



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
PLANT HEALTH PROGRAM
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

AMANDA E. BEAL
COMMISSIONER

To: Board of Pesticides Control
From: Hillary Peterson, Integrated Pest Management Specialist
Re: Request for Funding
Date: November 1, 2024

The Integrated Pest Management Program is requesting funds to assist with ongoing efforts for the advancement of IPM in Maine. The Maine IPM Program works closely with the BPC to educate and promote IPM across the entire State of Maine, including giving talks annually for applicator credits across several categories, updating the GotPests Website with new factsheets and research, and referring to the BPC website in all presentations and educational materials.

Over the past three years, the program has been funded through various means including some BPC funding, general plant health funding, and grants received by the program. To run a consistent IPM program, funding needs to be secured for the 2025 calendar year. Programs that require funding include: Outreach and education, including travel for presentations, materials such as printing costs and handouts, and IPM Council tabling outreach events (\$7,000 estimated); School IPM Program specific events and printing costs (\$300 estimated); purchases related to the mosquito monitoring program (\$600 estimated); and funds for a temporary hire to perform mosquito monitoring and IPM outreach efforts for 42 weeks out of 2025 (\$38,640 estimated). Maintaining the same temporary hire who was brought on in 2024, supported by both BPC funding and an estimated \$9,200 of Swallowwort Biocontrol grant funding in 2025 will result in more consistency across the program next year, as the current technician is excellent at mosquito taxonomy and has great interest in improving the program this winter and spring.

The IPM program is requesting a total budget of \$46,540.00 for the 2025 program. Please see the following pages for a breakdown of the costs and expenditures from the 2024 BPC Funds.

Sincerely,

Hillary Peterson,
IPM Entomologist
Maine Department of Agriculture, Conservation and Forestry

GARY FISH, STATE HORTICULTURIST
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-7545
WEB: WWW.MAINE.GOV/HORT

2024 IPM Program BPC Funds Report

The Integrated Pest Management Program requested a total budget of \$35,621 for the 2024 program, allotted to the following projects: Greenhouse IPM (estimated at \$1,110 annually), outreach specific to the IPM council and its mission (estimated at \$2,550 annually), funds for travel to provide education and outreach on various IPM topics, often for CEU Credits (estimated at \$9,471 annually), the School IPM Program (estimated at \$1,500 annually), structural IPM programs (namely, the Rodent Academy, which maintains a relationship with the world-renowned Rodentologist Bobby Corrigan, estimated at \$10,000 annually), and the mosquito monitoring program (estimated at \$11,0000 annually). Of these funds, \$12,110 allotted to the Greenhouse IPM workshop and the Rodent Academy were to be spent and reimbursed, while the other funds were to be spent and not reimbursed.

Due to inefficiencies at the State level, and changes in the University of Maine event registration process, the allotted funds to be reimbursed were not used in 2024. The greenhouse IPM program was held, and instead of BPC funds being used and then reimbursed, a different system was used with the University of Maine. Attendance at the program paid for all needed costs, and educational materials were provided to growers at the event and spent out of outreach and education allotment. Due to a lack of a reimbursement system at the state level, it was decided to cancel plans for hosting a 2024 Rodent Academy, and time will be spent in the coming months determining what this may look like in the coming year.

An overview of the funds demonstrates that all funds will be spent by 12/31/2024. Some rebudgeting occurred from the original categories, primarily shifting more funds to the vector responsibilities section to keep the temporary hire on through the winter. Other grant funding allows the program to keep the temporary hire on through the spring, and the current hire is enthusiastic about improving both the mosquito program and IPM education and outreach. Categories also blurred at times – for example, many items under “outreach and education” were also related to the IPM council, and some work performed by the temp hire falls under outreach and the school IPM program. This is demonstrated in the table below:

Category	Budget	Spent	Remaining
IPM Council	\$ 2,550.00	\$ 350.00	\$ 2,200.00
Outreach / Education	\$ 9,471.00	\$ 5,955.25	\$ 3,515.75
School IPM	\$ 1,500.00	\$ 150.00	\$ 1,350.00
Vector Responsibilities	\$ 14,300.00	\$ 21,365.75	\$ (7,065.75)
Total	\$ 27,821.00	\$ 27,821.00	\$ -

Continue to next page

The following list provides a more in-depth breakdown of spending within each category:

IPM Council	\$ 350.00
Maine Municipal Association Advertisement	\$ 350.00
Outreach / Education	\$ 5,954.77
2024 Common Ground Table	\$ 124.00
2024 Maine Sustainability and Water Conference	\$ 200.00
2024 MISN Registration	\$ 20.00
NYC Rat Summit - Attendee	\$ 1,177.12
The Physician's Guide to Delusional Infestation (Book)	\$ 109.00
WB Mason (Binders for Greenhouse BMP Workshop)	\$ 147.65
Outreach Materials - Brochures, Tabling Materials, Bulletin Board, etc. (Anticipated to be spent by 12/31/2024)	\$ 4,177.00
School IPM	\$ 150.00
School IPM Nurses Conference Registration	\$ 150.00
Vector Responsibilities	\$ 21,365.75
Temp hire - Mosquito work Completed	\$ 13,420.50
Temp hire - Mosquito & IPM work (Anticipated)	\$ 7,360.00
Mosquito Batteries	\$ 66.42
Mosquito Field Supplies (Backpack, fanny packs, sunscreen, bug spray)	\$ 130.44
Mosquito gravid trapping batteries	\$ 82.18
Mosquito Supplies (tape, head nets, petri dishes, specimen manipulators, microscope camera, ice packs)	\$ 232.75
Mosquito vacuum wire - amazon	\$ 25.00
Mosquito vacuum wire and connectors	\$ 48.46



Maine DACF IPM Program Update & Funding Request

**Maine Board of Pesticides Control
December 6, 2024**

Hillary Peterson, Ph.D.

Maine Department of Agriculture,
Conservation and Forestry

hillary.peterson@maine.gov

www.maine.gov/ipm



2024 BPC Funding Allocation



Project	Sub-Category	Budget	
<i>2024 BPC Fund</i>	<i>Greenhouse IPM</i>	<i>NA</i>	
2024 BPC Fund	IPM Council	\$	2,550.00
2024 BPC Fund	Outreach / Education	\$	9,471.00
2024 BPC Fund	School IPM	\$	1,500.00
<i>2024 BPC Fund</i>	<i>Structural IPM</i>	<i>NA</i>	
2024 BPC Fund	Vector Responsibilities	\$	14,300.00
		Total \$	27,821.00

2024 BPC Funding Allocation



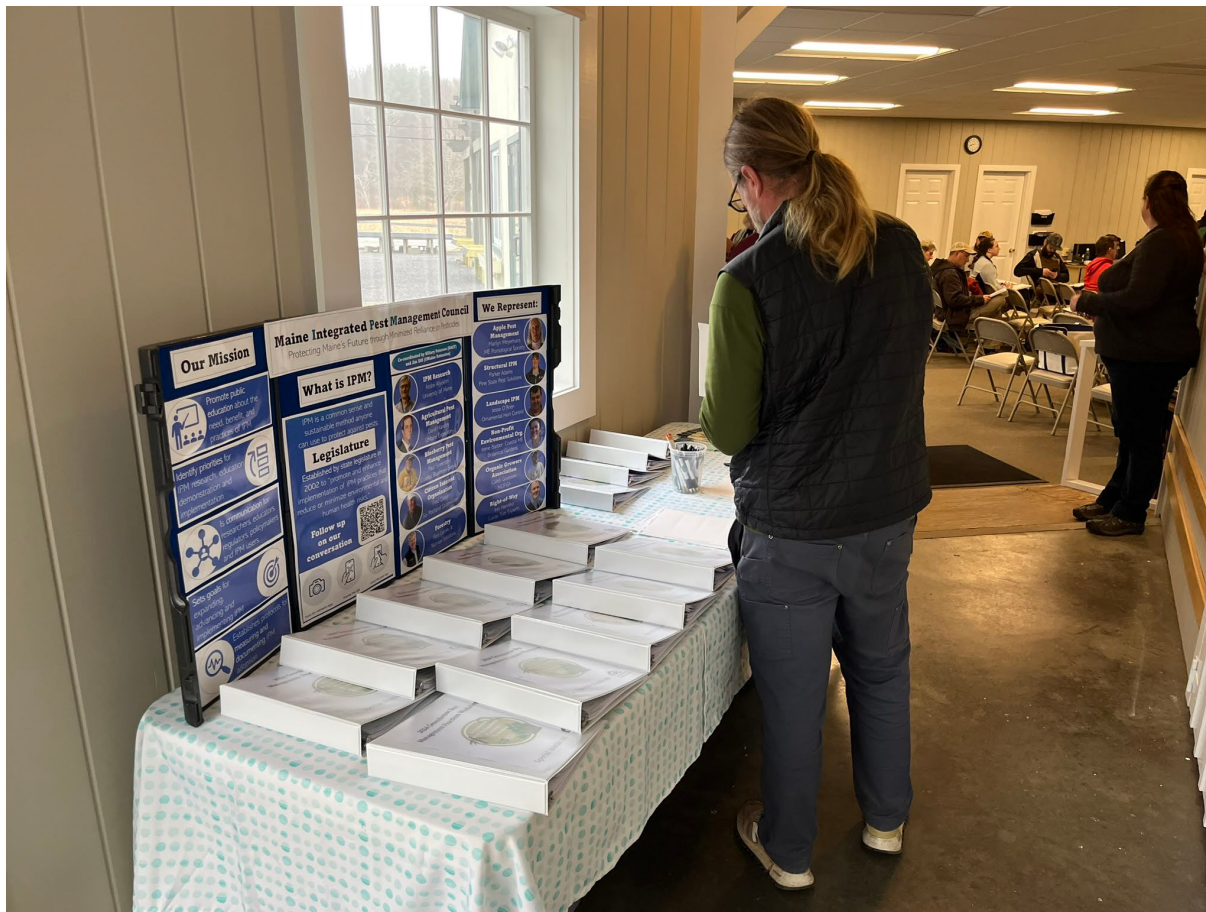
Project	Sub-Category	Budget		Spent		Remaining
2024 BPC Fund	<i>Greenhouse IPM</i>	NA		NA		NA
2024 BPC Fund	IPM Council	\$	2,550.00	\$	350.00	\$ 2,200.00
2024 BPC Fund	Outreach / Education	\$	9,471.00	\$	2,972.49	\$ 6,498.51
2024 BPC Fund	School IPM	\$	1,500.00	\$	150.00	\$ 1,350.00
2024 BPC Fund	<i>Structural IPM</i>	NA		NA		NA
2024 BPC Fund	Vector Responsibilities	\$	14,300.00	\$	20,445.75	\$ (6,145.75)
Total		\$	27,821.00	\$	23,918.24	\$ 3,902.76

The Greenhouse IPM & Rodent Academy categories were essentially “loans” from BPC to be refunded. Neither were used as we could not determine the best system within the state to do so, we collaborated with UMaine for the Greenhouse BMP Meeting and did not run the Rodent Academy (also partially due to a medical event).

Some of the education and outreach funds were used to provide booklets to attendees of the Greenhouse IPM Meeting.

2024 Greenhouse BMP Workshop

Approximately 40 attendees gathered on March 5 at Longfellow Greenhouses in Manchester



2024 Greenhouse BMP Workshop

March 5, 2024 (March 8 Rain Date)

Longfellow's Greenhouses

81 Puddledock Rd, Manchester, ME

Approved for 3 pesticide applicator credits with full-day attendance.



8:30 – 9:00 AM **Check-in and Coffee**

9:00 – 9:05 AM **Welcome and Introductions**

9:05 – 9:30 AM **Rodents & Other Mammals Around the Greenhouse**

Hillary Peterson, DACF IPM Specialist

Kirk Michaud (Wildlife Specialist, USDA APHIS Wildlife Services)

9:30 – 10:00 AM **Recycling Plastics in the Greenhouse**

Lee Skillin, Skillin's Greenhouses

10:00 – 11:00 AM **Hiring and Retention of Employees**

Jason Entsminger, Ph.D., UMaine Cooperative Extension Specialist: Small Business

11:00 – 11:15 AM **Break**

11:15 – 12:15 PM **Plant Disease Prevention, Detection, and Management**

Dr. Alicyn Smart, University of Maine

12:15 – 1:00 PM **Lunch – Brown Bag Lunch**

2024 Greenhouse BMP Workshop



1:00 – 3:30 PM

Guided Tour of Longfellow's Greenhouses with Hands-On Activity Stations
(25 Minutes per Station. See Map for your Group Number & Order of Stops)

Station #1: Biological Control

Diana LeBlanc (Longfellow's) & Hillary Peterson (DACF IPM Specialist)

Station #2: Improving Disease Detection & Sanitation

Dr. Alicyn Smart (University of Maine) & Matt Bilodeau (Longfellow's)

Station #3: Perennials & Rodents and other Mammals

Crystal Ferris (Longfellow's) & Kirk Michaud (Wildlife Specialist, USDA)

Station #4: Transplanting Machine Demo & Equipment

Will Longfellow (Longfellow's) & Sarah Scally (DACF Assistant Horticulturist)

Station #5: Watering, pH & Calibrating Equipment

*Monica Bragg (Longfellow's) & Carole Neil (DACF Assistant Horticulturist) &
Jeff Skillin (Head Grower, Skillins Greenhouses)*

3:30 – 4:00 PM

Q&A Session, Grower Discussion & Wrap Up



2024 BPC Funding Allocation



Project	Sub-Category	Budget		Spent		Remaining
2024 BPC Fund	Greenhouse IPM	NA		NA		NA
2024 BPC Fund	IPM Council	\$	2,550.00	\$	350.00	\$ 2,200.00
2024 BPC Fund	Outreach / Education	\$	9,471.00	\$	2,972.49	\$ 6,498.51
2024 BPC Fund	School IPM	\$	1,500.00	\$	150.00	\$ 1,350.00
2024 BPC Fund	Structural IPM	NA		NA		NA
2024 BPC Fund	Vector Responsibilities	\$	14,300.00	\$	20,445.75	\$ (6,145.75)
Total		\$	27,821.00	\$	23,918.24	\$ 3,902.76

These two categories make the most sense to lump – we spent less than anticipated, and it was decided to use some funds towards keeping our temporary hire on through the fall and winter due to increased mosquito responsibilities and opportunities for education and outreach.

Funds will be spent from the remaining \$3,902 on much needed outreach materials and attendance at the National Mosquito and Control Association meeting in December.

2024 IPM Council Outreach

- Advertisement in Maine Municipal Association Catalog
- Greenhouse Best Management Practices Workshop – approx. 40 reached
- Maine Agricultural Day at the Legislature – approx. 44 reached (including Janet Mills!)
- Common Ground Country Fair – approx. 600 reached



2024 IPM Outreach & Education

Selected Presentations:

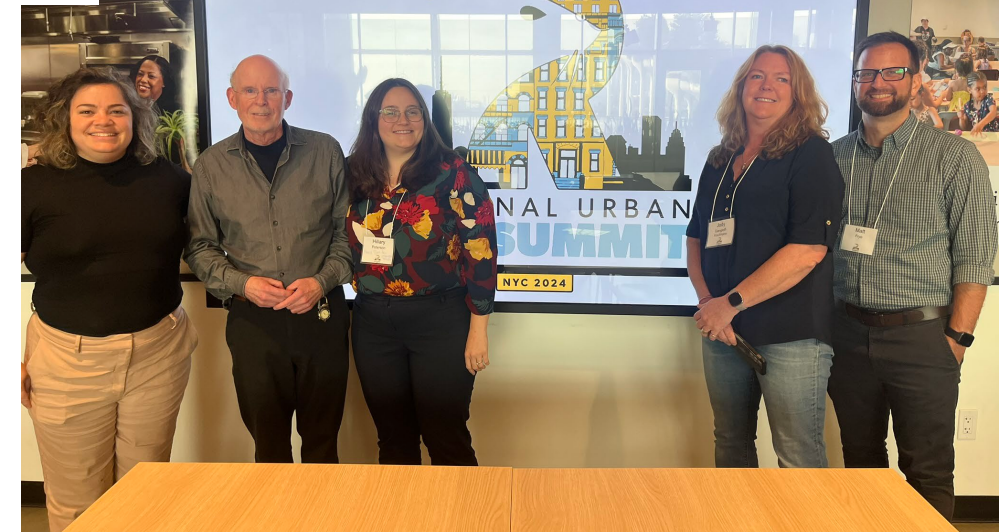
- Restaurant IPM Presentation for DHHS inspectors
- “The Maine IPM Toolbox” for the Ag Trades Show
- Maine State Update: Tri-State IPM Series
- Maine Calling: Beneficial Insects
- IPM for Arborists
 - Maine Arborist Association Annual Meeting
 - Maine Conservation Corps Stewards Training
- Swallowwort Biocontrol Presentations:
 - Friends of Merrymeeting Bay
 - Knox-Lincoln Soil & Water Conservation District
- Jumping Worm Talk: Old Bristol Garden Club
- Panelist: Northeastern Mosquito Control Association

Other Outreach & Networking:

- National Urban Rat Summit
- Tabling: Ag Trades Show
- MISN Meeting: Organizer
- Tri-State IPM Meeting: Organizer



2024 National Urban Rat Summit



2024 BPC Funding Allocation



Project	Sub-Category	Budget		Spent		Remaining
2024 BPC Fund	Greenhouse IPM	NA		NA		NA
2024 BPC Fund	IPM Council	\$	2,550.00	\$	350.00	\$ 2,200.00
2024 BPC Fund	Outreach / Education	\$	9,471.00	\$	2,972.49	\$ 6,498.51
2024 BPC Fund	School IPM	\$	1,500.00	\$	150.00	\$ 1,350.00
2024 BPC Fund	Structural IPM	NA		NA		NA
2024 BPC Fund	Vector Responsibilities	\$	14,300.00	\$	20,445.75	\$ (6,145.75)
Total		\$	27,821.00	\$	23,918.24	\$ 3,902.76

I had intended on using funds to build a new turfgrass workshop for the School IPM workshop this past summer, however I was unable to do so due to a medical event this past spring.

Funds were reallocated towards keeping the temp hire on this winter.

MAINE DEPARTMENT OF
**AGRICULTURE
CONSERVATION
& FORESTRY**

Resources: [Excellent Overview of Pediculicides \(Michigan\)](#)

2024 BPC Funding Allocation



Project	Sub-Category	Budget		Spent		Remaining
2024 BPC Fund	Greenhouse IPM	NA		NA		NA
2024 BPC Fund	IPM Council	\$	2,550.00	\$	350.00	\$ 2,200.00
2024 BPC Fund	Outreach / Education	\$	9,471.00	\$	2,972.49	\$ 6,498.51
2024 BPC Fund	School IPM	\$	1,500.00	\$	150.00	\$ 1,350.00
2024 BPC Fund	Structural IPM	NA		NA		NA
2024 BPC Fund	Vector Responsibilities	\$	14,300.00	\$	20,445.75	\$ (6,145.75)
Total		\$	27,821.00	\$	23,918.24	\$ 3,902.76

As mentioned previously, more funds were allocated to a temporary hire for vector work and vector supplies this year due to a mosquito season with increased needs of time, supplies, and labor.

2024 Vector Responsibilities

Maine CDC detects West Nile virus in Gorham crow

by WGME Staff | Tue, November 19th 2024 at 1:10 PM

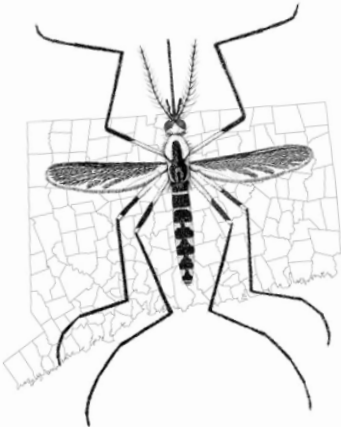


Locally Acquired Eastern Equine Encephalitis Virus Infection Identified in a Maine Resident

Nov 07, 2024

Public reminded to monitor for signs of mosquito-borne illness

IDENTIFICATION GUIDE TO THE MOSQUITOES OF CONNECTICUT



Theodore G. Andreadis, Michael C. Thomas, & John J. Shepard
Illustrations by Gale Ridge
The Connecticut Agricultural Experiment Station
123 Huntington Street
New Haven, CT 06511



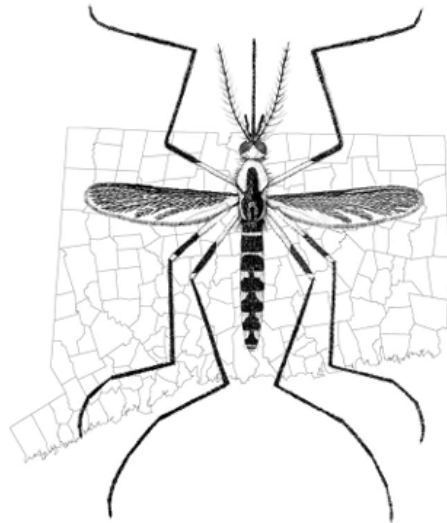
ARBOVIRUSES ISOLATED FROM MOSQUITOES IN CONNECTICUT

Mosquito Species	Arbovirus*							
	CV	EEE	FL	HJ	JC	TVT	WEE	WN
Aedes								
<i>Aedes cinereus</i>	X	X		X	X			X
<i>Aedes vexans</i>	X	X		X	X			X
Anopheles								
<i>Anopheles punctipennis</i>	X	X		X	X	X		X
<i>Anopheles quadrimaculatus</i>	X	X		X				X
<i>Anopheles walkeri</i>	X	X			X			X
Coquillettidia								
<i>Coquillettidia perturbans</i>	X	X	X	X	X	X		X
Culex								
<i>Culex pipiens</i>		X	X	X				X
<i>Culex restuans</i>		X	X	X	X			X
<i>Culex salinarius</i>		X	X	X				X
<i>Culex territans</i>		X						
Culiseta								
<i>Culiseta melanura</i>	X	X	X	X			X	X
<i>Culiseta morsitans</i>		X		X	X			
Ochlerotatus								
<i>Ochlerotatus abserratus</i>					X			
<i>Ochlerotatus aurifer</i>					X			
<i>Ochlerotatus canadensis</i>	X	X		X	X			X
<i>Ochlerotatus cantator</i>	X	X		X	X			X
<i>Ochlerotatus communis</i>					X			
<i>Ochlerotatus excrucians</i>					X			
<i>Ochlerotatus provocans</i>					X			
<i>Ochlerotatus sollicitans</i>	X	X			X			X
<i>Ochlerotatus sticticus</i>	X	X			X	X		X
<i>Ochlerotatus stimulans</i>				X	X			
<i>Ochlerotatus taeniorhynchus</i>	X	X			X			X
<i>Ochlerotatus triseriatus</i>	X	X		X	X			X
<i>Ochlerotatus trivittatus</i>	X	X			X	X		X
Psorophora								
<i>Psorophora ferox</i>	X	X		X	X	X		X
Uranotaenia								
<i>Uranotaenia sapphirina</i>		X		X				X

* CV-Cache Valley, EEE-Eastern equine encephalitis, FL-Flanders, HJ-Highlands J, JC-Jamestown Canyon, TVT-Trivittatus, WEE-Western equine encephalitis, WN-West Nile

2024 Vector Responsibilities

IDENTIFICATION GUIDE TO THE MOSQUITOES OF CONNECTICUT



Theodore G. Andreadis, Michael C. Thomas, & John J. Shepard
 Illustrations by Gale Ridge
 The Connecticut Agricultural Experiment Station
 123 Huntington Street
 New Haven, CT 06511



Mosquito Species	EEE	JCV	WNV
<i>Aedes cinereus</i>	X	X	X
<i>Aedes vexans</i>	X	X	X
<i>Anopheles punctipennis</i>	X	X	X
<i>Anopheles quadrimaculatus</i>	X		X
<i>Anopheles walkeri</i>	X	X	X
<i>Coquillettidia perturbans</i>	X	X	X
<i>Culex pipiens</i>	X		X
<i>Culex restuans</i>	X	X	X
<i>Culex salinarius</i>	X		X
<i>Culex territans</i>	X		
<i>Culiseta melanura</i>	X		X
<i>Culiseta morsitans</i>	X	X	
<i>Ochlerotatus abserratus</i>		X	
<i>Ochlerotatus aurifer</i>		X	
<i>Ochlerotatus canadensis</i>	X	X	X
<i>Ochlerotatus cantator</i>	X	X	X
<i>Ochlerotatus communis</i>		X	
<i>Ochlerotatus excrucians</i>		X	
<i>Ochlerotatus provocans</i>		X	
<i>Ochlerotatus sollicitans</i>	X	X	X
<i>Ochlerotatus sticticus</i>	X	X	X
<i>Ochlerotatus stimulans</i>		X	
<i>Ochlerotatus taeniorhynchus</i>	X	X	X
<i>Ochlerotatus triseriatus</i>	X	X	X
<i>Ochlerotatus trivittatus</i>	X	X	X
<i>Psorophora ferox</i>	X	X	X
<i>Uranotaenia sapphirina</i>	X		X

2024 Vector Responsibilities

Trap locations and type for the 2024 Mosquito Monitoring season.

Trap types include resting boxes (RB) and gravid traps (GT).

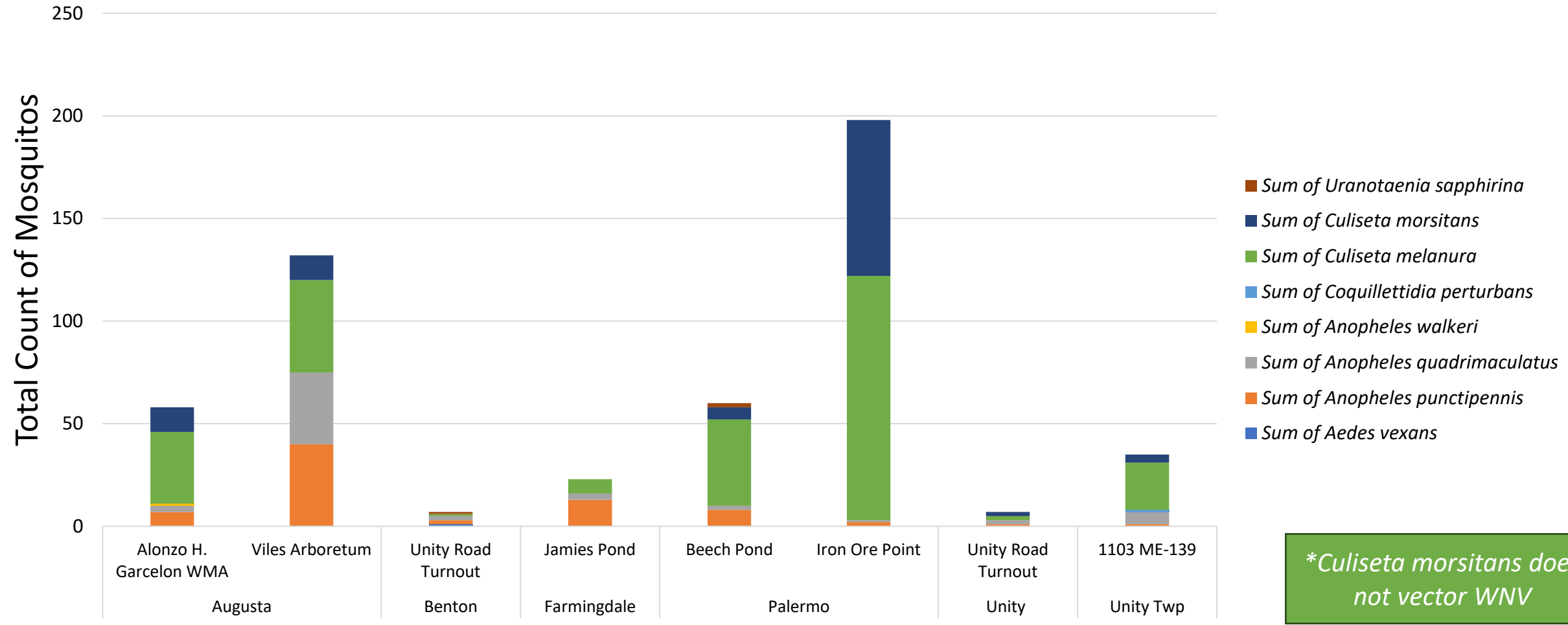
Resting box sites were monitored from 7/1/24 through 10/09/24, and gravid trap sites were monitored from 08/08/24 to 9/10/24.



Site Name	Town	County	State	Trap Type
Jamie’s Pond	Farmingdale	Kennebec	Maine	RB
Viles Arboretum	Augusta	Kennebec	Maine	RB
Garcelon WMA	Augusta	Kennebec	Maine	RB
Iron Ore Point	Palermo	Waldo	Maine	RB
Beech Pond	Palermo	Waldo	Maine	RB
Unity Plantation (1103 ME-139)	Unity Twp	Waldo	Maine	RB
Unity Road Turnout	Unity Twp	Waldo	Maine	RB
West River Rd	Sidney	Kennebec	Maine	GT
Sidney Boat Landing	Sidney	Kennebec	Maine	GT

2024: EEE & WNV* Vectors by Site

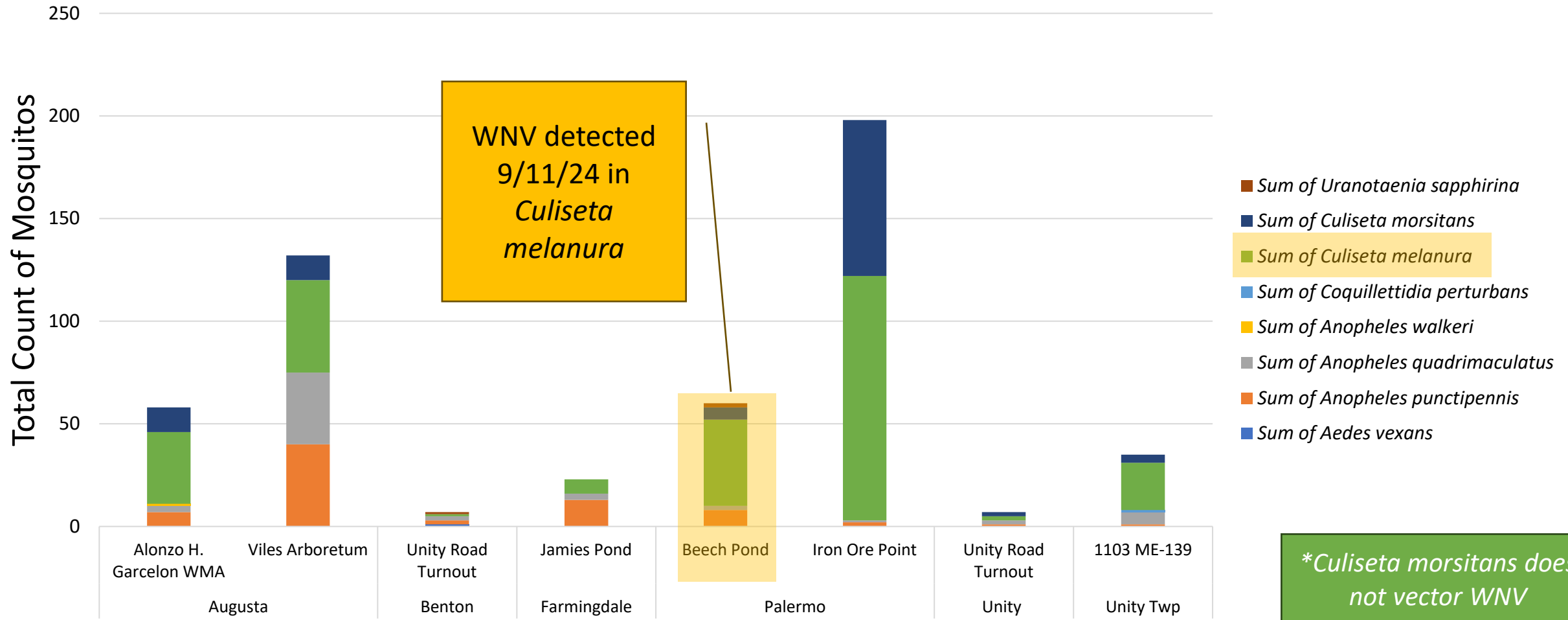
EEE & WNV Vectors Captured at Each Site and Town (Resting Boxes)



**Culiseta morsitans does not vector WNV*

2024: EEE & WNV* Vectors by Site

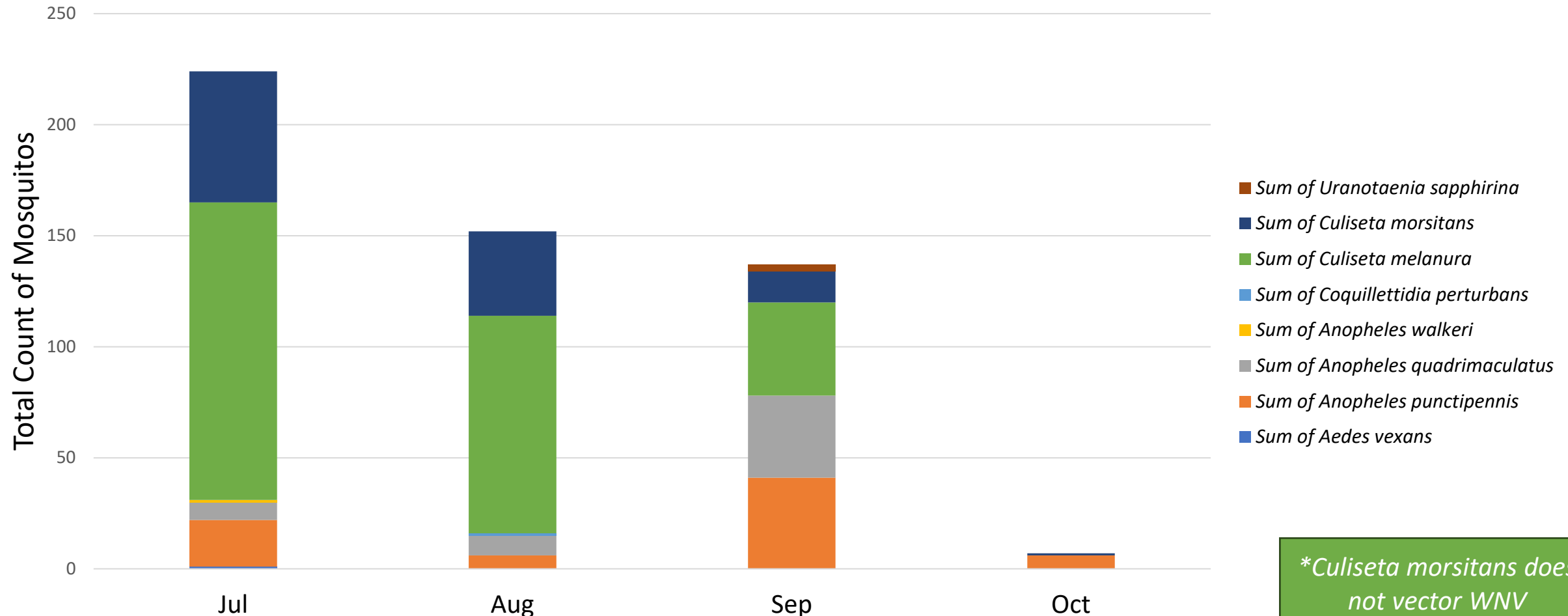
EEE & WNV Vectors Captured at Each Site and Town (Resting Boxes)



Note: Data represents only sites sampled by DACF, not sites sampled across all vector borne working group partners.

2024: EEE & WNV* Vectors by Date

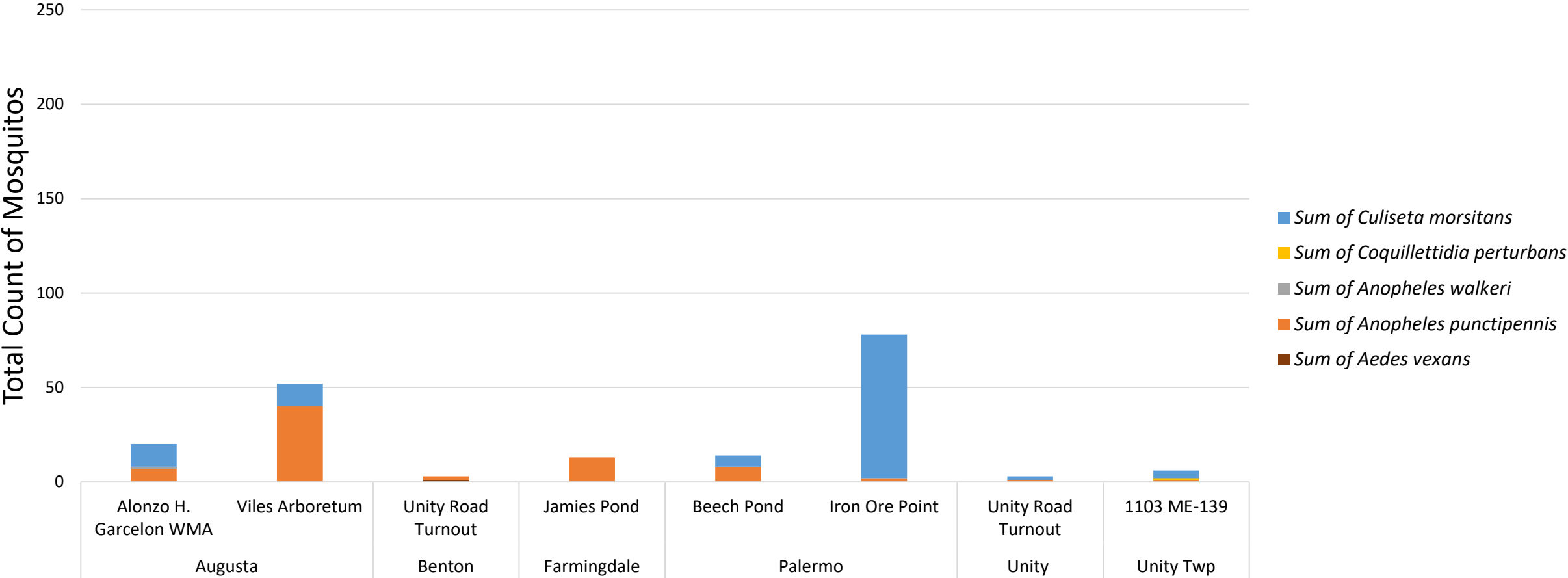
EEE & WNV Vectors Captured Over Time (Resting Boxes)



Note: Data represents only sites sampled by DACF, not sites sampled across all vector borne working group partners.

2024: JCV Vectors by Site

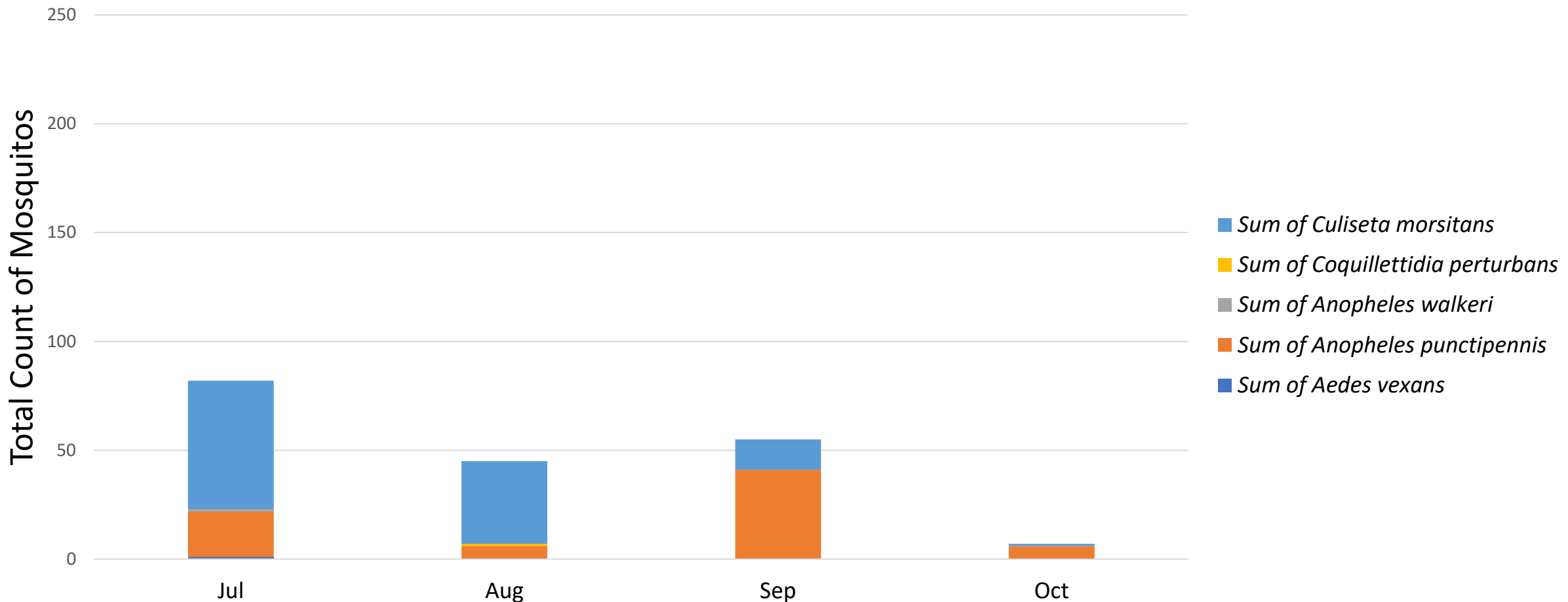
JCV Vectors Captured at Each Site and Town (Resting Boxes)



Note: Data represents only sites sampled by DACF, not sites sampled across all vector borne working group partners.

2024: JCV Vectors by Date

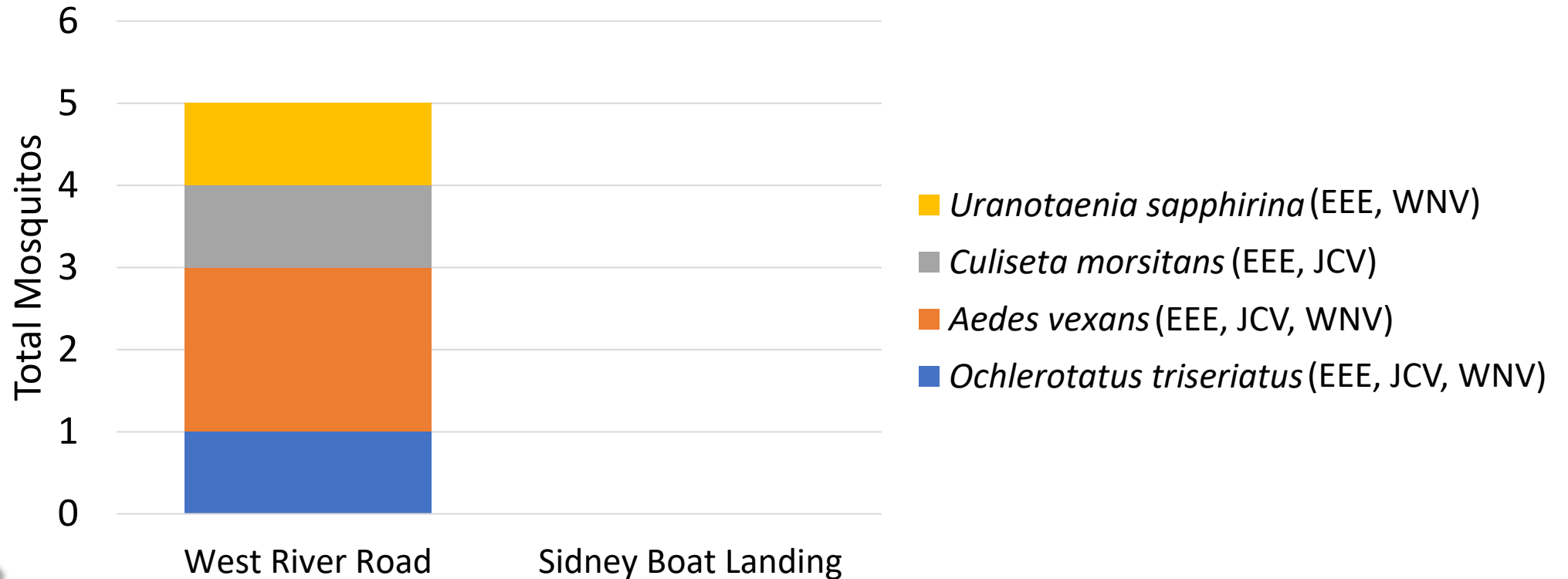
JCV Vectors Captured Over Time (Resting Boxes)



Note: Data represents only sites sampled by DACF, not sites sampled across all vector borne working group partners.

2024: Gravid Trapping Results

Gravid Trapping Results (Sidney) 8/8/24 - 9/10/24



Note: Data represents only sites sampled by DACF, not sites sampled across all vector borne working group partners.

2025 Budget Request - BPC



Category	Estimated Cost	
Outreach / Education		
• travel for presentations		
• materials such as printing costs and handouts		
• IPM Council tabling and outreach events	\$	7,000.00
School IPM		
• estimated printing costs	\$	300.00
Vector Responsibilities		
• mosquito monitoring items & PPE	\$	600.00
IPM Temp Hire (vector & outreach)*		
	\$	38,640.00
Total		\$ 46,540.00

**for 42 weeks out of the year, supplementing with 10 weeks from grants.*

2025 Budget Request - BPC



Category	Estimated Cost	
Outreach / Education		
• travel for presentations		
• materials such as printing costs and handouts		
• IPM Council tabling and outreach events	\$	7,000.00
School IPM		
• estimated printing costs	\$	300.00
Vector Responsibilities		
• mosquito monitoring items & PPE	\$	600.00
IPM Temp Hire (vector & outreach)*		
	\$	38,640.00
Total \$		46,540.00

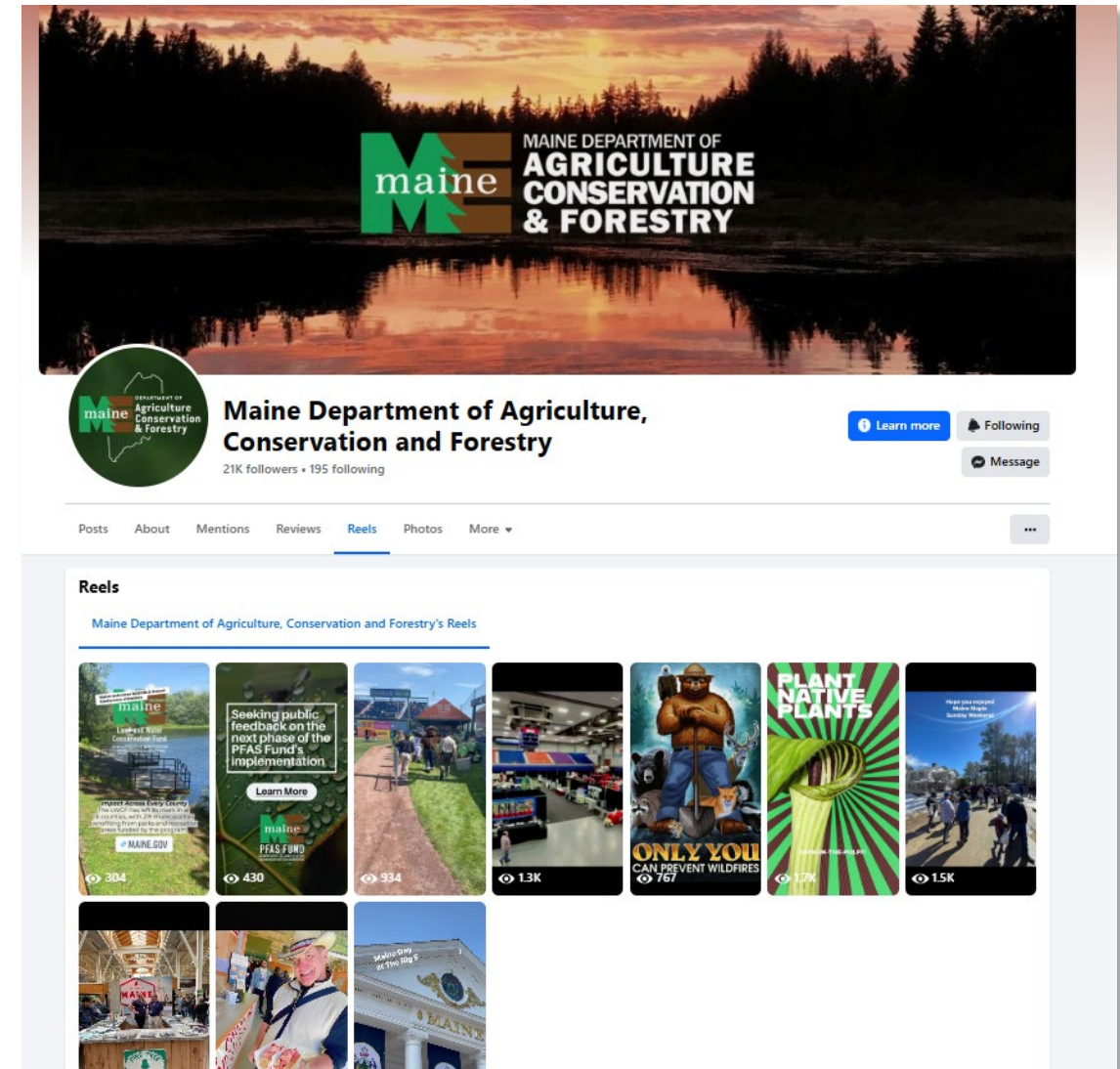
*for 42 weeks out of the year, **supplementing with 10 weeks from grants.**

IPM Temp Hire Responsibilities

We have been given permission from Jim Britt to create educational reels on the DACF Facebook Page, which has over **21,000 followers**.

Plans:

- Mosquito education about trapping, monitoring, and biology; when and how to avoid mosquito bites.
- “IPM Myths vs. Reality” series:
 - Do chickens reduce ticks in my yard?
 - Do cats keep mice out of my home?
 - Should I rake my leaves?
 - Do bug zappers work?
 - How can I keep fruit flies out of my kitchen?
 -and more!



IPM Temp Hire Responsibilities

Mosquito Monitoring Program & Improvements

Survey123 Key

- Work with Lubelczyk lab to try and develop a working key for identification that collects data

Mosquito Outreach

- Create graphics about mosquito species and prevalence in regions for internal use and identification

Mosquito Monitoring Program

- Update SOPs, documents, repair vacuums (and create SOP on how to do so), be prepared to set up additional / earlier mosquito monitoring

ArcGIS Survey123 My surveys Hillary.Peterson@maine.gov

Mosquito Vector ID Form Overview Design Collaborate Analyze Data Settings

Page 2 of 49

4 Genera: Couplet 1

5 Both have longer than normal palps. Sometimes proboscis of mosquitoes will be curved from collection so be sure to double check the size of the palps.

1. Maxillary palpus (MPp) nearly as long as proboscis (P) (Fig. 1); scutellum (Stm) rounded (Fig. 2) *Anopheles*

Maxillary palpus much shorter than proboscis (Fig. 3); scutellum trilobed (Fig. 4) . . 2

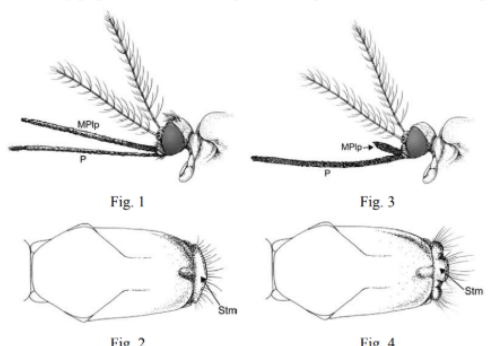


Fig. 1 Fig. 3
Fig. 2 Fig. 4

6 Couplet Choice:

Please select

Text, number, date, and time

Singleline text Multiline text

Number Slider

Date Time

Date and time Email

Website Barcode

Choice

Single select Multiple select

Single select grid Dropdown

