



## **Temporal changes in nutrient content of runoff within the Jornada Basin, New Mexico**

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Within the Jornada Basin of southern New Mexico summer convective rainstorms account for about 60% of annual rainfall, but for almost all runoff. The summer rainy season typically lasts for about three months from early July to late September. Consequently, it can be conjectured that runoff at the start of the rainy season will have nutrient content enriched by atmospheric dryfall and wetfall over the intervening nine months, and that successive depletion of this store will be reflected in runoff later in the rainy season. To investigate this conjecture, we have examined the nutrient content in runoff sampled at 96 locations within the Jornada Basin. These samples come from four vegetation communities: grass, creosotebush, mequite and tarbush. Analysis shows that, whereas the  $\text{NH}_4\text{-N}$  content in runoff shows marked depletion as the rainy season progresses, the DON and total P contents show a much smaller rate of decline, and  $\text{NO}_3\text{-N}$  shows no evidence of depletion at all. These results are discussed in terms of their implications for ecotones and processes of desertification, and for associated modelling of ecotones.