Geologic Map of Sequoia & Kings Canyon National Parks

California

National Park Service
U.S. Department of the Interior

Geologic Resources Inventory
Natural Resource Stewardship and Science

This map displays geologic map data compiled by the National Park Service Geologic Resources Inventory. It is not a substitute for site-specific investigations. All GRI products are available at https://go.nps.gov/gripubs.

Source Maps:

Bateman, P. C., L. V. Pakiser, and M. F. Kane. 1965. Geology and tungsten mineralization of the Bishop District, California, with a section on gravity study of Owens Valley and a section on seismic Profile (scale 1:62,500). Plate 4, PP 470. US Geological Survey, Reston, Virginia.

Bateman, P. C. 1965. Geologic map of the Blackcap Mountain Quadrangle, Fresno County, California (scale 1:62,500). Geologic Quadrangle Map GQ-428. US Geological Survey, Reston, Virginia.

Sisson, T. W., and J. G. Moore. 1994. Geologic map of the Giant Forest Quadrangle, Tulare County, California (scale 1:62,500). Geologic Quadrangle Map GQ-1751. US Geological Survey, Reston, Virginia.

Moore, J. G., and T. W. Sisson. 1985. Geologic map of the Kern Peak Quadrangle, Tulare County, California (scale 1:62,500). Geologic Quadrangle Map GQ-1584. US Geological Survey, Reston, Virginia.

Stone, P., G. C. Dunne, J. G. Moore, and G. I. Smith. 2000. Geologic map of the Lone Pine 15' Quadrangle, Inyo County, California (scale 1:62,500). Geologic Investigations Series Map I-2617. US Geological Survey, Reston, Virginia.

Moore, J. G. 1978 Geologic map of the Marion Peak Quadrangle, Fresno County, California (scale 1:62,500). Geologic Quadrangle Map GQ-1399. US Geological Survey, Reston, Virginia.

Bateman, P. C., and J. G. Moore. 1965. Geologic map of the Mount Goddard Quadrangle, Fresno and Inyo Counties, California (scale 1:62,500). Geologic Quadrangle Map GQ-429. US Geological Survey, Reston, Virginia.

Moore, J. G. 1963. Geology of the Mount Pinchot Quadrangle, southern Sierra Nevada, California (scale 1:62,500). Bulletin 1130. US Geological Survey, Reston, Virginia.

Moore, J. G. 1981. Geologic map of the Mount Whitney Quadrangle, Inyo And Tulare Counties, California (scale 1:62,500). Geologic Quadrangle Map GQ-1545. US Geological Survey, Reston, Virginia.

Du Bray, E. A., and J. G. Moore. 1985. Geologic map of the Dancha Quadrangle, southern Sierra Nevada, California (scale 1:62,500). Miscellaneous Field Studies Map MF-1734. US Geological Survey, Reston, Virginia.

Sisson, T. W., and J. G. Moore. 2013. Geologic map of southwestern Sequoia National Park, Tulare County, California (scale 1:24,000). Open-File Report OF 2013-1096. US Geological Survey, Reston, Virginia.

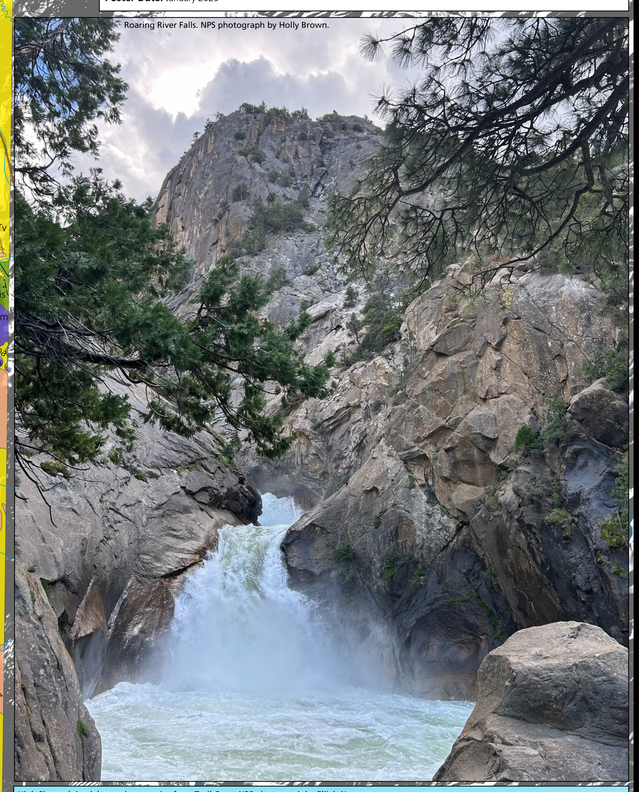
Moore, J. G., and W. J. Nokleberg. 1992. Geologic map of the Tehipite Dome Quadrangle, Fresno County, California (scale 1:62,500). Geologic Quadrangle Map GQ-1676. US Geological Survey, Reston, Virginia.

Moore, J. G., and T. W. Sisson. 1987. Geologic map of the Triple Divide Peak Quadrangle, Tulare County, California (scale 1:62,500). Geologic Quadrangle Map GQ-1636. US Geological Survey, Reston, Virginia.

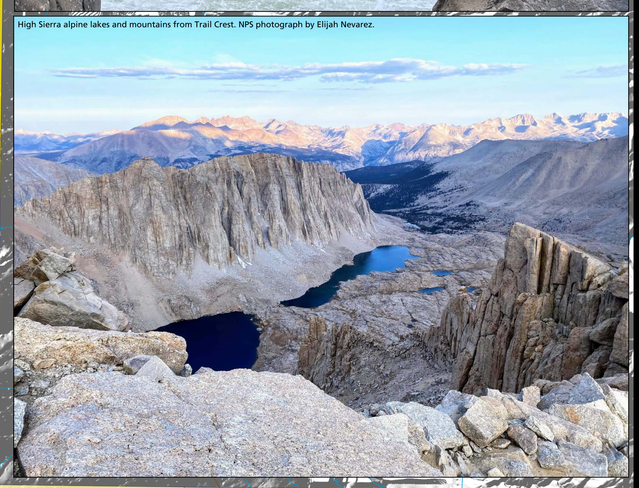
Source Scales: 1:62,500 and 1:24,000. According to US National Map Accuracy Standards, features are within 32 m (104 ft) and 12 m (40 ft), respectively of their true location.

Poster Layout: Trista L. Thornberry-Ehrlich (Colorado State University)

Poster Date: January 2025

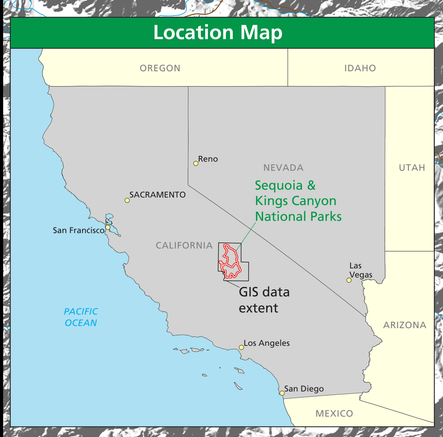


Roaring River Falls. NPS photograph by Holly Brown.



High Sierra alpine lakes and mountains from Trail Crest. NPS photograph by Elijah Nevarez.

Location Map



LEGEND

NPS Boundary
Highways and Roads
Water
Ice field
Giant Sequoia Grove

Folds

solid where known or certain, dashed where approximate, long-dashed where queried, arrows pointing in the down dip direction, arrow head indicates fold plunge

anticline
syncline
antiform
synform

Faults

solid bold where known or certain, solid thin where inferred, short-dashed where concealed, long-dashed where approximate, teeth point towards the overriding block, 'U' is fault up indicator, 'D' is fault down indicator, bar and ball indicates fault down side

thrust fault
normal fault
unknown offset/displacement
right-lateral strike-slip fault
left-lateral strike-slip fault
high-angle fault
high-angle normal fault

Geologic Point Features

copper (Cu) mineralization locality
individual spring
orbicular structure

Geologic Line Features

structural zone, known or certain
quartz vein, known or certain
comb-layered igneous rocks, known or certain

Hazard Feature Lines

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

Glacial Area Features

Morainal crest

Glacial Feature Lines

moraine crest

Dike Swarm Contacts

solid where known or certain, dashed where inferred, bold where a scratch boundary

contact

Dike Swarms

Kjd Mafic, intermediate-composition, and minor felsic dikes (Cretaceous? and Jurassic)

Linear Geologic Units and Dikes

Pliocene basalt
Tertiary dacite dikes
Late Cretaceous dikes and sills, grouped
Includes granite porphyry dikes and sills; Alabama Hills Granite; and aplite
Cretaceous dikes, pegmatites, plutons, and lenses, grouped
Includes mafic diorite and quartz diorite dikes; aplite, pegmatite, and alaskite; alaskite of Evolution Basin and LeConte Canyon, quartz vein; porphyry of Black Kaweah; Sardine pluton, related dikes; mafic dikes and lenses; and garnet-bearing aplite-pegmatite dikes
Cretaceous and/or Jurassic dikes, grouped
Includes felsic dike; mafic, intermediate-composition, and minor felsic dikes; mafic dikes; sheared mafic dikes; and rhyolite porphyry dikes
Jurassic dikes and dike swarm, grouped
Includes mafic dikes; and Independence dike swarm
Jurassic and Triassic(?) metavolcanic rocks, grouped
Includes metavolcanic rocks, conspicuous layers of metarhyolite; and metavolcanic rocks, piedmontite-bearing layers
Mesozoic marble

Geologic Units

* For visual clarity at the map scale, certain units from the GRI GIS data were grouped.

Qtf Tufa (Holocene)
Qa Active alluvium (Holocene)
Qes Eolian sand (Holocene)
Qly Younger lake deposits (Holocene)
Qr Rock glaciers (Holocene)
Qoa Older alluvial deposits, grouped (Holocene and Pleistocene)
For visual clarity at the map scale, certain units from the GRI GIS data were grouped. Qoa includes alluvial deposits (Qal), alluvial fan deposits (Qf), younger alluvial fan deposits (Qyf), inactive alluvium (Qai), very large boulder gravels (Qgv), stream gravels (Qsg)
Qs Slope deposits, grouped (Holocene and Pleistocene)
Qs includes talus (Qt), colluvium (Qcl), talus and colluvium, undivided (Qtc), landslide deposits (Qls), debris-flow deposits (Qdf), younger alluvial and debris-flow gravels (Qay), older alluvial and debris-flow gravels (Qao), landslide deposits (Qfls)
Qgs Grus and sand (Holocene)
Qg Glacial deposits, grouped (Quaternary)
Qg includes glacial deposits, undifferentiated (Qgg), Recess Peak till (Qrp), Recess Peak and Matthes tills, undivided (Qrpm), undifferentiated till (Qut), Tioga till, deposits of younger advances (Qty), Tioga till (Qti), Tioga and Tahoe tills, undivided (Qtw), Tahoe till (Qta), Tahoe till, deposits of older advance (Qtao), Sherwin and older tills (Qsh), Glacial moraines (Qm), Pre-Tahoe till deposits (Qpta)
Qlo Older lake deposits (Holocene and Pleistocene)
Qtr Mineral Spring Travertine deposits (Quaternary)
QTv Quaternary or Tertiary volcanics, grouped
QTv includes alkali basalt, lava and cinders of Groundhog cone (Qgh), basalt flows and cinder cones (Qyb), basalt dike and necks (Qob), olivine basalt of Sawmill Canyon (Qbs), rhyolite south of Big Pine (Qrbg), rhyodacite (Qrd), rhyolite of Long Canyon (Qrl), alkali basalt, lava and cinders of Tunnel and South Fork cones (Qsg), alkali basalt, lava and cinders of Little Whitney cone (Qlw), olivine basalt of Oak Creek (QTbo), olivine basalt dikes of Division Creek (QTbd), basalt (Tb), rhyolite of Templeton Mountain (Trt), trachybasalt (Ttb), dacite (Td)
Ki Cretaceous intrusive rocks, grouped
Ki includes granite porphyry dikes and sills (Kgp), granite of White Mountain (Kwm), alaskite of Olancha Peak (Kao), granodiorite of North Dome (Knd), granitic dikes (Kgd), Cartridge Pass pluton (Kcrp), granodiorite of Coyote Flat (Kcy), fine-grained quartz monzonite of Mount Shakespeare (Kfgqm), fine-grained quartz monzonites (Kfm), aplite, pegmatite, and alaskite (Kapa), granite of Dougherty Peak (Kgdp), granodiorite of Muro Blanco (Kmb), alaskite of Evolution Basin and/or LeConte Canyon (Kalc), Alabama Hills granite (Kah), granite of North Mountain (Knm), plutonic breccia of Timosea Peak (Kpb), granodiorite of Redrock Meadow (Krr), porphyry of Black Kaweah (Kbk), granodiorite of Chagoopa (Kgc), Arrow pluton (Ka), Pyramid pluton (Kpy), Spook pluton (Ksp), granodiorite of White Divide (Kwd), McGoogle pluton (Kmd), aplite (Kap), rocks similar to Cathedral Peak granite (Krsc), rocks similar to the Cathedral Peak granite, alaskite (Kca), Tungsten Hills quartz monzonite (Kth), Tungsten Hills quartz monzonite, albitized rock (Ktha), granodiorite of Mountain Home (Kgmh), granite of Maggie Mountain (Kmm), younger mafic plutonic rocks (Kym), granodiorite of Little Whitney Meadow (Klw), alaskite marginal to granodiorite of Chagoopa (Kac), diorite associated with granite of Coyote Pass (Kmcp), granodiorite of Brush Canyon (Kgbc), granite of Deer Meadow Grove (Kdm), granodiorite of McKinley Grove (Kmc), granite of Mount Hoffman (Khm), Mount Givens granodiorite (Kmgg), Mount Givens granodiorite, quartz mass (Kmga), Baxter pluton (Kbx), Lamarck granodiorite (Kl), Siberian pluton (Ks), Sardine pluton (Ksi), Striped pluton (Kst), Cotter pluton (Kc), Goodale pluton (Kg), granite of Kettle Dome (Kkd), granodiorite of Tehipite Dome (Kgtd), Kern Knob granite (Kk), synplutonic mafic dorite intrusions (Kmd), granite of Tamarack Lake (Kgtl), granite of Eagle Scout Peak (Kes), granite of Triple Divide Pass (Ktd), granite of Coyote Pass (Kgcp), granite of Little Kern Lake Creek (Klkc), granite of Kern Peak (Kkp), granodiorite of Lightning Creek (Klc), granite of Mount Kaweah (Kmk), granite of Kennedy lakes (Kkl), granodiorite of Tombstone Creek (Ktc), granite of Tunnemah Lake (Kgtul), granite of Alpine Creek (Kgac), Dinkey Creek granodiorite (Kdcg), garnet-bearing aplite-pegmatite dikes (Kga), granodiorite of Spring Creek (Ksc), granite of Grand Dike (Kggd), granodiorite dikes associated with the granite of Coyote Pass (Kcpp), equigranular facies of the granite of Coyote Pass (Kcp), granite of Case Mountain (Kcm), granite of Dennison Peak (Kdp), granodiorite of Milk Ranch Peak (Kmr), granodiorite of Eshom Point (Kep), granodiorite of Hartland (Kh), tonalite of Shadequarter Mountain (Ksq), diorite (Kd), granodiorite of Shepherds Saddle (Kss), granite of Frys Point (Kfp), granodiorite of Spring Lake (Ksl), granodiorite of Ash Peaks Ridge (Kgapr), McGann pluton (Kmg), Bullfrog pluton (Kb), quartz diorite of Yucca Point (Kyp), granite of Grant Cove (Kgg), granite of Tharps Peak (Ktp), granite of East Fork of Dry Creek (Ktp), granite of East Fork of Dry Creek (Kdc), granodiorite porphyry (Kgpy), granodiorite of Redwood Mountain (Kgrm), hypersthene granodiorite (Khg), granodiorite of North Fork of Kaweah River (Knk), granite of Grant Grove, eastern mass (Kgge), metadacite porphyry (Kmdp), hypersthene-bearing metadacite (Kmhd), hypabyssal granodiorite stock (Khg), quartz diorite of Empire Mountain (Kem), hornblende gabbro (Kgb), granodiorite of "Nev Point" (Knp), granodiorite of Windy Ridge (Kwr), granodiorite of Pecks Canyon (Kpc), granodiorite of White Chief Mine (Kwc), granodiorite of Camelback Ridge (Kgcr), granodiorite of Burnt Camp Creek (Kbc), granodiorite porphyry dikes (Kgpyd), felsite (Kf), Dragon pluton (Kdr), Taboose pluton (Kt), Twin Lakes pluton (Ktl), Diamond pluton (Kdi), Mule Lake pluton (Kml), Red Mountain Creek pluton (Krm), Independence pluton (Ki), White Fork pluton (Kwf), anorthosite (Kan), mafic plutonic rock (Km), granite of Carroll Creek (Kcc)
Kmwis Mount Whitney Intrusive Suite, grouped (Cretaceous)
Kmwis includes Mount Whitney Intrusive Suite, Whitney granodiorite (Kw), Mount Whitney Intrusive Suite, Paradise granodiorite (Kp), granodiorite of Sugarloaf (Mount Whitney Intrusive Suite) (Kgs), Mount Whitney Intrusive Suite, granodiorite of Lone Pine Creek (Klp)
Kmpis Mitchell Peak Intrusive Suite, grouped (Cretaceous)
Kmpis includes Mitchell Peak granodiorite (of Mitchell Intrusive Suite) fine-grained facies (Kmf), Mitchell Peak granodiorite (of Mitchell Intrusive Suite) fine-grained facies (Kmpg), granodiorite of Lookout Peak (of Mitchell Intrusive Suite) (Kglp), granodiorite of Castle Creek (of Mitchell Intrusive Suite) (Kgc), injection zone along margin of the granodiorite of Castle Creek (of Mitchell Intrusive Suite) (Kccz)
Ksis Sequoia Intrusive Suite, grouped (Cretaceous)
Ksis includes granite of Weaver Lake (of Sequoia Intrusive Suite) (Kwl), granite of Chimney Rock (of Sequoia Intrusive Suite) (Kcr), granite of Clover Creek (of Sequoia Intrusive Suite) (Kcl), Giant Forest granodiorite (of Sequoia Intrusive Suite) (Kgf), Dome Creek facies of the Giant Forest granodiorite (of Sequoia Intrusive Suite) (Kgfdc)
Kpcs Palisade Crest Intrusive Suite, grouped (Cretaceous)
Kpcs includes granodiorite of McMurry Meadows (Kgmm), Tinemaha granodiorite (Kta)
Kmi Cretaceous metaigneous rocks, grouped
Kmi includes meta-andesite (Kma), metarhyolite and metadacite breccia (Kvbr), metarhyolite tuff (Kmrt), schistose metarhyolite (Ksmr), metarhyolite lava (Kmrf), metavolcanic sedimentary rocks (Kmsv), metarhyolite (Kmrr), metarhyolite airfall ash (Kmap)
KJi Cretaceous and/or Jurassic intrusive rocks, grouped
KJi includes quartz diorite of Cactus Ridge (Kcr), granite of Skagway Grove (KJsw), granite of Hospital Rock (KJhr), granodiorite of Pattee Rocks (KJgr), gabbro (Kgb), felsic dike (Kf), granodiorite (Kgr), quartz diorite and other mafic plutonic rocks (KJqd), granite of Lodgepole Campground (Klp), rhyolite porphyry dikes (Krp), sheared granodiorite (KJsgd)
KJt Cretaceous and/or Jurassic tuffs, grouped
KJt includes metarhyolite and metadacite tuff, undivided (KJmt), metadacite tuff (Jmdt)
Jv Jurassic volcanic rocks, grouped
Jv includes volcanic complex of the Alabama Hills, lower part (Javl), Inyo Mountains volcanic complex, lower part (Jivl)
Ji Jurassic intrusive rocks, grouped
Ji includes Inyo Mountains volcanic complex, upper part (Jiva), volcanic complex of the Alabama Hills, upper part (Javu), Inyo Mountains volcanic complex, middle part (Jivm), Pat Keyes pluton (Jpk), intrusive rocks marginal to Pat Keyes pluton (Jl), diorite of Schaeffer Meadow (Jsm), alaskite of Kern Peak (Jkp), alaskite of Upper Funston Meadow (Juf), granite of Toowa Range (Jt), alaskite of Hells Hole (Jhh), granodiorite of Doe Meadows of Dubray and Dellinger (Jdm), alaskite of Window Cliffs (Jawc), granodiorite of Kern Canyon ranger station (Jkcr), granite of Rattlesnake Creek (Jrc), mafic plutonic rocks associated with granite of Grasshopper Flat (Jgf), granodiorite of Sheep Creek (Jsc), granodiorite of Left Stringer (Jls), granite of Angora Creek (Jac), granodiorite of Leggett Creek (Jlc), mafic granodiorite (Jmgd), granodiorite of Cold Meadows (Jcm), older mafic plutonic rocks (Jm), sheared granodiorite (Jgd), granodiorite of Yucca Mountain (Jym)
JTRj Jurassic and/or Triassic intrusive rocks, grouped
JTRj includes granite of Lion Rock (JTRlr), quartz porphyry (JTRqp), sheared diorite and gabbro (JTRd), mafic plutonic rock (JTRmpr), older sheared granite (JTRosg)
JTRmi Jurassic and/or Triassic metaigneous rocks, grouped
JTRmi includes meta-andesite and metabasalt (JTRab), metarhyolite (JTRmr), metavolcanic rocks, conspicuous layers of metarhyolite (JTRrh), metarhyolite lava flows (JTRrf), piedmontite-bearing metarhyolite tuffs (JTRrp), metawackes and pelitic hornfels (JTRmp), metasedimentary tuff (JTRms), metarhyolite and metadacite tuff (JTRrd), meta-andesite and metadacite, undifferentiated tuffs (JTRmamd), meta-andesite and metadacite, water-laid tuffs (JTRav), meta-andesite (TRma)
JTRm Jurassic and/or Triassic metamorphic rocks, grouped
JTRm includes biotite-feldspar-quartz schist (JTRbs), marble (JTRm), calc-hornfels (JTRch), quartz sericite hornfels (JTRqs), quartzite (JTRq), calc-silicate schist (JTRcs), amphibolite (JTRa), quartz and biotite mylonitic phyllite (JTRqbp), biotite mylonitic phyllite (JTRbp), andalusite-biotite schist (JTRabs), silicated marble, calc-hornfels, and schist (JTRscs), gneiss (JTRg), felsic gneiss (JTRgf)
TRu Union Wash Formation (Middle? and Early Triassic)
TRPc Conglomerate Mesa Formation (Early Triassic and Late Permian)
MZmi Mesozoic metaigneous rocks, grouped
MZmi includes mafic metavolcanic rocks (MZmm), meta-andesite (MZma), felsic metavolcanic rocks (MZmrd), metavolcanic rocks (MZmv), volcaniclastic metasandstone (MZvss), mafic plutonic rocks (MZmpr), hypersthene-bearing metadacite tuff (MZvh), metaquartz porphyry (MZqp)
MZmr Mesozoic metamorphic rocks, grouped
MZmr includes metasedimentary rock (MZms), marble (MZm), calc-silicate conglomerate (MZccgl), calc-silicate hornfels and schist (MZcs), quartzite (MZq), quartz-biotite schist and hornfels (MZqbs), quartz-biotite and calc-silicate schist nd hornfels (MZqbcs), slate and phyllite (MZslp), siliceous hornfels (MZslhf), metasandstone (MZss), tactite (MZtc)
MZPzhs Pelitic hornfels and schist (Mesozoic or Paleozoic)
MZPzch Calc-hornfels (Mesozoic or Paleozoic)
PZbs Biotite schist (Paleozoic)
PZph Pelitic hornfels and quartzite (Paleozoic)
PPNk Keeler Canyon Formation (Early Permian and Pennsylvanian)
PZms Metasedimentary rocks (Paleozoic?)
PZmqh Micaceous quartzite and pelitic hornfels (Lower Paleozoic)
PZsch Siliceous calc-hornfels (Lower Paleozoic)
PZcth Metachert and andalusite-bearing pelitic hornfels (Lower Paleozoic)
Pl Lone Pine Formation, grouped
Pl includes Lone Pine Formation, upper part (Plu), Lone Pine Formation, lower part (Pll)
PZcph Banded calc-hornfels and pelitic hornfels (Lower Paleozoic)
PZm Lower Paleozoic marble, grouped
PZm includes marble (PZm), marble (PZmb)
PZphm Pelitic hornfels and interbeds of marble (Lower Paleozoic)
Cp Poleta formation (Cambrian)
Cca Campito formation, Andrews Mountain member (Cambrian)
q unnamed unit (age unknown)