East Flagler Mosquito Control District Strategic Plan Performance Review

Fiscal Year 24/25

Priorities

From the Strategic Plan for Fiscal Year (FY) the District's priorities were listed as follows:

To utilize technology to enhance monitoring mosquito breeding sites for maximum efficiency and improved outcomes, have reliable and sufficient equipment and personnel to quickly respond to surges in mosquito populations, and the situational awareness to minimize the response time. Additionally, informing the public about mosquito control through outreach via social media, community events, school interactions, and in person visits to homes submitting mosquito tips is essential to supporting operations. A properly informed public that understands what mosquito control measures are implemented, when they are done but also the critical understanding of why certain control measures is taken at specific times facilitated public support of community-wide mosquito control measures and involvement in controlling peridomestic mosquito species on their own property.

District Strategic Goals

For FY 24/25 The District forced on 7 main goals:

1. Monitor and control the population of pestiferous mosquitoes to baseline levels to prevent disease and enhance quality of life.
2. Provide quality Public Outreach and Education.
3. Effectively suppress the spread of human infection of mosquito borne diseases.
4. Maintain State Approved Status as a mosquito control program.
5. Comply with all Federal and State Regulations regarding the dispensing of pesticides.
6. Respond to Citizen Concerns of Mosquito Activity within the District.
7. Quality Control and Assurance through analysis.

End of FY Goal Updates:

Goal 1: Monitor and control the population of pestiferous mosquitoes to baseline levels to prevent disease and enhance quality of life.

Objective 1.1: Map the saltmarsh breeding sites and monitor the most efficient way.

Strategy 1.1.1: *Maintain a geographic information system of all known breeding sites, prioritize areas to be pre-treated.*

Measure – number of new breeding locations are added to the database, number areas that have been developed are removed, total number of breeding sites

Year	Aerial	Boat	Drone	Evaluate	Ground	No Interest	Total
<7/7/2015	6	1		19	125	3	154
2015	3			1	5		9
2016	44	4		12	371	2	433
2017	7			6	84	11	108
2018	14		3	10	222	8	257
2019	10	4	2	9	174	12	211
2020	5		10	9	150	2	176
2021	1		2	22	136	8	169
2022			1	26	41	7	75
2023	25		1	156	77	6	265
2024	1		3	44	26	3	77
2025		1	1	25	33	2	62
Total	116	10	23	339	1444	64	1996

Strategy 1.1.2 *Monitor wet/dry status of breeding sites using GIS in real-time, allowing us to track the water cycle and apply larvicide at the optimal time.*

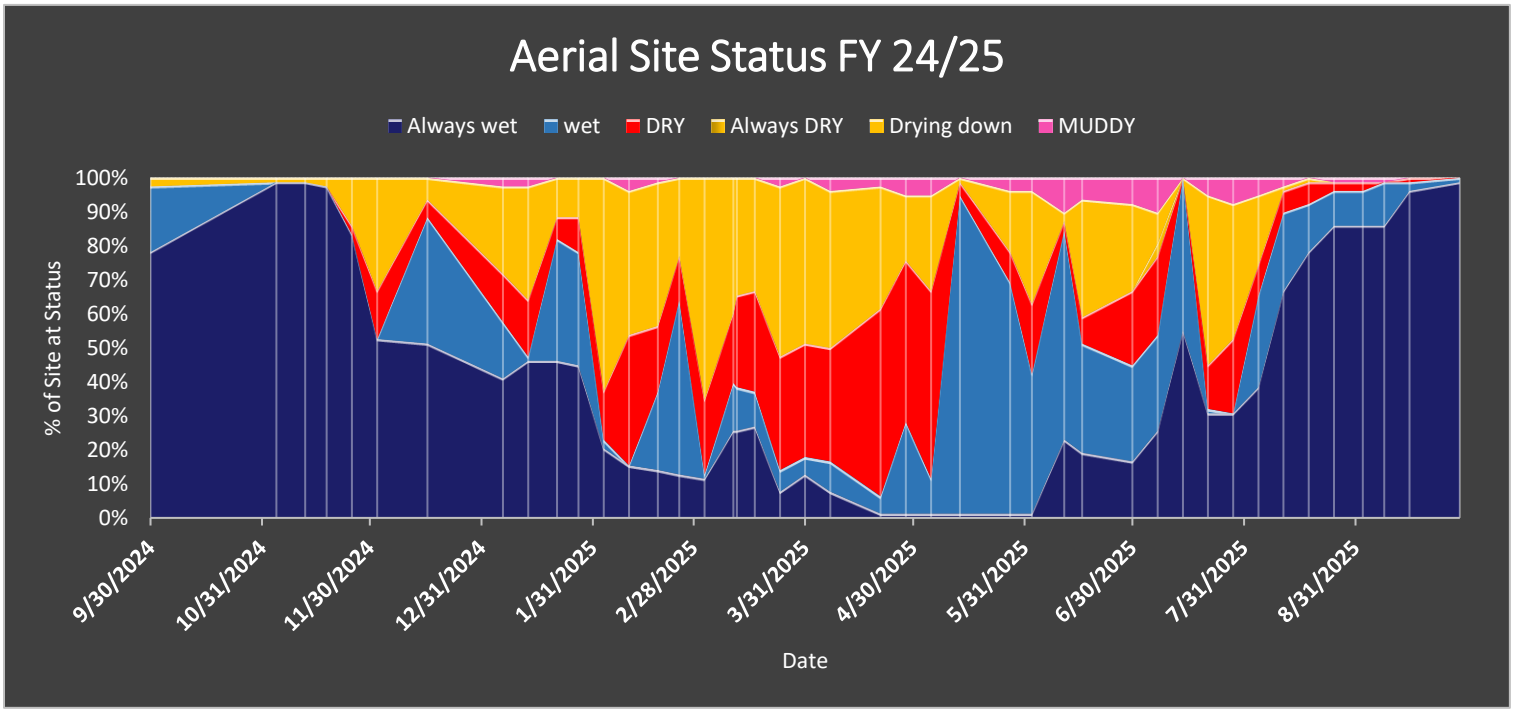
Measure- report on each week the number of sites checked and percentage of change to wet or dry.

Total sites checked each week, wet, dry:

- INSPECTION VOLUME:
  - Total Sites Inspected Across All Weeks: 58,338
  - Average Sites Inspected Per Week: 686.3
  - Maximum Sites in One Week: 1799 (Week of 2025-04-28)
- STATUS CHANGES - WENT WET:
  - Total "Went Wet" Events: 3001
  - Average Per Week: 35.3
  - Maximum in One Week: 263 (Week of 2025-08-25)
  - Weeks with Zero "Went Wet": 20
- STATUS CHANGES - WENT DRY:
  - Total "Went Dry" Events: 3247
  - Average Per Week: 38.2
  - Maximum in One Week: 193 (Week of 2025-07-28)
  - Weeks with Zero "Went Dry": 22
- ACTIVITY PATTERNS:
  - Weeks with High Inspection Volume (>1500 sites): 5
  - Weeks with High "Went Wet" Activity (>100 events): 10
  - Weeks with High "Went Dry" Activity (>100 events): 9
- TOP 5 WEEKS BY INSPECTION VOLUME:
  - 2025-04-28: 1799 sites (25 wet, 98 dry)
  - 2025-02-24: 1761 sites (20 wet, 119 dry)
  - 2025-04-21: 1665 sites (4 wet, 164 dry)
  - 2025-05-19: 1545 sites (45 wet, 135 dry)
  - 2025-03-03: 1519 sites (5 wet, 150 dry)
- TOP 5 WEEKS BY 'WENT WET' EVENTS:
  - 2025-08-25: 263 sites went wet (out of 1422 inspected)
  - 2025-08-04: 194 sites went wet (out of 1114 inspected)
  - 2025-05-12: 168 sites went wet (out of 619 inspected)
  - 2025-01-20: 159 sites went wet (out of 947 inspected)
  - 2025-05-05: 148 sites went wet (out of 1223 inspected)
- TOP 5 WEEKS BY 'WENT DRY' EVENTS:
- 2025-07-28: 193 sites went dry (out of 1431 inspected)
- 2025-04-21: 164 sites went dry (out of 1665 inspected)
- 2025-04-14: 162 sites went dry (out of 1130 inspected)
- 2025-03-24: 159 sites went dry (out of 1335 inspected)
- 2025-03-03: 150 sites went dry (out of 1519 inspected)

Strategy 1.1.3: *Utilize the helicopter for surveillance sights in conjunction with proactive as well as reactive treatments.*

Measure- produce report of surveillance status observations to aid in decision making for timing of larvicide applications.



*Strategy **1.1.4:** Remote monitoring technology for constant surveillance of breeding sites.*

Measure- produce report of surveillance status observations to aid in decision making for timing of larvicide applications.

Remote Tracking Log Comprehensive Analysis Assisted with Claude AI

EXECUTIVE SUMMARY

This analysis examines water status conditions across 14 monitoring sites for the period October 1, 2024 - September 30, 2025. The data reveals significant seasonal variations, with critical spring drought conditions and notable site-specific vulnerabilities.

STATUS DEFINITIONS

- WET: Site has adequate water availability
- DRYING DOWN (DD): Site is transitioning from wet to dry; water level decreasing
- MUDDY: Site has minimal water with muddy conditions (not observed in dataset)
- DRY: Site has inadequate or no water availability
- MISSING: No data recorded for that date

OVERALL STATISTICS

Aggregate Distribution Across All Sites

Status	**Total Days**	**Percentage**
Wet	1,352	26.5%
DD	562	11.0%
Dry	1,382	27.0%
Muddy	0	0.0%
Missing Data	1,755	34.3%

Total observations: 5,110 (365 days × 14 sites)

SITE CLASSIFICATIONS

WET-DOMINANT SITES (4 sites)

Site	*Wet*	*DD*	*Dry*
3	198 days (54.2%)	35 days (9.6%)	7 days (1.9%)
12	191 days (52.3%)	32 days (8.8%)	7 days (1.9%)
44	139 days (38.1%)	99 days (27.1%)	2 days (0.5%)
92	126 days (34.5%)	36 days (9.9%)	78 days (21.4%)

DRY-DOMINANT SITES (7 sites)

Site	*Wet*	*DD*	*Dry*
76	35 days (9.6%)	24 days (6.6%)	181 days (49.6%)
81	33 days (9.0%)	26 days (7.1%)	171 days (46.8%)
87	33 days (9.0%)	26 days (7.1%)	171 days (46.8%)
18S	71 days (19.5%)	26 days (7.1%)	138 days (37.8%)
83	64 days (17.5%)	44 days (12.1%)	130 days (35.6%)
7	75 days (20.5%)	28 days (7.7%)	128 days (35.1%)
8	94 days (25.8%)	22 days (6.0%)	115 days (31.5%)

SEASONAL PATTERNS

Monthly Status Distribution

Month / Year	**Wet Site Readings**	**DD Site Reedings**	**Dry Site Readings**	**Total Site Readings**
October / 2024	198 (94.7%)	9 (4.3%)	2 (1.0%)	209
November / 2024	187 (74.8%)	18 (7.2%)	45 (18.0%)	250
December / 2024	73 (34.8%)	40 (19.0%)	97 (46.2%)	210
January / 2025	109 (37.1%)	103 (35.0%)	82 (27.9%)	294
February / 2025	59 (22.6%)	75 (28.7%)	127 (48.7%)	261
March / 2025	39 (13.3%)	59 (20.1%)	196 (66.7%)	294
April / 2025	8 (2.7%)	51 (17.3%)	235 (79.9%)	294
May / 2025	76 (25.9%)	43 (14.6%)	175 (59.5%)	294
June / 2025	70 (23.8%)	55 (18.7%)	169 (57.5%)	294
July / 2025	105 (34.1%)	45 (14.6%)	158 (51.3%)	308
August / 2025	180 (61.2%)	47 (16.0%)	67 (22.8%)	294
September / 2025	248 (84.4%)	17 (5.8%)	29 (9.9%)	294
Total Site Readings	**1,352**	**562**	**1382**	**3,296**

Seasonal Summary

Season	Wet	DD	Dry	Observations
Fall 2024	385 (83.9%)	27 (5.9%)	47 (10.2%)	
Winter 24-25	241 (31.5%)	218 (28.5%)	306 (40.0%)	Onset of decline
Spring 2025	123 (13.9%)	153 (17.3%)	606 (68.7%)	DROUGHT PERIOD
Summer 2025	355 (39.6%)	147 (16.4%)	394 (44.0%)	
Early Fall 2025	248 (84.4%)	17 (5.8%)	29 (9.9%)	

CONCURRENT EVENTS & SITE CORRELATIONS

Most Severe Concurrent DD Event

January 31, 2025: 9 sites simultaneously experiencing Drying Down

- Sites affected: 8, 42, 92, 18N, 76, 7, 87, 44, 9
- Indicates extensive dry down of the salt marsh

Frequently Co-Occurring Site Pairs

Sites that experience DD together - likely share watershed or water sources

Site Pair	Days together
18N & 44	41 days
18N & 9	39 days
44 & 9	38 days
18 N & 42	33 days
3 & 44	31 days
12 & 44	28 days
12 & 3	27 days

Recommended Site Groups for Management:

- Group A: Sites 18N, 44, 9 (highly correlated)
- Group B: Sites 3, 12 (wet-dominant pair)
- Group C: Sites 76, 81, 87 (dry-dominant cluster)

SITE VOLATILITY ANALYSIS

Status Change Frequency (Number of Transitions)

Higher numbers indicate more unstable/fluctuating conditions

Site	*Transitions*	*Assessment*
42	*42*	
92	*39*	
18S	*37*	
38	*36*	
18N	*36*	
8	*33*	

Site 42 shows the highest instability with 27 separate DD periods and 45 status changes across the year, suggesting unique hydrological conditions.

CRITICAL FINDINGS

1. SPRING DROUGHT (March-May 2025)

- April 2025: Worst month on record
  - 79.9% DRY conditions
  - Only 2.7% WET conditions
  - Affected nearly all sites
- Total spring DRY days: 606 (68.7% of observations)

2. WINTER TRANSITION PERIOD (Dec-Feb)

- January 2025: Peak DD activity (103 days across sites)
- 28.5% of winter observations show DD status

3. SITE-SPECIFIC CONCERNS

- Sites 76, 81, 87: Dry >46% of time.
- Site 44: Despite 38% WET, shows extreme instability (99 DD days, 27% of year)

Enhanced Monitoring:

- Sites 18N, 42, 9: High DD frequency indicates vulnerability

PERFORMANCE METRICS

Most Stable

- Site 3: Only 10 DD periods, 2.9% DRY time
- Site 12: Only 11 DD periods, 3.0% DRY time

Least Stable

- Site 42: 27 DD periods, 45 status changes
- Site 44: 32 DD periods, despite 38% WET
- Site 18N: 23 DD periods, high correlation with other unstable sites

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Analysis Date: November 20, 2024

Data Period: October 1, 2024 - September 30, 2025

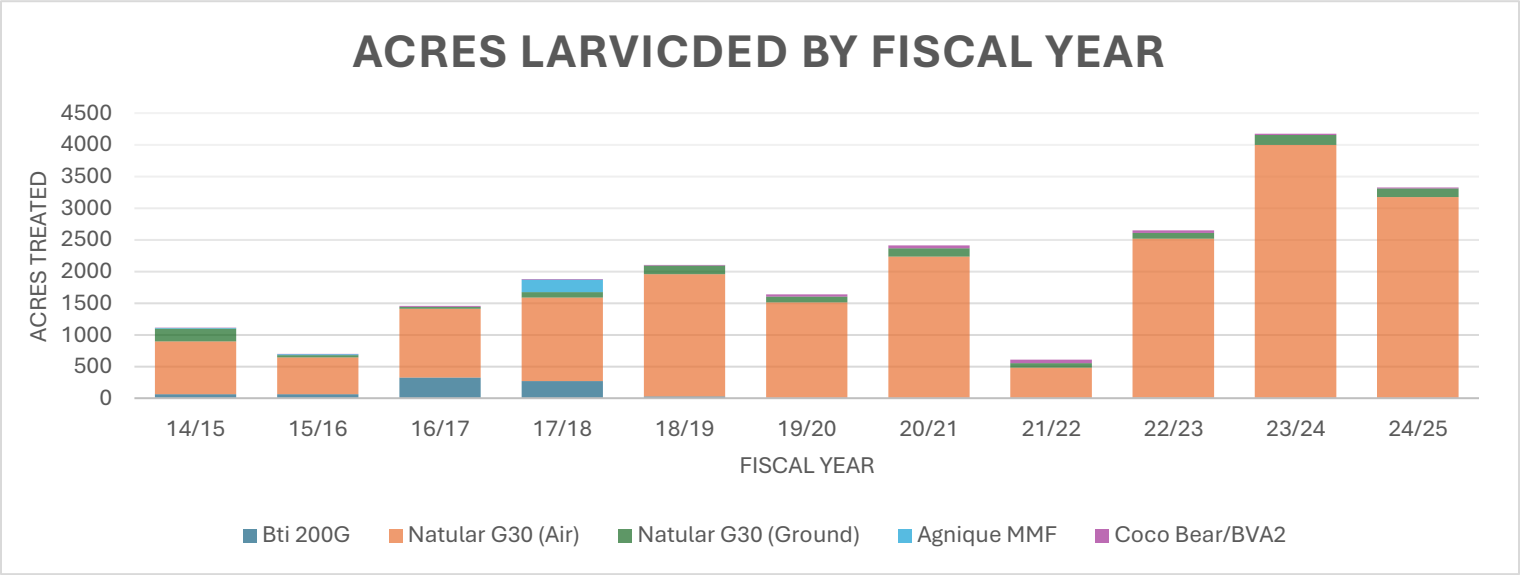
Total Sites: 14

Total Days Analyzed: 365

Objective 1.2: Apply control measures to prevent the emergence of adult saltmarsh mosquitoes

Strategy 1.2.1 *Areas pre-treated with larvicide are prioritized.*

Area Pretreated with larvicide

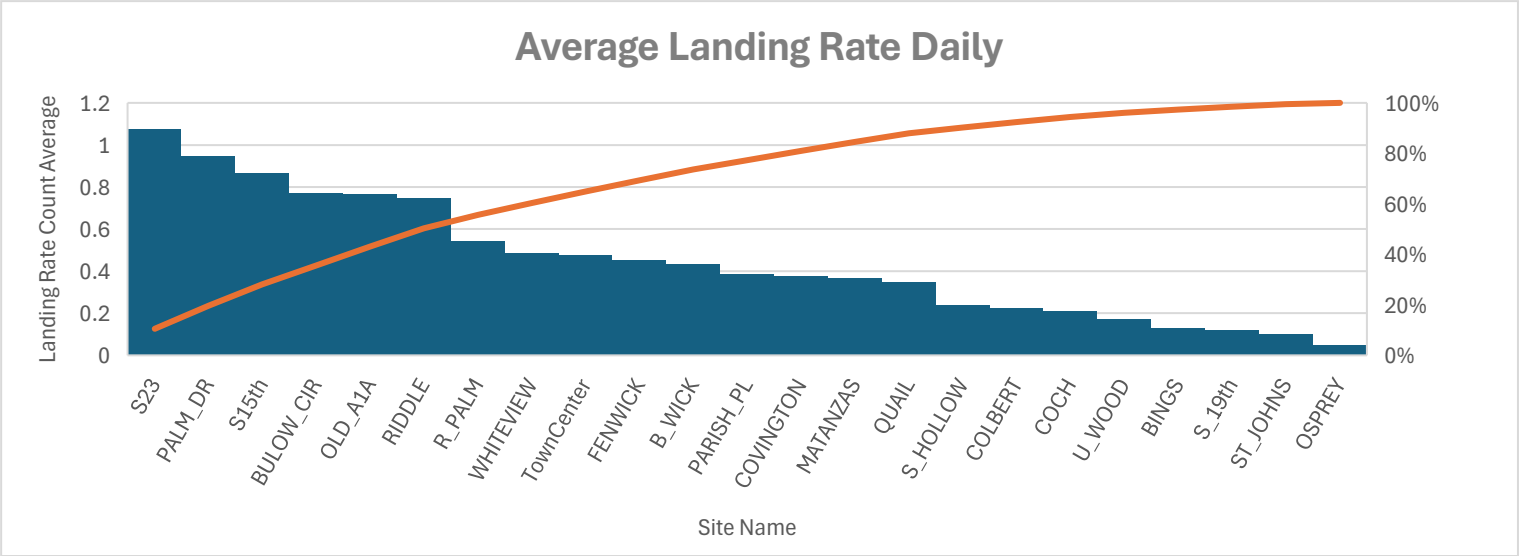


Objective 1.3: Survey adult mosquito populations and apply control measures at established parameters required by law to reduce population quickly

Strategy 1.3.1: *Adult mosquitoes are detected by landing rate counts and CDC light traps.*

Measure- Daily landing rates are conducted and recorded in the database.

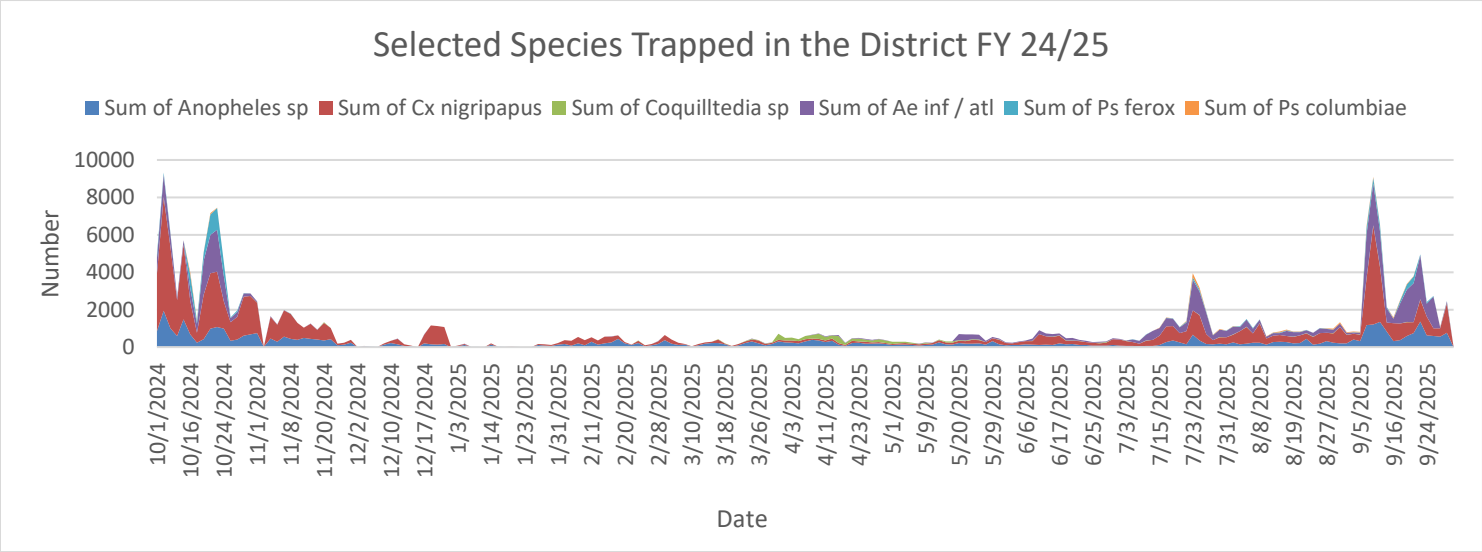
Daily landing rate counts – map with highest counts listed or box chart of sites
The average daily landing rate counts at all, but one site is below one.



Strategy 1.3.2 *Adult surveillance is conducted daily adjacent to representative breeding sites, identified to species, counted and the data is then tabulated for analysis of need for control measures.*

Measure- Daily trap data is collected and tabulated into a report

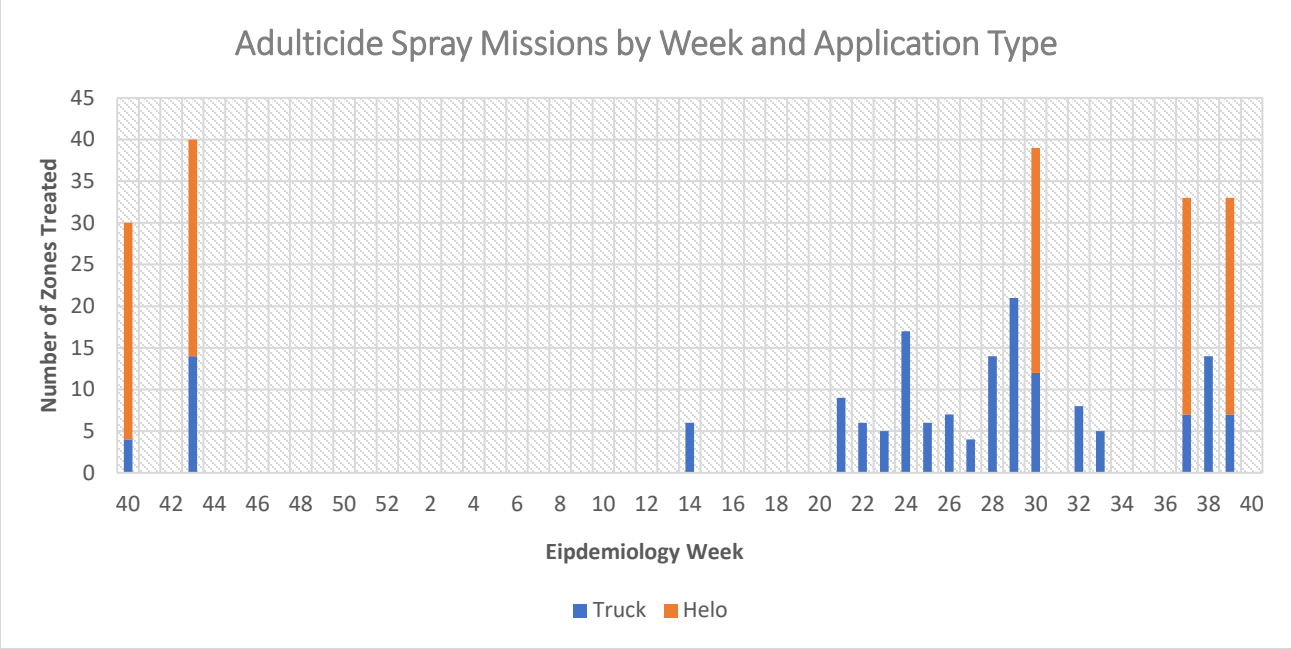
Daily trap data – annual chart



Strategy 1.3.3 *Adult control measures are implemented when established guidelines for mosquito presence is reached, and conditions are favorable for control*

Measure- Adulticide acreage treated

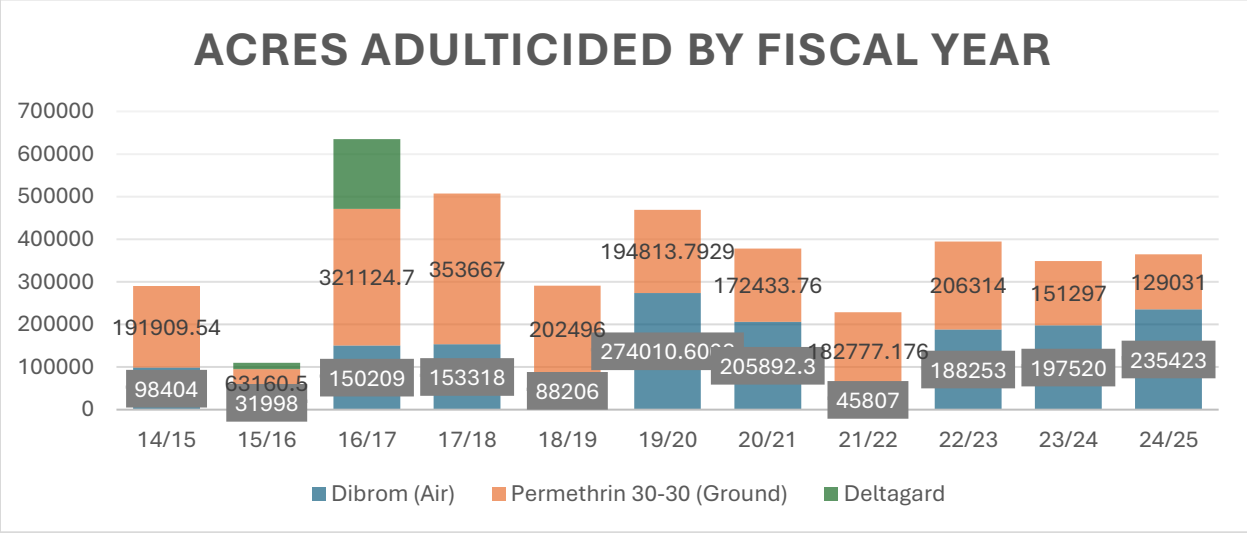
Zones treated graph



Strategy 1.3.4 *Rotation of active ingredients and resistance monitoring are critical components of effective adult control.*

Measure- acres treated by different pesticides

Adulticide Acreage treated graph



Goal 2: Provide quality Public Outreach and Education

Objective 2.1 Participate in Community events with educational materials provided.

Strategy 2.1.1 *Participate in Local Events:*

Measure- list of events attended for public outreach and education

Event Type	Number
School/Education Foundation	0
Library	2
Large Scale Community	9
Speaking Engagements	7
EFMCD Hosted	2

Objective 2.2 Partner with Schools to provide Educational opportunities

Strategy 2.2.1 *Interact with students both at school and outside the school setting*

Measure- list of events hosted to educate school children about mosquitoes

> *Staff have spent numerous hours attempting to make strides with the School District so that EFMCD might provide classroom supplemental education as other mosquito control districts have. Over the years staff have met with School Board Members, Principals, the Board Attorney, Techers etc. communication and attempts continue but to no avail. This remains a District priority and staff will continue to keep attempting to build relationships in the hopes of providing supplemental education and more opportunities for the students at Flagler Schools.*

The four programs that were completed with Flagler County Public Schools were not able to be completed this year. Due to staffing changes at Flagler County Public Schools, attempts to have the Skeeter Sweater event this year were unsuccessful despite District efforts. While the District was invited back for STREAM night at WES the event date was changed and conflicted with another District event. The District hopes to be in attendance for 2026. The Flagler Education Foundation is the nonprofit arm of the School District and has taken over Career Days for all of Flagler County Schools. While EFMCD was overlooked for the 2024 Career Day, they will be participating in the 2025 Career Day. For the Summer Programs Showcase all District Intern positions were filled at the time of the event this year as such the District did not participate in this event.

Objective 2.3 Engage Community Partners to increase understanding and support of Mosquito Control

Strategy 2.3.1 *Meet with Community Partners and provide tours of facility*

Measure- list of local officials met with

Representative Bull Partington, District 28

Representative Randy Fine, District 6

Commissioner David Atkinson, City of Bunnell

Commissioner Rick Belhulmer, City of Flagler Beach

Commissioner Ray Tremblay, Town of Beverly Beach

Objective 2.4 Create informational content

Strategy 2.4.1 · *Post content on various platforms*

5 New Rack Cards that provide simple messages and are visually appealing were created this year. These cards are both in print and digitally available, since they are able to be posted digitally, they have been utilized in various social media areas and are ADA compliant. In FY 24/25119 Social Media Posts were made on 5 different platforms, totaling 595 posts across FaceBook, Instagram, Twitter, NextDoor, and Ring Neighbors. The largest reaching post reaching over 10,000 accounts on FaceBook. 3 new videos were uploaded to YouTube.

Objective 2.5 Host Waste Tire and Bromeliad eradication

Strategy 2.5.1 *Host Waste Tire round-up pending FDEP funding*

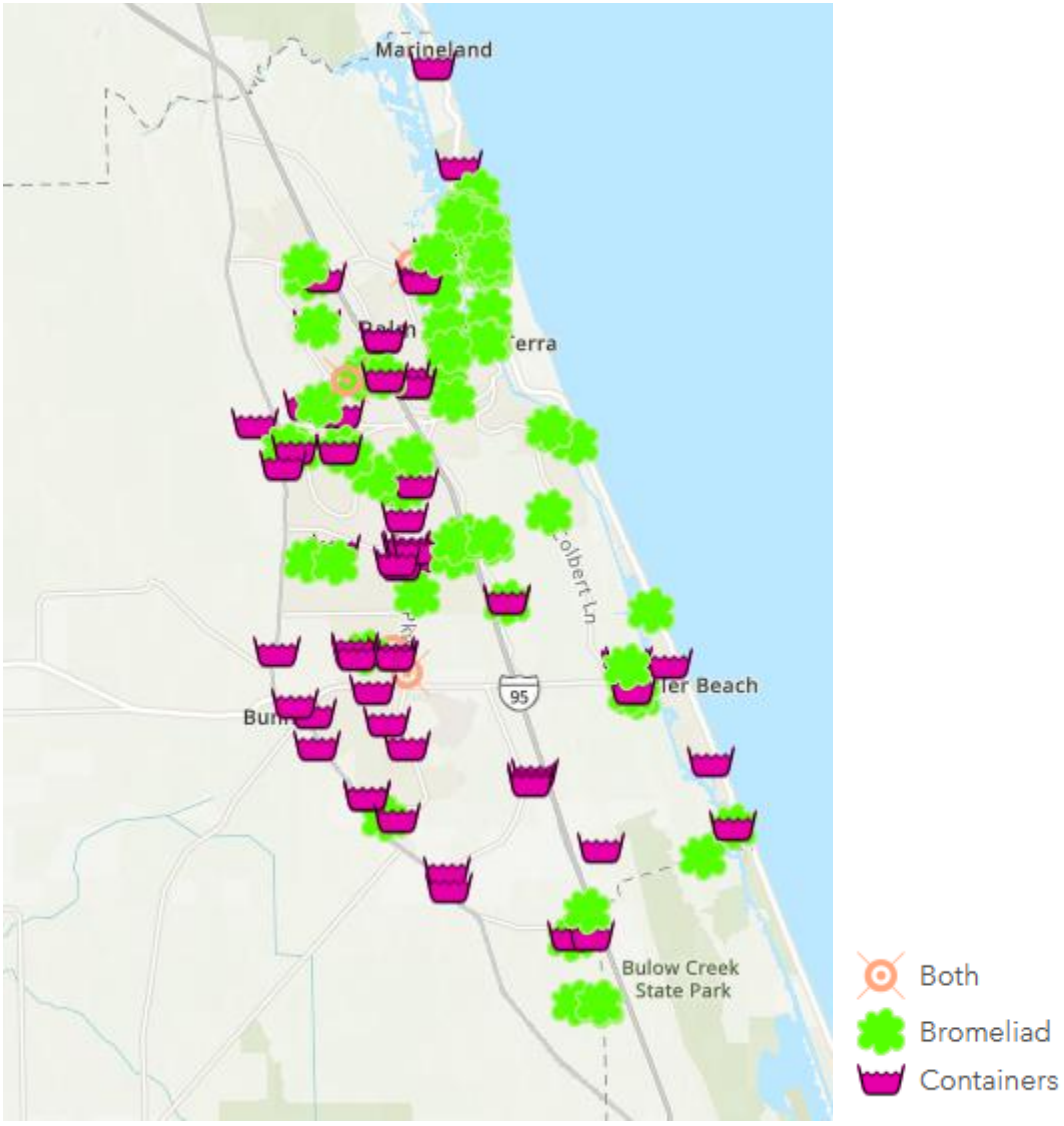
Measure- tire poundage removed

3.26 Tons of Waste Tires were collected during a 3-day event held at the District; that's 6520 pounds.

Strategy 2.5.2 *Bromeliad surveillance*

Measure-Sites found with bromeliads

3 new sites containing bromeliads. The District began tracking sites with bromeliads in December of 2023, the total is now 85 sites that have bromeliads on the property.



Goal 3: Effectively suppress the spread of human infection of mosquito borne diseases.

Objective 3.1 Monitor local cases of imported mosquito related diseases in conjunction with the Department of Health (DOH).

Strategy 3.1.1 *Monitor weekly reports of imported diseases*

Measure- number of human cases of imported mosquito borne diseases

There were zero cases of travel related mosquito-borne disease in Flagler County this FY. District was contacted by the DOH two times this FY for suspect cases of travel related Dengue.

Statewide Travel Associated Data:

EPI Weeks	**Dengue**	**Chikungunya**	**Oropouche**
2024 Epi Weeks 1 - 39	548	9	86
2024 Epi Weeks 40 - 52	363	2	17
2025 Epi Weeks 1 -39	239	15	0
Total for Fiscal Year 24/25	**602**	**17**	**17**

Source Data: https://www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/surveillance.html

Strategy 3.1.2 *Prevent the spread of locally acquired mosquito borne diseases in humans or respond with appropriate measures*

Measure- number of locally acquired human cases of mosquito borne diseases and response

There were zero locally acquired cases of any mosquito-borne disease in Flagler County this FY.

Statewide Locally Acquired Data:

Epi Week	**Human**		**Horse**	
	Dengue	**West Nile**	**Eastern Equine Encephalitis**	**West Nile**
2024 Weeks 1 - 39	45	8	9	1
2024 Weeks 40 - 52	40	19	13	10
2025 Weeks 1 -39	40	8	33	13
Total for Fiscal Year 24/25	**80**	**27**	**46**	**23**

Goal 4: Maintain State Approved Status as a mosquito control program

Objective 4.1 Work closely with the Florida Department of Agriculture to maintain approved status

Strategy 4.1.1 *File application paperwork*

Measure- completed MOU for approval

The District signed a memorandum of understanding (MOU) with the Florida Department of Agriculture and Consumer Services (FDACS) #31642 on 10/7/2024. This agreement details reporting requirements for State funds and pesticide activity. This was made mandatory by Florida Statute (F.S.) enacted in the 2023 Legislative session. The District is not eligible for State funds, as the grant is intended for small programs. The pesticide activity reporting is in addition to the inspection process in measure 5.2.1 and is essentially a duplication of effort of the site inspection.

Goal 5: Comply with all Federal and State Regulations regarding the dispensing of pesticides

Objective 5.1 Staff Training

Strategy 5.1.1 *Staff attend trainings for public health pesticide applicators to acquire Continuing Education Units (CEUs)*

Measure- List Trainings attended by staff

District staff earned 63.5 CEU's total in the fiscal year. Having a small staff that is highly trained creates the most efficient and effective workforce.

Strategy 5.1.2 *Staff attend trainings specific to safe handling of pesticides*

Measure- List Trainings attended

All staff that handle pesticides are licensed by the State. Staff receive professional continuing education units and formal training as mentioned above to maintain their licenses. The District also works to enhance safety in general and specifically for use of pesticides, reviewing labels and procedures annually in the Spring. Additionally, staff worked closely with the Flagler Emergency Exercise Training Group, facilitated by the emergency operations center to plan and host a tabletop exercise specific to mosquito control. In December 2024 this was successfully hosted by EFMCD. The exercise focused on a downed aircraft carrying pesticides. Many local and State agencies participated, and we appreciate their effort to keep everyone safe should an accident occur.

Objective 5.2 Maintain satisfactory compliance inspection reports by Florida Department of Agriculture/Federal Environmental Protection Agency

Strategy 5.2.1 *Comply with State and Federal Regulations for pesticides*

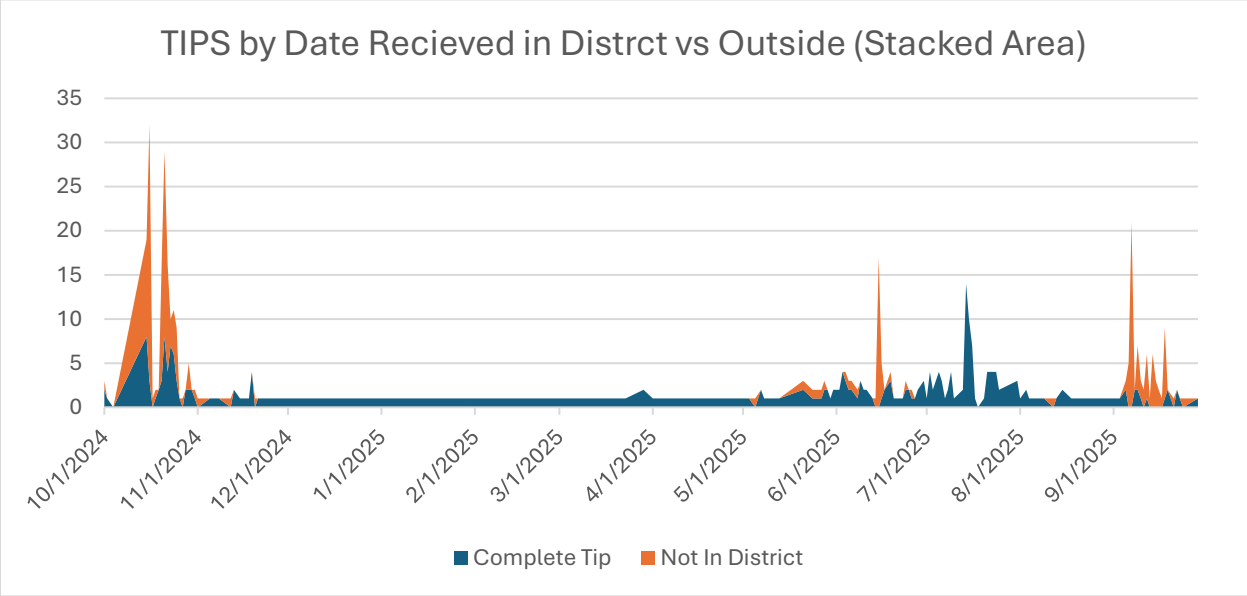
Measure- satisfactory compliance with most recent inspection report

The District was inspected by the Florida Department of Agriculture and Consumer Service on February 2, 2024, with no violations being found.

Goal 6: Respond to Citizen Concerns of Mosquito Activity

Objective 6.1 Respond to TIPS (Turning Information into Proactive Surveillance)

A low number of TIPS were received this year due to an extended drought and no hurricanes. Additionally, we received 210 TIPS from outside the District. An agreement with Flagler County Government reimburses the District for truck spraying missions by request from the County EOC. To facilitate this request-based system, we receive all calls for mosquito service in the County and relay the TIPS outside the District. TIPS outside the District are received in a condensed fashion, likely from postings on social media encouraging neighbors to submit TIPS.



Strategy 6.1.1 *Log complaints and maintain a database of TIPS*

Measure- number of TIPS

255 TIPS in the District

Strategy 6.1.2 *Advise homeowners on the proper removal of containers, especially bromeliads to prevent container breeding mosquitoes*

Measure- number of container related TIPS

39 TIPS were found to have containers, about 15% of TIPS

Strategy 6.1.3 *Verify the presence of mosquitoes or inform the homeowner when there is a different pest present*

Measure- number of TIPS with other than mosquitoes

68 TIPS were found to have no mosquitoes present, better than 25%

Goal 7: Quality Control and Assurance through analysis

Objective 7.1 Review operational components of each week during the peak season April through October

Strategy 7.1.1 *Assess over all abundance of mosquitoes and their distribution*

Weekly Operations Updates can be found here