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Subsection M261Eh
Upper Batholith and Volcanic Flows

This subsection is the moderately high elevations of the western slope of the Sierra Nevada. It is just west of a fault zone from Mohawk Valley, which is in the Plumas Trough, to Lake Tahoe; and it is west of the crest of the Sierra Nevada south of Lake Tahoe as far as the Middle Fork of the Stanislaus River. It has a cold and humid climate. MLRAs 22d and 22e.

Lithology and Stratigraphy. Mesozoic granitic and post-batholith volcanic rocks predominate in this subsection, but pre-batholith rocks are common, too. The volcanic rocks are mostly Miocene and Pliocene andesitic lahars of the Mehrten Formation. The pre-batholith rocks are mostly metamorphosed Paleozoic and Jurassic marine sedimentary and volcanic rocks. Pleistocene glacial till and outwash are common and there are small areas of Quaternary alluvial and lacustrine deposits.

Geomorphology. This subsection is on a gently sloping to moderately steep plateau with steep canyon slopes. Glacial erosion has modified the valleys in at least the higher parts of the subsection. Several large rivers between the Feather and Stanislaus Rivers head in or cross the subsection. Some of these rivers flow in the bottoms of very steep sided canyons. Many canyons U-shaped from glacial erosion. The elevation ranges from about 4000 or 5000 to 8000 feet, and up to 8587 feet on Sierra Buttes and 9006 feet on Granite Chief. Mass wasting and fluvial erosion are the main geomorphic processes.

Soils. The soils are mostly Entic, Lithic, Typic, Andic, and Pachic Xerumbrepts; Dystric Xeropsamments; and Dystric Xerochrepts. There are some Cryumbrepts at the highest elevations. The soils are mostly well drained. Soil temperature regimes are mostly frigid, but some are cryic. Soil moisture regimes are mostly xeric. Soils have udic moisture regimes where snow persists through spring, and melts to keep soils moist well into the summer. Soils with aquic moisture regimes are present in glaciated terrain and small valleys.

Vegetation. The predominant natural plant communities are, from lower to higher elevations, Mixed conifer series, White fir series, and Red fir series. Jeffrey pine series occurs on shallow and rocky soils. There are a few small patches of Mountain hemlock series at higher elevations. Lodgepole pine series prevails on many wet soils and on drier soils where cold air drainage and frost limit the regeneration of other conifers. Aspen series and Mountain alder series are common in riparian or wet areas. Sedge meadow communities are common, but they are not extensive.

Characteristic series by lifeform include:
Grasslands: Alpine habitat, Breaked sedge series, Fen habitat, Green fescue series, Montane meadow habitat, Nebraska sedge series, Rocky Mountain sedge series, Shorthair reedgrass series, Shorthair sedge series.
Shrublands: Bush chinquapin series, Greenleaf manzanita series, Huckleberry oak series, Mountain whitethorn series, Tobacco brush series.
Forests and woodlands: Aspen series, Jeffrey pine series, Mixed conifer series, Mountain hemlock series, Red fir series, Western white pine series, White fir series, Whitebark pine series.

Climate. The mean annual precipitation is about 40 to 80 inches; most of it falls as snow. Mean annual temperature is about 35° to 50° F. The mean freeze-free period is about 25 to 100 days.

Surface Water. Runoff is rapid from most of the area. Most of the runoff flows to the Feather, Yuba, American, Cosumnes, Mukelumne, or Stanislaus Rivers or their tributaries. Some flows from the eastern margin of the subsection to the Truckee River. Maximum flow in these rivers is during spring when snow melt is rapid. There are many small natural lakes or ponds in glaciated terrain, and some reservoirs.

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