

# New Mexico Geological Society

Downloaded from: <https://nmgs.nmt.edu/publications/guidebooks/49>



## Roadlog References

(Includes references for all roadlogs in this volume.)

in:

*Las Cruces Country II*, Mack, G. H.; Austin, G. S.; Barker, J. M.; [eds.], New Mexico Geological Society 49<sup>th</sup> Annual Fall Field Conference Guidebook, 325 p. <https://doi.org/10.56577/FFC-49>

---

*This is a section from the 1998 NMGS Fall Field Conference Guidebook.*

---

## Annual NMGS Fall Field Conference Guidebooks

Every fall since 1950, the New Mexico Geological Society (NMGS) has held an annual [Fall Field Conference](#) that explores some region of New Mexico (or surrounding states). Always well attended, these conferences provide a guidebook to participants. Besides detailed road logs, the guidebooks contain many well written, edited, and peer-reviewed geoscience papers. These books have set the national standard for geologic guidebooks and are an essential geologic reference for anyone working in or around New Mexico.

## Free Downloads

NMGS has decided to make peer-reviewed papers from our Fall Field Conference guidebooks available for free download. This is in keeping with our mission of promoting interest, research, and cooperation regarding geology in New Mexico. However, guidebook sales represent a significant proportion of our operating budget. Therefore, only *research papers* are available for download. *Road logs, mini-papers, and other selected content* are available only in print for recent guidebooks.

## Copyright Information

Publications of the New Mexico Geological Society, printed and electronic, are protected by the copyright laws of the United States. No material from the NMGS website, or printed and electronic publications, may be reprinted or redistributed without NMGS permission. Contact us for permission to reprint portions of any of our publications.

One printed copy of any materials from the NMGS website or our print and electronic publications may be made for individual use without our permission. Teachers and students may make unlimited copies for educational use. Any other use of these materials requires explicit permission.

*This page is intentionally left blank to maintain order of facing pages.*

## REFERENCES

- Berggren, W. A., Hilgen, F. J., Langereis, C. G., Kent, D. V., Obradovich, J. D., Raffi, I., Raymo, M. E. and Shackleton, N. J., 1995, Late Neogene chronology: new perspectives in high-resolution stratigraphy: Geological Society of America Bulletin, v. 107, p. 1272–1287.
- Boyers, W. C., McMillan, N. J., Snow, P. and Goff, F., 1996, Origin of magmatic iddingsite in Tertiary volcanic rocks, NM: Geological Society of America, Abstracts with Programs, v. 28, p. 484.
- Clemons, R. E., 1975, Petrology of the Bell Top Formation: New Mexico Geological Society, Guidebook 26, p. 123–130.
- Clemons, R. E., 1979, Geology of Good Sight Mountains and Uvas Valley, southwest New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 169, 32 p.
- Elston, W. E., Seager, W. R. and Clemons, R. E., 1975, Emory Cauldron, Black Range, New Mexico, source of the Kneeling Nun tuff: New Mexico Geological Society, Guidebook 26, p. 283–292.
- Finger, J. T., Hickox, C. E., Eaton, R. R. and Jacobson, R. D., 1994, Slim-hole exploration at Steamboat Hills Geothermal Field: Geothermal Resources Council Bulletin, v. 23, p. 97–104.
- Finger, J. T., Jacobson, R. D. and Hickox, C. E., 1997, Newberry exploratory slimhole-drilling and testing: Sandia National Laboratories Report SAND97-2790, 13 p.
- Foley, L. L., LaForge, R. C. and Peity, L. A., 1988, Seismotectonic study for Elephant Butte and Caballo Dams, Rio Grande Project, New Mexico: U.S. Bureau of Reclamation, Seismotectonic Report 88-9, 60 p.
- Gile, L. H., Hawley, J. W. and Grossman, R. B., 1981, Soils and geomorphology in the Basin and Range area of southern New Mexico—guidebook to the Desert Project: New Mexico Bureau of Mines and Mineral Resources, Memoir 39, 222 p.
- Goff, F., 1996, Vesicle cylinders in vapor-differentiated basalt flows: Journal of Volcanology and Geothermal Research, v. 71, p. 167–185.
- Goff, F., Rowley, J., Gardner, J. N., Hawkins, W., Goff, S., Charles, R., Wachs, D., Maassen, L. and Heiken, G., 1986, Initial results from VC-1, first Continental Scientific Drilling Program core hole in Valles caldera, New Mexico: Journal of Geophysical Research, v. 91, p. 1742–1752.
- Goff, F., Goff, S. J., Kelkar, S., Shevenell, L., Truesdell, A. H., Musgrave, J., Rufenacht, H. and Flores, W., 1991, Exploration drilling and reservoir model of the Platanares geothermal system, Honduras, Central America: Journal of Volcanology and Geothermal Research, v. 45, p. 101–123.
- Hawley, J. W. and Kottlowski, F. E., 1969, Quaternary geology of the south-central New Mexico border region: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 89–104.
- Hawley, J., Kottlowski, F. E., Seager, W. R., King, W. E., Strain, W. S. and LeMone, D. V., 1969, The Santa Fe Group in the south-central New Mexico border region: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 52–76.
- Hawley, J. W., Seager, W. R. and Clemons, R. E., 1975, Road log from Las Cruces to north Mesilla Valley, Cedar Hills, San Diego Mountain, and Rincon area: New Mexico Geological Society, Guidebook 26, p. 35–53.
- Hibbard, C. W. and Dalquest, W. W., 1966, Fossils from the Seymour Formation of Knox and Baylor Counties, Texas, and their bearing on the late Kansan climate of that region: University of Michigan, Contributions Museum of Paleontology, v. 21, p. 1–66.
- Jordan, C. F., 1975, Lower Permian (Wolfcampian) sedimentation in the Orogrande Basin, New Mexico: New Mexico Geological Society, Guidebook 26, p. 109–117.
- Kelley, V. C. and Silver, C., 1952, Geology of the Caballo Mountains: University of New Mexico, Publications in Geology 4, 286 p.
- Kottlowski, F. E., 1953, Road log from Las Cruces to Caballo: New Mexico Geological Society, Guidebook 4, p. 29–41.
- Kues, B. S., 1995, Marine fauna of the Early Permian (Wolfcampian) Robledo Mountains Member, Hueco Formation, southern Robledo Mountains, New Mexico; in Lucas, S. G. and Heckert, A. B., eds., Early Permian footprints and facies: New Mexico Museum of Natural History, Bulletin 6, p. 63–90.
- Kurtén, B. and Anderson, E., 1980, Pleistocene mammals of North America. New York, Columbia University Press, 443 p.
- Leeder, M. R., Mack, G. H. and Salyards, S. L., 1996, Axial-transverse fluvial interactions in half-graben: Plio-Pleistocene Palomas basin, southern Rio Grande rift, New Mexico, USA: Basin Research, v. 12, p. 225–241.
- LeMone, D. V. and Johnson, R. R., 1969, Neogene flora from the Rincon Hills, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 77–88.
- LeMone, D. V., Simpson, R. D. and Klement, K. W., 1975, Wolfcampian Upper Hueco Formation of the Robledo Mountains, Doña Ana County, New Mexico: New Mexico Geological Society, Guidebook 26, p. 119–122.
- Lozinsky, R. P., 1986, Geology and late Cenozoic history of the Elephant Butte area, Sierra County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 187, 40 p.
- Lozinsky, R. P. and Hawley, J. W., 1986a, The Palomas Formation of south-central New Mexico—a formal definition: New Mexico Geology, v. 8, p. 73–78, 82.
- Lozinsky, R. P. and Hawley, J. W., 1986b, Upper Cenozoic Palomas Formation of south-central New Mexico: New Mexico Geological Society, Guidebook 37, p. 239–247.
- Lucas, S. G. and Effinger, J. A., 1991, Mammuthus from Lincoln County and a review of mammoths from the Pleistocene of New Mexico: New Mexico Geological Society, Guidebook 42, p. 277–282.
- Lucas, S. G. and Heckert, A. B., eds., 1995, Early Permian footprints and facies: New Mexico Museum of Natural History and Science, Bulletin 6, 301 p.
- Lucas, S. G. and Oakes, W., 1986, Pliocene (Blancan) vertebrates from the Palomas Formation, south-central New Mexico: New Mexico Geological Society, Guidebook 37, p. 249–255.
- Lucas, S. G., Williamson, T. E. and Sobus, J. C., 1993, Plio-Pleistocene stratigraphy, paleoecology, and mammalian biochronology, Tijeras Arroyo, Albuquerque area, New Mexico: New Mexico Geology, v. 15, p. 1–8, 15.
- Lucas, S. G., Anderson, O. J., Heckert, A. B. and Hunt, A. P., 1995, Geology of early Permian tracksites, Robledo Mountains, south-central New Mexico; in Lucas, S. G. and Heckert, A. B., eds., Early Permian footprints and facies: New Mexico Museum of Natural History and Science, Bulletin 6, p. 13–32.
- Machette, M. N., 1987, Preliminary assessment of Quaternary faulting near Truth or Consequences, New Mexico: U.S. Geological Survey, Open-file Report 87-652, 40 p.
- Mack, G. H., 1992, Paleosols as an indicator of climatic change at the Early-Late Cretaceous boundary, southwestern New Mexico: Journal of Sedimentary Petrology, v. 62, p. 483–494.
- Mack, G. H. and James, W. C., 1986, Cyclic sedimentation in the mixed siliciclastic-carbonate Abo-Hueco transitional zone (Lower Permian), southwestern New Mexico: Journal of Sedimentary Petrology, v. 56, p. 635–647.
- Mack, G. H. and James, W. C., 1992, Calcic paleosols of the Plio-Pleistocene Camp Rice and Palomas Formations, southern Rio Grande rift: Sedimentary Geology, v. 77, p. 89–109.
- Mack, G. H. and Seager, W. R., 1990, Tectonic control on facies distribution of the Camp Rice and Palomas Formations (Plio-Pleistocene) in the southern Rio Grande rift: Geological Society of America Bulletin, v. 102, p. 45–53.
- Mack, G. H. and Seager, W. R., 1995, Transfer zones in the southern Rio Grande rift: Journal of the Geological Society of London, v. 152, p. 551–560.
- Mack, G. J., James, W. C. and Seager, W. R., 1988, Wolfcampian (Lower Permian) stratigraphy and depositional environments in the Doña Ana and Robledo Mountains, south-central New Mexico; in Robichard, S. R. and Gallick, C. M., eds., Basin to Shelf Facies Transition of the Wolfcampian Stratigraphy of the Orogrande Basin: Society of Economic Paleontologists and Mineralogists, Permian Basin Section, Publication 88-28, p. 97–106.
- Mack, G. H., Cole, D. R., Giordano, T. H., Schaal, W. C. and Barcelos, J. H., 1991, Paleoclimatic controls on stable oxygen and carbon isotopes in caliche of the Abo Formation (Permian), south-central New Mexico, USA: Journal of Sedimentary Petrology, v. 61, p. 458–472.
- Mack, G. H., Salyards, S. L. and James, W. C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas Formations in the Rio Grande rift of southern New Mexico: American Journal of Science, v. 293, p. 49–77.
- Mack, G. H., James, W. C. and Salyards, S. L., 1994a, Late Pliocene and early Pleistocene sedimentation as influenced by intrabasinal faulting, southern Rio Grande rift: Geological Society of America, Special Paper 291, p. 257–264.
- Mack, G. H., Seager, W. R. and Kieling, J., 1994b, Late Oligocene and

- Miocene faulting and sedimentation, and evolution of the southern Rio Grande rift, New Mexico, USA: *Sedimentary Geology*, v. 92, p. 79–96.
- Mack, G. H., Nightengale, A. L., Seager, W. R. and Clemons, R. E., 1994c, The Oligocene Goodsight-Cedar Hills half graben near Las Cruces and its implications to the evolution of the Mogollon-Datil volcanic field and to the southern Rio Grande rift: New Mexico Geological Society, Guidebook 45, p. 135–142.
- Mack, G. H., Cole, D. R., James, W. C., Giordano, T. H. and Salyards, S. L., 1994d, Stable oxygen and carbon isotopes of pedogenic carbonate as indicators of Plio-Pleistocene paleoclimate in the southern Rio Grande rift, south-central New Mexico: *American Journal of Science*, v. 294, p. 621–640.
- Mack, G. H., Lawton, T. F. and Sherry, C. R., 1995, Fluvial and estuarine depositional environments of the Abo Formation (Early Permian), Caballo Mountains, south-central New Mexico; in Lucas, S. G. and Heckert, A. B., eds., Early Permian footprints and facies: New Mexico Museum of Natural History and Science Bulletin, no. 6, p. 181–187.
- Mack, G. H., McIntosh, W. C., Leeder, M. R. and Monger, H. C., 1996, Plio-Pleistocene pumice floods in the ancestral Rio Grande, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 103, p. 1–8.
- Madden, C. T., 1981, *Mammoths of North America* [Ph.D. dissertation]: Boulder, University of Colorado, 271 p.
- Madden, C. T., 1995, Even more earliest isotopically dated *Mammuthus* from North America: *Quaternary Research*, v. 43, p. 265–267.
- McIntosh, W. C., Kedzie, L. L. and Sutter, J. F., 1991, Paleomagnetism and  $^{40}\text{Ar}/^{39}\text{Ar}$  ages of ignimbrites, Mogollon-Datil volcanic field, southwestern New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 135, 79 p.
- Molenaar, C. M., 1983, Major depositional cycles and regional correlations of Upper Cretaceous rocks, southern Colorado Plateau and adjacent areas; in Reynolds, M. W. and Dolly, E. D., eds., Mesozoic paleogeography of West-Central United States: Society of Economic Paleontologists and Mineralogists, Rocky Mountain Section, p. 201–224.
- Nummedal, D., 1988, Chapter 3. Fundamental concepts; in Nummedal, D., Wright, R. and Swift, D. J. P., eds., Sequence stratigraphy of Upper Cretaceous strata of the San Juan Basin, New Mexico: Field guide for 73rd American Association of Petroleum Geologists/Society of Economic Paleontologists and Mineralogists, Annual Meeting, Houston, Texas, p. 126–133.
- Payton, C. E., ed., 1977, Seismic stratigraphy—Applications to hydrocarbon exploration: American Association of Petroleum Geologists, Memoir 26, 516 p.
- Ramirez, R. O., Broadwell, M. S., Gallegos, R., Schmucker, M., Haga, M. and McMillan, N. J., 1995, Identification of individual volcanic centers in the Eocene Palm Park and Rubio Peak Formations, southern New Mexico: New Mexico Geological Society, Annual Spring Meeting Proceedings, p. 18.
- Ross, H. P. and Witcher, J. C., 1992, Self-potential expression of hydrothermal resources in the southern Rio Grande rift, New Mexico: *Transactions, Geothermal Resources Council*, v. 16, p. 247–253.
- Rowley, J., Hawkins, W. and Gardner, J., 1987, Drilling report-first CSDP/thermal regimes core hole project at Valles caldera, New Mexico (VC-1): Los Alamos National Laboratory Report LA-10934-OBES, 61 p.
- Ruhe, R. V., 1967, Geomorphic surfaces and surficial deposits in southern New Mexico: New Mexico Bureau of Mines and Mineral Resources, Memoir 18, 65 p.
- Schultz, G. E., 1984, Biostratigraphy and volcanic ash deposits of the Tule Formation along the East Fork of Rock Creek, Briscoe County, Texas; in Gustavson, T. C., ed., Elements of geomorphology and Quaternary stratigraphy of the Rolling Plains of the Texas Panhandle: Guidebook, Friends of the Pleistocene field trip, p. 126–132.
- Seager, W. R., 1975, Cenozoic tectonic evolution of the Las Cruces area, New Mexico: New Mexico Geological Society, Guidebook 26, p. 241–250.
- Seager, W. R. and Hawley, J. W., 1973, Geology of Rincon quadrangle, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 101, 42 p.
- Seager, W. R. and Mack, G. H., 1991, Geology of Garfield quadrangle, Sierra and Doña Ana Counties, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 128, 24 p.
- Seager, W. R., Hawley, J. W. and Clemons, R. E., 1971, Geology of San Diego Mountain area Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 97, 38 p.
- Seager, W. R., Clemons, R. E. and Hawley, J. W., 1975, Geology of Sierra Alta quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 102, 56 p.
- Seager, W. R., Kottlowski, F. E. and Hawley, J. W., 1976, Geology of Doña Ana Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 147, 36 p.
- Seager, W. R., Clemons, R. E., Hawley, J. W. and Kelley, R. E., 1982, Geology of northwest part of Las Cruces  $1^\circ \times 2^\circ$  sheet: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 53, scale 1:125,000.
- Seager, W. R., Shafiqullah, M., Hawley, J. W. and Marvin, R. F., 1984, New K-Ar dates from basalts and the evolution of the southern Rio Grande rift: *Geological Society of America Bulletin*, v. 95, p. 87–99.
- Seager, W. R., Mack, G. H., Raimonde, M. S. and Ryan, R. G., 1986, Laramide basement-cored uplift and basins in south-central New Mexico: New Mexico Geological Society, Guidebook 37, p. 123–130.
- Seager, W. R., Hawley, J. W., Kottlowski, F. E. and Kelley, S. A., 1987, Geology of east half of Las Cruces and northeast El Paso  $1^\circ \times 2^\circ$  sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 57, scale 1:125,000.
- Seager, W. R., Mack, G. H. and Lawton, T. F., 1997, Structural kinematics and depositional history of a Laramide uplift-basin pair in southern New Mexico: implications for development of intraforeland basins: *Geological Society of America Bulletin*, v. 109, p. 1389–1401.
- Simmons, M., 1991, The last conquistador, Juan de Oñate and the settling of the far Southwest: University of Oklahoma Press, Norman, 208 p.
- Thompson, A. D., 1991, Fusulinid biostratigraphy of the Bar B Formation (Desmoinesian-Wolfcampian), southern Caballo Mountains, New Mexico [M.S. thesis]: Las Cruces, New Mexico State University, 100 p.
- Thompson, R. N., 1982, Magmatism of the British Tertiary Volcanic Province: *Scottish Journal of Geology*, v. 18, p. 49–107.
- Vanderhill, J. B., 1986, Lithostratigraphy, vertebrate paleontology, and magnetostratigraphy of Plio-Pleistocene sediments in the Mesilla basin, New Mexico [Ph.D. dissertation]: Austin, University of Texas, 305 p.
- Van Wagoner, J. C., Posamentier, H. W., Mitchum, R. M., Vail, P. R., Sarg, J. F., Loutit, T. S. and Hardenbol, J., 1988, An overview of sequence stratigraphy and key definitions; in Wilgus, C. W., ed., Sea level changes: an integrated approach: Society of Economic Paleontologists and Mineralogists, Special Publication 42, p. 39–45.
- Van Wagoner, J. C., Mitchum, R. M., Campion, K. M. and Rahamanian, V. D., 1990, Siliciclastic sequence stratigraphy in well logs, cores, and outcrops: Concepts for high-resolution correlation of time and facies: American Association of Petroleum Geologists, Methods in Exploration Series, no. 7, 55 p.
- Wallin, E. T., 1983, Stratigraphy and paleoenvironments of the Engle Coal Field, Sierra County, New Mexico [M.S. thesis]: Socorro, New Mexico Institute of Mining and Technology, 127 p.
- Witcher, J. C., 1991a, Radon soil-gas surveys with diffusion-model corrections in geothermal exploration: *Transactions, Geothermal Resources Council*, v. 15, p. 301–308.
- Witcher, J. C., 1991b, The Rincon geothermal system, southern Rio Grande rift, New Mexico—A preliminary report on a recent discovery: *Transactions, Geothermal Resources Council*, v. 15, p. 205–212.
- Witcher, J. C., Pisto, L., Hahman, W. R. and Swanberg, C. A., 1994, Alpine No.1 Federal, Final Report: Arizona Geological Survey Contributed Report 94-E, 92 p.