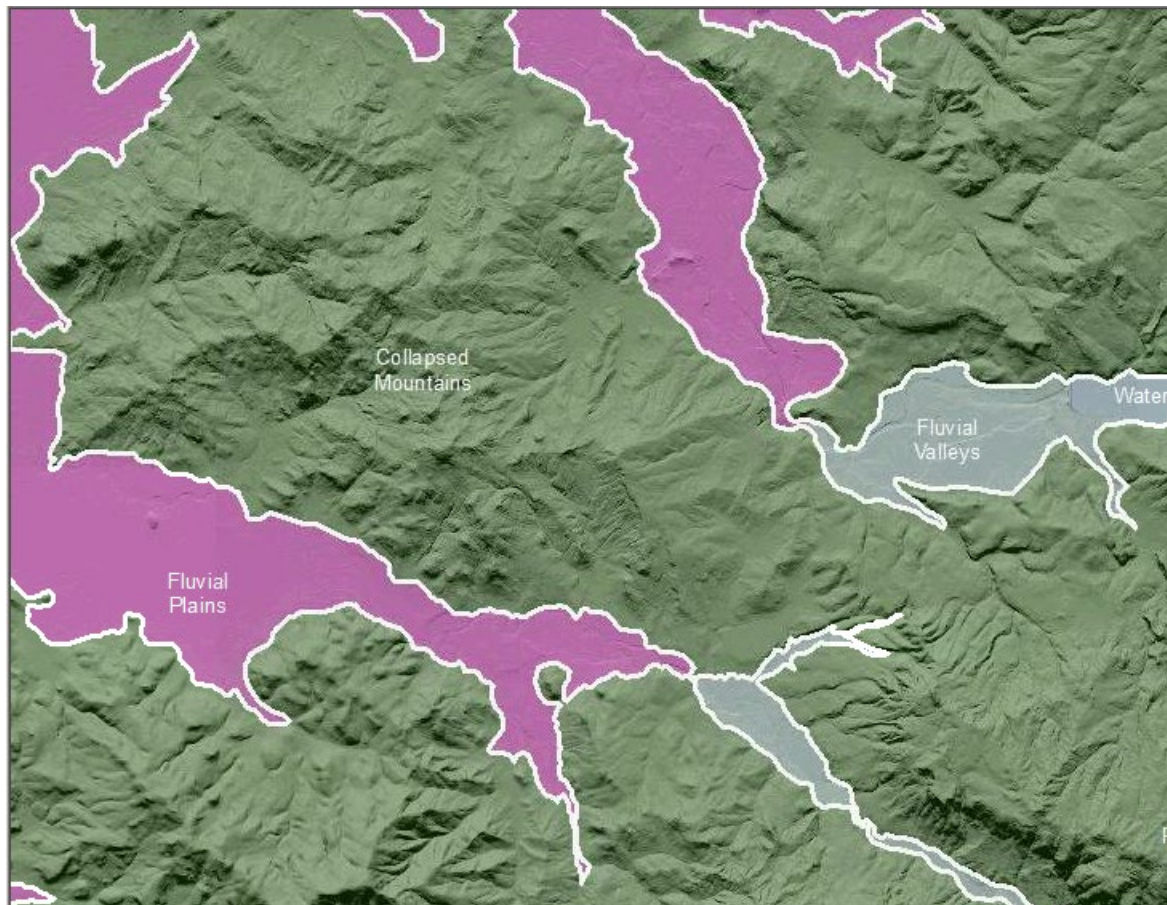


## Blue Mountains Collapsed Mountains

**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: Collapsed Mountains



## Collapsed Mountains

The dominant features are the many large landslides that have collapsed large extents of mountainsides. Landslide areas can cover many miles and may be from the pre-historic past or a recent and current development. Collapsed mountains consist of active and inactive zones. Many of these landslides are recognized and the more discreet, well-formed slide areas have been identified in geological maps. Sides of whole mountains and entire ranges can be solely landslide derived. Water routing through this landscape may be irregular due to recent and on-going slope failure with its accompanying surface and subsurface drainage diversions and impoundments. These areas are considered as sources of cool water to streams. Sediment recruitment by streams is significant along the margins of landslides. Sediment and water storage (such as a lake, meadow and or plain - current or historic) is locally significant upstream of landslide toes. Because of irregular slopes and varied surface water availability, this Landform Association has a most diverse upland habitat. The slide areas can hold deep soils, retain moisture and provide micro-climates that offer a variety of excellent resources for numerous floral and faunal communities.

This Landform Association has a limited spatial extent 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° - 134°)	% Southerly Aspect (135° - 225°)
<b>Collapsed Mountains</b>	<b>0.6%</b>	<b>21</b>	<b>1036</b>	<b>1409</b>	<b>1224</b>	<b>74%</b>	<b>26%</b>
Collapsed Mountains, Douglas-Fir	25.7%	21	1108	1420	1279	77%	23%
Collapsed Mountains, Grand Fir-White Fir	6.5%	24	1204	1489	1363	95%	5%
Collapsed Mountains, Ponderosa Pine	43.4%	19	983	1413	1182	60%	40%
Collapsed Mountains, Western Juniper	24.4%	21	577	1190	852	60%	40%

**Climate:**

<b>Landtype Association</b>	<b>Mean Annual Precipitation (mm)</b>	<b>Mean Annual Temperature °C</b>	<b>AET/PET Ratio July, Aug, Sept</b>
<b>Collapsed Mountains</b>	<b>453</b>	<b>8</b>	<b>0.18</b>
Collapsed Mountains, Douglas-Fir	453	8	0.18
Collapsed Mountains, Grand Fir-White Fir	488	7	0.22
Collapsed Mountains, Ponderosa Pine	449	8	0.18
Collapsed Mountains, Western Juniper	400	10	0.10

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