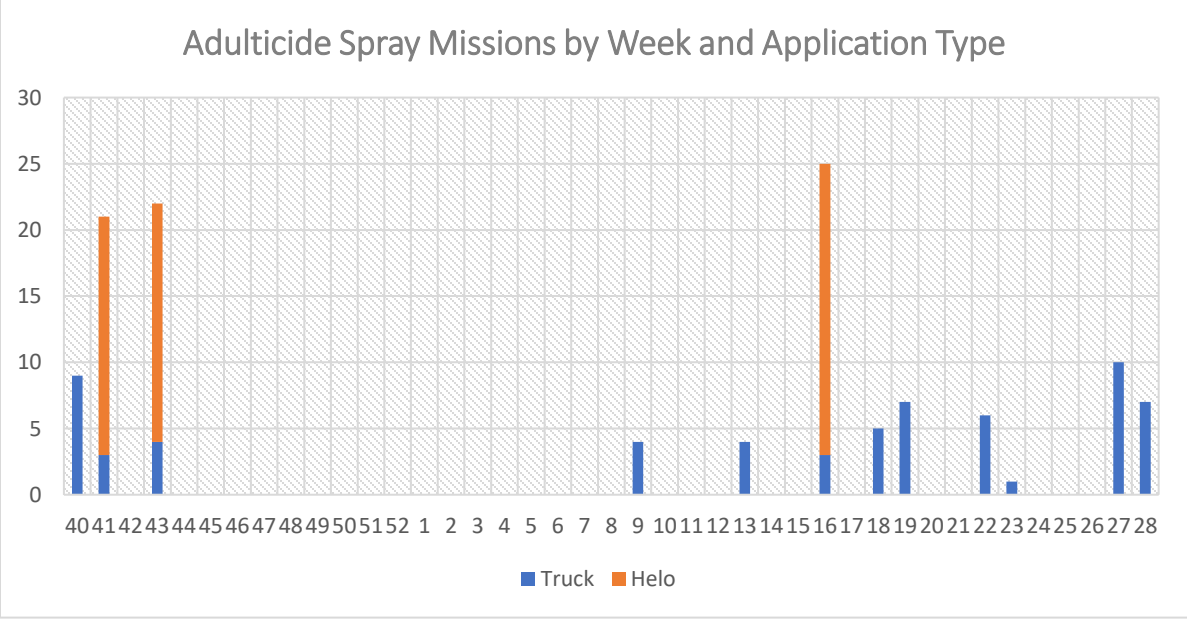




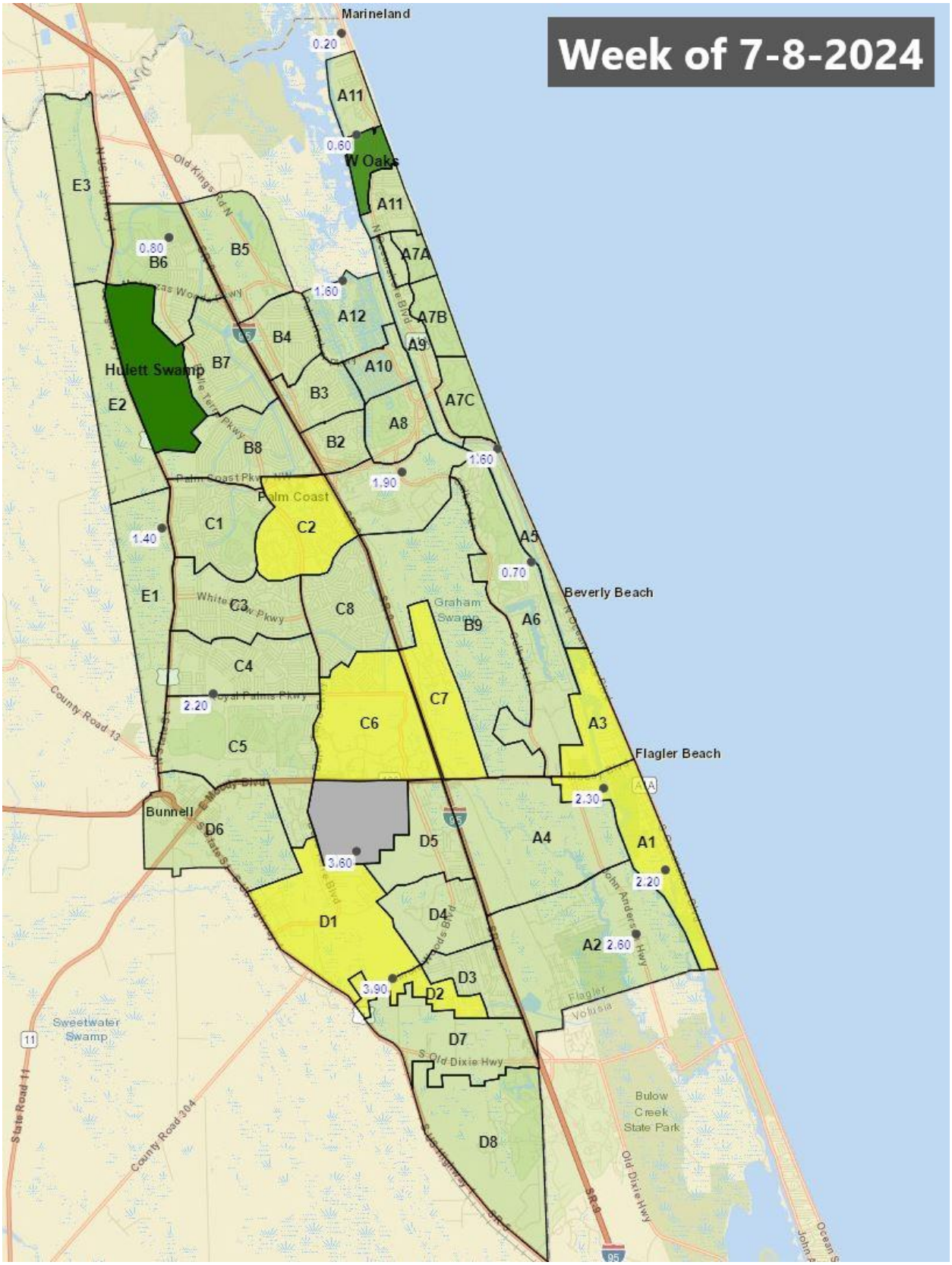
We normally see two permanent water sepcies year-round in our surveillance traps, and one is consistently more abundant than the other. This is because the two speices prefer slightly different habitats which differ in abundance throughout the District. *Anopholes spp.* prefer open, more natural bodies of water such as natural ponds, lakes, and basin wetlands. *Culex spp.* prefer ditches, man-made retention ponds, and swamps. A contributing factor is the quality of the water.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.

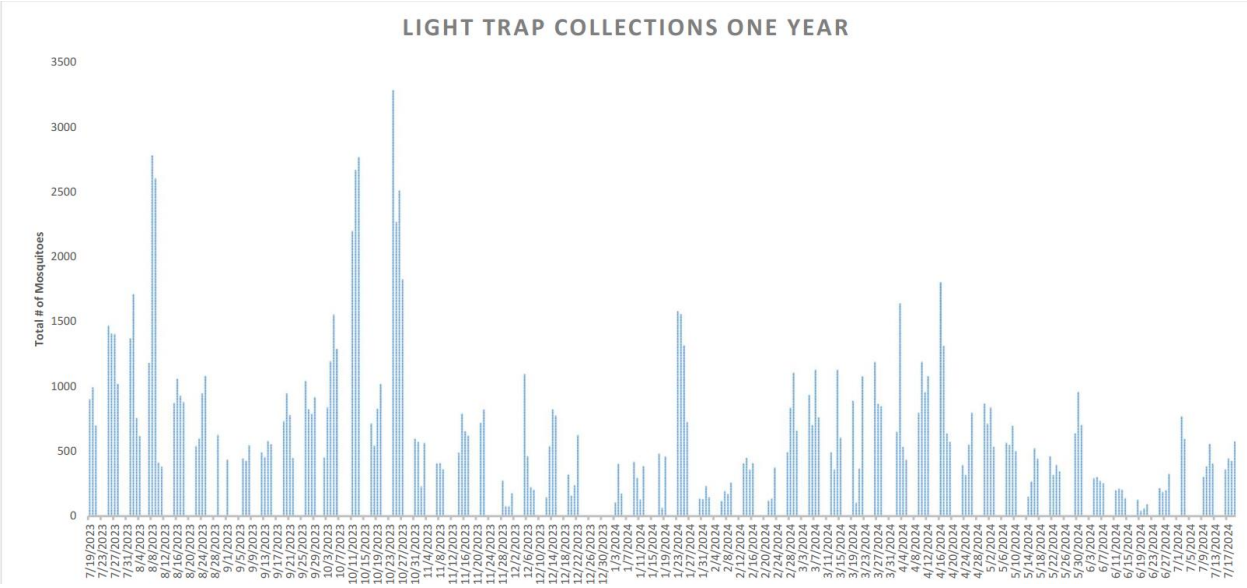


Zones highlighted in yellow were treated by truck this week.

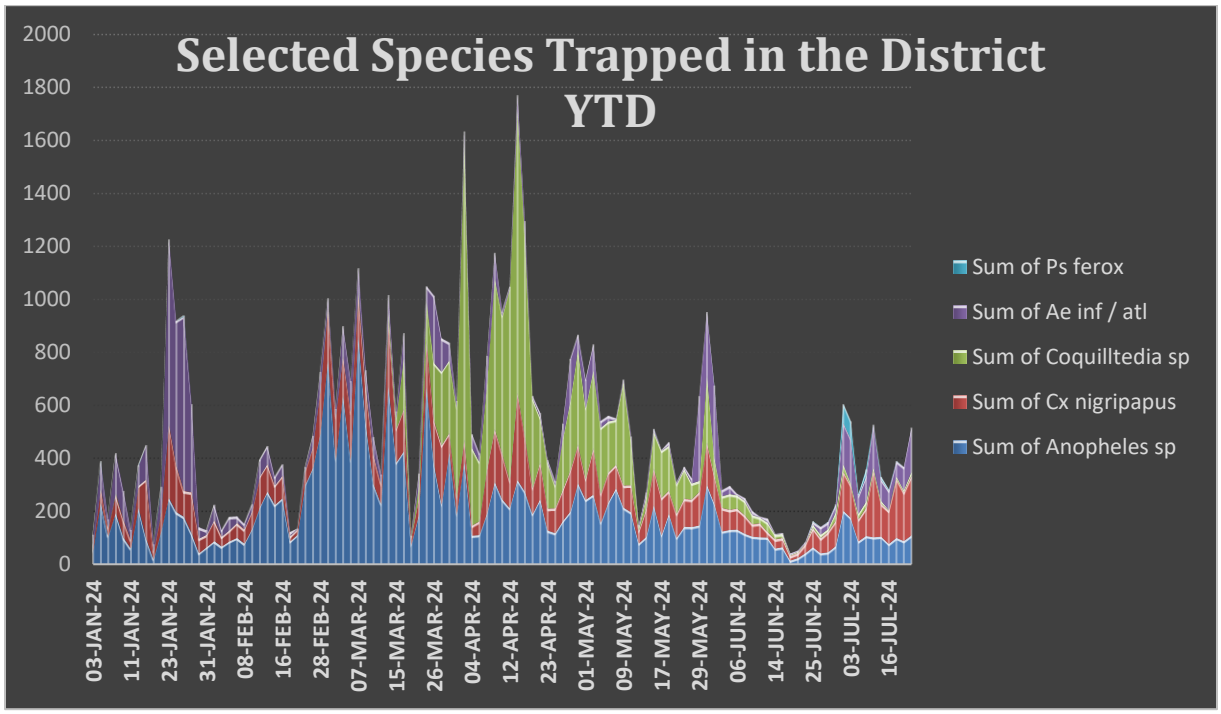


Week of 7/15/2024 Operations Update (29)

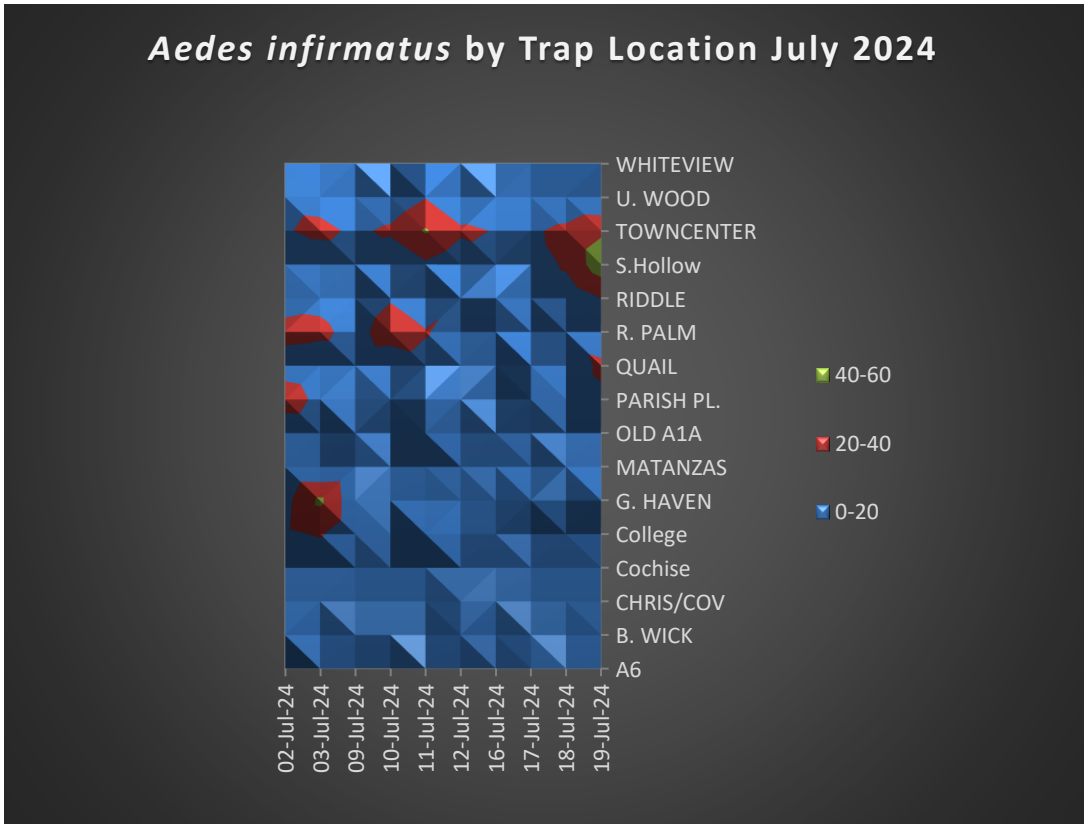
A moderate level of floodwater mosquitoes for three weeks running. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



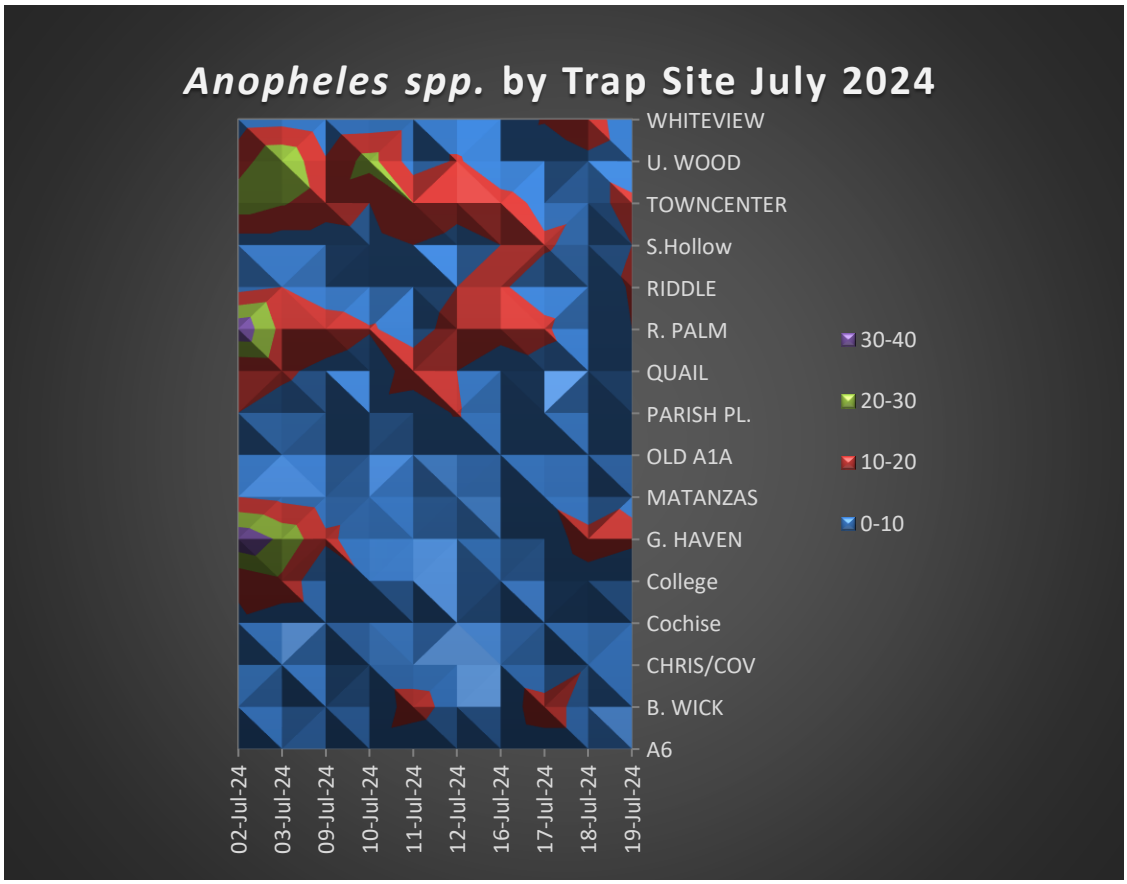
Floodwater species of mosquitoes have stayed at roughly the same levels for three weeks, albeit at varied abundance at different locations. Permanent-water species of mosquitoes stayed steady at baseline levels after rebounding from almost non-existent, although *Anopheles spp.* numbers have been relatively flat.



The Town Center area has been a focal point of floodwater mosquito activity for July as evidenced by the traps for Town Center and Royal Palms. Numbers for the floodwater species *Aedes infirmatus* were highest in January of this year. We have speculated in previous reporting that the source of the consistent level of mosquitoes of this species in Town Center is construction both in Town Center and across Highway 100 for the BJ's. Artificial flooding from construction would explain the consistent presence of this floodwater species when rain has been a limiting factor and there is little abundance elsewhere.



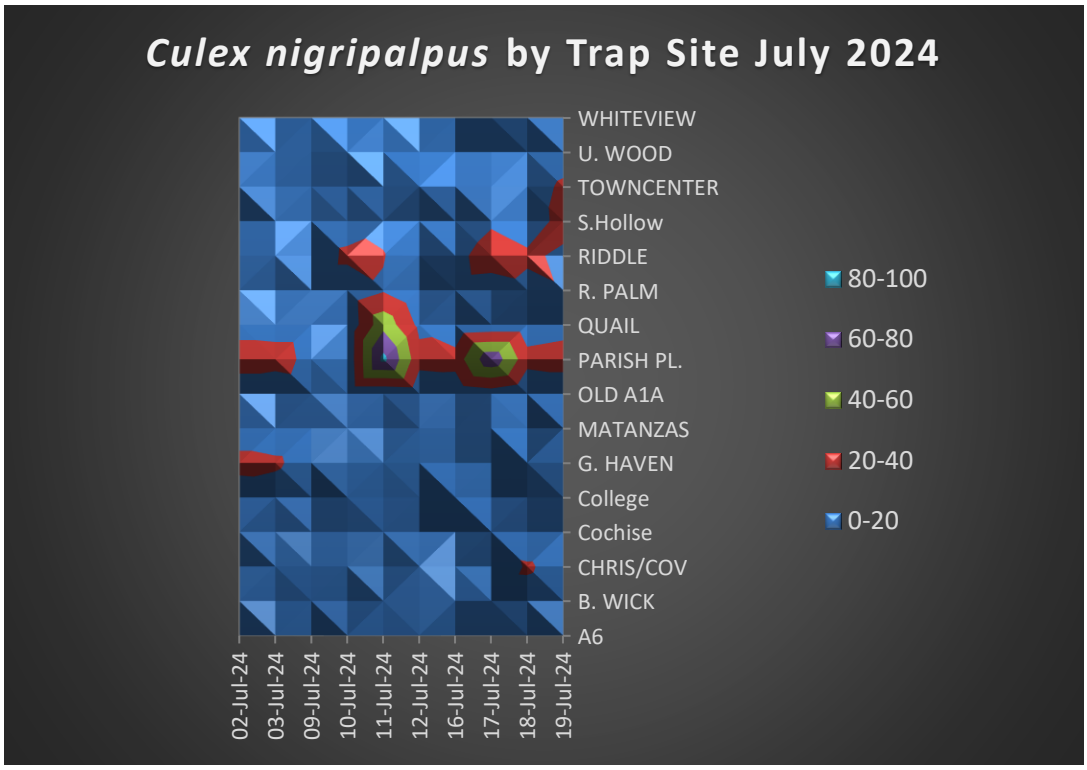
After the first few days in July, *Anopheles spp.* has been at a consistent level, which is very unusual. Normally the population of any mosquito species fluctuates from day to day based on wind speed and direction (towards the trap or not), as well as factors like rain, humidity, and temperature that affect the activity of mosquitoes. Examining the details at individual traps, you can see that there is variation day to day at each location.



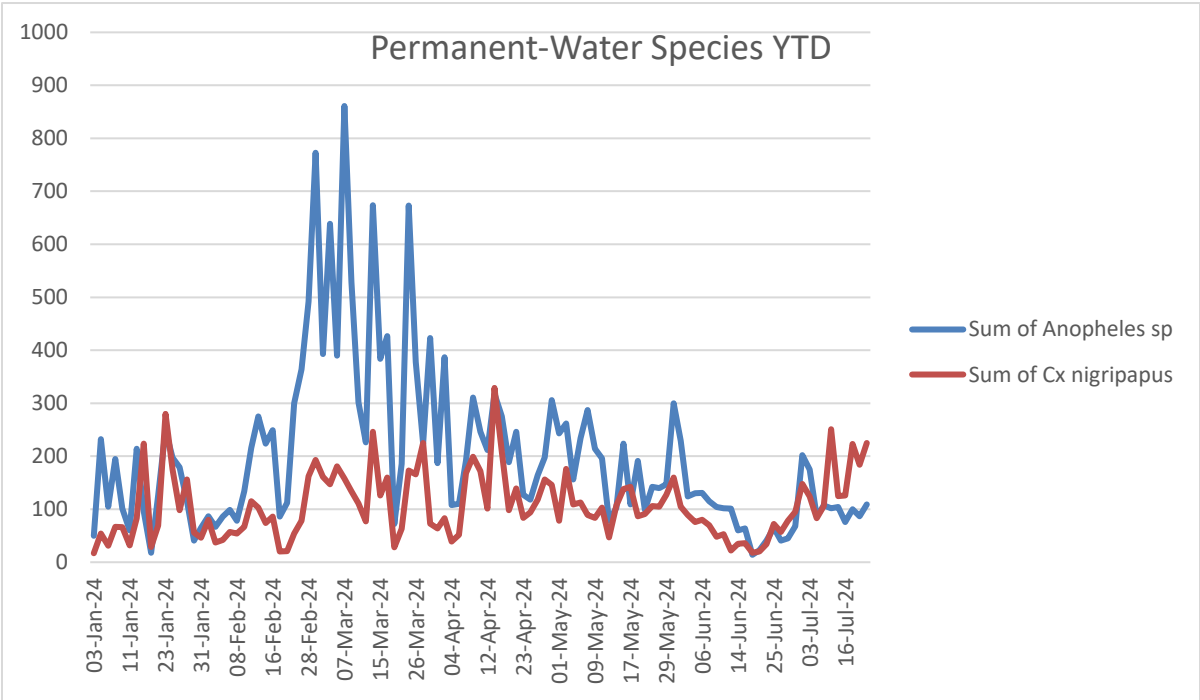
Culex nigirpalpus is another permanent water species, but it prefers a slightly different habitat. Last week we described the differences in habitat preferences:

"We normally see two permanent water species year-round in our surveillance traps, and one is consistently more abundant than the other. This is because the two species prefer slightly different habitats which differ in abundance throughout the District. Anopheles spp. prefer open, more natural bodies of water such as natural ponds, lakes, and basin wetlands. Culex spp. prefer ditches, man-made retention ponds, and swamps. A contributing factor is the quality of the water."

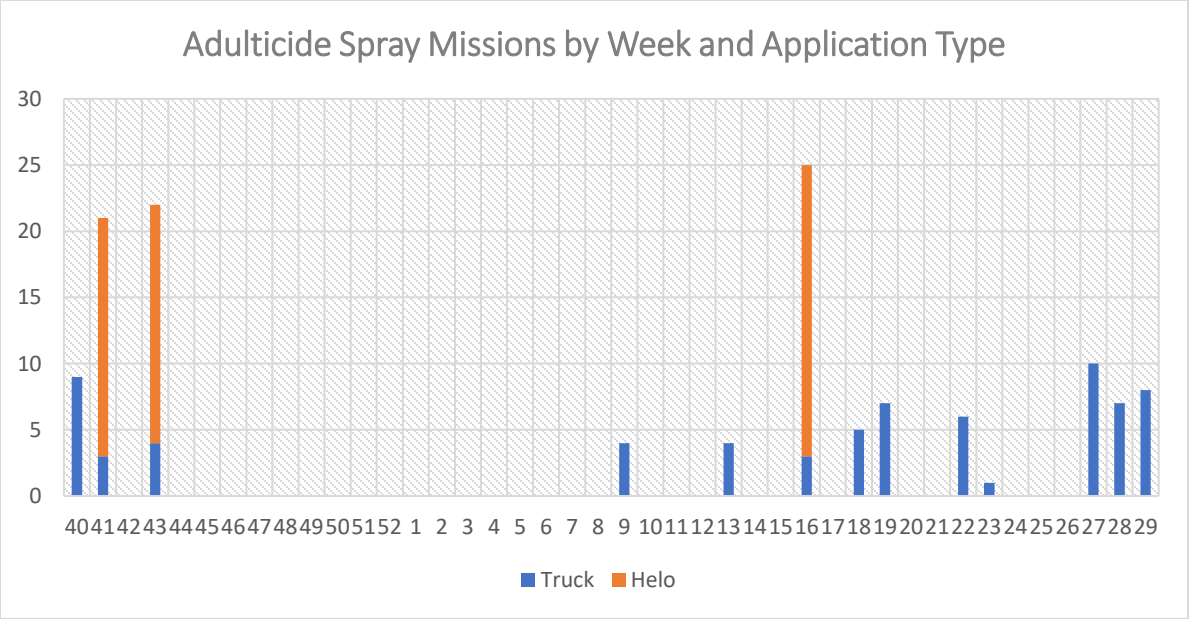
This species is not currently widespread and has been focused in just a few locations with the majority in a single trap location.



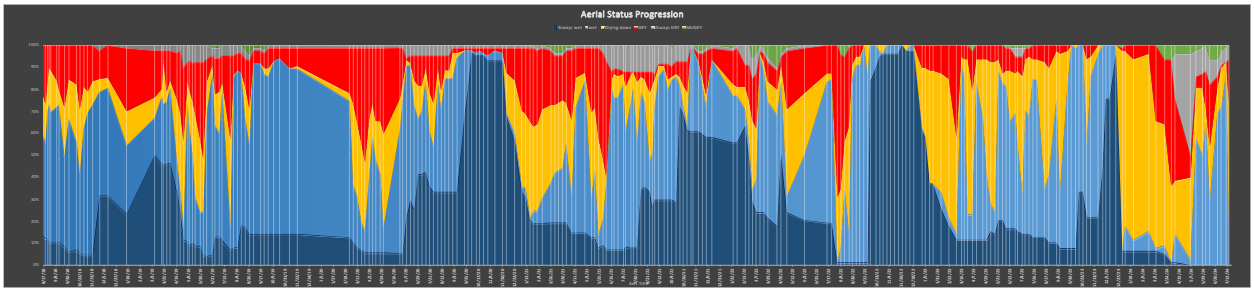
Culex nigirpalpus is at roughly the same population numbers as it has been over the course of the year, whereas *Anopheles spp.* numbers are still depressed. Since we had an extended dry period that all but eliminated mosquito activity in mid-June the two species have rebounded differently. *Culex nigirpalpus* will need less rainfall to replenish its habitat because rainfall will accumulate in the man-made structures it prefers more quickly as run off from impervious surfaces fills these areas more easily, as compared to larger natural areas that receive less runoff that *Anopheles spp.* prefer.



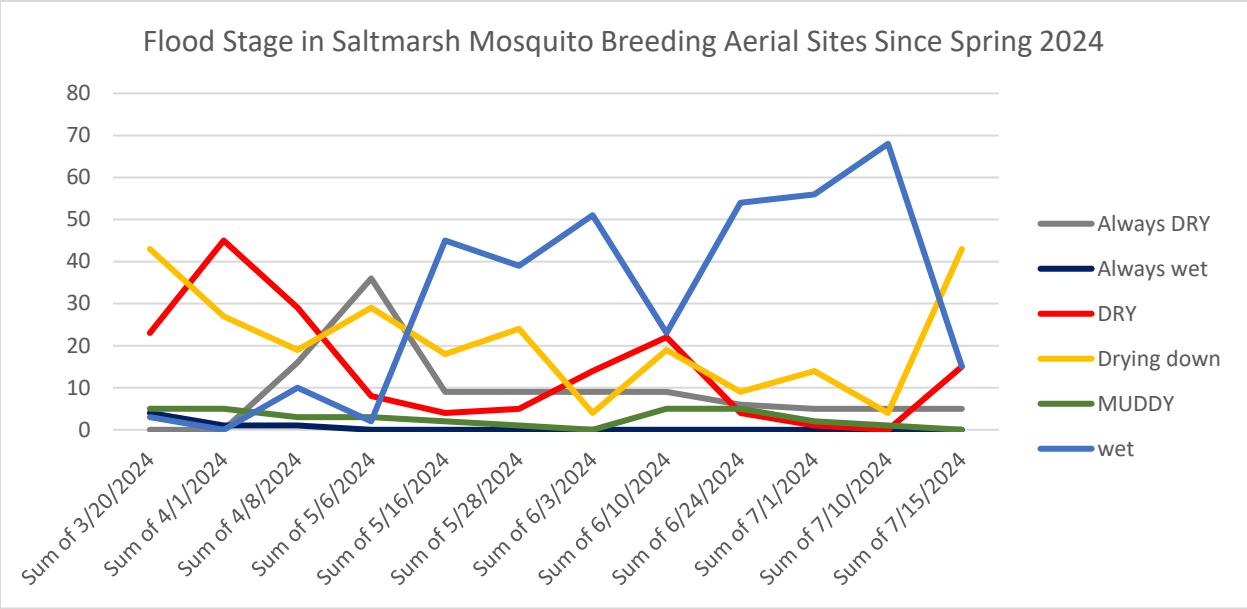
Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



This week we completed the fourth round of aerial larviciding in the saltmarsh. In the chart below you can see at the far-right side a decrease in the blue area replaced by yellow indicating a rapid dry down in the saltmarsh as observed by surveillance fights. To be most effective, larvicide pre-treatments are applied when there is a dry down phase. Constant monitoring by air and ground patrols as well as surveillance devices like cameras, soil moisture probes, and pressure transducers allows the District to identify when treatments should be applied ahead of flooding events that produce mosquitoes in the saltmarsh.



Looking at Just since Spring of this year in the chart below, you can see we started with an overall dry regime and have had two distinct dry down phases since as indicated by the dips in the blue line. Once an area dries down, the exposed soil is available for the saltmarsh mosquitoes to lay their eggs in and be ready for the next flooding event to hatch and complete the life cycle.



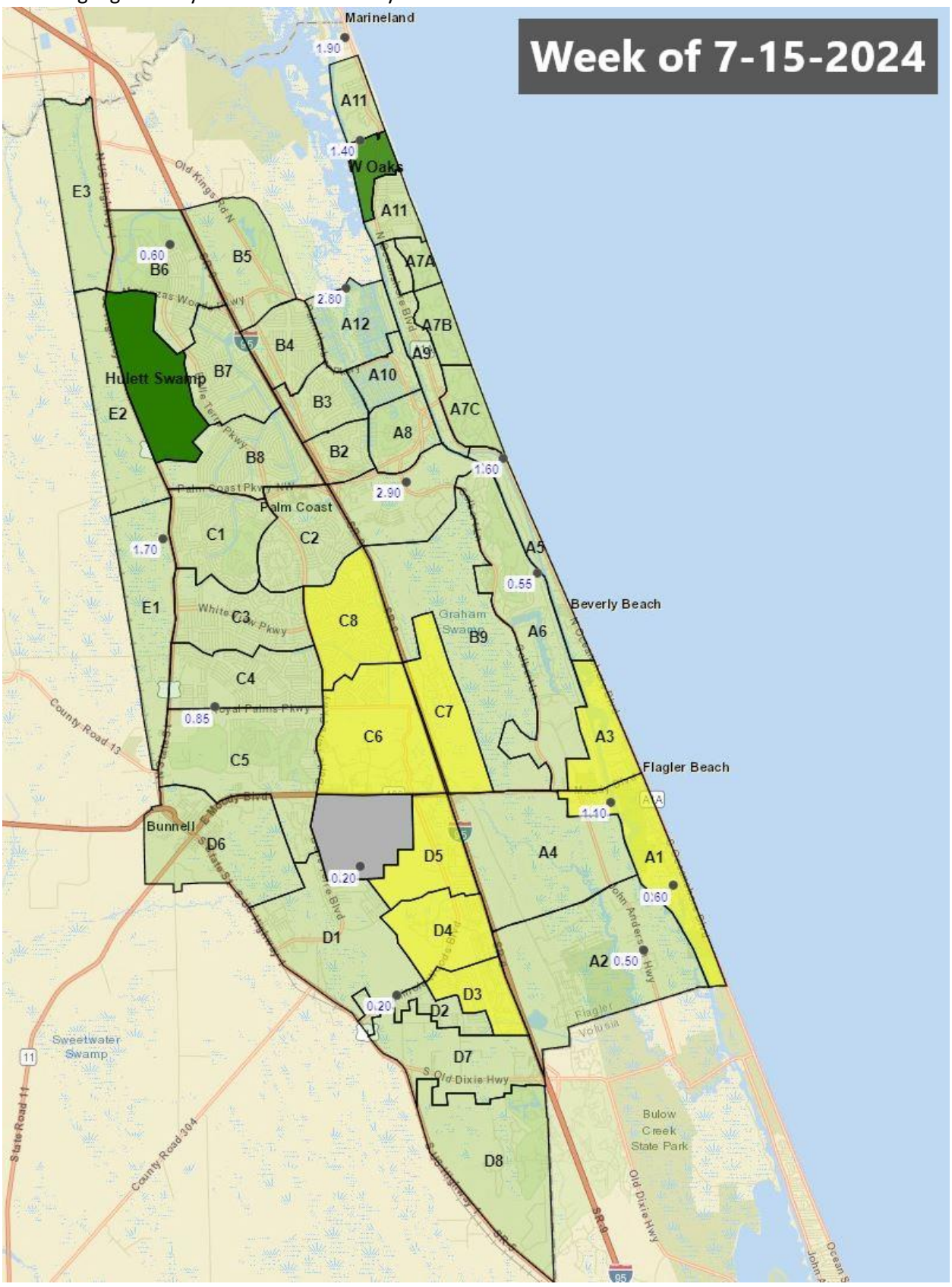
Florida Arbovirus Surveillance Week 29: July 14 - 20, 2024 View the full report

Advisories/Alerts: Holmes, Madison, Marion, Nassau, Pasco, and Walton counties are currently under a mosquito-borne illness advisory. Hillsborough, Miami-Dade, and Monroe counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert

West Nile Virus Illnesses Acquired in Florida: In 2024, two asymptomatic positive blood donors were reported from Marion (July) and Walton (July) counties.

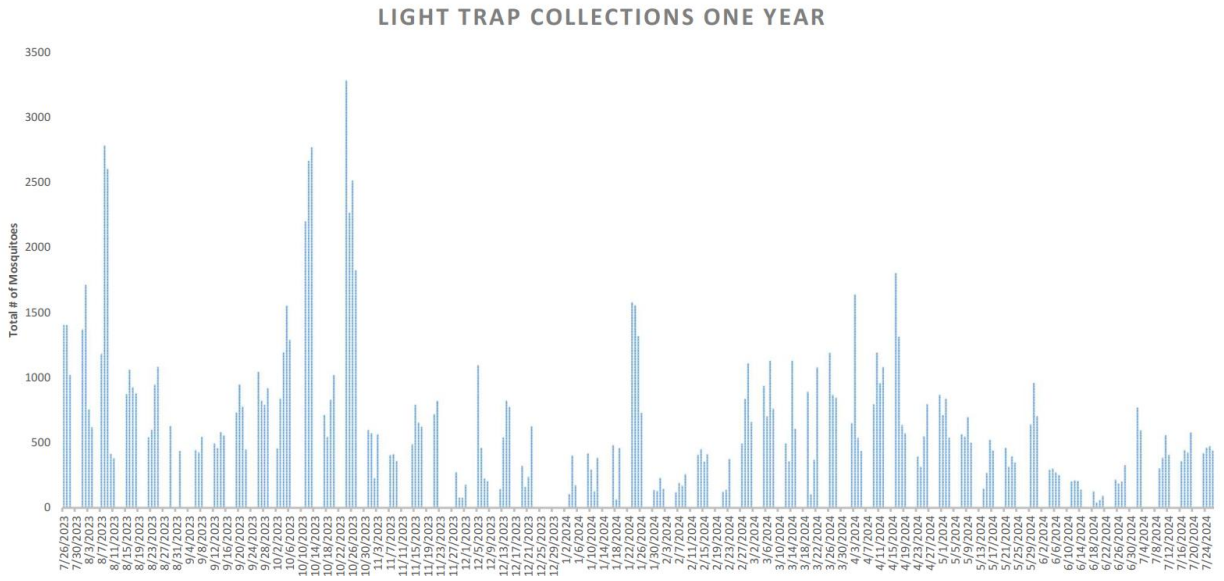
2024 Dengue Cases Acquired in Florida: In 2024, 16 cases of locally acquired dengue have been reported in Hillsborough (2), Miami-Dade (11), Monroe (2), and Pasco counties with onset in January (3), February, March (2), April, and June (9).

Zones highlighted in yellow were treated by truck this week.

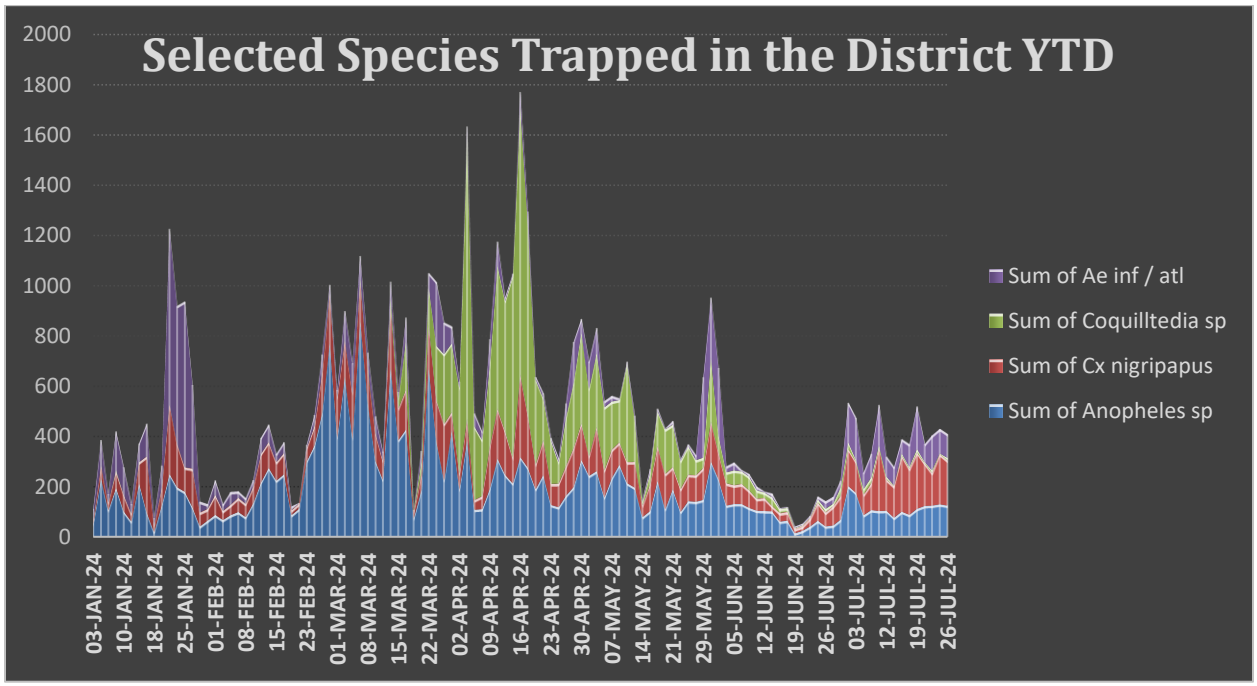


Week of 7/22/2024 Operations Update (30)

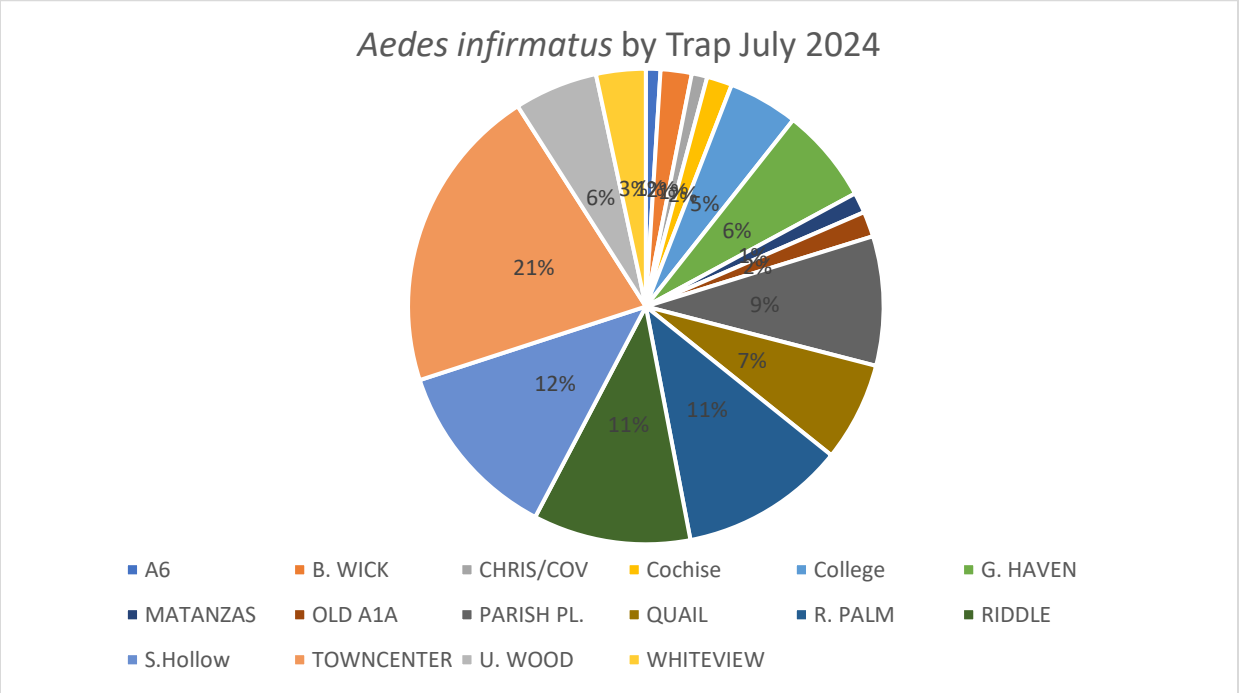
This week, like most of the month of July, has featured moderate mosquito activity in limited locations. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



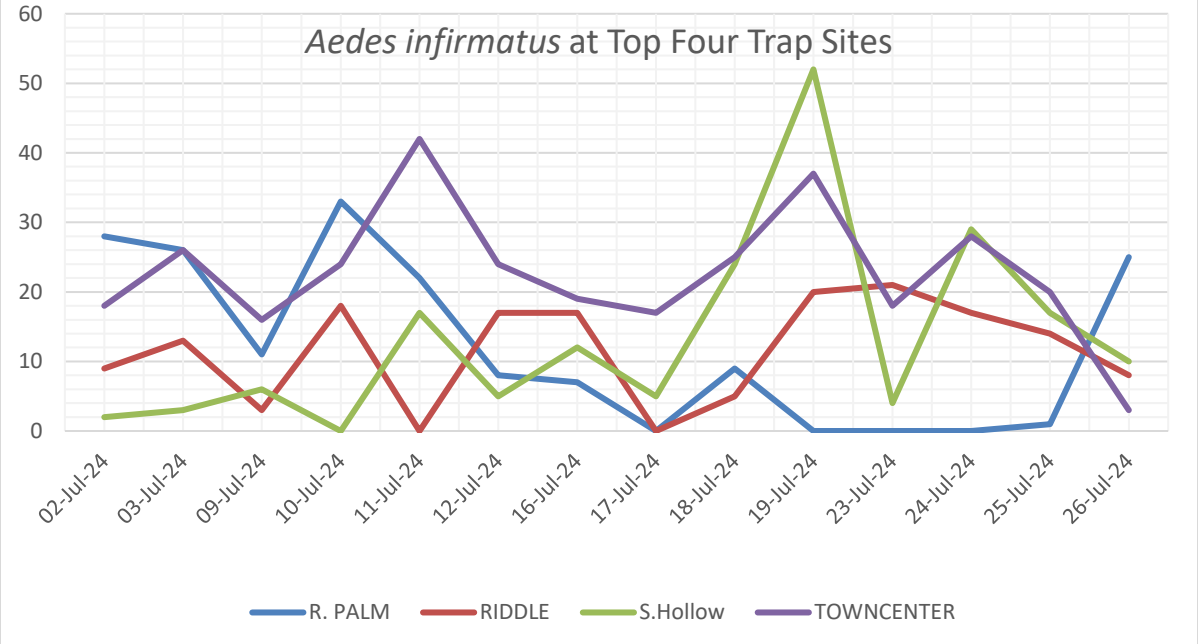
Floodwater species of mosquitoes have stayed at roughly the same levels for four weeks, albeit at varied abundance at different locations. Permanent-water species of mosquitoes have also continued to stay steady at baseline levels after rebounding from almost non-existent.



The Town Center trap location registered the highest proportion of the floodwater species *Aedes infirmatus*, accounting for one-fifth of the abundance in July. Sleepy Hollow was next at 12%, followed by Riddle and Royal Palm each with 11%.



The Town Center trap has also been remarkable at producing a consistent number of mosquitoes of this species. We have speculated in previous reporting that the source of the consistent level of mosquitoes of this species in Town Center is construction both in Town Center and across Highway 100 for the BJ's. Artificial flooding from construction would explain the consistent presence of this floodwater species when rain has been a limiting factor and there is little abundance elsewhere.

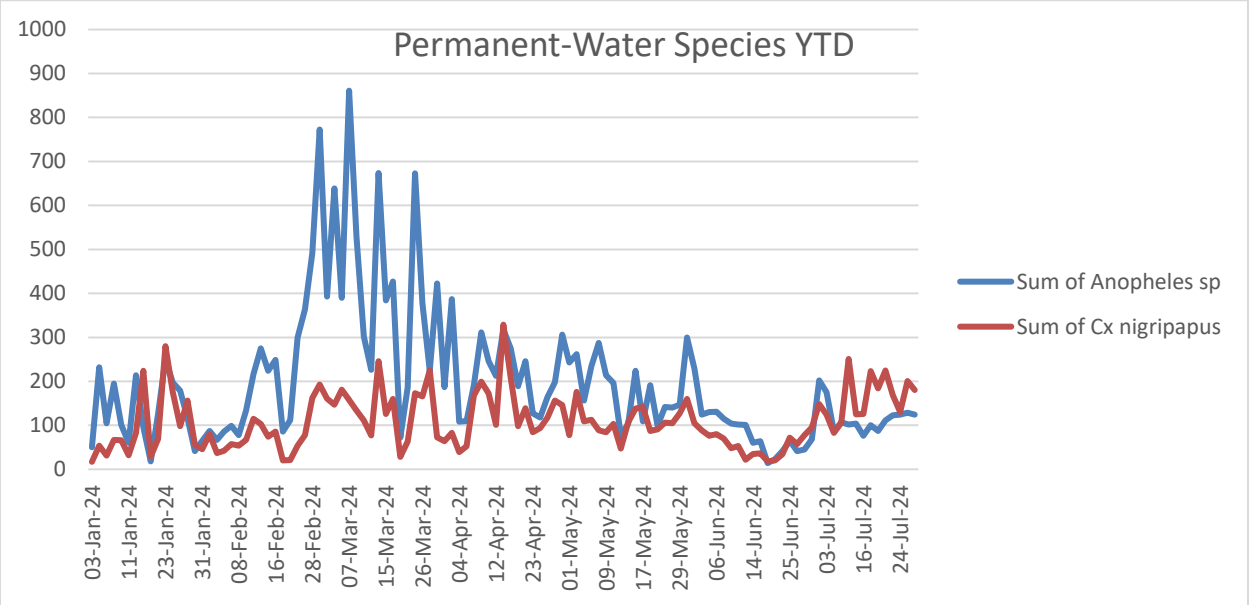


After the first few days in July, *Anopheles spp.* has been at a consistent level, which is very unusual. Normally the population of any mosquito species fluctuates from day to day based on wind speed and direction (towards the trap or not), as well as factors like rain, humidity, and temperature that affect the activity of mosquitoes.

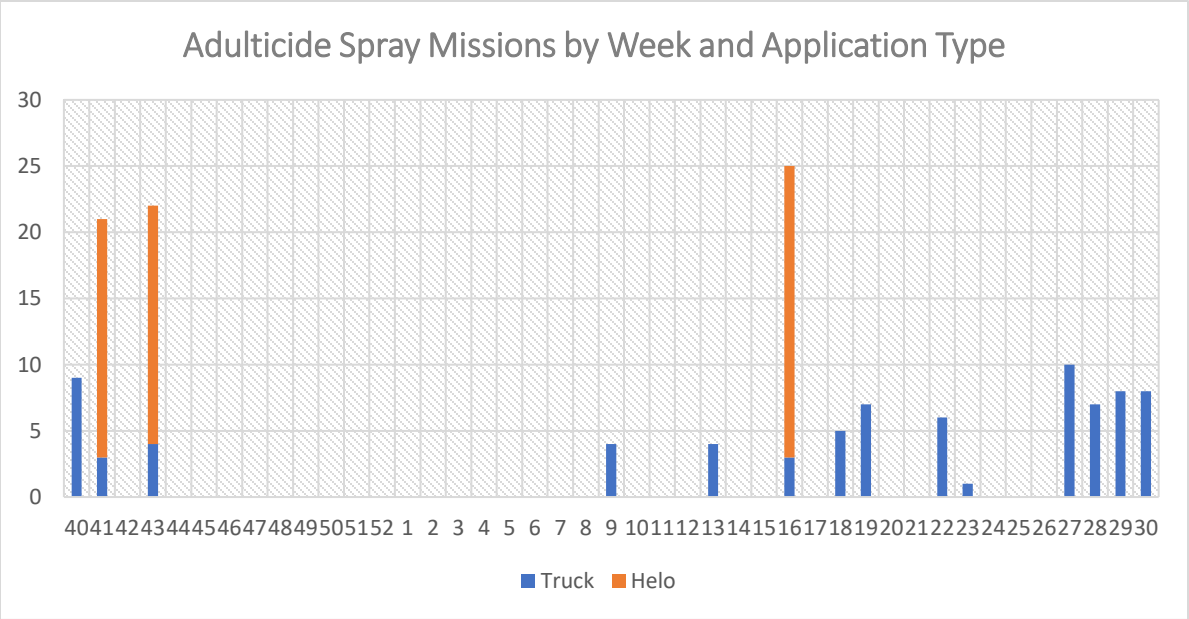
Culex nigirpalpus is another permanent water species, but it prefers a slightly different habitat. Last week we described the differences in habitat preferences:

"We normally see two permanent water species year-round in our surveillance traps, and one is consistently more abundant than the other. This is because the two species prefer slightly different habitats which differ in abundance throughout the District. Anopheles spp. prefer open, more natural bodies of water such as natural ponds, lakes, and basin wetlands. Culex spp. prefer ditches, man-made retention ponds, and swamps. A contributing factor is the quality of the water."

Culex nigirpalpus is at roughly the same population numbers as it has been over the course of the year, whereas *Anopheles spp.* numbers are still depressed. Since we had an extended dry period that all but eliminated mosquito activity in mid-June the two species have rebounded differently. *Culex nigirpalpus* will need less rainfall to replenish its habitat because rainfall will accumulate in the man-made structures it prefers more quickly as run off from impervious surfaces fills these areas more easily, as compared to larger natural areas that receive less runoff that *Anopheles spp.* prefer.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



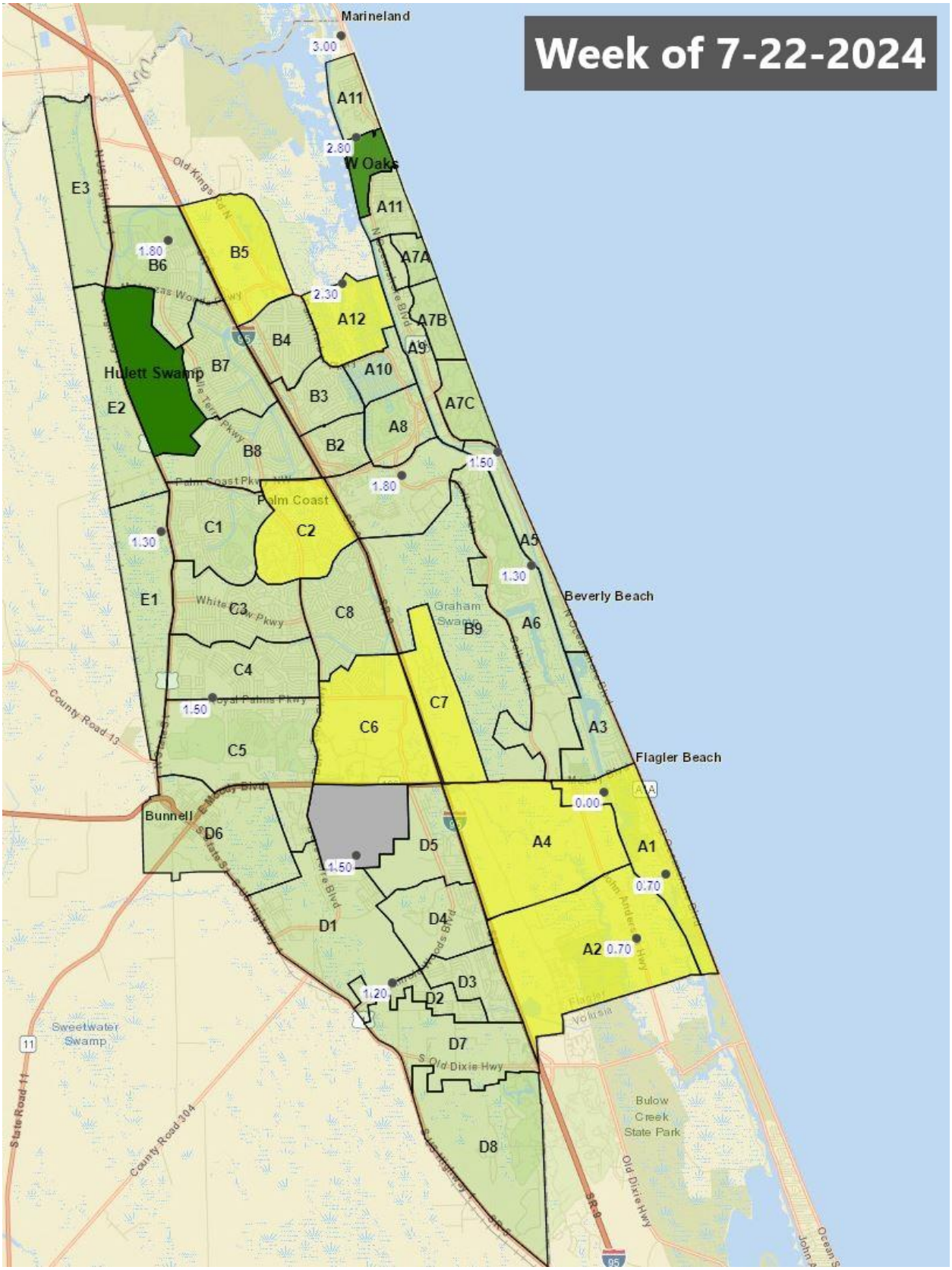
Florida Arbovirus Surveillance Week 30: July 21 - 27, 2024 View the full report

Advisories/Alerts: Holmes, Madison, Marion, Nassau, Pasco, and Walton counties are currently under a mosquito-borne illness advisory. Hillsborough, Miami-Dade, and Monroe counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert

West Nile Virus Illnesses Acquired in Florida: In 2024, two asymptomatic positive blood donors were reported from Marion (July) and Walton (July) counties.

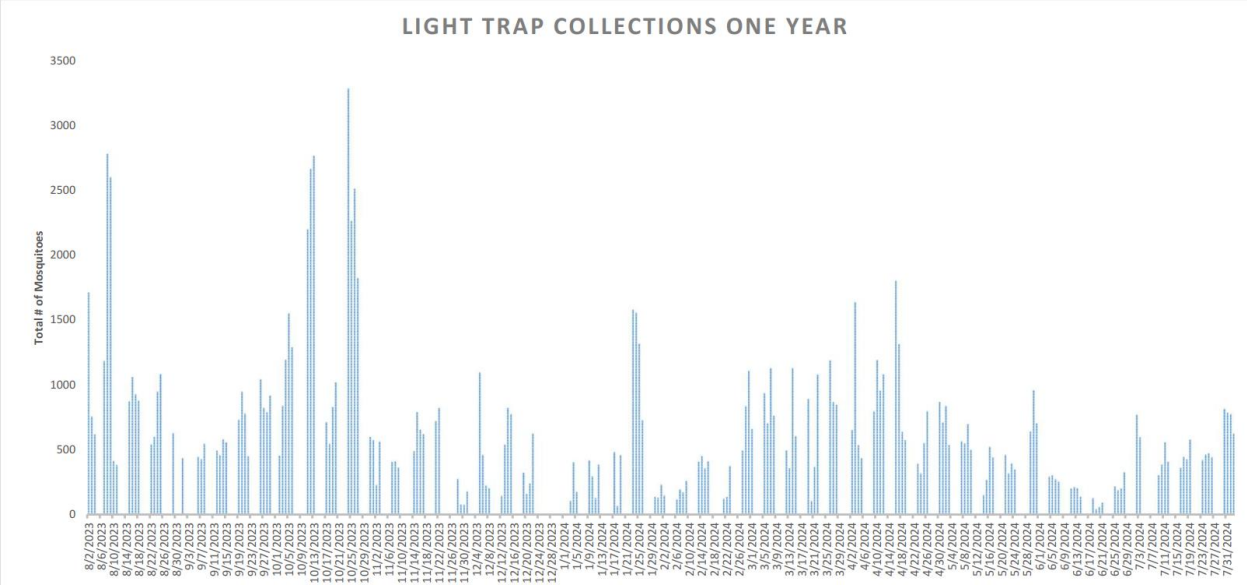
2024 Dengue Cases Acquired in Florida: In 2024, 17 cases of locally acquired dengue have been reported in Hillsborough (2), Miami-Dade (11), Monroe (3), and Pasco counties with onset in January (3), February, March (2), April, and June (9).

Zones highlighted in yellow were treated by truck this week.

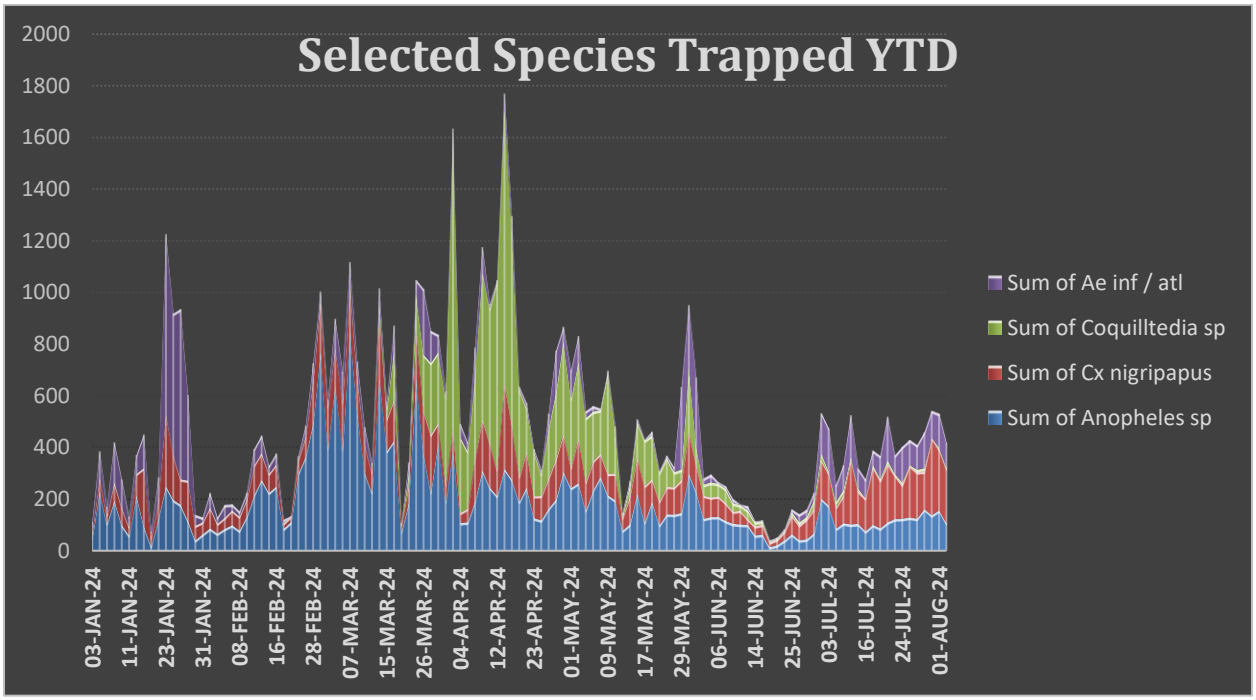


Week of 7/29/2024 Operations Update (31)

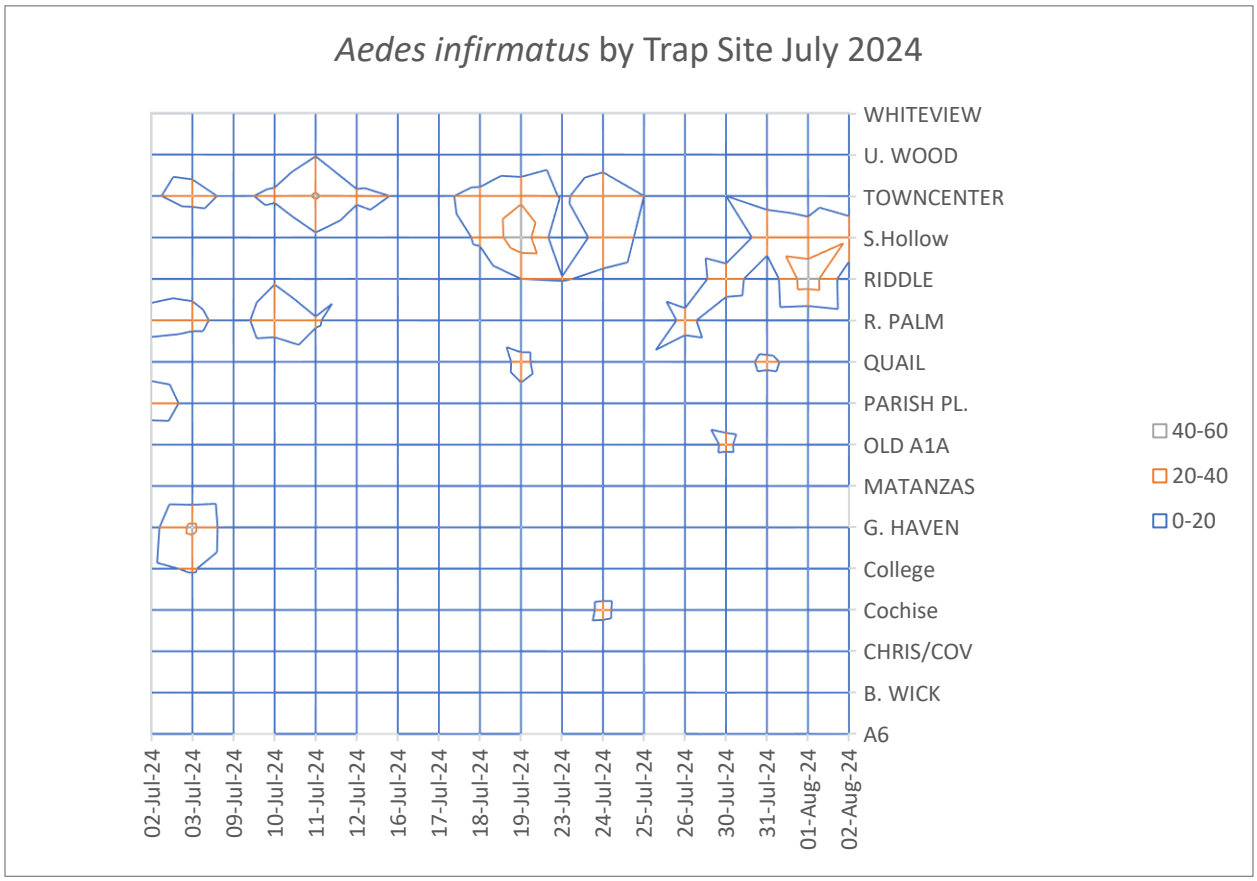
The final week of July, like most of the month, featured moderate mosquito activity in limited locations. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



Floodwater species of mosquitoes have stayed at roughly the same levels for four weeks, albeit at varied abundance at different locations. Permanent-water species of mosquitoes have also continued to stay steady at baseline levels after rebounding from almost non-existent.



The Town Center trap location registered the highest proportion of the floodwater species *Aedes infirmatus* for the month of July. It has also been remarkable at producing a consistent number of mosquitoes of this species. This pattern seems to have abated last week with abundance shifting elsewhere. We have speculated in previous reporting that the source of the consistent level of mosquitoes of this species in Town Center is construction both in Town Center and across Highway 100 for the BJ's. Artificial flooding from construction would explain the consistent presence of this floodwater species when rain has been a limiting factor and there is little abundance elsewhere.



We have been tracking two anomalies in the population of permanent-water species of mosquitoes. First, there is little variation in the daily population of *Anopheles spp. the population of these species remains low. Second, Culex nigirpalpus* has returned to normal but was focused in one trap site only. Despite this area being treated by helicopter and no breeding found in the undeveloped area in the vicinity. A more thorough explanation follows below.

After the first few days in July, *Anopheles spp.* has been at a consistent level, which is very unusual. Normally the population of any mosquito species fluctuates from day to day based on wind speed and direction (towards the trap or not), as well as factors like rain, humidity, and temperature that affect the activity of mosquitoes.

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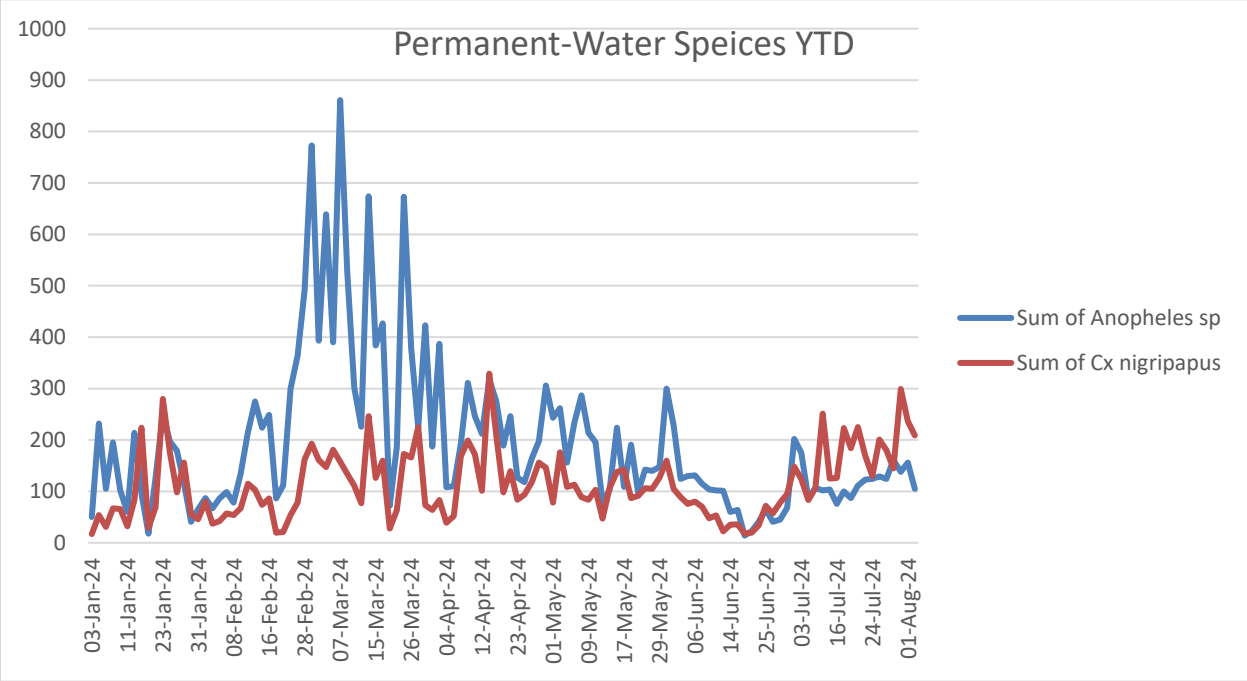
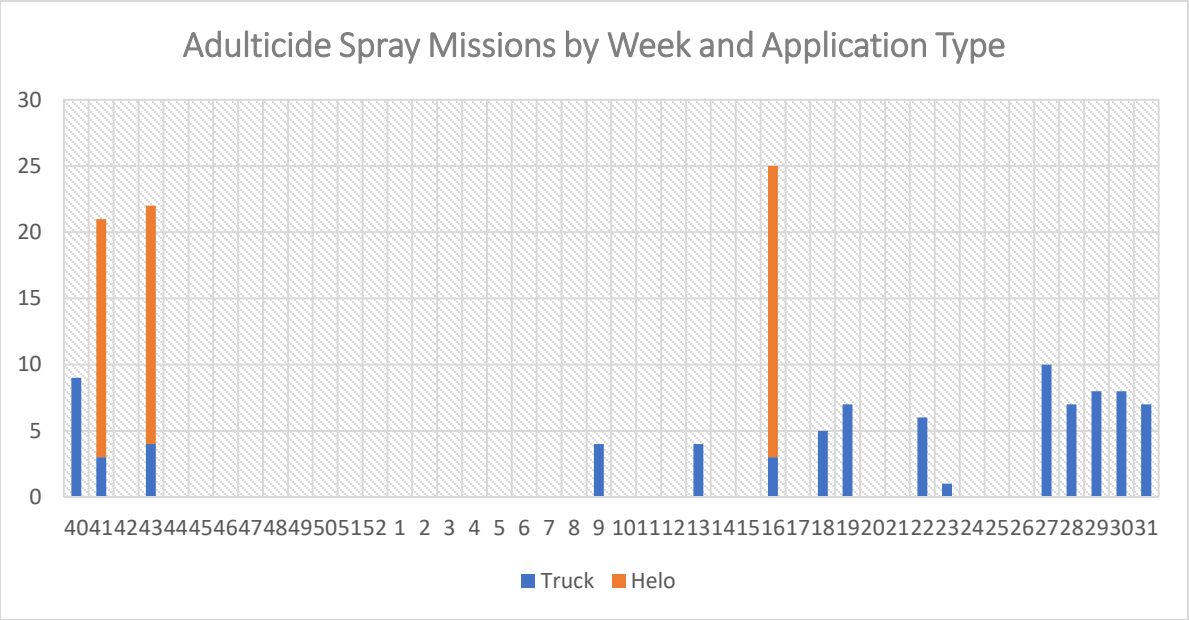
Culex nigirpalpus is at roughly the same population numbers as it has been over the course of the year, whereas *Anopheles spp.* numbers are still depressed. Since we had an extended dry period that all but eliminated mosquito activity in mid-June the two species have rebounded differently. *Culex nigirpalpus* will need less rainfall to replenish its habitat because rainfall will accumulate in the man-made structures it prefers more quickly as run off from impervious surfaces fills these areas more easily, as compared to larger natural areas that receive less runoff that *Anopheles spp.* prefer.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



Florida Arbovirus Surveillance Week 30: July 28 – August 3, 2024 View the full report

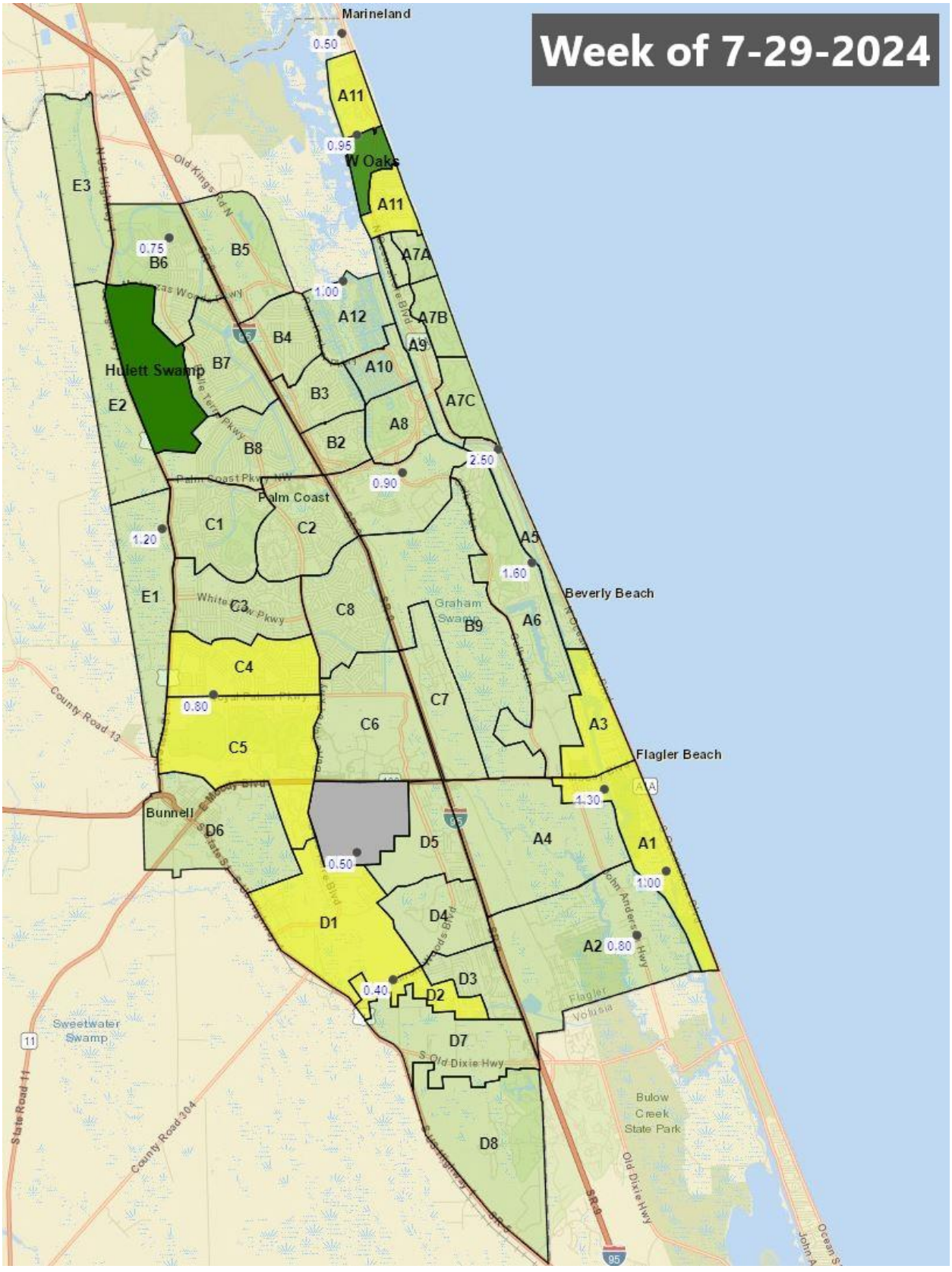
Advisories/Alerts: Holmes, Madison, Marion, Nassau, Pasco, and Walton counties are currently under a mosquito-borne illness advisory. Hillsborough, Miami-Dade, and Monroe counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert

West Nile Virus Illnesses Acquired in Florida: Two human cases of WNV infection were reported this week in Duval and Marion counties. Two asymptomatic positive blood donors were reported from Marion (July) and Walton (July) counties

2024 Dengue Cases Acquired in Florida: One case of locally acquired dengue was reported this week. In 2024, 18 cases of locally acquired dengue have been reported in Hillsborough (2), Miami-Dade (12), Monroe (3), and Pasco counties with onset in January (3), February, March (2), April, June (10) and July.

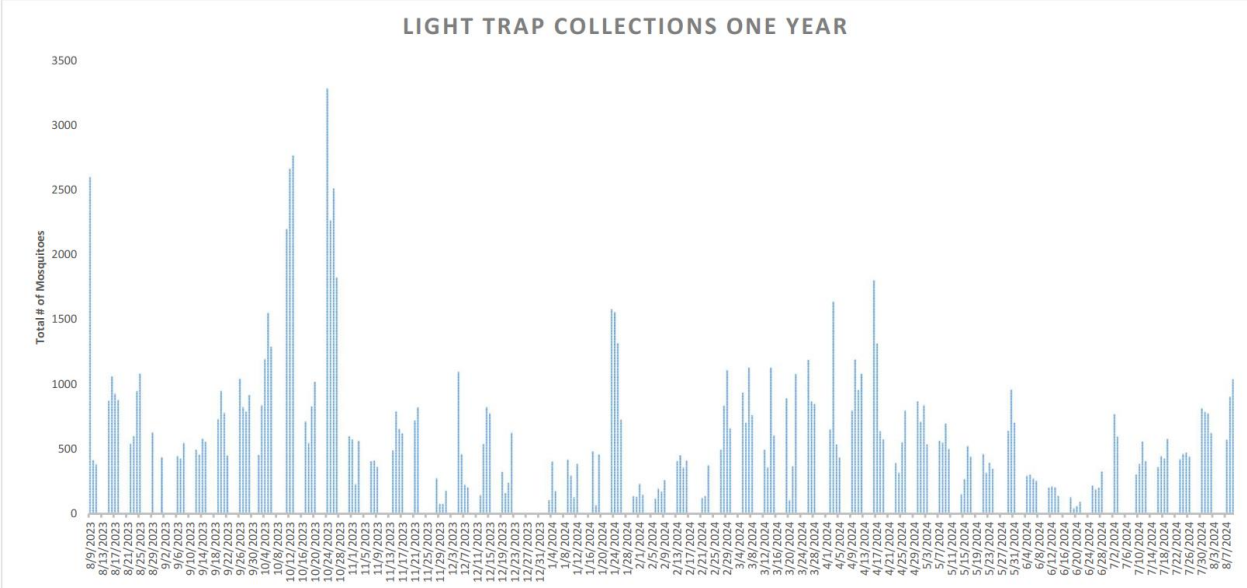
International Travel-Associated Oropouche Fever cases: No cases of Oropouche fever were reported this week in persons that had international travel. In 2024, two travel-associated Oropouche fever cases have been reported.

Zones highlighted in yellow were treated by truck this week.

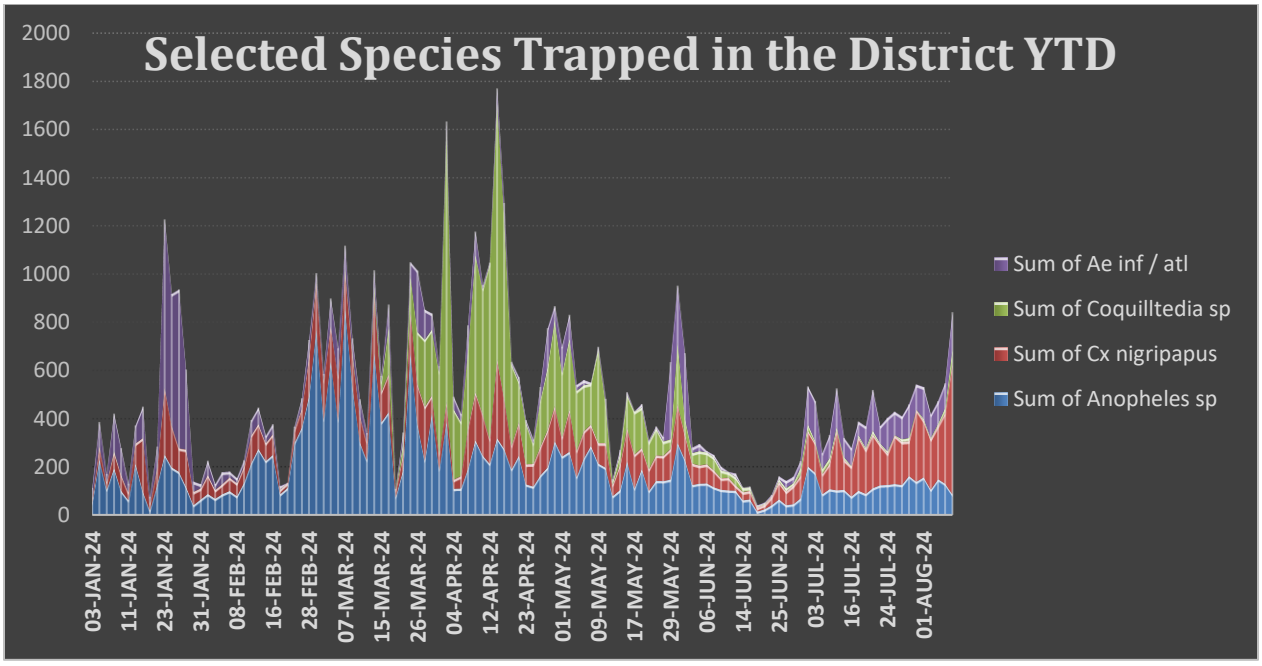


Week of 8/5/2024 Operations Update (32)

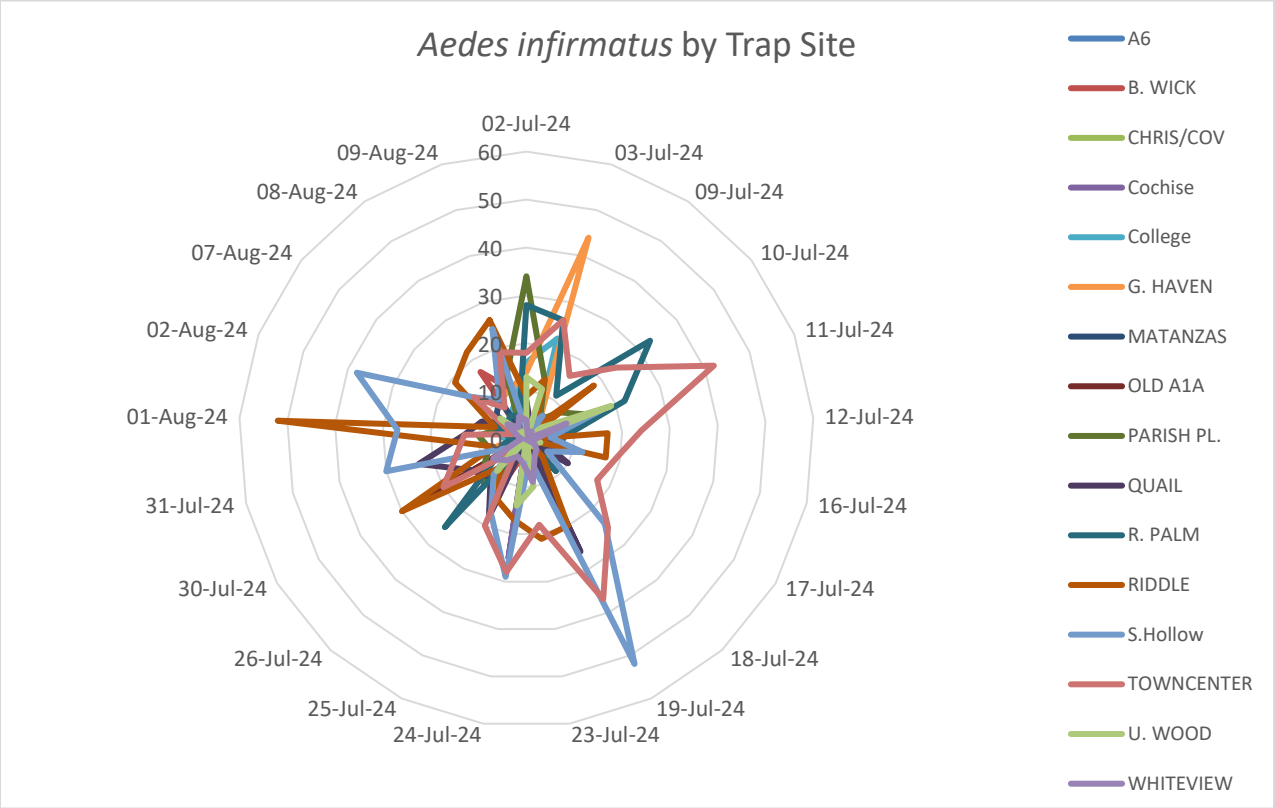
The first week of August yielded more total mosquitoes but more evenly dispersed and still below baseline for the District-wide. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



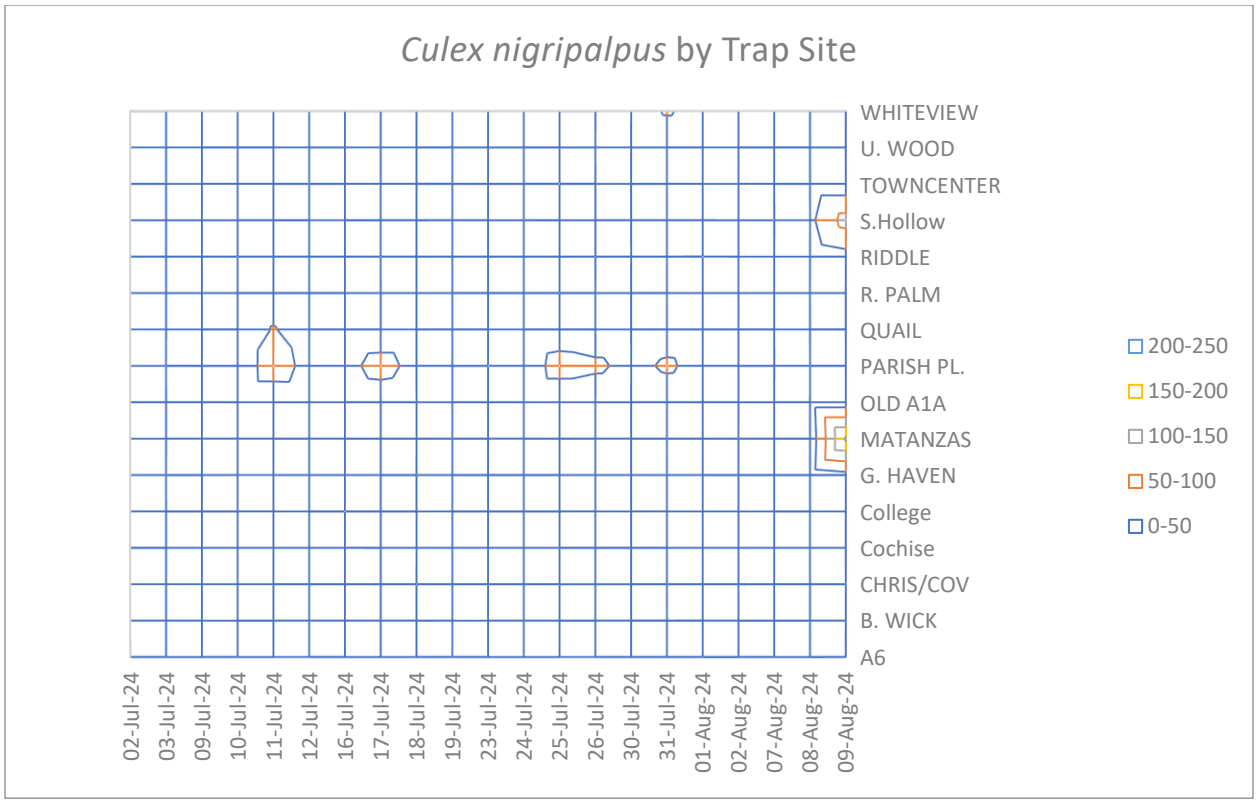
Floodwater species of mosquitoes have stayed at roughly the same levels after almost disappearing and returning to low levels in early July, with Town Center being the hot spot. Permanent-water species of mosquitoes continue to show a divergence with consistent low levels of *Anopheles spp.* and *Culex nigirpalpus* being prevalent at one location only that usually has a low level of mosquito activity.



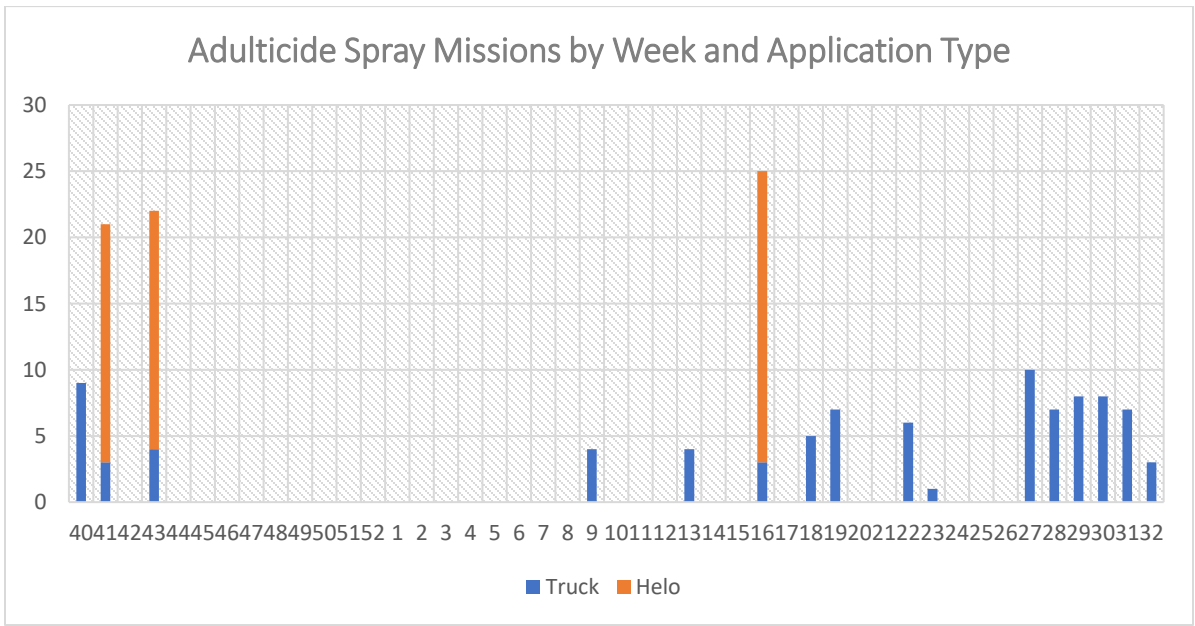
The Town Center trap location registered the highest proportion of the floodwater species *Aedes infirmatus* until the end of July (Pink line). Artificial flooding from construction would explain the consistent presence of this floodwater species when rain had been a limiting factor and there was not consistent abundance elsewhere in the District (see previous weeks reports for more detail). This week saw all trap locations below action thresholds for this species (no lines crossed the 30 mark).



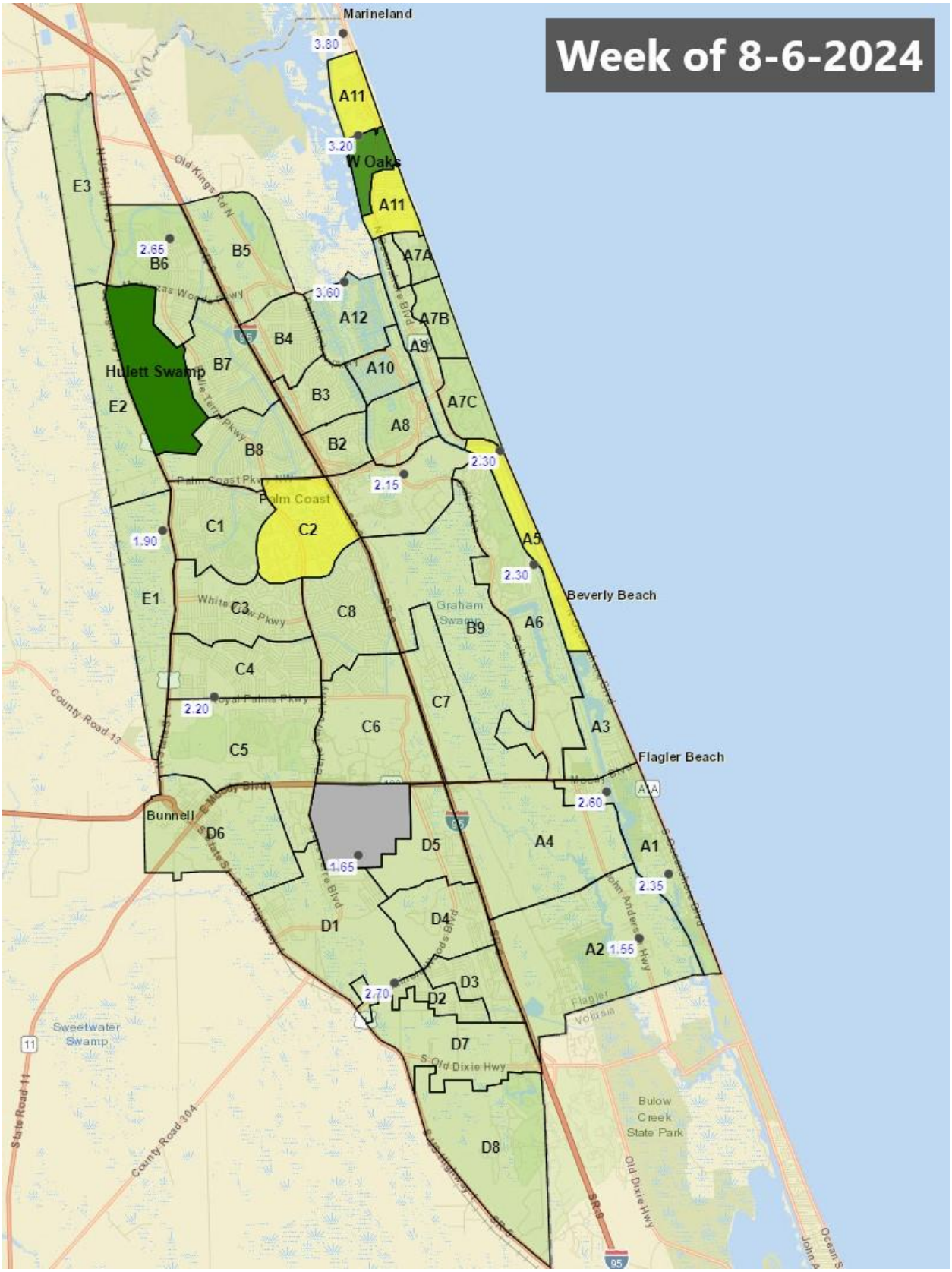
We have been tracking two anomalies in the population of permanent-water species of mosquitoes. First, there is little variation in the daily population of *Anopheles spp.* and the population of this species remains low. *Second, Culex nigirpalpus* has returned to normal but was focused in one trap site only. Despite this area being treated by helicopter and no breeding found in the undeveloped area in the vicinity. A more thorough explanation can be found in previous weeks' operation updates. This week saw a return of a more normal pattern of distribution of this species to sites in the north and south portions of the District that have less natural drainage.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.

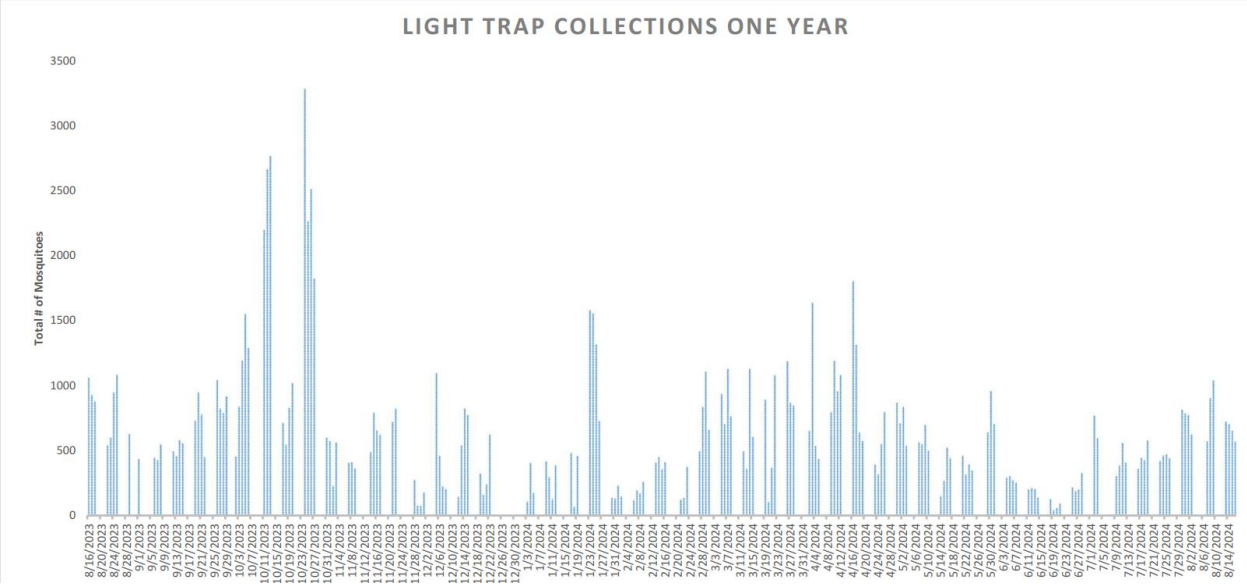


Zones highlighted in yellow were treated by truck this week.

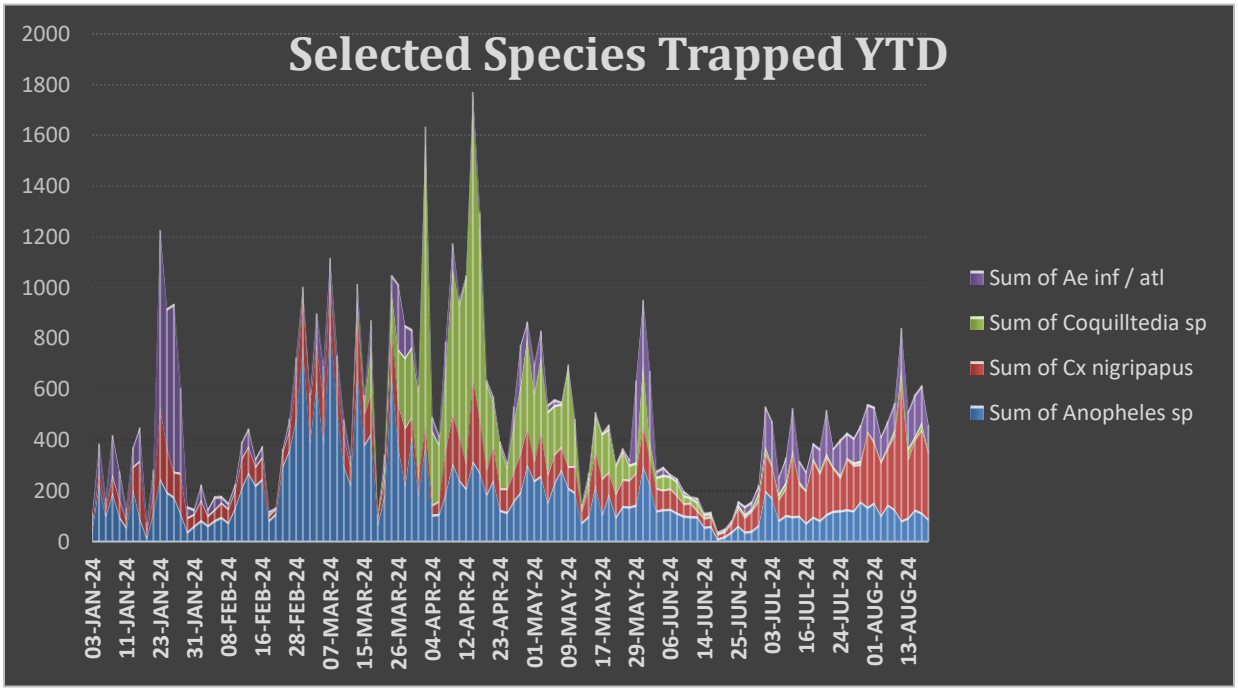


Week of 8/12/2024 Operations Update (33)

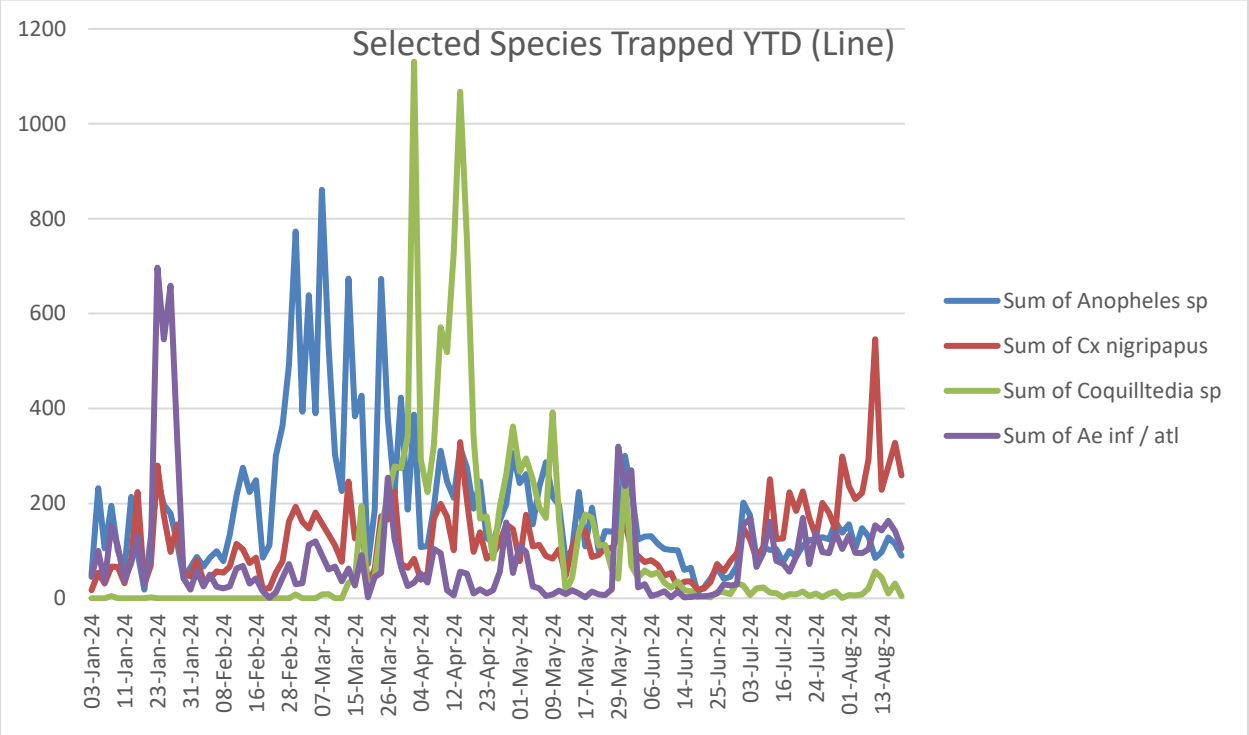
An unusual distribution of permanent-water species of mosquitoes continued this week with the overall mosquito population at low levels. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



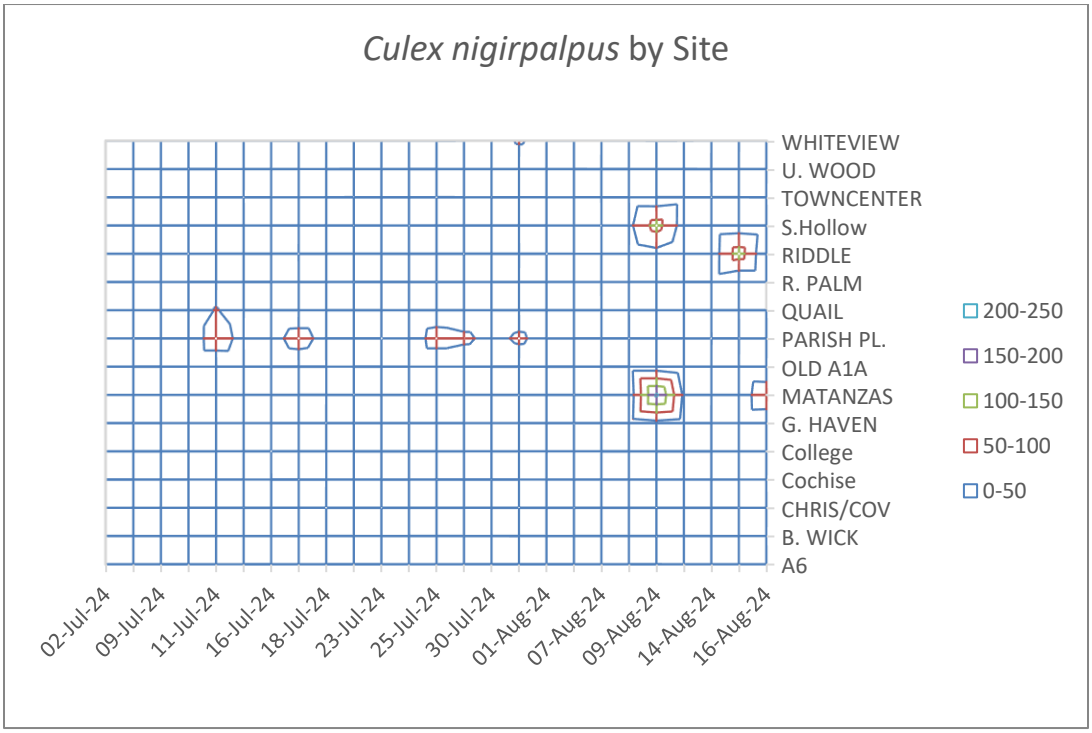
Floodwater species of mosquitoes have stayed at roughly the same levels after almost disappearing and returning to low levels in early July, while being prevalent in only Town Center despite a lack of rainfall District-wide. Permanent-water species of mosquitoes continue to show a divergence with consistent low levels of *Anopheles spp.* and *Culex nigirpalpus* being prevalent in few locations.



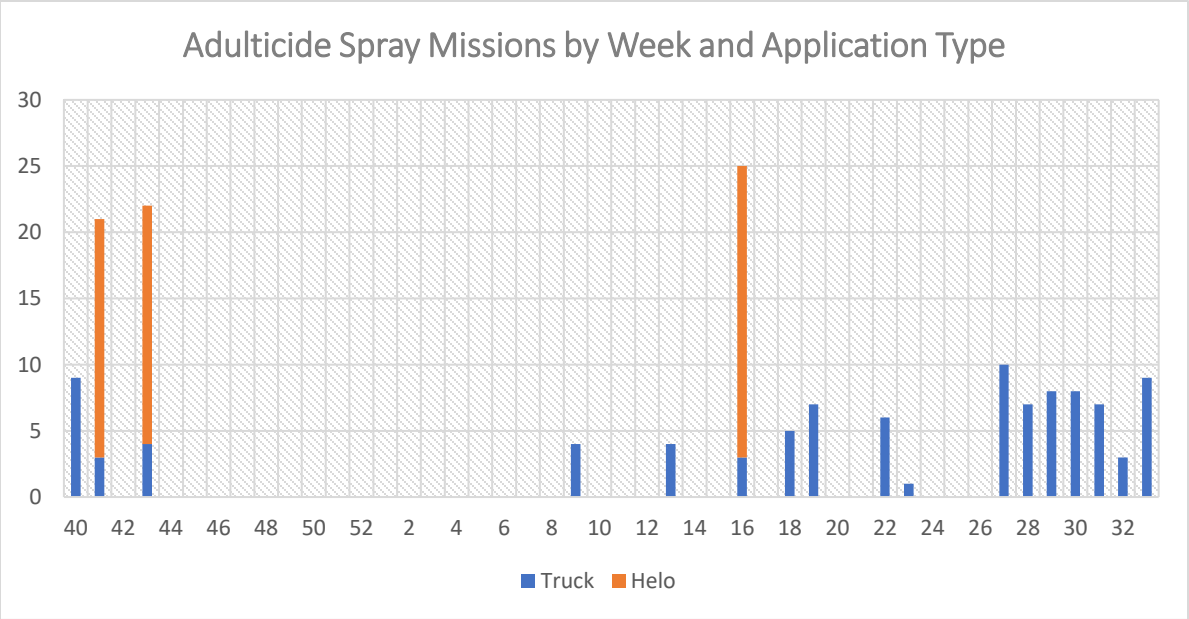
The additional chart below examining the most abundant species shows the permanent-water species *Culex nigirpalpus* rebounding to normal levels while other species abundance remained depressed.



We have observed a normal abundance of *Culex nigirpalpus* since a severe mid-June dry down, but the population was focused in just one location. It has now both become less abundant in that one unusual location and appeared more broadly throughout the District, which is normal for this time of year.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



Florida Arbovirus Surveillance Week 33: August 11-17, 2024 View the full report

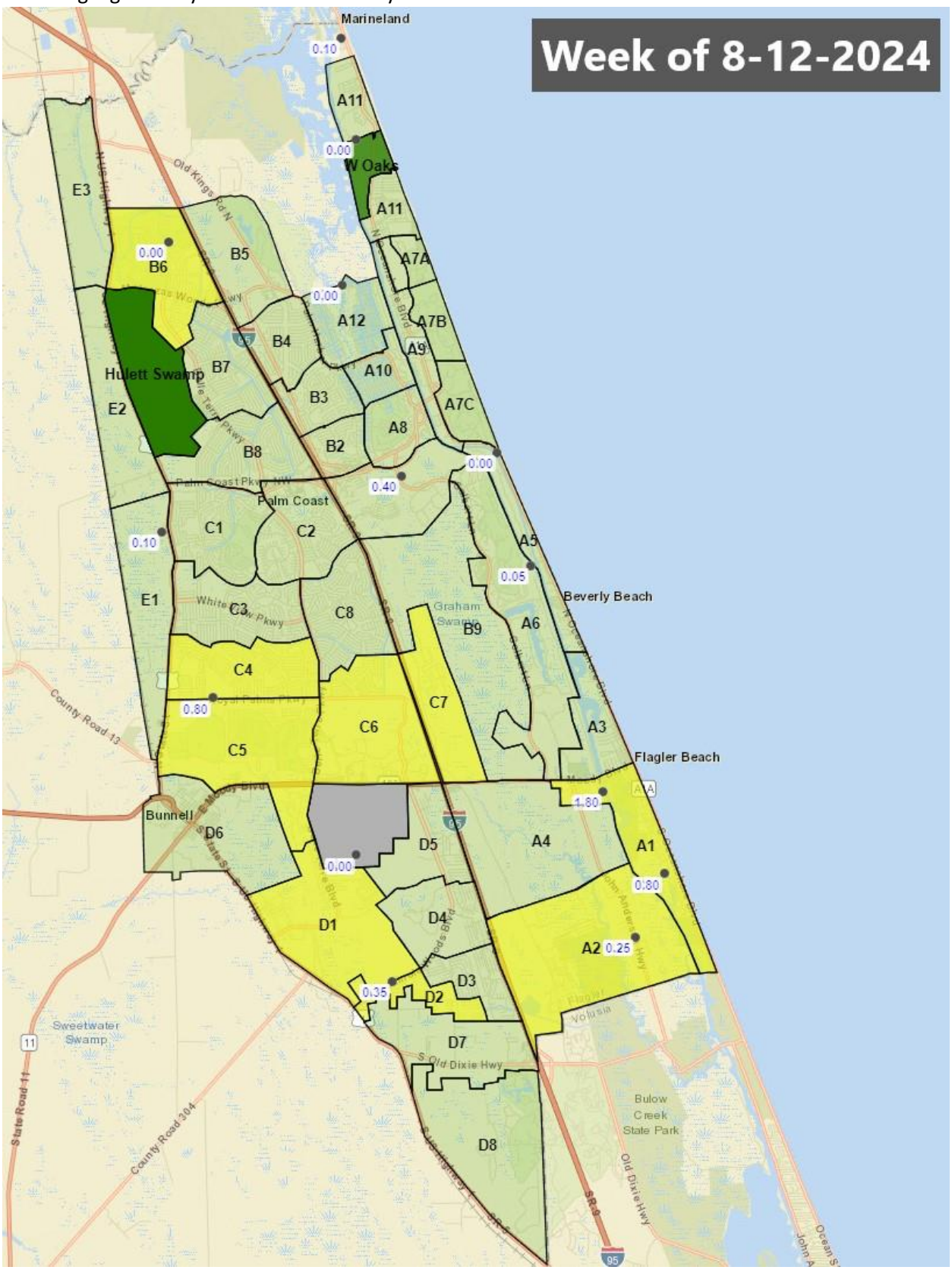
Advisories/Alerts: Alachua, Bay, Duval, Holmes, Madison, Mantatee, Nassau, and Pasco counties are currently under a mosquito-borne illness advisory. Hillsborough, Marion, Miami-Dade, Monroe, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquitoborne illness advisory or alert.

West Nile Virus Illnesses Acquired in Florida: In 2024, three human cases of WNV illness acquired in Florida have been reported in Duval (July), Marion (July), and Walton (July) counties. Three asymptomatic positive blood donors were reported from Marion (July) and Walton (July, August) counties.

Dengue Cases Acquired in Florida: In 2024, 23 cases of locally acquired dengue have been reported in Hillsborough (2), Manatee, Miami-Dade (16), Monroe (3), and Pasco counties with onset in January (3), February, March (2), April, June (10) and July (6).

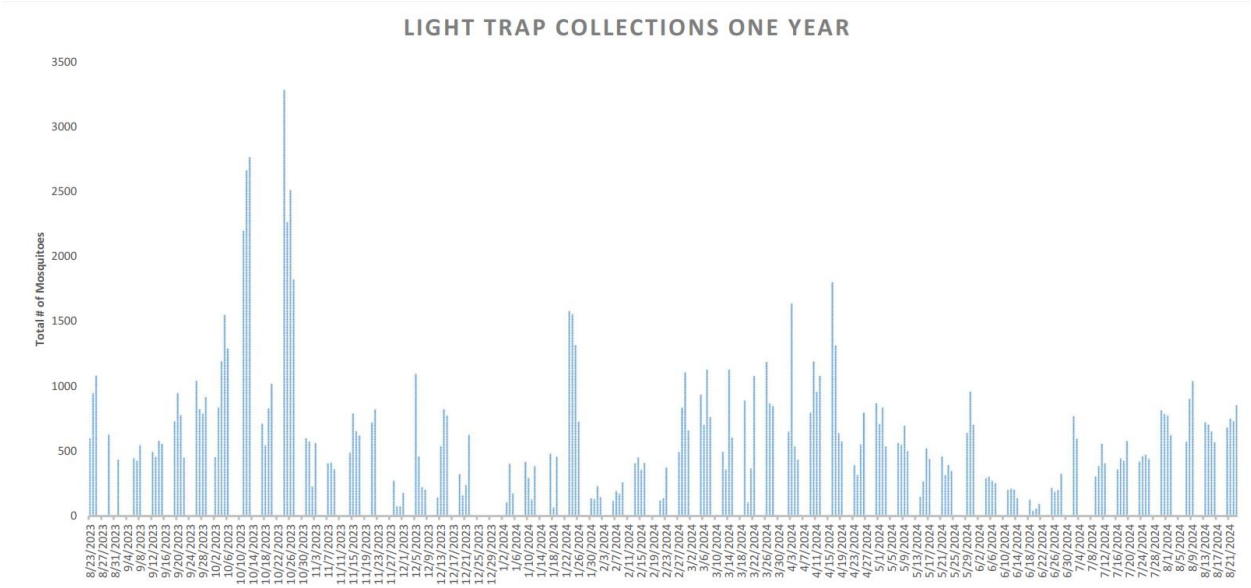
International Travel-Associated Oropouche Cases: Twenty cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Hillsborough (4), Lee (2), Miami-Dade (9), Orange (2), Polk (2), and Sarasota. Country of origin was Cuba (20).

Zones highlighted in yellow were treated by truck this week.

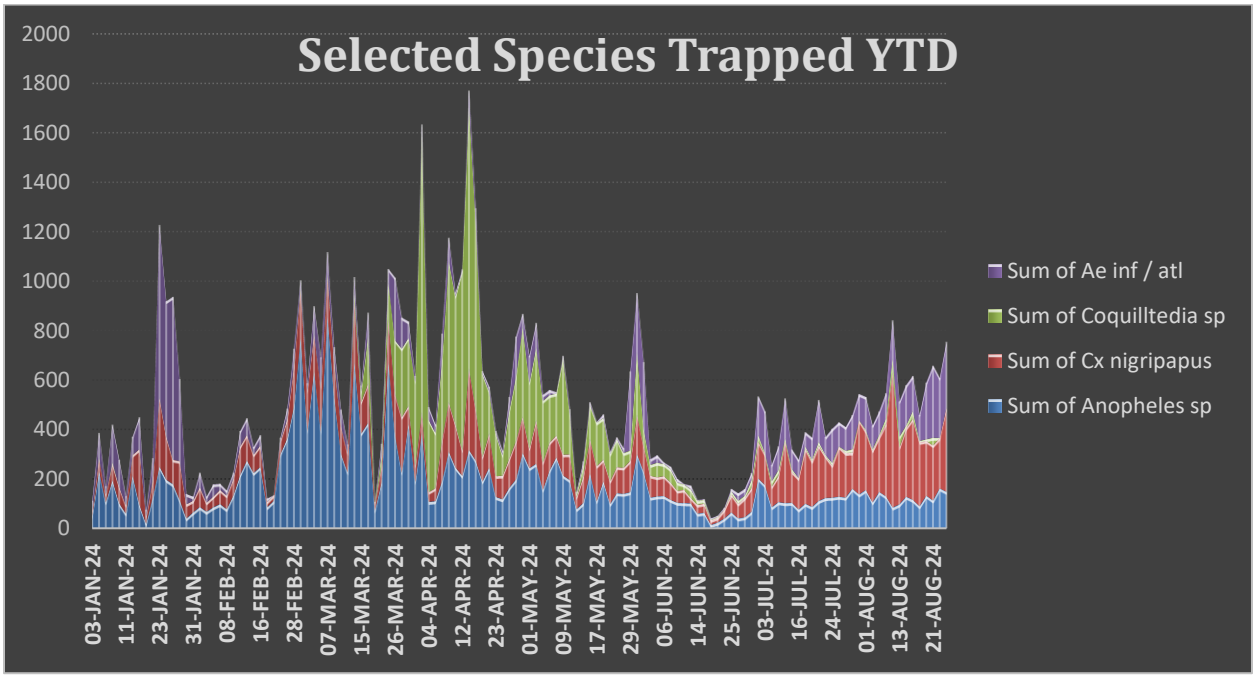


Week of 8/19/2024 Operations Update (34)

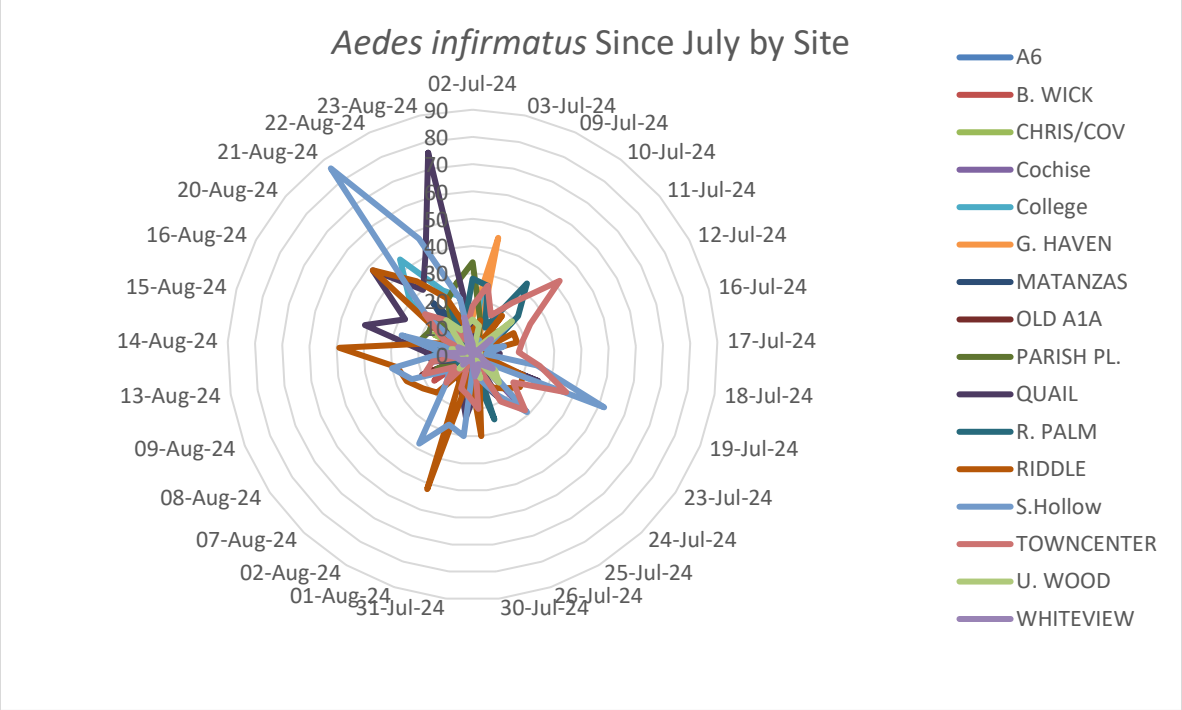
This week the total mosquito population was at low levels with a slight uptick in *Aedes infirmatus*. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



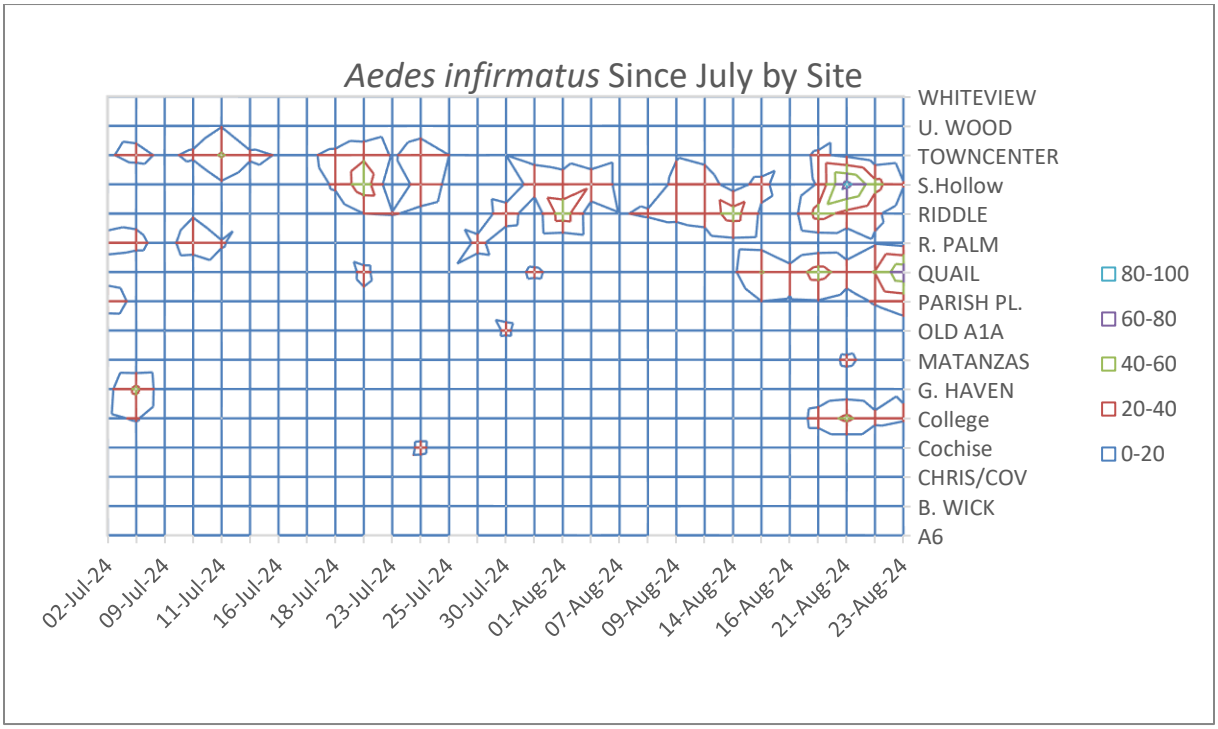
Permanent-water mosquito species remain remarkably flat at low levels. A slight increase in the flood-water population of mosquitoes.



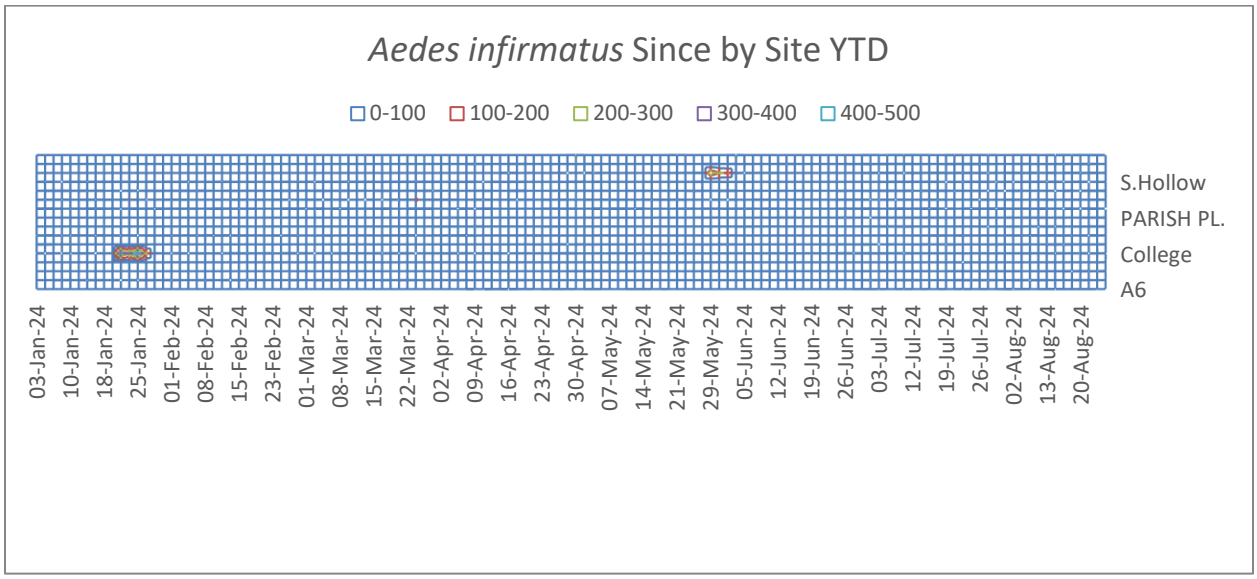
Floodwater species of mosquitoes had remained at roughly the same levels after almost disappearing and returning to low levels in early July, while being prevalent in only Town Center despite a lack of rainfall District-wide. Trap sites in Quail Hollow and Seminole Woods this week had the biggest increases in *Aedes infirmatus* seen in months.



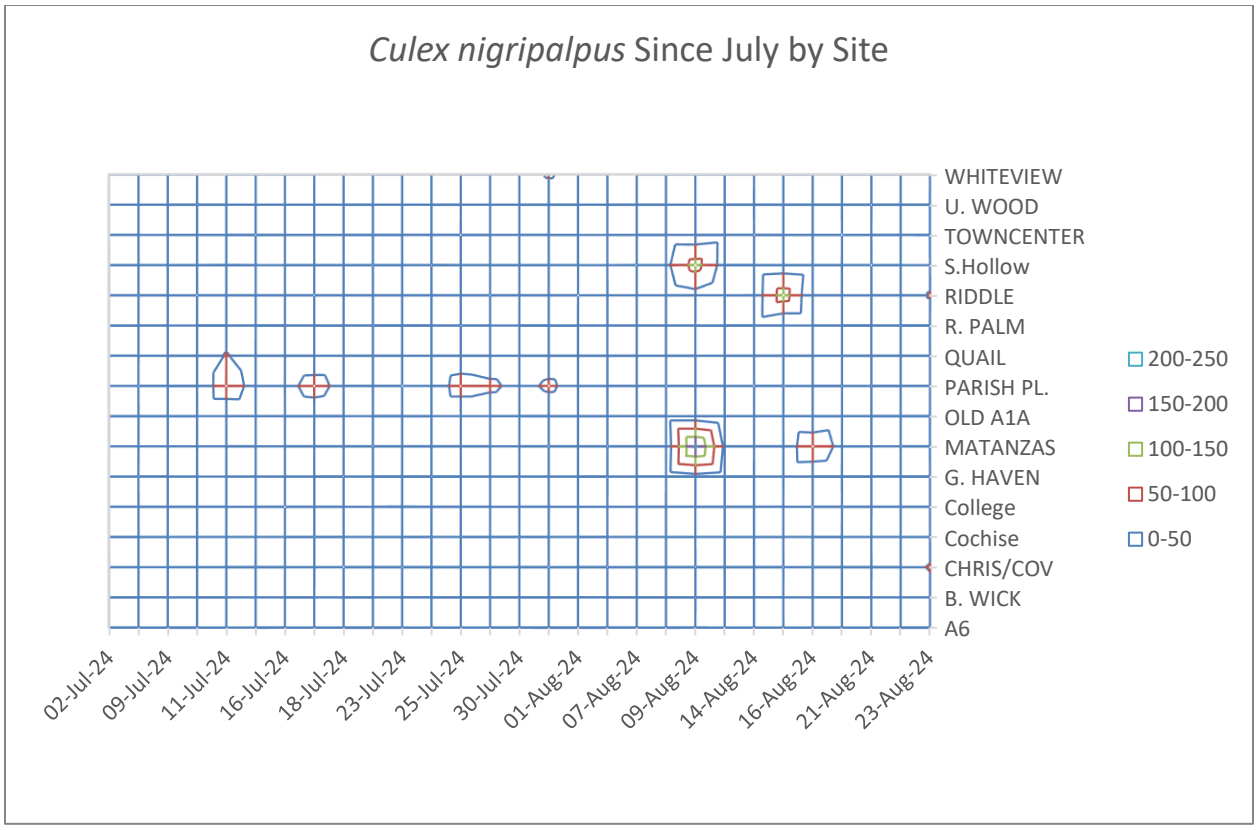
The population of this species was also more widely dispersed this week.



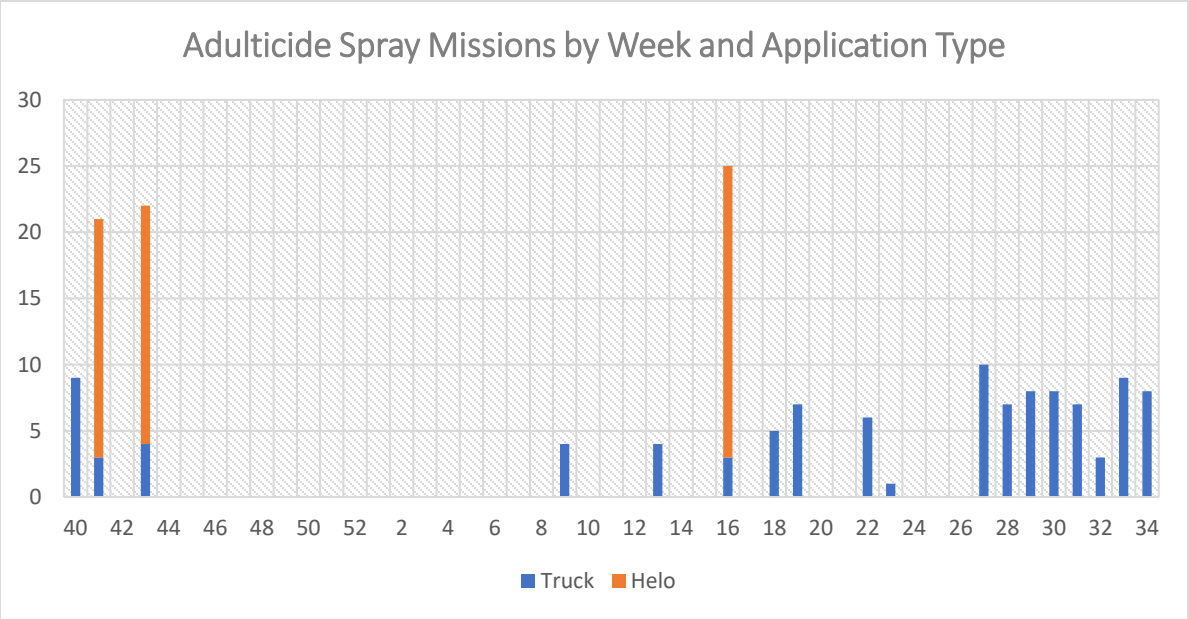
When we examine the population of this species over a longer timeline, it can be seen that currently it is at a very low level.



Permanent-water species of mosquitoes continue to show a divergence with consistent low levels of *Anopheles spp.* and steady but more normal levels of *Culex nigirpalpus.* However, similarly as discussed previously about flood-water species, it is more widely dispersed this week.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



Florida Arbovirus Surveillance Week 34: August 18-24, 2024 View the full report

Advisories/Alerts: Alachua, Bay, Duval, Holmes, Madison, Mantatee, Nassau, Orange, and Pasco counties are currently under a mosquito-borne illness advisory. Hillsborough, Marion, Miami-Dade, Monroe, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquitoborne illness advisory or alert.

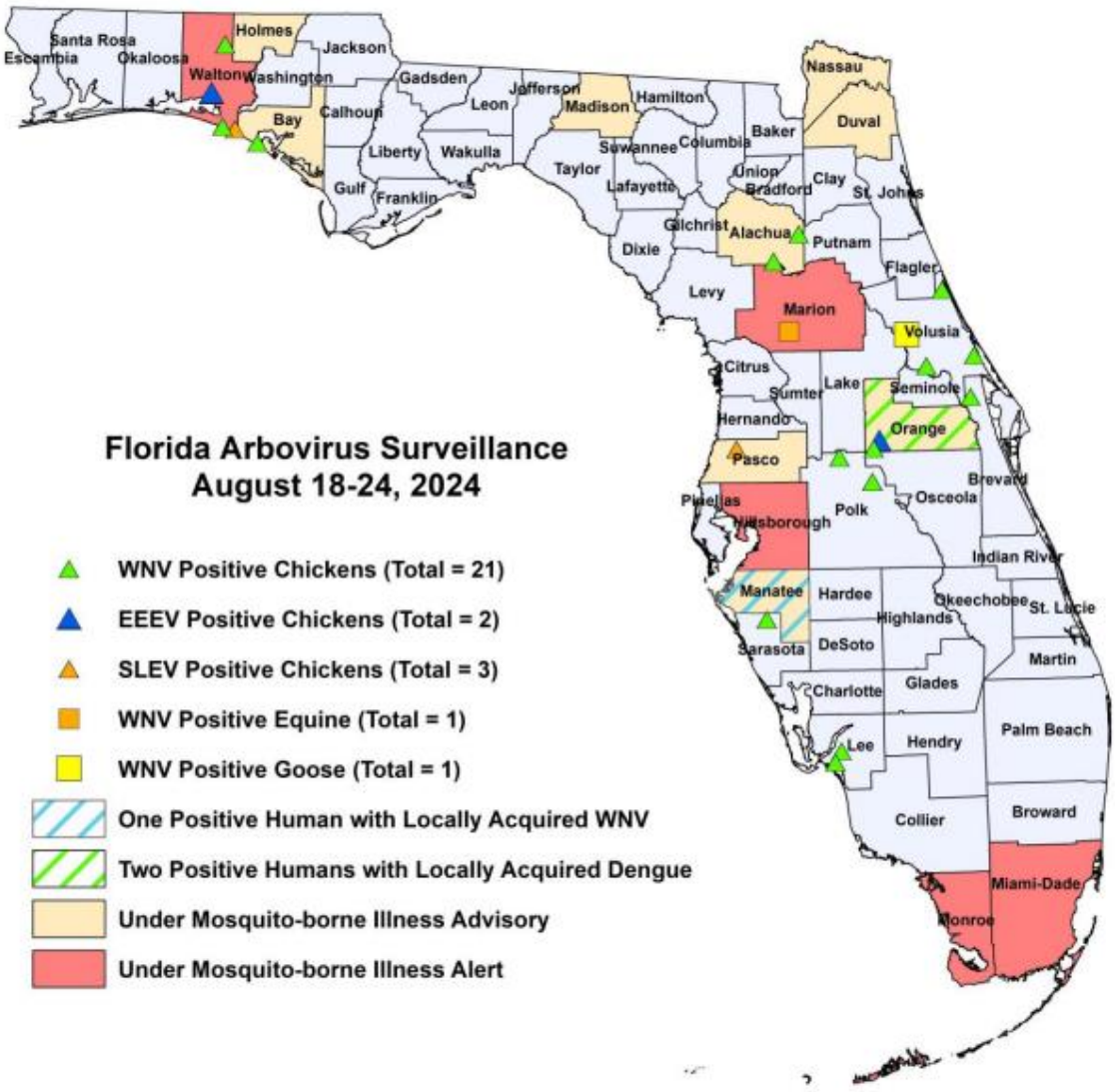
WNV activity: One human case of WNV infection was reported this week in Manatee County. One horse with WNV infection was reported this week in Marion County. One goose with WNV infection was reported this week in Volusia County. Twenty-one sentinel chickens tested positive for antibodies to WNV this week in Alachua, Bay, Brevard, Lee, Orange, Polk, Sarasota, Volusia, and Walton counties. No mosquito pools tested positive for WNV this week. In 2024, three human cases of WNV illness acquired in Florida have been reported in Duval (July), Marion (July), and Walton (July) counties. Three asymptomatic positive blood donors were reported from Marion (July) and Walton (July, August) counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. Two sentinel chickens tested positive for antibodies to EEEV this week in Orange and Walton counties. In 2024, positive samples from 47 sentinel chickens, 21 horses, two emus, and one emu flock have been reported from 26 counties.

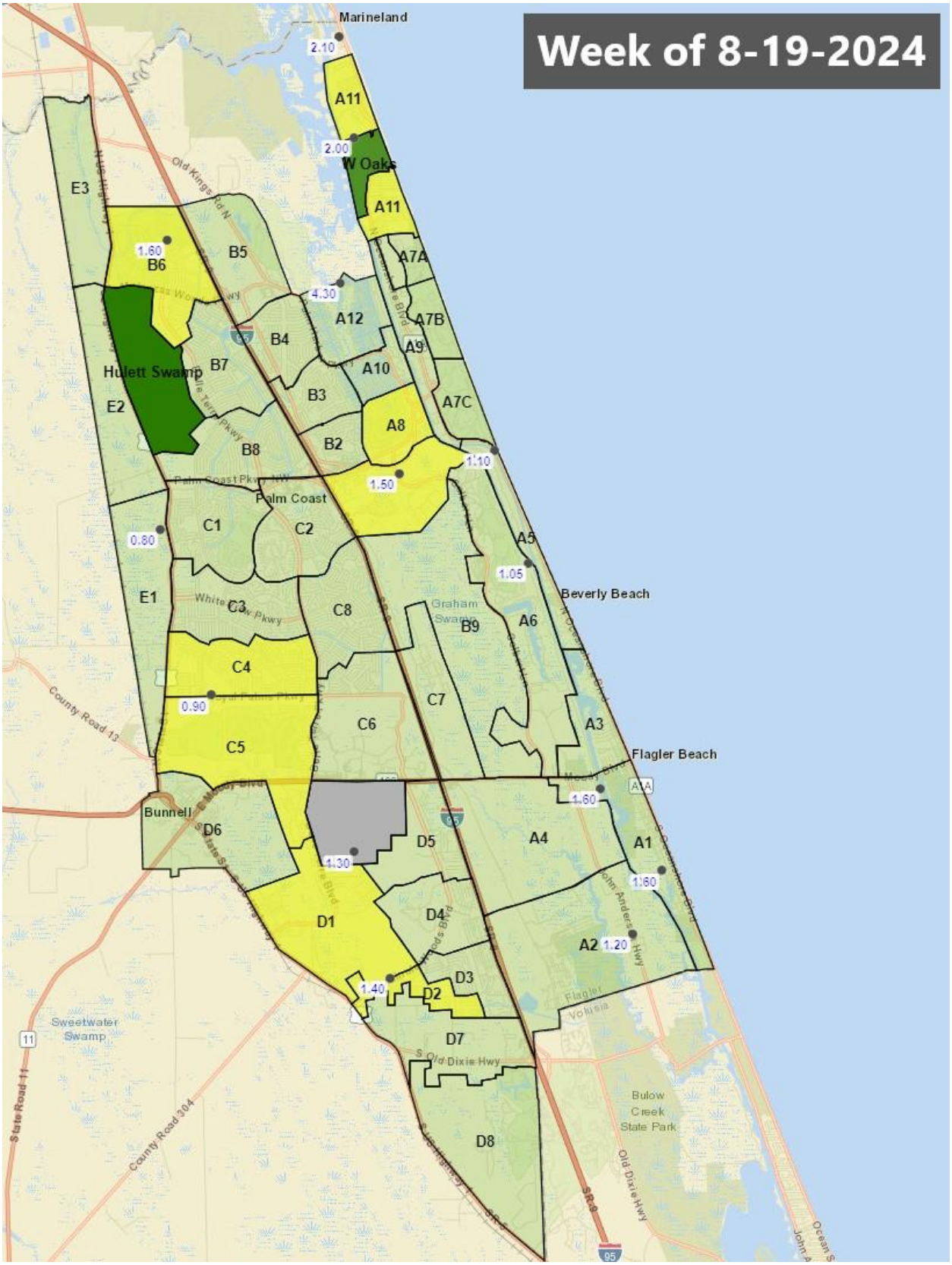
Dengue Cases Acquired in Florida: In 2024, 25 cases of locally acquired dengue have been reported in Hillsborough (2), Manatee, Miami-Dade (16), Monroe (3), Orange (2) and Pasco counties with onset in January (3), February, March (2), April, June (10), July (6) and August (2).

International Travel-Associated Oropouche Cases: Thirty cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward, Duval, Hillsborough (5), Lee (2), Miami-Dade (14), Orange (2), Palm Beach, Pasco, Polk (2), and Sarasota. Country of origin was Cuba (30).

*On the map of the Counties under advisories/warnings below, the locations are randomly assigned within the County affected and not geographically accurate.

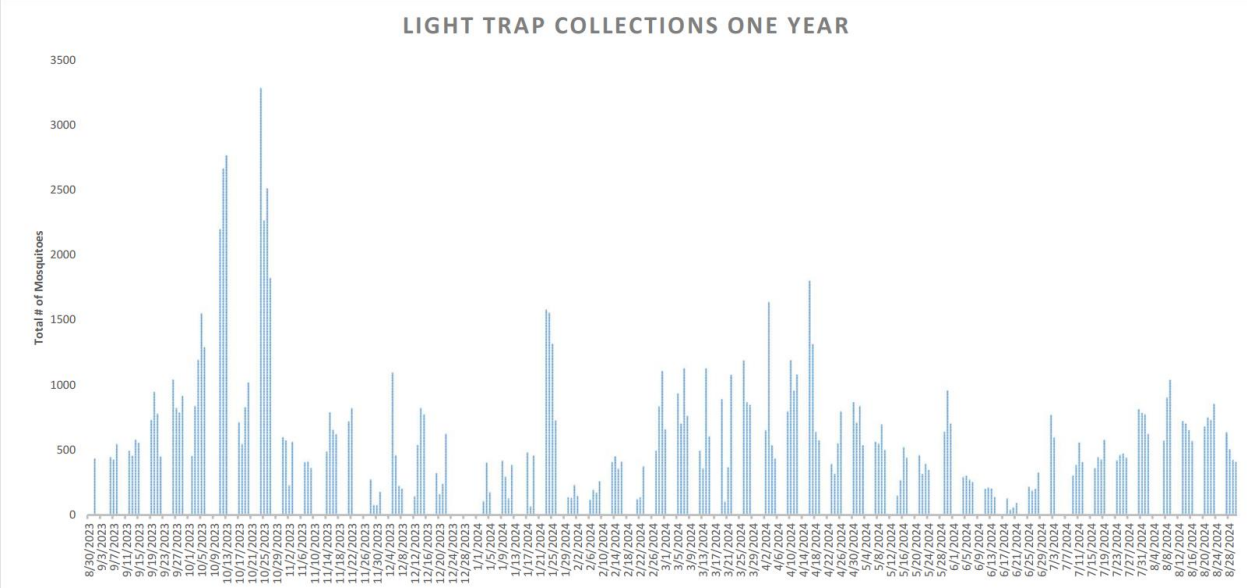


Zones highlighted in yellow were treated by truck this week.

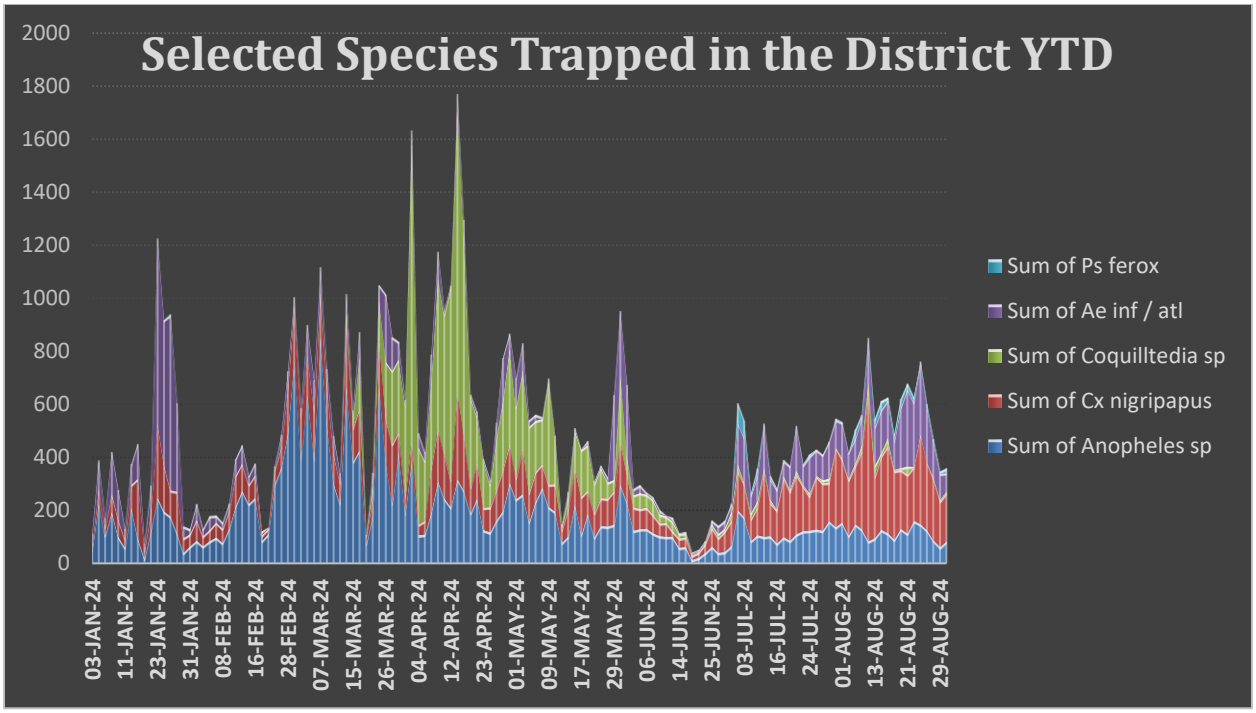


Week of 8/26/2024 Operations Update (35)

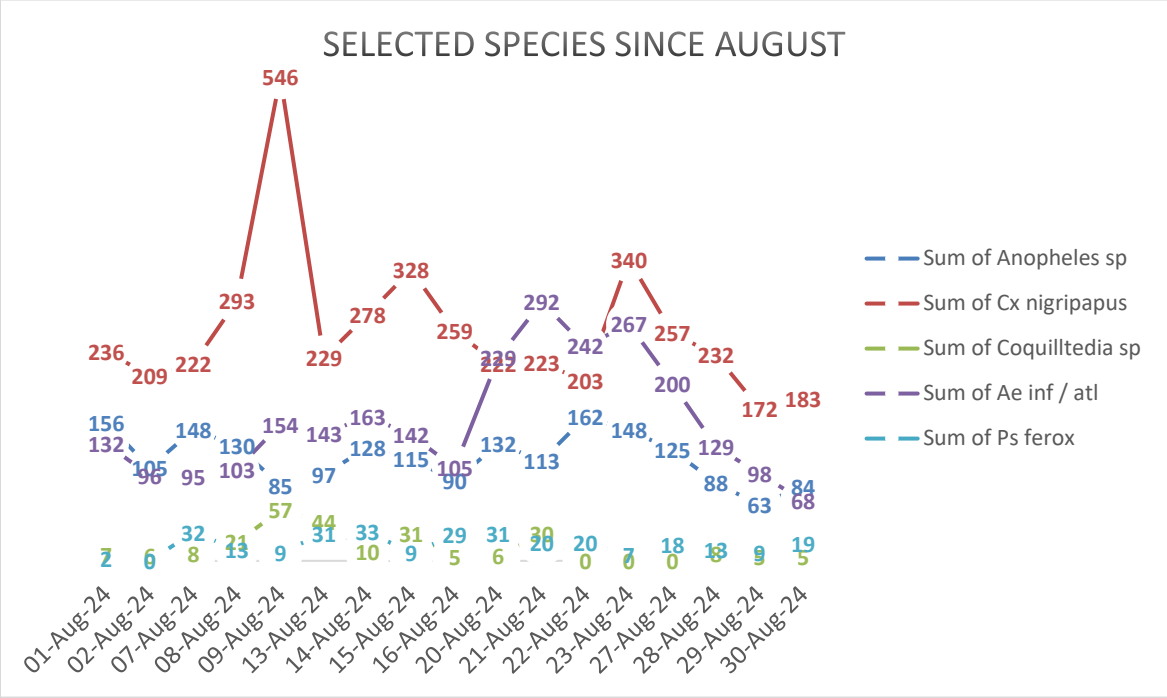
This week the total mosquito population was at low levels with all species declining in abundance. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



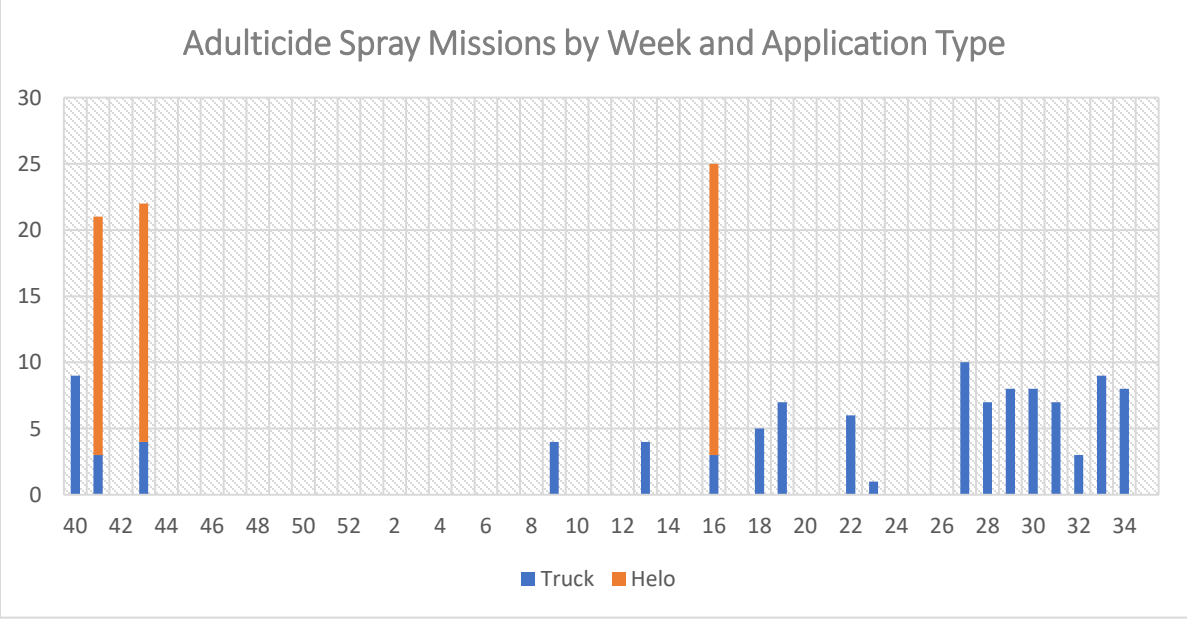
All species at low levels and declined through this week.



A closer look at the numbers shows a decline of better than half for each species not already at background levels.



Spraying consisted of isolated zones experiencing moderate levels of mosquito activity.



Florida Arbovirus Surveillance Week 34: August 18-24, 2024 View the full report

Advisories/Alerts: Alachua, Bay, Duval, Holmes, Madison, Mantatee, Nassau, Orange, and Pasco counties are currently under a mosquito-borne illness advisory. Hillsborough, Marion, Miami-Dade, Monroe, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquitoborne illness advisory or alert.

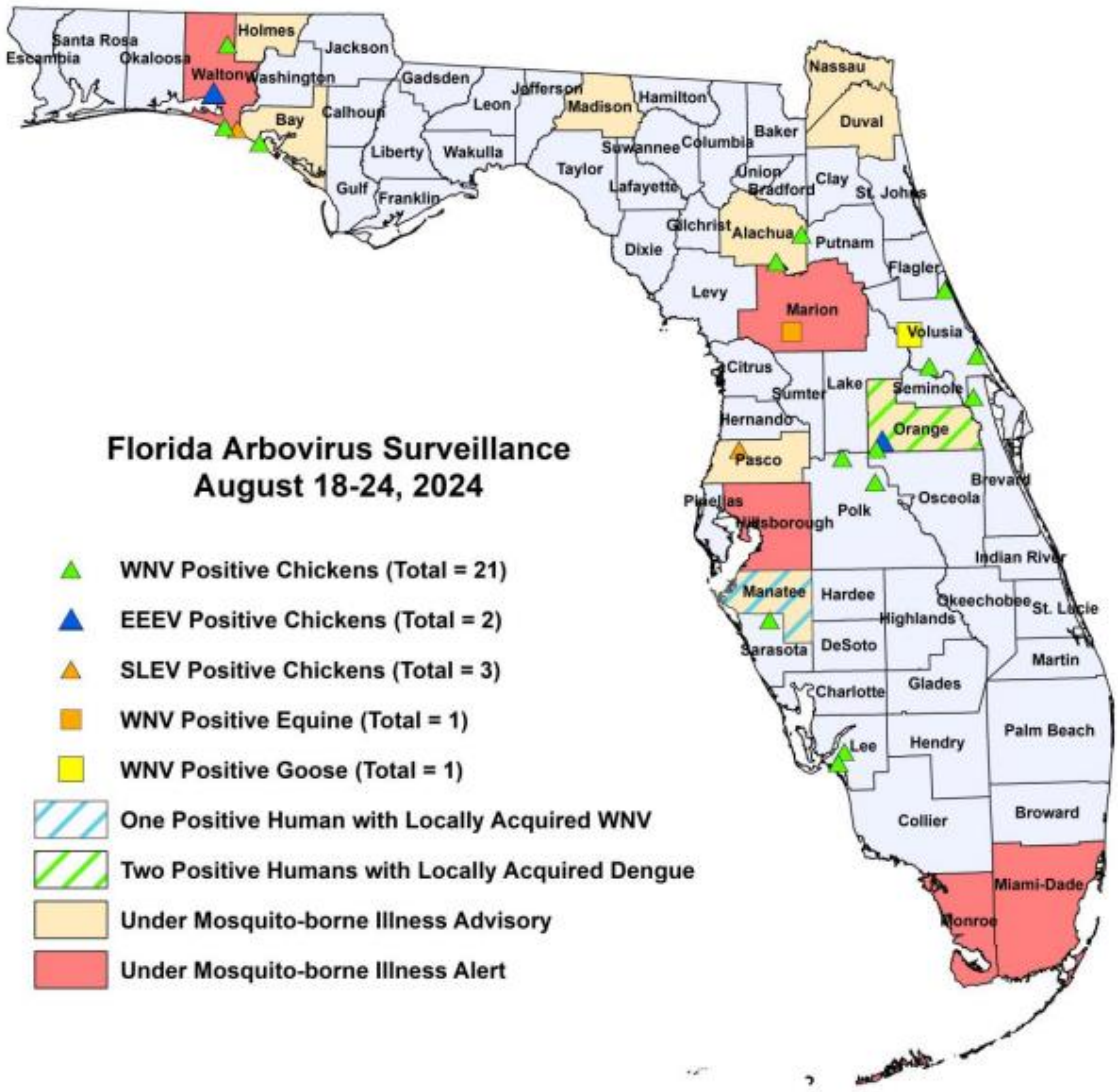
WNV activity: One human case of WNV infection was reported this week in Manatee County. One horse with WNV infection was reported this week in Marion County. One goose with WNV infection was reported this week in Volusia County. Twenty-one sentinel chickens tested positive for antibodies to WNV this week in Alachua, Bay, Brevard, Lee, Orange, Polk, Sarasota, Volusia, and Walton counties. No mosquito pools tested positive for WNV this week. In 2024, three human cases of WNV illness acquired in Florida have been reported in Duval (July), Marion (July), and Walton (July) counties. Three asymptomatic positive blood donors were reported from Marion (July) and Walton (July, August) counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. Two sentinel chickens tested positive for antibodies to EEEV this week in Orange and Walton counties. In 2024, positive samples from 47 sentinel chickens, 21 horses, two emus, and one emu flock have been reported from 26 counties.

Dengue Cases Acquired in Florida: In 2024, 25 cases of locally acquired dengue have been reported in Hillsborough (2), Manatee, Miami-Dade (16), Monroe (3), Orange (2) and Pasco counties with onset in January (3), February, March (2), April, June (10), July (6) and August (2).

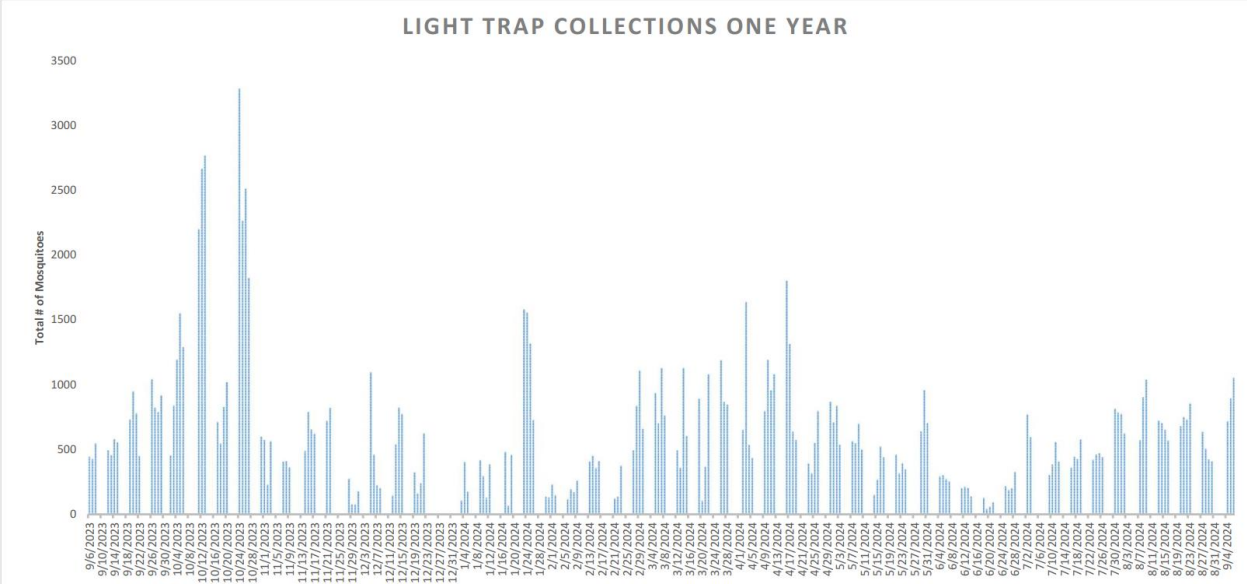
International Travel-Associated Oropouche Cases: Thirty cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward, Duval, Hillsborough (5), Lee (2), Miami-Dade (14), Orange (2), Palm Beach, Pasco, Polk (2), and Sarasota. Country of origin was Cuba (30).

*On the map of the Counties under advisories/warnings below, the locations are randomly assigned within the County affected and not geographically accurate.

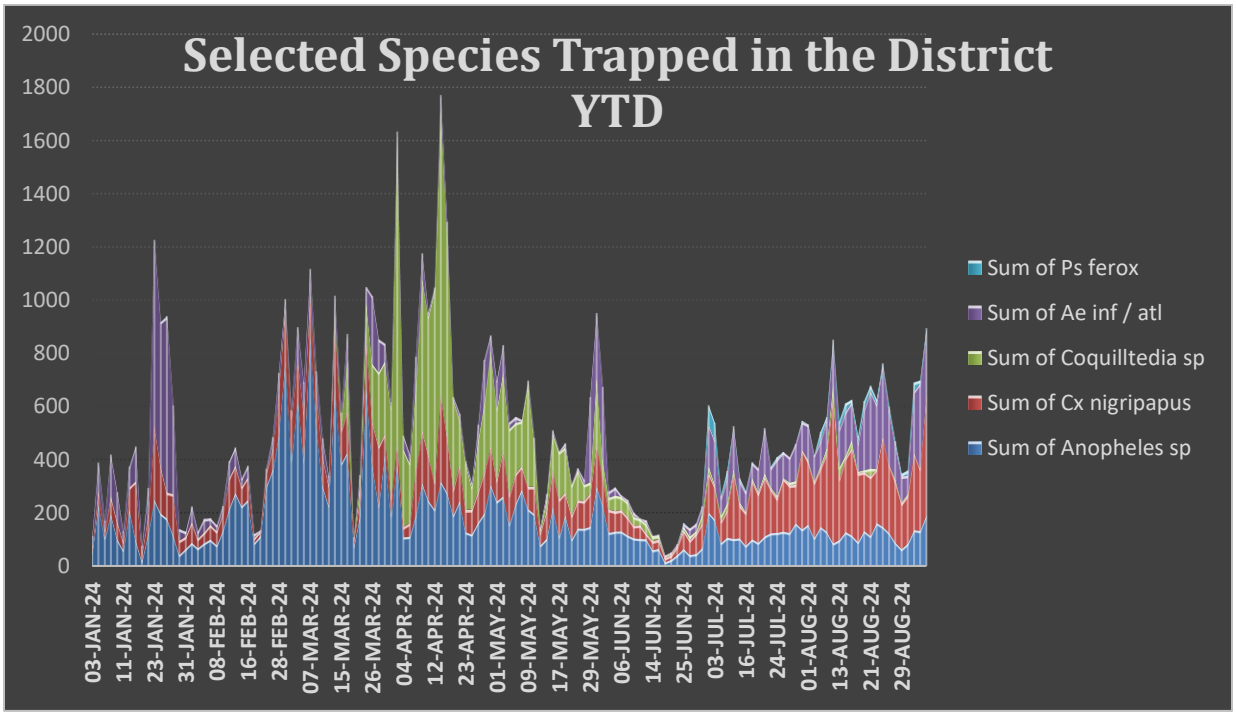

Florida Arbovirus Surveillance
August 18-24, 2024
WNV Positive Chickens (Total = 21)
EEEV Positive Chickens (Total = 2)
SLEV Positive Chickens (Total = 3)
WNV Positive Equine (Total = 1)
WNV Positive Goose (Total = 1)
One Positive Human with Locally Acquired WNV
Two Positive Humans with Locally Acquired Dengue
Under Mosquito-borne Illness Advisory
Under Mosquito-borne Illness Alert
Escambia
Santa Rosa
Okaloosa
Walton
Holmes
Washington
Jackson
Calhoun
Bay
Gadsden
Liberty
Gulf
Franklin
Wakulla
Leon
Jefferson
Madison
Taylor
Hamilton
Lafayette
Suwannee
Columbia
Baker
Nassau
Duval
Union
Bradford
Clay
St. Johns
Gilchrist
Alachua
Putnam
Dixie
Levy
Flagler
Marion
Volusia
Citrus
Sumter
Lake
Seminole
Hernando
Orange
Pasco
Brevard
Pinellas
Hillsborough
Polk
Osceola
Indian River
Manatee
Hardee
Okeechobee
St. Lucie
Highlands
Sarasota
DeSoto
Martin
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Miami-Dade
Monroe

Week of 9/3/2024 Operations Update (36)

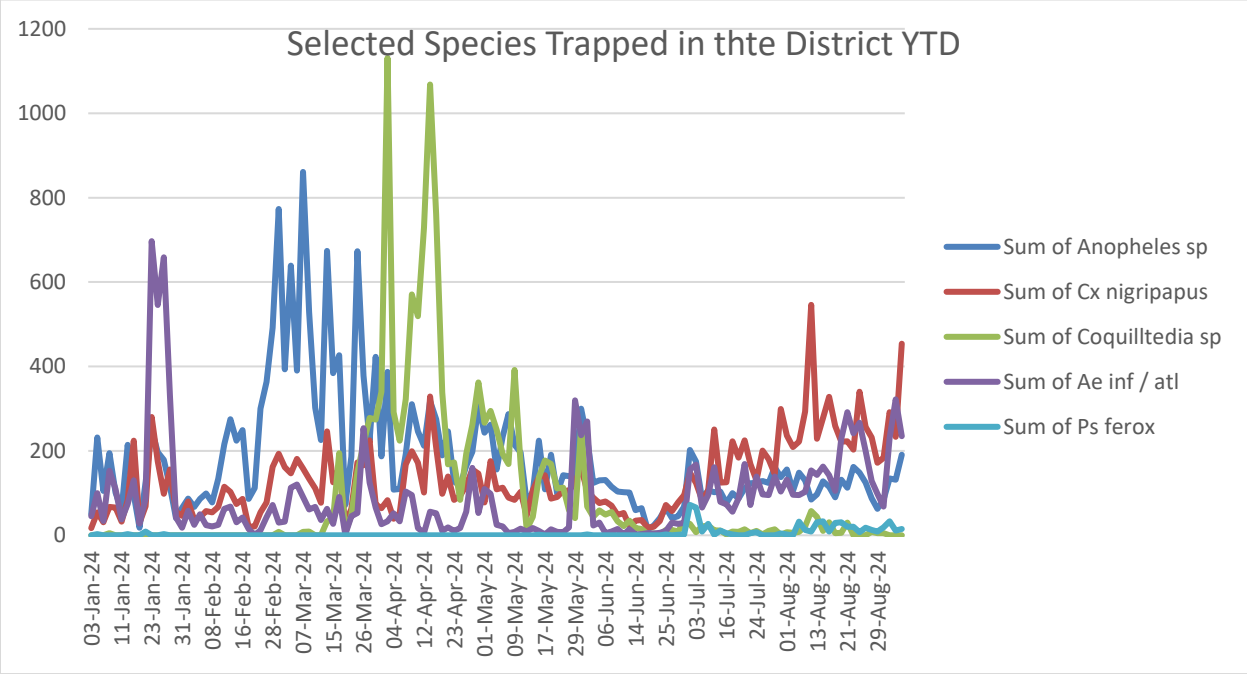
This week the total mosquito population increased to actionable levels after a week where no spraying for adult mosquitoes was justified. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



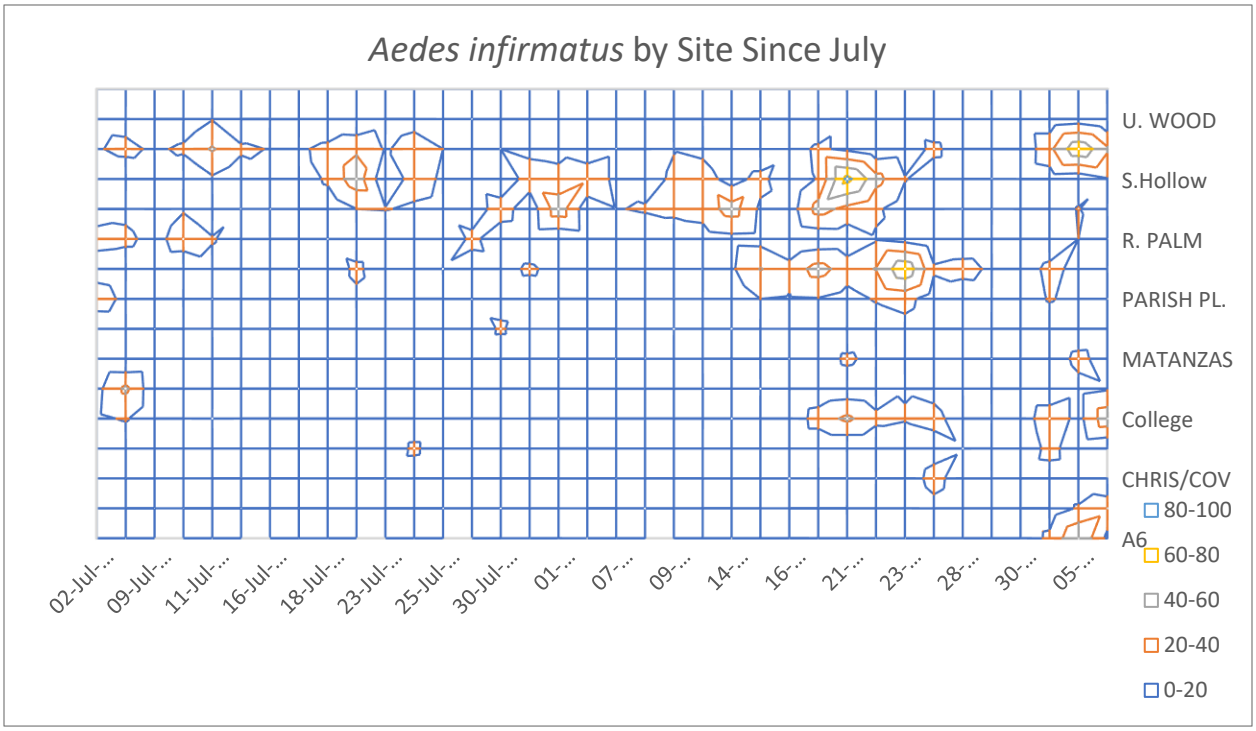
All species at low levels, declining through the week.



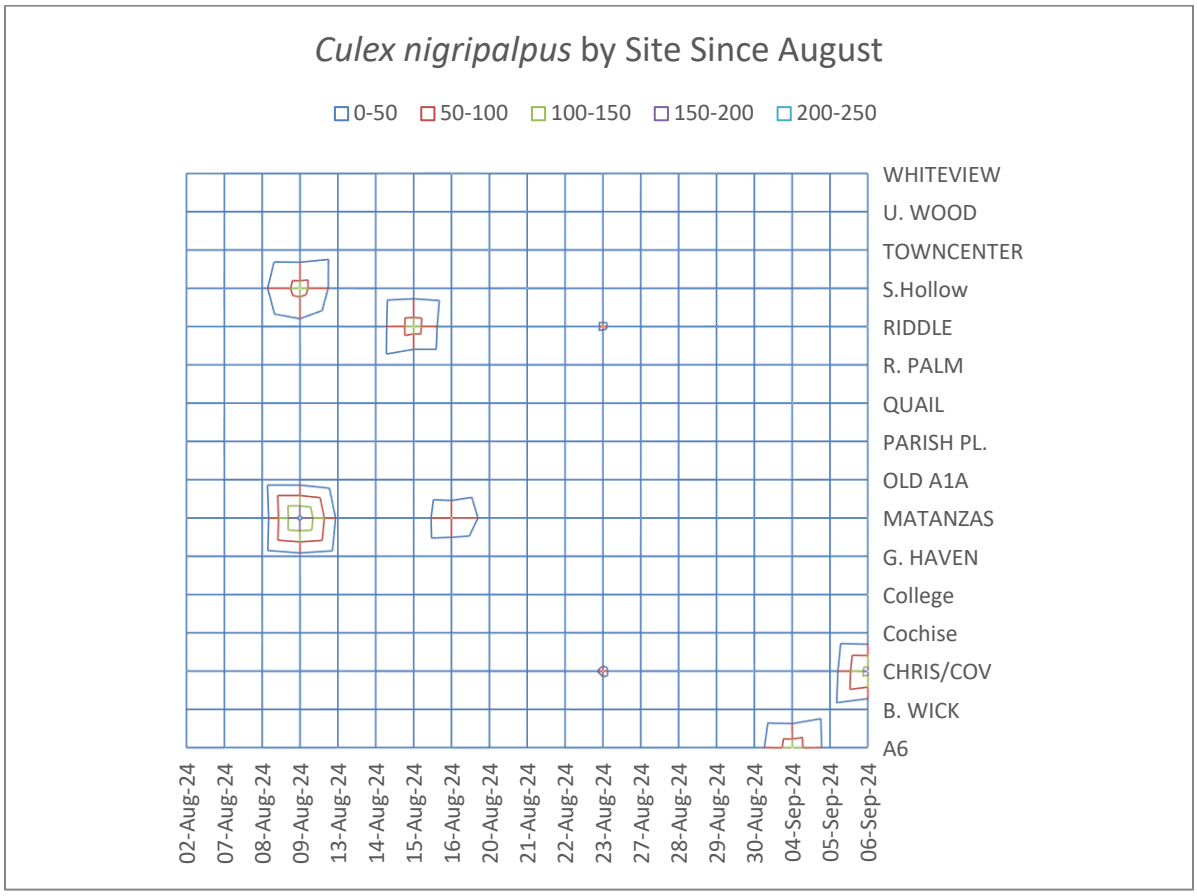
Two permanent-water species and one floodwater species represented the majority of active species this week. Culex nigripalpus has been at an increased level of abundance since August, while the other permanent-water species, Anopheles spp. has been at relatively low-levels and typically is more abundant than the other species year-round. Finally, the floodwater species, *Aedes infirmatus*, closed out the week at moderate levels.



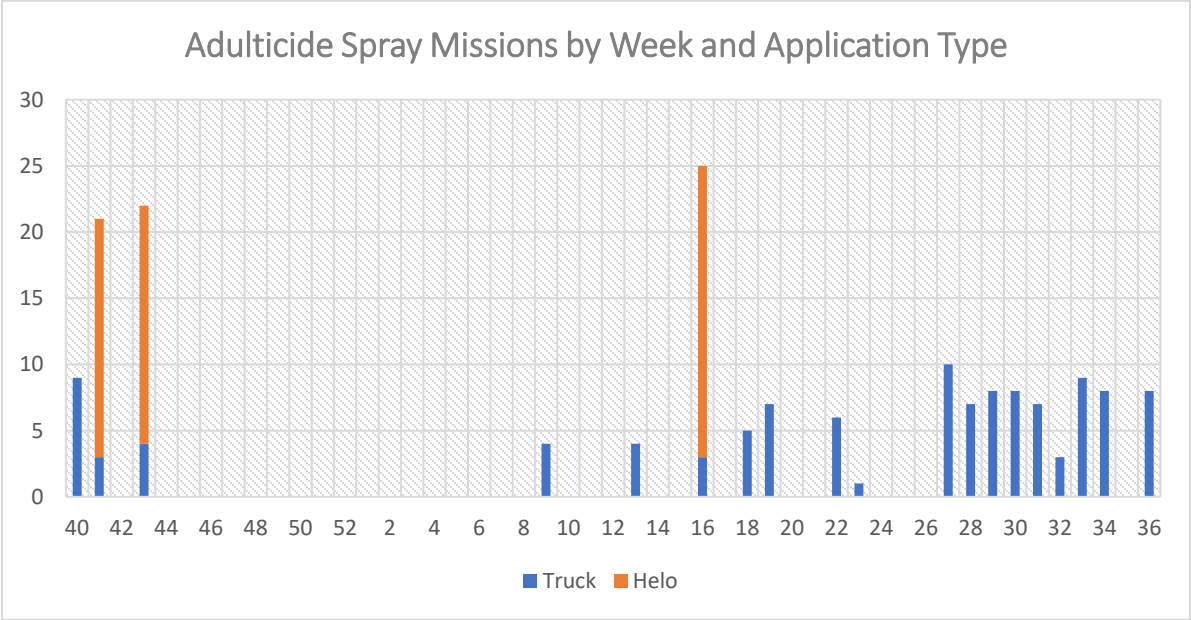
The main floodwater species was more widely dispersed since mid-August after more wide-spread rain was received.



Permanent-water species have been somewhat bifurcated with *Anopheles spp.* at relatively low numbers and *Culex nigirpalpus* at more typical moderate levels, and while being evenly distributed.



Spraying consisted of two clusters zones experiencing moderate levels of mosquito activity.



Florida Arbovirus Surveillance Week 35: August 25-31, 2024 View the full report

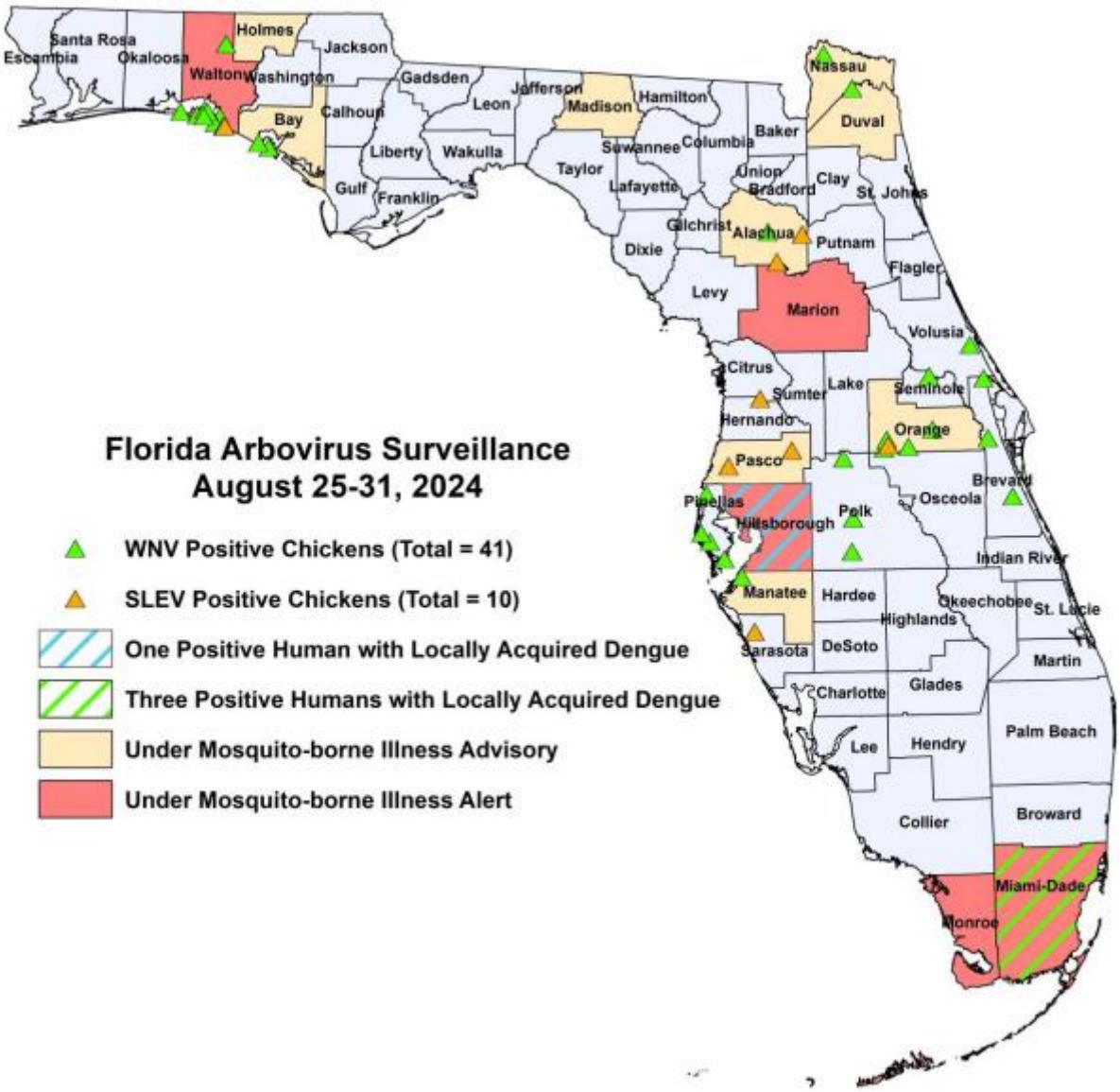
Advisories/Alerts: Alachua, Bay, Duval, Holmes, Madison, Mantatee, Nassau, Orange, and Pasco counties are currently under a mosquito-borne illness advisory. Hillsborough, Marion, Miami-Dade, Monroe, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquitoborne illness advisory or alert.

WNV activity: Acquired in Florida: In 2024, three human cases of WNV illness acquired in Florida have been reported in Duval (July), Marion (July), and Walton (July) counties. Four asymptomatic positive blood donors were reported from Manatee (August), Marion (July), and Walton (July, August) counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. No sentinel chickens tested positive for antibodies to EEEV this week. In 2024, positive samples from 47 sentinel chickens, 21 horses, two emus, and one emu flock have been reported from 26 counties.

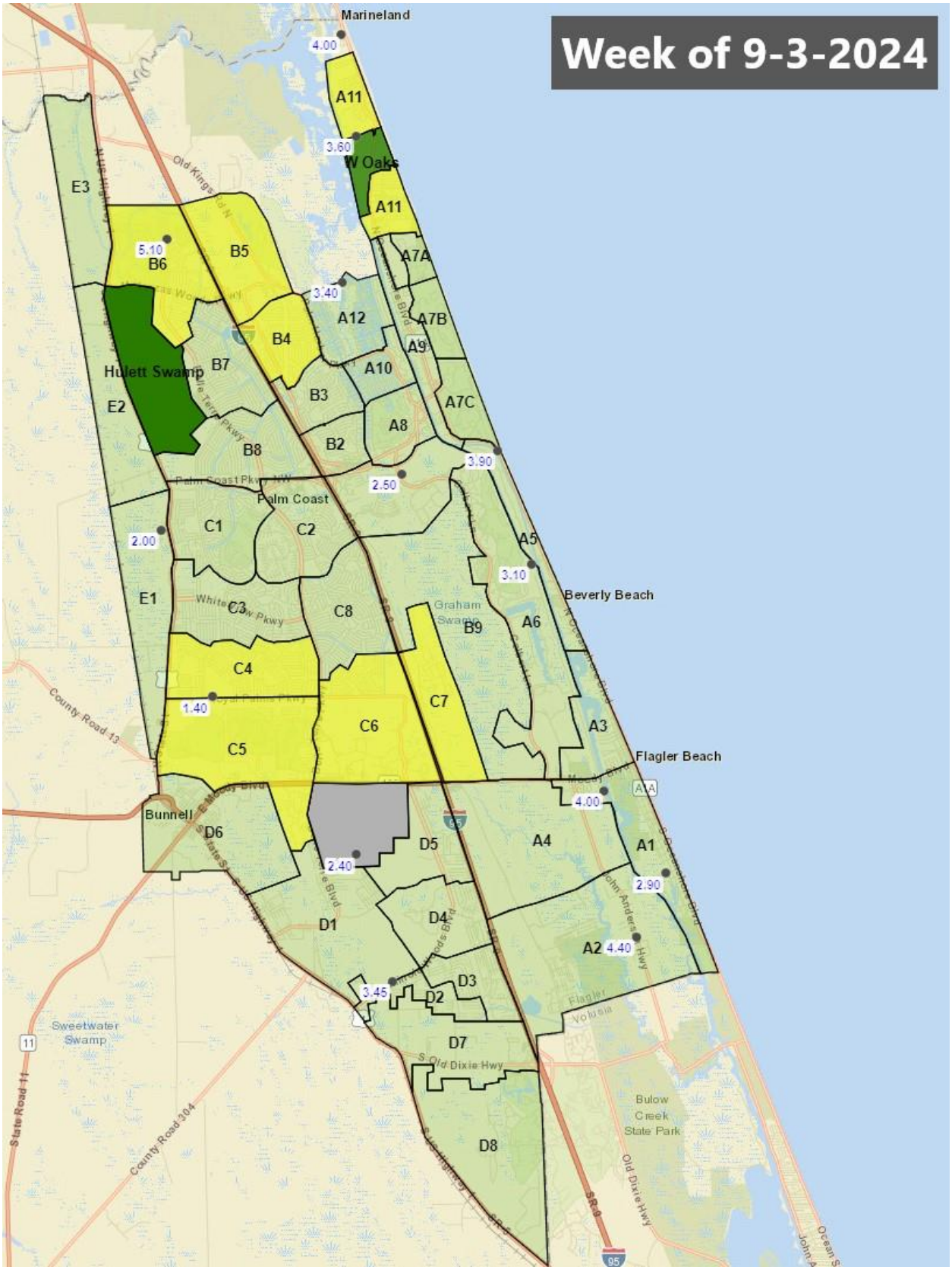
Dengue Cases Acquired in Florida: In 2024, 29 cases of locally acquired dengue have been reported in Hillsborough (3), Manatee, Miami-Dade (19), Monroe (3), Orange (2) and Pasco counties with onset in January (3), February, March (2), April, June (11), July (7) and August (4). One case was reported in a non-Florida resident.

2024 International Travel-Associated Oropouche Cases: Thirty-two cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward, Duval, Hillsborough (5), Lee (2), Miami-Dade (15), Orange (2), Palm Beach (2), Pasco, Polk (2), and Sarasota. Country of origin was Cuba (32).



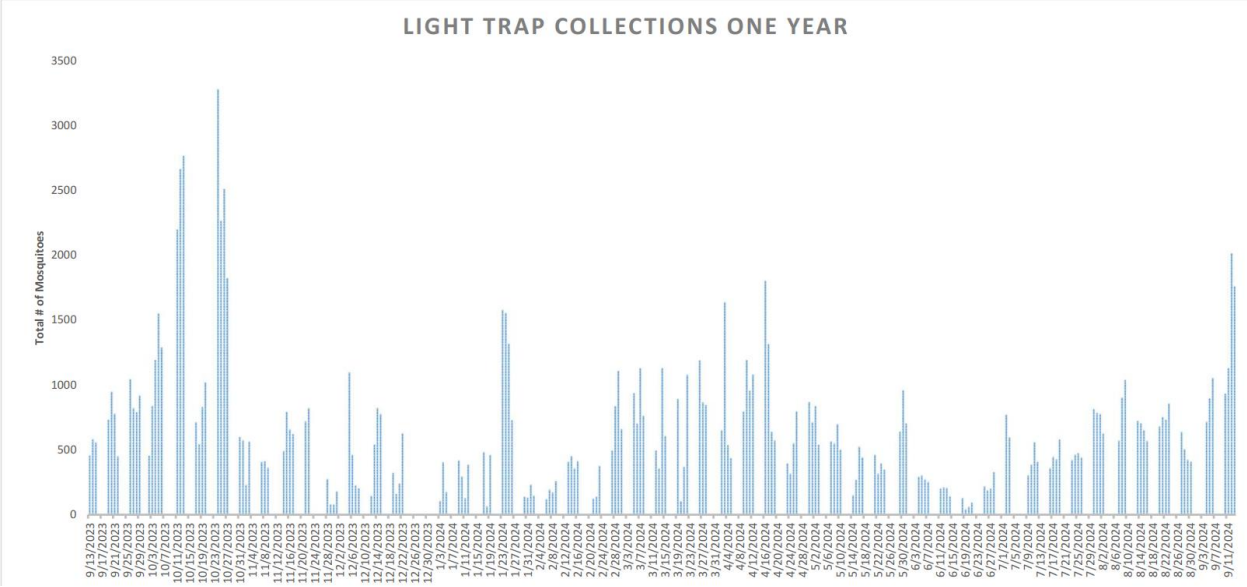
*On the map of the Counties under advisories/warnings below, the locations are randomly assigned within the County affected and not geographically accurate.

Zones highlighted in yellow were sprayed by truck this week.

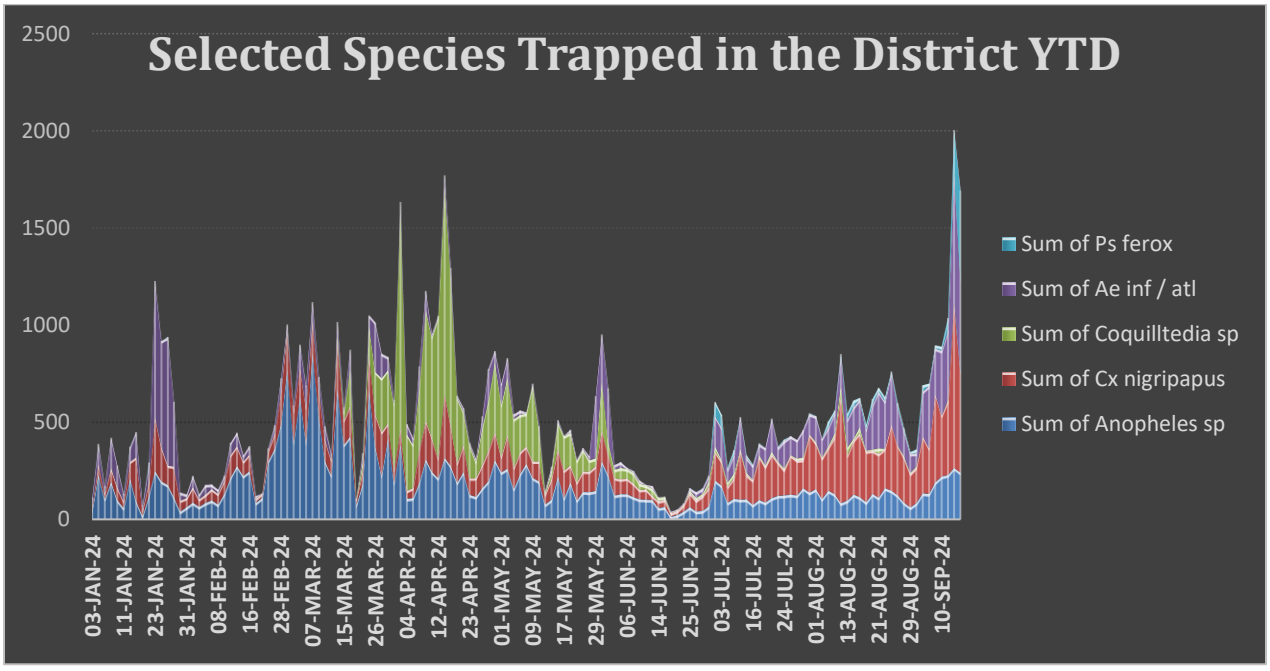


Week of 9/9/2024 Operations Update (37)

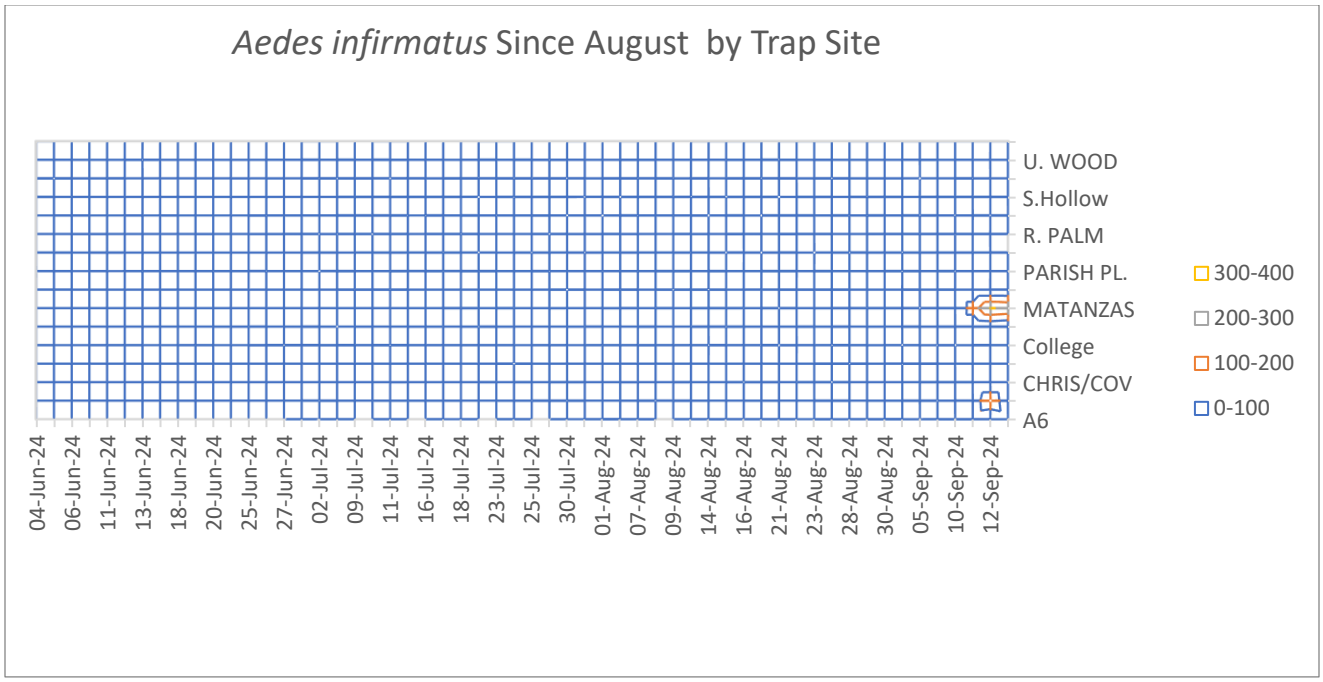
Significant rainfall last week in the northern portion of the District caused a surge in the mosquito population this week and was met with aerial adulticiding. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



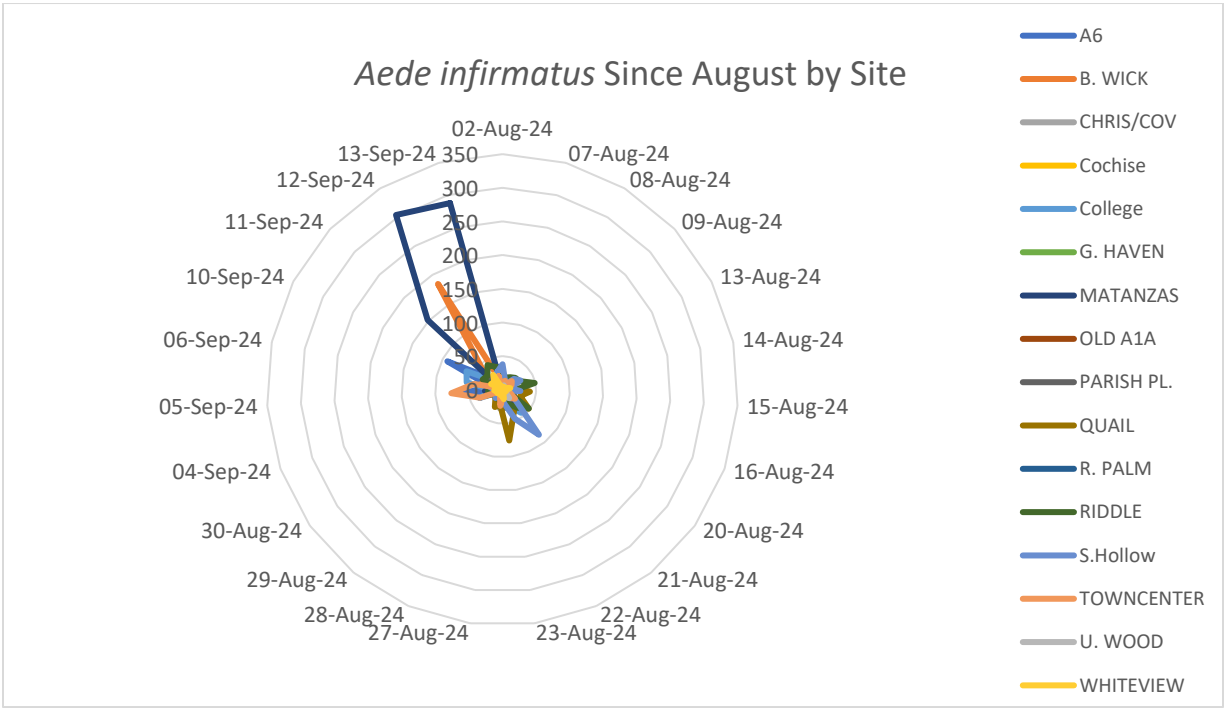
An average of 4-5” of rain had fallen in total the previous week in the northern portions of the District, and 2-3” had fallen everywhere else in the District. An additional 8” on average of rainfall accumulated over the course of this week and will likely lead to multiple broods as well as multiple species of floodwater mosquitoes emerging. The first wave of these mosquitoes emerged this week.



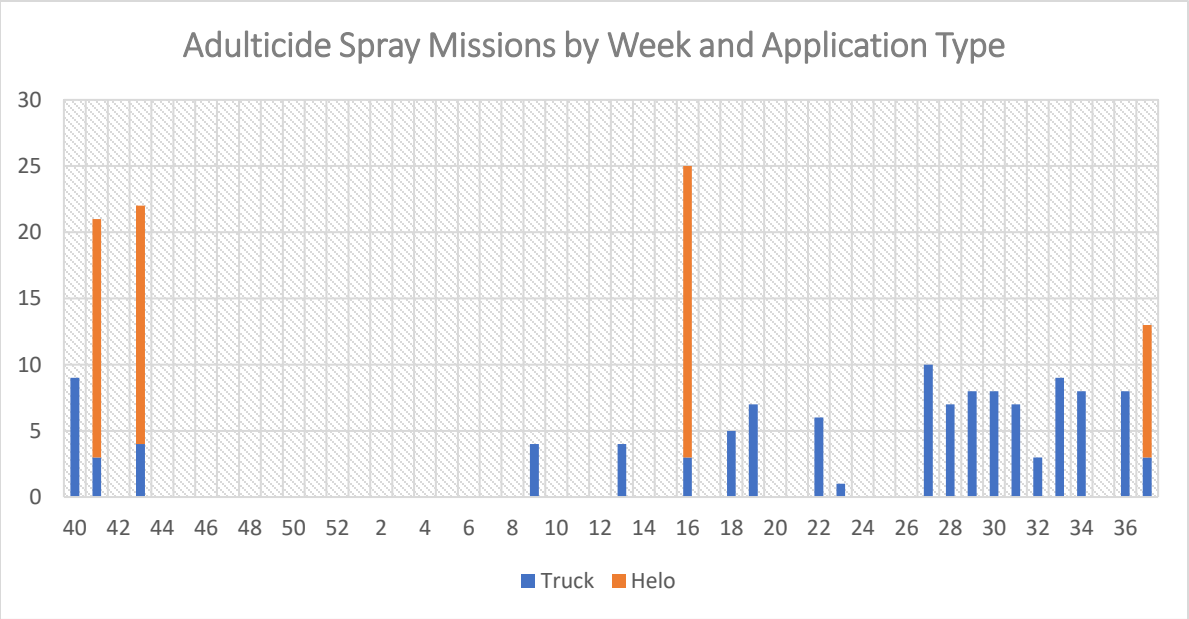
The surge in floodwater species was focused in just two trap sites. This is a representation of the increased mosquito population in general in the northern portion of the District as of this report. The rainfall received this week is similar to what we would experience after a hurricane and a much bigger surge in mosquitoes is anticipated.



The floodwater species *Aedes infirmatus* was at only moderate levels before this week.



Spraying consisted of aerial missions in northern zones experiencing high levels of mosquito activity.



Florida Arbovirus Surveillance Week 37: September 8 -14, 2024 View the full report

Advisories(7)/Alerts(11): Alachua, Bay, Holmes, Madison, Mantatee, Nassau, Orange, Palm Beach, Pinellas, Sarasota, and Volusia counties are currently under a mosquito-borne illness advisory. Duval, Hillsborough, Marion, Miami-Dade, Monroe, Pasco, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

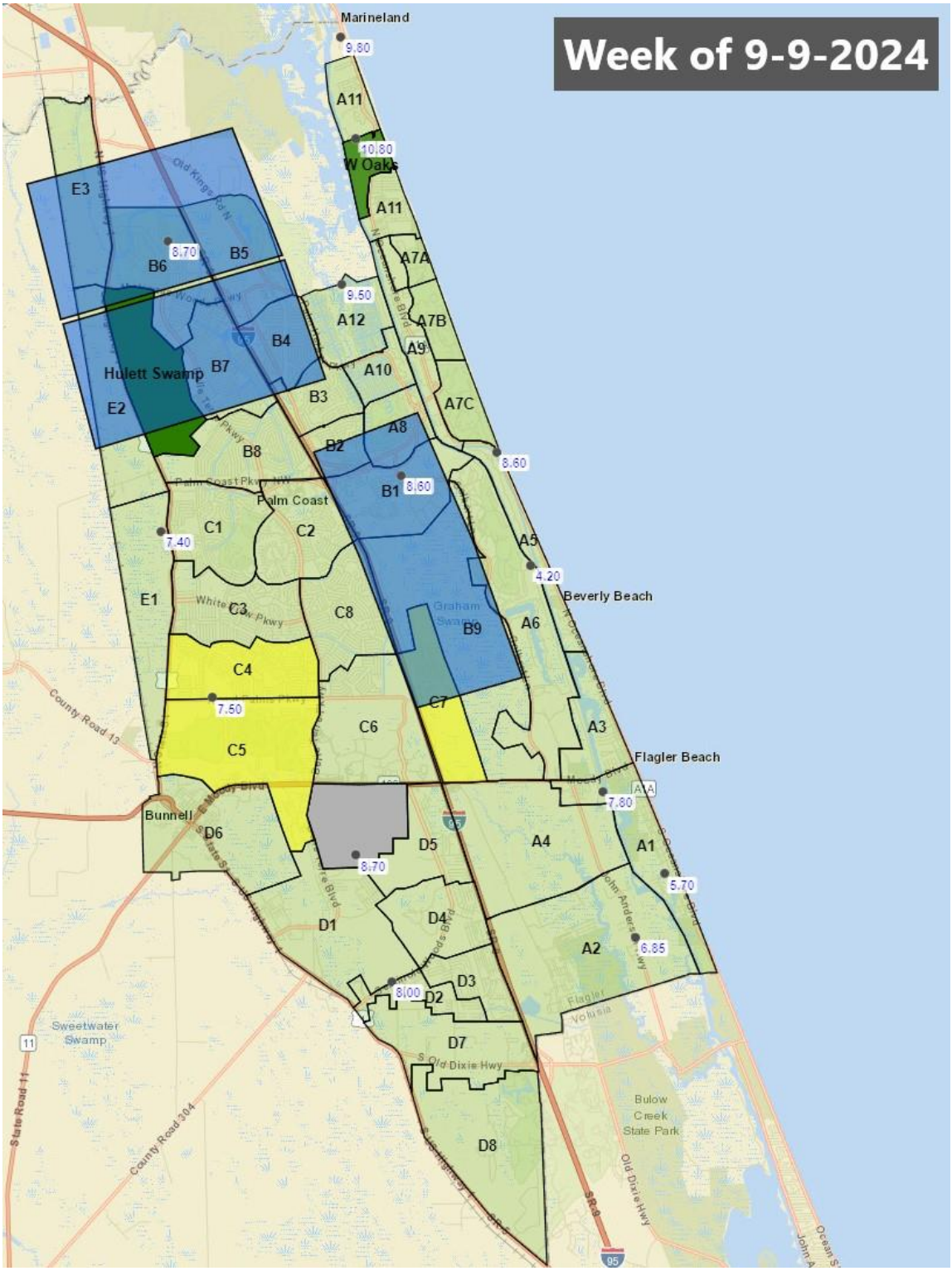
West Nile Virus Illnesses Acquired in Florida: In 2024, four human cases of WNV illness acquired in Florida have been reported in Bay (August), Duval (July), Marion (July), and Walton (July) counties. Five asymptomatic positive blood donors were reported from Duval (August), Manatee (August), Marion (July), and Walton (July, August) counties.

EEEV activity: In 2024, positive samples from 50 sentinel chickens, 21 horses, two emus, and one emu flock have been reported from 26 counties.

Dengue Cases Acquired in Florida: In 2024, 35 cases of locally acquired dengue have been reported in Hillsborough (3), Manatee, Miami-Dade (22), Monroe (3), Orange (2), Palm Beach, and Pasco (3) counties with onset in January (3), February, March (2), April, June (11), July (7) and August (10). One case was reported in a non-Florida resident.

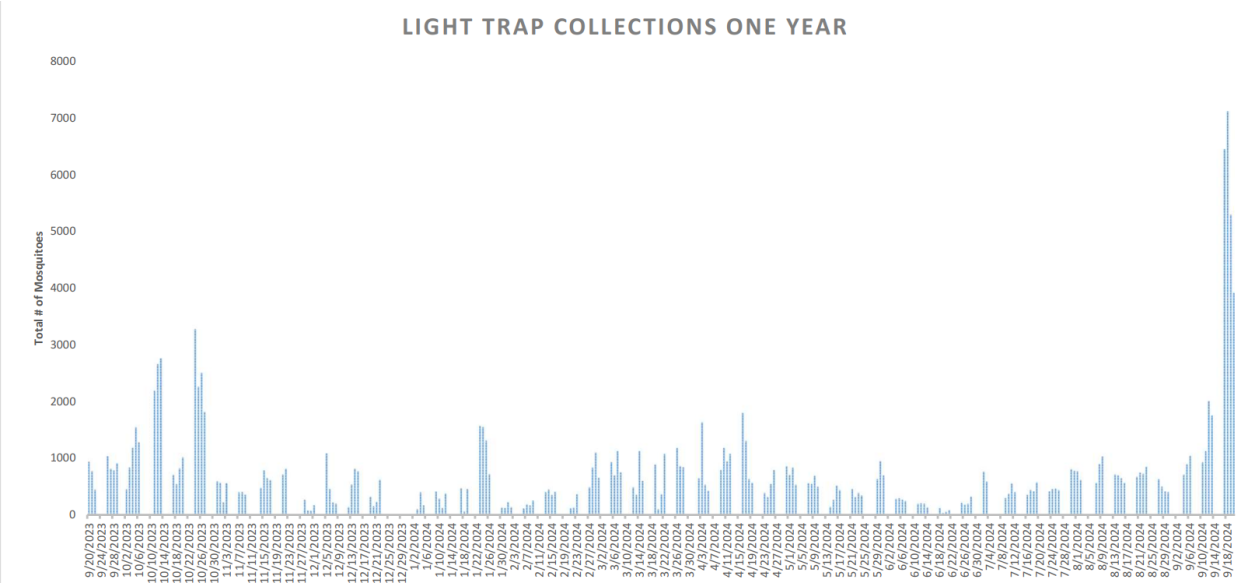
2024 International Travel-Associated Oropouche Cases: Seventy cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward (3), Duval, Hillsborough (11), Lee (4), Miami-Dade (41), Orange (2), Palm Beach (2), Pasco (2), Polk (2), Sarasota, and St. Lucie. Country of origin was Cuba (70).

Zones highlighted in yellow were sprayed by truck, blocks in blue were sprayed by helicopter this week. Rainfall totals for the week are indicated in blue numbers on white background. **Note- the spraying in C7 was done earlier in the week in response to mosquito activity emanating from the spray field at the waste-water treatment plant.*

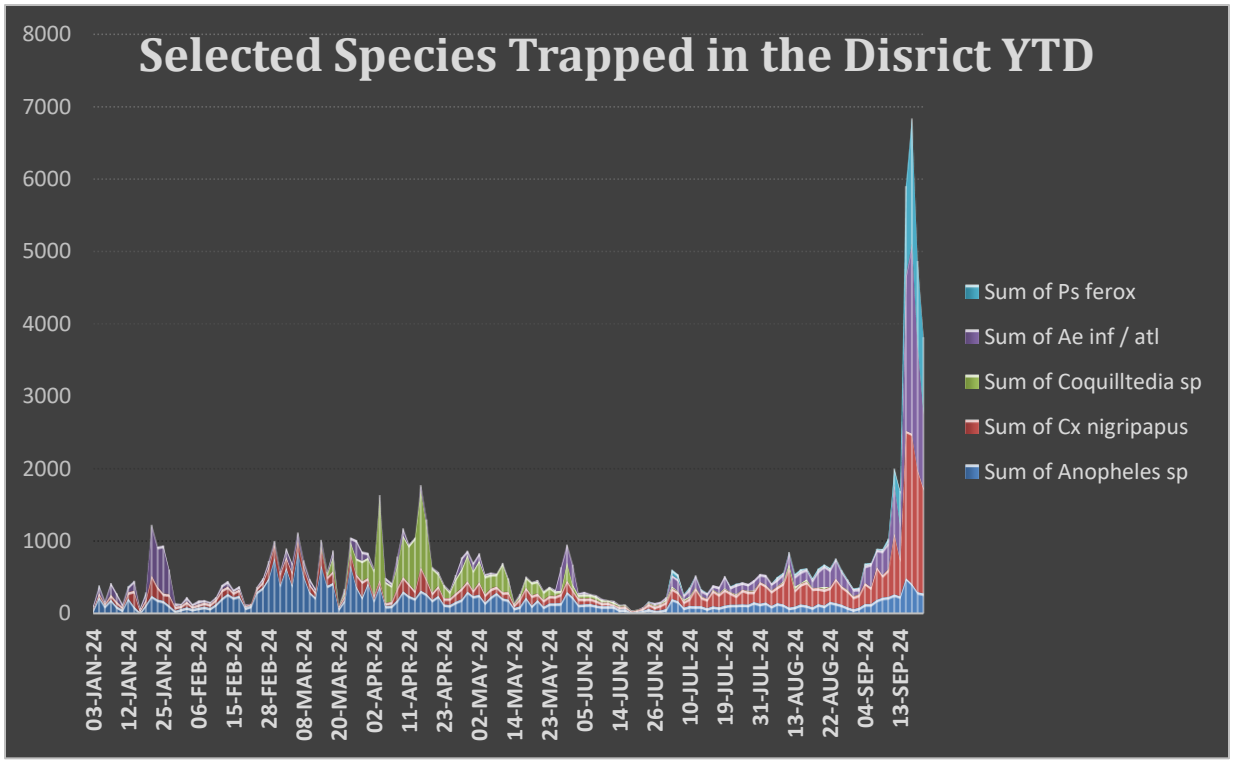


Week of 9/16/2024 Operations Update (38)

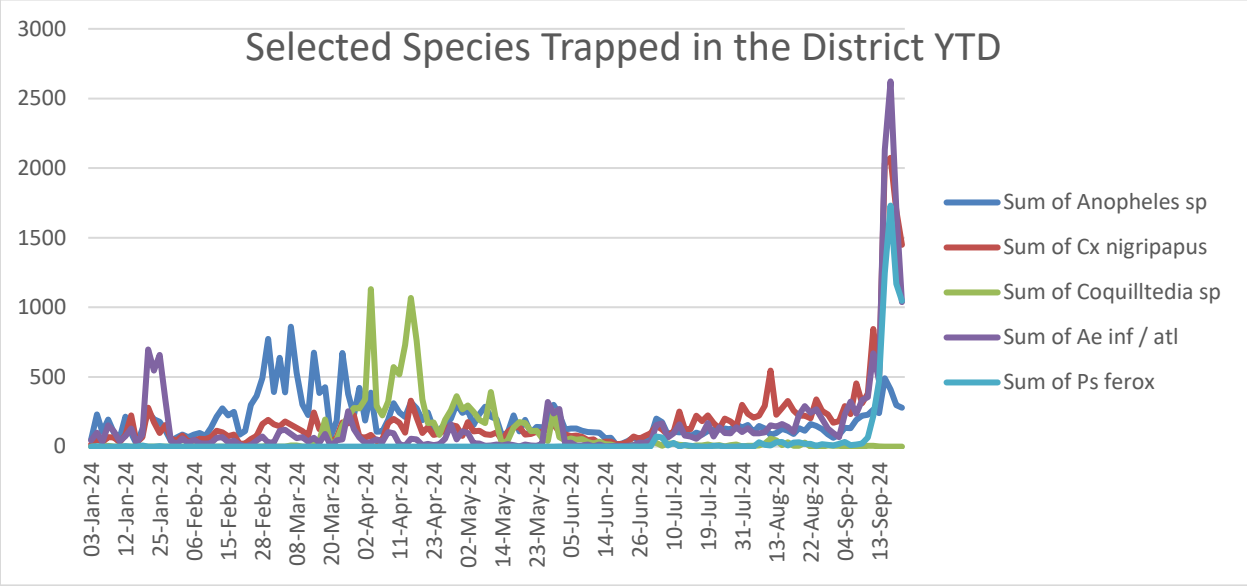
Following a significant amount of rainfall over two weeks, an extreme surge in the mosquito population this week was met with a second round of aerial adulticiding. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



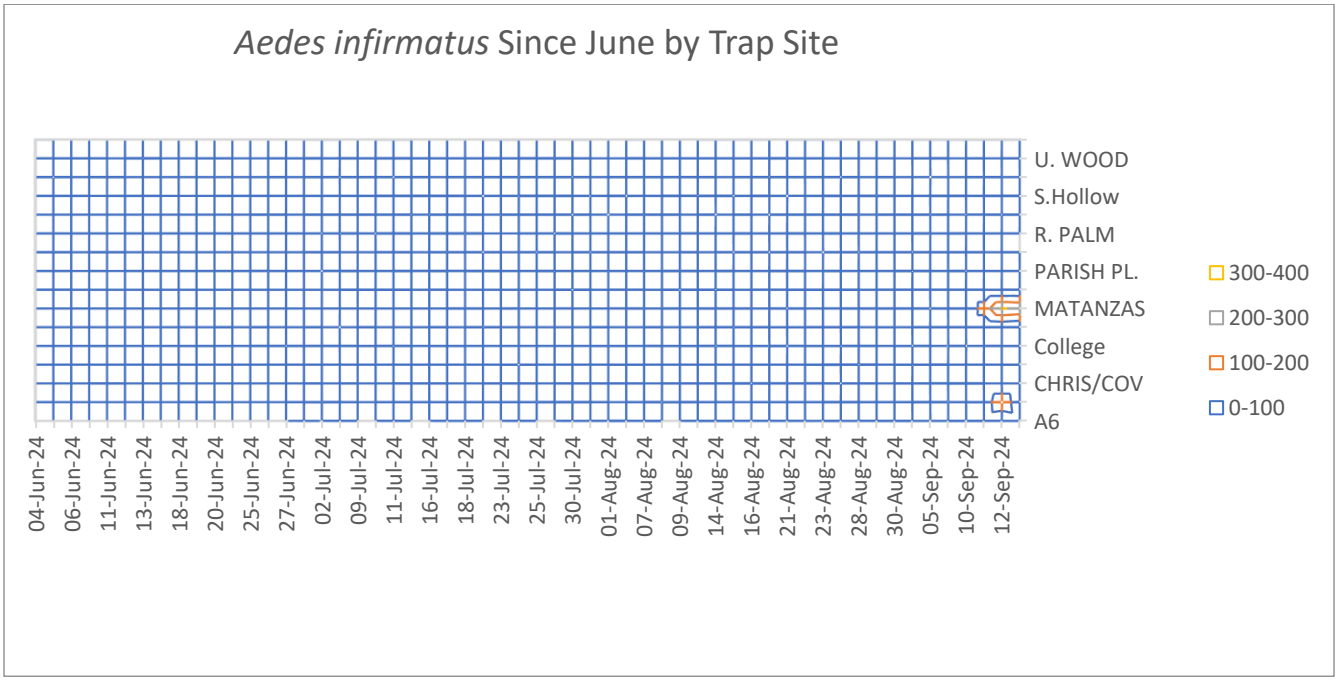
Last week we saw the first wave of mosquitoes emerge, but the bulk of the rainfall happened the second week and a larger emergence was expected this week. What resulted was similar to after a hurricane.



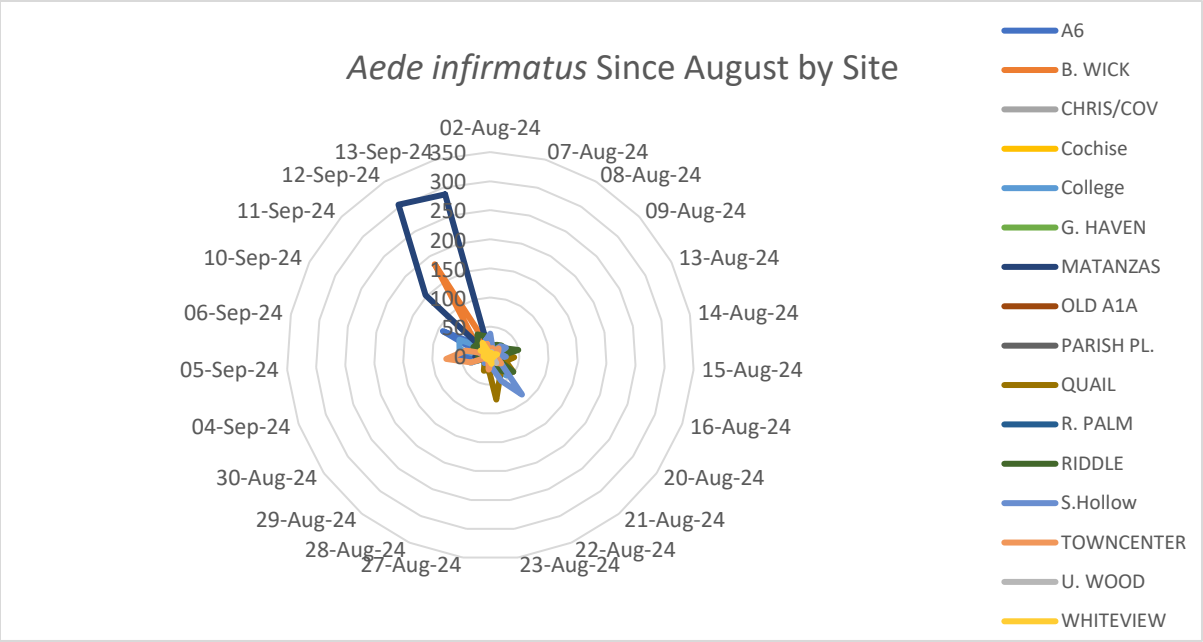
The unstacked chart below is easier to see the contribution of each species because of the outsized scale of the mosquito population. The first aerial treatment this week was done starting Wednesday night, with mosquito traps retrieved in the early morning hours on Thursday. The result then is a reduction evident in Friday's trap data. Thursday night's treatment effect is not reflected in Friday's trap data as the treatment had occurred at the end of the trapping period.



Because of the scale of rainfall and the number of days it occurred over, we expect to see further emergence of mosquito broods into next week. Last week we saw the emergence of *Psorophora ferox*, which usually follows large rain events. The emergence of this species this week was far greater. We also could see the emergence of *Psorophora columbiae*. This species is a larger and more aggressive biter than *Psorophora ferox*.

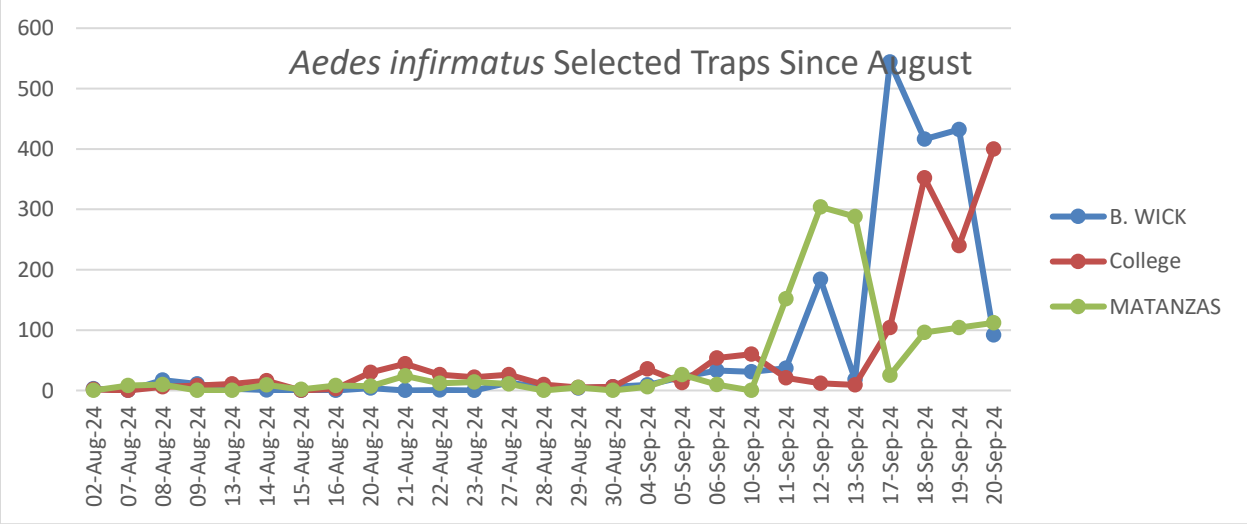


The graph below has better resolution on the floodwater species *Aedes infirmatus* since August.

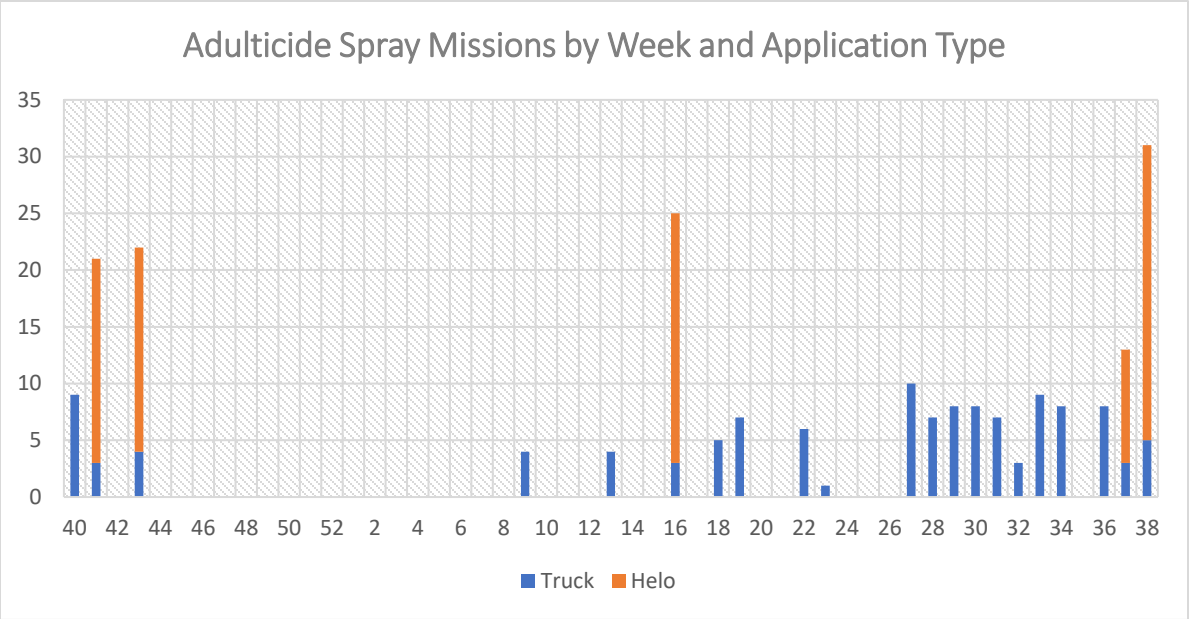


Focusing on just the three most abundant traps sites (graph below) for this species, you can see the timing of emergence being registered at each trap site is slightly different. We left the data from August on the graph to illustrate there is a normal variation in mosquito abundance from day to day. Wind is likely the greatest factor influencing the distribution of adult blood-seeking female mosquitoes, however, if it is too windy, or too cold this will reduce the activity of mosquitoes. Another factor to consider is that treatments were done last week and this week at the depicted sites.

The Matanzas trap increased first, a day ahead of B. Wick, was at low levels by the following Tuesday before settling at still high levels for most of the week before a second round of treatments could be registered. B. Wick peaked later and lower, and declined further after the first treatment before rebounding dramatically from further emergence. The College trap, further away, had emergence more appreciably this week as compared to last week.



Spraying consisted of aerial missions in response to extreme levels of mosquito activity.



Florida Arbovirus Surveillance Week 38: September 15 -21, 2024 View the full report

Advisories/Alerts: Alachua, Bay, Holmes, Madison, Mantatee, Nassau, Orange, Palm Beach, Pinellas, Sarasota, and Volusia counties are currently under a mosquito-borne illness advisory. Duval, Hillsborough, Marion, Miami-Dade, Monroe, Pasco, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

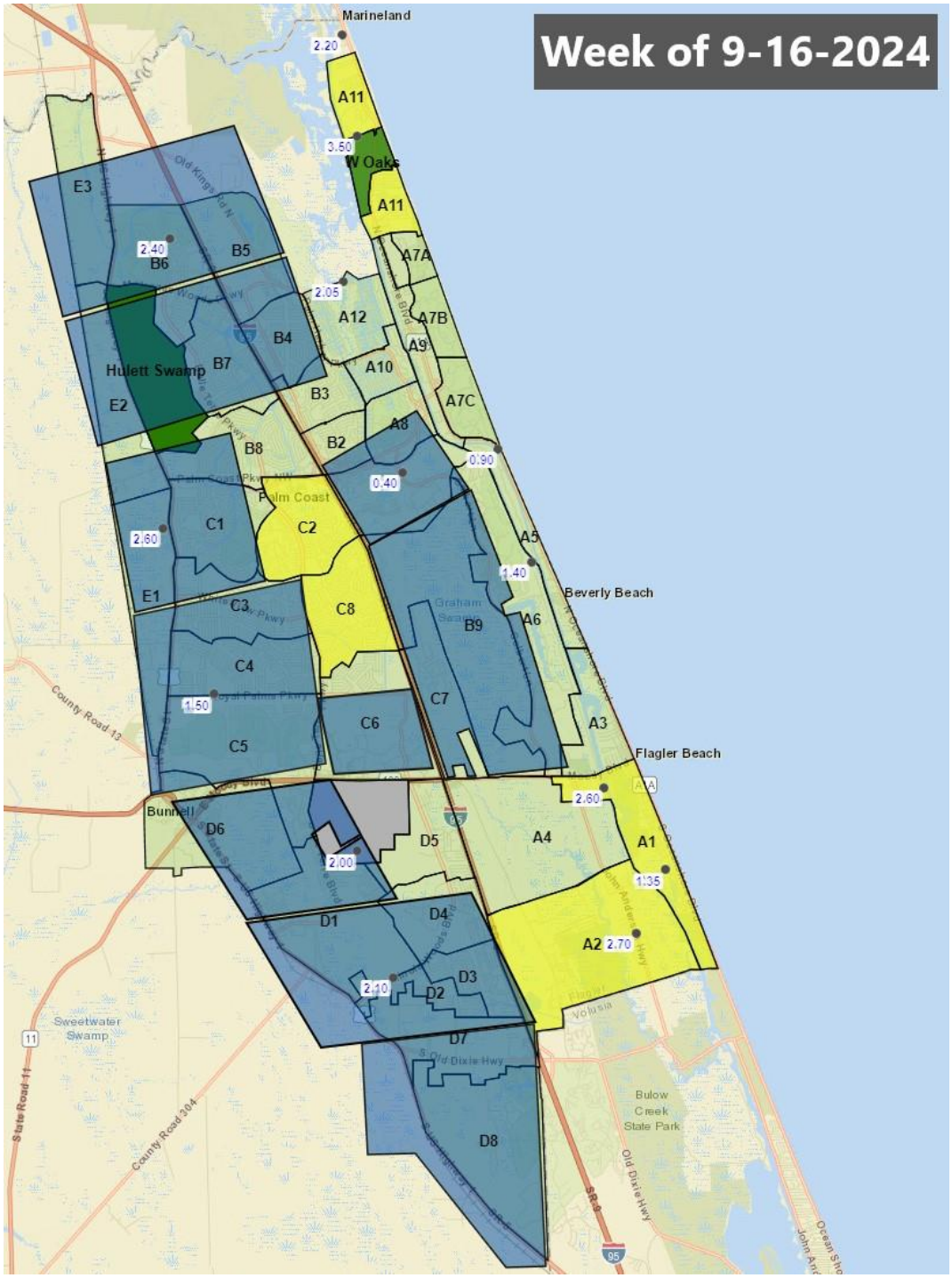
WNV activity: No human cases of WNV infection were reported this week. One horse with WNV infection was reported this week in Brevard County. Fifty-seven sentinel chickens tested positive for antibodies to WNV this week in Bay, Brevard, Charlotte, Citrus, Duval, Hernando, Hillsborough, Nassau, Orange, Pasco, Polk, St. Johns, Sumter, Volusia, and Walton counties. One mosquito pool tested positive for WNV this week in Sarasota County. In 2024, positive samples from four humans, five asymptomatic blood donors, three horses, one goose, one mosquito pool, and 245 sentinel chickens have been reported from 26 counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. No sentinel chickens tested positive for antibodies to EEEV this week. One deer tested positive to EEEV this week in Jackson County. In 2024, positive samples from 50 sentinel chickens, 21 horses, two emus, one emu flock, and one deer have been reported from 26 counties.

2024 Dengue Cases Acquired in Florida: In 2024, 37 cases of locally acquired dengue have been reported in Hillsborough (3), Manatee, Miami-Dade (24), Monroe (3), Orange (2), Palm Beach, and Pasco (3) counties with onset in January (3), February, March (2), April, June (11), July (8) and August (11). One case was reported in a non-Florida resident.

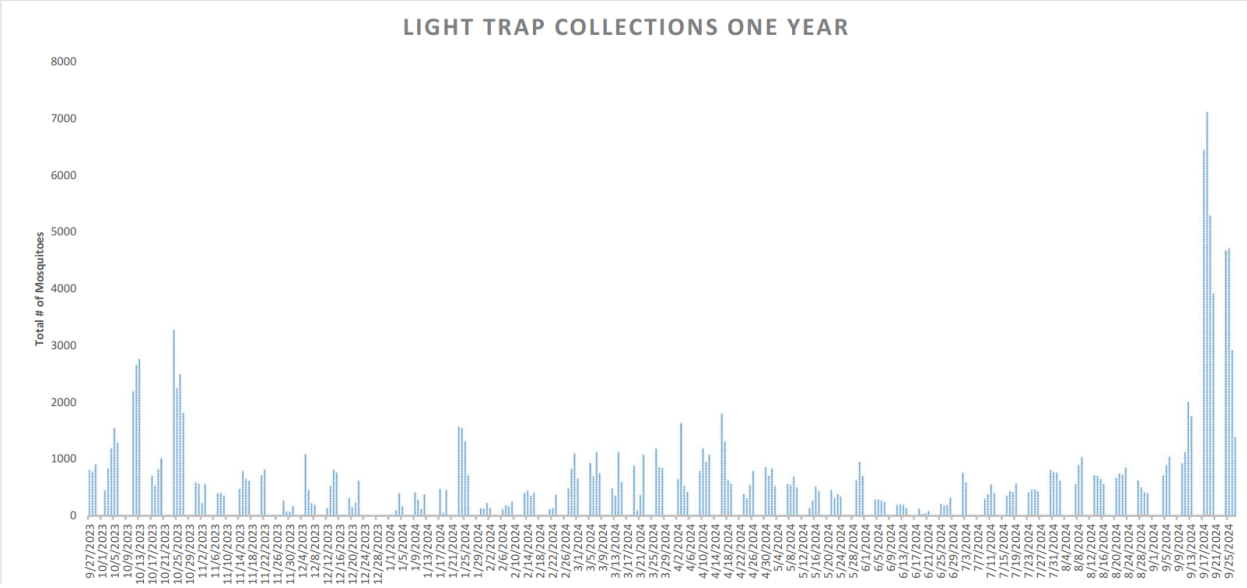
2024 International Travel-Associated Oropouche Cases: Seventy cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward (3), Duval, Hillsborough (11), Lee (4), Miami-Dade (41), Orange (2), Palm Beach (2), Pasco (2), Polk (2), Sarasota, and St. Lucie. Country of origin was Cuba (70).

Zones highlighted in yellow were sprayed by truck, blocks in blue were sprayed by helicopter this week. Rainfall totals for the week are indicated in blue numbers on white background.

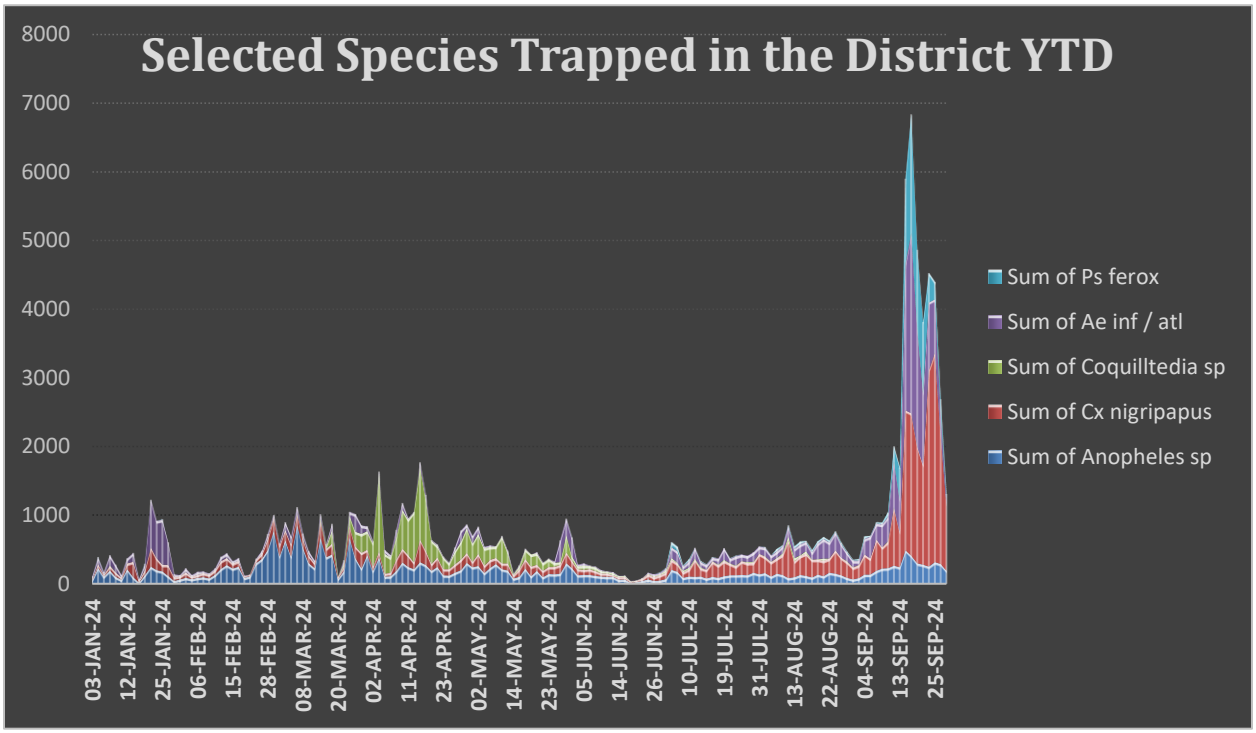


Week of 9/23/2024 Operations Update (39)

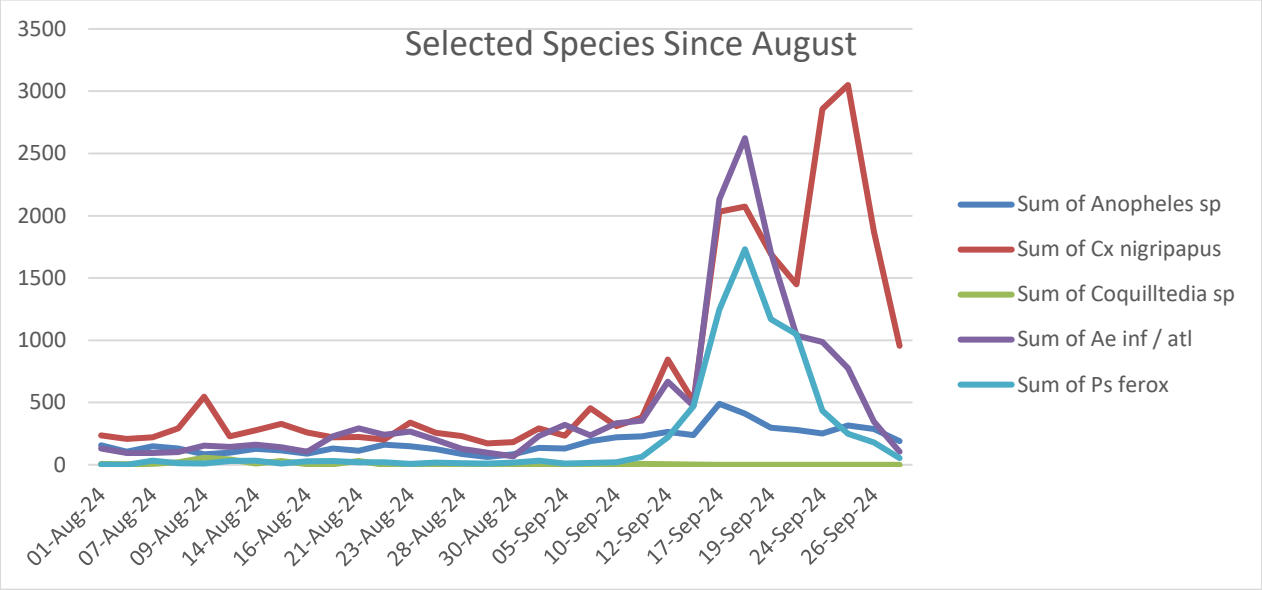
A continuation of surges in the mosquito population this week was met with a third week of aerial adulticiding focusing on the South of the District. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



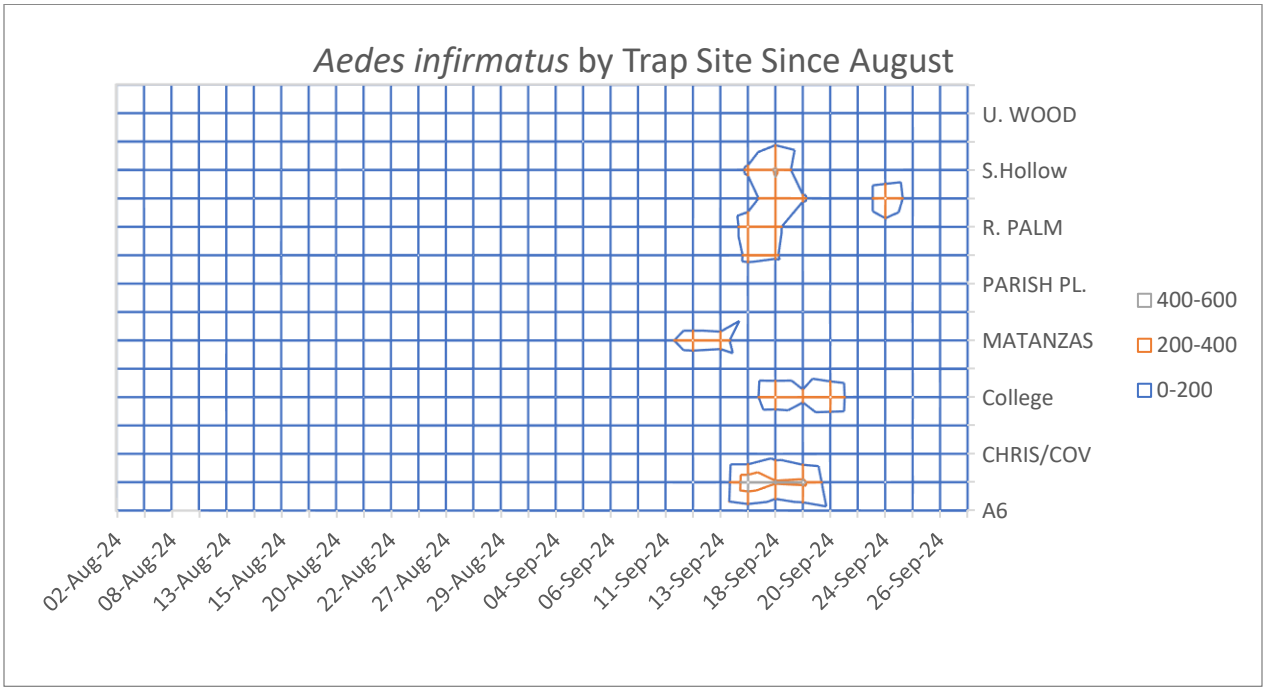
This is the third week of mosquito emergences after a two-week period where a rainfall typical of a hurricane fell.



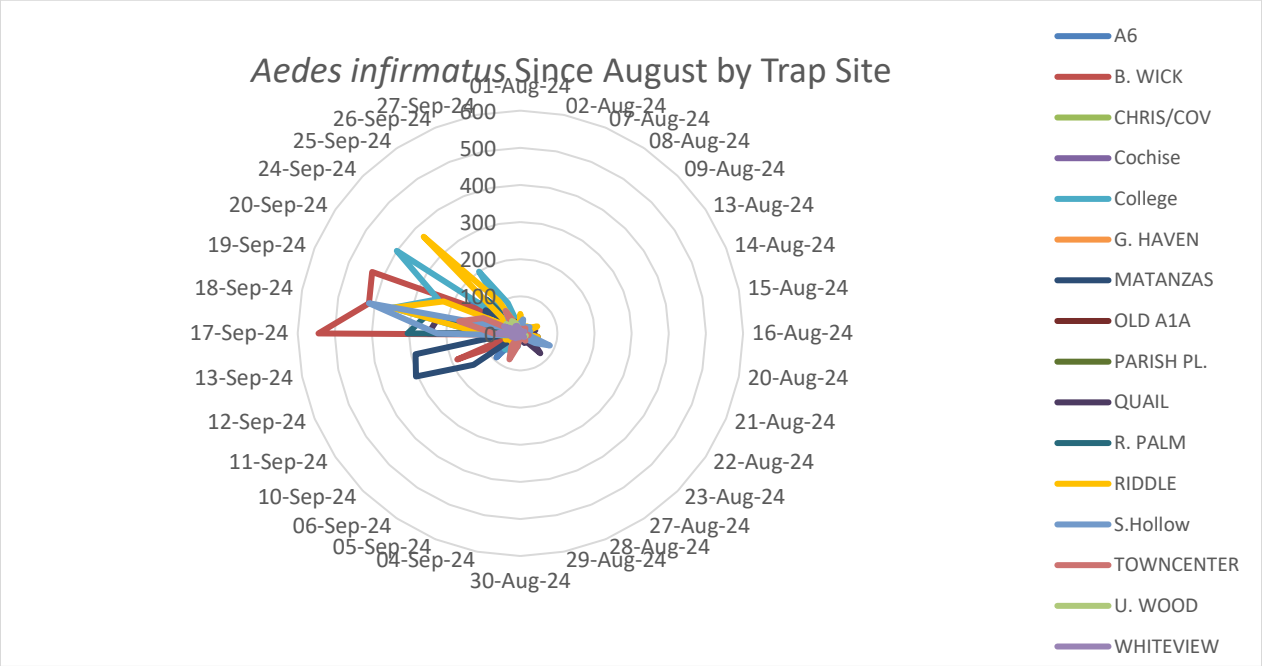
By the end of the week traps reflected a large decrease of mosquito species. We do anticipate further peaks in mosquito population as more mosquitoes migrate in from outised the District.



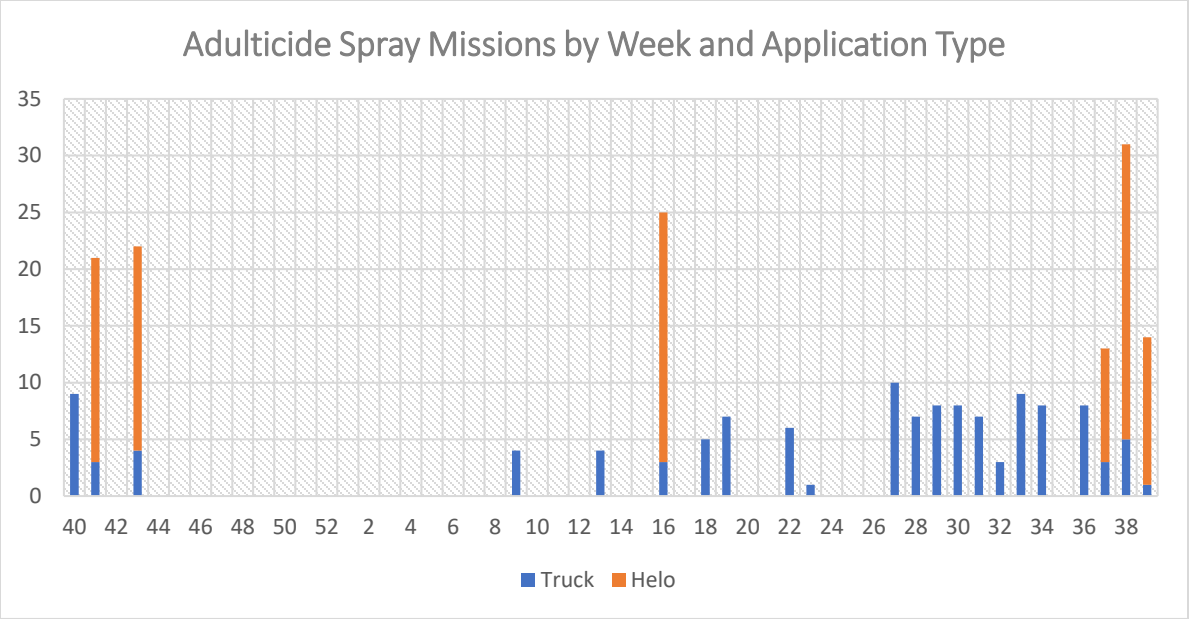
Because of the scale of rainfall and the number of days it occurred over, we expect to see further emergence of mosquito broods into next week. Last week we saw the emergence of *Psorophora ferox*, which usually follows large rain events. The emergence of this species this week was far greater. We also could see the emergence of *Psorophora columbiae*. This species is a larger and more aggressive biter than *Psorophora ferox*.



The graph below has better resolution on the floodwater species *Aedes infirmatus* since August. Focusing on just the three most abundant traps sites (graph below) for this species, you can see the timing of emergence being registered at each trap site is slightly different. We left the data from August on the graph to illustrate there is a normal variation in mosquito abundance from day to day. Wind is likely the greatest factor influencing the distribution of adult blood-seeking female mosquitoes, however, if it is too windy, or too cold this will reduce the activity of mosquitoes. Another factor to consider is that treatments were done last week and this week at the depicted sites.



The Matanzas trap increased first, a day ahead of B. Wick, and was at low levels by the following Tuesday before settling at still high levels for most of the week before a second round of treatments could be registered. B. Wick peaked later and lower, and declined further after the first treatment before rebounding dramatically from further emergence. The College trap, further away, had emergence more appreciably this week as compared to last week. Spraying consisted of aerial missions in response to extreme levels of mosquito activity.



Florida Arbovirus Surveillance Week 39: September 22 -28, 2024 View the full report

Advisories/Alerts: Alachua, Bay, Broward, Citrus, Holmes, Madison, Mantatee, Nassau, Orange, Palm Beach, Pinellas, Sarasota, Sumter, and Volusia counties are currently under a mosquito-borne illness advisory. Duval, Hillsborough, Marion, Miami-Dade, Monroe, Pasco, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

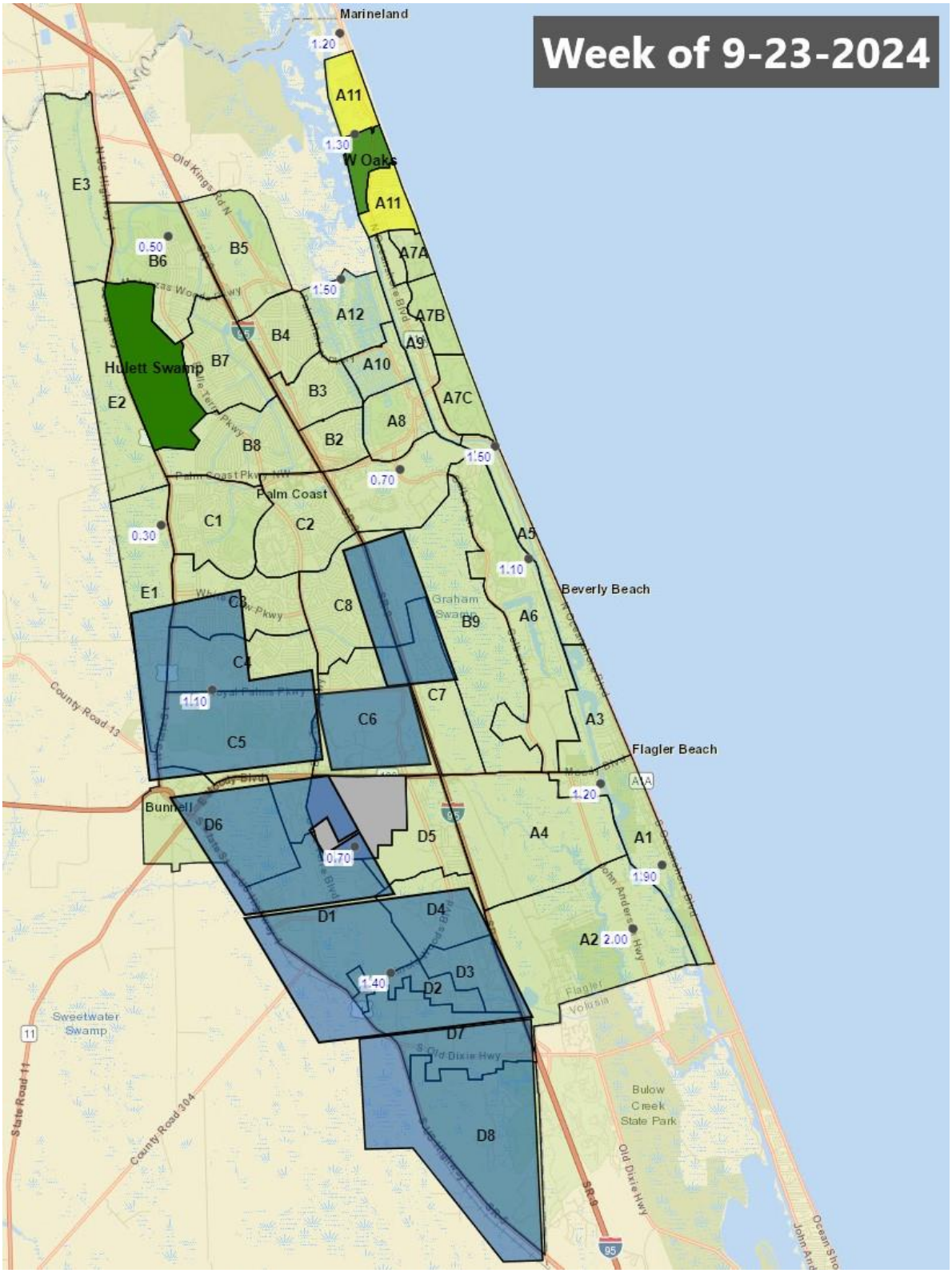
WNV activity: In 2024, four human cases of WNV illness acquired in Florida have been reported in Bay (August), Duval (July), Marion (July), and Walton (July) counties. Five asymptomatic positive blood donors were reported from Duval (August), Manatee (August), Marion (July), and Walton (July, August) counties. No human cases of WNV infection were reported this week.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. One sentinel chicken tested positive for antibodies to EEEV this week in Nassau County. In 2024, positive samples from 51 sentinel chickens, 21 horses, two emus, one emu flock, and one deer have been reported from 26 counties.

2024 Dengue Cases Acquired in Florida: In 2024, 40 cases of locally acquired dengue have been reported in Broward, Hillsborough (3), Manatee, Miami-Dade (24), Monroe (3), Orange (2), Palm Beach (2), and Pasco (4) counties with onset in January (3), February, March (2), April, June (11), July (8), August (13), and September.

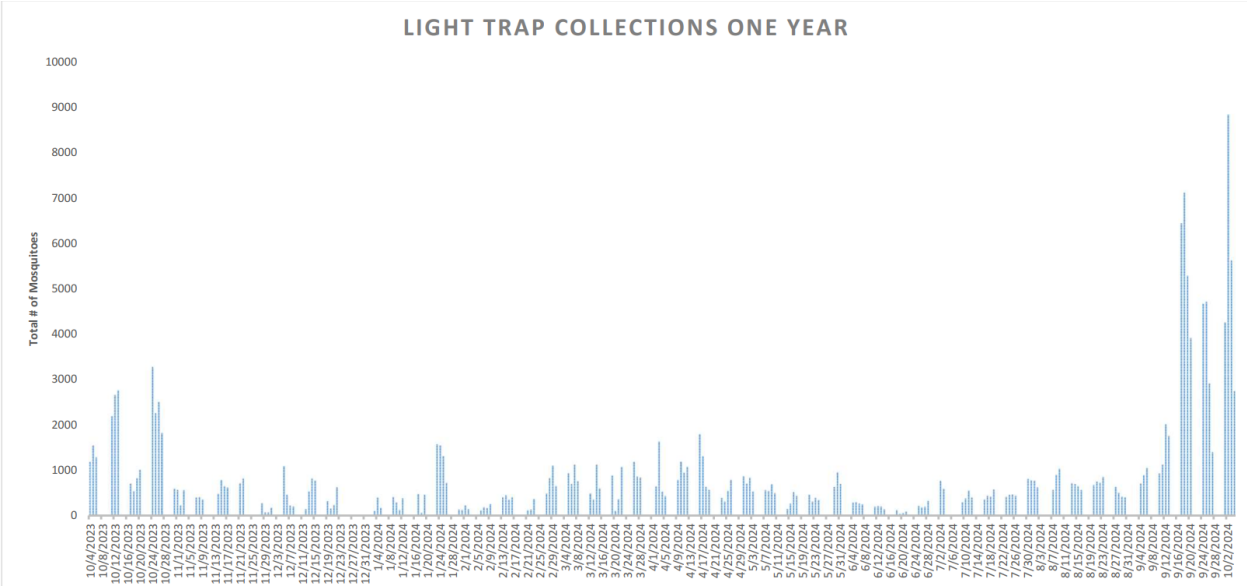
2024 International Travel-Associated Oropouche Cases: Eighty-six cases with onset in 2024 have been reported in individuals with travel history to an Oropouche-endemic area in the two weeks prior to onset. Counties reporting cases were: Broward (3), Duval, Hillsborough (11), Lee (5), Marion, Miami-Dade (51), Orange (3), Palm Beach (2), Pasco (3), Polk (4), Sarasota, and St. Lucie. Country of origin was Cuba (86)

Zones highlighted in yellow were sprayed by truck, blocks in blue were sprayed by helicopter this week. Rainfall totals for the week are indicated in blue numbers on white background.

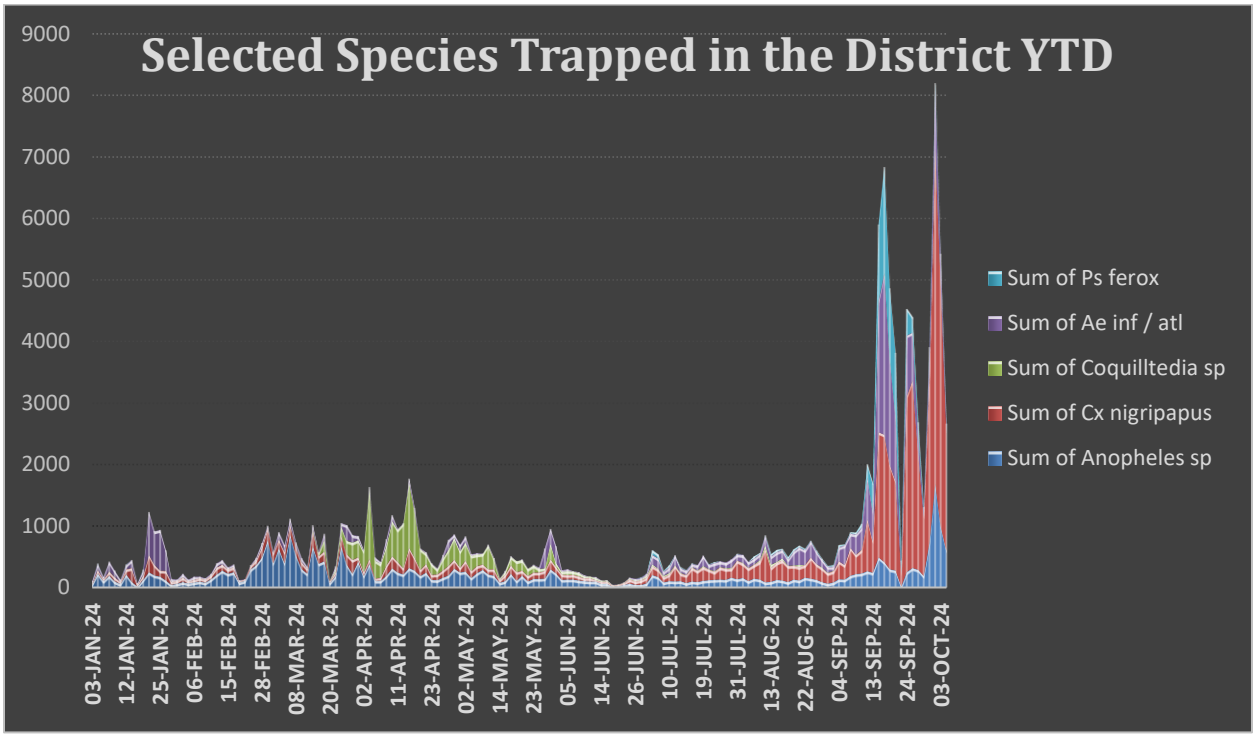


Week of 9/30/2024 Operations Update (40)

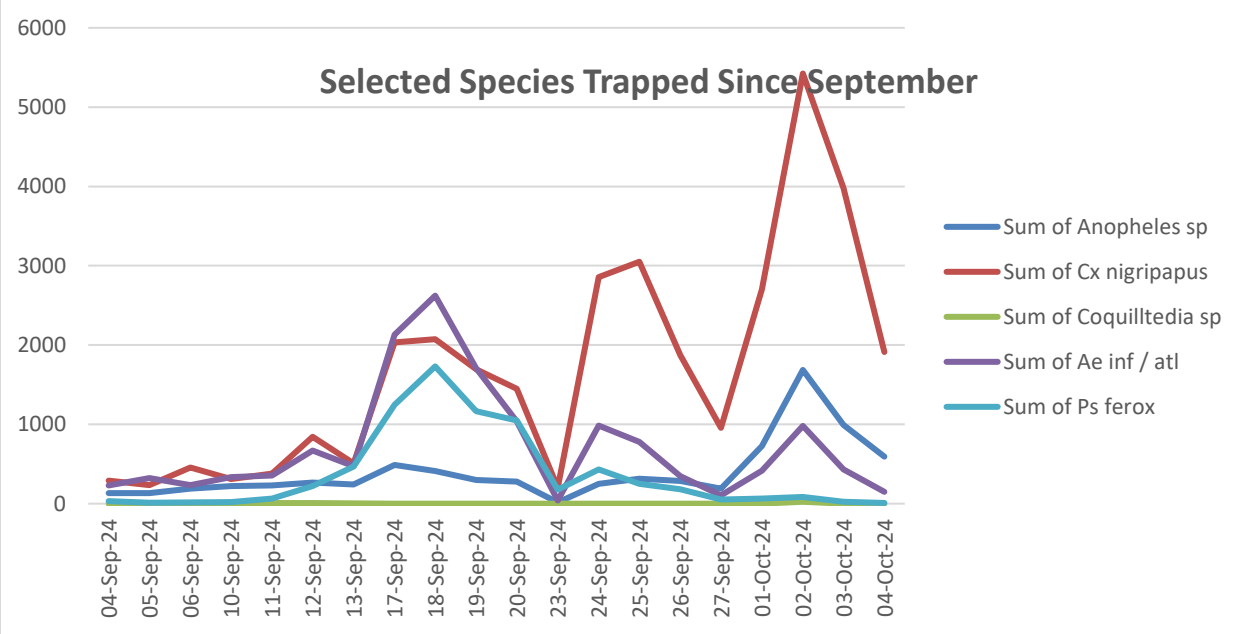
Week four of consecutive aerial spraying. *Aedes infirmatus* is much reduced but still abundant District-wide. The bar graph below shows the total number of adult mosquitoes from all traps in the District for the past year (TTM).



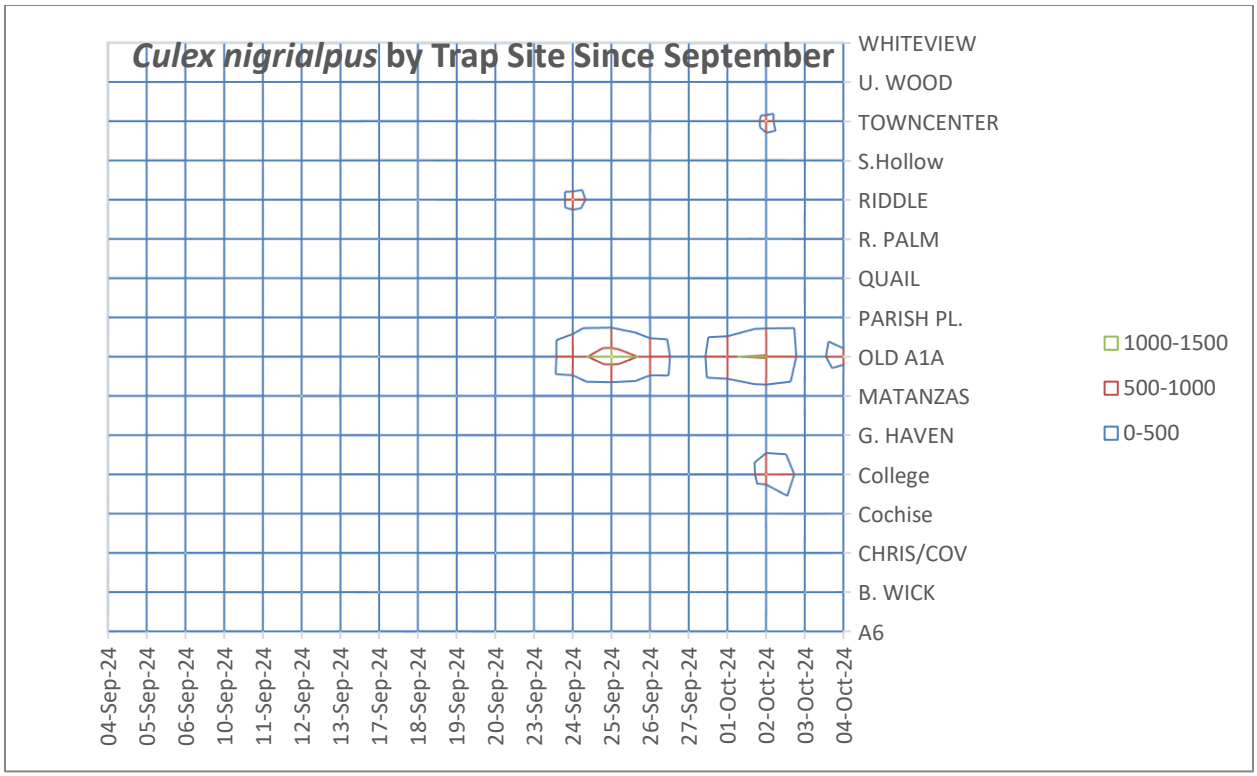
This is the fourth week of mosquito emergences after a two-week period where a rainfall typical of a hurricane fell. This week *Culex nigripalpus* was the main species trapped.



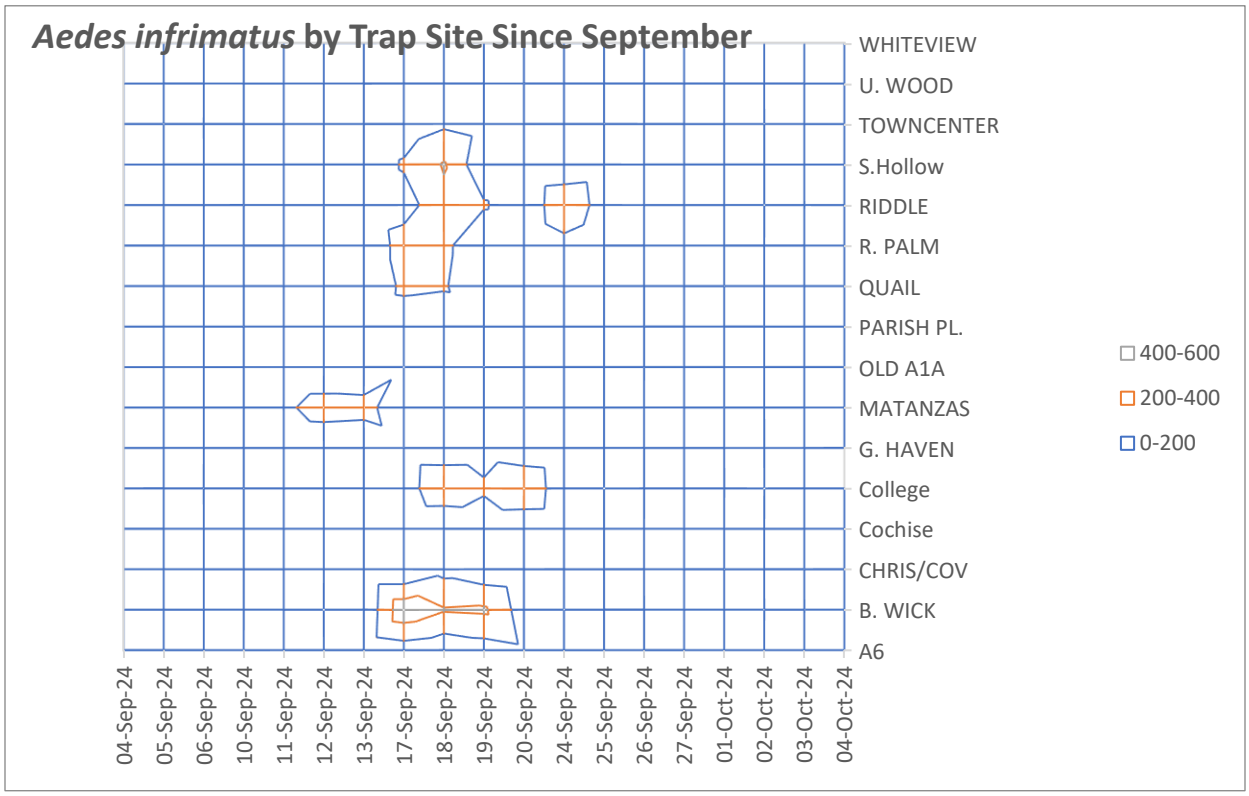
Once again, by the end of the week traps reflected a large decrease in the mosquito population after spray missions were completed. However, *Culex nigirplalpus* will continue to replensih as long as breeding areas remain flooded, unlike the floodwater species *Aedes infirmatus* and *Psorophora ferox* which emerged intensely in mid-September and rebounded to a lesser degree the subsequent two weeks.



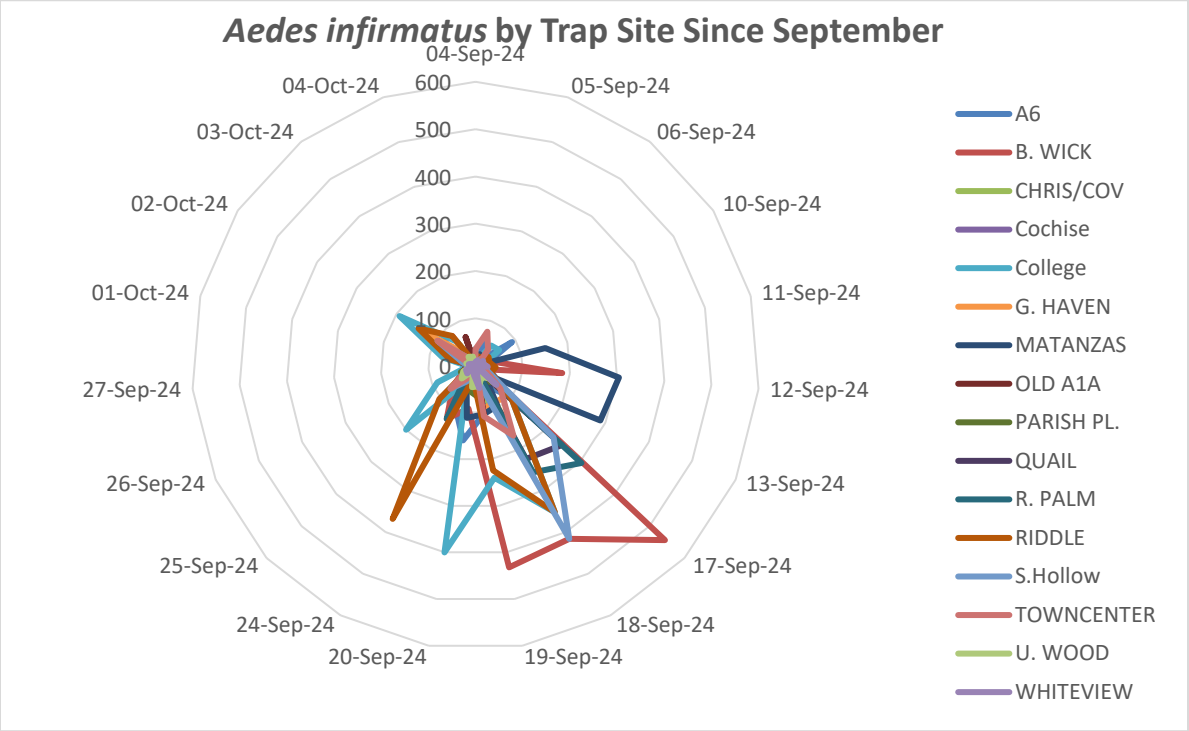
Culex nigirpalpus was primarily present in the vicintiy of Washington Oaks Gardens State Park. The County is working on drainage around the park. The park has limited access to permit the proper treatment coverage by Spray-Truck. Both of these factors, lack of effective drainage and insufficient road access for Spray-Truck, contributed to continued rebounding of this species in this location.



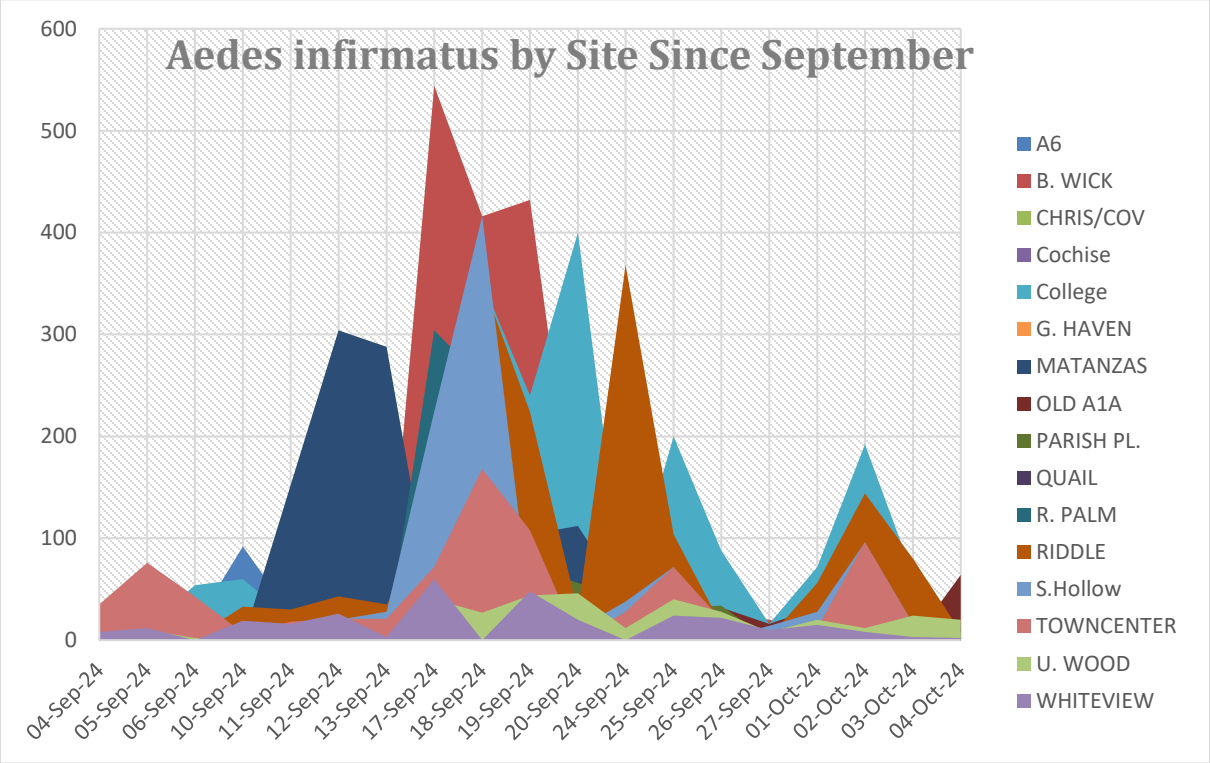
The peak of *Aedes infirmatus* emergence was September 18 with an early peak at the Matanzas trap site six days earlier. An additional late peak occurred at the Riddle six days later, surface chart below.

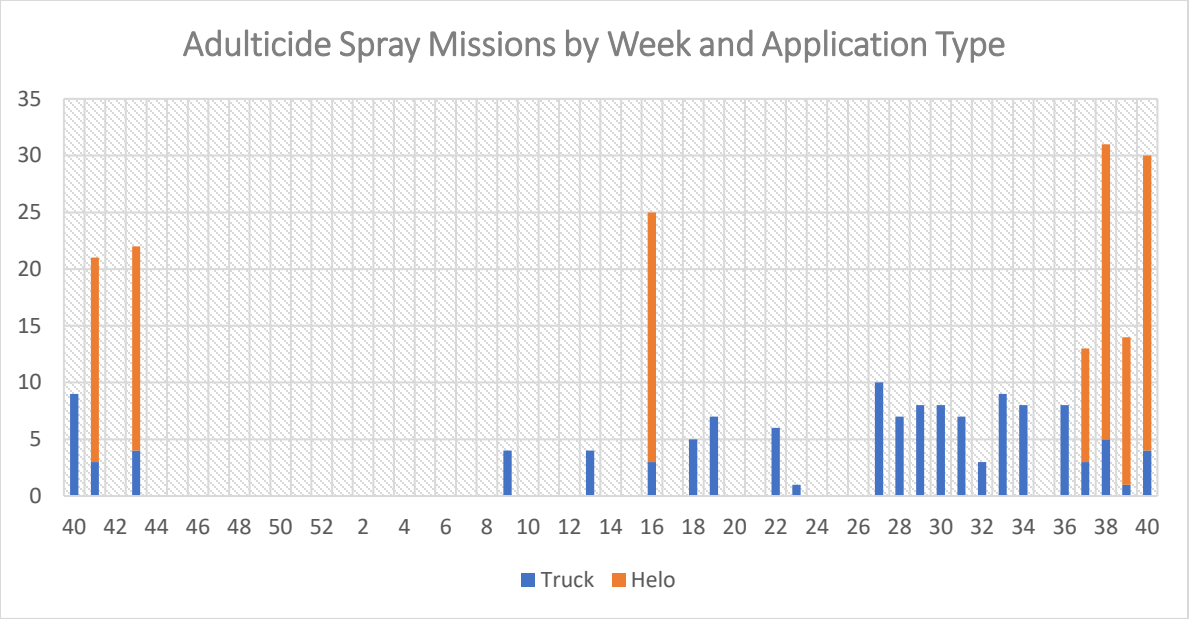


The size and duration of peaks in the population of this species at each trap site can be seen with greater detail in the radar chart below. This week the large peaks are missing, but a number of traps remained elevated warranting another round of treatments.



A straight-forward chart of the same data (unstacked) is below.





Florida Arbovirus Surveillance Week 39: September 29 – October 5, 2024 View the full report

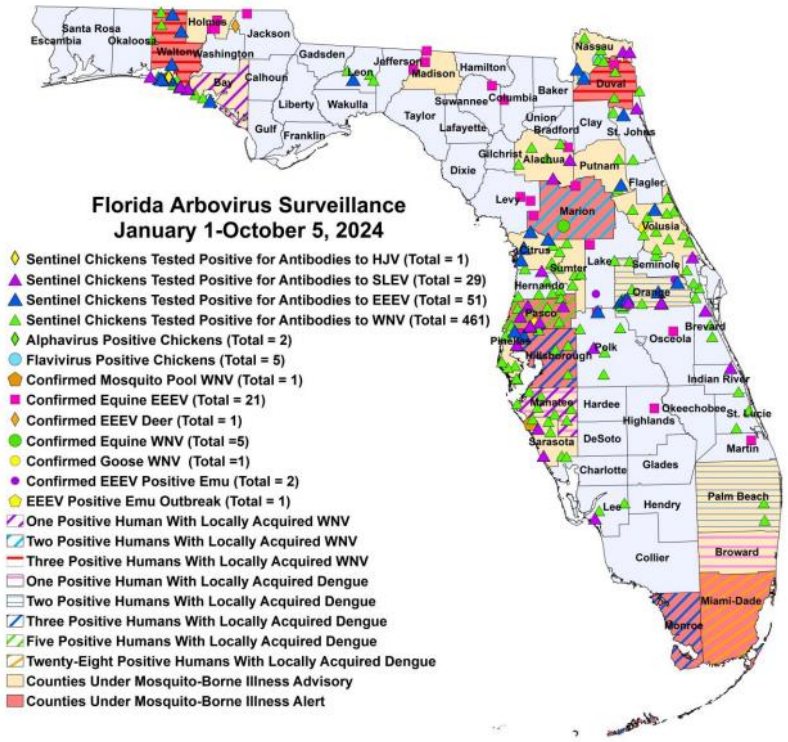
Advisories/Alerts: Alachua, Bay, Broward, Citrus, Holmes, Madison, Mantatee, Nassau, Orange, Palm Beach, Pinellas, Putnam, Sarasota, Sumter, and Volusia counties are currently under a mosquito-borne illness advisory. Duval, Hillsborough, Marion, Miami-Dade, Monroe, Pasco, and Walton counties are currently under a mosquito-borne illness alert. No other counties are currently under a mosquito-borne illness advisory or alert.

WNV activity: One human case of WNV infection was reported this week in Duval County. Two horses with WNV infection were reported this week in Marion County. Eighty-three sentinel chickens tested positive for antibodies to WNV this week in Alachua, Bay, Brevard, Citrus, Duval, Hillsborough, Hernando, Lee, Manatee, Nassau, Orange, Pasco, Pinellas, Polk, Putnam, Sarasota, St. Johns, Volusia, and Walton counties.

EEEV activity: No human cases of EEEV infection were reported this week. No horses with EEEV infection were reported this week. No sentinel chickens tested positive for antibodies to EEEV this week. In 2024, positive samples from 51 sentinel chickens, 21 horses, two emus, one emu flock, and one deer have been reported from 26 counties.

2024 Dengue Cases Acquired in Florida: Five cases of locally acquired dengue were reported this week. In 2024, 45 cases of locally acquired dengue have been reported from eight counties.

2024 International Travel-Associated Oropouche Cases: No cases of Oropouche fever were reported this week in persons that had international travel. In 2024, 86 travel-associated Oropouche fever cases have been reported.



*This is the last report of fiscal year 2023-2024. Weekly operations updates are typically produced April through October.

Zones highlighted in yellow were sprayed by truck, blocks in blue were sprayed by helicopter this week. Rainfall totals for the week are indicated in blue numbers on white background.