



MOSQUITO ABATEMENT  
ST. TAMMANY PARISH

Q1  
2021

# Quarterly Report



# Letter From the Director

## Ready. Set. Go!

Winter at the mosquito abatement office is a time of preparation and planning. Winter is over and spring is here!

Training is complete. Spray trucks have been calibrated and are already on the road completing 45 missions spraying 30,254 acres. Larvicider jeeps are back having already treated the 633 miles of roadside ditches with septic system sewage pollution. The airplane has been calibrated, sports a new nose cone after a bird strike last year, and has a new navigation system. Three new field biologists will start their work with us in the next two months.



Director Kevin Caillouet, Ph.D., M.S.P.H.



While all operations are up and running for the mosquito season several other activities are underway. These include COVID-19 staff vaccinations. To date, our staff has reached 52% vaccination rate. While vaccines may give some folks pause, our staff is recognizing the need to keep themselves and their co-workers safe by getting vaccinated. By rolling up their sleeves our staff is also ready to keep themselves healthy to perform their vital role in keeping our community safe from mosquito-transmitted diseases.

Other STPMAD activities which you can read more about in this report include evaluating the effectiveness of hyacinth removal or abatement to reduce the production of *Mansonia* spp. mosquitoes. Also, the district is currently out for bid for the purchase of a helicopter to perform mosquito control missions. Though many of these activities look to plant dividends that will pay off in years to come, we remain focused on the immediate needs for mosquito management.

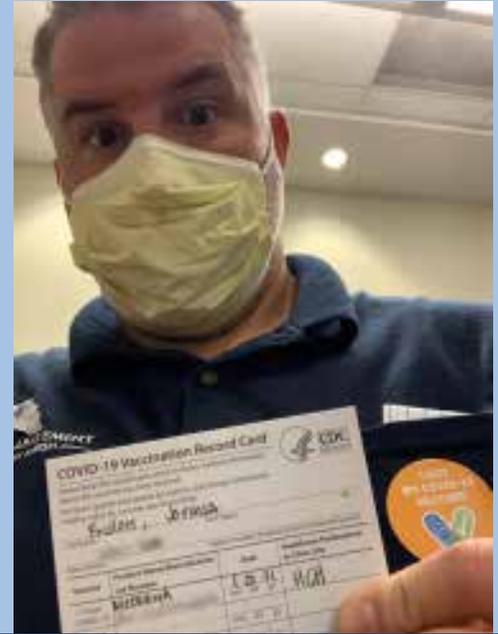
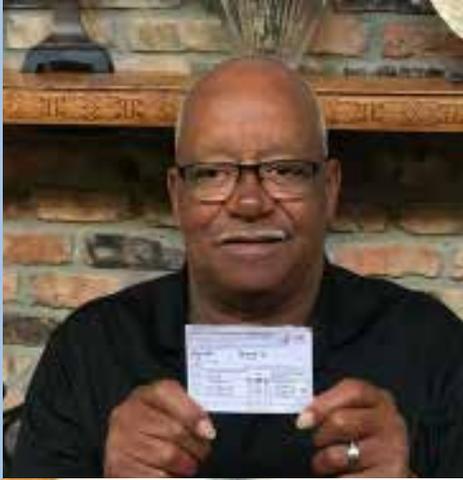
Yours in health,

Kevin A. Caillouet, Ph.D., M.S.P.H.  
Director

On the cover: Larvicider treats roadside septic ditch in Mandeville.

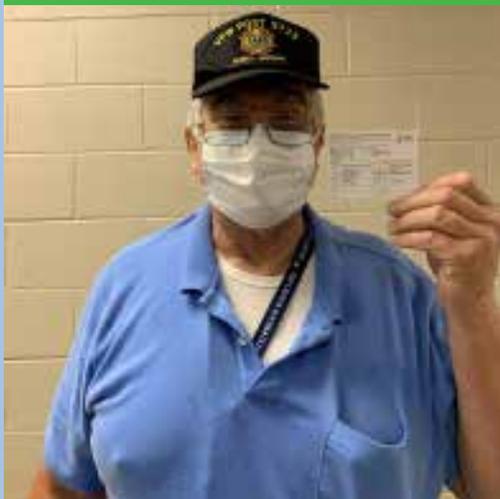
On this page:  
Top right: Night Driver Kyle Swan treats Slidell neighborhood.

Middle page photo strip from left to right:  
- Nick DeLisi teaches staff how to properly set up the new BG Counter Traps.  
- Larvicider Doug Williams sprays the standing water inside culvert.  
- Spinners are set out for calibrating the airplane for the 2021 mosquito season.  
- Biologist Richard Fraiser takes a photo of his vaccination button.



**Mosquito Abatement employees are rolling up their sleeves for vaccines!**

**Protecting ourselves so that we can protect our community!**



# Q1 MOSQUITO CONTROL STATS

**38,607** total mosquitoes trapped

**34,326** acres treated by ground

**633** miles of ditch treated with larvicide

**88** service requests completed

## First Quarter Arbovirus Report



Five of the 760 pools of mosquitoes, tested from specimens collected during the 1<sup>st</sup> Quarter, were positive for West Nile virus (WNV) infection. Adult mosquitoes are collected using No Light CO<sub>2</sub>-baited CDC traps and tested in pools (or groups) via RT-PCR, by the Louisiana Arbovirus Disease Diagnostic Laboratory (LADDL) in Baton Rouge. The current absence of WNV in mosquitoes since February indicates a low-level risk of WNV infection to people in St. Tammany Parish.



A total of 20,982 mosquitoes were collected and tested for WNV during the 1<sup>st</sup> Quarter across St. Tammany Parish. *Culex salinarius*, a secondary WNV vector, accounted for 69.3 % of mosquitoes submitted for virus testing. Populations of another secondary WNV vector, *Aedes vexans*, consisted of 14.0 % of the mosquitoes collected and tested for WNV.

The Louisiana Department of Health has reported a total of zero human cases of West Nile neuro-invasive disease year-to-date in St. Tammany.



STPMAD staff photo taken during the 2021 Training Day event held on Microsoft Teams in March.

## First Quarter Training

Each year, training and professional development of our team is an important focus in our first quarter operational plan. Through virtual meeting platforms, we were able to offer additional training opportunities to both full and part-time seasonal employees. The American Mosquito Control Association Annual Conference was held virtually this year, which enabled more personnel to attend and learn best practices and techniques implemented by our peers across the country, and to hear about important research being conducted to improve the way we control mosquitoes.

With the welcomed return of our seasonal employees in early March, we replaced our normal in person training with a virtual format that included a mix of pre-recorded video demonstrations and live Q and A sessions. Our staff was able to learn about new techniques and products we will be using this coming year, like setup procedures for the new BG counter traps or methods for conducting septic inspections. The safety committee created demonstrative presentations on topics ranging from vehicle accidents to handling chemical spills and spill kit walk-through.

The biologist and lab teams attended a virtual training seminar about aquatic pest management put on by the LSU AgCenter to help prepare field biologists for the Aquatic Pest Control Certification exam. This is an important first step in our source reduction efforts to reduce the *Mansonia* mosquito population.

## Readying Equipment

Cost savings are coming to mosquito control operations by helicopter in 2022. For the past two years STPMAD has contracted with Blackstar LLC of Picayune, MS to provide mosquito abatement by helicopter. During that time STPMAD has found that helicopters can provide many vital services that airplanes cannot, including precision larviciding in the marsh, woodland sites, and over neighborhoods as well as the application of insecticides to kill adult mosquitoes. The “swiss-army knife” of mosquito control, helicopters are widely used throughout Florida for mosquito control, but none, other than in St. Tammany, within Louisiana.

On March 31, STPMAD went to bid for the purchase of our own helicopter to operate instead of reliance on a more costly contractor. “Owning and operating our own helicopter should net a cost savings of about \$100,000 each year and provide greater availability at a moment’s notice when the need for control arises,” said Director Caillouet.

Helicopter bids will be opened at the April 21 STPMAD Board of Commissioners meeting. The district expects to take delivery by the end of 2021 of the aircraft and begin its service early in 2022.



Contractor Blackstar LLC. conducts larvicide treatment over Fritchie Marsh in Slidell.



Biologist Briana Hornsby and Mark Bunch collect emergence traps set out over water hyacinth in Fontainebleau State Park.

## Planning Our Strategy

Larvae of the *Mansonia* genus camouflage themselves within the roots of aquatic plants, making them difficult to find and control. Water hyacinth (*Eichhornia crassipes*) is an invasive aquatic plant impacting most major waterways along the coastline of St. Tammany, and is the primary host plant of *Mansonia* species mosquitoes. As such, adult *Mansonia* species are a major nuisance to our residents during summer and fall outdoor activities. Research Assistant Sydney Johnson has spent the last two years developing a preemptive larvicide strategy to supplement our adulticide response.

In 2020, we performed field trials in Fontainebleau State Park to evaluate the bacterial larvicides *Bacillus thuringiensis israelensis* (*Bti*) and *Bacillus sphaericus* (*Bs*). Both larvicides were applied by airboat and adult emergence was compared over three days to an untreated control. Neither treatment with *Bti* nor *Bs* reduced the average number of adults produced (Figure 1). Results were similar to those obtained in 2019 indicating *Bs* provided mediocre control, and *Bti* none. We concluded that either our application method or choice of larvicides were inappropriate for this environment.

In late 2020, we began a partnership with the Army Corps of Engineers, Department of Wildlife and Fisheries, LSU, and a variety of other stakeholders to gain a better understanding of actions that were being taken to manage water hyacinth in Louisiana. These agencies both research and use herbicides against water hyacinth as a means of clearing waterways and encouraging the return of native plants and wildlife that have been suppressed by its invasion. In 2021, we will begin evaluating herbicides as an alternative method of managing *Mansonia* species larvae. We hypothesize that plant source reduction will reduce *Mansonia* species abundance across St. Tammany. Beginning this spring, we will perform small-scale evaluations of different herbicides with an emphasis on whether these herbicides will control larval mosquito populations. We look forward to evaluating whether or not to incorporate these tools into our pockets to combat one of our most annoying mosquito species.

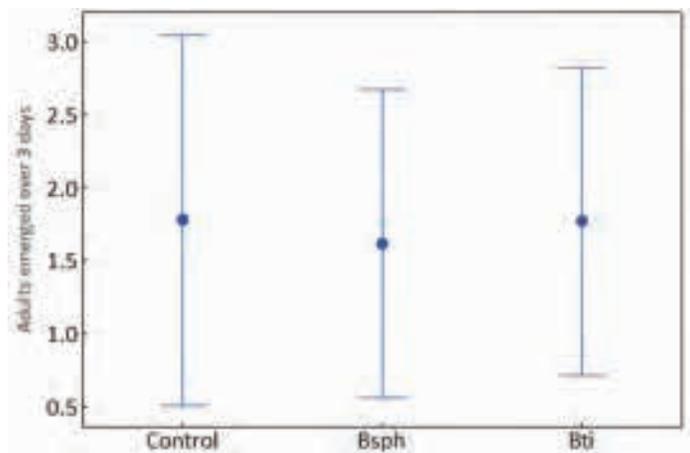
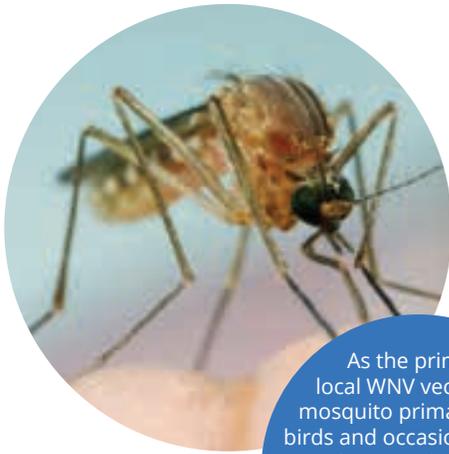


Figure 1. 2020 Field evaluation of bacterial larvicides in Fontainebleau Park, Oct 2020



The above picture shows the roots of a water hyacinth plant to which the *Mansonia* mosquitoes attach themselves.

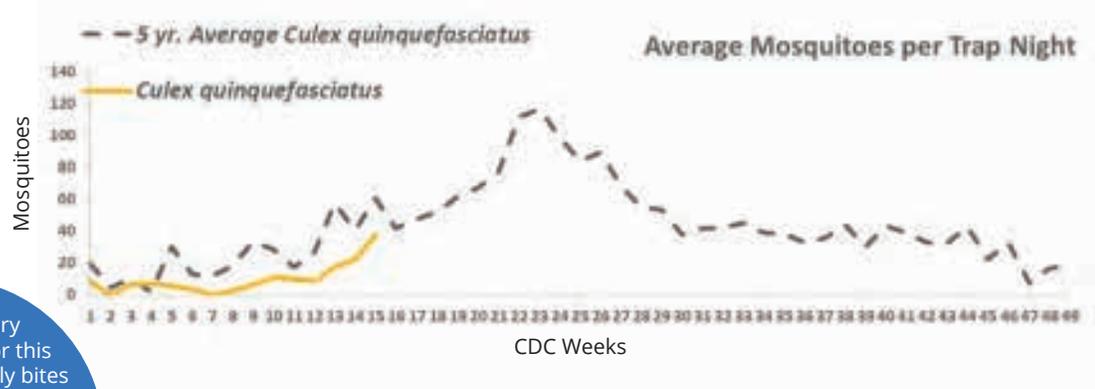
# How Bad are the Mosquitoes?



**Common name:**  
The southern house mosquito

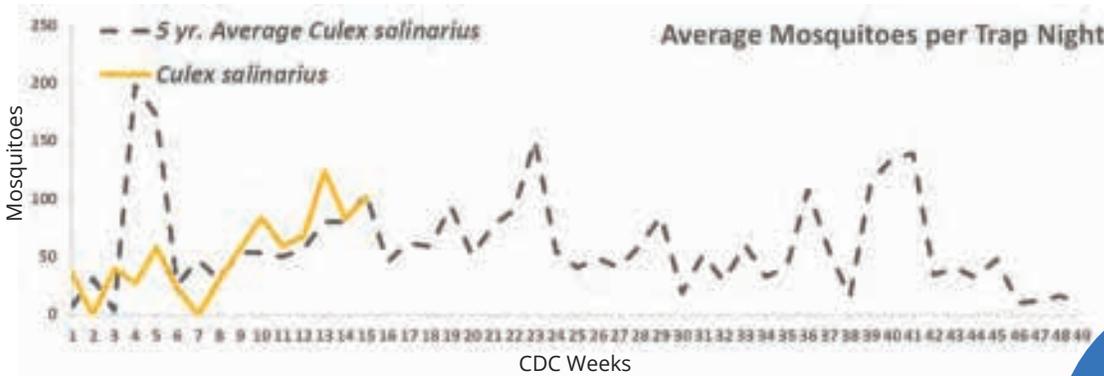
As the primary local WNV vector this mosquito primarily bites birds and occasionally bites people. It prefers to lay its eggs in sewage-associated water. As it readily enters structures, it is named the "house" mosquito.

## Culex quinquefasciatus



**2121**  
*Cx. quinquefasciatus* trapped in Q1

## Culex salinarius



A serious pest that is produced in fresh to brackish marshes. It frequently bites large mammals (including people) and birds. Considered an important secondary WNV vector.

**Common name:**  
The brackish marsh mosquito

**23**   
# of different species found in Q1



**23,159**  
*Cx. salinarius* trapped in Q1

## Top 5 Species Trapped in the First Quarter

