

flows and levels. The sensitivity analysis included calculation of “traditional” parameter sensitivities as well as calculation of composite-scaled sensitivities (Hill and Tiedeman, 2007). Each of these analyses is discussed below. It should also be noted that parameter sensitivities are a key component of parameter and prediction uncertainty analysis.

Traditional Sensitivity Analysis

The traditional sensitivity analysis evaluated changes in the average and standard deviation of groundwater level, baseflow and spring flow residuals in response to changes to the parameter groups or sets of parameter groups. These changes were quantified by increasing and decreasing the calibrated parameter values for a given parameter group or set of parameter groups, running the model, and calculating new statistics for the groundwater level, baseflow and spring-flow residuals. Changes in parameter values were limited to their respective upper or lower bounds as specified in the model calibration. To implement the traditional sensitivity analysis, parameters were organized into ‘traditional sensitivity analysis parameter sets’ (parameter sets). In some cases, these parameter sets represented collections of PEST parameter groups, while in other cases they only contained one PEST parameter group (Table 7-1).

Table 7-1. Traditional Sensitivity Analysis Parameter Sets

Parameter Set ID	Description
kx	Horizontal hydraulic conductivity pilot points in Layers 1, 3, 5, and 7. Includes PEST parameter groups k1x, k3x, k5x, k7x.
kz	Vertical hydraulic conductivity pilot points in Layers 2, 4, and 6. Includes PEST parameter groups k2z, k4z, k6z.
k3xz	Vertical hydraulic conductivity multipliers in Layers 2, 4, and 5 where the middle confining unit of the Floridan aquifer system is assumed to be absent. Includes PEST parameter groups k2zk3z, k4zk3z, k5xk3x.
vanis	Vertical anisotropy for each Layer 1 through 7. Includes PEST parameter groups vanis1 through vanis7.
lcm	Lakebed conductance multipliers.
rcm	Riverbed conductance multipliers.
sc	Spring conductance multipliers for each spring.
rechmul	Recharge multipliers.
evtrmul	Maximum saturated evapotranspiration rate multipliers.
lkzmul	Vertical hydraulic conductivity conductance multipliers beneath lakes.
ghb	GHB source heads.