

Evaluation of Natular XRT™ for Larval Control in a Vacuum Sewer System in York County, Virginia



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Presentation modified from original by Leah Henretta

Introduction



- York County Mosquito program is continuing to increase operations to a more green and sustainable direction
- We began the study with the Organic product Natular™ so we decided to continue our research from prior year
- Expansion of larvicide program
- Limited staffing so can only treat once per season

Study Background

- Second year for treating vacuum system
- No published literature on mosquito control in vacuum sewer
- Vacuum sewer installation is increasing as county's population increases and comply with TMDL



Study Purpose

- Are the species observed last year still using the pits for oviposition sites.
- Is Natular XRT™ still effectively controlling larvae in the vacuum pits?
- Will Natular XRT™ continue to control larvae for 180 days in the vacuum pits?



Vacuum Sewer

- First used in Europe in 1882, introduced to the U.S. late 1960s (AIRVAC)
- Alternative to gravity and septic
- High H₂O table, unstable soils, rock, sensitive eco-system
- Low impact, conserve energy, reduce pollution/waste from operations



AirVac Municipal Vacuum Sewer

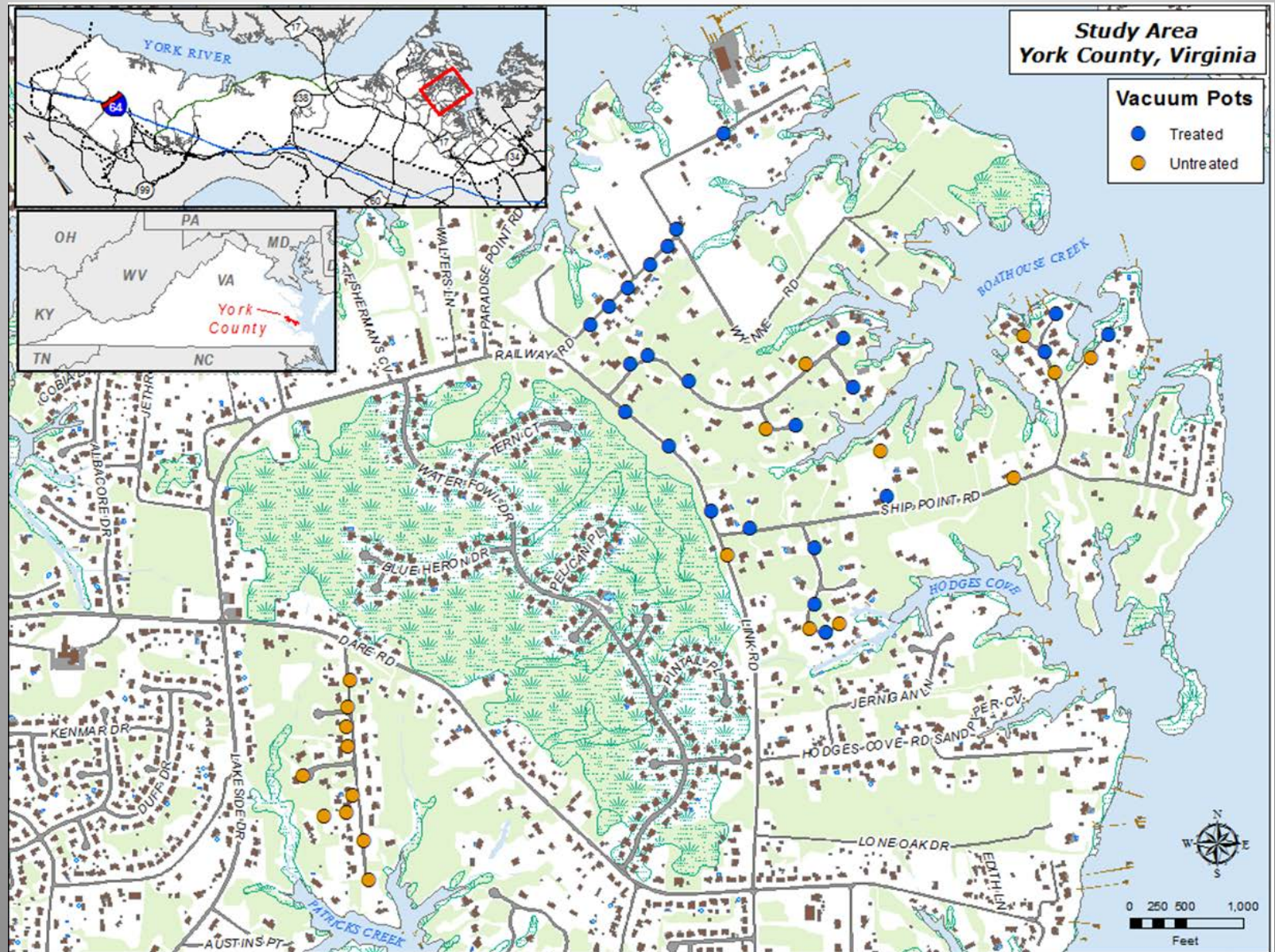
U.S.

Projects

As of December 31, 2015

<u>Location</u>	<u># of Valves</u>	<u># Connections</u>	<u># Stations</u>
Florida	20,791	57,640	71
Georgia	265	500	2
Maryland	2,709	6,671	20
New Jersey	98	190	1
New York	1651	2971	11
North Carolina	7,220	17,136	28
Pennsylvania	681	1,412	5
South Carolina	356	733	1
Virginia	3,921	7,585	27
West Virginia	2,858	4,657	26

Study Area



Method

- Study duration 6 months (May-October)
- 40 pits (20 treated, 20 untreated)
- Sampled bi-weekly with standard dipper
- Larvae separated/counted by instar
- Collected larval samples for identification
- Monitored rainfall, water depth in pits



Results

- Species: *Aedes albopictus* and *Aedes japonicus* (one was reared off)
- Untreated pots: 3960 total larvae with an average of .99 per dip
- Treated pots: 36 total larvae with an average of .05 per dip

Conclusion

- Natular XRT™ is an effective larval treatment for use in vacuum pits for up to 180 days
- Or longer?-Tablet still visible in many pits
- Ae. Albopictus is the main species utilizing pits
- 32% of County wide seasonal surveillance
- Pits may be even more important oviposition sites in dry conditions

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Questions?

