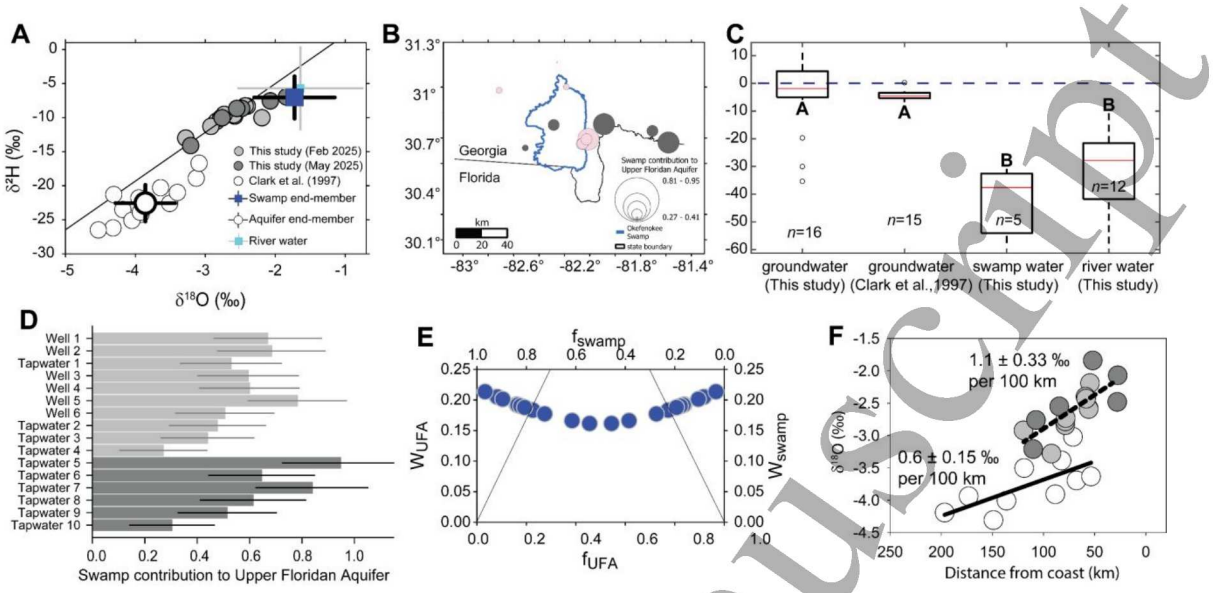

Figure 2. Endmember mixing results. (A) $\delta^{18}O$- $\delta^{2}H$ crossplot of UFA groundwater samples from Clark et al. (1997; *n=15*) and this study (*n*=16); also shown are aquifer and swamp endmember mean values (error bars represent one standard deviation) and river water and LMWL. **(B)** Dots map of swamp water contributions to UFA samples collected in this study; bubble size denotes the fraction of swamp water contribution to UFA. **(C)** LCE box plots of UFA groundwater from this study, Clark et al. (1997), swamp water and river water; boxplots that are not connected by the same letter are significantly different (using Steel-Dwass nonparametric all-pairs comparison, $p<0.05$). **(D)** Bar plot of swamp water contributions to UFA samples collected in this study; the error bars represent the calculated uncertainties using Eq. (4). **(E)** Calculated uncertainty *W* in fractions of swamp water (f_{swamp}) and UFA (f_{UFA}) contributions to UFA samples collected in this study (following Genereux, 1998); the concave up curve shows that the lowest uncertainties are associated with increasingly equal proportions of swamp water and UFA water contributions to UFA samples collected in this study. **(F)** Crossplot of $\delta^{18}O$ and distance from the coast; the open circles are from Clark et al. (1997); the grey-filled circles are from this study. The trendlines represent inland gradients of $\delta^{18}O$ from Clark et al. (1997) (0.60 ±0.15 ‰ per 100 km) and this study (1.10 ±0.33 ‰ per 100 km).

From the isotopic mixing analysis (**Figure 2B**), we estimate that the fraction of swamp-origin water in the UFA beneath the Okefenokee ranges from roughly 0.27 to 0.95 in our 2025 samples. The LCE values of UFA water from this study and from Clark et al. (1997) are significantly different from the LCE values of swamp and river water (**Figure 2C**) (Steel-Dwass nonparametric all-pairs comparison, $p<0.05$). In all but two UFA samples within the perimeter of the swamp (**Figure 2D**), the groundwater compositions