Pioneer Valley MCD Weekly Report

EPI Week 29 **Week Ending: July 20, 2024**

Surveillance Summary

EPI Week 29 Target Species Surveillance Summary					Cumulative Totals: EPI Weeks 24-29			
Species	# Collected	Pools	WNV+	EEEV+	Cumulative Specimens	Cumulative Pools	Cumulative WNV+	Cumulative EEEV+
Cx. *pipiens/restuans*	40	1	0	0	1161	41	0	0
Cs. *melanura*	6	2	0	0	122	13	0	0
Cq. *perturbans*	877	12	0	0	14982	134	0	0
Oc. *canadensis*	11	1	0	0	556	20	0	0
Oc. *japonicus*	17	1	0	0	357	19	0	0
Cx. *salinarius*	86	3	0	0	549	10	0	0
Ae. *albopictus*	2	0	0	0	15	2	0	0
Ps. *ferox*	5	0	0	0	234	4	0	0
An. *quadrimaculatus*	10	0	0	0	515	1	0	0
Ae. *vexans*	9	0	0	0	132	1	0	0

Positive Samples

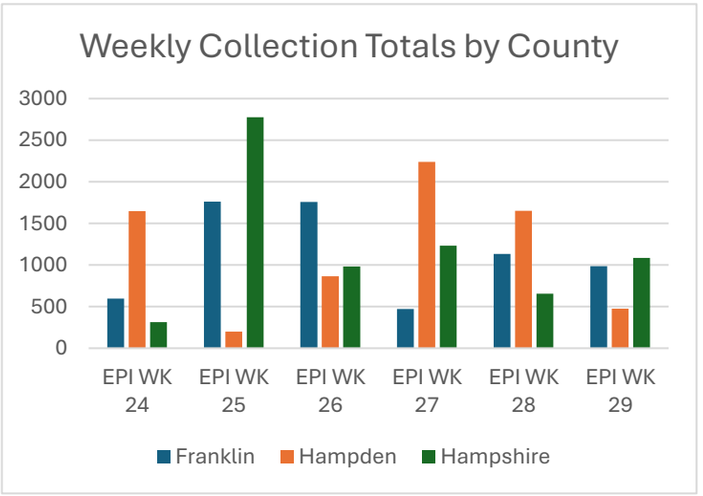
- Apart from the WNV positive pool of Cx. *salinarius* reported in East Longmeadow at the beginning of EPI week 29, there were no additional arboviruses detected during EPI week 29 in Pioneer Valley.

Most Abundant Species

- Cq. *perturbans* were the most abundant vector species collected during EPI week 29, totaling 1867 specimens. *Perturbans* collections are down by 33% from the previous week and are expected to remain relatively stable or decrease during the coming weeks. Cq. *perturbans* are a bridge vector for EEE and WNV and can be found in permanent swamps with emergent vegetation (e.g. cattails and hummocks/tussocks). Cq. *perturbans* are aggressive human biters that can fly up to 5 miles for a blood meal and are active during the night.

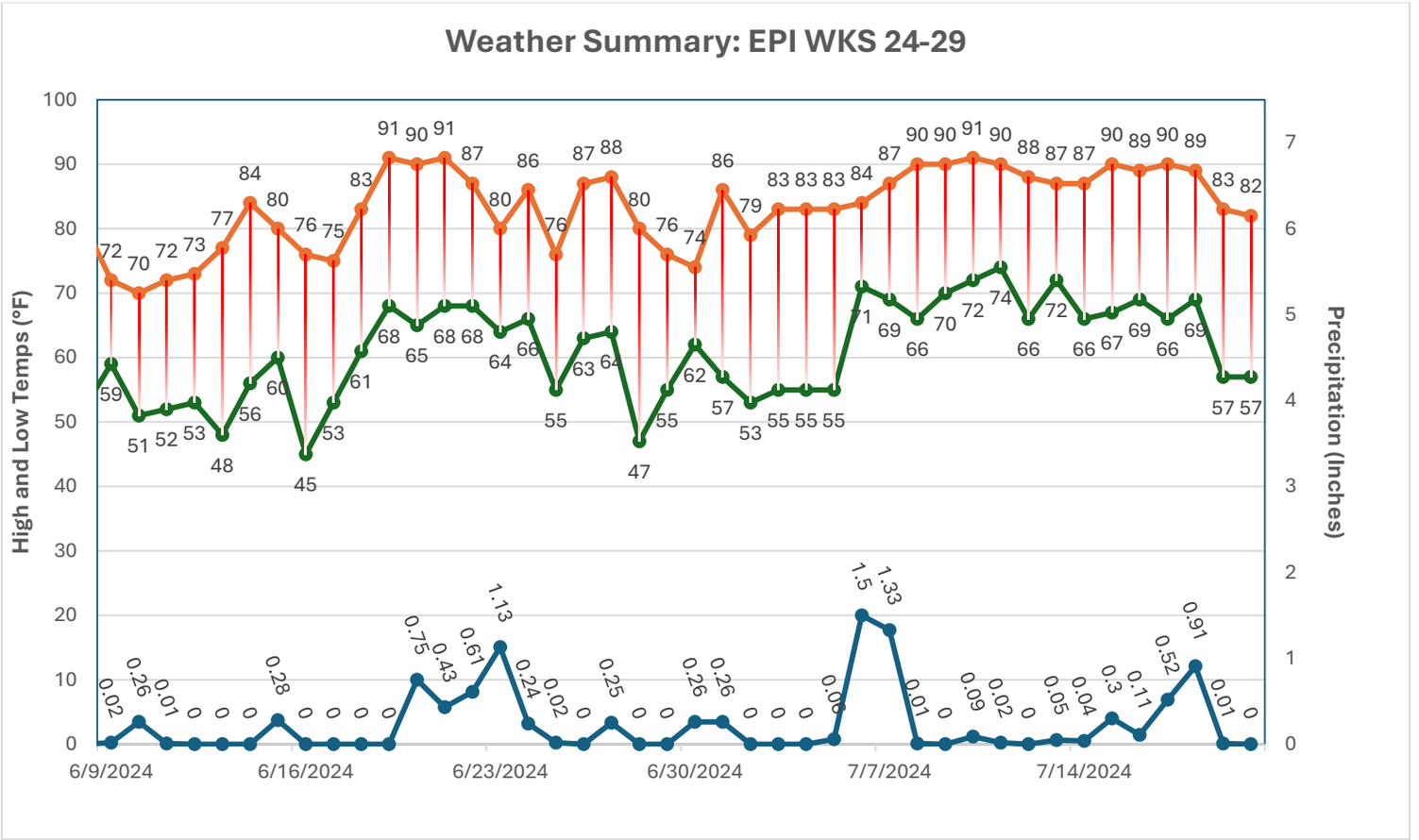
EPI WK 29 Summary by County

- Franklin County
  - EPI WK 29 Pools Tested: 25
  - Positive Samples: 0
  - Most Abundant Species: Cq. *perturbans* (704)
  - Total Mosquitoes Collected: 988
- Hampden County
  - EPI WK 29 Pools Tested: 15
  - Positive Samples: 0
  - Most Abundant Species: Cq. *perturbans* (286)
  - Total Mosquitoes Collected: 475
- Hampshire County
  - EPI WK 29 Pools Tested: 20
  - Positive Samples: 0
  - Most Abundant Species: Cq. *perturbans* (877)
  - Total Mosquitoes Collected: 1084



- Total Mosquitoes Collected (All Counties): 2547
- Total Pools Submitted for Testing (All Counties): 59

Weather Data



Weather Summary

- Weather conditions remained favorable for mosquitoes during EPI week 29. There was a total of 2,547 mosquitoes collected during EPI week 29 (-26%). Due to specific species phenology (seasonal abundance) and weather conditions, it is expected that mosquito collection totals will continue to decrease slightly or remain relatively stable.

Weekly Changes

Station	Name	EPI Week	PRCP Total (in.)	TMAX AVG (°F)	TMIN AVG (°F)
USC00190120	AMHERST, MA US	**24**	**0.57**	**75.43**	**54.14**
USC00190120	AMHERST, MA US	**25**	**1.79 (+214%)**	**84.71 (+12%)**	**61.14 (+13%)**
USC00190120	AMHERST, MA US	**26**	**1.64 (-8%)**	**81.86 (-3%)**	**59.14 (-3%)**
USC00190120	AMHERST, MA US	**27**	**2.08 (+28%)**	**81.71 (no change)**	**58.29 (+1%)**
USC00190120	AMHERST, MA US	**28**	**1.5 (-28%)**	**89 (+9%)**	**69.9 (+20%)**
USC00190120	AMHERST, MA US	**29**	**1.89 (+26%)**	**87.14 (-2%)**	**64.43 (-8%)**

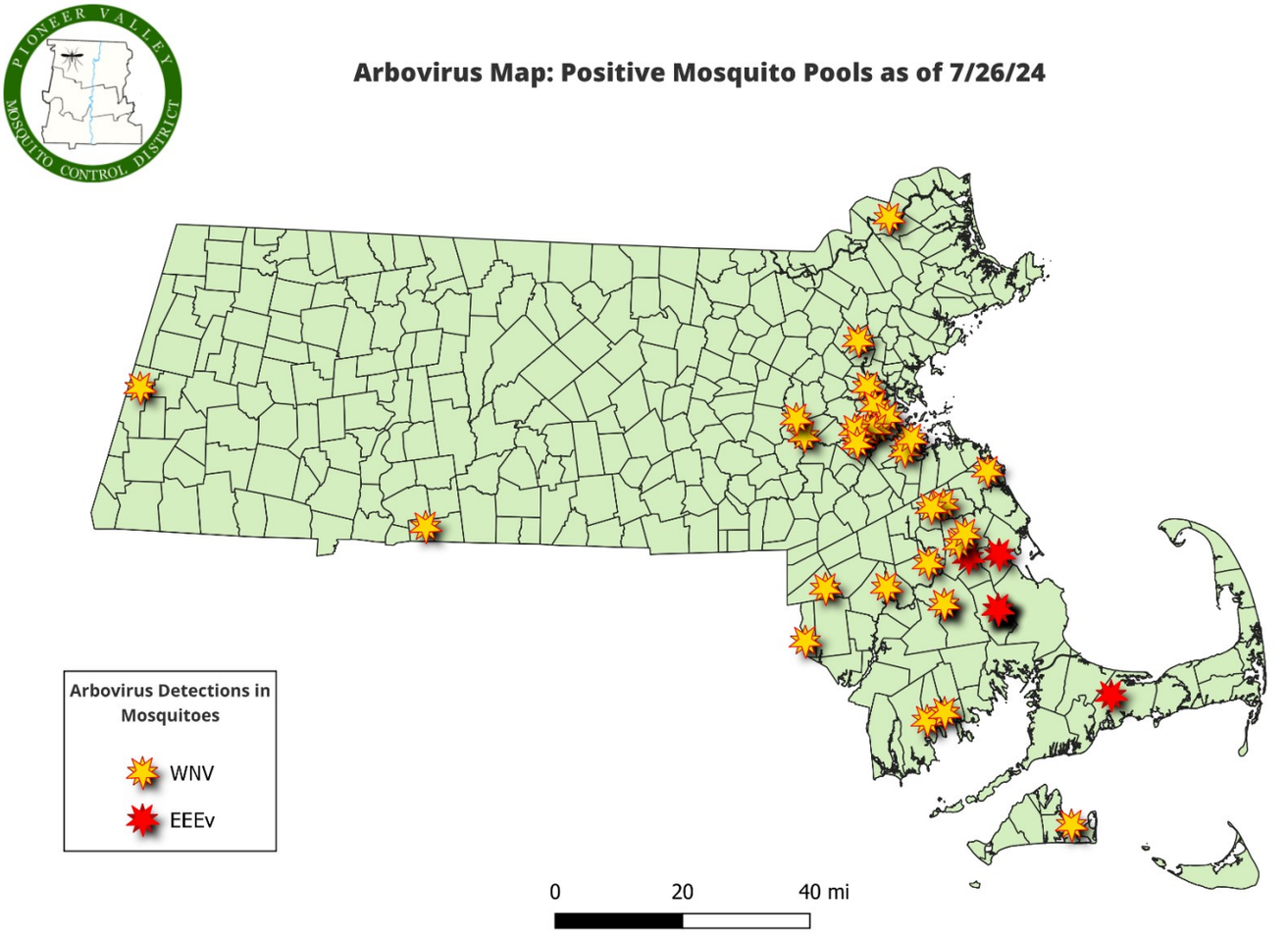
Arbovirus Detections as of 7/26/24

Collection Date	Town	Species	Pool Size	County	Virus
6/25/2024	Quincy	Culex pipiens/restuans	36	Norfolk	WNV
6/25/2024	Quincy	Culex pipiens/restuans	25	Norfolk	WNV
7/1/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/1/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/1/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/1/2024	Carver	Culiseta melanura	34	Plymouth	EEE
7/1/2024	Carver	Coquillettidia perturbans	50	Plymouth	EEE
7/1/2024	Carver	Coquillettidia perturbans	50	Plymouth	EEE
7/2/2024	Rockland	Culex pipiens/restuans	50	Plymouth	WNV
7/8/2024	Kingston	Culex pipiens/restuans	50	Plymouth	EEE
7/8/2024	Halifax	Culiseta melanura	50	Plymouth	EEE
7/9/2024	Raynham	Culiseta melanura	50	Bristol	WNV
7/9/2024	Blackstone	Culex pipiens/restuans	24	Worcester	WNV
7/9/2024	Edgartown	Culex pipiens/restuans	22	Dukes	WNV
7/9/2024	Cambridge	Culex pipiens/restuans	50	Middlesex	WNV
7/9/2024	Hanson	Culiseta melanura	50	Plymouth	WNV
7/11/2024	Clinton	Culex pipiens/restuans	20	Worcester	WNV
7/11/2024	Natick	Culex pipiens/restuans	50	Middlesex	WNV
7/15/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/15/2024	East Longmeadow	Culex salinarius	5	Hampden	WNV
7/16/2024	Dracut	Coquillettidia perturbans	50	Middlesex	WNV
7/16/2024	Wayland	Culex pipiens/restuans	34	Middlesex	WNV
7/16/2024	Middleborough	Culex pipiens/restuans	50	Plymouth	WNV
7/16/2024	Middleborough	Culex pipiens/restuans	50	Plymouth	WNV
7/16/2024	Scituate	Culex pipiens/restuans	49	Plymouth	WNV
7/16/2024	Pembroke	Culex pipiens/restuans	31	Plymouth	WNV
7/17/2024	Fairhaven	Culex pipiens/restuans	22	Bristol	WNV
7/17/2024	Dartmouth	Culex pipiens/restuans	37	Bristol	WNV
7/18/2024	Seekonk	Coquillettidia perturbans	50	Bristol	WNV
7/18/2024	Seekonk	Culiseta melanura	31	Bristol	WNV
7/19/2024	Richmond	Culex pipiens/restuans	21	Berkshire	WNV
7/19/2024	Attleboro	Culex pipiens/restuans	23	Bristol	WNV
7/19/2024	Worcester	Culex pipiens/restuans	19	Worcester	WNV
7/19/2024	Worcester	Culex pipiens/restuans	50	Worcester	WNV
7/19/2024	Marlborough	Culex pipiens/restuans	50	Middlesex	WNV
7/22/2024	Haverhill	Culex pipiens	50	Essex	WNV
7/22/2024	Haverhill	Culex pipiens	50	Essex	WNV
7/22/2024	Haverhill	Culex pipiens	41	Essex	WNV
7/22/2024	Brookline	Culex pipiens/restuans	50	Norfolk	WNV
7/22/2024	Kingston	Culex pipiens/restuans	37	Plymouth	WNV
7/22/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/22/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/22/2024	Carver	Culiseta melanura	50	Plymouth	EEE
7/22/2024	Carver	Coquillettidia perturbans	50	Plymouth	EEE
7/22/2024	Carver	Coquillettidia perturbans	50	Plymouth	EEE
7/23/2024	Barnstable	Culex pipiens/restuans	50	Barnstable	EEE
7/23/2024	Abington	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Abington	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Abington	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Brockton	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Brockton	Culex pipiens/restuans	50	Plymouth	WNV

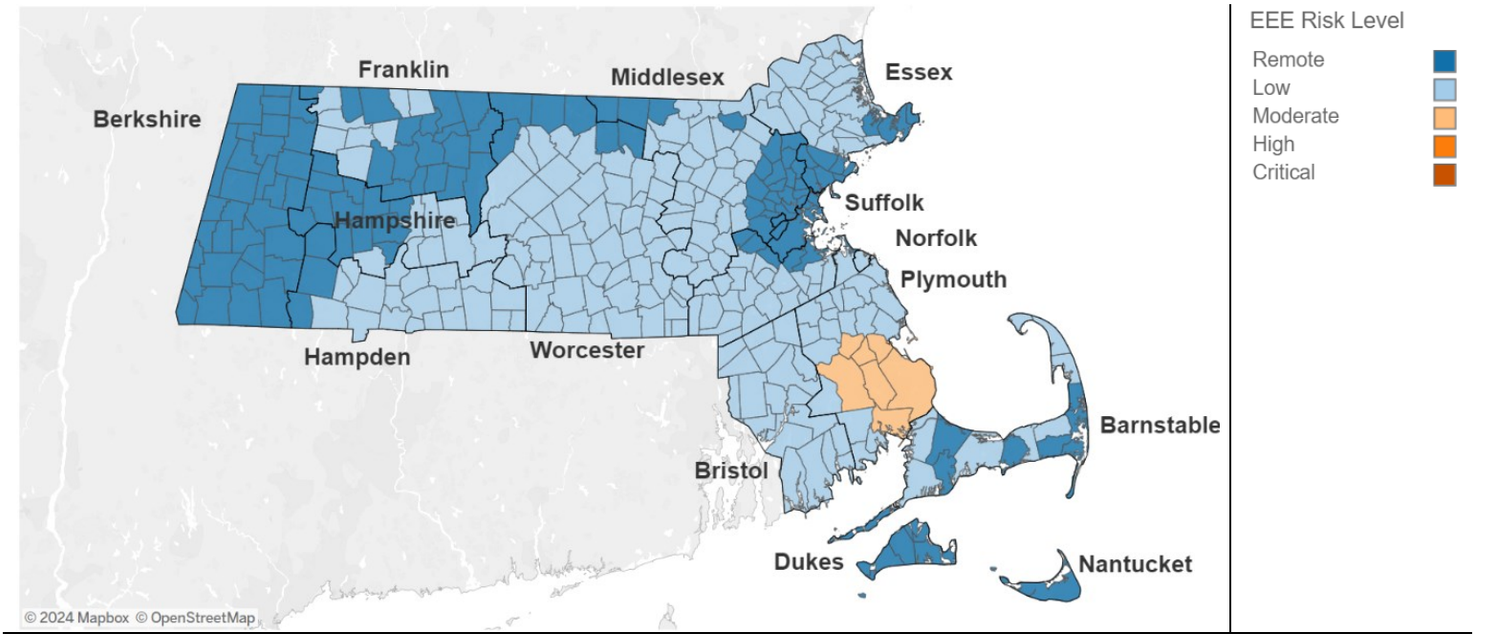
7/23/2024	Brockton	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Bridgewater	Culex pipiens/restuans	50	Plymouth	WNV
7/23/2024	Boston	Culex pipiens/restuans	37	Suffolk	WNV
7/23/2024	Boston	Ochlerotatus japonicus	9	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	41	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	19	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	50	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	50	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	28	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	50	Suffolk	WNV
7/23/2024	Boston	Culex pipiens/restuans	39	Suffolk	WNV
7/24/2024	Woburn	Culex pipiens/restuans	50	Middlesex	WNV

Arbovirus Summary as of 7/26/24

Virus	Positive Mosquito Samples	Animal Cases	Human Cases
EEEv	**15**	**0**	**0**
WNV	**48**	**0**	**0**



EEE Impacted Areas



Recent detections of EEEv in mosquitos has resulted in a risk level change to “Moderate” in the following communities: Carver, Halifax, Kingston, Middleborough, Plymouth, Plympton, and Wareham.

Current EEE Risk Map from: https://www.mass.gov/info-details/massachusetts-arbovirus-update

WNV Impacted Areas

There were no recent changes to the WNV risk map.

Current WNV Risk Map From: https://www.mass.gov/info-details/massachusetts-arbovirus-update

Dengue Fever in Massachusetts (acquired through travel)

- According to the CDC, there have been a total of 64 human cases of dengue in Massachusetts, as of 7/26/24. There have been no local transmissions of dengue in Massachusetts.
- Dengue transmission typically occurs in the following regions: the Caribbean, Central America, South America, Southeast Asia, and the Pacific Islands.
- Dengue is spread through a human-to-mosquito-to-human cycle.
- Onset is up to two weeks with illness lasting 2-7 days. Transmission to mosquitoes is possible for up to 12 days.
- Symptoms include:
  - Fever
  - Nausea and vomiting
  - Rash
  - Aches and pains
  - Joint and muscle pain
  - Pressure and pain around the eye sockets
  - Headache

WNV and EEE Symptoms Chart

Disease	Onset	Symptoms	
WNV	**2 to 14 Days**	**Febrile Illness** • Fever • Muscle aches • Joint Pain • Fatigue • Rash	**Neuroinvasive Disease** • Stiff neck • Muscle Tremors • Seizures • Changes in vision • Weakness or paralysis
EEE	**4 to 10 Days**	**Febrile Illness** • Fever • Muscle aches • Joint pain • Chills	**Neuroinvasive Disease** • Fever • Headache • Seizures • Behavioral changes • Vomiting • Diarrhea • Coma

Southern Mosquito Species Found in MA

Because of a changing climate, mosquito populations are shifting, and species that were once confined to southern states are now appearing in New England. For instance, the mosquitoes that carry dengue fever, such as Aedes *albopictus*, are now regularly found in Massachusetts. Climate change is creating unusually balmy conditions and helping to expand the range of mosquito-borne diseases.

Just this past week, PVMCD collected 5 Psorophera *columbiae,* a mosquito that has never been documented in Massachusetts. In addition, PVMCD collected a total of 149 Culex *erraticus*. This is another southern mosquito species that is not typically found in Massachusetts. Since 2007, only 64 Cx. *erraticus* have been reported in the state. These findings underscore the importance of ongoing mosquito surveillance and the need for continued research to understand the changing distribution patterns of mosquito species in Massachusetts.

Ae. *albopictus*

Ps. *columbiae*

Cx. *erraticus*

PE Poster Printouts and Helpful Links

- Mosquito Bite Prevention Poster
- EEE Transmission Cycle Poster
- WNV Transmission Cycle Poster
- Dengue Virus Transmission Cycle Poster
- CDC Dengue Fever Information
- DPH Mosquito PE Materials: https://www.mass.gov/lists/mosquito-borne-disease-educational-materials
- CDC Press Kit: https://www.cdc.gov/mosquitoes/communication-resources/press-kit-mosquitoes.html
- DPH Tick PE Materials: https://www.mass.gov/info-details/tick-borne-educational-materials

Recommended Messaging

- Use EPA approved bug-repellent
- Cover skin/wear long sleeves and pants
- Avoid outdoor activities during peak mosquito times (between dusk and dawn)
- Repair window screens
- Containers in yards with standing water should be emptied to reduce mosquito breeding

DPH Arbovirus Toolkit: https://www.mass.gov/lists/arbovirus-information-for-local-boards-of-health#toolkit-

DPH Arbovirus Response Plan: https://www.mass.gov/doc/2024-arbovirus-surveillance-and-response-plan/download

Questions/Comments: Please email John Briggs, the District Director, at john.c.briggs@mass.gov.

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

FIGHT THE BITE

AND HELP PREVENT THE SPREAD OF MOSQUITO BORNE DISEASES

USE REPELLENT

Be sure to apply EPA approved insect repellents containing plant based eucalyptus or DEET when outdoors.

AVOID DUSK AND DAWN

Most mosquito species are very active at dusk and dawn. Avoid engaging in outdoor activities during these times whenever possible.

WEAR PROPER CLOTHING

Wearing long-sleeves and pants will significantly help reduce mosquito bites.

PREVENT ARTIFICIAL HABITAT

Buckets, plant pots, kiddie pools, tire swings, and anything that holds water should be emptied to prevent mosquito habitat.

FIX DOORS AND WINDOWS

Screens with holes should be repaired and be sure that all doors and windows are working properly to keep the mosquitoes out.

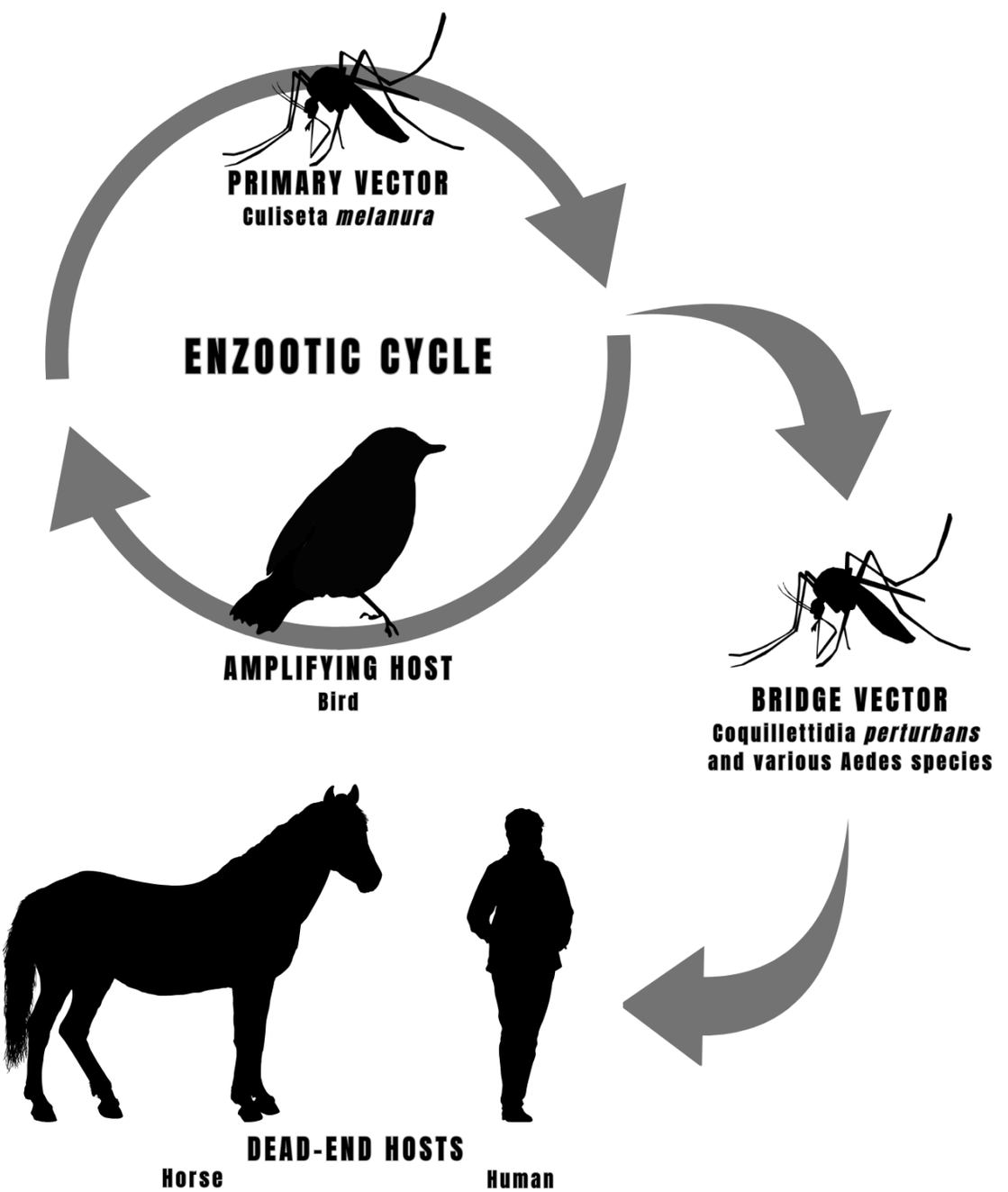
FIRST AID FOR BITES

Wash bite with soap and water and apply anti-itch cream. If necessary, apply a cold cloth to reduce swelling.

Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

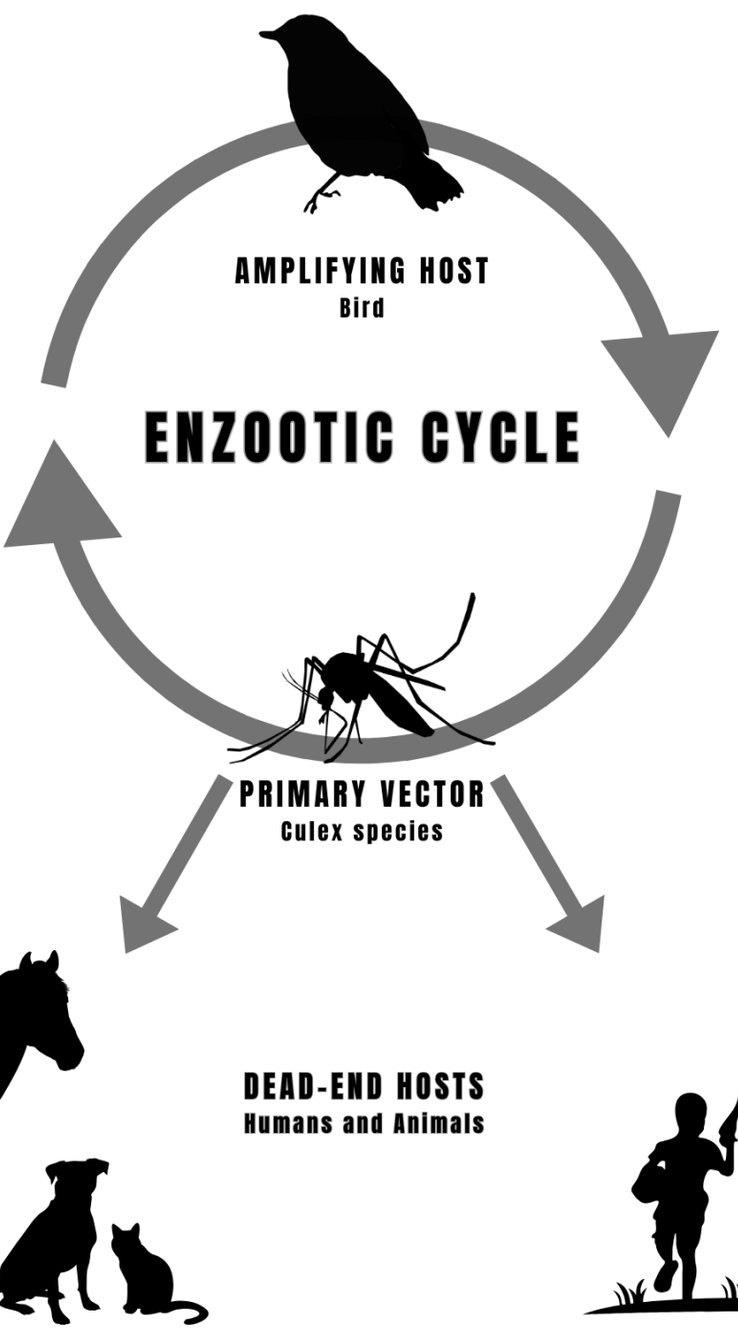
EASTERN EQUINE ENCEPHALITIS VIRUS TRANSMISSION CYCLE



Email: john.c.briggs@mass.gov
Web: mass.gov/info-details/pioneer-valley-mosquito-control-district-pvmcd

PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

WEST NILE VIRUS TRANSMISSION CYCLE



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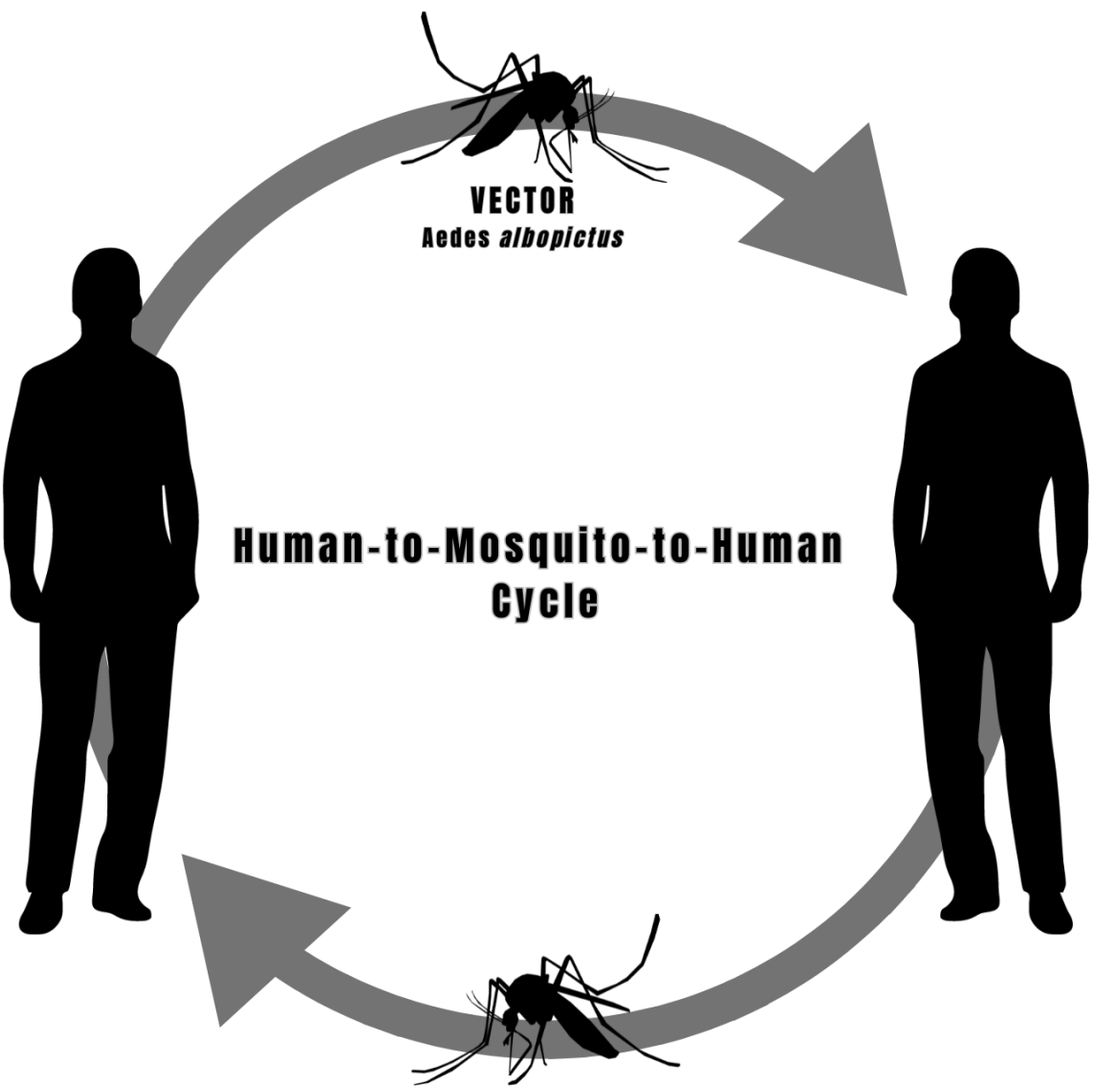
PIONEEER VALLEY MOSQUITO CONTROL DISTRICT

DENGUE VIRUS TRANSMISSION CYCLE



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