Uranium and Heavy Metals in Macroinvertebrates in the Santa Fe River on the Cochiti Reservation

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PURPOSE OF STUDY

The retired La Bajada uranium/copper mine increases uranium and other heavy metal concentrations in downstream waters. While the New Mexico Environment Department says that the Cochiti portion of the river meets EPA water quality standards for radionuclides, their study did not include biota. The researchers will investigate accumulation and biomagnification of uranium and some heavy metals within macroinvertebrate feeding guilds to determine the effect of uranium mining on aquatic macroinvertebrate feed groups.

STUDY UNDERWAY

- → Macroinvertebrates, sediment, and water will be collected from selected sites in the Santa Fe River and analyzed for uranium and metals using the ICP-MS method.
- → Three sampling sites will be used: a control site upstream from the mine, a catchment basin where the river meets the Cochiti dam, and a site downstream where the river resurfaces after flowing under the dam through the valley alluvium.

BENEFITS

- → This study will determine the fate of contaminants transported by the Santa Fe River into the catchment basin and the interaction of the contaminants with surrounding geology.
- → Because this study uses macroinvertebrates instead of surface or groundwater sampling as an indicator, it could show useful and different results from previous studies.

Carlos Herrera standing in a pool habitat collecting stream substrate samples. Carlos grew up on the Cochiti reservation and in Santa Fe. He hopes to graduate with a master's degree in natural resource management, with a focus in water quality, in the fall of 2007.

NMHU faculty and students who have been helping with the experiment. The team collected and packaged the invertebrate samples for future analysis.