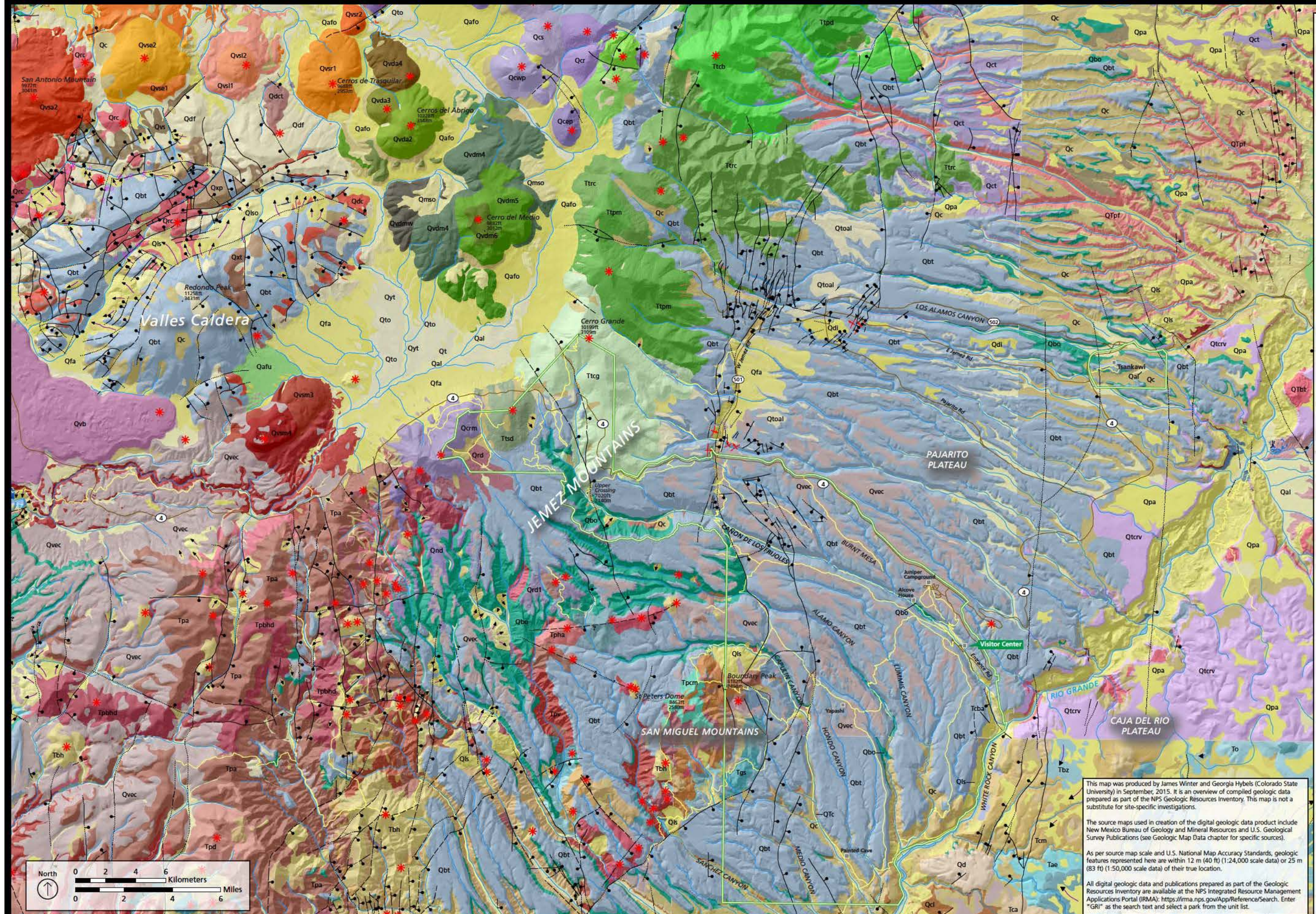
Geologic Map of Bandelier National Monument

New Mexico

National Park Service
U.S. Department of the Interior

Geologic Resources Inventory
Natural Resource Stewardship and Science



NPS Boundary

Map Symbology

- vent
- fumarole
- point of interest
- major paved roads
- hydrology
- trails

Hazard Feature Lines

- landslide direction, known or certain
- landslide escarpment/scarp, known or certain

Folds

- monocline, known or certain

Faults

- normal fault, known or certain. Bar and ball on downthrown block
- normal fault, approximate
- normal fault, concealed
- normal fault, queried
- normal fault, concealed and queried
- normal fault, inferred

Volcanic Line Features

- ash bed, known or certain
- flow direction line, known or certain

Other Line Features

- 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)
- Qrd2 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)
- QTcrv Cerros del Rio volcanic rocks (lower Pleistocene to upper Pliocene)
- QTc Cochiti Formation (lower Pleistocene to Miocene)
- QTsfa Santa Fe Group, axial channel facies (lower Pleistocene and Pliocene)
- QTpf Puye Formation, ancestral Rio Grande facies (lower Pleistocene to lower Pliocene)
- Tclf Mafic lava flows (Pliocene)
- Tcba Benmorite (Pliocene)
- Tcbc Cinder deposit (Pliocene)
- Tcbm Mafic hydromagmatic deposits (Pliocene)
- Ttpm Tschicoma Formation, Pajarito Mountain dacite (Pliocene)
- Ttcg Tschicoma Formation, Cerro Grande dacite (Pliocene)
- Ttsd Tschicoma Formation, Sawyer Dome dacite (Pliocene)
- Tbh Bearhead Rhyolite (Pliocene to Miocene)
- Tb Basalt of La Bajada Rim (Pliocene)
- Tbhm Hydromagmatic deposits (Pliocene)
- Tas Andesite of Sanchez Canyon (Pliocene)
- Taba Andesite and basaltic andesite, undivided (Pliocene)
- Tkpt Bearhead Rhyolite, Peralta Tuff Member (Miocene)
- Tsf Santa Fe Group, undivided (Miocene)
- Tstv Volcaniclastic sediments (Miocene to upper Oligocene)
- Tscv Chamita Formation, lower Vallito Member (Miocene)
- Tstb Tesuque Formation, basalt flow (Miocene to upper Oligocene)
- Tstc Tesuque Formation, Chama-El Rito Member (Miocene)
- Tsfb Basalt flows and cinders (late Miocene)
- Tpa Paliza Canyon Formation, Two-pyroxene andesite, undivided (Miocene)
- Tpdf 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)
- Tpoa 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.