

# Chesapeake 2022

## The Quiet Flipside of 2021

Lisa Wagenbrenner

Chesapeake Mosquito Control Commission

# Overview of 2021

- 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

Contact:  
Lisa Wagenbrenner, Director  
Chesapeake Mosquito Control  
(757) 663-0086

## 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.

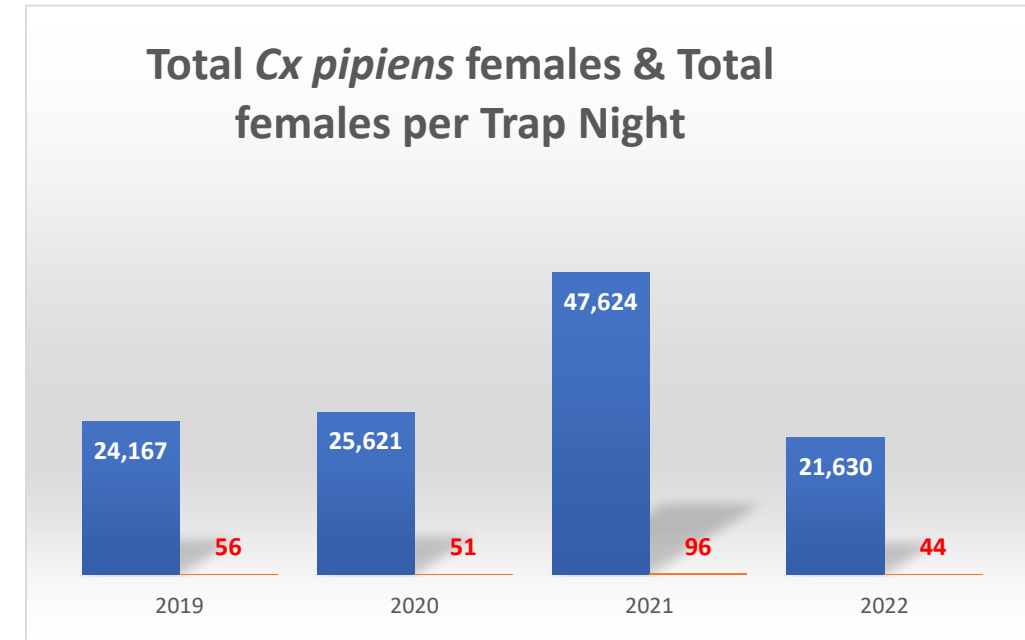
"Mosquitoes have been testing positive for the disease at a higher than normal rate this summer. Sporadic thunderstorms and human activities such as watering lawns and washing cars has perpetuated mosquito breeding habitats," said Chesapeake Mosquito Control Director, Lisa Wagenbrenner. "With the recent 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.

# 4 Year Comparison-2019-2022

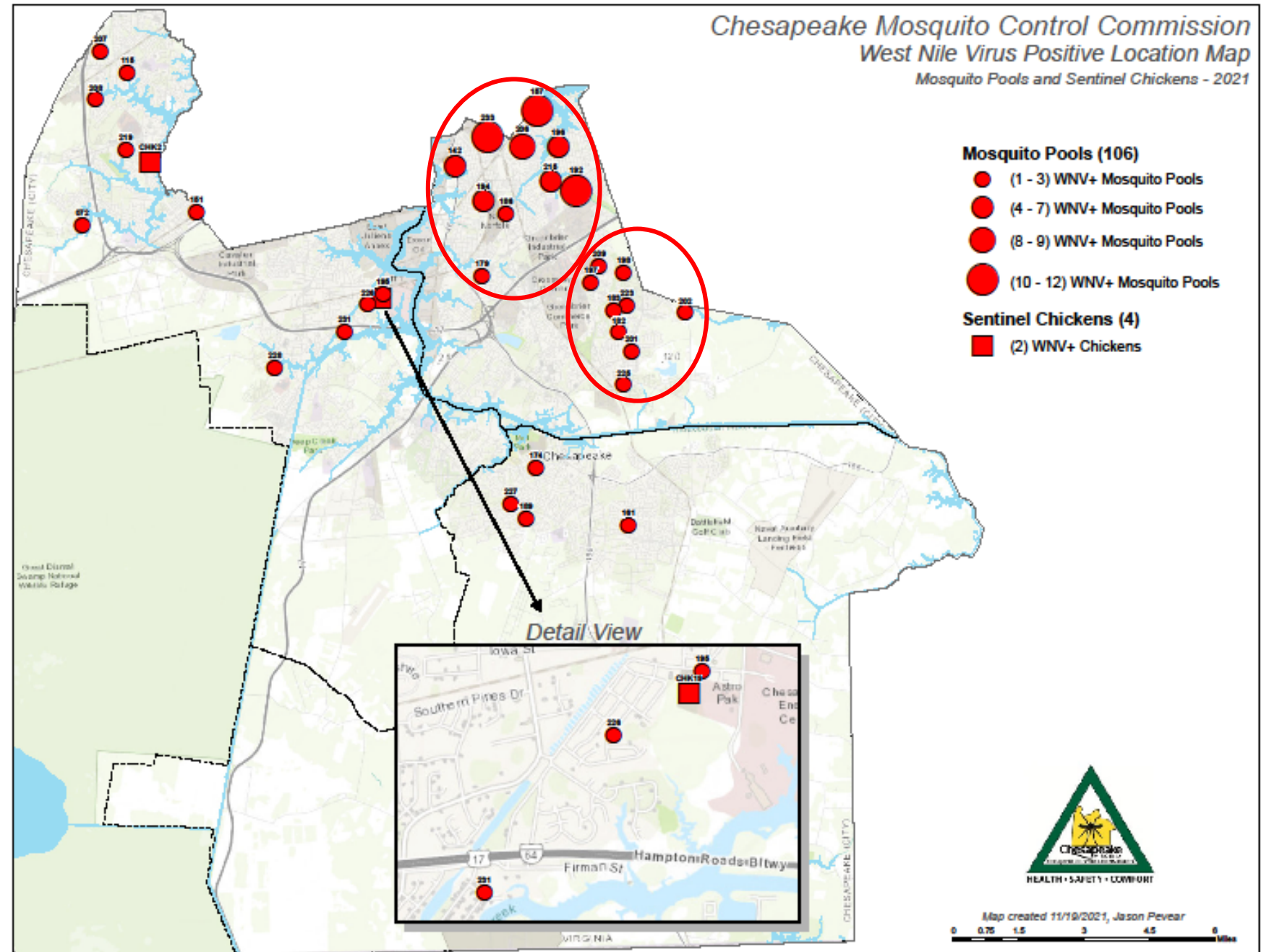
	2019	2020	2021	2022
<b>Total # of WNV Vector Tests Ran</b>	481	595	938	421
<b>Total # of <i>pipiens</i> tested</b>	18,838	25,316	42,177	16,964
<b># of WNV positive Vector tests</b>	7	6	106	2
<b># of WNV positive chickens</b>	1	2	4	1
<b>Date of first WNV chicken</b>	9-25-2019 EPI wk 39	7-13-2020 EPI wk 29	7-12-2021 EPI wk 28	10-3-2022 EPI Week 40
<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	9-21-2022 EPI Week 38
<b>Human cases-Chesapeake</b>	0	0	0	0
<b>Horse cases-Chesapeake</b>	0	0	0	0
<b>Total # of <i>pipiens</i> trapped-Gravid only</b>	24,167	25,621	47,624	21,630
<b>Total # of <i>melanura</i> trapped-CDC only</b>	67,720	159,876	243,506	*20,088



\*Lowest # of *melanura* recorded in 11 years!

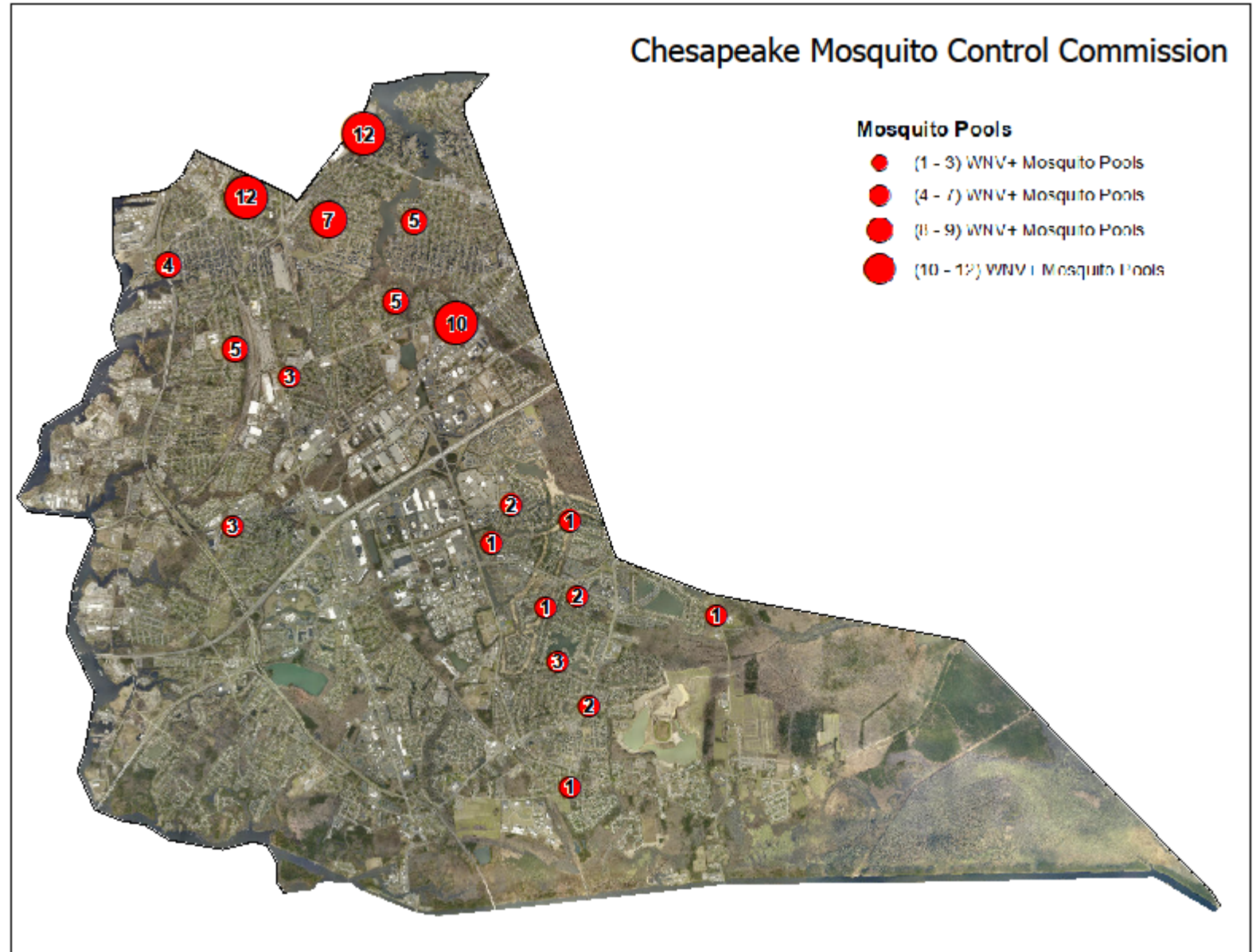
# 2021 WNV+ Map

Two Cluster Areas  
Greenbrier  
District-  
Responsible for  
80 of the WNV  
positives in 2021!



# Greenbrier District 2021 WNV+ Map

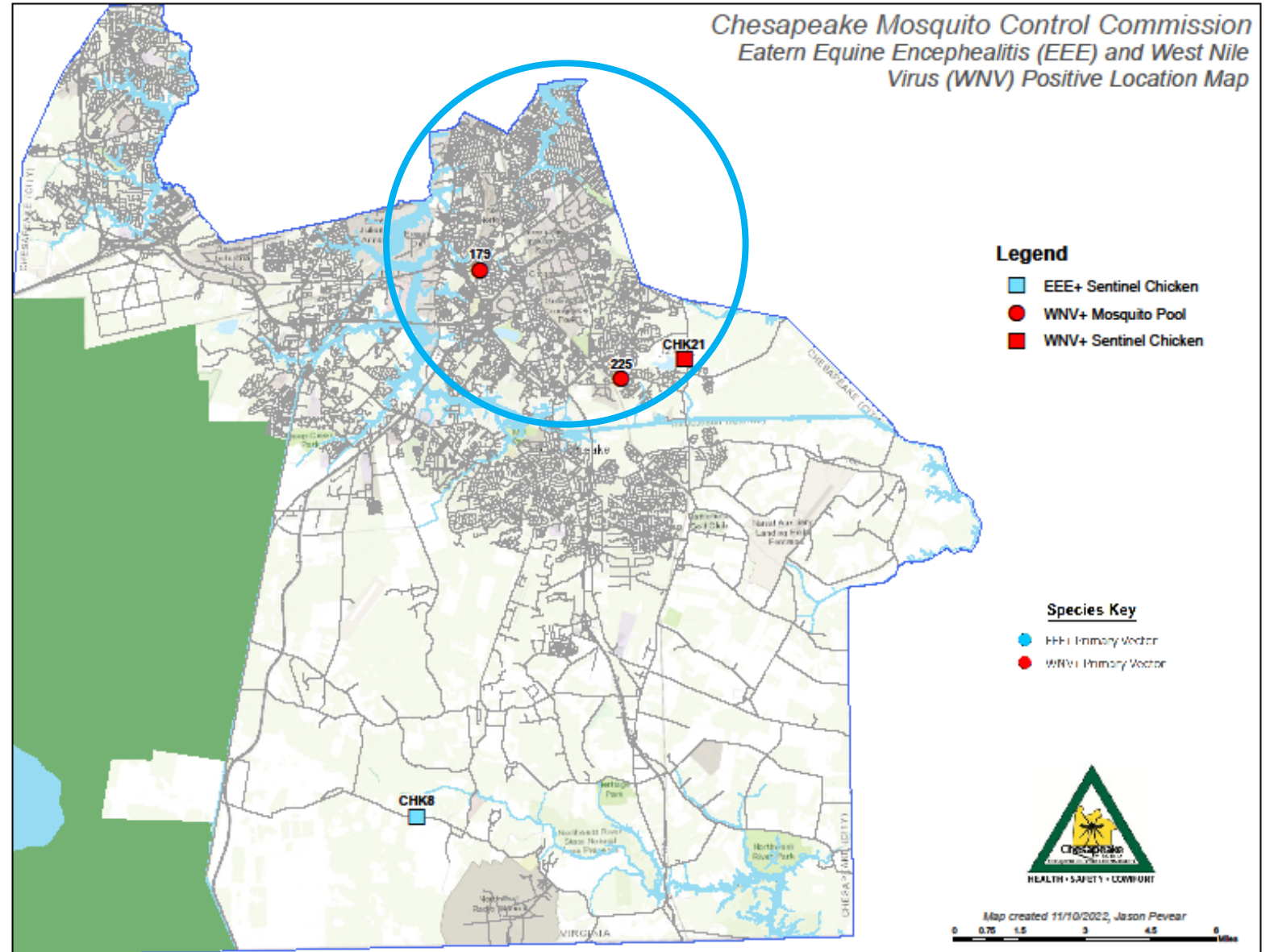
Comprises **19 sites**  
All but **2** are pump stations  
Most densely populated area  
**2,170** people/sq mile  
**37,757** single family homes



# Positive Map 2022

2-WNV+ mosquito pools  
1-WNV+ Chicken  
Greenbrier District

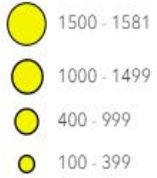
1-EEE+Chicken  
Southern District



### Legend

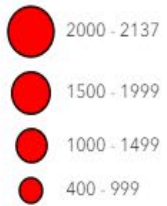
#### Gravid Trap Sites (2022)

Cx pipiens Total



#### Gravid Trap Sites (2021)

Cx pipiens Total

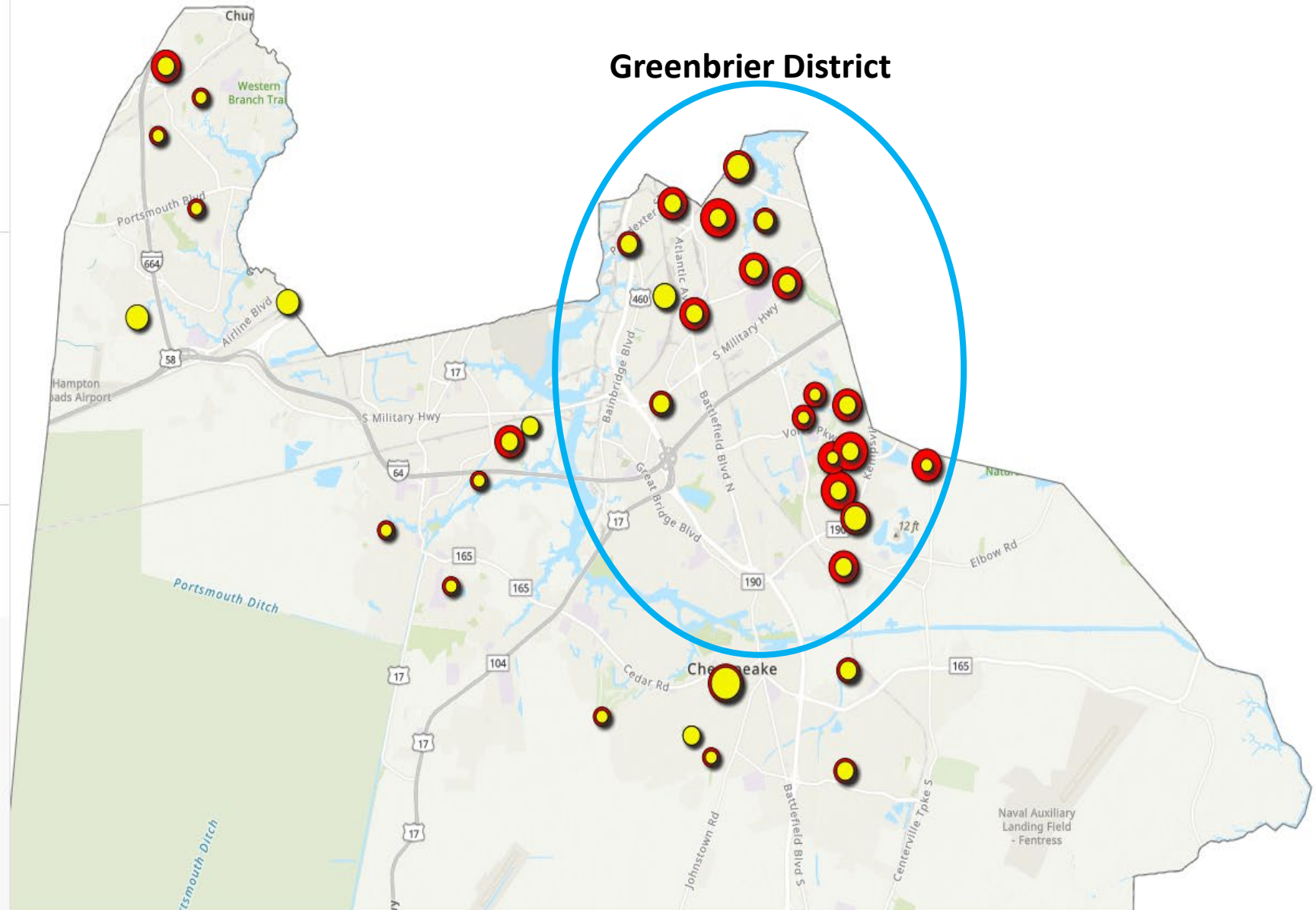


#### Chesapeake City Boundary



Cx pipiens - Increase and Decrease (2021-2022)

### Greenbrier District



**Overlay map  
comparing  
2021 to 2022**

Legend

Cx pipiens - Decrease / Increase %

% Status



Decrease



Increase

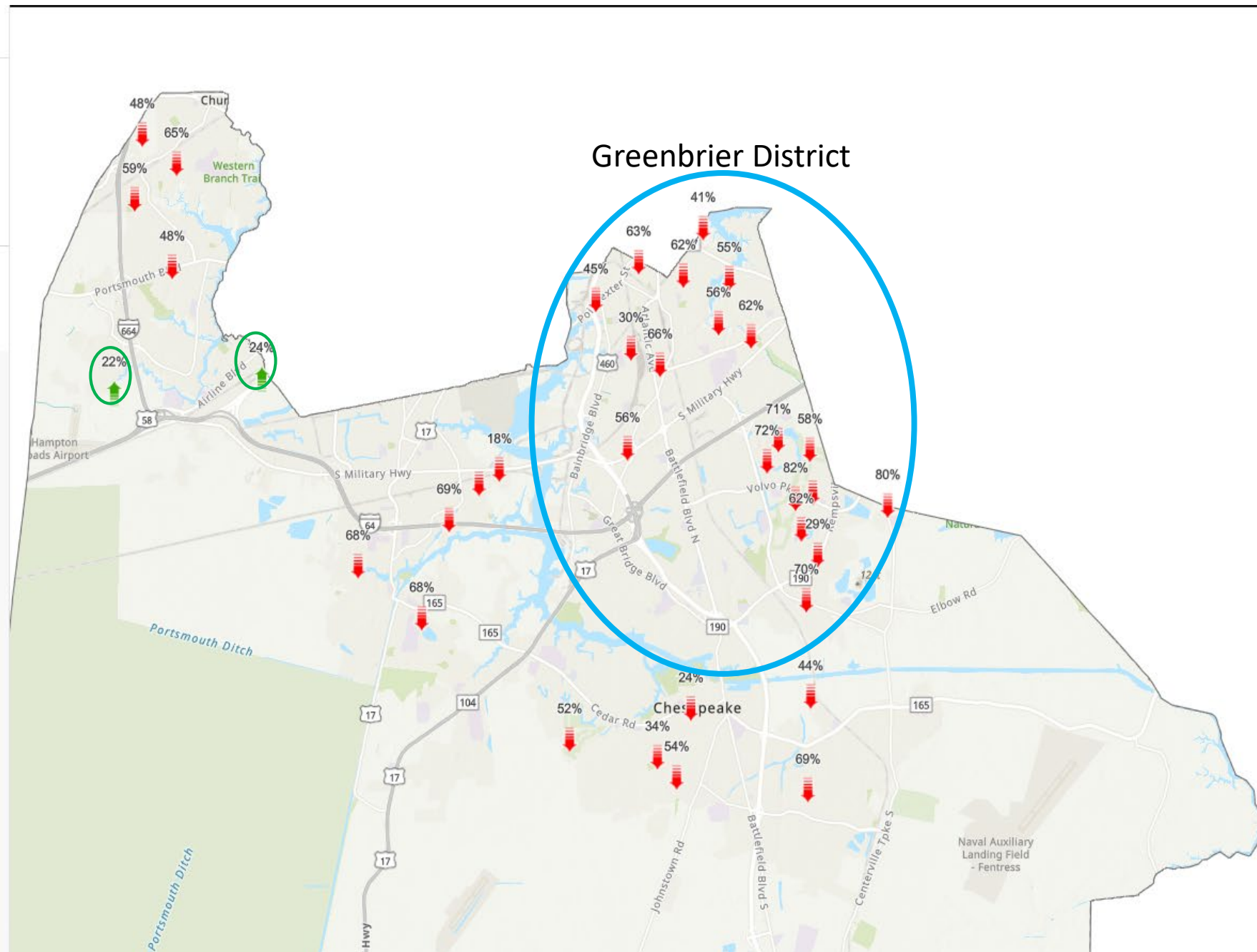
Chesapeake City Boundary



**% Increase or Decrease  
from 2021 in gravid  
trap sites.**

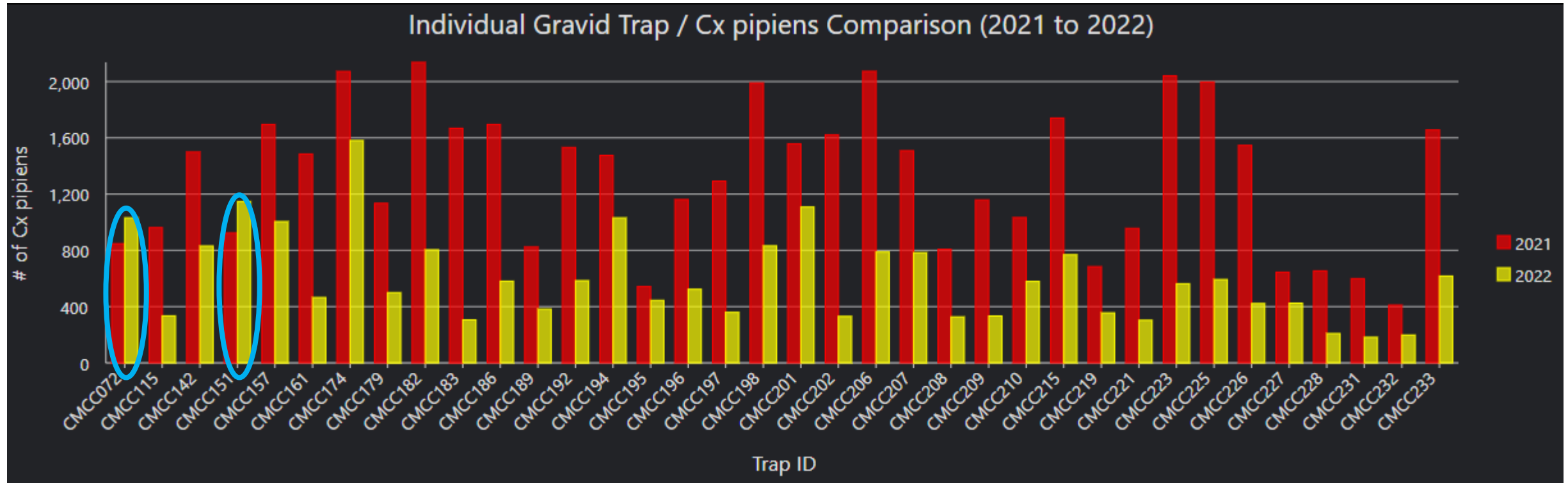
**Greenbrier District  
with significant  
decreases!**

**Only 2 sites increased.**





# 36 routine gravid trap sites



# What we did in 2021- Reactive vs Proactive Approach-based on +mosquito pools and/or high trap counts

- **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* in 2021. 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 in 2021



# Questions and Theories from 2021 Season

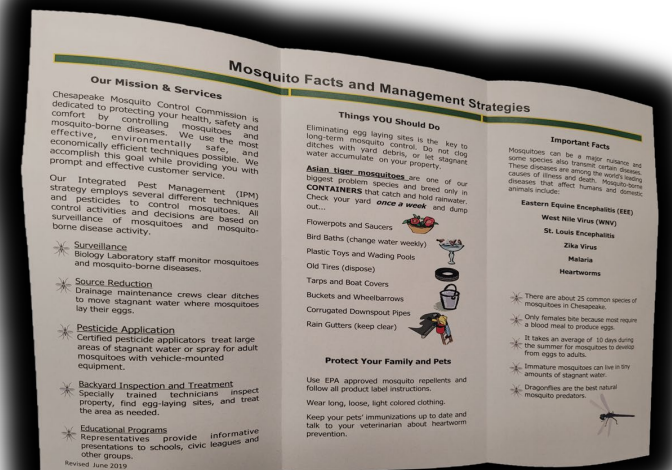
- Increase in sheer #'s of *pipiens*- Habitat expansion?
- Mild winter-more survived?
- Common factor in the neighborhoods with highest positives and/or catches- older, poor drainage, tightly packed, unkept home sites?
- Extremely high # of *melanura*. Did this play a factor in amplifying the WNV within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



18,000 *melanura*

# Strategy for 2022- WNV Task Force- A Proactive Approach

- Team consisting of 2-3 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-*not purchased until Dec 2022*
- Adding **Duet** into the rotation of our adulticides (high *pipiens* and/or WNV+'s)-*Night ULV down 42% in 2022*
- Hang Nuvan strips in select catch basins and Pump Stations-create unfavorable resting area



# Our Proactive Approach for 2022

- **Week 18** (first week in May)- High *pipiens* trap counts- **Task Force put into action!** canvassed effected areas
- Distributed new flyer by **hand** and **Nextdoor** (facilitated by Chesapeake Health Dept.)
- Reached out to over **50** residents in the problem areas.
- **Treated, eliminated** breeding sites where appropriate and **educated** residents
- Placed **140 Nuvan strips** in catch basins/yard drains at several problem sites
- New and improved Outreach Program (**Mosquito Control Information Team**)

## Chesapeake Mosquito Control Commission



*Culex pipiens* – (Common brown 'house mosquito')  
Our surveillance has indicated that your neighborhood has a very high population of the Common Brown 'house mosquito'. This mosquito has the potential to transmit **West Nile Virus** to humans and cause heartworm disease in dogs.

Some facts about *Culex pipiens*:

- ❖ Primary vector for **West Nile Virus**.
- ❖ Light brown and small.
- ❖ Out at dawn and dusk.
- ❖ Enter homes in search of blood.
- ❖ Breeds in drainage catch basins, ditches, and a variety of artificial containers such as; tires, buckets, unused baby pools, and other water-filled man-made containers.

Check your yard once a week and dump out any containers holding water to help prevent the spread of **West Nile Virus**.

Contact a veterinarian for heartworm prevention to protect your dog.



Submit a request for service by calling 757-382-3450

Or

Online 24/7 by visiting [www.CityofChesapeake.net](http://www.CityofChesapeake.net)

Click on the tab

"Mosquito Control Service"

# Mosquito Control Information Team

- Organized by our Biologist I, Katherine Reutt
- Employees volunteered for events
- Updated our display board, including a picture op
- T-shirts for the team- Easily seen by citizens





# Mosquito Control Information Team

- **Chesapeake Jubilee- May**
- **National Night Out- Aug**
- **2 Town Meetings-** organized by the City
- **CARES Picnic-** for City employees
- **Career Day** at Treakle School
- Interacted with **~350 citizens** in 2022!
- Planning to attend more events in 2023!



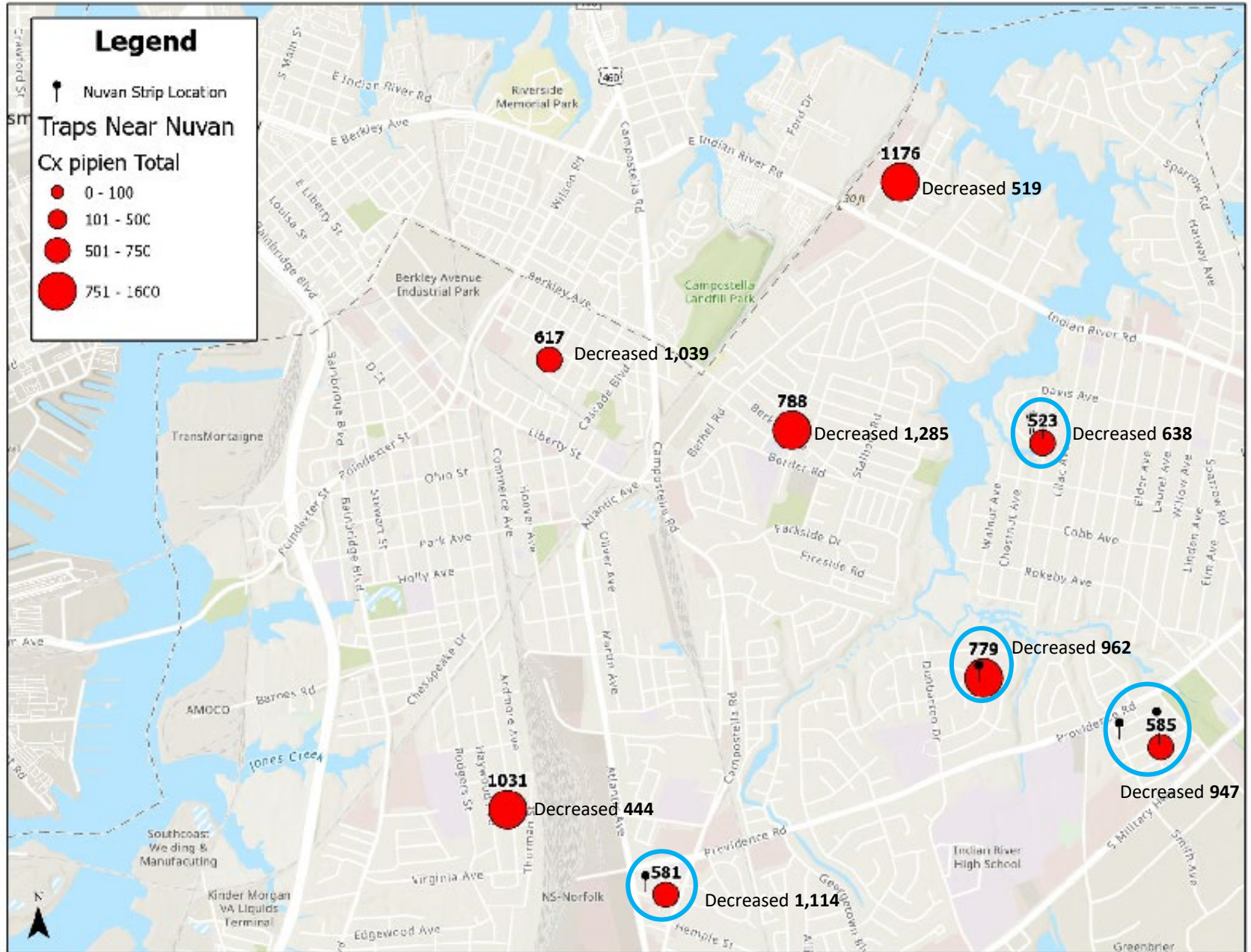


# Nuvan strips placed in the Greenbrier District-68 total

Circled sites with strips

All sites decreased

Larviciding & Source reduction also occurred in the area

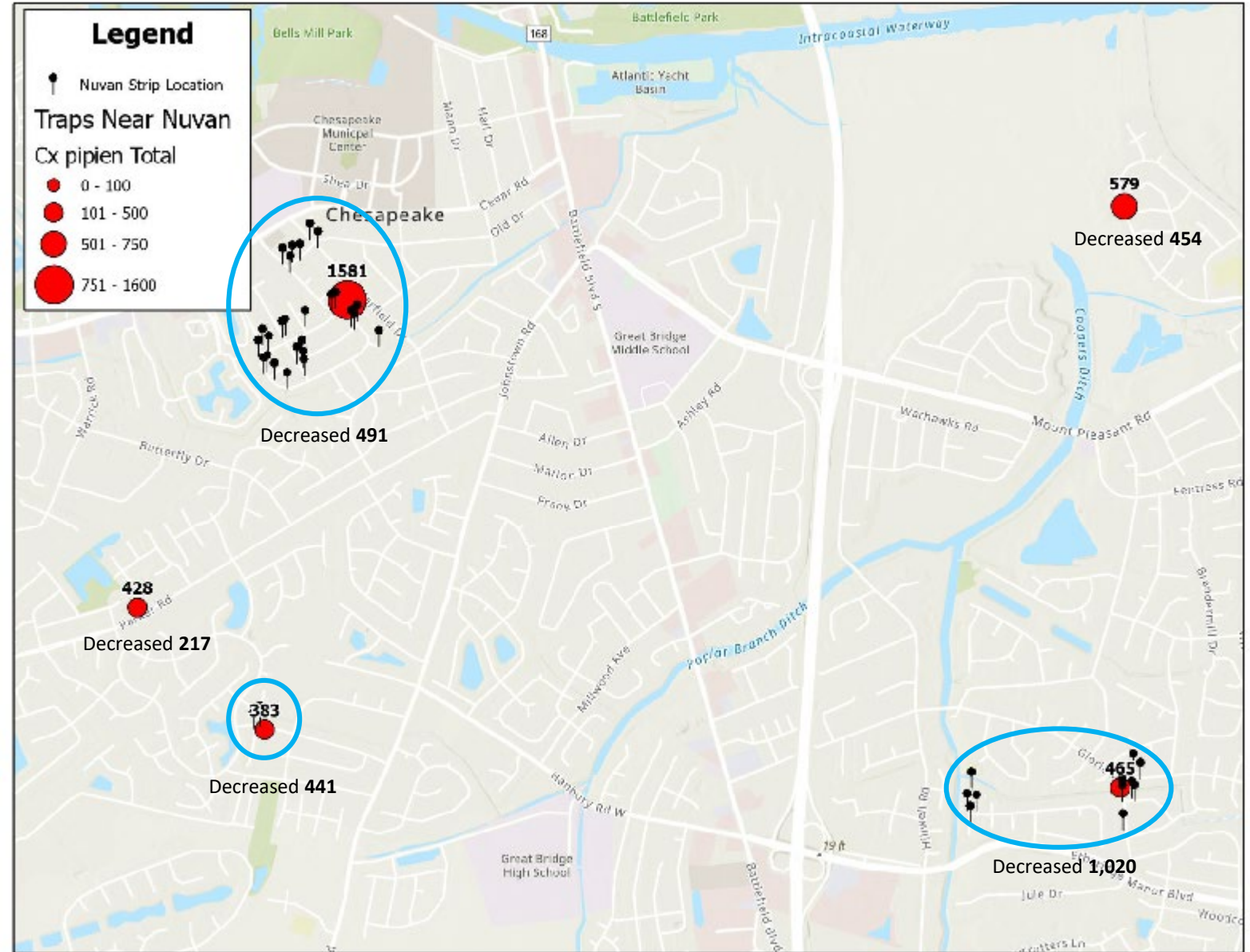


# Nuvan strips placed in the Southern District-72 total

Circled sites with strips

All sites decreased

Larviciding & Source Reduction also occurred in the area



## Sites of Interest- Cogliandro Dr.- 3 WNV+ pools- 2021



Grate holding water next to P.S.

**This site caught  
the most  
*pipiens*, 2,137  
in 2021!!**

**2022-** site caught only 804  
*pipiens*(no Nuvan strips)  
and zero WNV+ pools!

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

What was found adjacent to the Cogliandro P.S. in 2021



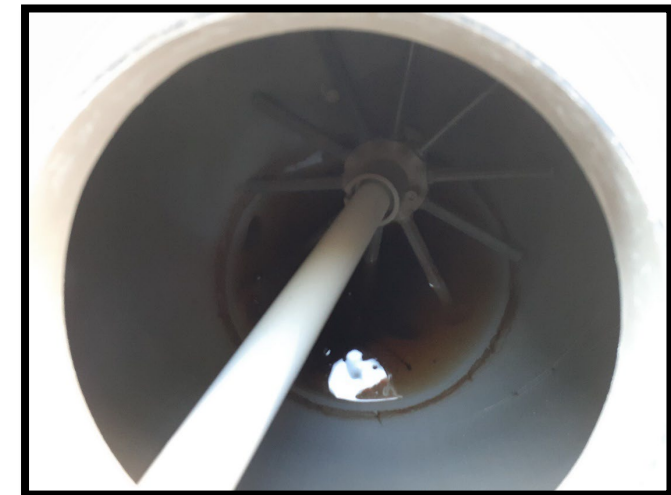
Messy yard with many containers  
across the street from P.S.



Ornamental fish pond



Kayak



Outdoor umbrella stand

Sites with the most WNV+'s in 2021- Princeton Ave- 12 total & 1,695 *pipiens* trapped



Grate holding water



In 2022, no positives & 1,176 *pipiens* trapped (decreased by 519). No Nuvan strips

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

What was found adjacent to the Princeton P.S. in 2021



Sites with the most WNV+'s in 2021-Quail Ave- 12 total & 1,656 *pipiens* trapped



Drain next to pump station holding water

In 2022, no WNV+'s & 617 *pipiens* trapped (decreased 1,039) and -No Nuvan strips

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

What was  
found adjacent  
to the Quail  
P.S. in 2021





Sites with the most WNV+s in 2021- Osborn Ave.- 10 total & 1,532 *pipiens* trapped



In 2022, no positives  
& 585 *pipiens* trapped  
(decreased 947)  
Nuvan strips placed

**Non-pumping station** site. Older neighborhood- drainage system of driveway pipes, swales and grates

# What was found adjacent to the Osborn site in 2021



Cooler



Buckets, tire, tarp




Bucket lid

# Strategy for 2023- Start the season as we did in 2022- A Proactive Approach

- Team consisting of 2-3 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
- **Hand out Mosquito Dunks** to select residents
- **Add 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- **use up what we have in stock**

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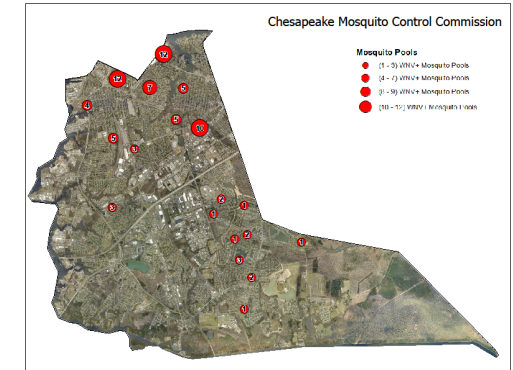
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Thanks!

Any Questions?