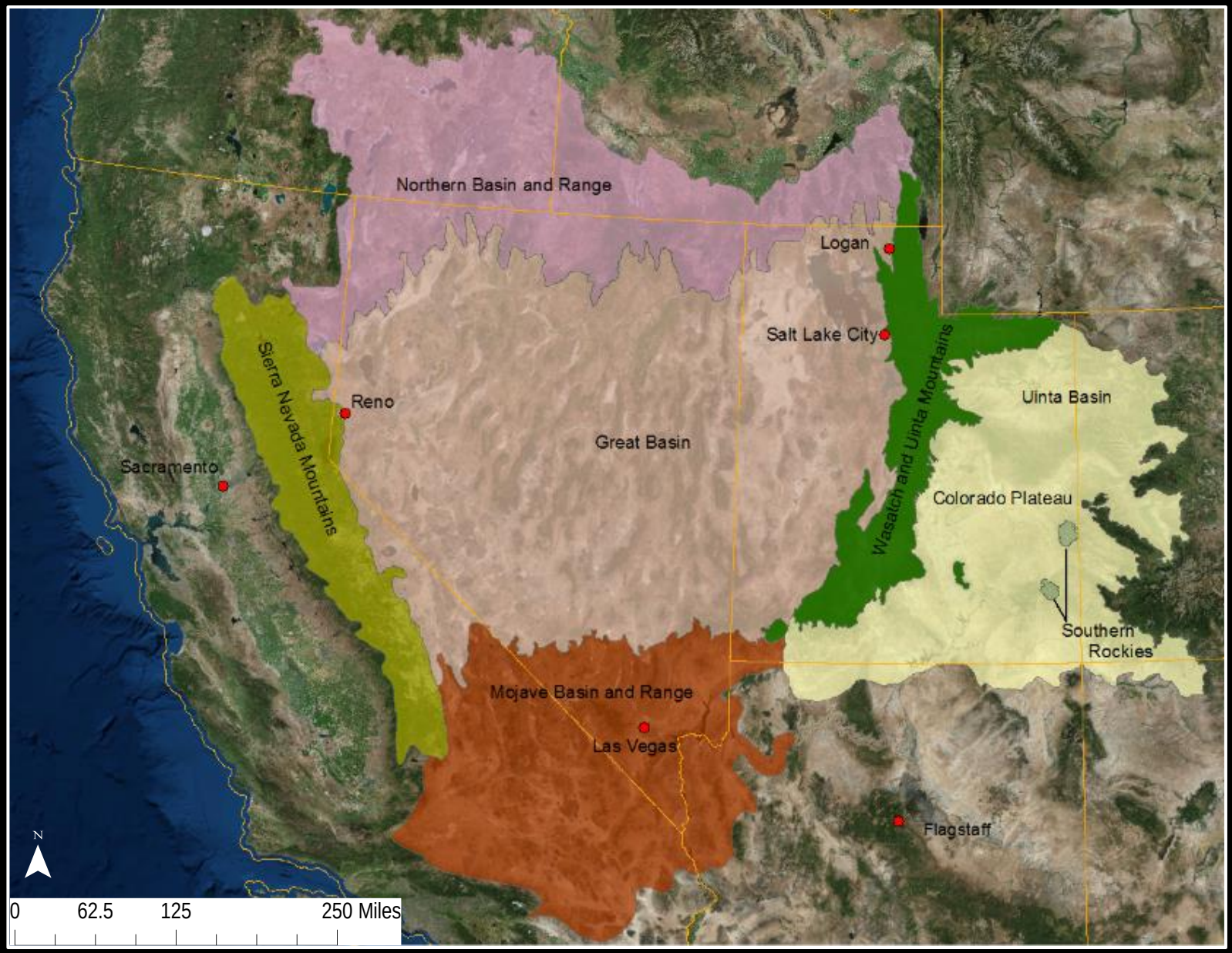
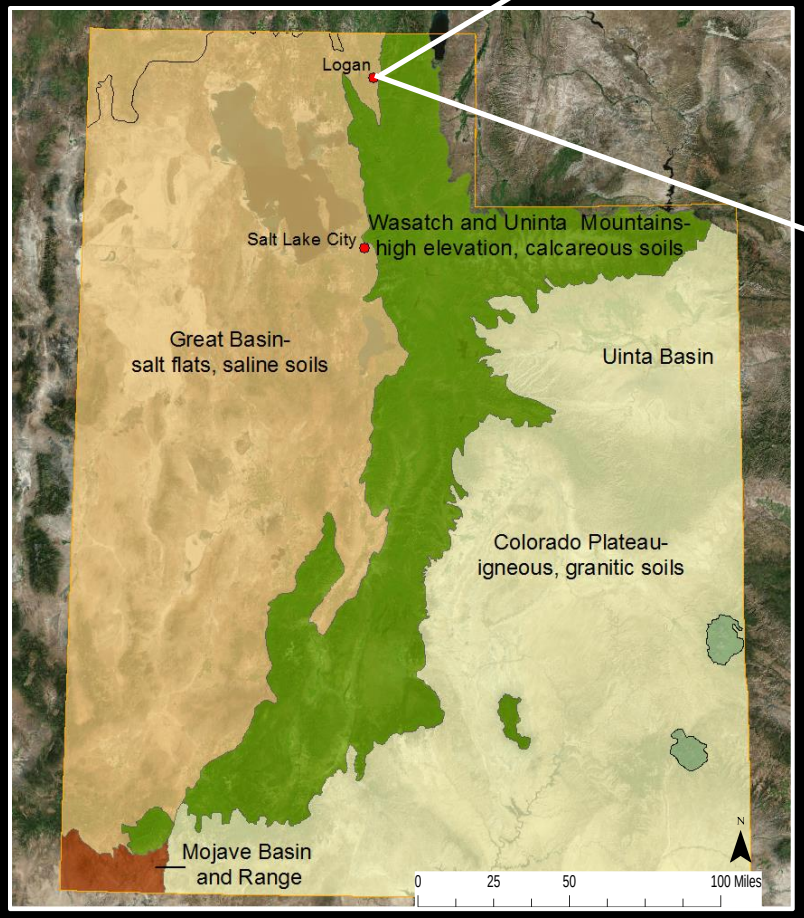
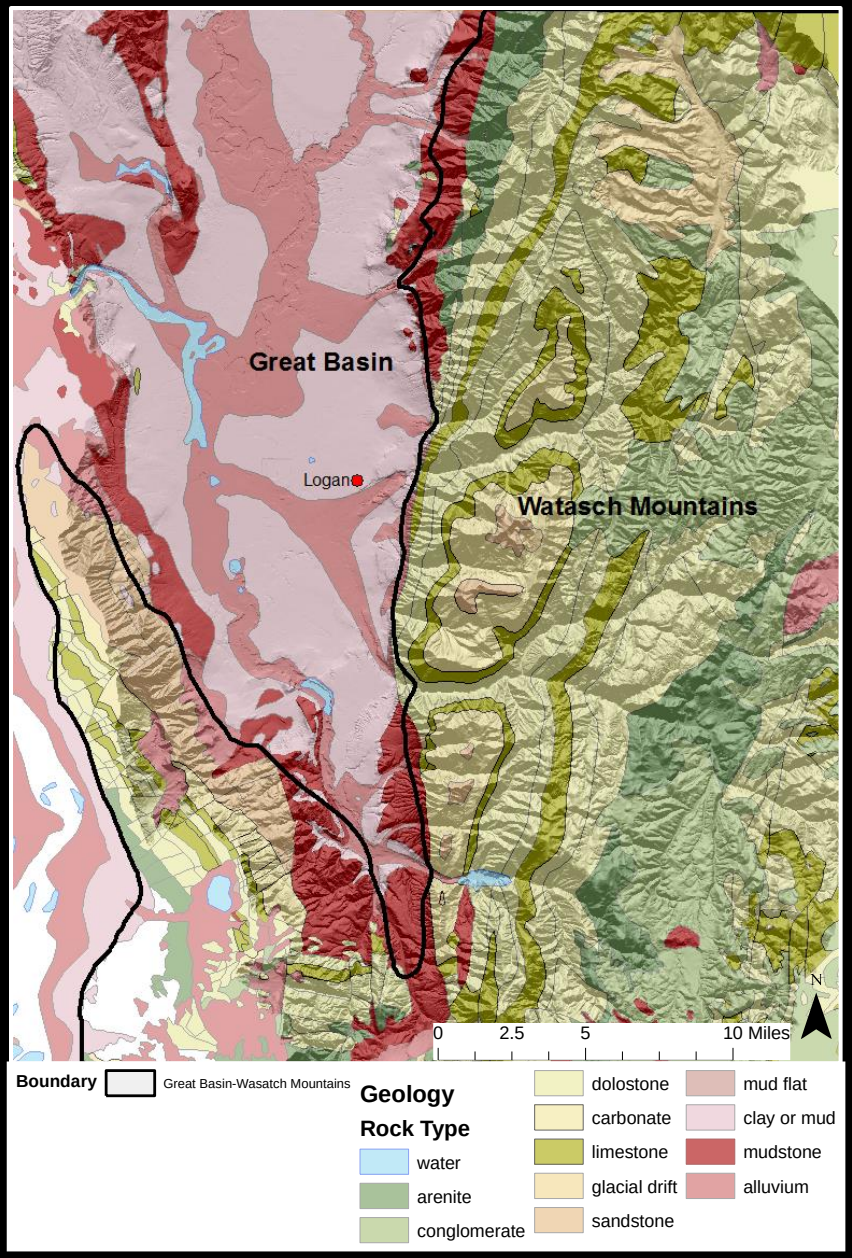
Floristic Regions in the Western U.S.

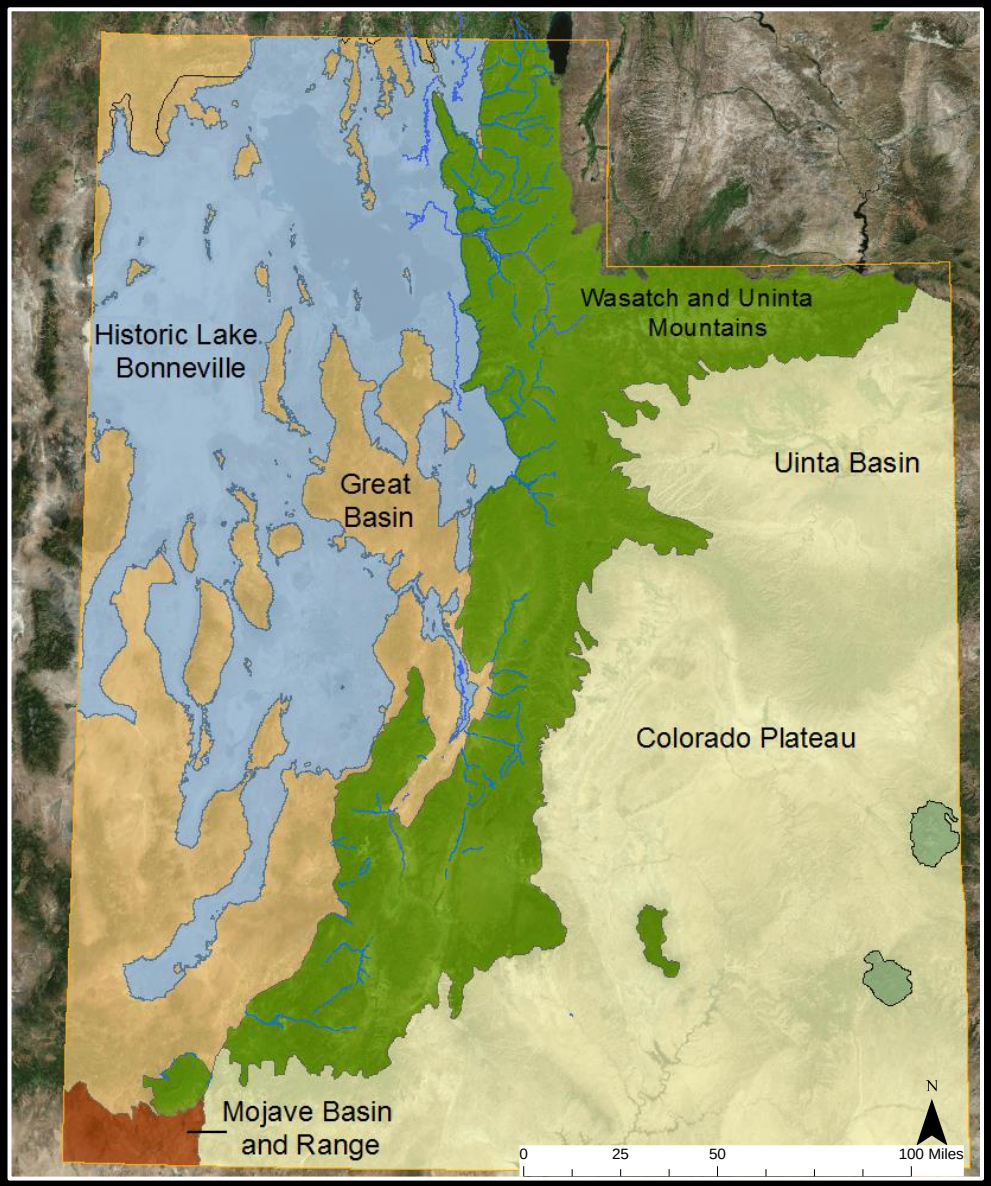


Different soils types in the Great Basin and Watasch Mountains of northern Utah





Formation of the Physiographic Regions of the Utah Flora



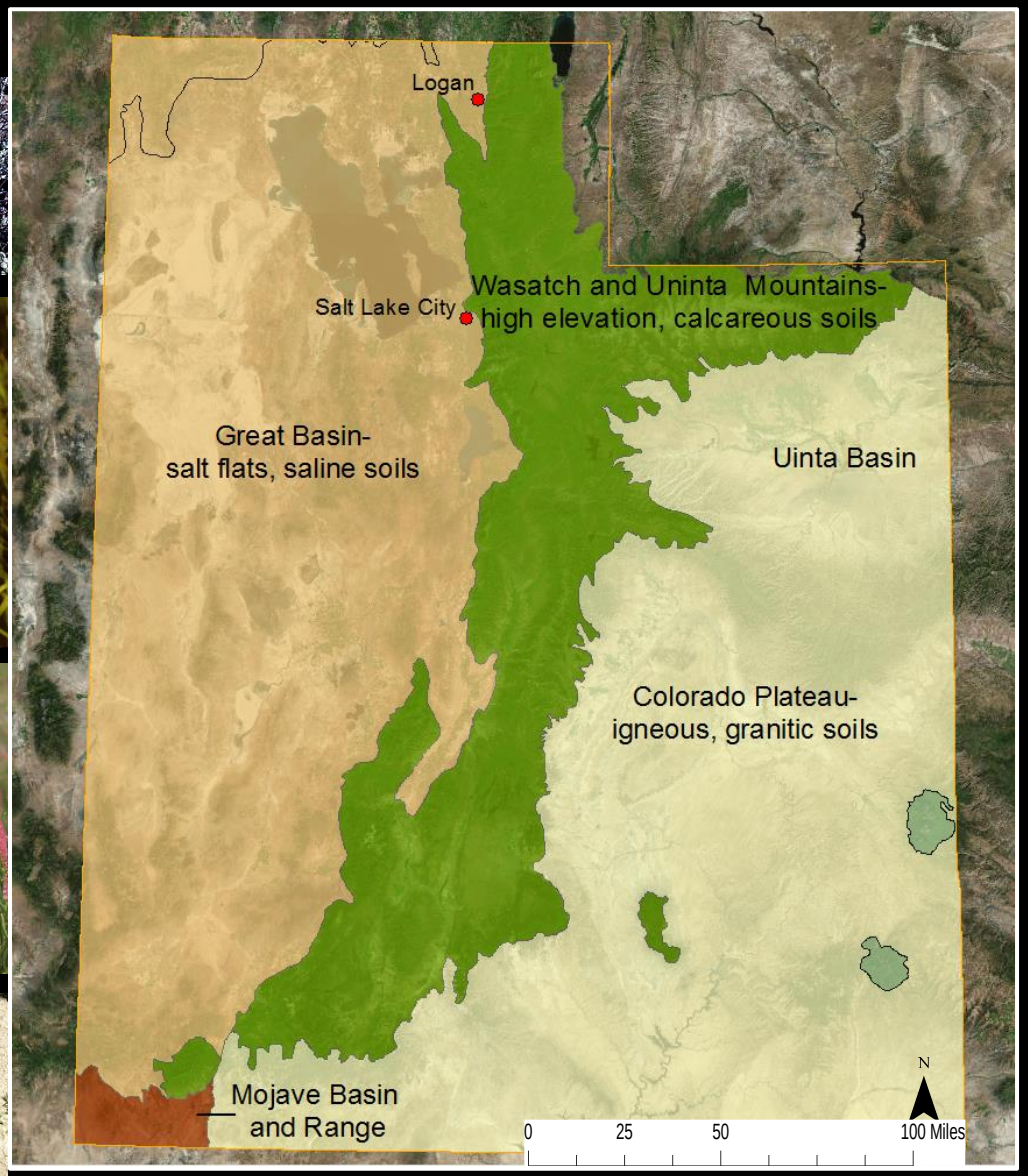
Examples of Plant Species from the Great Basin

Halophytes:
Family Chenopodiaceae
Atriplex confertifolia
(Shadscale)

Salicornia rubra
(Pickleweed)

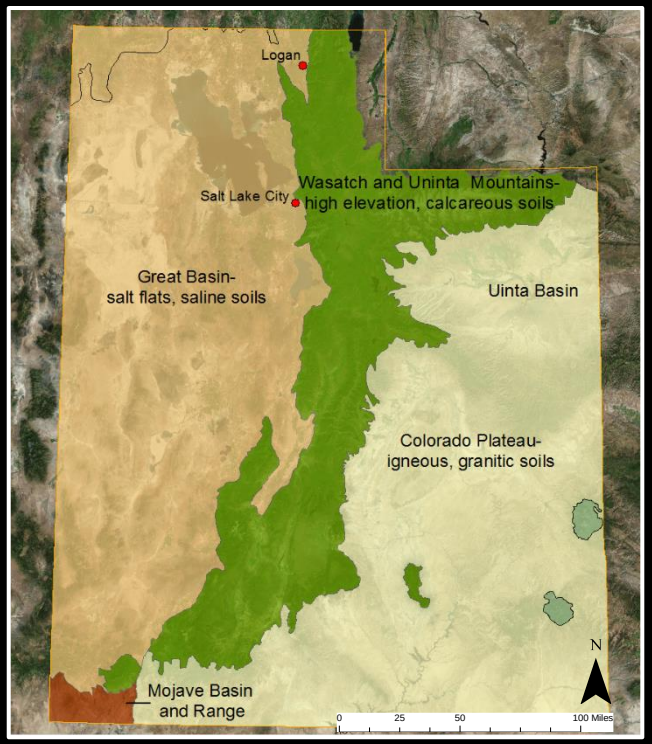
Sarcobatus vermiculatus
(Greasewood)

<u>Eurasian Weeds:</u>
Salsola tragus
(Russian Thistle)

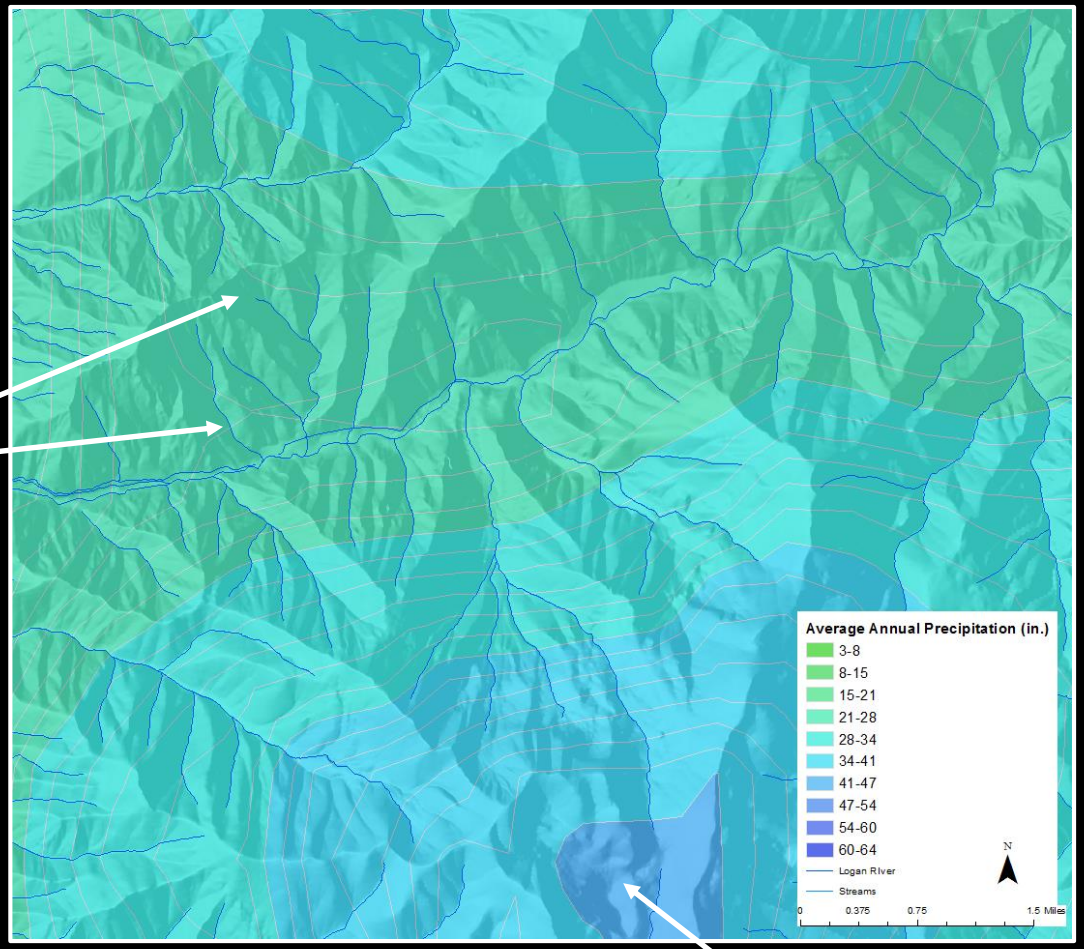


Endemic Plant Species

Primula maguirei (scarlet primrose)



Precipitation Gradients in Logan Canyon, UT



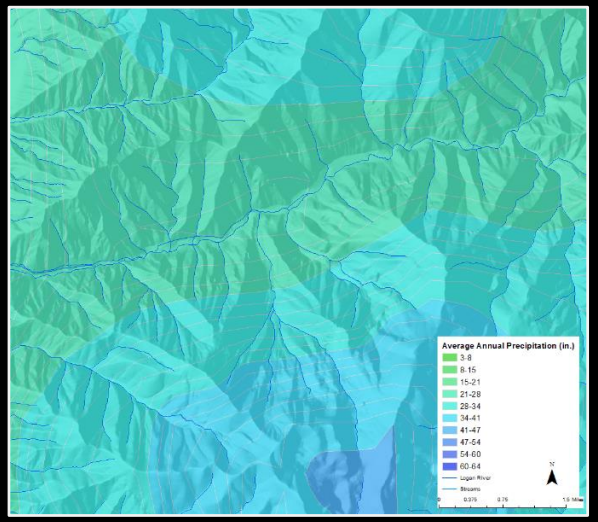
- **Less precipitation at lower elevations and on south-facing slopes supports**
  - **Shrublands o of *Juniper* spp. & Sagebrush (*Artemisia* spp.)**

- **Greater precipitation at high elevations and on north-facing slopes supports**
  - **Forests of Douglas Fir (*Pseudotsuga menziesii*)**

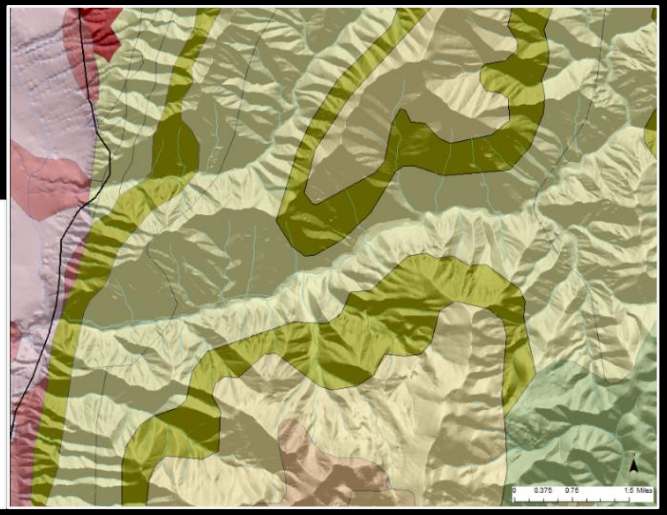
Plant species distribution in Logan Canyon reflects:

Logan Canyon Vegetation
Type
- Aspen-Mixed Conifer
- Aspen
- Lodgepole Pine
- Subalpine Dry-Mesic Spruce-Fir
- Subalpine Mesic Spruce-Fir
- Subalpine-Montane Limber-Bristlecone Pine
- Bigtooth Maple Ravine
- Dry-Mesic Montane Mixed Conifer
- Mesic Montane Mixed Conifer
- Pinyon-Juniper Woodland
- Mountain Mahogany Woodland and Shrubland
- Pinyon-Juniper Woodland
- Lower Montane Riparian Woodland and Shrublan
- Montane-Foothill Deciduous Shrubland
- Montane-Subalpine Grassland
- Gambel Oak-Mixed Montane Shrubland
- Subalpine-Montane Mesic Meadow
- Subalpine-Montane Wet Meadow
- Subalpine-Montane Riparian Shrubland
- Big Sagebrush Shrubland
- Big Sagebrush Steppe
- Montane Sagebrush Steppe
- Cliff, Canyon and Massive Bedrock
- Cultivated Cropland
- Pasture/Hay
- Introduced Upland Grass and Forbs
- Introduced Upland Vegetation - Shrub
- Grass/Forb Regeneration
- Shrub Regeneration
- Open Water (Fresh)
- Developed, Open Space
- Low Intensity Development
- Medium Intensity Development
- High Intensity Development
- Logan River
- Streams

Precipitation, Elevation, Aspect, Streams



Geology/Soils



Low Sagebrush and Big Mountain Sagebrush

Artemisia arbuscula

- **Stalkless flowers**

Levin 2010a

Levin 2010b

Artemisia tridentata **ssp.** *vaseyana*

- **Stalked flowers**

Monroe 2017c

Monroe 2017a

Mountain Silver Sagebrush and Big Mountain Sagebrush

Artemisia cana ssp. *viscidula*

- silvery color
- deciduous, leaves not lobed
- wetter habitats
- in basins
- never on mountain slopes

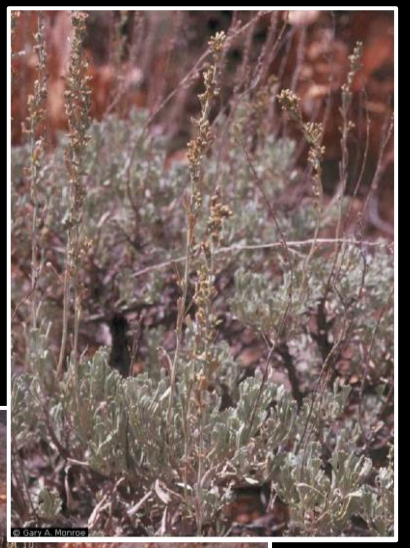
Artemisia tridentata ssp. *vaseyana*

- silver-green color
- flat top
- evergreen, lobed leaves
- tall candle-like flowers
- drier habitats - mountain slopes

Levin 2010c

Levin 2017

Monroe 2017c



Monroe 2017b

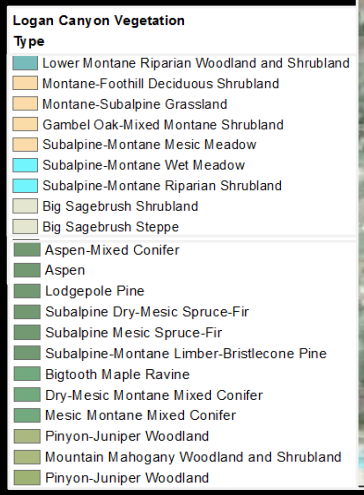
Vegetation Sorting in Basins along Riparian Corridors

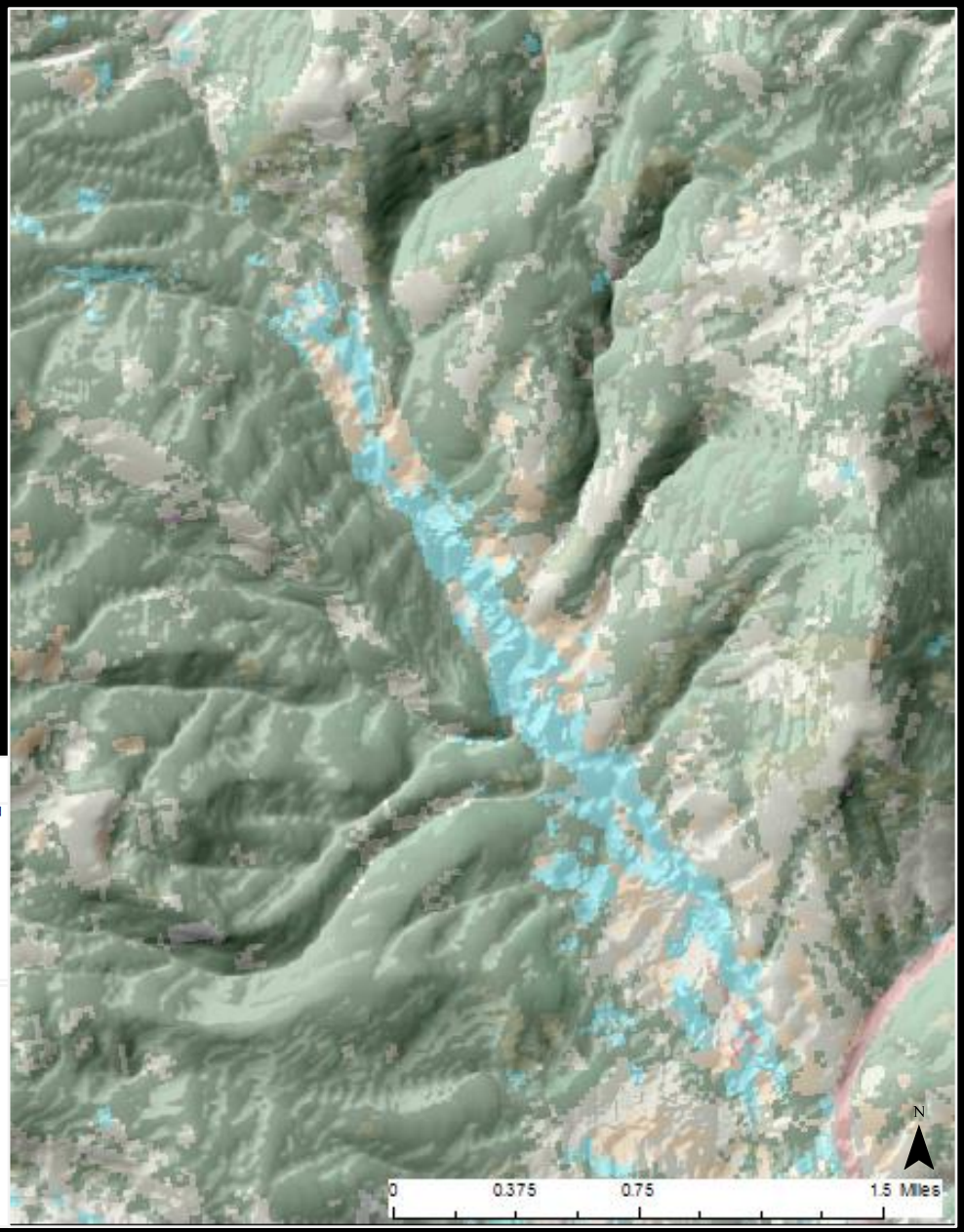
Near river:

- *Juncus* spp. (Rushes)
- *A. cana* ssp. *viscidula* (Silvery Sagebrush)
- *Salix* spp. (Willows)
- *Pinus contorta* (Lodgepole pine)
- *A. tridentata* ssp. *vaseyana* (Mountain Sagebrush)

In adjacent foothills :

- *A. tridentata* ssp. *vaseyana* (Mountain Sagebrush)
- *Populus tremuloides* (Aspen)
- *Pseudotsuga menziesii* (Douglas Fir)





Vegetation sorting in Spring Hollow, UT

Harsh, arid climate and shallow soils of the south-facing slopes at lower elevations support

- **Junipers- *J. scopulorum* and *J. osteosperma***
- **Big-toothed Maple *Acer grandidentatum***

Moister north-facing slopes at lower elevations support

- **Deeper, well developed soils**

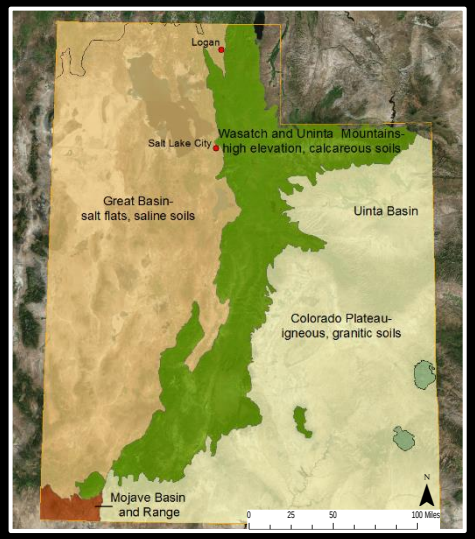
On water's edge:

- **Reed Canary Grass *Phalaris arundinacea***
- **Common Reed *Phragmites australis***
- **River Birch *Betula nigra***

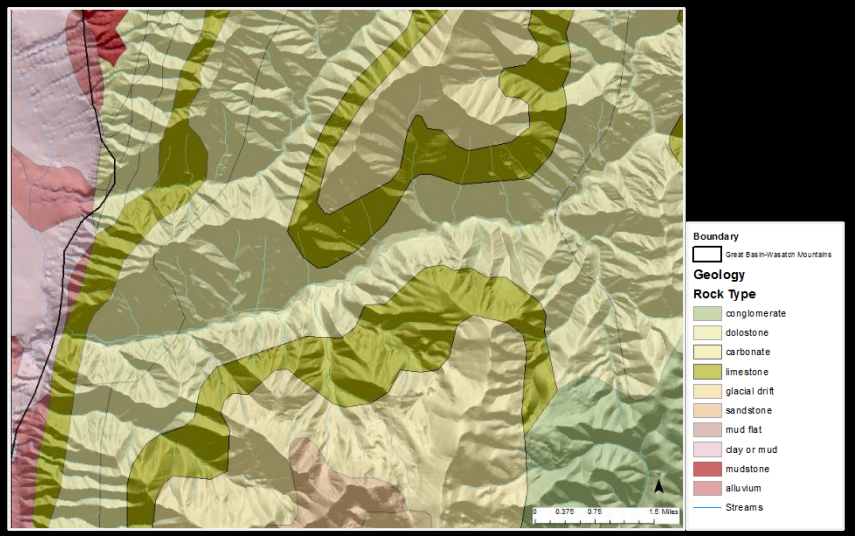
Google Earth 2017

Plant species distribution reflects:

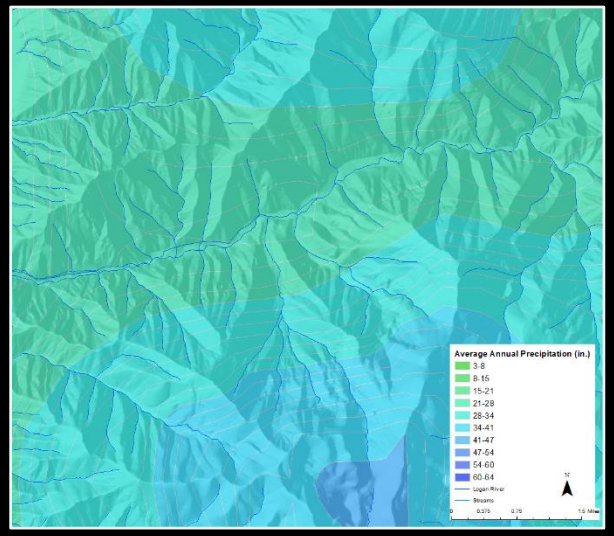
Phytogeography



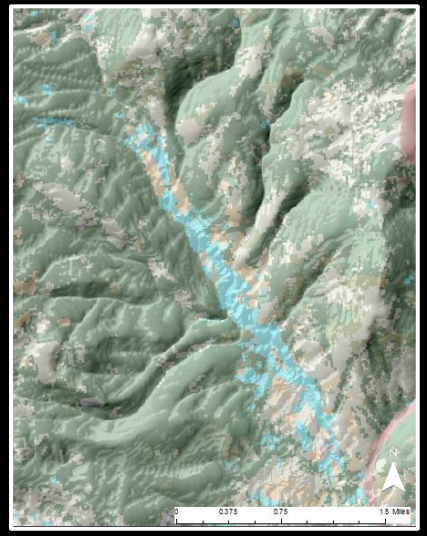
Geology/Soils



Precipitation, Elevation, Aspect



Genetic Isolation



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