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## View Abstract Details

**Title:** *Assessing ecological changes with repeat photography at El Malpais National Monument, New Mexico, USA*

**Keywords:** Photography-Repeat, Mexico-New, Forests-Old Growth, Vegetation Dynamics

**Type:** Paper

**Abstract:** El Malpais National Monument preserves over 46,000 hectares of the arid tableland of northwestern New Mexico. The monument includes a variety of unique geologic features, Native cultural sites, and rich floral and faunal diversity on the Colorado Plateau. El Malpais National Monument is dominated by sections of the Zuni-Bandera volcanic field, which is largely covered by a mosaic of mixed conifers, shrubs, herbs, and grasses. Previous studies have shown that many trees growing on the local basalt formations live to very old ages, suggesting that the volcanic badlands insulate resident vegetation from environmental impacts (including human activity) that would facilitate more frequent changes in species composition and stem density. We examined 395 photographs, taken by the eminent ecologist Alton Lindsey, of select ecological communities and geologic formations on the volcanic badlands in and around El Malpais National Monument. The collection consisted of original images paired with repeat images of the same scenes photographed by Lindsey during the summers of 1947 and 1981 respectively. Fifteen repeat-photo pairs were digitized and analyzed for evidence of change. We digitally photographed six of the selected scenes a third time during the summer of 2009 to allow a broader temporal assessment of processes affecting woodland structure, groundcover, and human disturbance. Locations near the edges of lava flows displayed the greatest changes between 1947 and 2009, while scenes captured in the interior of the basalt formations appeared less dynamic.

**Authors:** Mark D. Spond, University of Tennessee [mspond@utk.edu](mailto:mspond@utk.edu)\*  
Henri D. Grissino-Mayer, Ph.D, University of Tennessee [grissino@utk.edu](mailto:grissino@utk.edu)  
Sally P. Horn, Ph.D, University of Tennessee [shorn@utk.edu](mailto:shorn@utk.edu)

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