Modeling the Future of Water Resources in the South Platte:

South Platte Regional Assessment Tool

General:	**Purpose:**	**Details:**
Competition for water has always been a part of life in the South Platte basin, as it has been throughout the arid West. A rapidly expanding population along the Front Range urban corridor guarantees increasing pressure on South Platte water resources in the foreseeable future. Variability in climate, and perhaps climate change compounds the challenge of satisfying competing demands because climate determines the supply of water. As part of the Western Water Assessment (WWA) and its mission to consider climate variability research in conjunction with water resources management, researchers from the University of Colorado have recently developed a water model called the South Platte Regional Assessment Tool (SPRAT).	Predicting the future adequacy of water supplies in the South Platte basin depends not only on projections of population growth and land use change, but also on a host of assumptions about water management practices and climate conditions. Only a water allocation model like SPRAT can capture the complex interplay of different uses at different times and in different places. SPRAT assesses the ***relative importance*** of various stresses on future water budgets, in order to provide a better understanding of vulnerability and the potential for adaptation within the basin. The model is best suited for large-scale, reconnaissance level investigations, and specifically, as a tool for evaluating future water management ***scenarios*** in which climate, population, land use, and even infrastructure may be varied.	SPRAT is a network model that tracks all major facets of water supplies (inputs), demands, storage, allocation, use and flow within the South Platte basin. The model achieves its reconnaissance purpose by aggregating elements of supply, demand, and infrastructure. SPRAT divides the basin geographically into four sub-regions (northern, central, southern, and downstream) and three demand sectors (M&I, agricultural, and environmental quality). This aggregation takes many forms: e.g., multiple small reservoirs are operated in the model as if they formed one large reservoir, several water rights of similar date and purpose are combined into one right, demands from several cities are aggregated into one M&I demand node, and so on. The use of a monthly time step simplifies water movements. These design characteristics reflect the intended uses of SPRAT.

See what SPRAT can do for you!

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or visit us on the web at http://wwa.colorado.edu/products/sprat/

Western Water Assessment

NOAA

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