

Luzerne County's Mosquito-borne Disease Control (MDC) Program

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Luzerne Conservation District

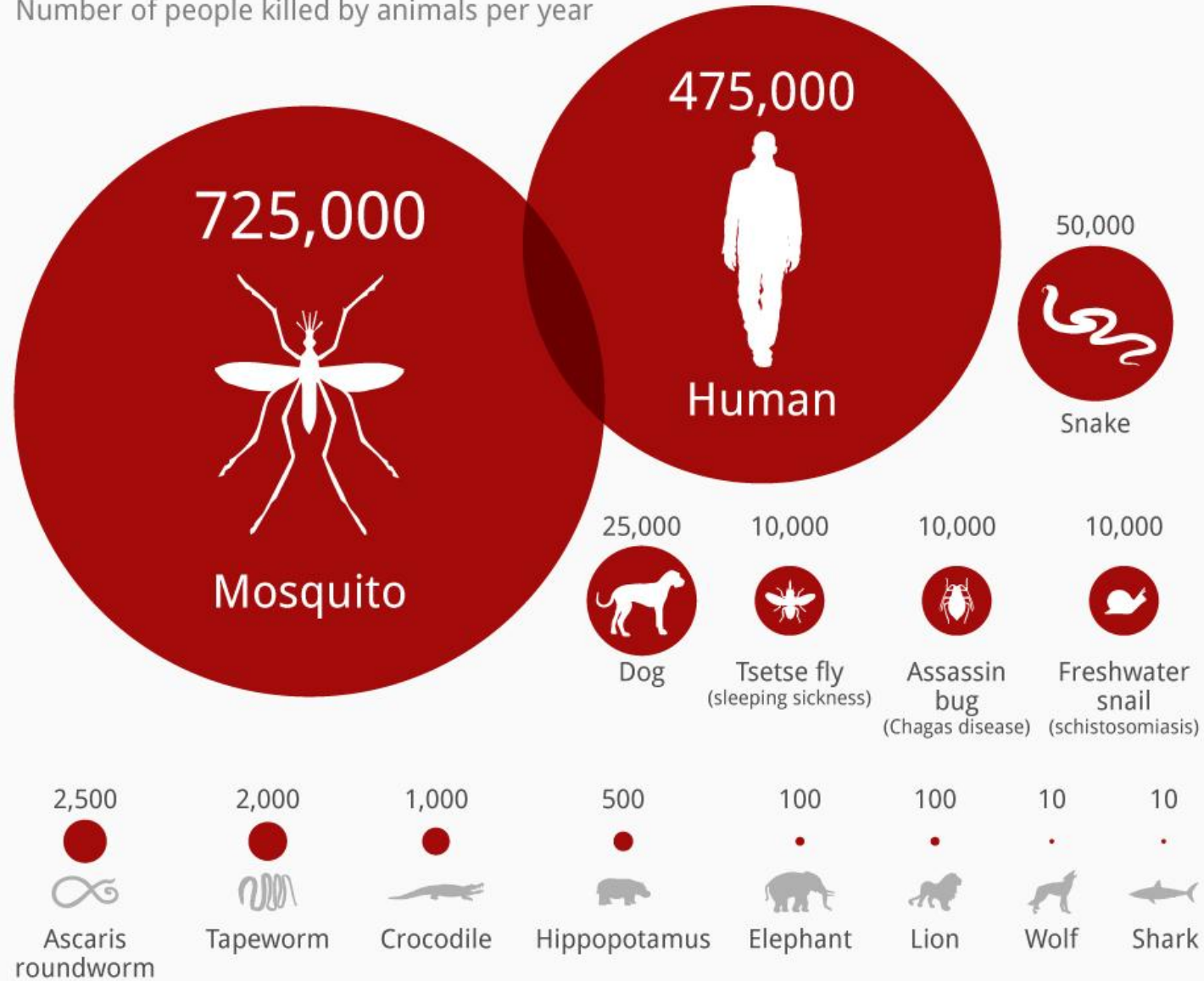
Mosquito-borne Disease Control (MDC) Program in Luzerne County



- **The goal of the program is to reduce human exposure**, health care costs, and financial impacts that mosquito-borne disease outbreaks would have on the Commonwealth.
- The Luzerne Conservation District has administered the MDC Program (formerly called West Nile Virus program) in Luzerne County since 2010.
- The program is funded through a grant under DEP's Vector Management Program.
- The MDC Coordinator and staff work with DEP on mosquito surveillance and control programs.

The World's Deadliest Animals

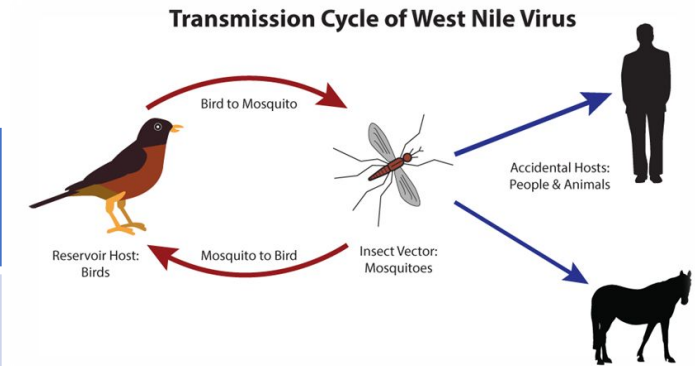
Number of people killed by animals per year



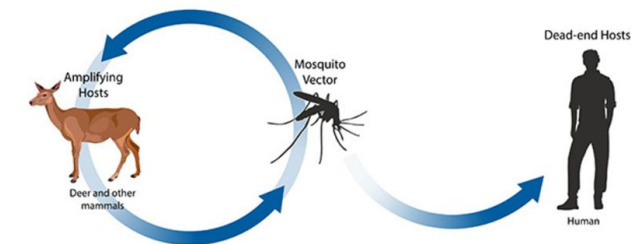
@StatistaCharts Source: Gatesnotes

Mosquito-borne Diseases

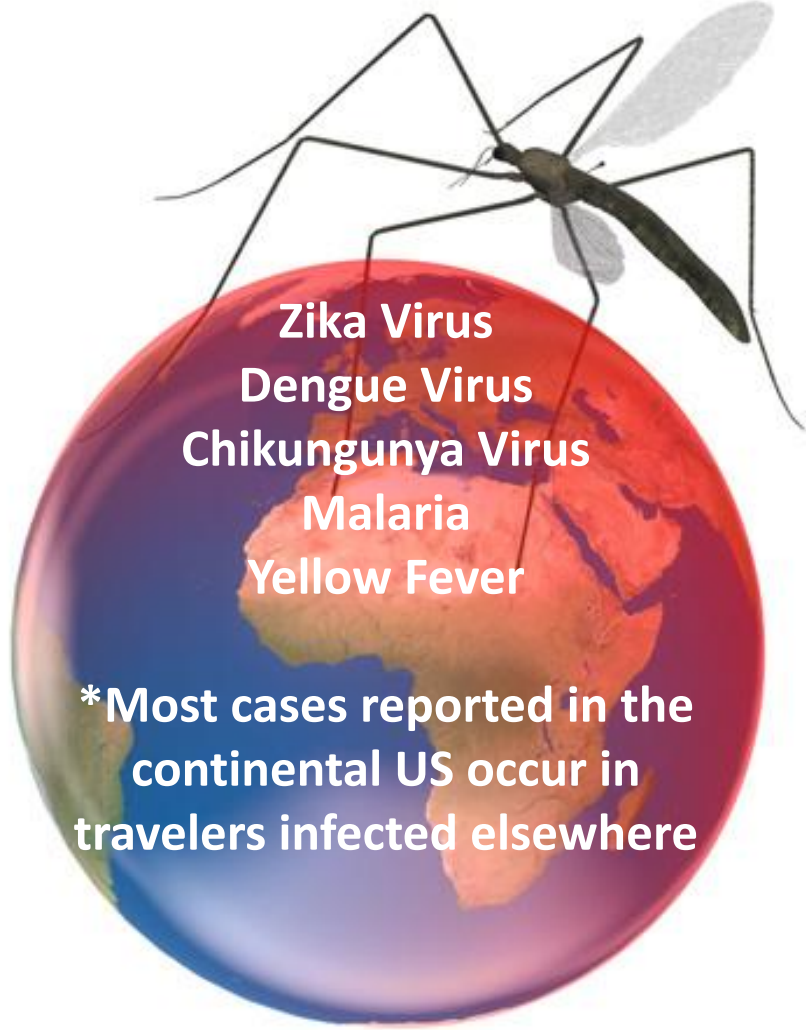
	West Nile Virus (WNV)	Jamestown Canyon Virus (JCV)
Mild Case	<ul style="list-style-type: none"> • Fever • Fatigue • Headache • Body aches • Joint pain • Vomiting, diarrhea 	<ul style="list-style-type: none"> • Fever • Fatigue • Headache • Body aches • Nausea, vomiting • Runny nose, congestion • Sore throat
Severe/Neuroinvasive Case	<ul style="list-style-type: none"> • High fever • Neck stiffness • Disorientation, coma, tremors, seizures • Encephalitis • Meningitis • Paralysis • Death 	<ul style="list-style-type: none"> • High fever • Neck stiffness • Disorientation, loss of coordination, difficulty speaking, seizures • Encephalitis • Meningitis • Death
	Most infections are asymptomatic or mild	Most infections are asymptomatic or mild



Jamestown Canyon Virus Transmission Cycle



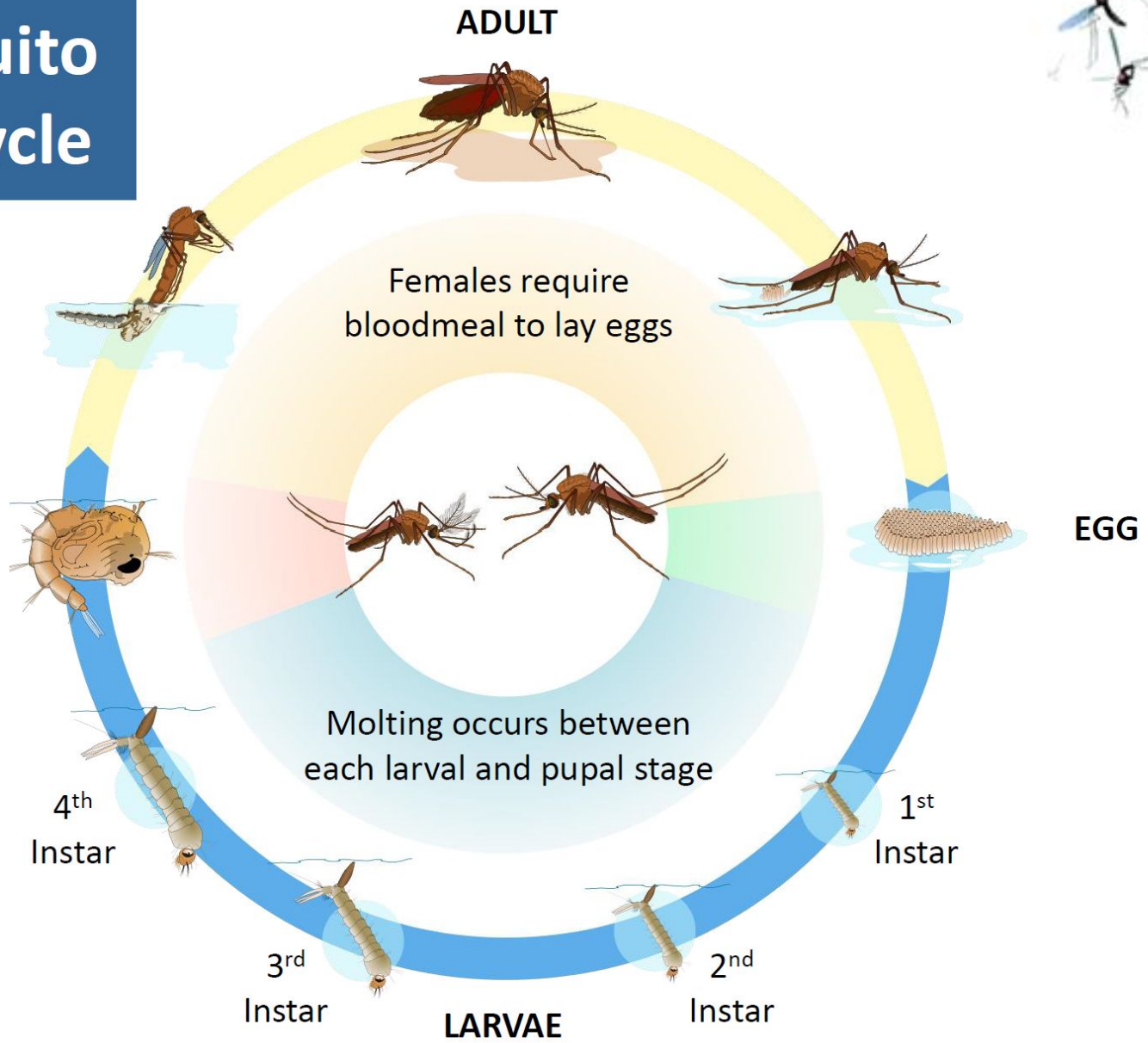
Other Important Mosquito-borne Diseases



Zika Virus
Dengue Virus
Chikungunya Virus
Malaria
Yellow Fever

***Most cases reported in the continental US occur in travelers infected elsewhere**

Mosquito Life Cycle



Eggs laid directly on water surface
OR
in depressions or above water line to become inundated during a later rain event.

Mosquitos can proceed from egg to adult in less than 1 week.

Some species have eggs that can lie dormant (not submersed in water) for many years.

62 Mosquito Species in PA



Main vectors of WNV transmission

Culex restuans

Culex pipiens

Mainly container
breeding species

Aedes japonicus

Aedes albopictus

Aedes vexans

Aedes trivittatus

Aedes sticticus

Mainly floodwater / woodland
pool breeding species

Potential vectors of JCV

Anopheles punctipennis

Psorophora ferox



Integrated Mosquito Management (IMM)



- Education/Outreach efforts
 - Educate the public on prevention, source reduction techniques, personal protection
 - Work with local municipalities to eliminate mosquito breeding habitat. **NOTE: LCD MDC staff has no regulatory authority to enforce mosquito habitat reduction/elimination.**
- Mechanical Controls
 - Prevention - Eliminate standing water before mosquitos lay eggs
 - Source Reduction - Eliminate standing water after mosquitos lay eggs
- Larval control
 - Using appropriate methods for the habitat (ie. biological pesticides)
- Adult control
 - Using pesticides applied from backpacks, trucks or aircrafts when established thresholds have been exceeded

****Mosquito Surveillance required prior to pesticide control****

MDC Surveillance



Larval Dip



Gravid Trap



BG Sentinel 2 Trap

2025 Season Summary



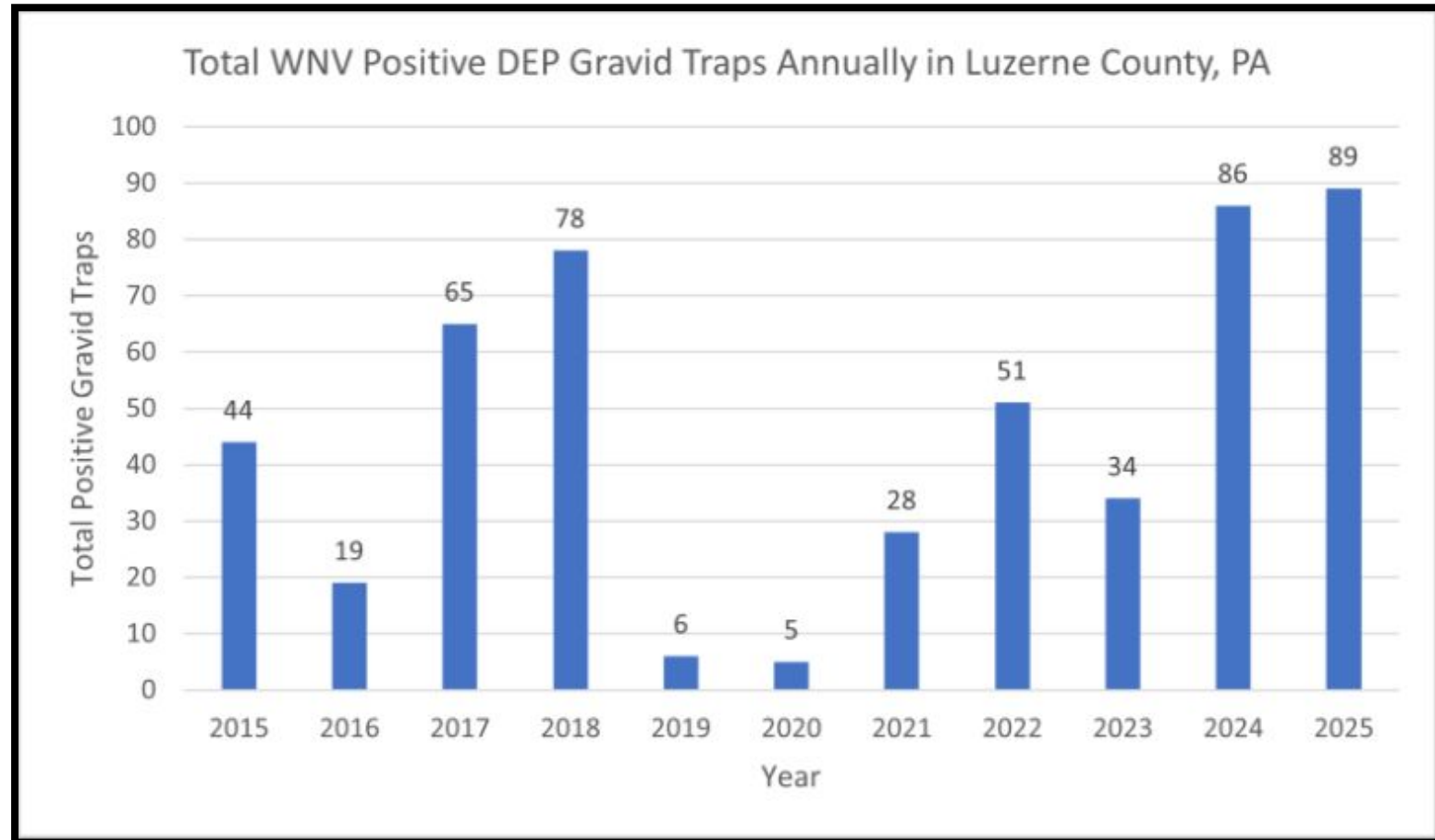
- Approx. **81,000** adult mosquitos were collected by LCD staff
- **600** gravid traps were set by LCD staff.
- **92** BG-Sentinel traps were set by LCD staff
- **360** mosquito larval samples were logged by LCD staff.
- Mosquito surveillance included **201** sites throughout Luzerne County.
- **52** municipalities were sampled
- **175+** mosquito complaints were received and investigated by LCD staff.

2025 Season Summary



WEST NILE VIRUS (WNV)

- **89** mosquito traps collected by LCD staff tested positive for WNV.
 - **103** positive mosquito pools identified by DEP lab
- **0** WNV human cases in Luzerne County.
- **80** WNV human cases (**5** deaths) in PA.
- **1** WNV equine case in Luzerne County.
- **25** WNV equine cases in PA



2025 Season Summary



MOSQUITO PESTICIDE CONTROL OPERATIONS

- **201** mosquito control operations performed by LCD staff.
 - **18** truck-mounted ULV sprays
 - **10** backpack barrier sprays
 - **11** thermal fog applications
 - **162** larval control applications





1 TIRE CAN
PRODUCE OVER
10,000
MOSQUITOES IN A
SINGLE SEASON

Mosquito Habitat Reduction through Cleanup



Sign-up for our Newsletter!

Summer 2025

MOSQUITO NEWSLETTER

Issue 2



Luzerne Conservation District

A BUSY START TO THE SEASON!

Persistent early season rainfall and Susquehanna River flooding in May (river exceeded 18' as monitored by the Wilkes Barre river gauge) triggered a significant mosquito emergence and made for a busy start to the season! Through July 23rd, our team worked to lower the mosquito populations by conducting:

- Over 130 acres of larval control
- 169 catch basin treatments
- Over 5,000 acres of adult control
 - Approx. 4,800 acres treated with truck-mounted ULV sprayer
 - Over 33 acres treated with thermal fogger.
 - Approx. 6 acres of backpack barrier treatments.



District truck with ULV Sprayer

A BEHIND-THE-SCENES GLIMPSE INTO OUR PROGRAM:

Our program must collect data and meet disease and/or population thresholds prior to applying control products. This is to ensure that there are no adverse impacts to the environment and non-target species during our mosquito control operations. The following pages will give you a behind-the-scenes look into how our program operates.

Visit DEP's Vector Management page for more information and season updates!
<https://www.pa.gov/agencies/dep/programs-and-services/integration/vector-management>

MUNICIPALITIES WITH 2025 SEASON WEST NILE VIRUS DETECTIONS*

Kingston Borough	Wilkes-Barre City
Exeter Borough	Edwardsville Borough
Wyoming Borough	Nanticoke City
West Pittston Borough	

MUNICIPALITIES WITH 2025 SEASON JAMESTOWN CANYON VIRUS DETECTIONS*

Plymouth Township
Wyoming Borough
Kingston Borough
Edwardsville Borough
Plains Township

*DATA UP TO 7/24/25



Fall 2025

MOSQUITO NEWSLETTER

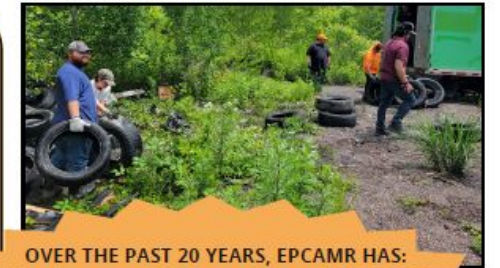
Issue 3

www.luzernecd.org | 570-674-7991

PARTNER HIGHLIGHT

BACKGROUND

Luzerne County has historically been a hotspot for illegal tire and trash dumping, creating unsightly scenes along our roadsides, our state forests, state game lands, municipal parks, and private property. Not only is this illegally dumped garbage a visible eyesore, it can also negatively impact wildlife, leach chemicals into our streams and water resources, and serve as major breeding grounds for disease carrying mosquitos.



- OVER THE PAST 20 YEARS, EPCAMR HAS:**
- Helped organize 79 Cleanup Events (2005-2025)
 - Removed 7,705 tires
 - Removed 356,722 lbs (~178.36 tons) of trash
 - Engaged 1,393 volunteers
 - Recorded 161 volunteer hours
- visit www.epcamr.org to volunteer!**

Top Right: Luzerne Conservation District and EPCAMR team up for tire cleanup in Ashley
 Below: EPCAMR with tires removed from Sugar Notch Run site in Hanover Township



Please let LCD/EPCAMR know about any dumping sites in your municipality!

PARTNER HIGHLIGHT: EASTERN PA COALITION FOR ABANDONED MINE RECLAMATION (EPCAMR)

The Eastern PA Coalition for Abandoned Mine Reclamation (EPCAMR), a local non-profit, has been a leader in spearheading tire/trash cleanups in Luzerne County and beyond for decades. Over the years, EPCAMR has orchestrated dozens of cleanup events, bringing together numerous community volunteers and agency/organization partners.

The Luzerne Conservation District has partnered with EPCAMR on many of these cleanups, including a large-scale event sponsored by the Wyoming Valley Sanitary Authority (WVSA) last year, where 1,901 tires were removed from along Sugar Notch Run in a section of the Pinchot State Forest! The District commends EPCAMR's environmental stewardship in helping clean up both legacy and new illegal dumpsites, which has an added benefit in helping our MDC program's goal of reducing human exposure to mosquito-borne diseases.

MOSQUITO TEAM MEMBERS

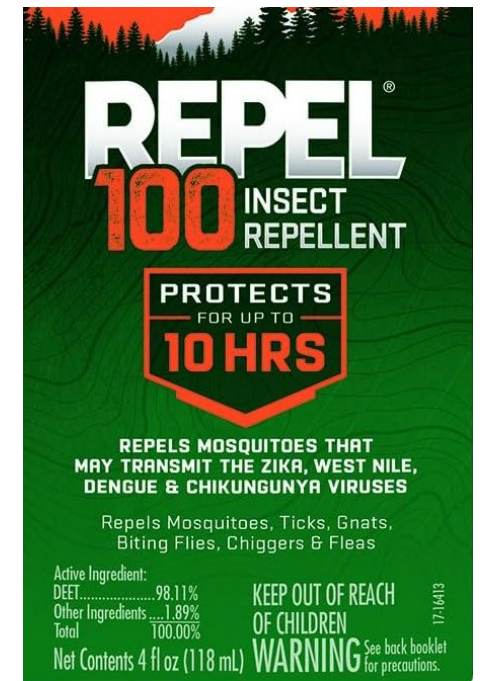
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Protection from Mosquito Bites



- Use screens on windows to prevent mosquitos from entering your home.
- Limit time outdoors during dusk and dawn. Mosquitos are most active at these times.
- Use mosquito repellent (DEET, picaridin, oil of lemon eucalyptus).
- Wear long sleeves and pants. Wear thicker fabrics and looser fitting cloths.
- Use small fans when outside. Mosquitos are weak flyers.



Questions?



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