

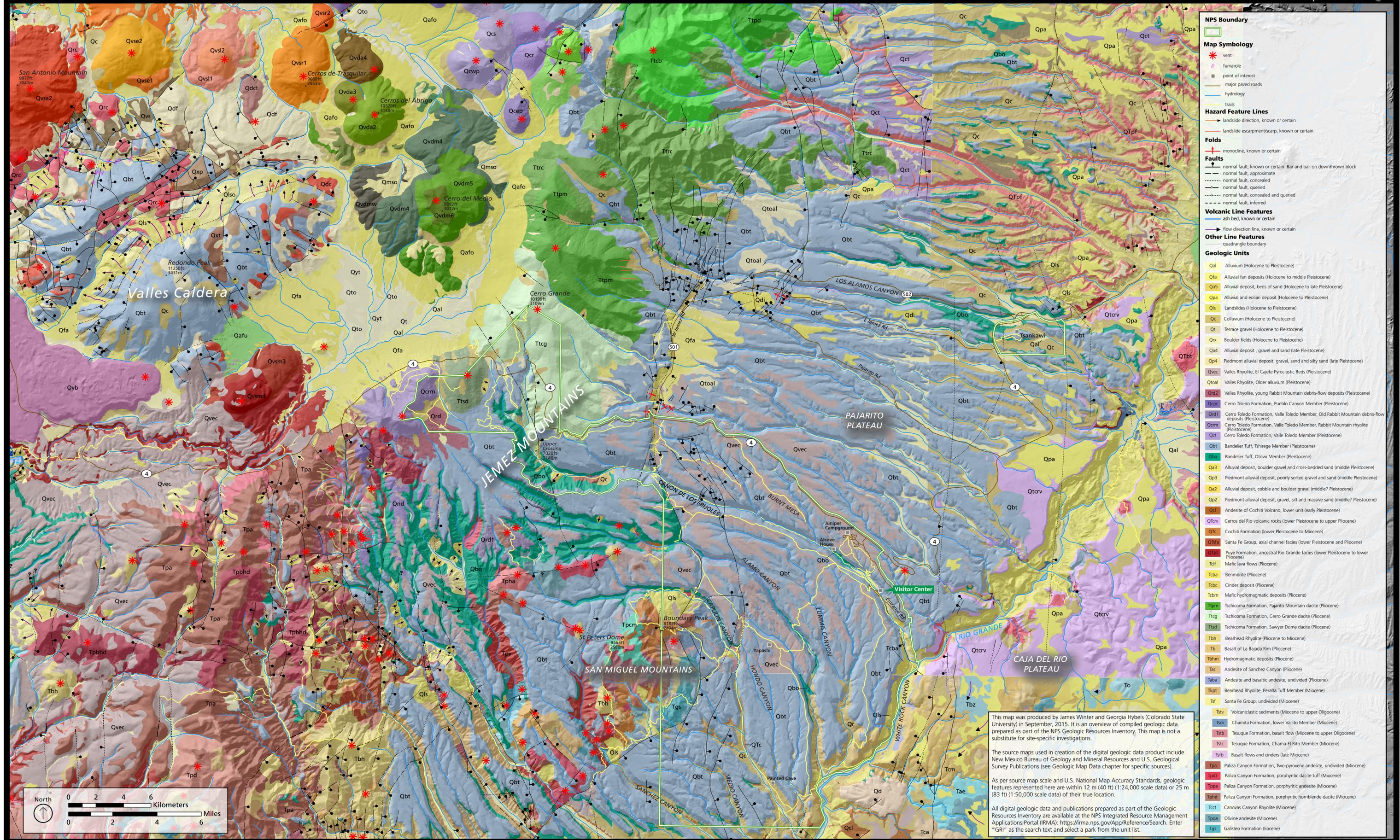
Geologic Map of Bandelier National Monument

New Mexico

National Park Service
U.S. Department of the Interior



Geologic Resources Inventory
Natural Resource Stewardship and Science



- NPS Boundary**
[Symbol] NPS Boundary
- Map Symbology**
[Symbol] vent
[Symbol] fumarole
[Symbol] point of interest
[Symbol] major paved roads
[Symbol] hydrology
[Symbol] trails
- Hazard Feature Lines**
[Symbol] landslide direction, known or certain
[Symbol] landslide escarpment/scar, known or certain
- Folds**
[Symbol] monocline, known or certain
- Faults**
[Symbol] normal fault, known or certain. Bar and ball on downthrown block
[Symbol] normal fault, approximate
[Symbol] normal fault, concealed
[Symbol] normal fault, queried
[Symbol] normal fault, concealed and queried
[Symbol] normal fault, inferred
- Volcanic Line Features**
[Symbol] ash bed, known or certain
[Symbol] flow direction line, known or certain
- Other Line Features**
[Symbol] quadrangle boundary
- Geologic Units**
- Qal Alluvium (Holocene to Pleistocene)
 - Qfa Alluvial fan deposits (Holocene to middle Pleistocene)
 - Qa5 Alluvial deposit, beds of sand (Holocene to late Pleistocene)
 - Qpa Alluvial and eolian deposit (Holocene to Pleistocene)
 - Qls Landslides (Holocene to Pleistocene)
 - Qc Colluvium (Holocene to Pleistocene)
 - Qt Terrace gravel (Holocene to Pleistocene)
 - Qrx Boulder fields (Holocene to Pleistocene)
 - Qa4 Alluvial deposit, gravel and sand (late Pleistocene)
 - Qp4 Piedmont alluvial deposit, gravel, sand and silty sand (late Pleistocene)
 - Qvec Valles Rhyolite, El Cajete Pyroclastic Beds (Pleistocene)
 - Qtoal Valles Rhyolite, Older alluvium (Pleistocene)
 - Qrdz Valles Rhyolite, young Rabbit Mountain debris-flow deposits (Pleistocene)
 - Qcpc Cerro Toledo Formation, Pueblo Canyon Member (Pleistocene)
 - Qrd1 Cerro Toledo Formation, Valle Toledo Member, Old Rabbit Mountain debris-flow deposits (Pleistocene)
 - Qcrm Cerro Toledo Formation, Valle Toledo Member, Rabbit Mountain rhyolite (Pleistocene)
 - Qct Cerro Toledo Formation, Valle Toledo Member (Pleistocene)
 - Qbt Bandelier Tuff, Tshirege Member (Pleistocene)
 - Qbo Bandelier Tuff, Otowi Member (Pleistocene)
 - Qa3 Alluvial deposit, boulder gravel and cross-bedded sand (middle Pleistocene)
 - Qp3 Piedmont alluvial deposit, poorly sorted gravel and sand (middle Pleistocene)
 - Qa2 Alluvial deposit, cobble and boulder gravel (middle? Pleistocene)
 - Qp2 Piedmont alluvial deposit, gravel, silt and massive sand (middle? Pleistocene)
 - Qd Andesite of Cochiti Volcano, lower unit (early Pleistocene)
 - Qtrcv Cerros del Rio volcanic rocks (lower Pleistocene to upper Pliocene)
 - Qc Cochiti Formation (lower Pleistocene to Miocene)
 - Qbsa Santa Fe Group, axial channel faces (lower Pleistocene and Pliocene)
 - Qtpf Puye Formation, ancestral Rio Grande facies (lower Pleistocene to lower Pliocene)
 - Tcf Mafic lava flows (Pliocene)
 - Tcba Benmorite (Pliocene)
 - Tcbc Cinder deposit (Pliocene)
 - Tcbm Mafic hydrothermal deposits (Pliocene)
 - Ttcm Tschicoma Formation, Pajarito Mountain dacite (Pliocene)
 - Ttcm Tschicoma Formation, Cerro Grande dacite (Pliocene)
 - Ttcm Tschicoma Formation, Sawyer Dome dacite (Pliocene)
 - Tbh Bearhead Rhyolite (Pliocene to Miocene)
 - Tb Basalt of La Bajada Rim (Pliocene)
 - Tbhm Hydrothermal deposits (Pliocene)
 - Tas Andesite of Sanchez Canyon (Pliocene)
 - Taba Andesite and basaltic andesite, undivided (Pliocene)
 - Tbpt Bearhead Rhyolite, Peralta Tuff Member (Miocene)
 - Tsf Santa Fe Group, undivided (Miocene)
 - Tstsv Volcaniclastic sediments (Miocene to upper Oligocene)
 - Tscv Chamita Formation, lower Valitto Member (Miocene)
 - Tstb Tesuque Formation, basalt flow (Miocene to upper Oligocene)
 - Tstc Tesuque Formation, Chama-El Rito Member (Miocene)
 - Tsb Basalt flows and cinders (late Miocene)
 - Tpa Paliza Canyon Formation, Two-pyroxene andesite, undivided (Miocene)
 - Tpdt Paliza Canyon Formation, porphyritic dacite tuff (Miocene)
 - Tppa Paliza Canyon Formation, porphyritic andesite (Miocene)
 - Tphd Paliza Canyon Formation, porphyritic hornblende dacite (Miocene)
 - Tcct Canovas Canyon Rhyolite (Miocene)
 - Tpca Olivine andesite (Miocene)
 - Tgs Galisteo Formation (Eocene)

This map was produced by James Winter and Georgia Hybels (Colorado State University) in September, 2015. It is an overview of compiled geologic data prepared as part of the NPS Geologic Resources Inventory. This map is not a substitute for site-specific investigations.

The source maps used in creation of the digital geologic data product include New Mexico Bureau of Geology and Mineral Resources and U.S. Geological Survey Publications (see Geologic Map Data chapter for specific sources).

As per source map scale and U.S. National Map Accuracy Standards, geologic features represented here are within 12 m (40 ft) (1:24,000 scale data) or 25 m (83 ft) (1:50,000 scale data) of their true location.

All digital geologic data and publications prepared as part of the Geologic Resources Inventory are available at the NPS Integrated Resource Management Applications Portal (IRMA): <https://irma.nps.gov/App/Reference/Search>. Enter "GRI" as the search text and select a park from the unit list.

