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The recent modeling focus has been on predicting flow for the river reaches as affected by runoff from rainfall events. The model development is using Better Assessment Science Integrating point and Nonpoint Sources (BASINS 4.0) which facilitates the interface between GIS and hydrological and water quality models. One of the most commonly used modules in BASINS is Hydrological Simulation Program-Fortran (HSPF) which was also developed by EPA. It is used to simulate runoff and non-point sources from a watershed and to simulate the fate and transport phenomena of the constituents in a one dimensional model. This type of model is capable of simulating the loading from different land use categories and the receiving water body at the same time, with some limitations. We currently have a preliminary calibration of the model capable of predicting the total runoff flow for 2008 and 2009

The model can be divided into two main parts: flow simulation and water quality simulation. Flow simulation requires data including river flow measurements, points of significant difference of flow due to discharge into the river or withdraw out from the river (such as tributary arroyos or diversions), land use, soil, topography and metrological data. The model estimates the amount of flow discharges from each land use category, and divides it into surface flow, interflow, and base flow components. We currently have a preliminary calibration of the model capable of predicting the total runoff flow for 2008 and 2009 with r^2 greater than 95 percent, and we are currently investigating the partitioning into flow components. Water quality simulation requires output of flow simulation and point sources of *E. coli* such as waste water treatment plant discharge, septic tanks and non-point sources such as distribution and density of wildlife and distribution and numbers of agricultural animals.

Two routing sampling runs have been performed by EBID in 2011, with a third underway on March 31. Results are given below. Releases from Caballo Reservoir began in early March.

