

Figure 1 shows the estimated mean daily flows for various exceedence percentages at the TNC Boundary gage site. Figure 2 is the estimate mean daily flows for a typical low, medium and high flow year and the TNC-measured flows at the Boundary site. After looking at the data more, I realized that the TNC measurements have been taken at low to moderate flows and the regression equation we discussed earlier doesn't make sense when applied outside the range of the TNC measurements. (It significantly underestimates high flows). I used the regional regression equations for Southern Arizona from the USGS National Stream System database to estimate the difference between the expected peak discharge at the Boundary site (drainage area ~ 387 mi²) and the USGS gage (drainage area~537 mi²) for the 2- through 100-year storms as the basis for adjusting the higher flows. These relationships indicated that during storm events, the peak flow at the Boundary site would typically be 85% to 90 percent of the peak at the USGS gage.

I've also included a plot of the reported mean daily discharges for 1992, 1996 and 2002 at the USGS gage for comparison with the typical year plot for Boundary Creek (Figure 3). (The one I provided earlier included years prior to the TNC measurement program.)





