

## **Determination of baseflow inputs in riparian areas along a North American Monsoon gradient**

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The North American Monsoon is a critical climatological phenomenon in the in the Northwest of Mexico and Southwest of the United States. Little is known however of how important this climate phenomenon is to long term ground water resources in this region and such information would be useful for water management institutions. One of the better-studied basins in this region is the San Pedro Basin, in the North American side. Using geochemical and isotopic mixing techniques the waters sources of the San Pedro have been shown to include a significant fraction of monsoon season flood water. For this study we are looking to extend this understanding to other basins in the area. We are analyzing two other basins, one more monsoon dominated (San Miguel 29° 29' 0" N, 110° 45' 0" W) and one less monsoon dominated (Verde 33°32'48"N, 111°39'45"W). The sampling period is planned to be two years of data, at this point we already have completed the first one. These data show stream flow in these basins follows the climatological pattern with the San Miguel more enriched in <sup>18</sup>O and D; while samples from the Verde are more depleted. The isotopic data for the San Pedro Basin has a larger isotopic spread, due to more data availability and possibly due to more diverse moisture sources within the basin. Comparing surface water samples to groundwater data indicates that the San Miguel derives flow from summer storm events whereas this is not the case in the Verde.

**FORECASTING AND QUANTITATIVE PRECIPITATION ESTIMATION**