

# A COMPARISON OF GULF COASTAL PLAIN ISOLATED WETLANDS: WATER QUALITY AND LARVAL MOSQUITO POPULATIONS IN AGRICULTURAL AND REFERENCE SITES

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**Abstract.** Geographically isolated wetlands, i.e. those surrounded completely by upland landforms and vegetation, are a common feature on the southeastern Coastal Plain. As a group they lack surface connection to perennial streams, rivers, or lakes and thus are not regulated under federal or state statutes. Lack of regulation has resulted in widespread isolated wetland loss or degradation, often without an appreciation for their contributions to the surrounding landscape. We sampled water quality and larval mosquito abundance in 10 reference and 10 agricultural wetlands in rural southwestern Georgia from spring through fall 2009. Generally, agricultural wetlands had higher pH, suspended solids, NO<sub>3</sub>-N, and PO<sub>4</sub>-P concentrations compared to reference sites. During weekly surveys we collected 23 species of larval mosquitoes from reference sites. Of these, 12 species were not observed in agricultural wetlands including *Aedes albopictus*, *Culex peccator*, *Cx. pilosus*, *Cx. quinquefasciatus*, *Cx. salinarius*, *Cx. tarsalis*, *Ochlerotatus atlanticus*, *Oc. canadensis*, *Oc. infirmatus*, *Oc. mitchellae*, *Oc. thibaulti*, and *Oc. triceriatius*. We collected 13 species of larvae from agricultural wetlands including 4 unique species (*Cx. coronator*, *Psorophora columbiae*, *Ps. discolor* and *Ps. horrida*). Species found in both types included *Ae. vexans*, *Anopheles crucians*, *An. punctipennis*, *An. quadrimaculatus*, *Culiseta melanura*, *Cx. erraticus*, *Cx. restuans*, *Cx. territans*, *Oc. sticticus*, *Ps. howardii*, and *Uranotaenia sapphirina*. *Ae. vexans* and *Culex* spp. were the most abundant larvae collected. Agricultural and reference wetlands support diverse larval mosquito populations including potential arbovirus vectors, however there has been little systematic sampling in rural areas of the Gulf Coastal Plain.