Weekly Mosquito Surveillance and Forecast Report

Florida Department of Health in Alachua County

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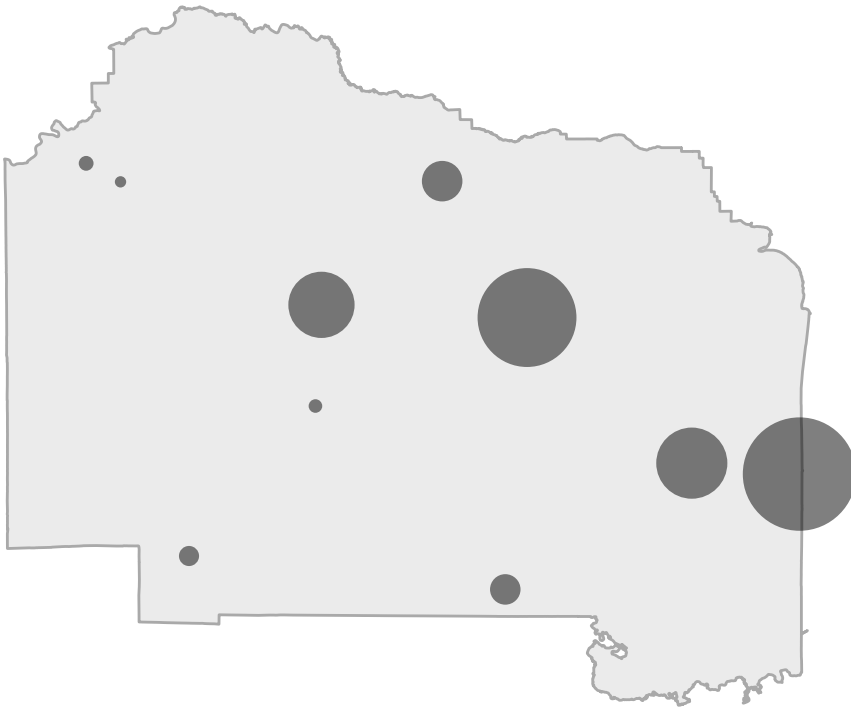
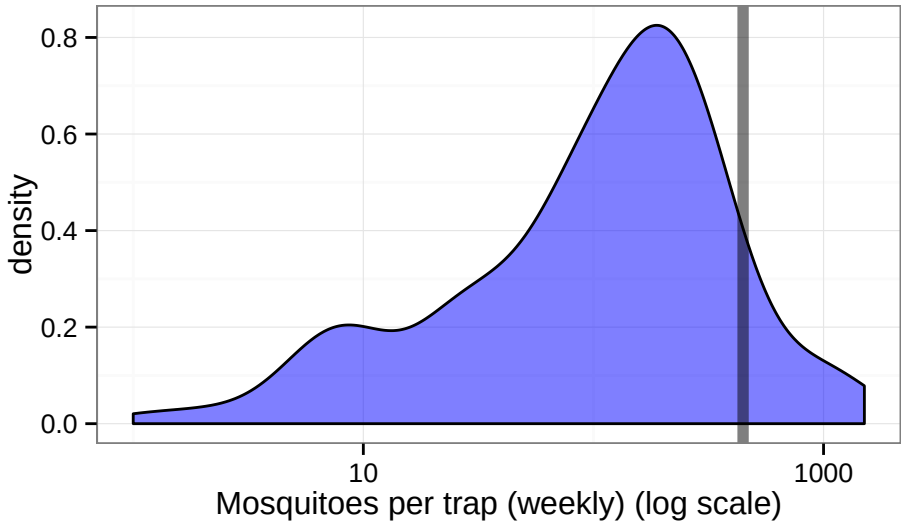


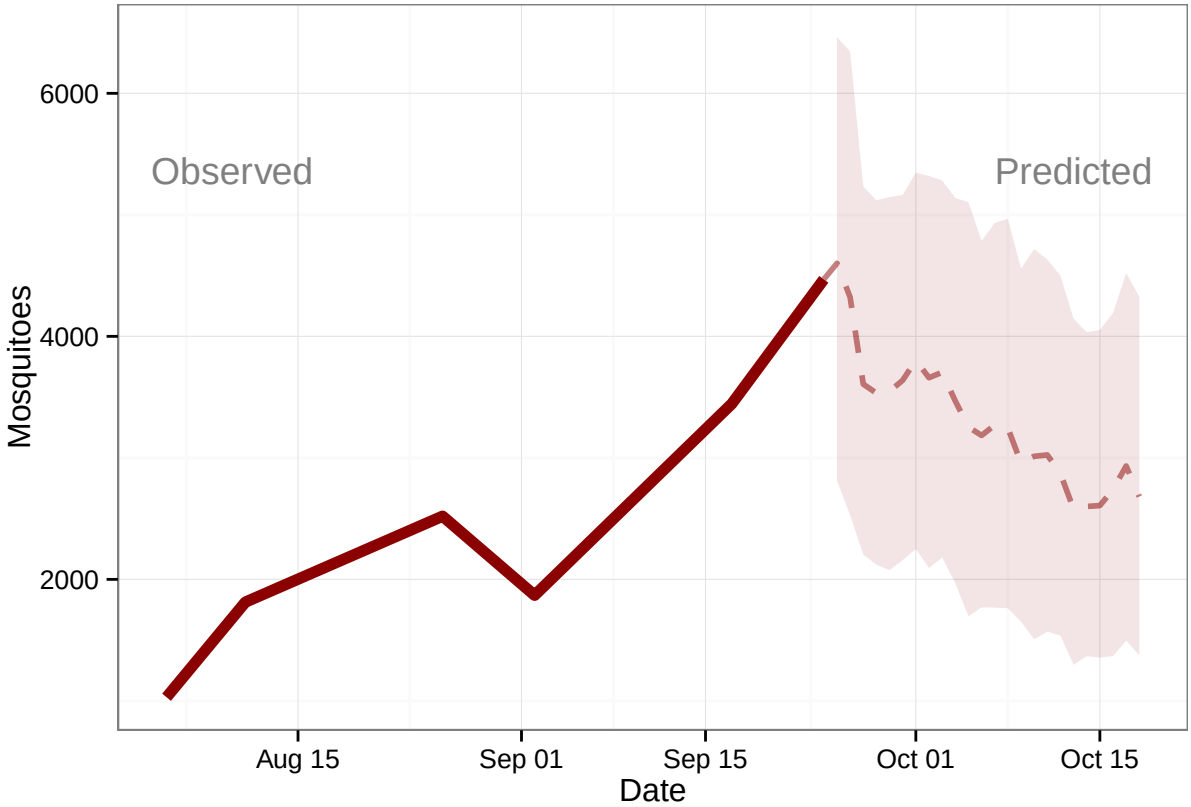
Joe Brew
Ben Brew
Yoni Teitelbaum

Overview

The most recent trap collection was on September 24, 2015. The 4469 mosquitoes trapped (approximately 447 per trap) is at the 93 percentile of all historical trappings.

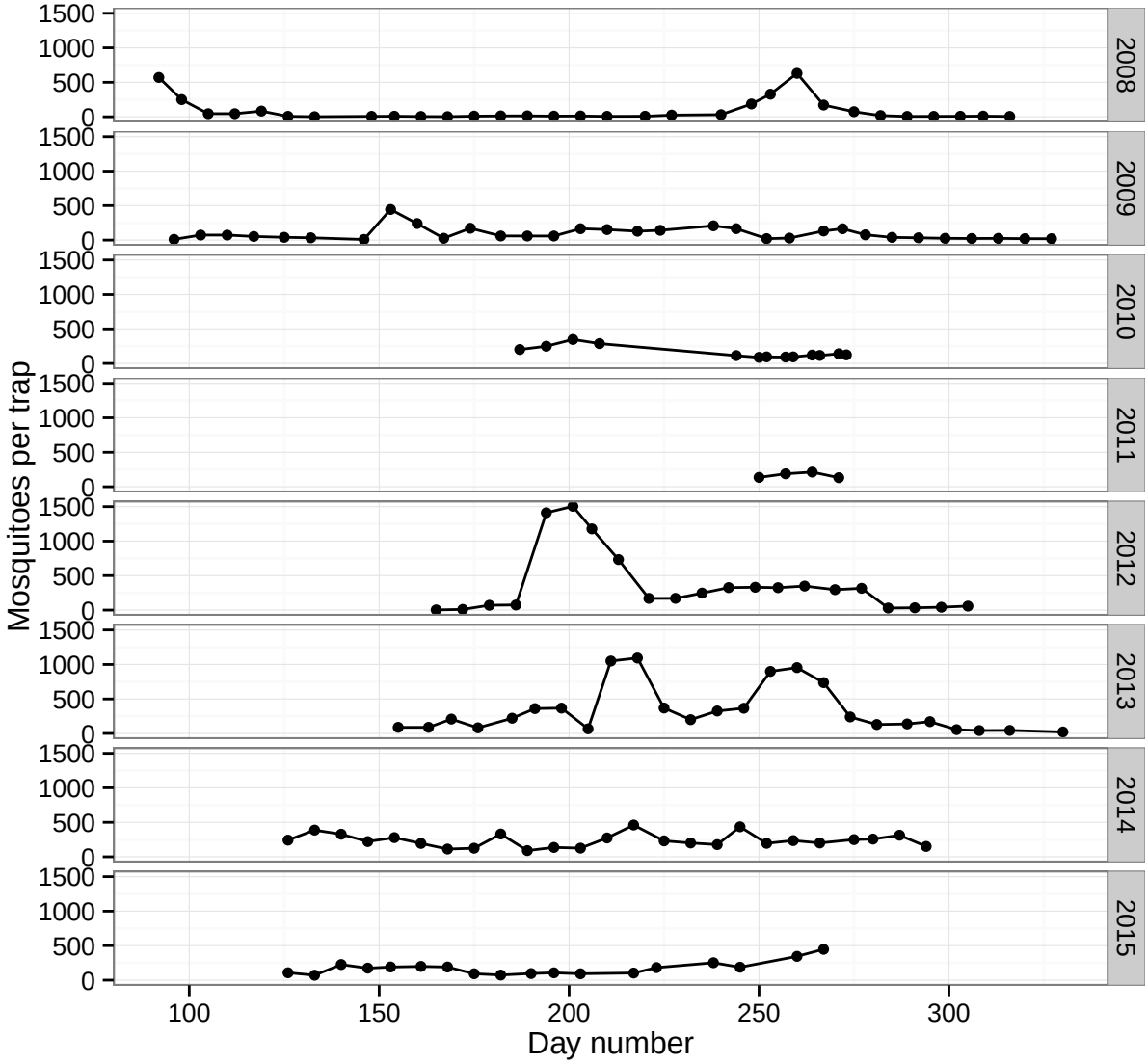


Our model had predicted that the number of mosquitoes would remain elevated - but not grow - from the middle to end of September. In reality, the number of mosquitoes *did* continue grow, peaking on September 24th at the highest levels so far this year. Recent weather conditions suggest a decline As predicted, the number of mosquitoes rose through mid-September. Our model suggests that numbers will remain elevated through the end of the month and into the first few days of October, but will thereafter gradually decline.



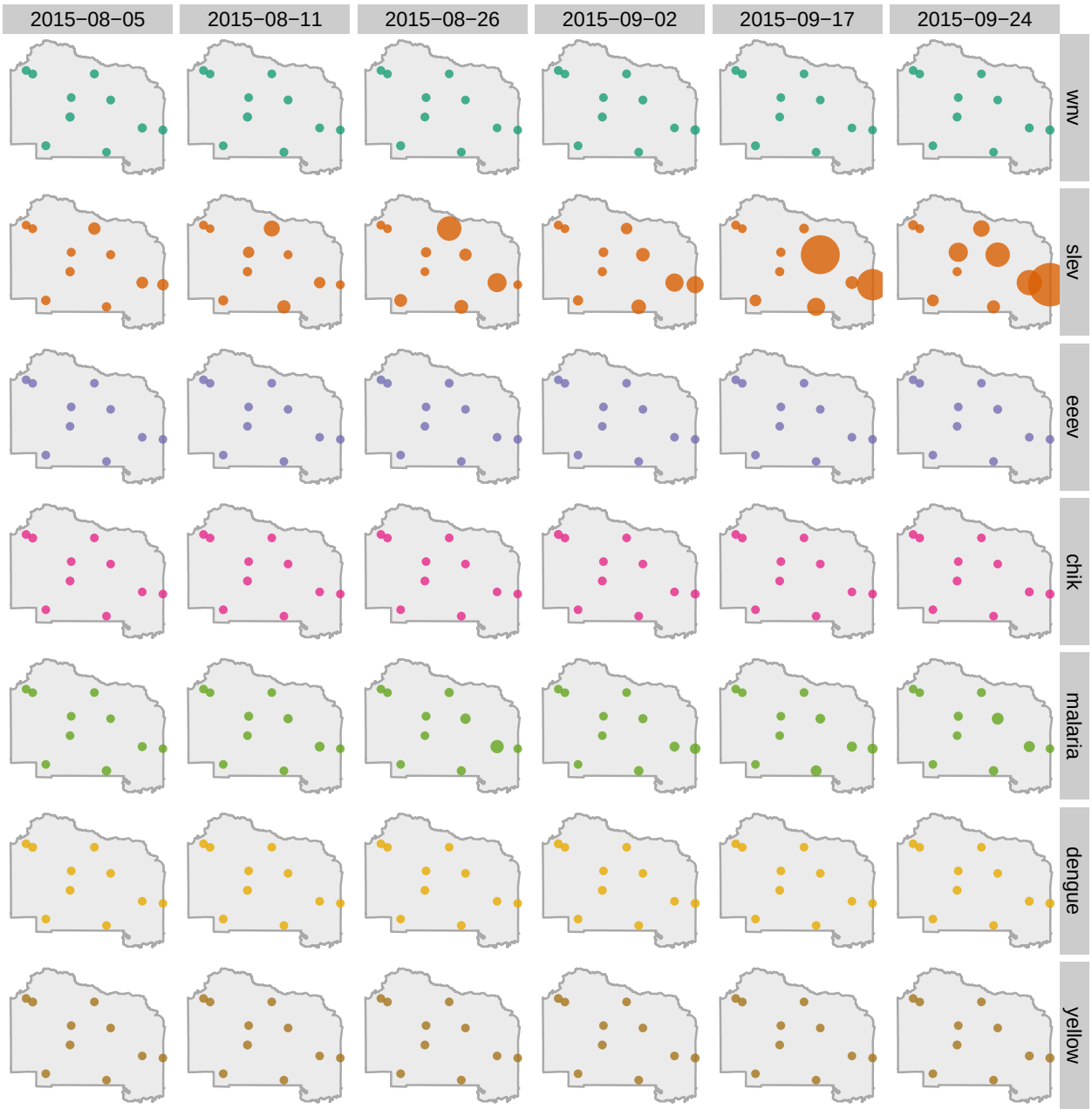
Historical perspective

Numbers so far this summer have been relatively low compared to previous summers. The recent spike is similar in magnitude to the 2014 spikes.



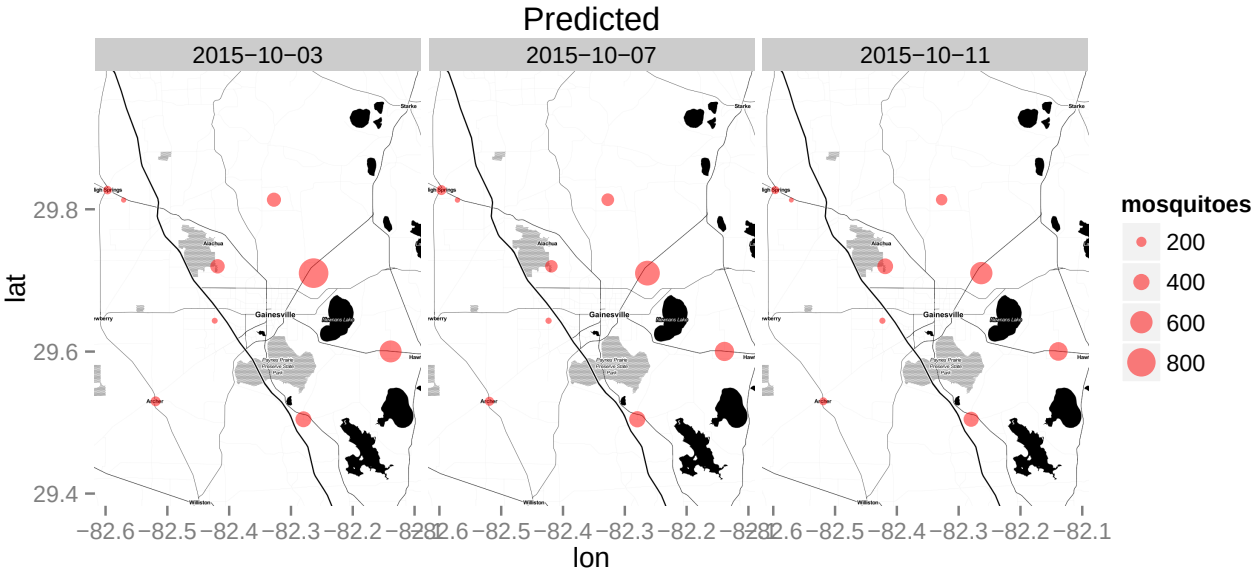
Disease details

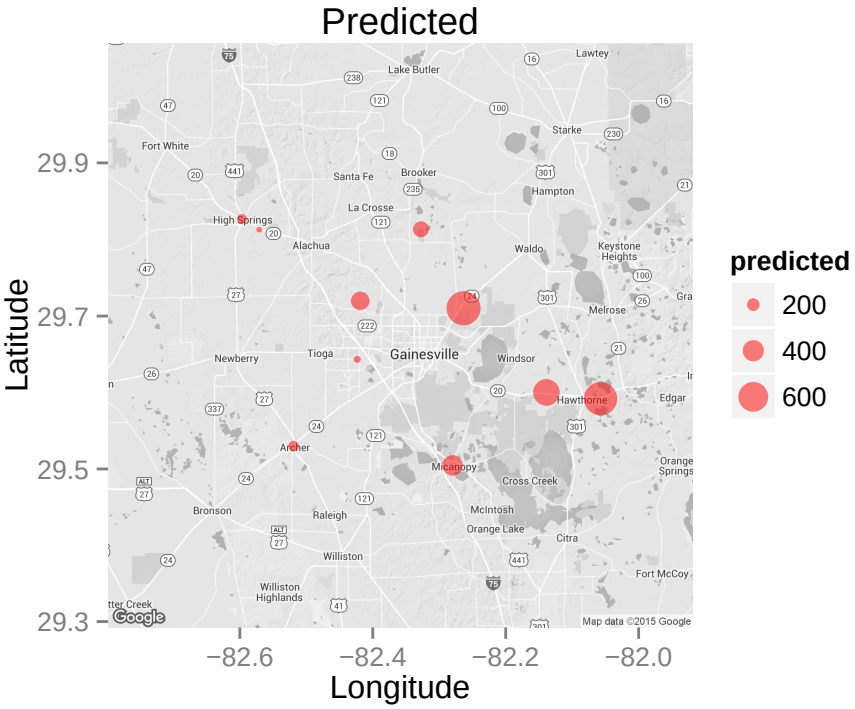
Vectors of diseases of concern appear relatively evenly distributed throughout the county. In recent weeks, the number of mosquitoes capable of carrying SLEV has increased substantially and remains elevated, particularly in Hawthorne.



Forecast

Over the next two weeks, we predict the mosquito population to grow slightly, with the greatest growth ocurring in the east and south of the county.





Model details

The forecast model has undergone several improvements since last year. The inputs have been substantially expanded (now taking into account humidity, precipitation, wind speed, temperature and its fluctuations), and the model has been improved (in lieu of linear regression, the predictive model now employs ensemble machine learning methods).

The model is cross-validated and backtesting confirms a decent fit.