

## **Final Technical Report for USGS/NEHRP #06HQAG0143 (UofO #280491)**

Project Title: Data Processing for Paleoseismology of the San Andreas fault

PI: Ray Weldon, University of Oregon

Project Period: 7/15/06 – 1/14/07

### **INTRODUCTION**

The purpose of this work was to rapidly complete the processing of field data collected at the Coachella paleoseismic site on the southernmost San Andreas fault, so that we could interpret the data and publish it as soon as possible. This work included rectifying all of the photographs taken of the walls of the excavations, assembling them into mosaics, converting analog line work drawn in the field into digital lines on the rectified photo-mosaics, and interpreting the results.

### **RESULTS**

All of the photographs were rectified, mosaiced, and all field annotations were digitized and added to the photo-mosaics. A summary figure of the fault zone from the critical central trench is included at the end of this report, with numbered arrows indicating the location of earthquake evidence. Detailed examples of portions of annotated photo-mosaics including evidence for paleo-earthquakes are also included below the summary figure. These data were interpreted and published (or are currently in review) as listed below. A more complete description of the overall results of the Coachella site investigations and the timing of paleo-earthquakes can be found in Final Technical Report for USGS/ NEHRP grant #07HQGR0019.

### **PUBLICATIONS**

Philibosian, B., T. Fumal, and R. Weldon, *in review*, San Andreas Fault Earthquake Chronology and Lake Cahuilla History at Coachella, California, Bull. Seismological Society of America.

Philibosian, B., Fumal, T., Kendrick, K., Weldon, R., Scharer, K., Bemis, S., Burgette, R., and Wisely, B., 2008, Photomosaics and logs of trenches on the San Andreas fault near Coachella, California, *U.S. Geological Survey Open-File Report 2008-xxxx*

Philibosian, B., Weldon, R., Kendrick, K., Scharer, K., Bemis, S., Burgette, R., and Wisely, B., 2007, Recurrence of ground rupturing earthquakes on the southernmost San Andreas fault at Coachella, CA, *SCEC Annual Meeting, Proceedings and Abstracts, Vol XVII*.

Philibosian, B., 2007, Paleoseismology of the Southern San Andreas Fault at Coachella, California, MS Thesis, Department of Geological Sciences, University of Oregon, Eugene, OR, 75 p.

Philibosian, B., T. Fumal, K. Kendrick, and R. Weldon, 2006a, Paleoseismic investigation of the San Andreas fault at Coachella, California, *Eos Trans. AGU 87*, no.52, Fall Meet. Suppl., T21C-0438.

Philibosian, B., T. Fumal, K. Kendrick, R. Weldon, S. Bemis, R. Burgette, and K. Scharer, 2006b, Paleoseismic investigation of the San Andreas fault at Coachella, California, *2006 SCEC Annual Meeting Proceedings XVI* 143-144.

