

2013 SVP Preparator's posters abstracts

USING PARTNERSHIPS AND VOLUNTEERS TO MANAGE MIOCENE-AGED (HEMINGFORDIAN-BARSTOVIAN NALMA) PALEONTOLOGICAL RESOURCES ON BLM LANDS IN THE ESPANOLA BASIN OF NEW MEXICO

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The New Mexico Bureau of Land Management (BLM) and the New Mexico Museum of Natural History and Science (NMMNHS) have entered into a formal partnership to manage paleontological resources on public lands in New Mexico. Working through the NMMNHS, volunteer members of the New Mexico Friends of Paleontology have played a key role in paleontological site monitoring on these public lands. This partnership has been most successful through work within the Miocene-aged Tesuque Formation of the Santa Fe Group within the Espanola Basin of northern New Mexico.

BLM lands in this area, the El Palacio Special Recreation Management Area (SRMA) and the El Sombrillo Area of Critical Environmental Concern (ACEC), contain approximately 40 square miles of badlands that were originally recognized for their fossiliferous importance by E.D. Cope. About 50 years later this area was intensively prospected by collectors from the Frick Laboratory of the American Museum of Natural History. The Frick collectors visited this area continuously from 1924 to 1964 and have amassed a large collection of Hemingfordian and Barstovian NALMA vertebrate fossils.

Due to the highly erodible badlands that make up the Santa Fe Group in the Espanola basin paleontological resources are continually eroding away and being destroyed. Through the BLM/NMMNH partnership, new fossil specimens are now being collected on a yearly basis. The collections are permanently housed in the collections at the NMMNH which is the paleontological repository for BLM New Mexico. In the past five years over 150 localities have been identified and collected.

Ongoing scientific studies in the Española basin includes the mammalian biostratigraphy of the Pojoaque and Skull Ridge members of the Tesuque Formation with geologists from the New Mexico Bureau of Geology and Mineral Resources who have been conducting geologic mapping and lithostratigraphic studies of Miocene rocks in this same area. We also have discovered several new microvertebrate sites in the Pojoaque Member that have produced a diverse late Barstovian small mammalian fauna.

USE OF SILICONE CAULK AS A SEPARATOR FOR FIELD JACKETS

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In January 2012, the Field Museum teamed up with Universidad Maimónides, Buenos Aires and the Museo Ernesto Bachmann, Villa El Chocón and conducted a fieldwork to explore a terrestrial deposit from the Cretaceous era in the Neuquén province of Argentina. The team discovered a bone bed with partially articulated skeletons of at least four large dinosaurs lying between sandstone and mudstone. The sandstone is weather resistant and formed overhang ledges as the mudstone eroded away. The

underside of the sandstone ledges contained fossil fragments and impressions that were exposed and ready to be collected. The traditional method of using wetted toilet paper as a separator was ineffective because the toilet paper would not adhere to the underside of the overhang. The team used silicone caulk as a separator because it would adhere to the underside of the overhang. The team found that a liberal application of consolidants and mold release agent prior to brushing on silicone caulk resulted in superb preservation of the fossil fragments and impressions and resulted in excellent separation between the specimen and matrix and the silicone caulk. The use of silicone caulk as a separator also proved to be effective for a specimen left in situ for future excavation because the silicone caulk created an anoxic environment, which is more resistant to weathering and erosion.