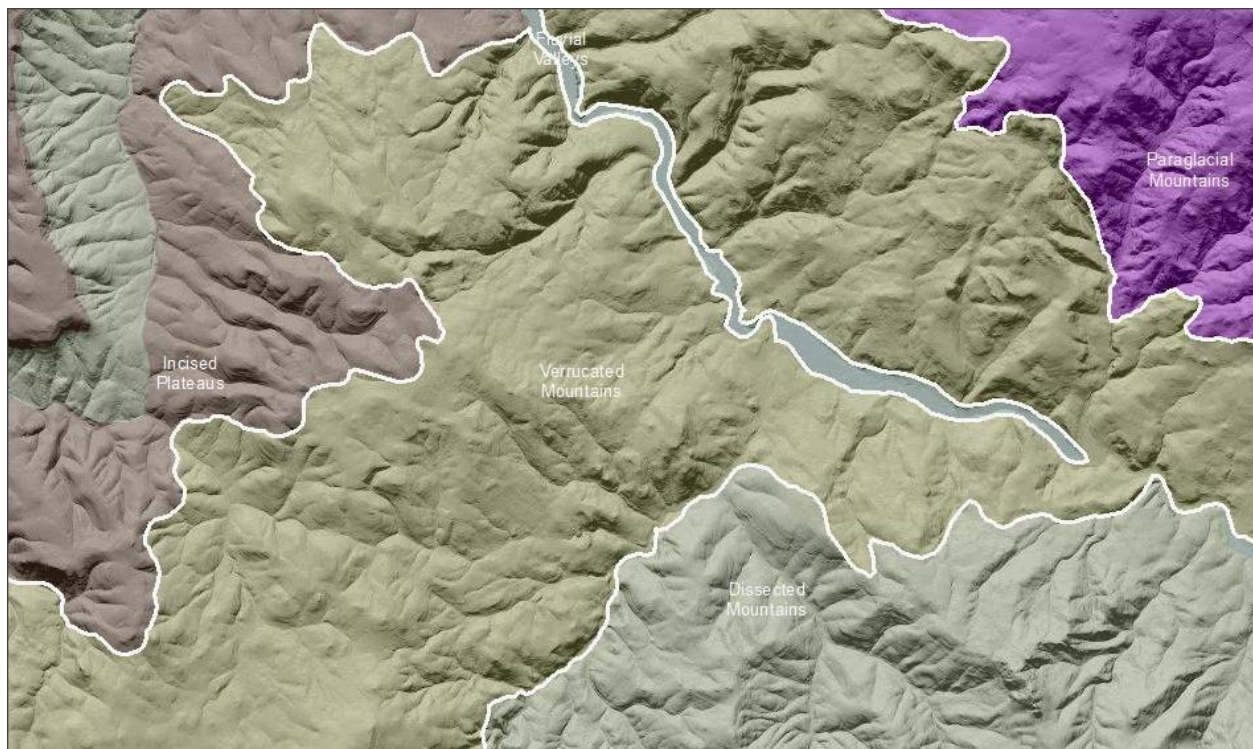


## Klamath Mountains Verrucated Mountains, Serpentinitic

**Terrain Class: Mountains** - No one process responsible for construction of mountains. They can be uplifted, tectonic, subduction of plates, folding, uplift, up and down warping of the mantle, inflation of molten lower crustal (batholiths), etc. Erosion of mountain systems occurs over time. The rate of erosion is dependent on the geomorphic process, the underlying rock structure, and the climate, including both freeze thaw and the amount and intensity of precipitation and runoff. Mountains are further defined and distinguished based on morphology, including the pattern and density of drainages, depth of drainages, overall morphology of the area between the drainages, evidence of a strong imprint of a surficial process such as glaciation, and presence of visible underlying rock structure.

Mountains have simple to very complex forms that have arisen due to inherited rock structure, rock history, and are the net result of local to regional spatial scales of competing rates of upbuilding/uplift and downgrading/erosion. Mountains will have an inherited history from weathering and degradation of the underlying stack of earth materials that forms them. Vegetation, habitat, water interception, collection and transport will share a similar history in the same type of uplift and rock.

### Landform Association: Verrucated Mountains



**Verrucated Mountains, Serpentinitic** have a hummocky, warty morphology, including common hillocks and poorly organized to tortuous drainages, but cannot be definitely ascribed to mass failure as the dominant surface process. Origins for this type of Landform Association include ancient landslides that have been eroded, such as exhumed deep-marine landslides incorporated in a bedrock formation, or exhumed ancient volcanic flows in bedrock strata. In this map unit, drainages are poorly integrated,

leading to variable routing of surface water through this type of landscape. Sediment recruitment is regular where this map unit intersects stream channels. Because of irregular slopes and aspect, as well as varied surface water availability, this Landform Association has a diverse upland habitat.

Serpentinitic is a term attached to the Landtype Association if the base geology is peridotite or serpentine (from geologic maps). The resultant chemical imbalance (low Ca/Mg ratio) may or may not dominate the above ground vegetation assemblages. In some areas, the chemical imbalance may be obscured by landslide activity which neutralizes the affect by mixing multiple parent materials

This Landform Association is rare on National Forest System Lands.

**Landtype Associations:** Landtype Associations are formed by intersecting vegetation series or groups of vegetation series with Landform Associations.

### Topography:

The following tables represent the average conditions for the Landform Association. Only lands within and adjacent to National Forest System Lands were mapped by this project. The entire EPA Level III Ecoregion is not covered by this mapping.

The percent of Landform Association (% of LfA) in bold in the table below refers to the percent of the Ecoregion represented by that Landform Association. The (% of LfA) numbers not in bold in the table below refer to the percent of each Landtype Association within the Landform Association.

Landform Association/Landtype Association	% of LfA	Mean % Slope	Minimum Elevation (m)	Maximum Elevation (m)	Mean Elevation (m)	% Northerly Aspect (226° -	% Southerly Aspect (135° -
<b>Verrucated Mountains, Serpentinetic</b>	<b>0.2%</b>	<b>42</b>	<b>196</b>	<b>704</b>	<b>472</b>	<b>77%</b>	<b>23%</b>
Verrucated Mountains, Serpentinetic, Port Orford-cedar	19.0%	39	117	628	330	73%	27%
Verrucated Mountains, Serpentinetic, Port Orford-cedar - Western Hemlock	64.4%	40	134	896	534	77%	23%
Verrucated Mountains, Serpentinetic, Tanoak	8.5%	57	206	772	588	91%	9%
Verrucated Mountains, Serpentinetic, Tanoak - Western Hemlock	8.0%	31	328	522	436	67%	33%

### Climate:

Landform Association/Landtype Association	Mean Annual Precipitation (mm)	Mean Annual Temperature °C	AET/PET Ratio July, Aug, Sept
<b>Verrucated Mountains, Serpentinetic</b>	<b>2230</b>	<b>12</b>	<b>0.59</b>
Verrucated Mountains, Serpentinetic, Port Orford-cedar	2187	12	0.60
Verrucated Mountains, Serpentinetic, Port Orford-cedar - Western Hemlock	2280	12	0.60
Verrucated Mountains, Serpentinetic, Tanoak	2227	12	0.60
Verrucated Mountains, Serpentinetic, Tanoak - Western Hemlock	2223	12	0.57

The ratio of Actual Evapotranspiration to Potential Evapotranspiration (AET/PET) is used as a broad-scale indicator of potential drought stress. We obtained modeled actual and potential evapotranspiration datasets from the Numerical Terradynamic Simulation Group at the University of Montana

(<http://www.ntsg.umn.edu/project/mod16>) for a 30 year climate average. AET/PET ratio in the table above is based on a scale of zero to one. A value closer to 1 means the vegetation is transpiring close to its potential. A value farther from 1 means that the Actual Evapotranspiration is below potential based on this climatic zone (Ringo, et. al. 2016 in draft).