Improving Water Demand Forecasting in the Middle Rio Grande River Basin

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Objectives

- To Validate and Compare U.S. Bureau of Reclamation's (Reclamation) AWARDS ET Toolbox Decision Support System (DSS)+ with
  - in-situ measurements,
  - modeled moisture and energy budget output from the Land Information Systems (LIS) environment satellite-derived ET, and
  - satellite-derived ET

- Goal :: To Improve Water Consumption and Loss Estimates for the Middle Rio Grande River and provide better tested and improved products into Reclamation DSSs – RiverWare and URGWOM

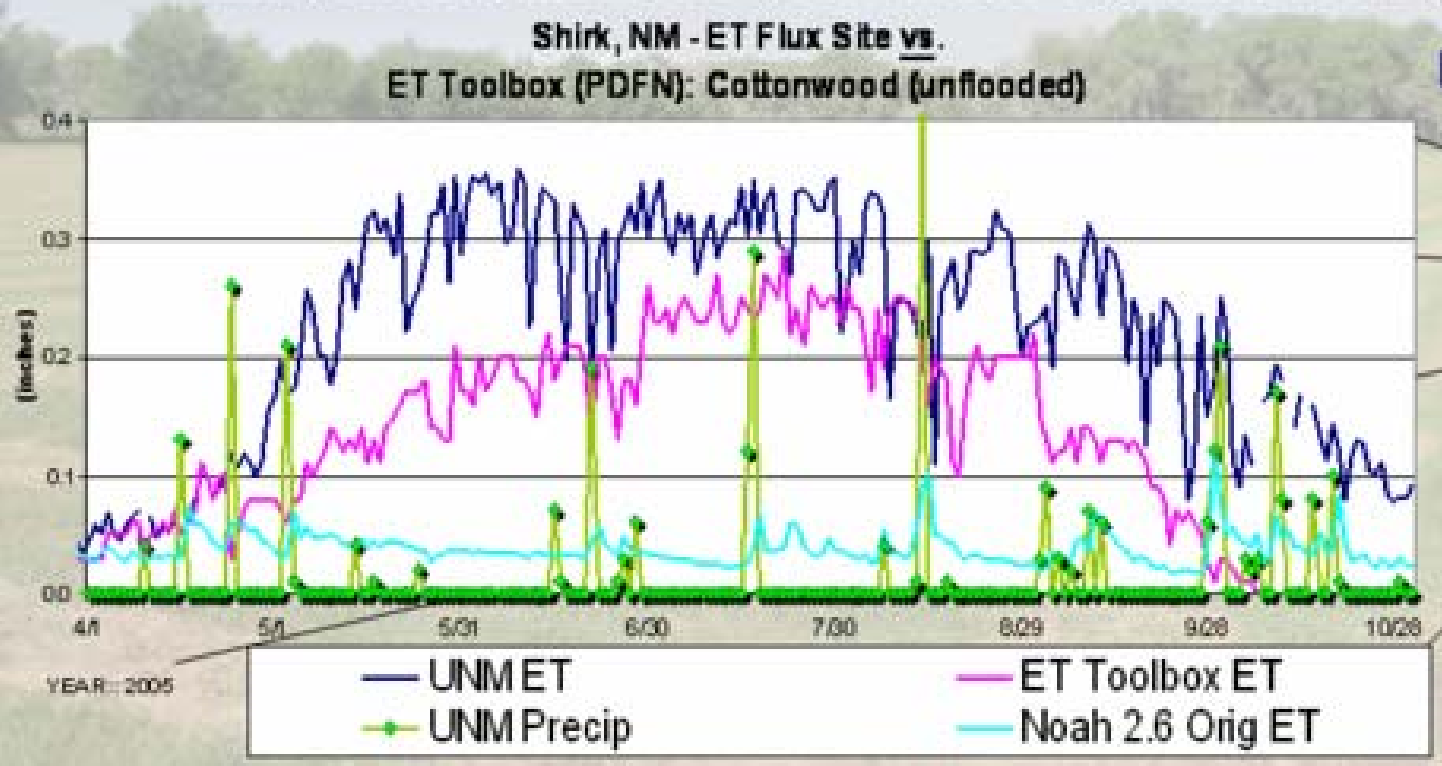
+ Brower, A., 2004: ET Toolbox Evaporation Toolbox for the Middle Rio Grande – A Water Resources Decision Support Tool. Final Draft. Bureau of Reclamation, U.S. Department of Interior, Denver Colorado.

Validation of LIS and AWARDS ET Toolbox

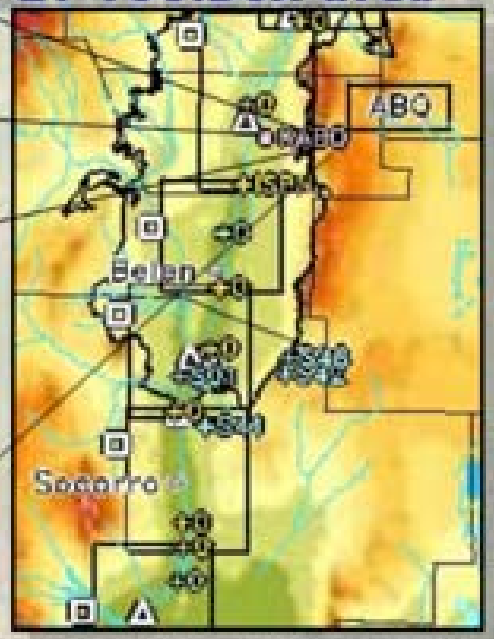
A. The ET Toolbox :: 1) land cover/use information within selected Hydrologic Rainfall Analysis Project (HRAP) grid cells; 2) NCEP Eta 12km meteorological forecasts; and 3) Doppler Radar products as input forcings, and a 4) modified Penman equation and derived crop coefficients (Kc) to estimate ET for the different land cover types.

B. LIS :: 1) Includes AWARDS ET Toolbox land cover classification and meteorological forcing datasets; 2) NLDAS Forcing; 3) MODIS-derived land parameters.

➔ **Validated against in-situ eddy covariance flux and other meteorological tower data (*Cleverly et al., 2006) for various vegetated areas (e.g., riparian, etc.)**



Example of AWARDS ET Toolbox area



* Cleverly, J.R., J.R. Thibault, and C.N. Dahm (2006), Groundwater and Flux Database, http://bosque.unm.edu/~cleverly/bosque/, University of New Mexico, Albuquerque, NM.