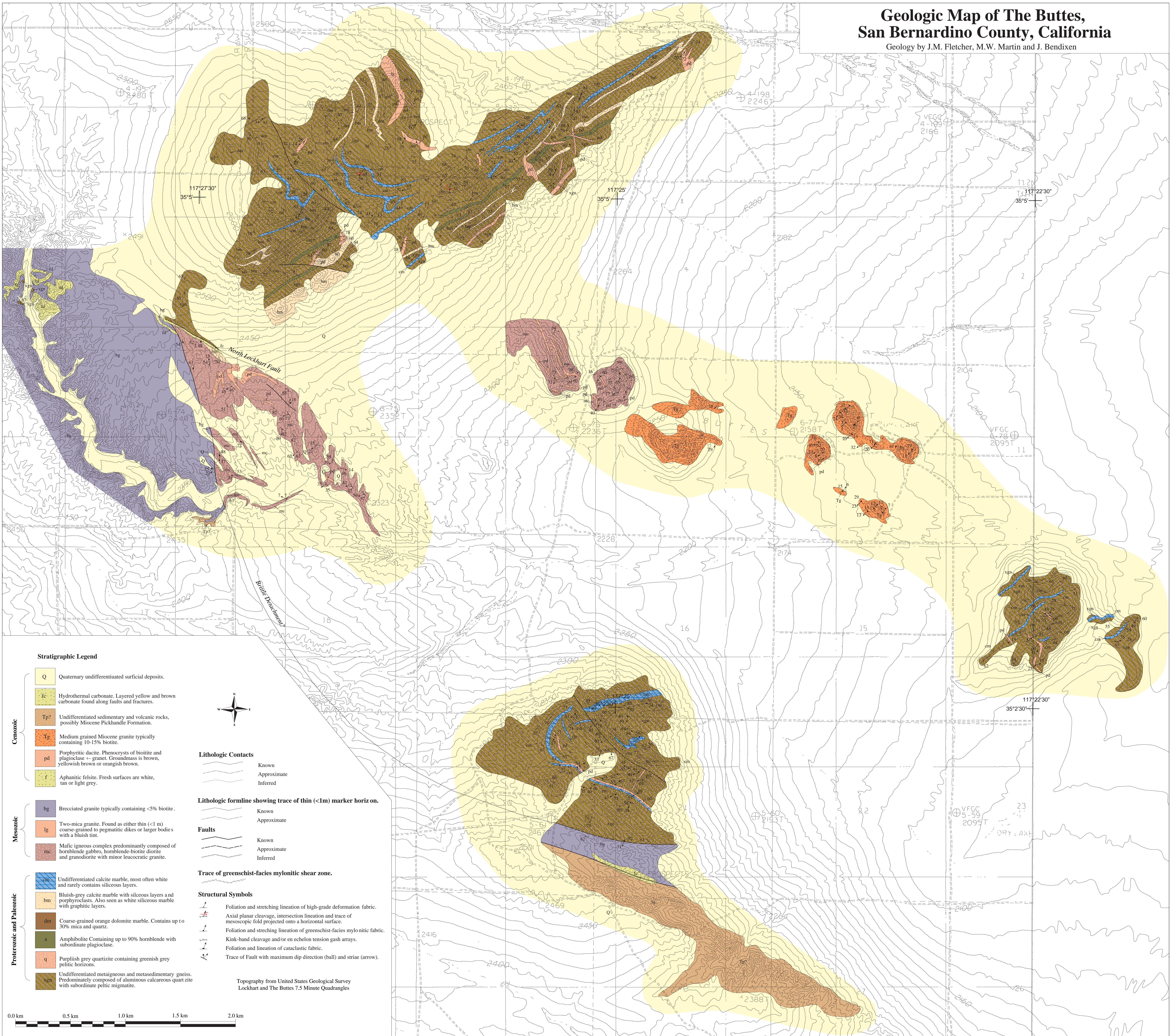


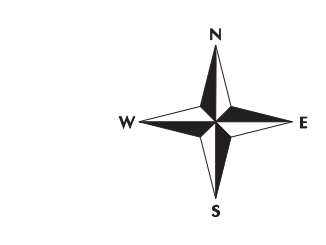
Geologic Map of The Buttes, San Bernardino County, California

Geology by J.M. Fletcher, M.W. Martin and J. Bendixen



Stratigraphic Legend

- | | | | |
|---------------------------|-----|---|--|
| Cenozoic | | Q | Quaternary undifferentiated surficial deposits. |
| | | fc | Hydrothermal carbonate. Layered yellow and brown carbonate found along faults and fractures. |
| | | Tp ¹ | Undifferentiated sedimentary and volcanic rocks, possibly Miocene Pickhandle Formation. |
| | | Tg | Medium grained Miocene granite typically containing 10-15% biotite. |
| | | pd | Porphyritic dacite. Phenocrysts of biotite and plagioclase + granet. Groundmass is brown, yellowish brown or orangish brown. |
| Mesozoic | | f | Aphanitic felsite. Fresh surfaces are white, tan or light grey. |
| | | bg | Brecciated granite typically containing <5% biotite. |
| | | lg | Two-mica granite. Found as either thin (<1 m) coarse-grained to pegmatitic dikes or larger bodies with a bluish tint. |
| Proterozoic and Paleozoic | | mc | Mafic igneous complex predominantly composed of hornblende gabbro, hornblende-biotite diorite and granodiorite with minor leucocratic granite. |
| | | cn | Undifferentiated calcite marble, most often white and rarely contains siliceous layers. |
| | | bm | Bluish-grey calcite marble with siliceous layers and porphyroclasts. Also seen as white siliceous marble with graphitic layers. |
| | | dm | Coarse-grained orange dolomite marble. Contains up to 30% mica and quartz. |
| | | a | Amphibolite. Containing up to 90% hornblende with subordinate plagioclase. |
| | | q | Purplish grey quartzite containing greenish grey pelitic horizons. |
| | agn | Undifferentiated metaigneous and metasedimentary gneiss. Predominately composed of aluminous calcareous quartzite with subordinate pelitic migmatite. | |



Lithologic Contacts

- Known
- Approximate
- Inferred

Lithologic formline showing trace of thin (<1m) marker horizon on.

- Known
- Approximate

Faults

- Known
- Approximate
- Inferred

Trace of greenschist-facies mylonitic shear zone.

-

Structural Symbols

- Foliation and stretching lineation of high-grade deformation fabric.
- Axial planar cleavage, intersection lineation and trace of mesoscopic fold projected onto a horizontal surface.
- Foliation and stretching lineation of greenschist-facies mylonitic fabric.
- Kink-band cleavage and/or en echelon tension gash arrays.
- Foliation and lineation of cataclastic fabric.
- Trace of Fault with maximum dip direction (ball) and striae (arrow).

Topography from United States Geological Survey Lockhart and The Buttes 7.5 Minute Quadrangles

