

SEDIMENTOLOGY, STRATIGRAPHY, AND PROVENANCE OF UPPER CRETACEOUS STRATA OF THE SEVIER FORELAND BASIN, SOUTHERN NEW MEXICO

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The Cordilleran foreland basin is located in the western part of North America and is one of the most widely studied foreland basin systems in the Western Hemisphere. Previous studies have focused on constraining the sedimentology and provenance from Upper Cretaceous strata of the Sevier foreland basin in the northern parts of the Cordillera, however little is known about how the southernmost, distal parts of the foreland system evolved. New sedimentologic, stratigraphic, and provenance data from Late Cretaceous (Cenomanian-Campanian) strata in southern New Mexico will provide a basis for testing whether exhumation and sediment dispersal trends along the southern margin of the basin compare or contrast with established trends from the northern part of the foreland system. The U-Pb detrital zircon geochronology will be used to identify potential magmatic and basement source areas that were exhumed during various stages of basin development. Upsection trends in modal composition will be used to determine temporal trends in detrital contributions from continental block, recycled orogen, and magmatic arc source areas. It is realistic to expect provenance signatures and sediment dispersal trends in the southernmost part of the basin to vary considerably from more northern parts of the foreland given that there is a more diverse distribution of Precambrian basement provinces and Phanerozoic magmatic provinces to the south. The paired approach of combining sedimentologic and stratigraphic analysis with provenance trends allows for a better understanding on exhumation and sediment dispersal trends along the southern margin of the Sevier foreland basin during the Late Cretaceous.