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Regional and Local Scale Groundwater Modeling of the Chicot Aquifer System.

Groundwater modeling is a useful tool for evaluating the ability of an aquifer system to support groundwater withdrawals over an extended period of time. As computational power increases, there is a trend towards more detailed and higher-resolution models. However, these models require more detailed hydrological data and do not necessarily provide information on the regional groundwater system. In this presentation, we will present results from our ongoing groundwater modeling study of the Chicot Aquifer in southwestern Louisiana. Our approach is to use a "low" resolution groundwater model to simulate regional flow in the Chicot aquifer and to provide boundary conditions for parish- or township-scale models. A technique, known as Telescopic Mesh Refinement, to create these higher-resolution inset models. This approach allows us to better understand the many processes that impact the groundwater flow dynamics, including changes in the regional flow, hydrogeological heterogeneities, recharge rates, and pumping locations and rates.