



JEFFERSON COUNTY MOSQUITO CONTROL 2012 ACCOMPLISHMENT REPORT



Jefferson County Mosquito Control, 1255 West Washington Street, Monticello, Florida 32344 (850) 997-3343
www.doh.state.fl.us/chdJefferson/EH/MosquitoControl.htm JeffersonMosquitoControl@doh.state.fl.us

Message from the Director

As we move into the winter months, and wind down from the busiest mosquito season in my five years as Director of the Jefferson County Mosquito Control, I wanted to take a moment to describe the situation and assess our performance. I hope that this report is used to foster discussion and serve as a resource for future operational planning.

I want to thank the Commissioners for their continued support for Mosquito Control, as well as the employees of Mosquito Control for their hard work in the last year.

– Mark Positano, Director

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The Year in Review:

The 2012 Mosquito Season was the busiest yet. Services were expanded considerably to accommodate the more than doubling of residences requesting services as compared to the previous year. A lack of resources hindered our ability to respond to the increase in scale. The operating budget for the fiscal year was exceeded and reserve funding was heavily relied upon. Even operating at peak capacity we were unable to meet demands of residents requesting services as we had in previous seasons.

“...a lack of resources hindered our ability to respond to the increase in scale.”

The 2012 mosquito season was very active with a large and sustained increase in the mosquito population. This increase can be attributed to two

INSIDE THIS REPORT

<i>Message from the Director</i>	1
<i>The Year in Review</i>	1
<i>Finances</i>	2
<i>Determining Spray Routes</i>	2
<i>Getting Service</i>	4
<i>Final Thoughts</i>	4

factors. First, due to a warm winter, high mosquito counts were experienced earlier than normal. Second, Tropical Storm Debby was a severe, sustained rain event at the end of June that provided ample breeding sites for mosquitoes. The result was that a large baseline population existed at the start of the season and there was a large multiplying of this population after significant rain.

As a result of the increase in mosquito population requests for mosquito control services increased from 502 to 1,145 customers (Figure 1). Every measure of performance sharply increased as operations were adapted and expanded to more effectively deal with the situation.

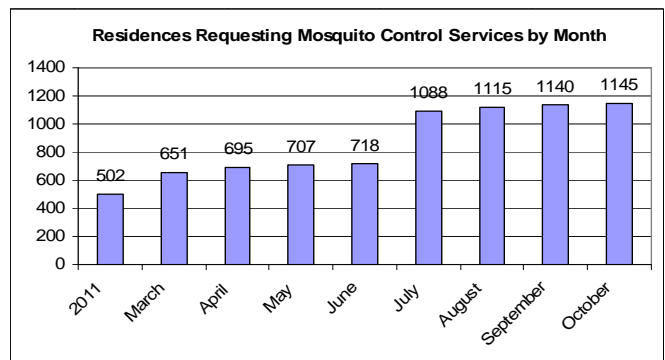


Figure 1.



The majority of new residences requested services in two peaks – before the official start of the season in March and again in July after Tropical Storm Debby (Figure 2).

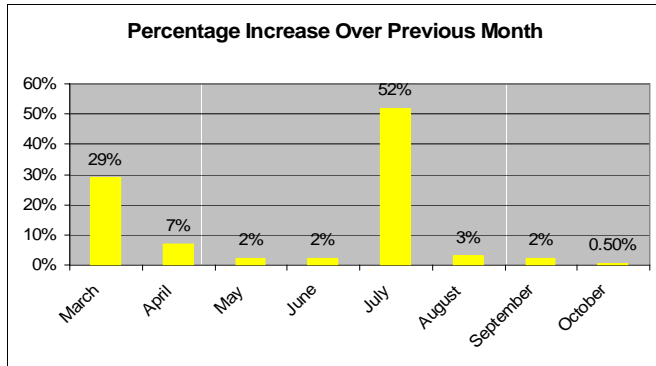


Figure 2.

As a result of the increased demand for services, rural routes outside the City of Monticello were expanded in both number of routes and length of said routes. To maximize the use of the spray trucks, spray hours were extended to midnight and Sunday became a scheduled day. The City was scheduled to be sprayed once a week after rural routes were sprayed for the evening. Even with these changes implemented we were not able to spray each route every week.

"[routes] were expanded both in size and the number of routes... we were not able to spray each route every week."

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Finances:

Each season the level of mosquito activity determines the level of control response. For this reason, the funding needed to operate for the season is largely weather dependent. Cold winters and drought limit the mosquito population and reduce the need for control measures whereas warm winters and ample rain fall have the opposite effect.

Mosquito control funding is subject to Florida Statute 388, which requires that all funds budgeted for mosquito control purposes must be carried forward. Any money not used during mild years is held in a reserve to supplement years with severe mosquito infestations when budgeted funds might be exceeded.

Expenditures continue to increase alongside demand for services, while revenue from all funding sources is down and "Carry Forward" money for reserves is reduced as well (Figure 3). The combination of reduced revenue and reserve funding may at some point prove inadequate to fully fund an active mosquito season.

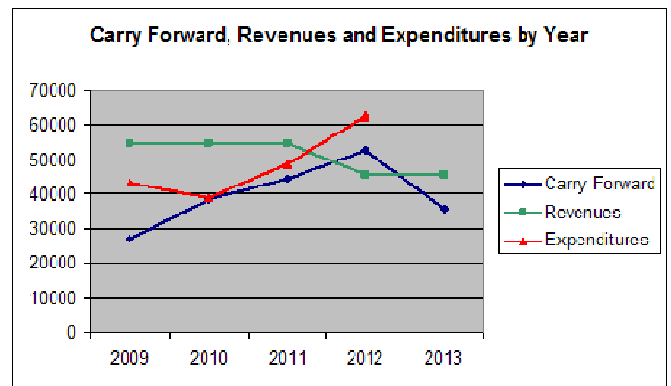


Figure 3.

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Determining Spray Routes:

Weekly spraying is the most effective way to control for adult mosquitoes. Currently each rural route is sprayed every ten days to two weeks depending on the weather and equipment operations. This limitation greatly affects our ability to rapidly decrease mosquito populations.

However, when a route has a confirmed case of arbovirus that route is sprayed weekly for as long as an Arbovirus Advisory or Alert is in effect. This is done in order to protect public health by quickly eradicating disease carrying mosquitoes.



"[E]ach rural route is sprayed every ten days to two weeks... [this] greatly affects our ability to rapidly decrease mosquito populations"

Spraying efforts are concentrated on areas where there is likelihood of people being exposed to mosquitoes. For example, residences in the City can be sprayed from the roads because the swath width of the insecticide application is 150 feet on each side of the spray truck and can reach into the yards of the residences being treated. Spraying from the road would not be effective in a rural setting since the distance from the road to homes, barns, etc, is too far for the insecticide application to treat. Instead drivers must drive onto private property when requested in order to treat those areas effectively.

"Spraying efforts are concentrated on areas where there is likelihood of people being exposed to mosquitoes."

The County is divided into five (5) zones. The county is split along Jefferson Street and the Interstate to form the Northeast, Northwest, Southeast and Southwest zone, with the City as a separate zone. The zone designations are for organizational purposes only and do not reflect an even distribution of mosquito control efforts.

The City is the most densely populated area and is sprayed weekly, which accounts for 1/3 of the total acres treated (Figure 4). It is also more efficient to spray the City since the spray truck can travel up to ten miles per hour while applying pesticides, whereas this speed is not feasible on private property. The amount of time spent spraying the City is only 1/5 of the total spray time (Figure 5).

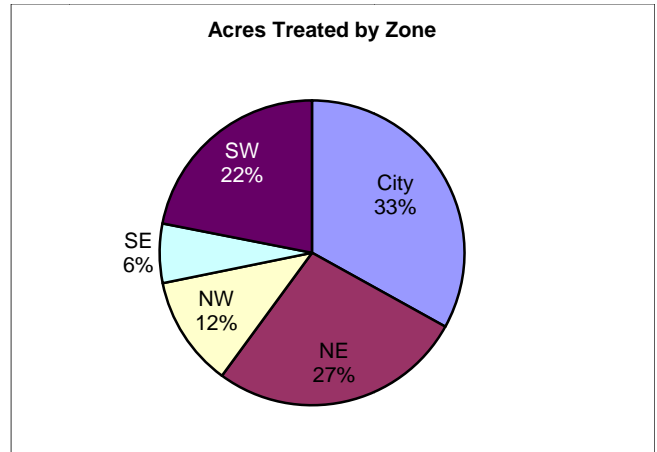


Figure 4.

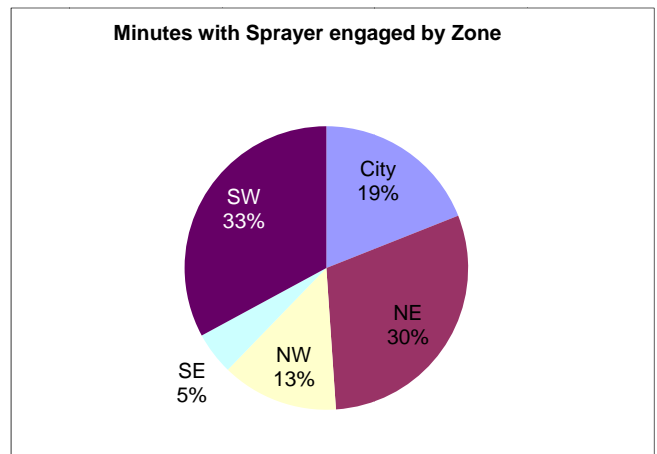


Figure 5.

The routes outside the City are organized so that they can be completed in a single night and to maximize the use of travel time and fuel. The remainder of the county (Northeast, Northwest, Southeast and Southwest zones) is not as densely populated and residences are more disjunct. More time and fuel is needed to reach the same number of residences for these zones as compared to the City.

Each zone outside the city differs in the number of requests, average miles traveled to reach each residence and average area treated. The Northeast and Southwest Zones have the most requests for service (Figure 6). Nearly half of the miles driven



are in the Southwest Zone, which is also the largest geographical area (Figure 7).

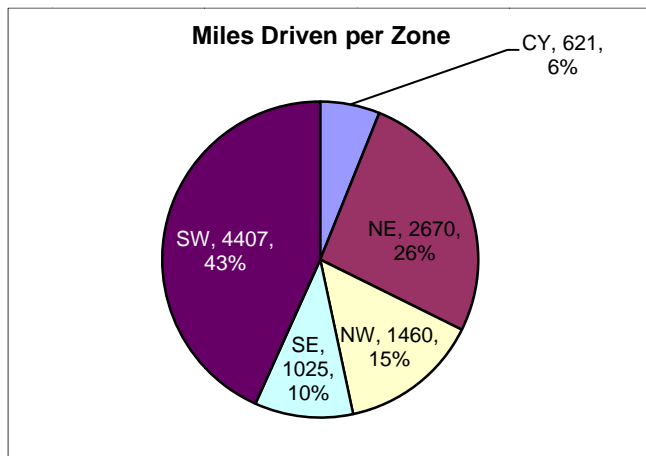


Figure 6.

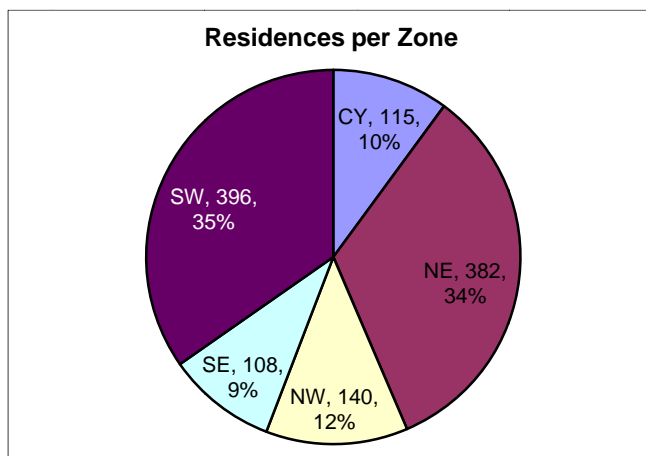


Figure 7.

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Getting Service:

Service requests are obtained from voice mail messages to the hotline, email requests and messages left with the Health Department. New service requests are incorporated daily into the service list, and the routes are updated every week. Depending on the zone and weather conditions, routes are sprayed every ten days to two weeks. The lag time between when new service requests are made and when those requests are fulfilled can be up to three to four weeks.

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Final Thoughts:

This past season saw severe and sustained mosquito activity. While the scope of operations increased drastically in one season due to unusual weather patterns, it is likely that service requests will continue to increase even in moderate and mild years. A lack of equipment will make further increases in demand for services difficult to accommodate. Operations going forward may also be hindered due to equipment breakdowns due to age.

Every possible adjustment was made to make operations as efficient as possible with limited resources. Further areas for improvement are not readily apparent. Without additional sources of revenue, reductions in service may be possible.

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