CALIBRATION PACKAGE

SAN LUIS CREEK RESPONSE AREA

Stream Reach: Crestone (Crestone Creek)

Ratio Method Response Function

Grouping Based On Streamflow of North Crestone Creek Near Crestone Gage
Dry: <6,500 acre-feet for January through December
Average: 6,500-9,400 acre-feet for January through December
Wet: >9,400 acre-feet for January through December

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Figure 1 **RGDSS Groundwater Model Net Stream Depletions Used to Generate Response Functions , One Curve Per Year for 2001 -2010**
These are the monthly RGDSS Groundwater Model output for the specified year in the model.

Figure 2 **Response Functions for Dry, Average, and Wet Years - Net Stream Depletions as a Percent of Net Groundwater Consumptive Use**[1]
Response functions are generated from the information shown in Figure 1, for example, in a dry year there are three steps to generate the dry year response function for January. The first step is to average all of the dry year monthly stream depletions for January. The next step is to average the annual Net Groundwater Consumptive Use for the last 10 years for each dry year in the analysis. The third step is to divide the value in the first step by the value in the second step. This process is repeated for all 12 months to generate a dry response curve. The same procedure is used to generate the response function for average and wet years. Finally all the response functions are scaled by scaling factor so that the volumes from the response functions are a match to the volumes from the RGDSS groundwater model as defined using the slope parameter in Figure 3D.

Figure 3 A-D **Calibration Graphs**
A. Monthly Net Stream Depletion Comparison (acre-feet)
B. Annual Net Stream Depletion Comparison (acre-feet)
C. Cumulative Net Stream Depletion Comparison (acre-feet)
D. Response Function Versus RGDSS Groundwater Model Annual Net Stream Depletions for 2001-2010

[1] "Net Groundwater Consumptive Use" means the groundwater consumed by the operations of one or more Wells, and represents the difference between groundwater withdrawals less any return flow to the hydrogeologic system within Water Division No. 3.

Figure 1: RGDSS Groundwater Model Net Stream Depletions Used to Generate Response Functions, One Curve Per Year for 2001 -2010

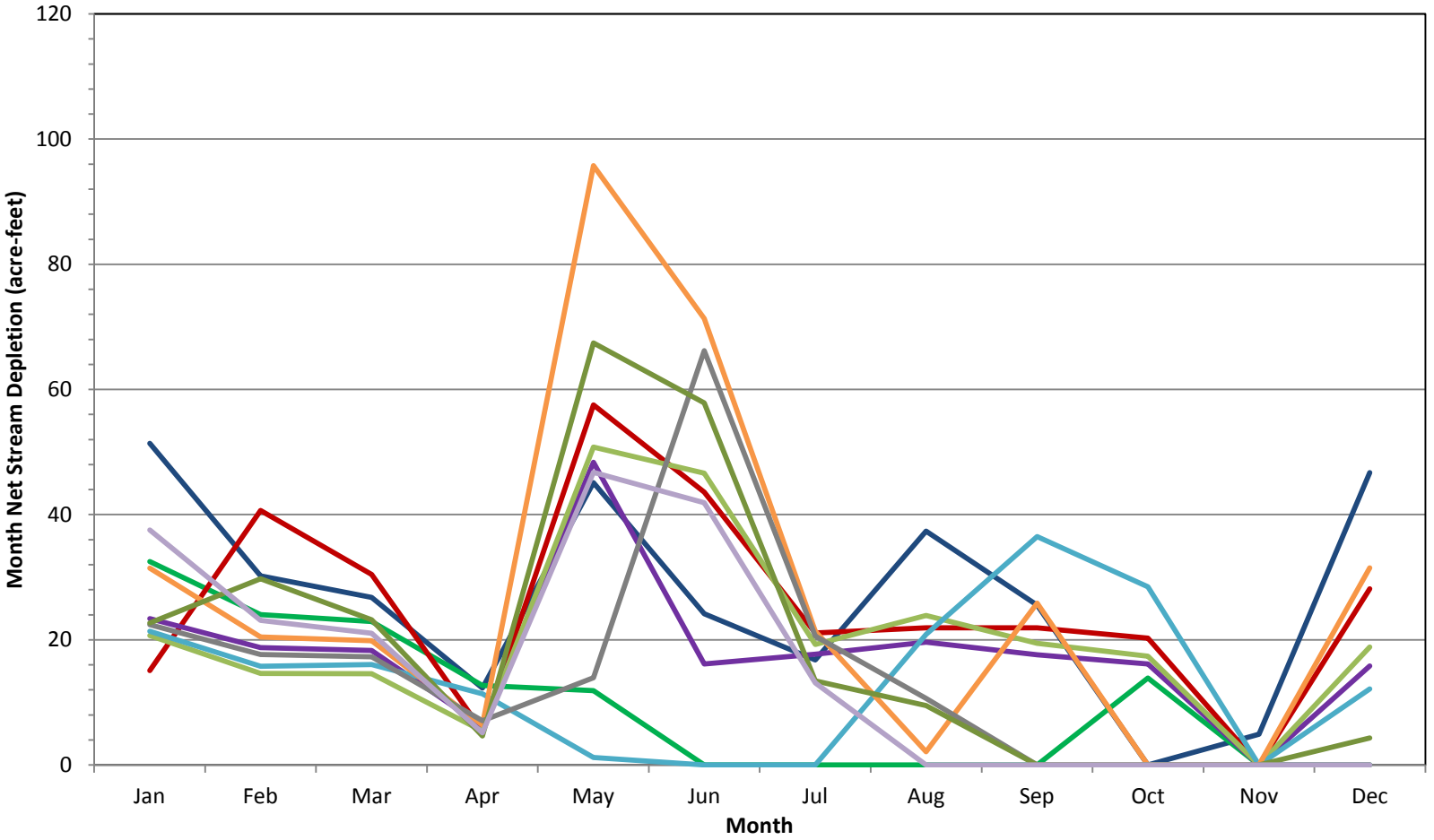


Figure 2: Response Functions for Dry, Average, and Wet Years - Net Stream Depletions as a Percent of Net Groundwater Consumptive Use

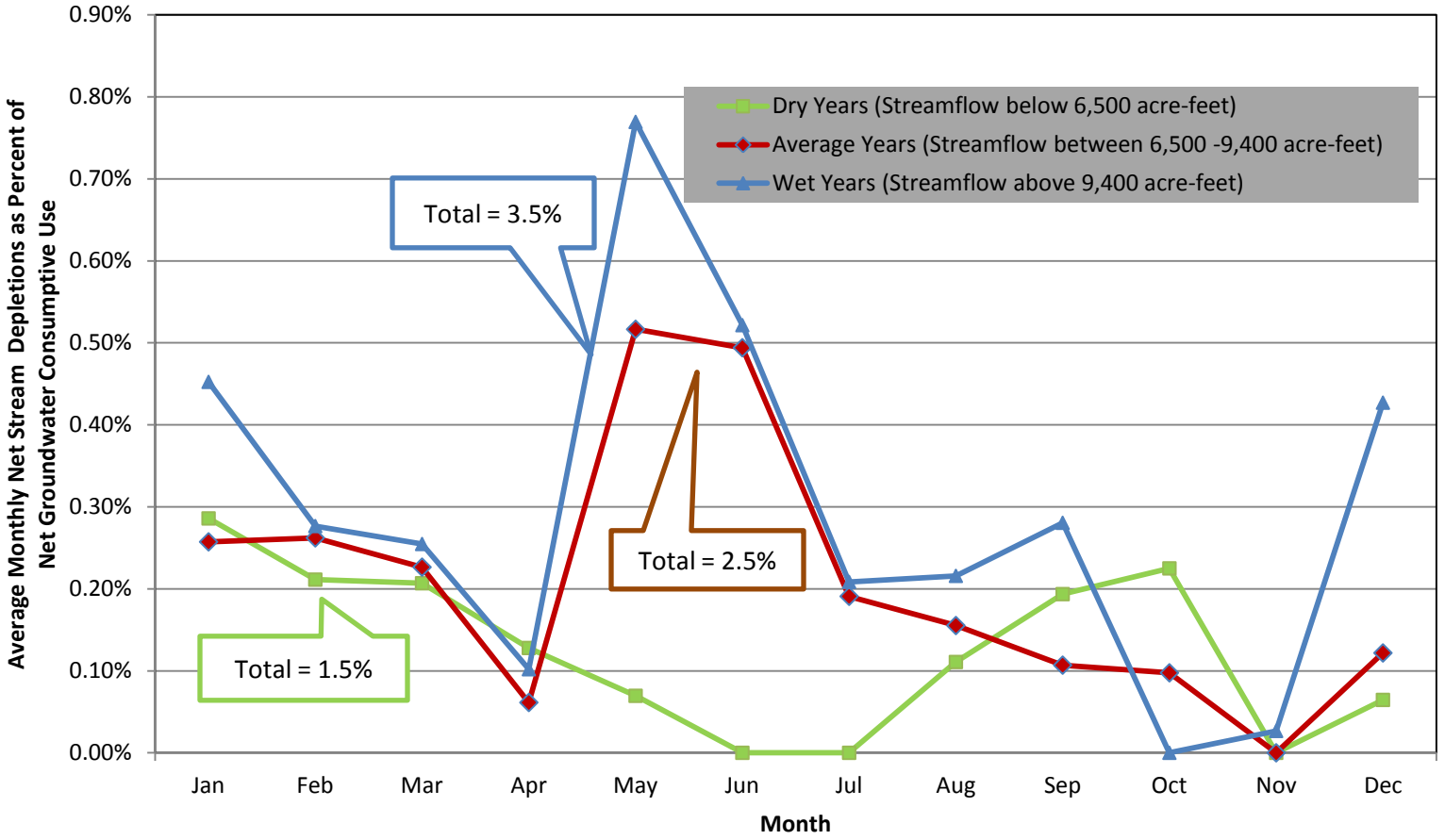


Figure 3A: Monthly Net Stream Depletion Comparison (acre-feet)

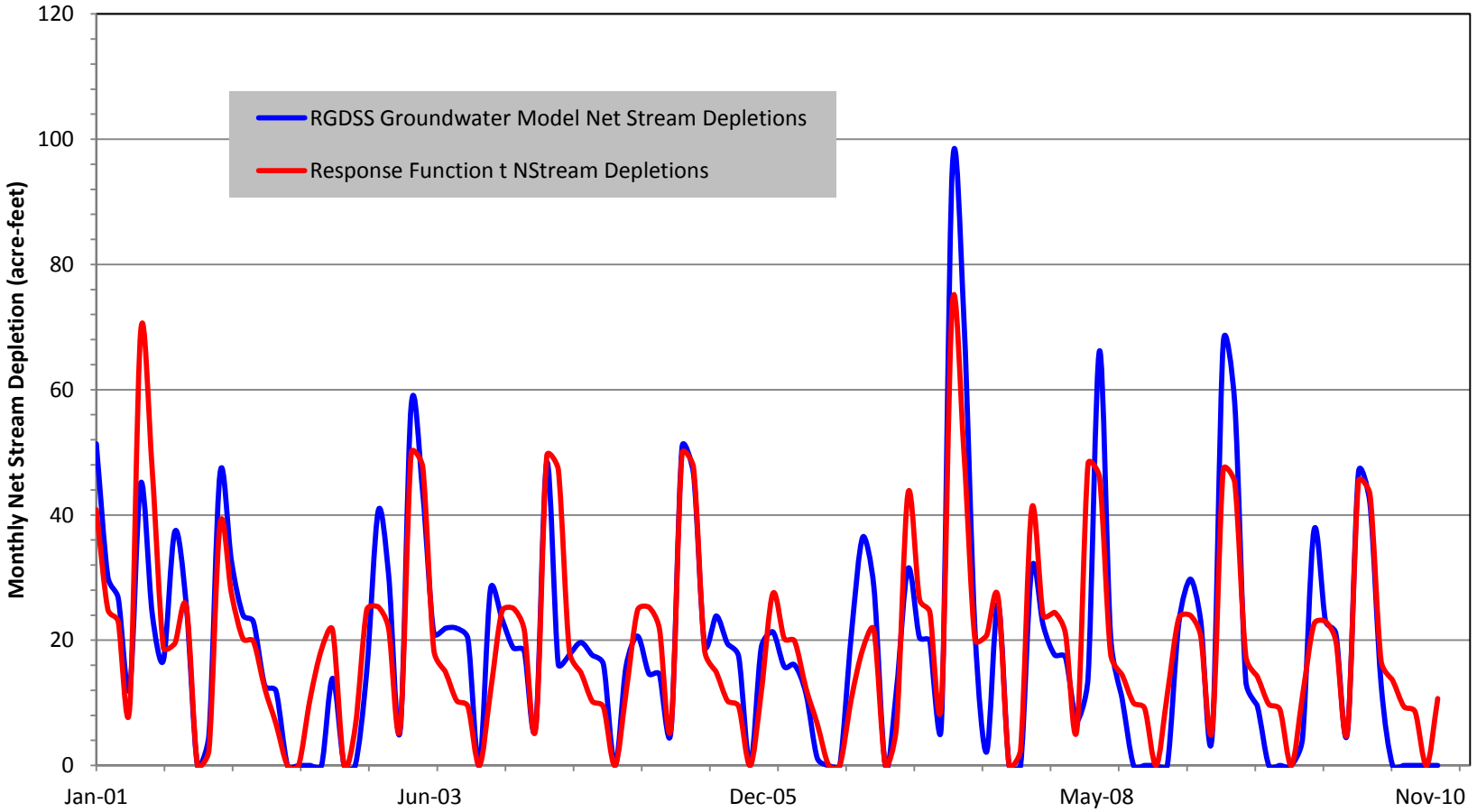


Figure 3B: Annual Net Stream Depletion Comparison (acre-feet)

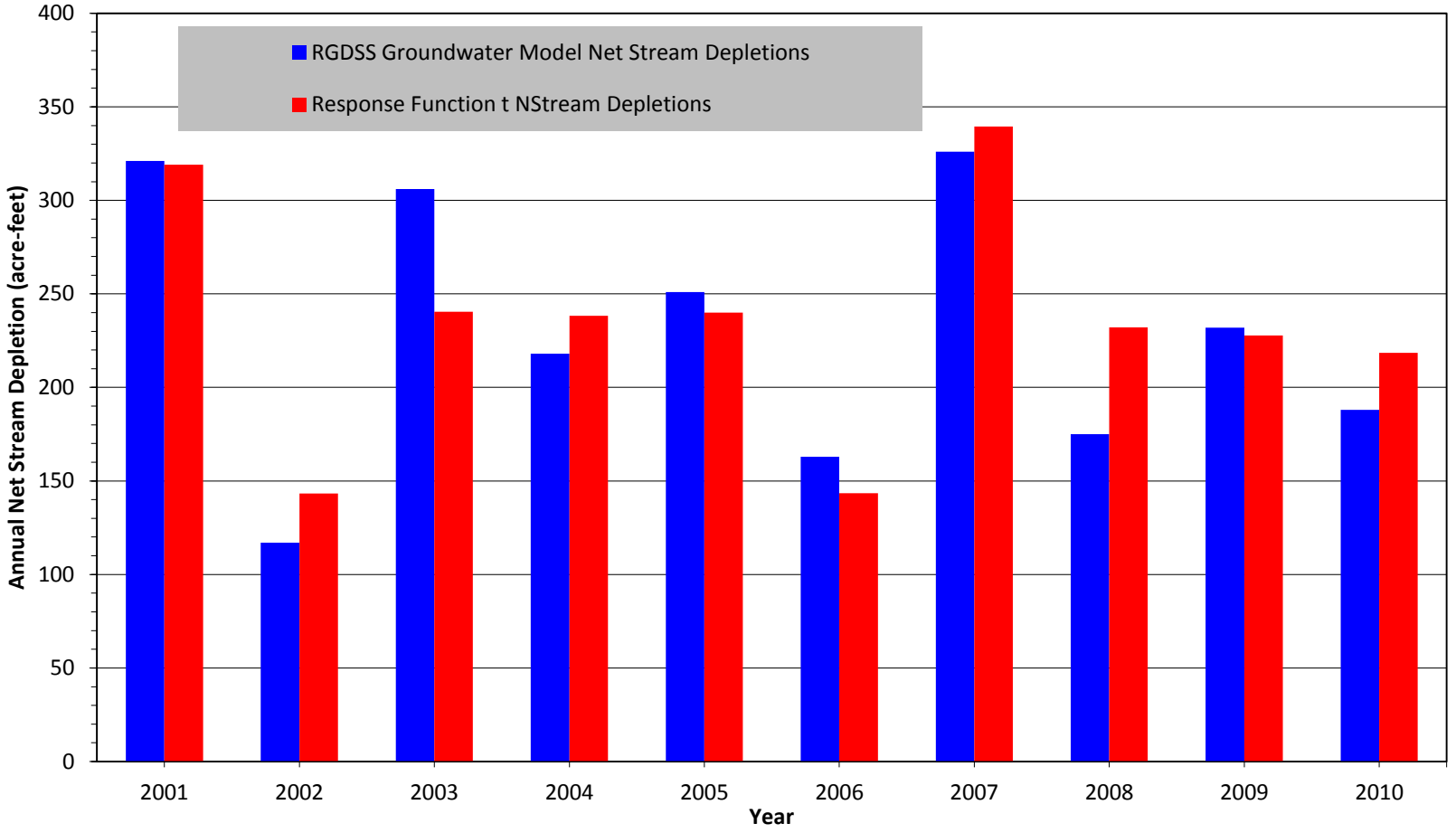


Figure 3C: Cumulative Net Stream Depletions Comparison (acre-feet)

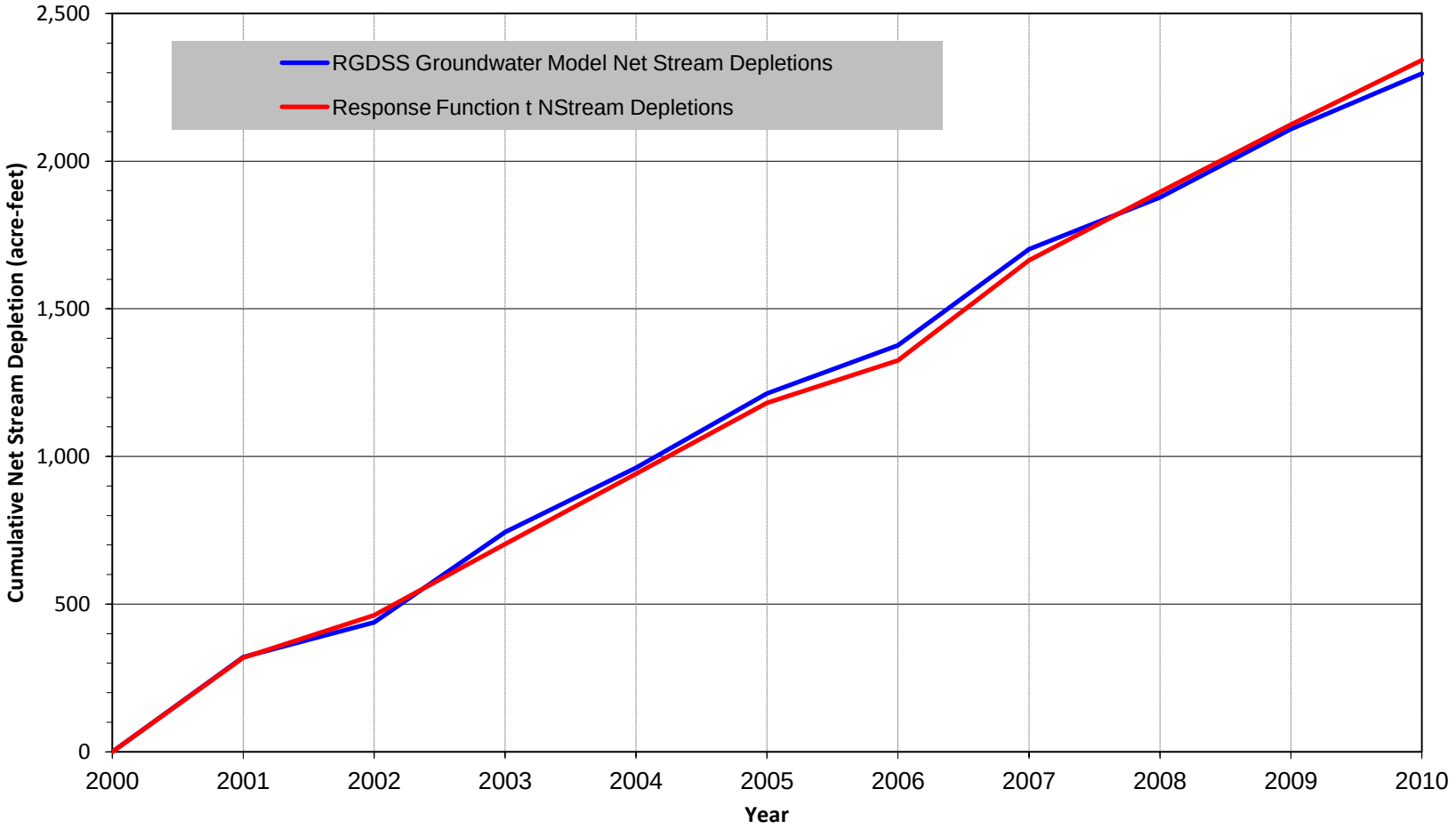


Figure 3D: Response Function Versus RGDSS Groundwater Model Annual Net Stream Depletions for 2001-2010

