

### **A Brief Update on the Current Assessment of SLE/WN Epidemic Risk in South Florida:**

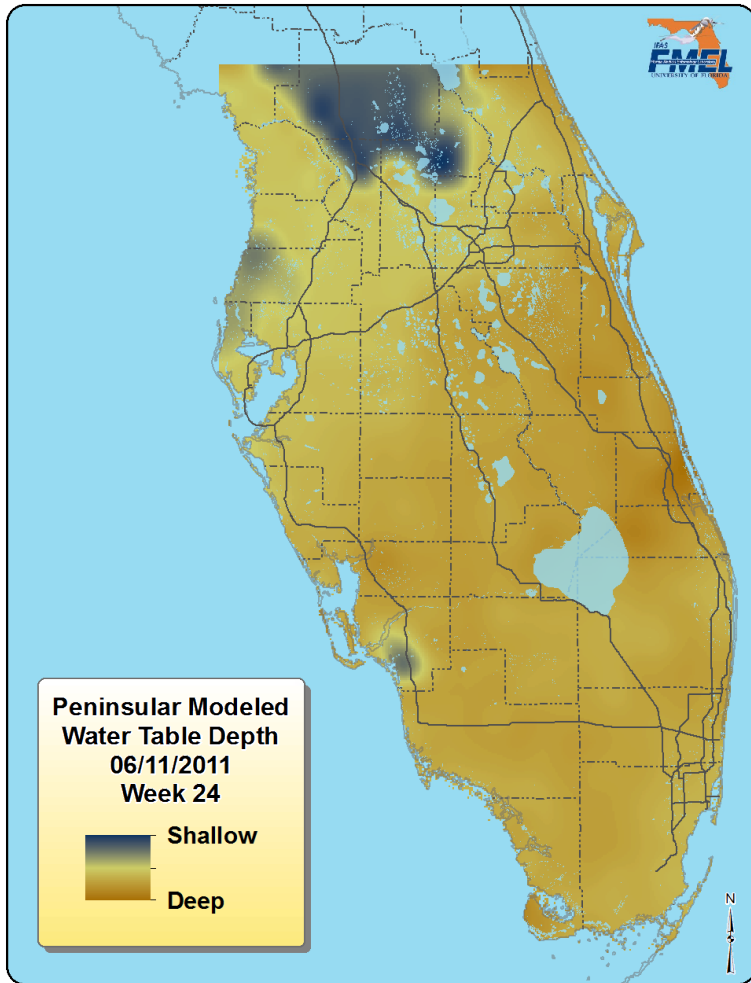
The current level of drought reported throughout Florida is unprecedented (**Figure 4, left frame**). There are presently four areas of interest relative to SLE/WN epidemic risk in South Florida (**Figures 1 and 2**). These areas of interest originate around Tampa Bay and extend to the northeast into Volusia County (**Figure 2**). The four areas of interest include Levy County, Marion/Citrus Counties, Pinellas County, and Polk County (**Figure 2**). Throughout this region of Florida there currently exists a MEDIUM to HIGH risk of SLE/WN amplification and epidemic transmission. The Modeled Water Table Depths are compared with the FMEL Arboviral Epidemic Risk (AER) model for each of the four areas of interest from Week 1 through Week 24 of 2011 in **Figure 3**. All four areas were on the dry side of the model for weeks 1 through 13. All four areas of interest moved to the wet side of the model during weeks 14 and 15 and conformed to the model through week 24. If the current statewide drought continues, it is unlikely that these four areas of interest will continue to conform to the FMEL AER model as seen in **Figure 3**.

### **A Brief Update on the Current Assessment of EEE Epidemic Risk in Florida:**

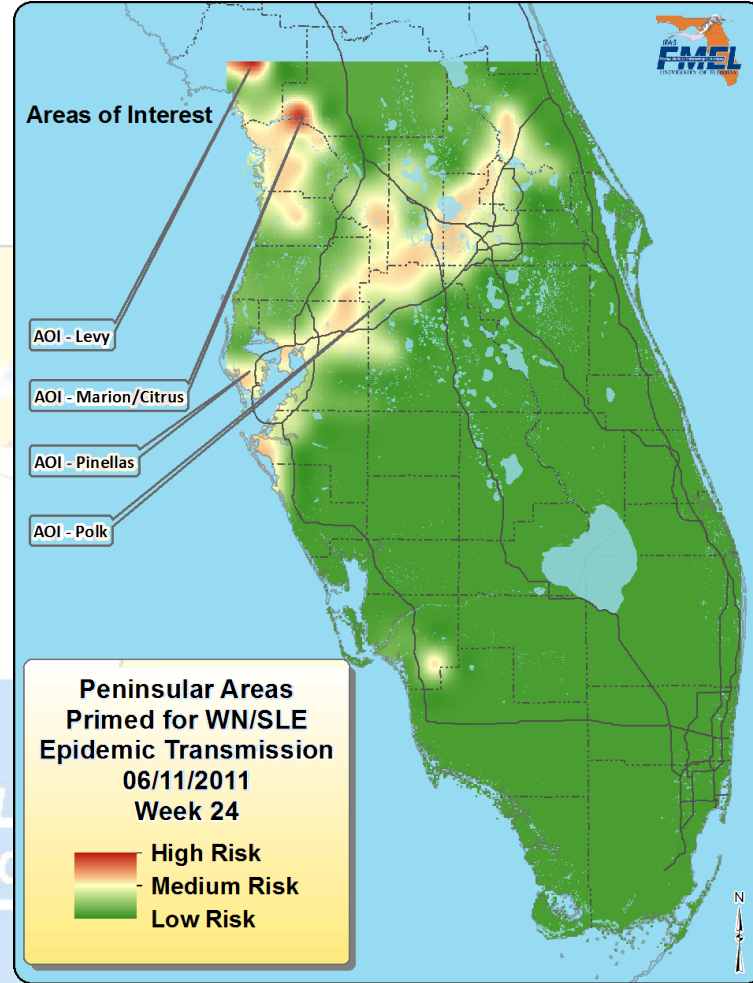
The current level of drought reported in Florida (**Figure 4**) will greatly impact EEEV amplification and transmission throughout the state. With the current level of drought, EEEV amplification and transmission will be restricted to the hardwood swamps located throughout the central counties of Florida from the western Panhandle south into central South Florida. Without appreciable wetting, it will be extremely difficult for infected mosquitoes to exit these swamp habitats and establish secondary EEEV amplification and transmission foci in habitats adjacent to the swamps.

### **A Brief Update on the Current Assessment of Dengue Transmission Risk in Key West, Florida:**

Key West, Florida remains exceedingly dry (**Figure 4, right frame**). The rainfall deviation from normal for May, 2011 was nearly three inches below normal and continued a trend of below normal rainfall that began in February, 2011 (**Figure 4, third frame from the top**). A one inch rainfall event was recorded in Key West at the end of May and the beginning of June (circled areas on the top two frames of Figure 4). If transovarial transmission is a source of dengue virus overwintering in Key West, than heavy summer rainfall events may serve to flood infected overwintering eggs and produce infected *Aedes aegypti* females.

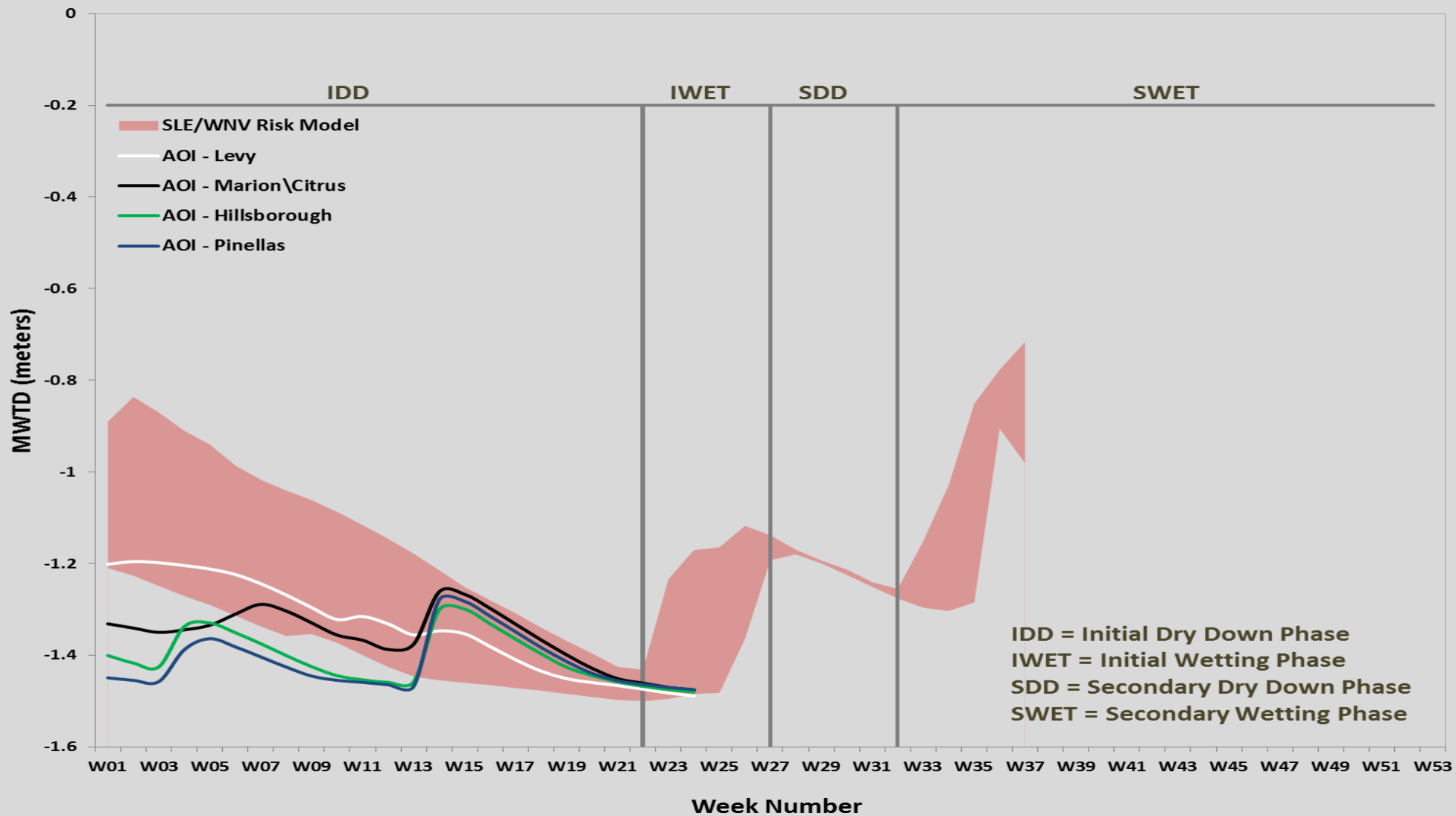


**Figure 1.** The current Modeled Water Table Depth profile reported in peninsula Florida. Areas highlighted in orange have a deep water table and reduced surface water. Areas highlighted in blue have a shallow water table and increased surface water.

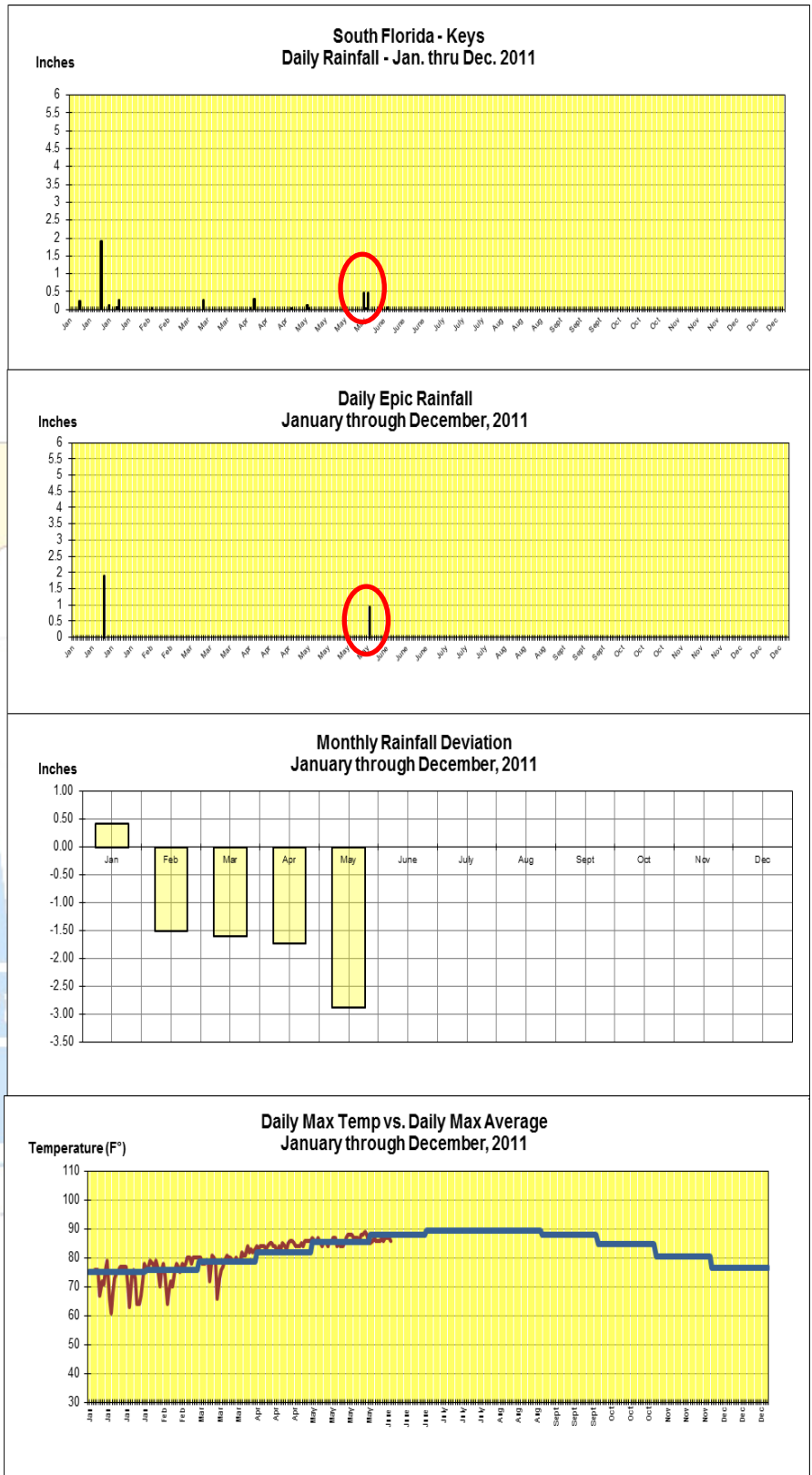
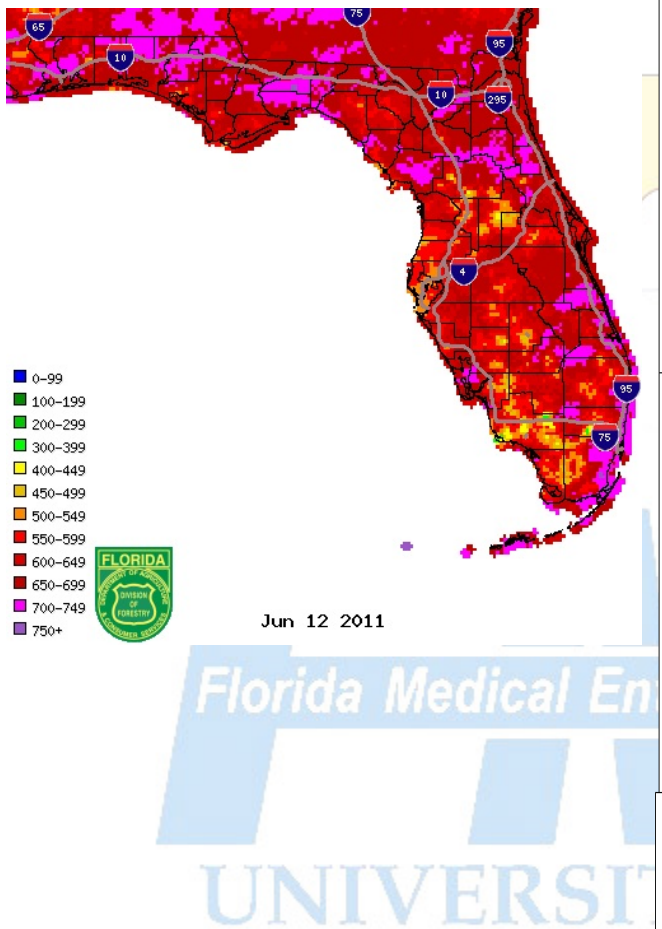


**Figure 2.** Map of peninsular Florida indicating areas at **MEDIUM to HIGH** risk (highlighted in yellow and red) for arboviral (SLEV and WNV) amplification. The **MEDIUM to HIGH** risk areas tracked the FMEL Arboviral Epidemic Risk Model shown in **Figure 3**. Focal arboviral transmission may occur in these **MEDIUM to HIGH** risk areas if bird and mosquito populations were present at sufficient levels to support arboviral amplification during the avian nesting season from April-June.

### Peninsular Florida 2011 MWTD - 06/11/2010 (Week 24)



**Figure 3.** The weekly (averaged) MWTD values collected between **January 1 and June 11, 2011** for the four areas of elevated epidemic risk shown in Figure 2. The real-time MWTD data from each region were compared with the FMEL Arboviral Epidemic Risk Model for SLEV generated from MWTD observations made in Indian River County during the 1977 and 1990 St. Louis encephalitis epidemics. Deviation of real-time MWTD data from the FMEL Arboviral Epidemic Risk Model may reduce the likelihood of SLEV/WNV amplification and transmission.



**Figure 4.** Current rainfall and surface water conditions reported in Florida. The image on the left is the June 12, 2011 KBDI analysis for Florida, including the Florida Keys. The extremely dry conditions throughout South Florida are evident from the data in this image. The image on the right shows the daily rainfall (top frame), the heavy (epic) rainfall events > 2.0 inches (second frame from the top), the monthly rainfall deviations from normal (third frame from the top), and the daily temperature deviations from normal for Key West, Florida. The monthly rainfall deviations show that Key West has been extremely dry from February through the start of June 2011.

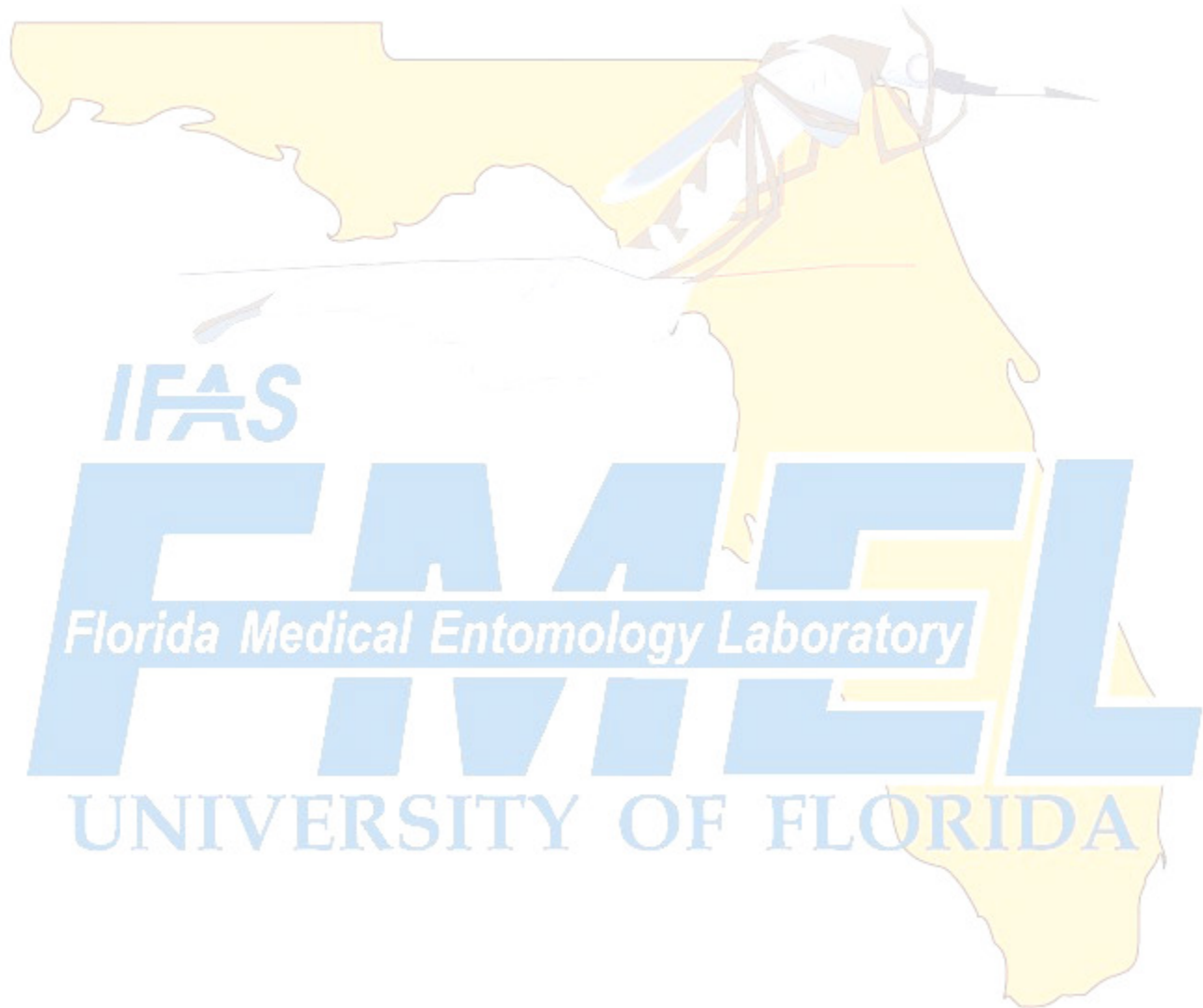
## Acknowledgments

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