

# WNV in Chesapeake 2021

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Chesapeake Mosquito Control Commission

# Overview

- Record setting **106 WNV** Vector test positive pools!
- **33** of the **36** routine gravid trap sites positive
- **Two** sites with a total of **12+** pools (**6 EPI** wks)
- **One** non-pump station site with **10+** pools (**5 EPI** wks)
- **Two** sites positive for the first time in over **5 yrs** of trapping!
- **EPI** week 36- **21** WNV+'s at **9** different sites!
  
- **We initiated two** PSA's released by the Health Department:  
**July 23 & Sept 9**
  
- **Highest *Cx pipiens* trapped: 47,624**



July 24, 2021  
For immediate release

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## Increasing West Nile Virus Activity Detected in Chesapeake

CHESAPEAKE - The Chesapeake Health Department has confirmed increasing West Nile Virus (WNV) activity detected by the Chesapeake Mosquito Control Commission.

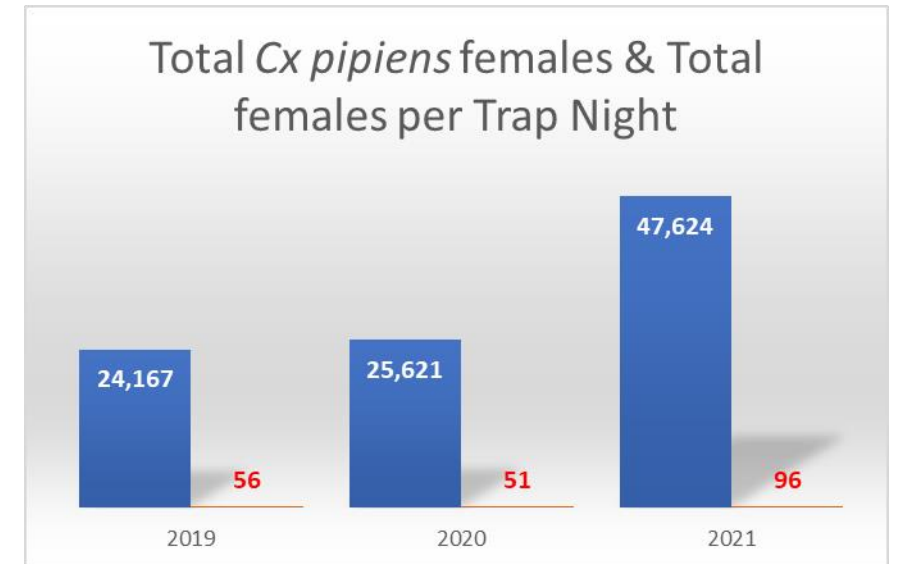
"Mosquitoes have been testing positive for the disease at a higher than normal rate this summer. Sporadic thunderstorms and human activities such as watering lawns and washing cars has perpetuated mosquito breeding habitats," said Chesapeake Mosquito Control Director, Lisa Wagenbrenner. "With the recent rains leading to even more mosquitoes, it's important for residents of Chesapeake to take precautions to protect themselves and their families," said Chesapeake Health Director Dr. Nancy Welch.

West Nile virus is spread by the bite of an infected mosquito. WNV can affect a person's nervous system. Many people get a mild form, experiencing fever, headache and muscle aches that can last days to weeks. While most people make a full recovery, severe cases of WNV can lead to meningitis, encephalitis, paralysis and even death. Recovery from severe WNV can take months or years.

People at highest risk for serious WNV disease are adults 50-years-old or older and those whose immunity is suppressed because of a disease such as cancer or diabetes. Anyone experiencing symptoms such as high fever, severe headache, stiff neck, confusion and lethargy should seek medical attention right away.

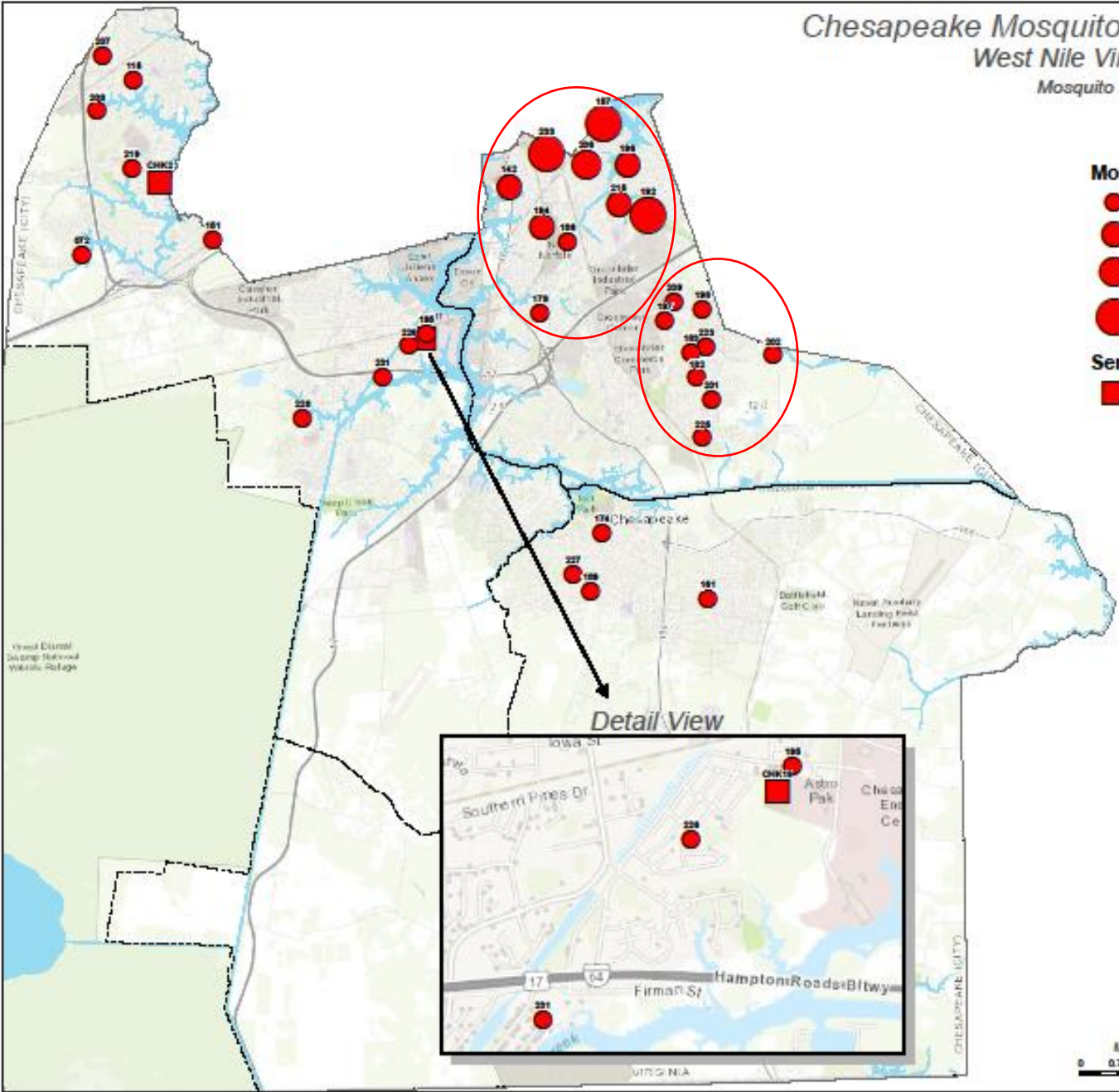
# 3 Year Comparison-2019-2021

	2019		2020		2021
<b>Total # of WNV Vector Tests Ran</b>	481		595		938
<b>Total # of <i>pipiens</i> tested</b>	18,838		25,316		42,177
<b># of WNV positive Vector tests</b>	7		6		106
<b># of WNV positive chickens</b>	1		2		4
<b>Date of first WNV chicken</b>	9-25-2019 EPI wk 39		7-13-2020 EPI wk 29		7-12-2021 EPI wk 28
<b>Date of first WNV mosquito</b>	6-26-2019 EPI wk 26		6-24-2020 EPI wk 26		6-30-2021 EPI wk 26
<b>Human cases-Chesapeake</b>	0		0		0
<b>Horse cases-Chesapeake</b>	0		0		0
<b>Total # of <i>pipiens</i> trapped-Gravid only</b>	24,167		25,621		47,624
<b>Total # of <i>melanura</i> trapped-CDC only</b>	67,720		159,876		243,506



Chesapeake Mosquito Control Commission  
 West Nile Virus Positive Location Map  
 Mosquito Pools and Sentinel Chickens - 2021

- Mosquito Pools (106)**
- (1 - 3) WNV+ Mosquito Pools
  - (4 - 7) WNV+ Mosquito Pools
  - (8 - 9) WNV+ Mosquito Pools
  - (10 - 12) WNV+ Mosquito Pools
- Sentinel Chickens (4)**
- (2) WNV+ Chickens

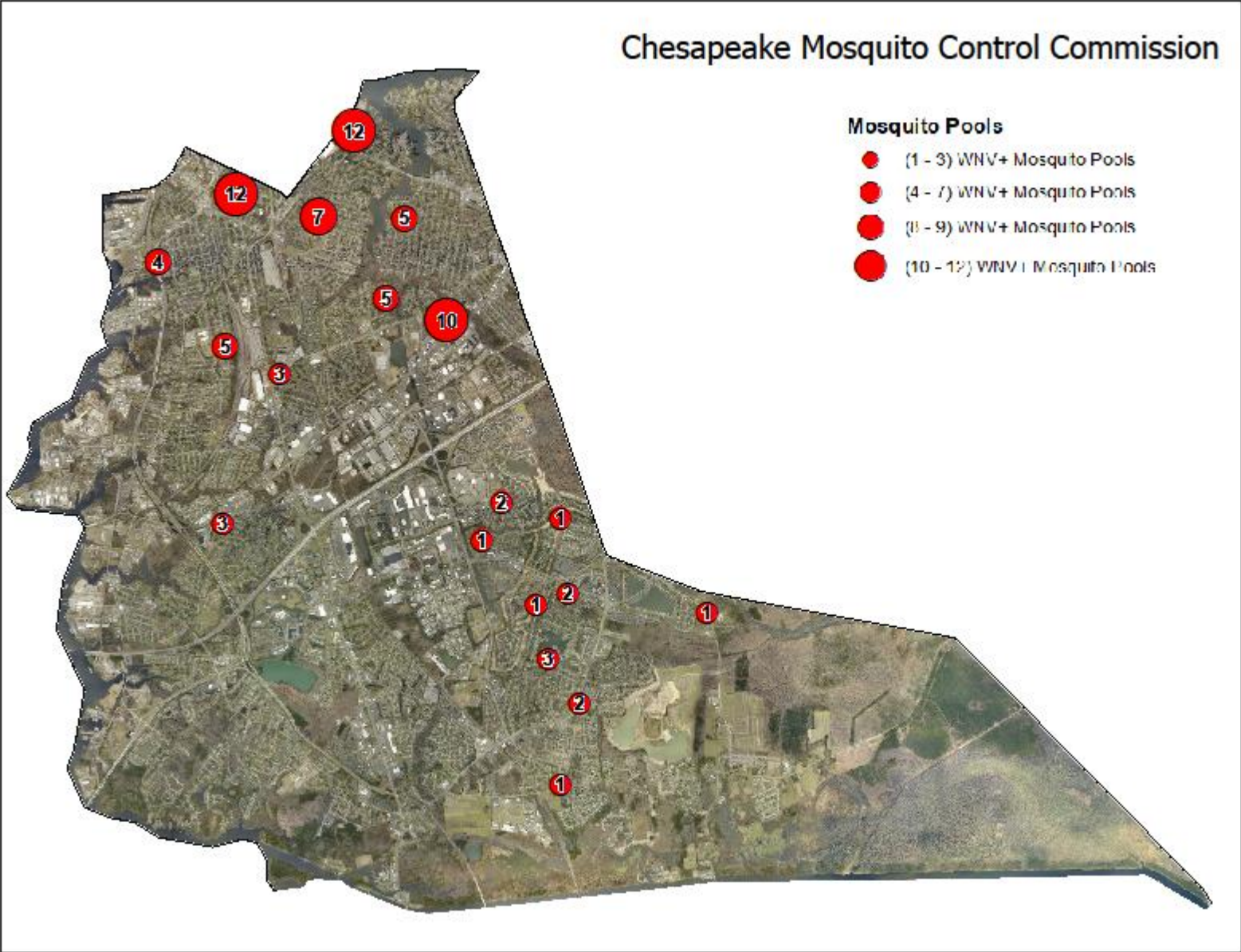


Two Cluster Areas- Responsible for 80 of the positives!



# Greenbrier District

Comprises **19 sites**  
All but 2 are pump stations  
Most densely populated area  
**2,170** people/sq mile  
**37,757** single family homes



Sites first time positive- Centerville Tpke.- EPI wk 37(1)



Older established neighborhood-junk filled yard behind pump station

Sites first time positive-Kempsville Rd-EPI wk 37(1),39(1)



Newer neighborhood with clean yards & CDI drainage system

Clean yards can be deceiving! Kempsville Rd





Sites with the most positives- Princeton Ave- 12 total- EPI wks: 30(1), 32(1), 34(2), 36(4), 38(3), 42(1)



Older neighborhood with driveway pipes and swales-smaller homes close together

What was found adjacent to Princeton



Sites with the most positives-Quail Ave- 12 total (EPI wks. 28(2), 30(1), 32(2), 36(5), 38(1), 40(1))



Drain next to pump station holding water

Neighborhood mixed drainage of new CDI's and old swales with driveway pipes

# What was found adjacent to Quail



**Non-Pumping Station sites- Osborn Ave.- 10 total (EPI wks. 28(3), 29(2), 30(2), 34(1), 36(2))**



Older neighborhood- drainage system of driveway pipes, swales and grates

# What was found adjacent to Osborn



Cooler

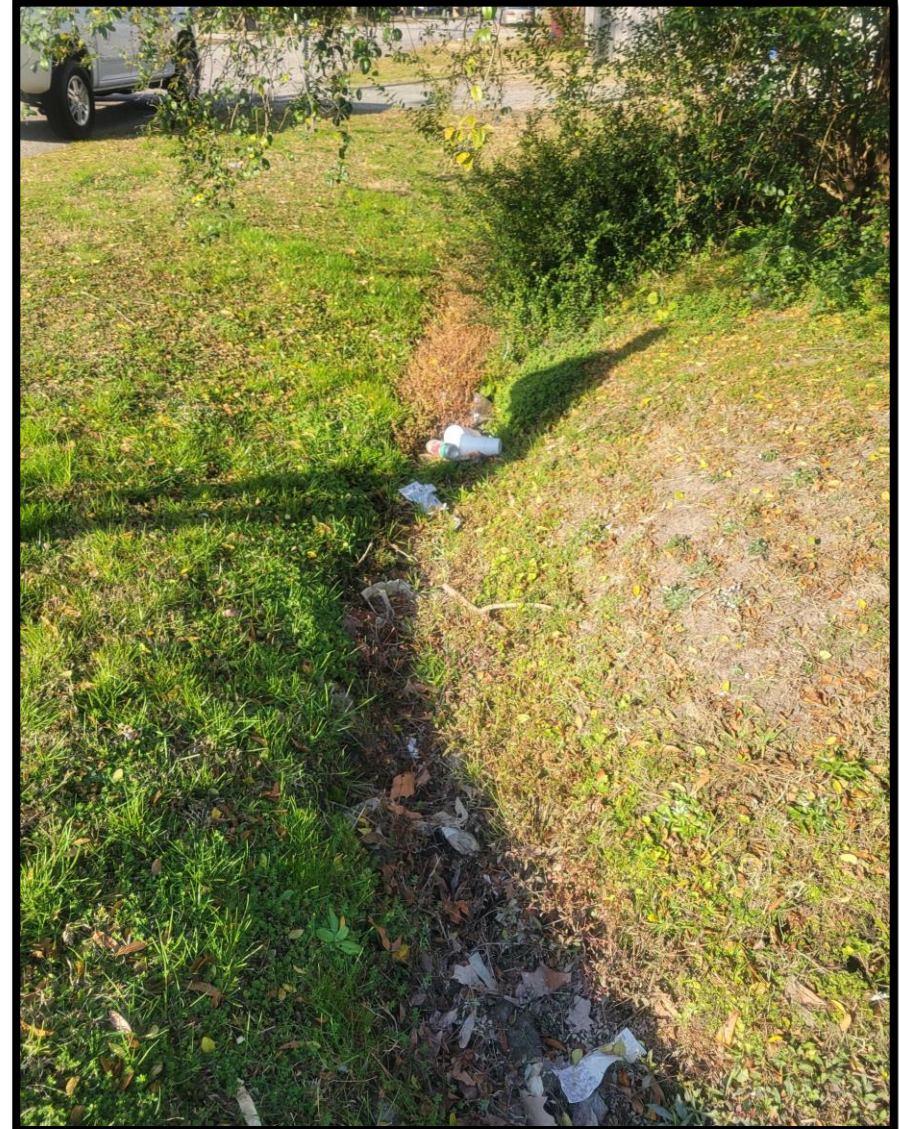


Buckets, tire, tarp



Bucket lid

## Non-Pumping Station sites- Lanier St.- 3 total (EPI wks. 26,36,42)



Older neighborhood with drainage system of driveway pipes and swales-ditches accumulate trash

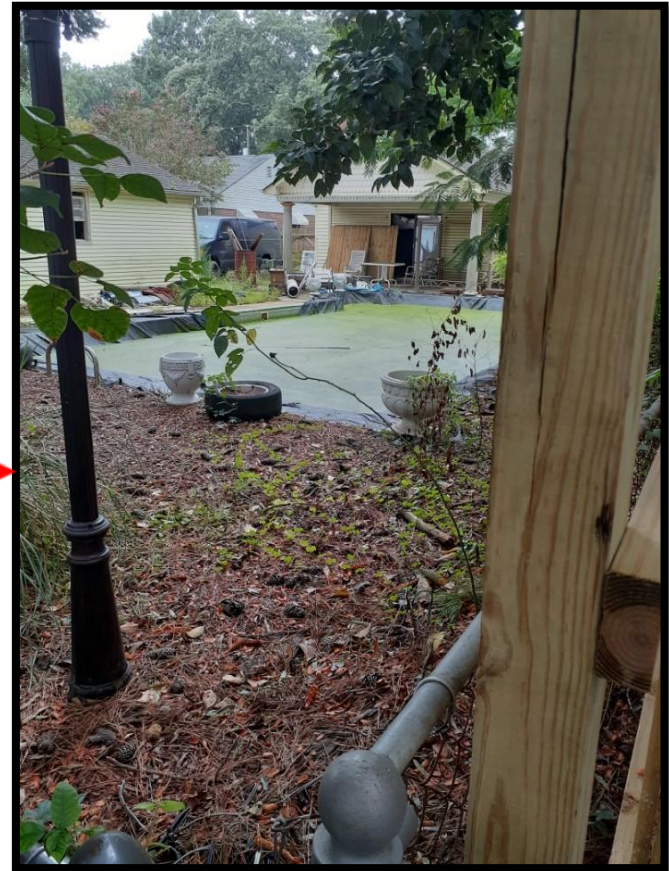
# Sites of Interest- Chesapeake Ave- 5 total- EPI wk 36(3), 40(2)



Older neighborhood with broken down CDI system



Unkept inground pool found behind pump station



Crack!!



Sites of Interest- Cogliandro Dr.- 3 Total- EPI wks. 33, 35, 41



Grate holding water next to P.S.

**This site  
caught the  
most pipiens,  
2,137!!**

Mixed neighborhood- older section with driveway pipes & swales and newer section with CDI's

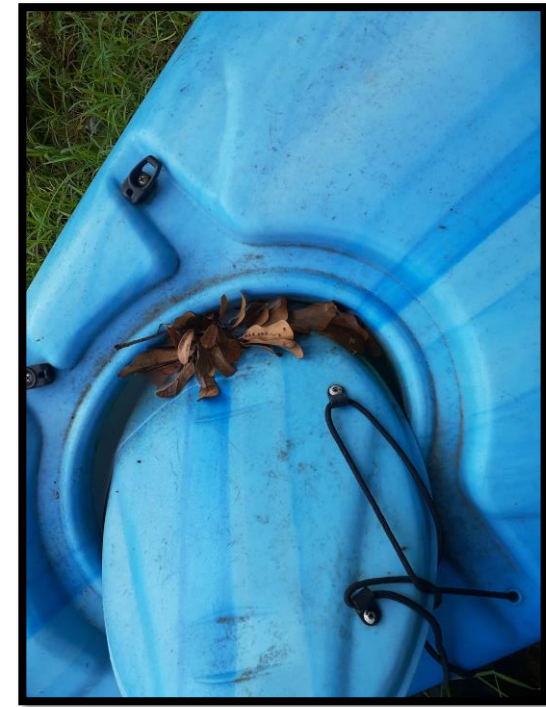
What was found adjacent to Cogliandro



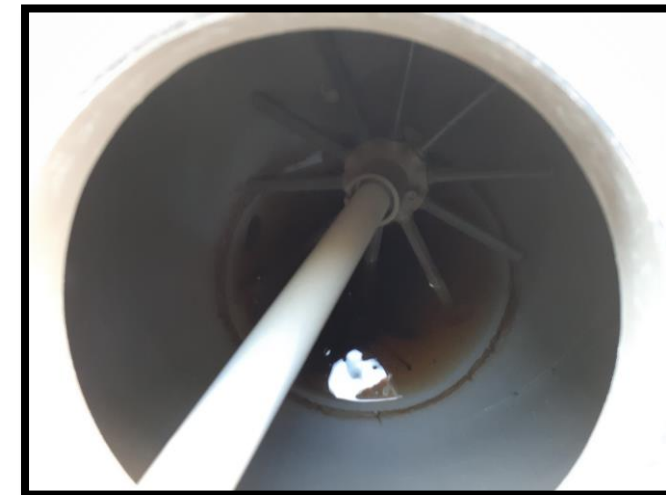
Messy yard with many containers  
across the street from P.S.



Ornamental fish pond



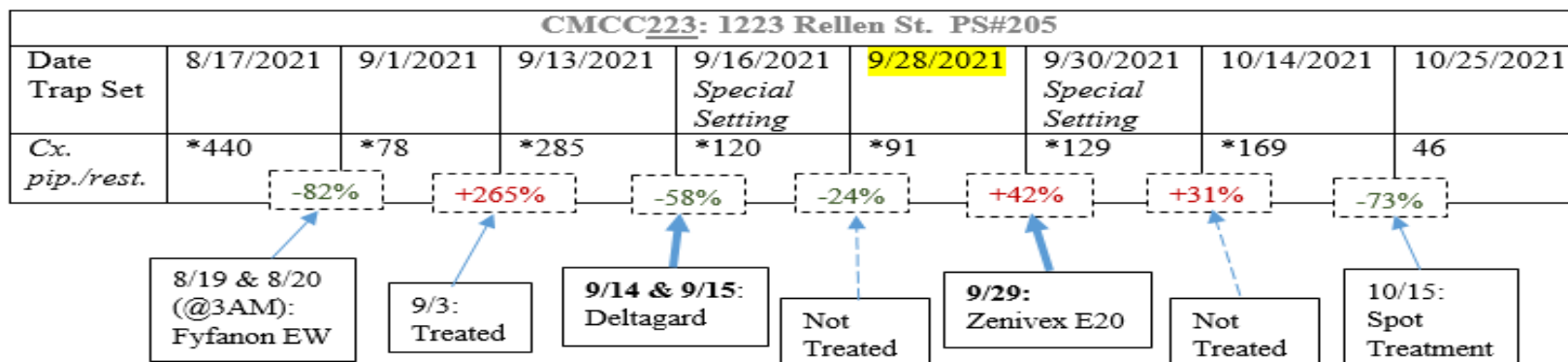
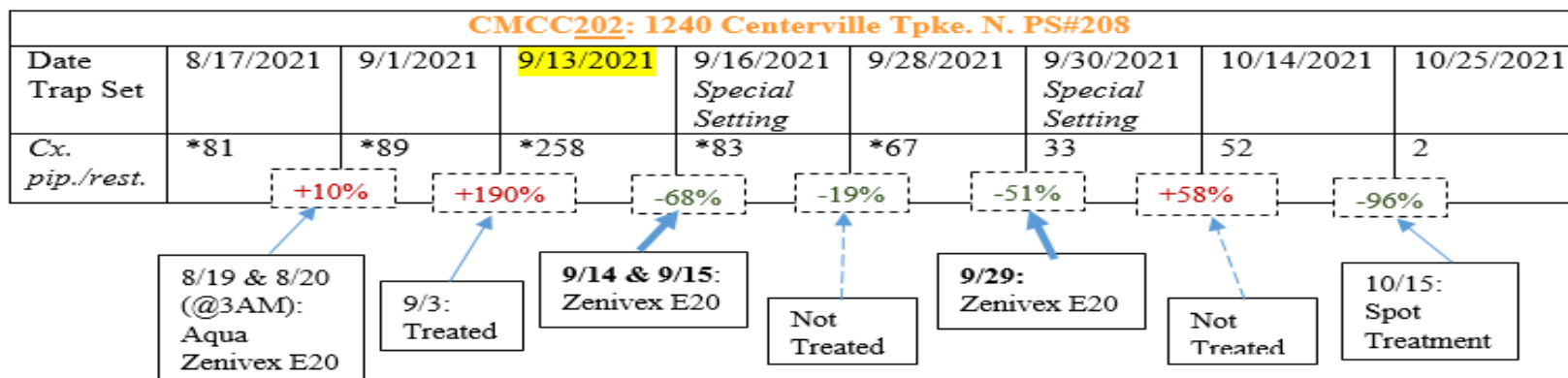
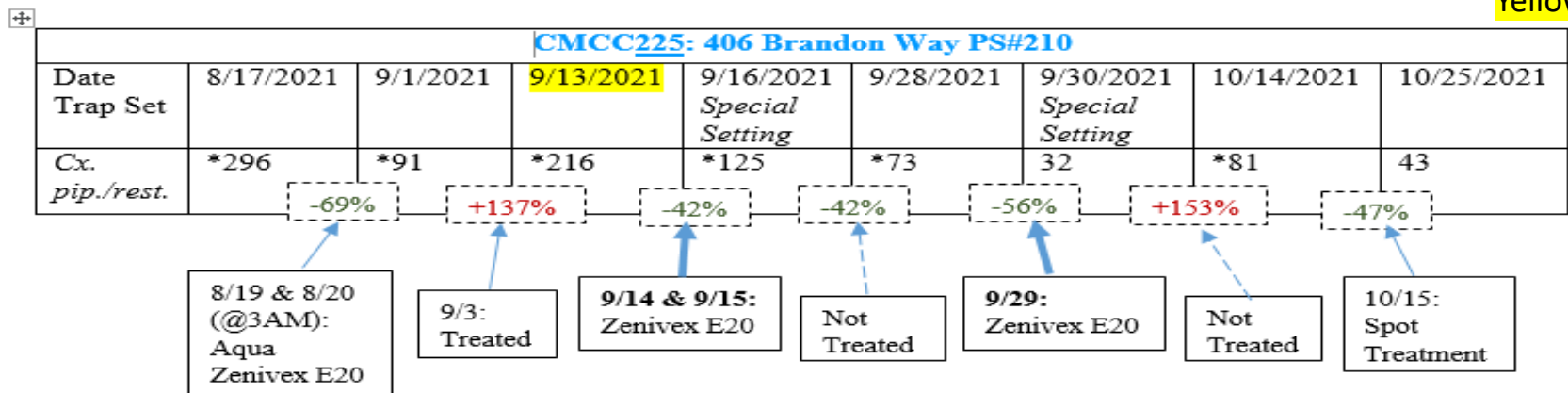
Kayak



Outdoor umbrella stand

## What we did this season of 2021

- **Boots on the ground-** door to door (tip & toss)
- **Applied larvicide-** containers, catch basins (CDI's), yard drains, pipes, etc.
- **Rotated adulticides:** Zenivex E20, Deltagard, Fafynon
- **Sprayed** evening and early AM.
- **Trap-spray-trap-** to determine if something was not working as well-mixed results



106 WNV+'s & 47,000 *pipiens*. Did we miss something? Any Changes?

- Tackle box style traps the last several years
- Gravid bait recipe the same
- Vector test protocol unchanged
- Pooling techniques remain as aseptic as possible, only trained biologist & techs pool WNV samples
- 20 WNV+ confirmed by PCR



## Strategy for 2022- WNV Task Force

- Team consisting of 2 seasoned employees- instead of tying up the entire crew
- Responsible for investigating the problem areas- locating & documenting future sites to treat.
- Educate as many residents as possible before the season starts
- Looking into handing out Mosquito Dunks to select residents
- Adding Duet into the rotation of our adulticides (high *pipiens* and/or WNV+'s)
- Hang Nuvan strips in select catch basins and Pump Stations-create unfavorable resting area

# Questions and Theories

- Increase in sheer #'s of *pipiens*- Habitat expansion?
- Mild winter-more survived?
- Common factor in the neighborhoods with highest positives and/or catches- older, poor drainage, tightly packed, unkept home sites?
- Extremely high # of *melanura*. Did this play a factor in amplifying the WNV within the bird population?
- Why no human cases? Did Covid play a factor?



*melanura* on microscope



18,000 *melanura*

Thanks!

Any Questions?