

# Map Unit Properties Table: Devils Postpile National Monument and vicinity

Colored rows indicate map units within Devils Postpile National Monument.

| Age        | Unit Name (Symbol)                                                                     | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Erosion Resistance                      | Suitability for Infrastructure                              | Hazards                                               | Paleontological Resources         | Cultural Resources                                | Mineral Occurrence                                | Habitat                                         | Recreation                                                                             | Geologic Significance                                        |
|------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------|-------------------------------------------------------|-----------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------|
| QUATERNARY | <b>SURFICIAL DEPOSITS</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |                                                             |                                                       |                                   |                                                   |                                                   |                                                 |                                                                                        |                                                              |
|            | Alluvium (Qal)                                                                         | Valley-fill material. Includes both gravel and finer sediments. Locally contains appreciable pumice of non-alluvial origin, especially in the northeast quadrant of the reference map. Flood plain deposits in valley lowlands.                                                                                                                                                                                                                                                                  | Low.                                    | Contains roads and campgrounds.                             | Limited exposures; none documented.                   | None.                             | Possible American Indian sites. Limited exposure. | Sand and gravel.                                  | Riparian habitat; sub-alpine meadows.           | Limited aerial extent; campgrounds.                                                    | Stream processes.                                            |
|            | Talus (Qt)                                                                             | Rock debris, largely angular, mapped chiefly at the foot of steep cliffs at higher elevations in the Devils Postpile quadrangle. Scattered outcrops of limited aerial extent in the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                     | High.                                   | Low. Unstable debris beneath cliffs.                        | Potential downslope movement.                         | None.                             | Minor exposures outside of the monument.          | None documented on reference map.                 | Bare rock exposures. Habitat for small animals. | Limited aerial extent outside the monument.                                            | High altitude weathering and erosion processes.              |
|            | Talus and slopewash (Qts)                                                              | Miscellaneous debris mantling gentle to steep slopes. Locally contains appreciable pumice, especially in the northeast quadrant of the reference map. Locally also includes minor glacial materials. Not exposed in the monument.                                                                                                                                                                                                                                                                | Moderate.                               | Shuttle bus route; Mammoth Mountain ski lodge.              | None documented on reference map.                     | None documented on reference map. | Possible American Indian sites.                   | Pumice.                                           | Coniferous forests and sub-alpine meadows.      | Suitable for most uses, including hiking, picnicking, camping, skiing.                 | High altitude weathering and erosion processes.              |
|            | Cirque Moraine (Qm)                                                                    | Small moraines in cirques, likely of post-Wisconsinan age (the last Pleistocene glacial period, the Wisconsinan, began approximately 110,000 years ago and ended approximately 10,000 years ago). Scattered high- elevation outcrops of limited aerial extent in the Ritter Range. Not exposed in the monument.                                                                                                                                                                                  | Moderate to high.                       | Low. Scattered outcrops of limited extent. Not applicable.  | Scattered outcrops of limited extent. Not applicable. | None documented on reference map. | Remote possibility of American Indian sites.      | None documented on reference map.                 | Alpine tundra above tree-line.                  | Suitable for backcountry hiking, pack trips, and camping.                              | Features left by alpine glaciation.                          |
|            | Glacial Deposits (Qg)                                                                  | Chiefly formless glacial till (unstratified, unsorted material) but includes some moraine; largely of Wisconsinan age. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                              | Moderate to high.                       | Contains Inyo National Forest roads.                        | Unlikely. Gradually sloping topography.               | None documented on reference map. | Possible American Indian sites.                   | None documented on reference map.                 | Valley edge vegetation. Variable altitude.      | Suitable for most uses, including hiking, picnicking, camping.                         | Pleistocene glacial activity.                                |
|            | <b>VOLCANIC ROCKS</b><br>(classification based on and extrapolated from chemical data) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |                                                             |                                                       |                                   |                                                   |                                                   |                                                 |                                                                                        |                                                              |
|            | Rhyolite pumice (Qp)                                                                   | Light-gray, subangular, rhyolitic pumice fragments and volcanic ash. Mapped in the northeastern part of the Devils Postpile quadrangle where it forms a blanket up to several tens of feet in thickness in the rather broad, flat area. Elsewhere it is locally a major constituent of units mapped as <i>Qal</i> or <i>Qts</i> . Although much of the pumice is of Holocene age (related to <i>Qr</i> domes), much is likely older (e.g., related to <i>Qqm</i> ). Not exposed in the monument. | Low (ash) to moderate (rock fragments). | Contains unimproved Inyo National Forest roads.             | Relatively flat topography suggests minimal hazards.  | None documented on reference map. | Possible American Indian sites.                   | Pumice.                                           | Volcanic soils and coniferous forests.          | Mountain biking in Deer Mountain/Inyo Crater Lakes area; cross-country skiing, hiking. | Quaternary volcanic activity.                                |
|            | Rhyolite of Mono Craters (Qr)                                                          | Obsidian and other dominantly glassy rocks with varied percentage of quartz; plagioclase, sanidine, and biotite phenocrysts. Occurs as a series of domes aligned north-south in the northeastern corner of the Devils Postpile quadrangle. Considered to be a southern extension of the Mono Craters rhyolitic domes. Not exposed in the monument.                                                                                                                                               | High.                                   | Isolated outcrops surrounded by <i>Qp</i> . Not applicable. | Potential slumping into Deadman Creek.                | None documented on reference map. | Limited exposure. Possible American Indian sites. | Obsidian, quartz, plagioclase, sanidine, biotite. | Volcanic soils and coniferous forests.          | Inyo National Forest recreational activities.                                          | Related to Mono Craters volcanic eruptions                   |
|            | Basalt of the Red Cones (Qbr)                                                          | Occurs as cinders in the Red Cones and as a flow extending from the base of the southernmost cone. Typically scoriaceous with prominent phenocrysts of plagioclase and olivine. Exposed on the southeastern slope of the Middle Fork of the San Joaquin River, southeast of the monument.                                                                                                                                                                                                        | High.                                   | Hiking trails. Inyo National Forest.                        | Unstable slopes.                                      | None.                             | Possible American Indian sites.                   | Phenocrysts of plagioclase and olivine.           | Surrounded by coniferous forest.                | Inyo National Forest recreational activities.                                          | Erupted less than 10,000 years ago. Escaped glacial erosion. |
|            | Olivine-bearing Quartz Latite (Qoq)                                                    | Flow of dark-gray rock with aphanitic to glassy matrix and abundant plagioclase and sanidine phenocrysts. Minor exposure of limited aerial extent in the northeastern corner of the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                     | High.                                   | Outcrop of limited extent. Not applicable.                  | Relatively gentle topography.                         | None.                             | Limited exposure. Possible American Indian sites. | Phenocrysts of plagioclase and sanidine.          | Outcrop of limited extent. Not applicable.      | Outcrop of limited extent. Not applicable.                                             | Quaternary volcanic activity.                                |
|            | Andesite (Qa)                                                                          | Includes scattered flow remnants of porphyritic andesite (phenocrysts of plagioclase and olivine) and andesitic cinder in cones north and east of Mammoth Mountain. All are not necessarily from the same source, but of approximately the same age. Not exposed in the monument.                                                                                                                                                                                                                | Moderate (cinder) to high (flow).       | Scattered, minor outcrops. Insignificant.                   | Scattered, minor outcrops. Insignificant.             | None.                             | Scattered, minor outcrops. Insignificant.         | Phenocrysts of plagioclase and olivine.           | Scattered, minor outcrops. Insignificant.       | Scattered, minor outcrops. Insignificant.                                              | Quaternary volcanic activity.                                |
|            | Andesite of Pumice Butte (Qap)                                                         | Cinder cones and associated flows. Typically scoriaceous; nonporphyritic. Contacts only approximate; partly distinguished from older andesite in the area by aerial photo interpretation. Includes dacite that forms two knobs in the northwest part of the outcrop area, which may be older than the andesite. Exposed at Pumice Butte, southeast of the monument.                                                                                                                              | High.                                   | Limited to area around Pumice Butte, Inyo National Forest.  | Potential rockfall on steep slopes in backcountry.    | None.                             | Possible American Indian sites.                   | None.                                             | Coniferous forest.                              | Intersects John Muir Trail.                                                            | Quaternary volcanic activity.                                |

Colored rows indicate map units within Devils Postpile National Monument.

| Age                                                                   | Unit Name (Symbol)                                                | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Erosion Resistance                                                        | Suitability for Infrastructure                                                | Hazards                                                         | Paleontological Resources | Cultural Resources                                                               | Mineral Occurrence                                                       | Habitat                                                                   | Recreation                                                                | Geologic Significance                                                                       |
|-----------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                       | Quartz Latite of Mammoth Mountain (Qqm)                           | Light-gray, nearly black in glassier phases. Dominantly glassy texture with varied percentage of plagioclase and biotite phenocrysts. Commonly flow- banded. Previously designated as Pliocene(?). Associated with Mammoth Mountain, east of the monument. Not exposed in the monument.                                                                                                                                                                                                                                                                                                              | High.                                                                     | Mammoth Mountain ski area – highest in California.                            | Outgassing of carbon dioxide (south flank of Mammoth Mountain). | None.                     | Possible American Indian sites and remnants of early mining activity.            | Phenocrysts of plagioclase and biotite.                                  | Bare rock exposures and conifers in Inyo National Forest.                 | Skiing, mountain biking, hiking, and camping.                             | Mammoth Mountain is a volcanic dome complex on the southwestern rim of Long Valley Caldera. |
|                                                                       | Andesite of the Devils Postpile (Qad)                             | Light- to dark-gray, commonly porphyritic with phenocrysts of plagioclase and olivine; rarely vesicular. Platy and columnar jointing well developed locally. Forms columnar basalt and talus at the Devils Postpile. Forms cliff at Rainbow Falls (rhyodacite of Rainbow Falls).                                                                                                                                                                                                                                                                                                                     | Unfractured welded tuff is high; fractured, platy tuff is less resistant. | Suitable for roads and trails. Contains Reds Meadow Resort, east of monument. | Potential rockfall from column collapse.                        | None.                     | Possible American Indian sites (campfires and trails); remnants of early mining. | Phenocrysts of plagioclase and olivine.                                  | Monument lies within lush high-Sierran river corridor; coniferous forest. | Postpile viewing, Rainbow Falls Trail, King Creek Trail, John Muir Trail. | World renowned columnar jointing and glacial features (polish, striations).                 |
|                                                                       | Rhyolitic Tuff of Reds Meadow (Qtr)                               | Crystal-vitric tuff with phenocrysts of quartz and sanidine in nearly equal amounts. Welded in part, with two distinct zones of dense welding, indicating a compound flow unit. Banded (eutaxitic) structure prominent in welded portions. Base consists of unconsolidated pumice, ash, and exotic fragments. Scattered, isolated outcrops with limited aerial extent. Not exposed in the monument.                                                                                                                                                                                                  | High.                                                                     | Outcrops too minor to be significant.                                         | Potential seismic activity.                                     | None.                     | Limited exposures; possible American Indian sites.                               | Phenocrysts of quartz and sanidine.                                      | Scattered, minor outcrops in forest. Insignificant.                       | Fishing, hiking, and pack horse trails (nearby resort).                   | Hot springs attest to ongoing volcanic activity.                                            |
| QUATERNARY/<br>TERTIARY<br>(Pliocene or Pleistocene)                  | Andesite (QTa)                                                    | Medium-gray aphanitic rock, locally containing plagioclase and pyroxene phenocrysts; exposed only in the extreme northeastern corner of the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                 | High.                                                                     | Outcrops too minor to be significant.                                         | Outcrops too minor to be significant.                           | None.                     | Check adjoining Mt. Morrison quadrangle.                                         | Phenocrysts of plagioclase and pyroxene.                                 | Outcrops too minor to be significant.                                     | Recreation tied to activities common to the surrounding national forest.  | Pliocene–Pleistocene volcanic activity.                                                     |
|                                                                       | Regional Unconformity Between Quaternary Rocks and Tertiary Rocks |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                           |                                                                               |                                                                 |                           |                                                                                  |                                                                          |                                                                           |                                                                           |                                                                                             |
| TERTIARY<br>(Pliocene)                                                | Quartz Latite of Two Teats (Tqt)                                  | Light-gray to dark- or purplish-gray, glassy to microcrystalline rock with abundant plagioclase and lesser biotite and amphibole phenocrysts. Flow structures common. Locally fragmental. Mapped in the northeastern part of the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                                                                            | High.                                                                     | Semi-linear outcrops in Inyo National Forest.                                 | Potential rockfall in backcountry.                              | None.                     | Limited exposures; possible American Indian sites.                               | Phenocrysts of plagioclase, biotite, amphiboles.                         | Alpine and subalpine vegetation.                                          | Backcountry hiking and camping.                                           | Pliocene volcanic activity.                                                                 |
|                                                                       | Andesite of Deadman Pass (Tad)                                    | Series of interbedded andesitic flows, cinders, and rubble. Flow rock commonly vesicular; mostly non-porphyritic. Includes scattered remnants of andesitic rock not necessarily from the same source, but of approximately the same age. Exposed in a linear outcrop trend striking northwest from Deadman Pass, north of the monument. Not exposed in the monument.                                                                                                                                                                                                                                 | High.                                                                     | Backcountry trails.                                                           | Potential rockfall in backcountry.                              | None.                     | Possible American Indian sites (campfires and trails).                           | None documented on reference map.                                        | Coniferous forest.                                                        | Hiking, packhorse trails, and fishing at Clark Lakes.                     | Pliocene volcanic activity.                                                                 |
| Regional Unconformity Separating Tertiary Rocks from Cretaceous Rocks |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                           |                                                                               |                                                                 |                           |                                                                                  |                                                                          |                                                                           |                                                                           |                                                                                             |
| GRANITIC ROCKS                                                        |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                           |                                                                               |                                                                 |                           |                                                                                  |                                                                          |                                                                           |                                                                           |                                                                                             |
| CRETACEOUS                                                            | Rocks similar to Cathedral Peak Granite (Kcp)                     | Rocks similar to the Cathedral Peak Granite. Composition from granodiorite to leucogranite with average composition of mafic quartz monzonite (26% quartz; 27% K-feldspar; 41% plagioclase; 6% mafics, chiefly biotite). Generally coarse-grained and commonly porphyritic with blocky phenocrysts of K-feldspar up to 5 cm (2 in) long. K-Ar determinations on biotite yield ages of about 85 million years. Leucogranite limited to Fish Creek-Silver Divide area. <i>Kcp</i> intrudes <i>Kmg</i> . Forms its highest peaks in Devils Postpile National Monument on either side of the Buttresses. | High.                                                                     | Suitable for trails. Exposed in both the monument and Inyo National Forest.   | Potential rockfall along the Buttresses.                        | None.                     | Possible American Indian sites (campfires and trails); remnants of early mining. | Phenocrysts of plagioclase and biotite.                                  | Sub-alpine meadows and coniferous forests.                                | Rainbow Falls Trail, King Creek Trail; John Muir Trail.                   | One of many plutons emplaced in the Mesozoic that core the Sierra Nevada.                   |
|                                                                       | Mount Givens Granodiorite (Kmg)                                   | Medium-grained. Composition from granodiorite to quartz monzonite with average composition of felsic granodiorite (24% quartz; 18% K-feldspar; 43% plagioclase; 15% mafics, chiefly biotite and hornblende). Likely continuous with Mount Givens Granodiorite to south of the map area. K-Ar determinations on biotite and hornblende south of the Devils Postpile quadrangle yield ages of about 85 million years. Not exposed in the monument.                                                                                                                                                     | High.                                                                     | Suitable for trails. Exposed in Inyo National Forest.                         | Potential rockfall in backcountry.                              | None.                     | Possible American Indian sites (campfires and trails); remnants of early mining. | Quartz; K-feldspar; plagioclase; mafics, chiefly biotite and hornblende. | Sub-alpine meadows and coniferous forests.                                | Backcountry use including hiking, camping, and pack trips.                | Cretaceous plutonic intrusion.                                                              |
|                                                                       | Granodiorite of Kuna Crest (Kk)                                   | Rock dominantly granodiorite but of variable composition and texture. In the Rush Creek area, contains zones of numerous mafic inclusions and stringers of mafic mineral segregation. Named for exposures on Kuna Crest, Mono Craters quadrangle. Exposed in the northwestern part of the Devils Postpile quadrangle. Floors Garnet and Thousand Island Lakes. Not exposed in the monument.                                                                                                                                                                                                          | High.                                                                     | Suitable for trails in backcountry of Inyo National Forest.                   | Forms gentle slopes along lake shores.                          | None.                     | Possible American Indian sites (campfires and trails).                           | None documented on reference map.                                        | Coniferous forests.                                                       | Backcountry use including hiking, camping, and pack trips.                | Cretaceous plutonic intrusion.                                                              |

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| Age                     | Unit Name (Symbol)                                                                          | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Erosion Resistance | Suitability for Infrastructure                                            | Hazards                                                    | Paleontological Resources | Cultural Resources                                                                   | Mineral Occurrence                                 | Habitat                                              | Recreation                                           | Geologic Significance                      |                               |
|-------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------|------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------|-------------------------------|
|                         | Wheeler Crest Quartz Monzonite (Kwc)                                                        | Medium- grained, commonly porphyritic with phenocrysts of K-feldspar 1 cm (0.4 in) long on average. Biotite and hornblende are the chief mafic minerals. Correlated with Wheeler Crest Quartz Monzonite to the southeast. K-Ar determinations on hornblende in the Mount Tom quadrangle to the southeast yield ages of about 100 million years. Limited to isolated outcrops in the northeastern corner of the reference map. Not exposed in the monument.                                                                                                                                                                                                            | High.              | Low. Isolated pods of rock on slopes above Deadman Creek and Glass Creek. | Potential rockfall in backcountry.                         | None.                     | Possible American Indian sites (campfires and trails).                               | Phenocrysts of K-feldspar.                         | Coniferous forests.                                  | Backcountry trails might cross this unit.            | Cretaceous plutonic intrusion.             |                               |
| CRETACEOUS and JURASSIC | Quartz Monzonite of Shellenbarger Lake (KJs)                                                | Fine- to medium- grained, commonly porphyritic with micrographic groundmass and 2 to 5 mm (0.08 to 0.2 in) albite phenocrysts of possible replacement origin. Exposed west of the monument, but not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                          | High.              | Backcountry exposures in Inyo National Forest.                            | Potential rockfall in backcountry.                         | None.                     | Possible American Indian sites.                                                      | Phenocrysts of albite (feldspar).                  | Subalpine meadows and coniferous forests.            | Backcountry use.                                     | Cretaceous or Jurassic plutonic intrusion. |                               |
|                         | Felsic dikes and masses (KJfd)                                                              | Fine-grained, rhyolitic, commonly with flow banding. Most dikes occur as a swarm in and near the granodiorite near <i>KJf</i> and are somewhat generalized on the map. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | High.              | Linear features. Not applicable.                                          | Linear features. Not applicable.                           | None.                     | Linear features of limited extent.                                                   | None documented on reference map.                  | Linear features. Not applicable.                     | Linear features. Not applicable.                     | Dikes intrude older rocks.                 |                               |
|                         | Mafic dikes and masses (KJmd)                                                               | Fine- to medium- grained, occasionally porphyritic or amygdaloidal. Mapped as a dike and two small masses south of Iron Mountain (southwest of the monument). These small exposures contain magnetite-rich hornblendite. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                 | High.              | Linear feature and two small masses. Not applicable.                      | Linear feature and two small masses. Not applicable.       | None.                     | Linear feature and two small masses. Not applicable.                                 | Magnetite.                                         | Linear feature and two small masses. Not applicable. | Linear feature and two small masses. Not applicable. | Dikes intrude older rocks.                 |                               |
|                         | Diorite and Gabbro (KJd)                                                                    | Fine- to coarse-grained. Occurs as scattered masses not necessarily of the same age. Gabbro is limited chiefly to the central part of mass south of Iron Creek, and masses north of Stevenson Meadow, south of Island Pass, and northeast of Davis Lakes. Isolated exposures near Trinity Lakes, along Kings Creek, and southeast of Pumice Butte. Not exposed in the monument.                                                                                                                                                                                                                                                                                       | High.              | Limited exposure in vicinity of the monument.                             | None. Not exposed in the monument.                         | None.                     | Limited exposure in vicinity of the monument.                                        | None documented on reference map.                  | Sub-alpine meadows.                                  | Limited exposure.                                    | Cretaceous or Jurassic plutonic intrusion. |                               |
|                         | Granodiorite of King and Fish Creeks (KJf)                                                  | Fine- to coarse-grained. Varied composition and texture with average composition of granodiorite. Both King Creek and Fish Creek masses contain numerous metavolcanic inclusions, including large masses of part to nearly completely assimilated material. Numerous mafic and rhyolitic dikes cut King Creek rocks. <i>KJf</i> intruded by <i>Kcp</i> and <i>Kmg</i> . Mapped south and west of the monument. Not exposed in the monument.                                                                                                                                                                                                                           | High.              | Low. Backcountry exposure in Inyo National Forest. Suitable for trails.   | Potential backcountry rockfall.                            | None.                     | Possible American Indian sites (campfires and trails); remnants of early mining (?). | None documented on reference map.                  | Sub-alpine lakes and coniferous forests.             | Hiking and pack horse trails; camping.               | Cretaceous or Jurassic plutonic intrusion. |                               |
|                         | Granodiorite of Jackass Lakes (KJj)                                                         | Medium- grained, equigranular. Exposed only in a small area at western edge of the quadrangle and named for more extensive exposures in the Merced Peak quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | High.              | Exposure is too minor to be applicable.                                   | Exposure is too minor to be applicable.                    | None.                     | Exposure is too minor to be applicable.                                              | None documented on reference map.                  | Limited outcrops in Inyo National Forest.            | Exposure is too minor to be applicable.              | Cretaceous or Jurassic plutonic intrusion. |                               |
|                         | Quartz Monzonite of Lee Vining Canyon (Jl)                                                  | Medium- grained with varied texture. Contains dense fine- grained felsic rock, commonly porphyritic, locally banded, possibly younger. Numerous dikes and sills, not shown, are likely related to this unit. Cuts the metamorphic rocks exposed in the San Joaquin Mountain ridge. Correlated with quartz monzonite exposed in Lee Vining Canyon and elsewhere in the Mono Craters quadrangle. Rb-Sr whole-rock age determinations from this unit in the Mono Craters quadrangle yielded an age of about 190 million years. Limited to the northeastern part of the Devils Postpile quadrangle at Carson Peak and north of Deadman Pass. Not exposed in the monument. | High.              | Low. Backcountry exposures in Inyo National Forest.                       | Potential backcountry rockfall in vicinity of Carson Peak. | None.                     | Possible American Indian sites (campfires and trails); remnants of early mining (?). | None documented on reference map.                  | Sub-alpine meadows and coniferous forests.           | Backcountry use.                                     | Jurassic plutonic intrusion.               |                               |
| JURASSIC                | Granodiorite of Rush Creek (Jr)                                                             | Medium- grained, ranging in composition from granodiorite to diorite. Generally exhibits a pronounced linear structure and less pronounced foliation. Minor exposure along the northern border of the map continues into Mono Craters quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                        | High.              | Exposure is too minor to be applicable.                                   | Exposure is too minor to be applicable.                    | None.                     | Exposure is too minor to be applicable.                                              | None documented on reference map.                  | Exposure is too minor to be applicable.              | Exposure is too minor to be applicable.              | Jurassic plutonic intrusion.               |                               |
|                         | <b>METAMORPHIC ROCKS</b><br>(prefix "meta" omitted from rock names for convenience)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                                                                           |                                                            |                           |                                                                                      |                                                    |                                                      |                                                      |                                            |                               |
|                         | <b>Metavolcanic Rocks Near Twin Island Lakes</b><br>(approximately 300 m [1,000 ft] thick.) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                                                                           |                                                            |                           |                                                                                      |                                                    |                                                      |                                                      |                                            |                               |
|                         | Basalt (Jb)                                                                                 | Medium dark- gray to dark- gray, thick flows, massive, finely porphyritic with labradorite laths ranging from a fraction of a millimeter to 5 mm (0.2 in) in length, set in a dense matrix of plagioclase, biotite, chlorite, and hornblende. Minor exposure along the northwestern border of the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                                                                                                                                                                                            | High.              | Exposures are too minor to be applicable.                                 | Exposures are too minor to be applicable.                  | None.                     | Exposures are too minor to be applicable.                                            | Plagioclase phenocrysts (labradorite).             | Exposures are too minor to be applicable.            | Exposures are too minor to be applicable.            | Exposures are too minor to be applicable.  | Metamorphosed volcanic rocks. |
|                         | Andesite and Basalt (Ja)                                                                    | Medium dark-gray to dark-gray. Lenticular sequence of thin to thick flows, commonly interlayered with thinly laminated to thin-bedded tuffaceous rocks; typically porphyritic with tabular phenocrysts of plagioclase (andesine to labradorite) as large as 2 cm (0.8 in) in maximum dimension. Locally contains quartz amygdules. Resembles <i>Jab</i> and <i>JTRa</i> . Minor exposure along the northwestern border of the quadrangle, west of Twin Island Lakes. Not exposed in the monument.                                                                                                                                                                     | High.              | Exposures are too minor to be applicable.                                 | Exposures are too minor to be applicable.                  | None.                     | Exposures are too minor to be applicable.                                            | Plagioclase phenocrysts (andesine to labradorite). | Exposures are too minor to be applicable.            | Exposures are too minor to be applicable.            | Exposures are too minor to be applicable.  | Metamorphosed volcanic rocks. |

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| Age                       | Unit Name (Symbol)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Erosion Resistance                                             | Suitability for Infrastructure                                            | Hazards                                                        | Paleontological Resources                                                                                                                                                                                                         | Cultural Resources                                                                              | Mineral Occurrence                                                                                | Habitat                                                                       | Recreation                                                             | Geologic Significance                                                 |  |
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|                           | Sedimentary Rocks (Js)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A generally well-bedded sequence of sedimentary rocks, tuffaceous in part, in the northwestern part of the quadrangle. Composed chiefly of siltstone and fine-grained sandstone but includes tremolite-bearing carbonaceous marble, pelitic hornfels and slate (both typically carbonaceous) and granule conglomerate. Locally includes several feet of graded, rhythmically bedded siltstone in layers ranging from 1 mm to 3 cm (0.04 to 1.2 in). Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | High.                                                          | Exposures are too minor to be applicable.                                 | Exposures are too minor to be applicable.                      | None.                                                                                                                                                                                                                             | Exposures are too minor to be applicable.                                                       | Tremolite.                                                                                        | Exposures are too minor to be applicable.                                     | Exposures are too minor to be applicable.                              | May contain potential evidence of Jurassic depositional environments. |  |
|                           | <b>Metavolcanic Rocks of the Ritter Range</b><br>(approximately 4,600 m [15,000 ft] thick)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                |                                                                           |                                                                |                                                                                                                                                                                                                                   |                                                                                                 |                                                                                                   |                                                                               |                                                                        |                                                                       |  |
|                           | Undifferentiated volcanic rocks, chiefly Breccia (Jbr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Undifferentiated volcanic rocks, chiefly breccia. Highly varied unit that includes nearly all lithologic types of metavolcanic rocks found in the metavolcanic sequence but consists chiefly of tuff breccia, somewhat lesser amounts of crystal tuff and crystal-lithic tuff, hypabyssal intrusives, and bedded tuff. Composition ranges from rhyolite to basalt but averages near dacite or rhyodacite. Rocks are typically structureless, at most, weakly foliated; primary texture generally dominates. Lithic fragments range in maximum dimension from a few mm to more than 0.3 m (1 ft); fragments are typically volcanic, but locally are sedimentary or granitoid. Overprinted pattern indicates an area of extensive migmatization south of Bench Canyon at the western edge of the quadrangle. Exposed west of the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High.                                                          | Trails. Backcountry exposures in Inyo National Forest.                    | Potential backcountry rockfall associated with steeper slopes. | None.                                                                                                                                                                                                                             | Possible American Indian sites (campfires and trails); remnants of early mining (?).            | None documented on reference map.                                                                 | Alpine tundra above tree-line, sub-alpine meadows, and coniferous forests.    | Trails for backcountry use.                                            | Metamorphosed volcanic rocks.                                         |  |
| Andesite and Basalt (Jab) | Medium dark- gray to dark- gray. Thin to thick flows locally interlayered with bedded tuffaceous rocks. Fine-grained to conspicuously porphyritic, containing tabular plagioclase (oligoclase to labradorite) phenocrysts a few mm to as much as 3 cm (1.2 in) in maximum dimension. In several places the unit is a breccia with irregular-shaped fragments of coarsely porphyritic rock in a fine-grained matrix. Porphyritic phases bear a striking resemblance to <i>Ja</i> and <i>JTRa</i> . Fragments of <i>Jab</i> are found in overlying volcanic breccia. Not exposed in the monument. | High.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Low. Minor, scattered outcrops in backcountry of Ritter Range. | Minor, scattered outcrops in Ritter Range pose few, if any, hazards.      | None.                                                          | Potential cultural sites are more likely to be found in adjacent units.                                                                                                                                                           | Plagioclase phenocrysts (oligoclase to labradorite).                                            | Coniferous forests.                                                                               | Minor, scattered outcrops are insignificant with regards to recreational use. | Metamorphosed volcanic rocks.                                          |                                                                       |  |
| JURASSIC and TRIASSIC     | <b>Metavolcanic Rocks of Shadow Creek and Mammoth Crest</b><br>(approximately 4,900 m [16,000 ft] thick)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                |                                                                           |                                                                |                                                                                                                                                                                                                                   |                                                                                                 |                                                                                                   |                                                                               |                                                                        |                                                                       |  |
|                           | Undifferentiated volcanic rocks (JTRu)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Highly varied unit that contains nearly all the rock types of the entire metavolcanic sequence, but consists chiefly of crystal-lithic tuff. Composed of discontinuous, lenticular, dominantly pyroclastic units; rhyolitic to basaltic in composition, but average near dacite or rhyodacite. Rock types (in order of decreasing abundance) are: crystal-lithic tuff; tuff breccia; tuffaceous sandstone and siltstone; flows and hypabyssal intrusives, mostly mafic. Fragments of underlying formations occur locally at or near the base. Rocks in the stratigraphic interval between the base and roughly the easternmost crystal tuff ( <i>JTRx</i> ) unit are characteristically more schistose than most other rocks in the metavolcanic sequence, and primary structures are sparse. Elsewhere in the sequence, generally well preserved primary textures and structures exist south of Garnet Lake; from Garnet Lake north, preservation becomes progressively poorer with accompanying increase in dominance of metamorphic fabric. Hornfelses, schists, and gneisses predominate in the Rush creek area, and are included with <i>JTRu</i> although the high degree of metamorphic recrystallization and associated anomalous structural trends makes their equivalence uncertain and the location of the contact with undifferentiated volcanic rocks, chiefly breccia ( <i>Jbr</i> ) tentative. Based on lithologic similarities, rocks in the Mammoth Crest area are likely equivalent to those in the stratigraphic interval between Agnew Meadows and Shadow Lake. Exposed northwest of the monument. Not exposed in the monument. | High.                                                          | Trails. Backcountry exposures in Inyo National Forest.                    | Potential backcountry rockfall associated with steeper slopes. | Early Jurassic pectinoid (scallop-like) pelecypod bivalves recovered from calcareous sandstones and siltstones ( <i>JTRc</i> ) near Garnet Lake and north of Thousand Island Lake in same stratigraphic interval as <i>JTRu</i> . | Possible American Indian sites (campfires and trails); remnants of early mining (Minaret Mine). | Lead was mined at the abandoned Minaret Mine (claim turned over to U.S. Forest Service in 1990s). | Sub-alpine meadows and coniferous forests.                                    | Trails for backcountry use, including trail to abandoned Minaret Mine. | Metamorphosed volcanic rocks.                                         |  |
|                           | Andesite and Basalt (JTRa)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Medium dark- gray to dark- gray. Thin to thick flows and hypabyssal intrusive. Aphanitic to porphyritic with plagioclase (albite to andesine) phenocrysts as much as 3 cm (1.2 in) long; locally with quartz amygdules up to 1 cm (0.4 in) in maximum dimension. Coarsely porphyritic phases bear striking megascopic resemblance to <i>Jab</i> . Locally extensively replaced by epidote, particularly on Volcanic Ridge, northwest of the monument. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | High.                                                          | Trails. Exposed in the backcountry of the Inyo National Forest.           | Potential backcountry rockfall associated with steeper slopes. | None.                                                                                                                                                                                                                             | Possible American Indian sites (campfires and trails); remnants of early mining (?).            | Plagioclase phenocrysts (albite to andesine); epidote.                                            | Sub-alpine meadows and coniferous forests.                                    | Trails for backcountry use.                                            | Metamorphosed volcanic rocks.                                         |  |
|                           | Crystal Tuff (JTRx)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Light- to medium- gray. Lithic fragments are common but sparse; typically massive or weakly foliated parallel to regional strike. Rhyolitic to quartz latitic in composition. White and pink feldspar is distinguishable in outcrops as small wispy dark patches, bent around crystals or lithic fragments, giving the rock an aspect reminiscent of the banded (eutaxitic) structure of welded tuff; most of these layers likely originated as ash flows. Exposed in northwest-southeast trending outcrops northwest of the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | High.                                                          | Trails. Exposed in the backcountry of the Inyo National Forest.           | Potential backcountry rockfall associated with steeper slopes. | None.                                                                                                                                                                                                                             | Possible American Indian sites (campfires and trails); remnants of early mining (?).            | White and pink feldspar.                                                                          | Sub-alpine meadows and coniferous forests.                                    | Crossed by John Muir Trail. Backcountry use.                           | Metamorphosed volcanic rocks.                                         |  |
|                           | Dacite and Andesite (JTRd)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Medium- to dark- gray, massive porphyritic flows and hypabyssal intrusive rocks, locally amygdaloidal with quartz or calcite fillings; grades into breccia in a few places. Original texture is generally well preserved. Includes a coarsely porphyritic, medium- gray, quartz latitic flow or hypabyssal intrusive, locally amygdaloidal, west of Weber Lake. Exposed in narrow northwest-southeast trending outcrops. Not exposed in the monument.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | High.                                                          | Low. Narrow, linear outcrops in the back-country of Inyo National Forest. | Narrow outcrop bands make potential hazards insignificant.     | None.                                                                                                                                                                                                                             | Potential cultural sites are more likely to be found in adjacent units.                         | Quartz.                                                                                           | Exposures are too minor to be applicable.                                     | Exposures are too minor to be applicable.                              | Metamorphosed volcanic rocks.                                         |  |

Colored rows indicate map units within Devils Postpile National Monument.

| Age                       | Unit Name (Symbol)                                                                                                                                                                                                                                                                                                                                                                                                                                            | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Erosion Resistance                                           | Suitability for Infrastructure                                               | Hazards                                                        | Paleontological Resources                                                                                                                                                       | Cultural Resources                                                      | Mineral Occurrence                                              | Habitat                                                           | Recreation                                 | Geologic Significance                                      |  |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------|--|
|                           | Calcareous Sedimentary Rocks (JTRc)                                                                                                                                                                                                                                                                                                                                                                                                                           | Typically thin-bedded tuffaceous sandstone and siltstone, commonly calcareous. Minor amounts of marble, slate, and conglomerate. Gross sedimentary features are preserved, but microscopic granoblastic fabric; well foliated in places. Sporadic occurrences of garnet, pyroxene, tremolite and/or actinolite, and plagioclase. Rocks composing the thin, sedimentary lens near Minaret Summit contain a much smaller proportion of volcanic material than most sedimentary rocks in the metavolcanic sequence. Exposed in narrow northwest-southeast trending outcrops northwest of the monument.                                                                       | High.                                                        | Low. Narrow, linear outcrops in the backcountry of the Inyo National Forest. | Narrow outcrop bands make potential hazards insignificant.     | Early Jurassic pectinoid (scallop-like) pelecypod bivalves found north of Garnet Lake and north of Thousand Island Lake; ammonites (indeterminate) found south of Minaret Mine. | Potential cultural sites are more likely to be found in adjacent units. | Garnet, pyroxene, tremolite and/or actinolite, and plagioclase. | Exposures are too minor to be applicable.                         | Exposures are too minor to be applicable.  | Metamorphosed sedimentary rocks.                           |  |
|                           | Sandstone, Siltstone, and Slate (JTRss)                                                                                                                                                                                                                                                                                                                                                                                                                       | <u>North of Thousand Island Lake:</u> Medium- to dark- gray siltstone and slate. Locally, slate contains andalusite and garnet. Aphanitic to fine-grained, thinly laminated or massive; locally contains thin laminations composed of quartz, plagioclase and amphibole; primary texture is generally well preserved but locally phyllitic.<br><u>North of Davis Lakes:</u> Dark- gray to medium light- gray siltstone and fine- to medium-grained tuffaceous sandstone; thinly laminated to thin-bedded; beds locally graded. Exposed in narrow outcrops in the northwestern corner of the Devils Lake quadrangle. Not exposed in the monument.                          | Variable. Siltstone less resistant than slate and sandstone. | Exposures are too minor to be applicable.                                    | Exposures are too minor to be applicable.                      | None.                                                                                                                                                                           | Potential cultural sites are more likely to be found in adjacent units. | Andalusite and garnet found in slate.                           | Exposures are too minor to be applicable.                         | Exposures are too minor to be applicable.  | Metamorphosed sedimentary rocks.                           |  |
|                           | <b>Metavolcanic Rocks of Silver Creek</b>                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                              |                                                                              |                                                                |                                                                                                                                                                                 |                                                                         |                                                                 |                                                                   |                                            |                                                            |  |
|                           | Undifferentiated Volcanic Rocks (JTRv)                                                                                                                                                                                                                                                                                                                                                                                                                        | Dominantly intermediate composition so extensively recrystallized that the primary textures and structures are obscure or absent and correlation with units exposed in the Ritter Range Pendant is uncertain. Rocks bearing some similarities to <i>JTRc</i> were tentatively recognized in a few outcrops. Well-developed foliation is the dominant structure with schist and gneiss the most common rock. Crystal-lithic tuff was likely the chief parent rock type; a few mafic flows and calcareous epiclastic rocks formed a quantitatively minor part of the sequence. Exposed in the southern part of the Devils Postpile quadrangle. Not exposed in the monument. | High.                                                        | Low. Exposed in the backcountry of Inyo National Forest.                     | Potential backcountry rockfall associated with steeper slopes. | None.                                                                                                                                                                           | Possible American Indian sites (campfires and trails).                  | None documented on reference map.                               | Sub-alpine meadows and coniferous forests. Silver Creek drainage. | Backcountry use.                           | Metamorphism has destroyed primary textures and structure. |  |
|                           | <b>Regional Unconformity Separating Mesozoic Rocks from Paleozoic Rocks</b>                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                              |                                                                              |                                                                |                                                                                                                                                                                 |                                                                         |                                                                 |                                                                   |                                            |                                                            |  |
| PENNSYLVANIAN and PERMIAN | <b>Metasedimentary Rocks</b><br>(approximately 1,500 m [5,000 ft] thick)                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                              |                                                                              |                                                                |                                                                                                                                                                                 |                                                                         |                                                                 |                                                                   |                                            |                                                            |  |
|                           | <b>Younger Metasedimentary Rocks</b><br>(younger sedimentary sequence lithologically similar to and correlated with Pennsylvanian and Permian [?] rocks of Mount Morrison Pendant southeast of reference map; some silicate marble and calc-hornfels present in eastern part of sedimentary belt near Spooky Meadow lithologically similar to older sedimentary rocks, but structurally concordant, and thus included herein, with younger sedimentary rocks) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                              |                                                                              |                                                                |                                                                                                                                                                                 |                                                                         |                                                                 |                                                                   |                                            |                                                            |  |
|                           | PIPh                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Dark, moderately well-bedded siliceous hornfels and small amounts of interbedded pelitic hornfels, slate, and quartzite; several large irregular areas of massive light-colored cherty or silicified rock northeast of Agnew Meadows. Minor interlayering with metavolcanic rocks at the top of the unit may possibly be primary, but appears more likely to be of tectonic origin. Parent rocks were chiefly shale and siltstone. Exposed in the northeastern corner of the Devils Postpile quadrangle. Not exposed in the monument.                                                                                                                                     | High.                                                        | Low. Exposed in the backcountry of Inyo National Forest.                     | Potential backcountry rockfall associated with steeper slopes. | None.                                                                                                                                                                           | Possible American Indian sites (campfires and trails).                  | None documented on reference map.                               | Coniferous forests.                                               | Backcountry use.                           | Metamorphosed Paleozoic sedimentary rocks.                 |  |
| PIPm                      | Marble in two small outcrops north of Minaret Summit is lithologically similar to the Mount Baldwin Marble in the Mount Morrison quadrangle. Medium- gray to medium dark- gray; thinly laminated to massive; crinoidal in part; clean; typically too sheared and deformed to determine a regional trend. The two outcrops are separated by a massive tuffaceous conglomerate containing many marble fragments. Not exposed in the monument.                   | High.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Only two minor exposures. Insignificant.                     | Only two minor exposures. Insignificant.                                     | Crinoids.                                                      | Only two minor exposures. Insignificant.                                                                                                                                        | None documented on reference map.                                       | Only two minor exposures. Insignificant.                        | Only two minor exposures. Insignificant.                          | Metamorphosed Paleozoic sedimentary rocks. |                                                            |  |

Colored rows indicate map units within Devils Postpile National Monument.

| Age                     | Unit Name (Symbol)                                                                                                                                                                                                                                                                                                          | Features and Description                                                                                                                                                                                                                                                                                                                                                                                                                                             | Erosion Resistance | Suitability for Infrastructure                                          | Hazards                                   | Paleontological Resources | Cultural Resources                                     | Mineral Occurrence                                  | Habitat                                   | Recreation                                                         | Geologic Significance                      |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------|-------------------------------------------|---------------------------|--------------------------------------------------------|-----------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------|--------------------------------------------|
| SILURIAN and ORDOVICIAN | <b>Older Metasedimentary Rocks</b><br>(rocks highly deformed, and regional trend in bedding appears closer to north than trend in younger sedimentary rocks;<br>rocks included in this unit are lithologically similar to, and thus herein correlated with, pre-Pennsylvanian rocks to southeast in Mount Morrison Pendant) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                                                         |                                           |                           |                                                        |                                                     |                                           |                                                                    |                                            |
|                         | SOh                                                                                                                                                                                                                                                                                                                         | Dark- colored, chiefly bedded to massive pelitic and siliceous hornfels; locally abundant thin to thick beds of silicated marble and thin beds of calc-hornfels, both containing plagioclase, tremolite, diopside, and wollastonite as common minerals; minor amounts of fine- to medium-grained quartzite. Parent rocks were shale, siltstone, marly siltstone, and quartz-bearing limestone. Exposed in the northeastern corner of the Devils Postpile quadrangle. | High.              | Low. Scattered outcrops in the backcountry of the Inyo National Forest. | Minor rockfall potential in backcountry.  | None.                     | Possible American Indian sites (campfires and trails). | Plagioclase, tremolite, diopside, and wollastonite. | Coniferous forests.                       | Suitable for most uses, including hiking, picnicking, and camping. | Metamorphosed Paleozoic sedimentary rocks. |
|                         | SOm                                                                                                                                                                                                                                                                                                                         | Silicated marble in beds generally poorly layered or massive. Exposed as isolated outcrop pods within <i>SOh</i> . Not exposed in the monument.                                                                                                                                                                                                                                                                                                                      | High.              | Low. Isolated pods within SOh.                                          | Exposures are too minor to be applicable. | None.                     | Exposures are too minor to be applicable.              | None documented on reference map.                   | Exposures are too minor to be applicable. | Exposures are too minor to be applicable.                          | Metamorphosed Paleozoic sedimentary rocks. |

Reference: Huber, N.K., and C.D. Rinehart. 1965. *Geologic map of the Devils Postpile quadrangle, Sierra Nevada, California*. Scale 1:62,500. Geologic Quadrangle GQ-437. Reston, VA: U.S. Geological Survey.