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## Providing Direct Access to Simulation Models for Water Managers

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## Providing Direct Access to Simulation Models for Water Managers

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**Abstract:** Important water management decisions are made every day. Too often these decisions are made with an inadequate understanding of the system being managed, making the outcome of these decisions highly uncertain. Many water management decisions, and most groundwater management decisions, can benefit greatly from the use of simulation models. While every model of an environmental system is inherently uncertain, all reasonable models can be extremely useful if the water manager has the ability to conduct many scenario evaluations. However, water managers do not typically have the high degree of technical training needed to directly utilize their existing water models. Furthermore, the process of employing trained scientists to conduct model runs for them is expensive and time consuming, so these models tend to be extremely under-utilized. This presentation will present contrasting case studies in which model scenarios were either abundant or scarce, and the resulting outcomes of management decisions that were made. For the situation that allowed for frequent and numerous model simulations, uncertainty in the outcome of the water management decisions was greatly reduced, as evidenced by the successful outcome. Another water management decision based on a single model run turned out to be incorrect, highlighting the uncertainty inherent in that decision. The case is made for empowering water managers to be able to directly interact with their simulation models, creating an environment wherein water managers are comfortable making decisions due to the sense that uncertainty has been minimized. As a result, a platform has been developed that provides this experience, creating a true paradigm shift in water management.

**Keywords:** Groundwater Modeling, Water Managers