

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: The Effects Of Plate Deformation On Water-Levels At Devil's Hole,
Death Valley National Park

Type of Project: Research

Funding Agency: National Park Service

Other Partners/Cooperators: University of Colorado at Boulder and Denver

Effective Dates: 2/1/2005 - 2/1/2007

Funding Amount: \$13,053.00

Investigators and Agency Representative:

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Project Abstract:

Declining water levels and pupfish populations, coupled with increased ground-water development, are of great concern to Death Valley National Park. Ongoing research is focused on determining what effect existing ground water development has had on water levels at Devil's Hole, and to develop the technical tools needed to evaluate the risk of future impacts to water resources due to proposed ground-water development. Inherent in this research is the evaluation of possible alternative causes of water level decline, such as seismic events, long term climate change, and crustal deformation. Identification and evaluation of the stresses on water levels is important to the interpretation of the long term water level record and the overall understanding of the hydrogeologic setting at Devil's Hole.

Little is known regarding how plate tectonic related rock deformation affects the water level in Devils Hole. Before an extensive study is launched to thoroughly examine the relationship between tectonic deformation and water level, it would be cost effective to conduct a preliminary study. The objective of this study is to conduct a study that will provide first-order estimates on the possible range of water level change in Devils Hole due to tectonic deformation, on the basis of available tectonic and hydrogeologic data. The results from the preliminary investigation may also prove valuable for planning future studies and data collection.

Outcomes with Completion Dates:

1. First Progress Report due May 31, 2005.
2. Second Progress Report due December 31, 2005.
3. Completion Report due May 31, 2006.
4. Draft paper submitted to a technical journal due December 31, 2006.

Keywords: groundwater, pupfish, plate tectonics, tectonic deformation, WASO-WRD,
University of Colorado - Boulder, Death Valley National Park, Devil's Hole

For Administrative Use Only:

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: