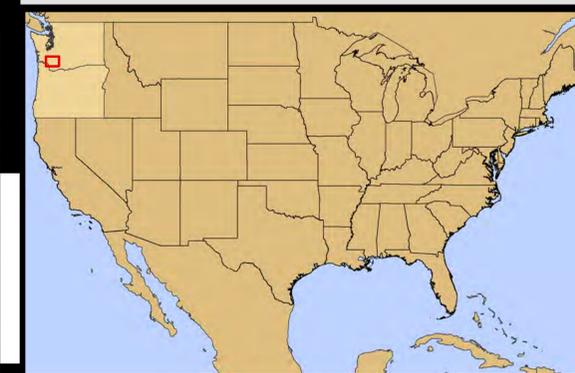
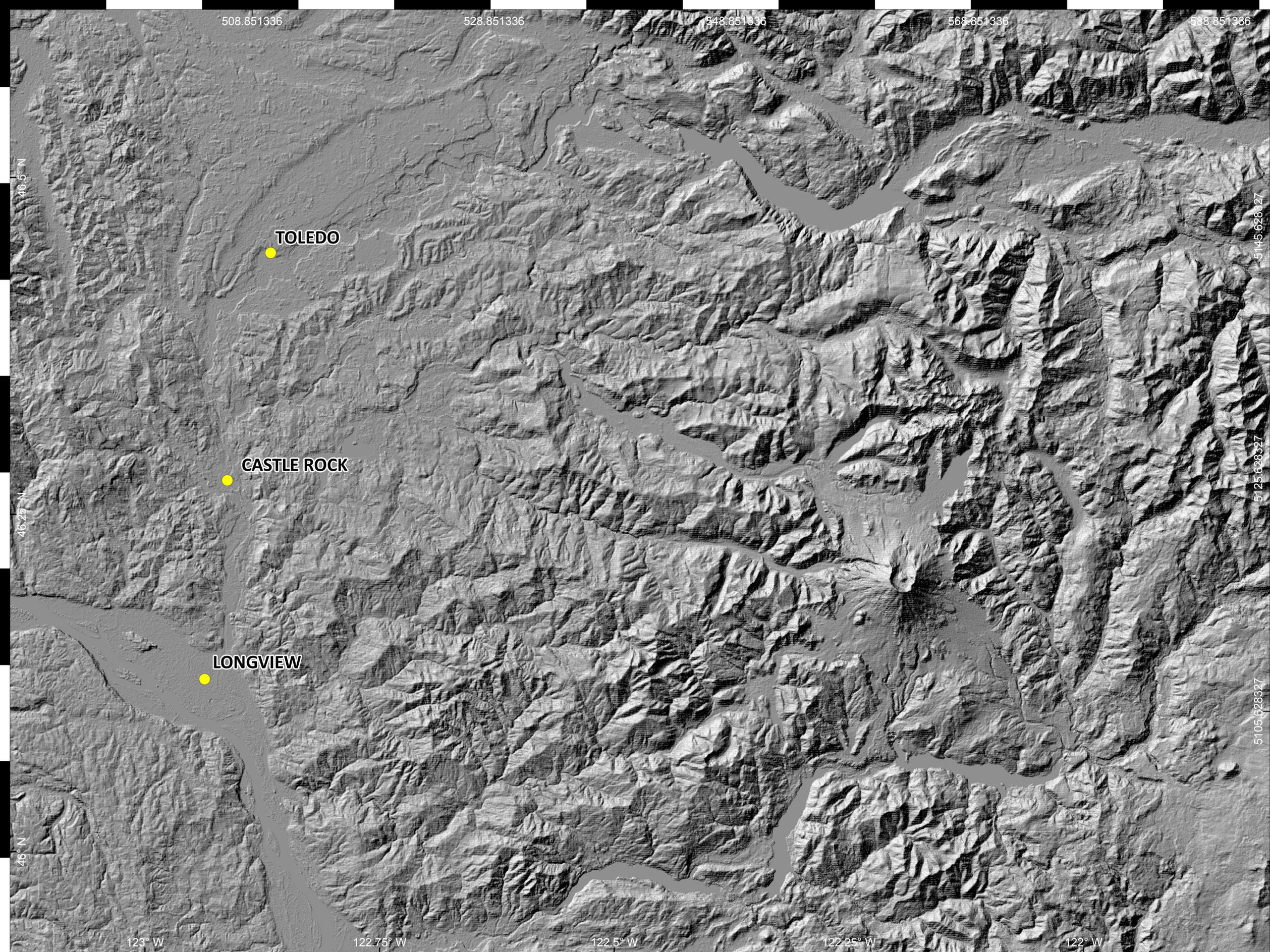


# Southern Washington Hillshade



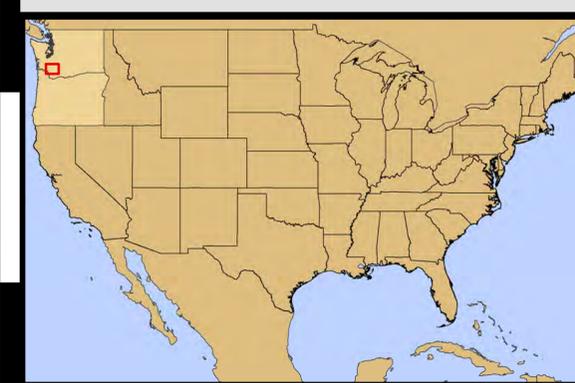
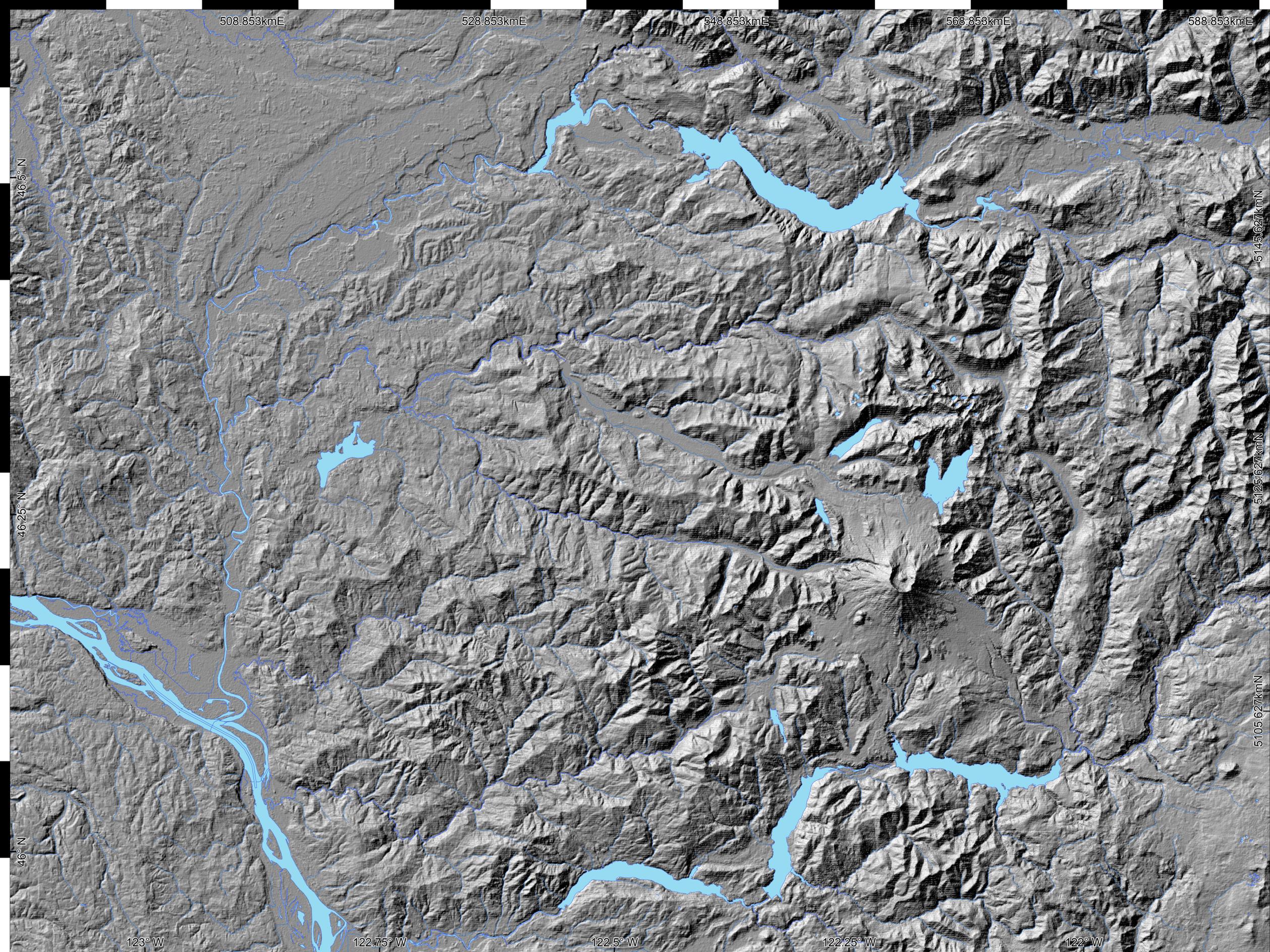
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Sources:  
Country and state boundaries  
provided by ESRI.  
SRTM DEM data provided by  
OpenTopography.



# Southern Washington Hillshade + Water



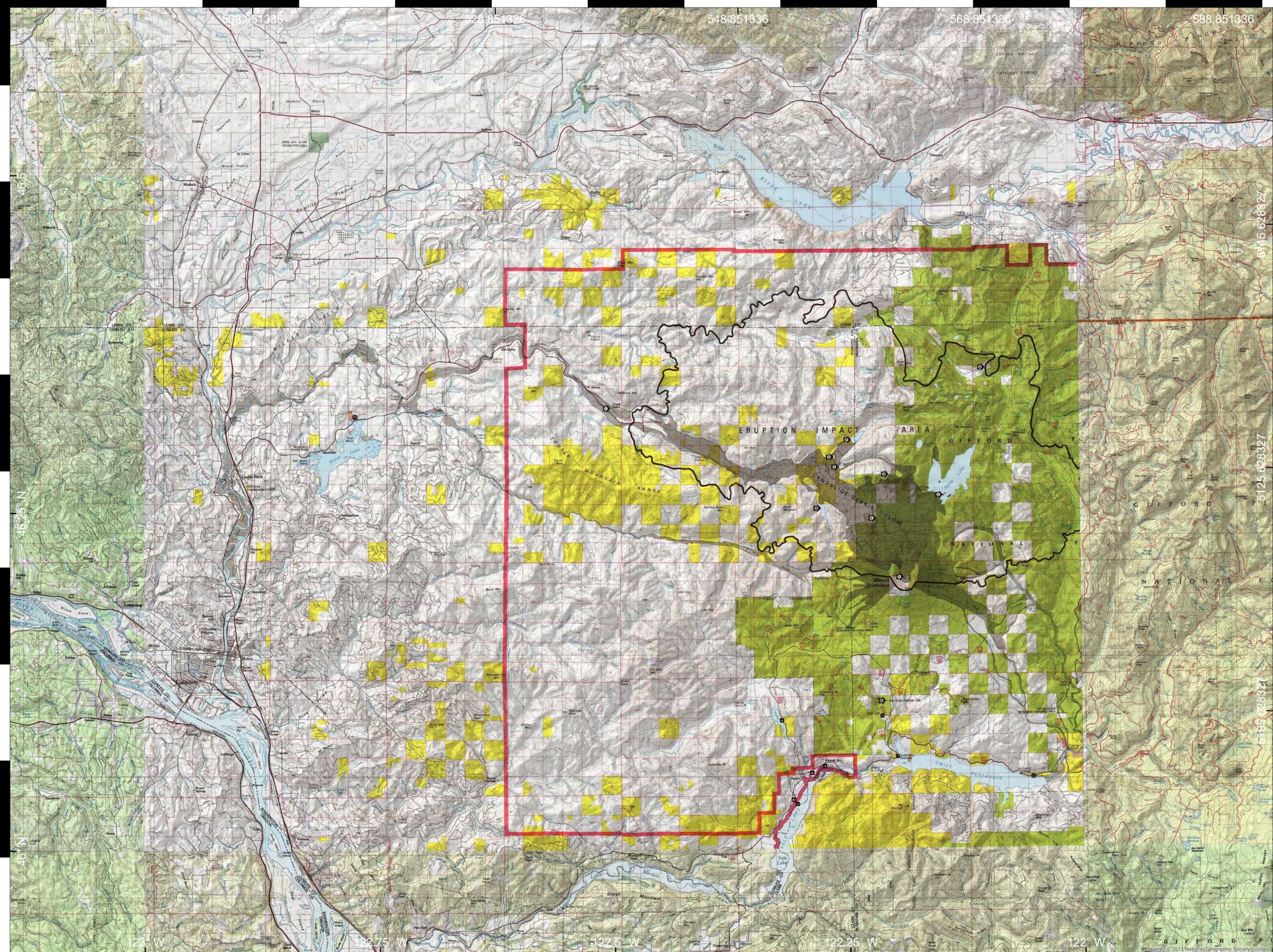
0 10 20 km

Sources:  
Country and state boundaries provided by ESRI.  
Hydrologic data provided by the USGS.  
SRTM DEM data provided by OpenTopography.

Surface Water

1:150,000

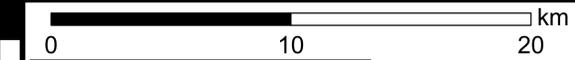
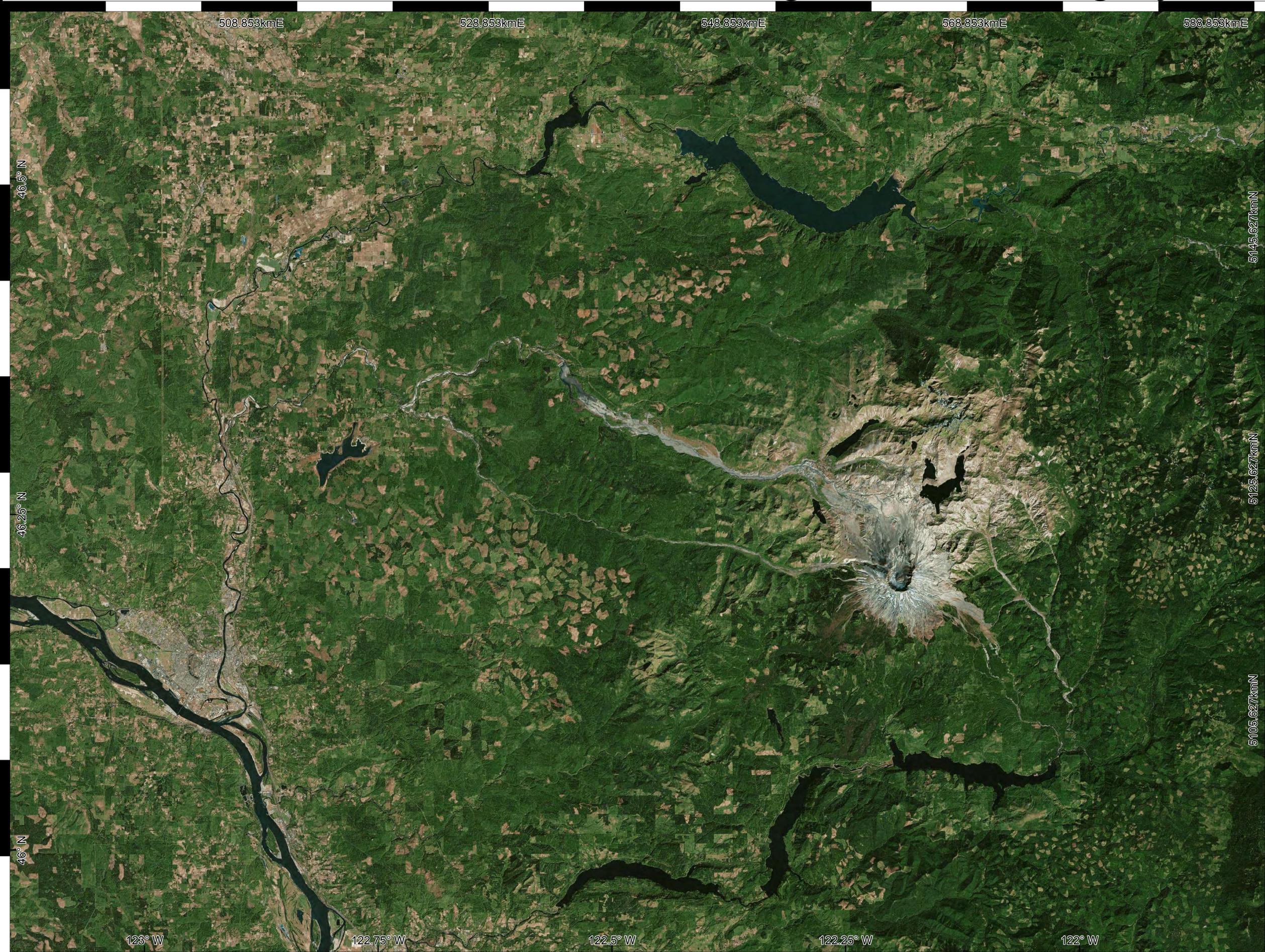
# Southern Washington Topography



Sources:  
All data shown is provided by  
ESRI

1:150,000

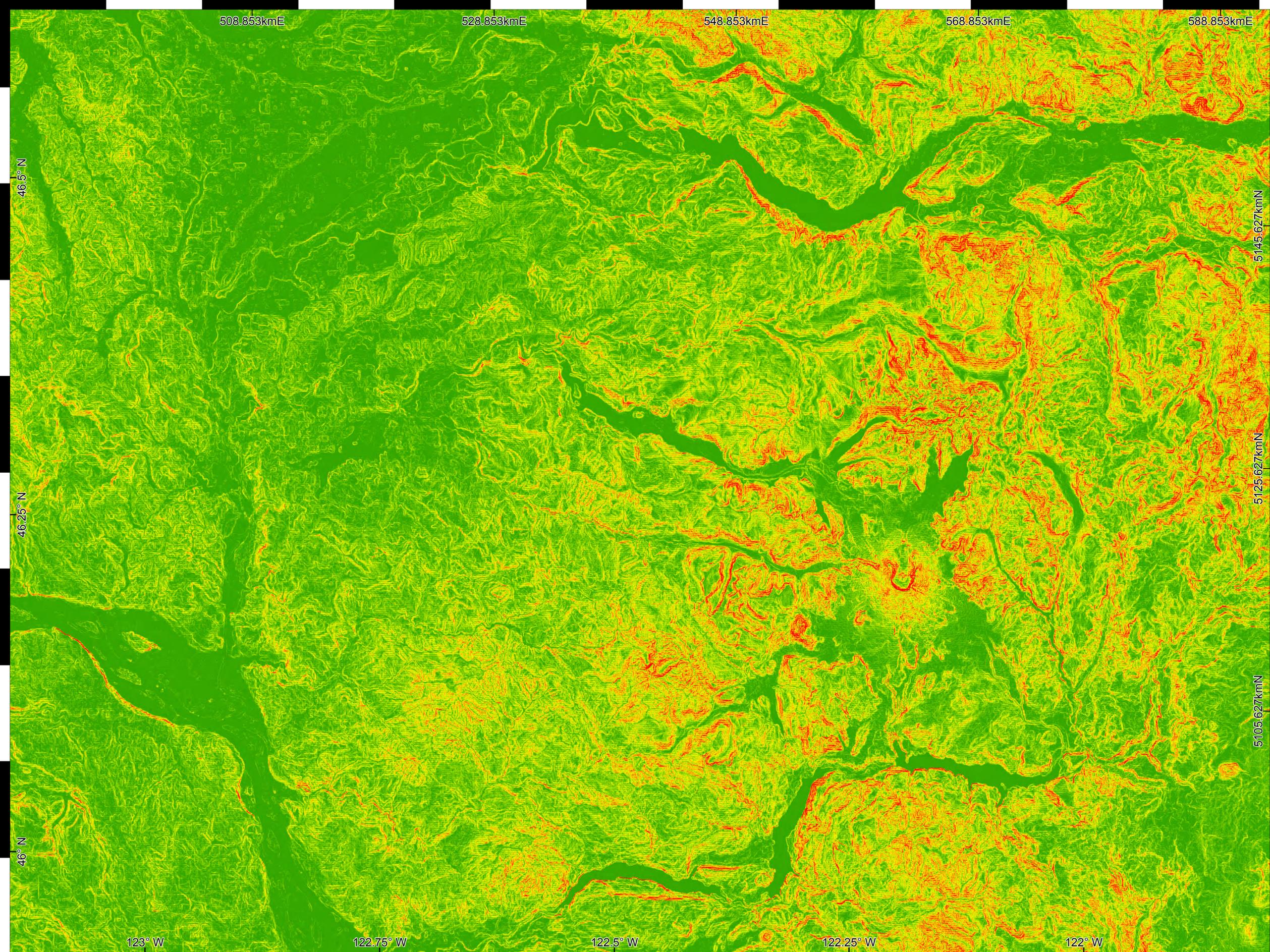
# Southern Washington Aerial Imagery



Sources:  
Country and state boundaries provided by ESRI.  
SRTM DEM data provided by OpenTopography.  
Imagery provided by ESRI.

1:150,000

# Southern Washington Slope



0 10 20 km

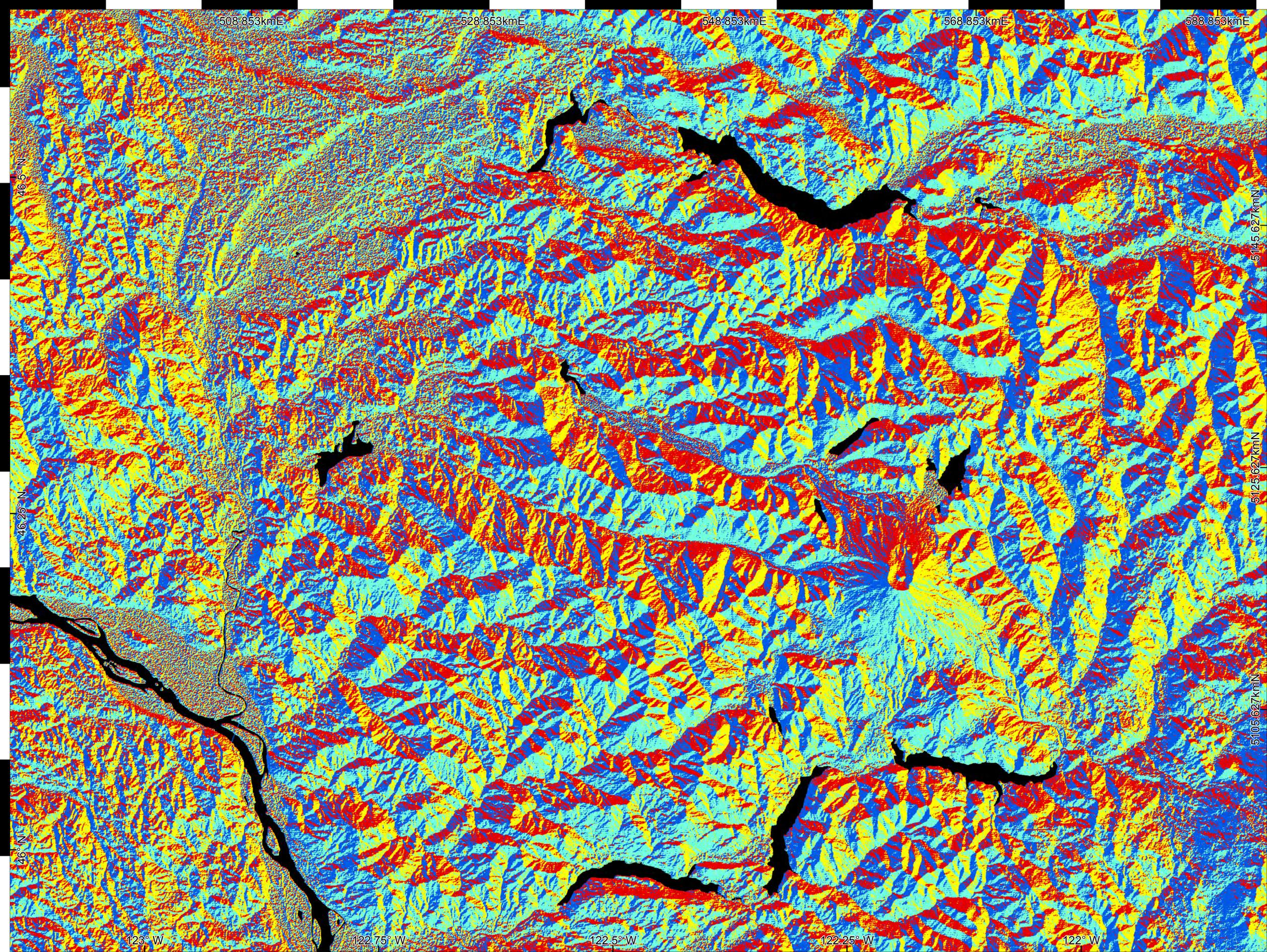
Sources:  
Country and state boundaries provided by ESRI.  
SRTM DEM data provided by OpenTopography.

**Slope (degrees)**

0° - 5°	25° - 30°
5° - 10°	30° - 35°
10° - 15°	35° - 40°
15° - 20°	40° - 45°
20° - 25°	45° - 80.8°

1:150,000

# Southern Washington Aspect



0 10 20 km

Aspect (degrees)

Black	Flat
Red	315° - 45°
Yellow	45° - 135°
Cyan	135° - 225°
Blue	225° - 315°

Sources:  
Country and state boundaries provided by ESRI.  
SRTM DEM data provided by OpenTopography.

1:150,000



# Southern Washington Geology

## Legend

### Faults 250K

#### Dip-Slip Movement

—| Normal fault - Identity and existence certain, location accurate. Bar and ball on downthrown block [43]

- - -| Normal fault - Identity and existence certain, location inferred. Bar and ball on downthrown block [55]

· · · · ·| Normal fault - Identity and existence certain, location concealed. Bar and ball on downthrown block [45]

#### Strike-Slip Movement

· · · · ·| Left-lateral strike-slip fault - Identity and existence certain, location concealed. Arrows show relative motion [21]

#### Movement Unknown

—| Fault, unknown offset - Identity and existence certain, location accurate [1]

- - -| Fault, unknown offset - Identity and existence certain, location inferred [49]

· · · · ·| Fault, unknown offset - Identity and existence certain, location concealed [3]

## Geologic Units 250K

### Unconsolidated Sediments

- Quaternary alluvium, dune sand, loess, and modified land
- Quaternary beach, continental sedimentary, lacustrine, fluvial, mass-wasting, terraced sedimentary, and peat deposits
- Pleistocene Bonneville flood deposits
- Quaternary sedimentary deposits or rocks, undivided
- Quaternary alluvium, older (includes alluvial fans and talus)
- Pleistocene glacial drift, alpine, Fraser-age
- Pleistocene (Fraser-age) continental glacial drift, outburst flood deposits, and glaciolacustrine deposits
- Pleistocene glacial drift, alpine, pre-Fraser
- Pleistocene glacial drift, continental, pre-Fraser

### Sedimentary Rocks and Deposits

- Quaternary–Pliocene and Pliocene continental sedimentary deposits or rocks
- Pliocene–Miocene continental sedimentary deposits or rocks and mass-wasting deposits
- Miocene continental sedimentary rocks
- Miocene–Eocene continental sedimentary rocks
- Eocene continental sedimentary rocks
- Older Eocene continental sedimentary rocks
- Tertiary–Cretaceous continental sedimentary rocks
- Cretaceous continental sedimentary rocks
- Lower Cretaceous continental sedimentary rocks, conglomerate
- Devonian continental sedimentary rocks, conglomerate
- Pliocene–Miocene nearshore sedimentary rocks
- Miocene nearshore sedimentary rocks
- Oligocene–Eocene nearshore sedimentary rocks
- Eocene nearshore sedimentary rocks
- Cretaceous nearshore sedimentary rocks
- Miocene marine sedimentary rocks
- Miocene to Eocene marine sedimentary rocks
- Eocene marine sedimentary rocks
- Older Eocene marine sedimentary rocks
- Upper Cretaceous marine sedimentary rocks
- Lower Cretaceous marine sedimentary rocks

### Sedimentary and Volcanic Rocks

- Paleocene–Cretaceous volcanic and sedimentary rocks, undivided
- Jurassic–Permian volcanic and sedimentary rocks

### Volcanic Rocks and Deposits

- Quaternary lava flows
- Pleistocene–Pliocene and Pliocene lava flows
- Miocene lava flows
- Miocene Saddle Mountains Basalt
- Miocene Saddle Mountains Basalt, invasive
- Miocene Wanapum Basalt
- Miocene Grande Ronde Basalt
- Miocene Grande Ronde Basalt, invasive
- Miocene Imnaha Basalt
- Miocene–Oligocene and Oligocene lava flows
- Oligocene–Eocene and younger Eocene lava flows
- Eocene lava flows
- Eocene basalt flows, Crescent Formation
- Quaternary fragmental volcanic rocks or deposits
- Pliocene tuffs and tuff breccias
- Miocene fragmental volcanic rocks or deposits
- Miocene–Oligocene and Oligocene fragmental volcanic rocks
- Oligocene–Eocene and Eocene fragmental volcanic rocks

Eocene fragmental volcanic rocks

### Intrusive Igneous Rocks

- Quaternary intrusive igneous rocks
- Pleistocene–Pliocene and Pliocene to Miocene intrusive igneous rocks
- Miocene–Oligocene and Oligocene intrusive igneous rocks
- Oligocene–Eocene and Eocene intrusive igneous rocks
- Paleocene intrusive igneous rocks
- Tertiary–Cretaceous intrusive igneous rocks
- Pre-Tertiary ultrabasic (ultramafic) rocks
- Cretaceous intrusive igneous rocks
- Mesozoic intrusive igneous rocks
- Mesozoic and Paleozoic intrusive igneous rocks
- Middle-upper Proterozoic basic (mafic) intrusive rocks

### Metasedimentary and Metavolcanic Rocks (Greenschist Facies and Lower)

- Pre-Tertiary metasedimentary and metavolcanic rocks
- Pre-Tertiary marble
- Cretaceous metasedimentary and metavolcanic rocks, undivided
- Cretaceous–Jurassic sedimentary, metasedimentary, volcanic, and metavolcanic rocks
- Pre-Cretaceous–Devonian metasedimentary and metavolcanic rocks
- Pre-Jurassic to middle Proterozoic metasedimentary rocks
- Triassic–Permian metasedimentary and metavolcanic rocks
- Mesozoic schist
- Permian and pre-Permian metasedimentary rocks
- Permian–Devonian metasedimentary and metavolcanic rocks
- Carboniferous–Devonian metasedimentary and metavolcanic rocks
- Carboniferous–Ordovician metasedimentary and metavolcanic rocks
- Devonian and Silurian metasedimentary rocks
- Ordovician metasedimentary and metavolcanic rocks
- Ordovician–Cambrian metacarbonate
- Cambrian metasedimentary rocks
- Cambrian–upper Proterozoic quartzite
- Upper Proterozoic metasedimentary and metavolcanic rocks
- Middle Proterozoic metasedimentary rocks
- Middle Proterozoic metasedimentary rocks
- Middle Proterozoic metasedimentary rocks

### Metamorphic Rocks (Amphibolite Facies and Higher)

- Paleocene orthogneiss
- Tertiary–Cretaceous banded gneiss
- Tertiary–Cretaceous orthogneiss and mixed metamorphic and igneous rocks
- Pre-Tertiary metamorphic rocks
- Cretaceous metamorphic rocks
- Cretaceous orthogneiss and migmatite
- Cretaceous–Jurassic and Jurassic metamorphic rocks
- Triassic heterogeneous metamorphic rocks
- Triassic orthogneiss
- Triassic–Permian metamorphic rocks (high and low? grade)
- Mesozoic orthogneiss and migmatite
- Mesozoic to Paleozoic metamorphic rocks
- Pre-Devonian gneiss
- Precambrian metamorphic rocks

### Other Features or Geologic Units

- Water
- Ice
- Features in Oregon, geology not shown
- Tectonic zone

# Southern Washington Population Density 2012



### Population Density

- 100,001 or more people
- 25,001 to 100,000 people
- 10,001 to 25,000 people
- 1,001 to 10,000 people
- 101 to 1,000 people
- 100 or less people
- No population



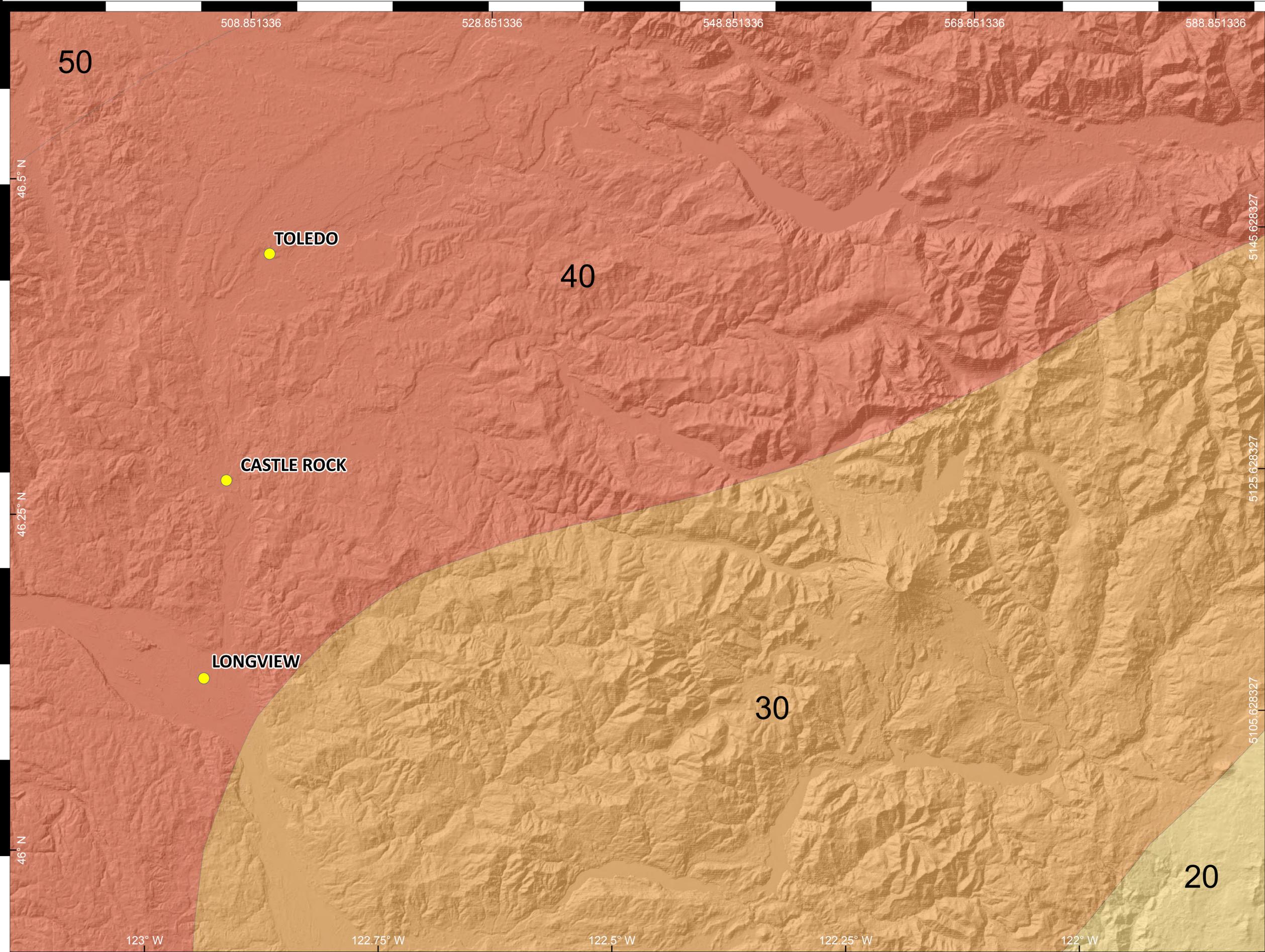
Sources:  
Country and state boundaries provided by ESRI.  
SRTM DEM data provided by OpenTopography.  
Population Density data provided by ESRI



1:150,000

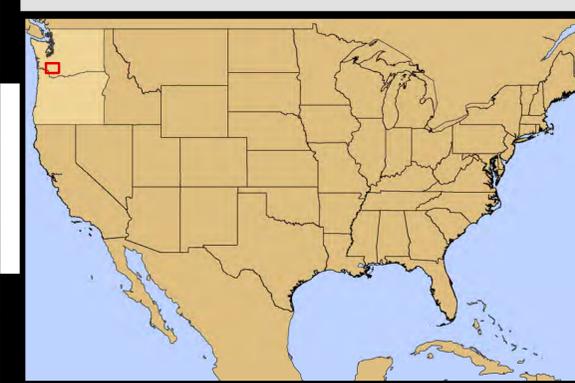
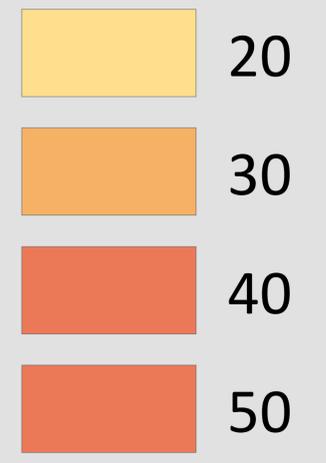


# Southern Washington Seismic Hazard

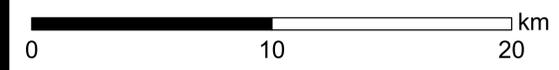


## LEGEND

Peak acceleration expressed as a percent of gravity



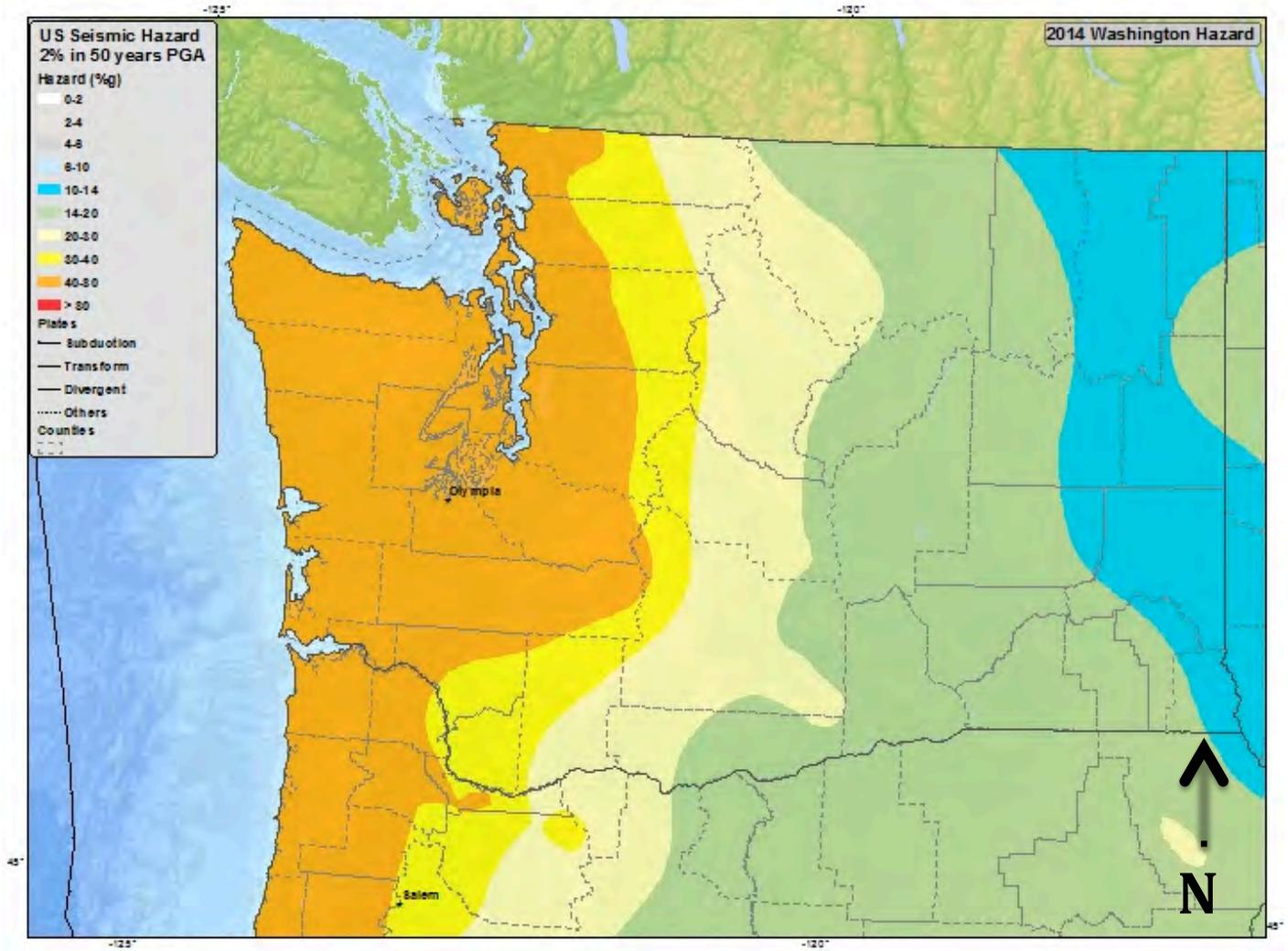
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Sources:  
Country and state boundaries provided by ESRI.  
SRTM DEM data provided by OpenTopography.  
Seismic Hazard data provided by the USGS.

# Washington

## 2014 Seismic Hazard Map



Seismic Hazards Map of WA state from the USGS Earthquake Hazards Program  
website: <http://earthquake.usgs.gov/earthquakes/states/washington/hazards.php>