**Blue Mountains Paraglacial 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: Paraglacial Mountains**



**Paraglacial Mountains, Serpentinitic** are influenced by and directly conditioned by glaciation and deglaciation, though the area is not in direct contact with glacial ice. Features are constructed by geomorphic processes active during the transition from glacial to post-glacial conditions such as deposition of debris washed off the newly exposed ice-free landscape up slope and deposited by high stream discharge associated with the retreating ice. The Landform Association includes Periglacial landforms; pertaining to processes, conditions, areas, climates, and topographic features occurring at the immediate margins of glaciers and ice sheets, and are influenced by the cold temperature of the ice. Sediment scour and deposition patterns leave a mix of soil depths and textures in this map unit. Glacial cobbles and boulders are prominent in this landscape.

Serpentinitic is a term attached to the landform association if the base geology is peridotite or serpentine (from geologic maps. The resultant chemical (Mg/Ca) imbalance may or may not dominate the above ground vegetation assemblages. In some areas the chemical imbalance that results from this geology may be obscured by landslide geomorphology which neutralized 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.



**Climate:**



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.umt.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 1means that the Actual Evapotranspiration is below potential based on this climatic zone (Ringo, et. al. 2016 in draft).