

USING ARCVIEW SPATIAL ANALYST TO DETERMINE POTENTIAL AQUIFER RECHARGES ZONES BASED ON SOIL MAPPING AND SLOPE ASPECT

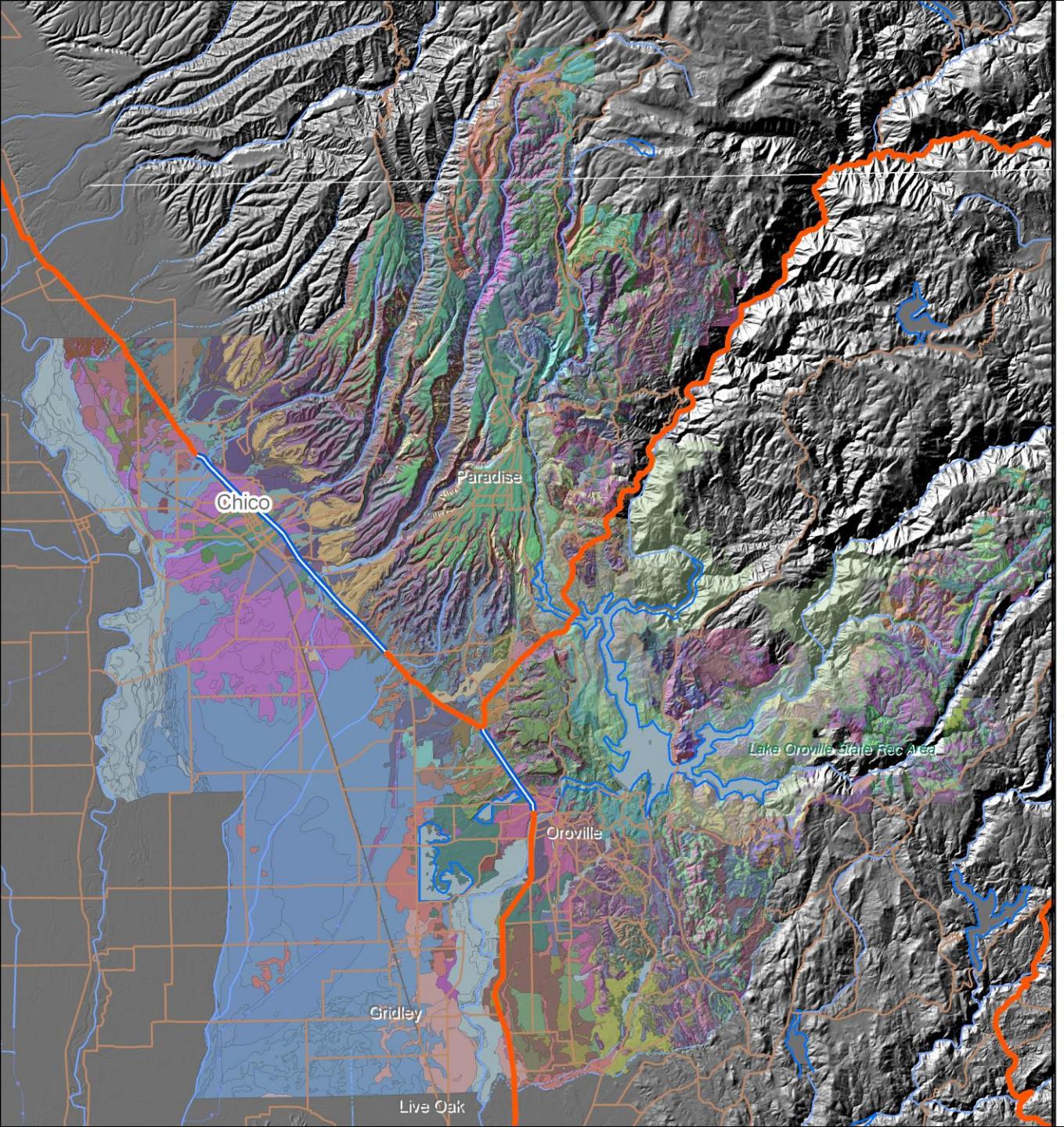
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Department of Water Resources

Ground Water Recharge Zones

Some feature characteristics

- Permeable Surface Layer (based on geology or soils mapping)
- Flat or nearly flat slope aspect
- Vegetation cover and land use

BUTTE COUNTY SOIL MAP



Soil Data Viewer

File View Help

Attribute Folders

- + Building Site Development
- + Construction Materials
- + Disaster Recovery Planning
- + Land Classifications
- + Land Management
- + Recreational Development
- + Sanitary Facilities
- + Soil Chemical Properties
- + Soil Erosion Factors
- Soil Physical Properties
 - Available Water Capacity
 - Available Water Supply, 0 to 100 cm
 - Available Water Supply, 0 to 150 cm
 - Available Water Supply, 0 to 25 cm
 - Available Water Supply, 0 to 50 cm
 - Bulk Density, 15 Bar
 - Bulk Density, One-Tenth Bar
 - Bulk Density, One-Third Bar
 - Linear Extensibility
 - Organic Matter
 - Percent Clay
 - Percent Sand
 - Percent Silt
 - Saturated Hydraulic Conductivity (Ksat)
 - Saturated Hydraulic Conductivity (Ksat), Standard Classification
 - Surface Texture
 - Water Content, 15 Bar
 - Water Content, One-Third Bar
- Soil Conditions and Features

Attribute/Folder Description Rating Options Report Options

Basic Options
Result Column Name: KsatClass

Advanced Options

Aggregation Method

All Components

Dominant Condition
Dominant Component
Weighted Average
All Components

Method Description: This option is below the cutoff value will not be considered. If no components in the database will be considered. The data for some may not be in the database, and therefore are not considered.

Tie-break Rule

Slowest
 Fastest

Interpret Nulls as Zero

Yes
 No

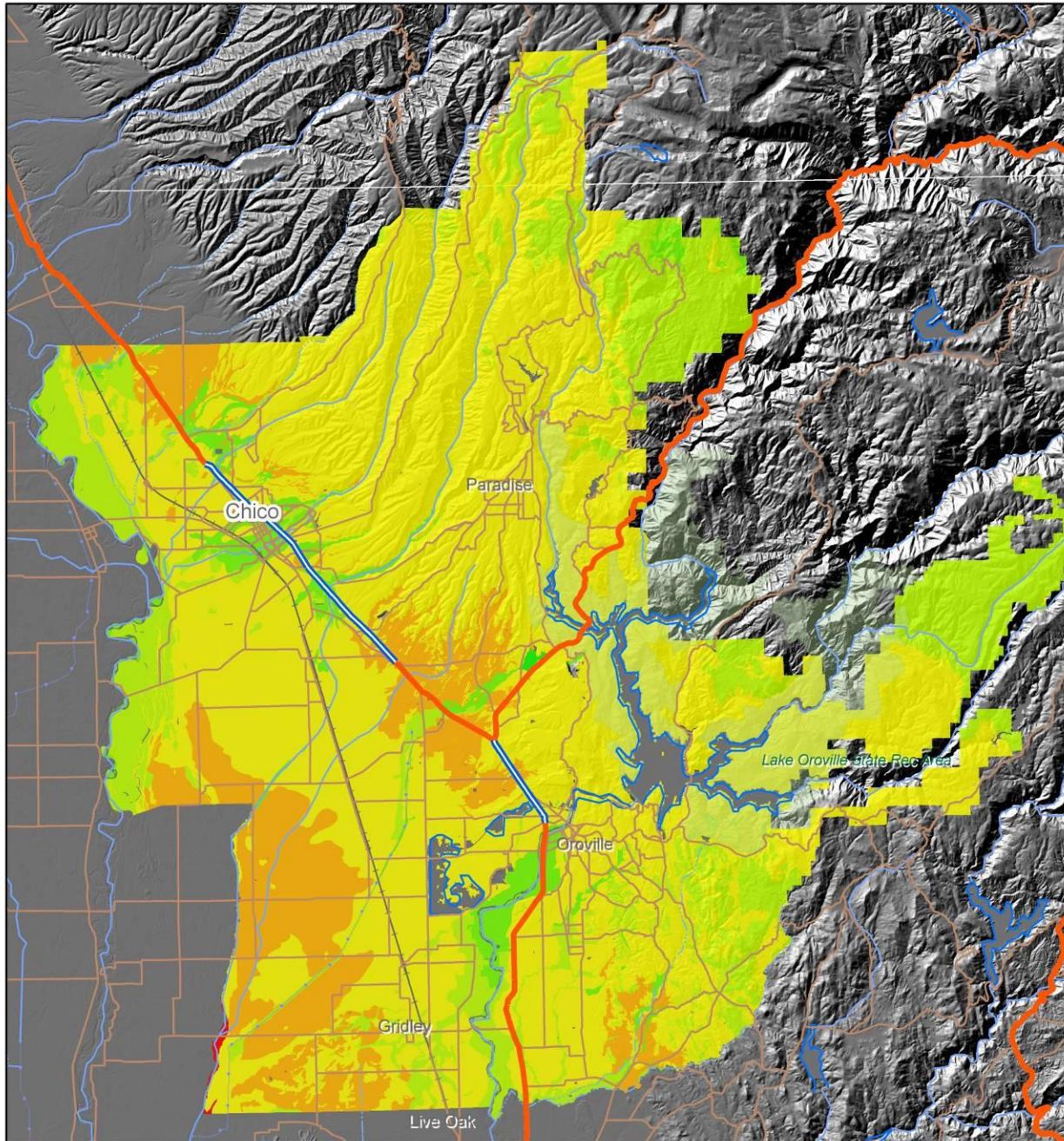
This option indicates if a null value for a component should be converted to zero before aggregation occurs. This will be done only if a map unit has at least one component where this value is not null.

Layer Options

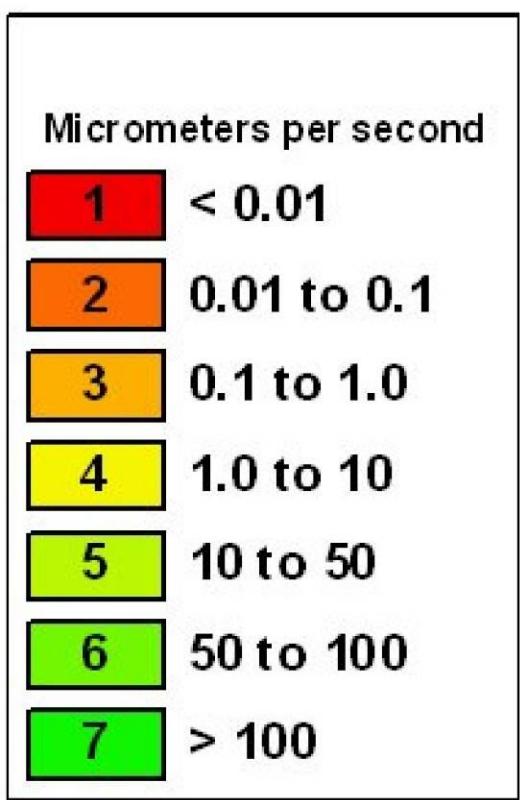
Surface Layer
 Depth Range
 All Layers

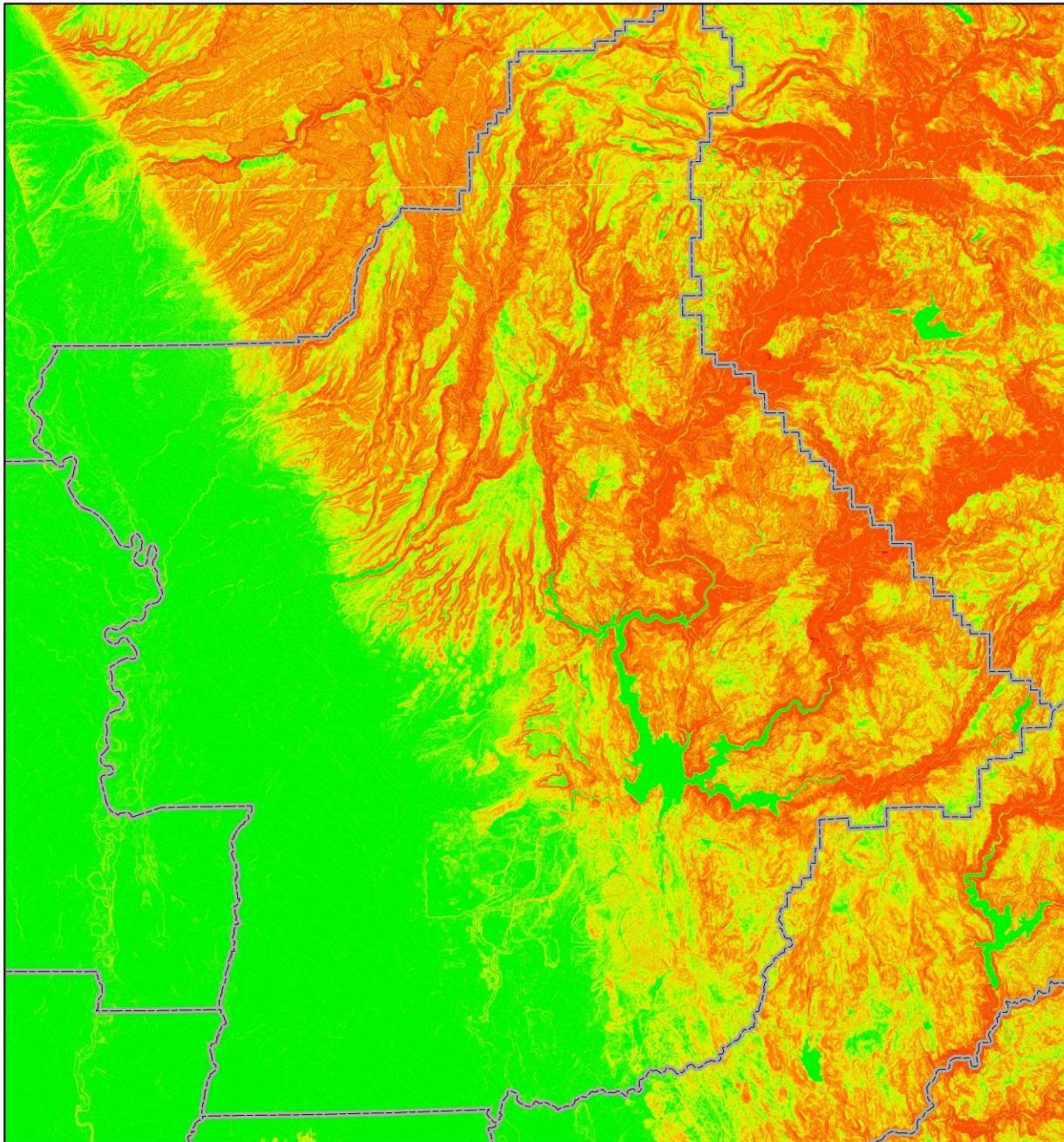
Basic Mode Advanced Mode

Aggregation Report Map Unit Desc. Report

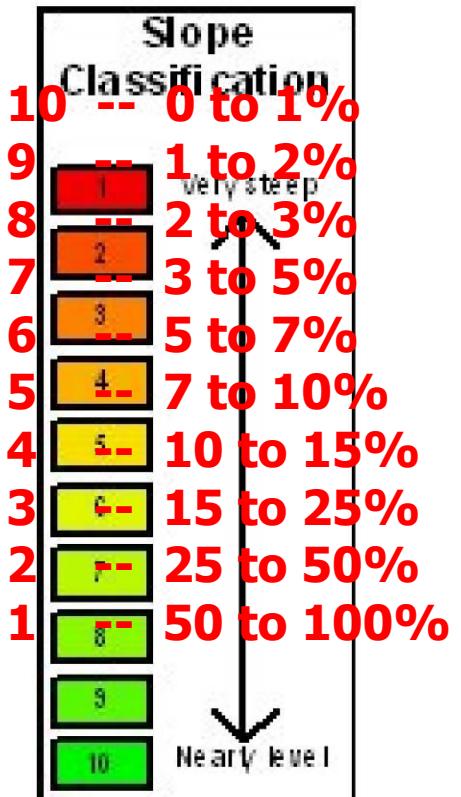


BUTTE COUNTY SOILS RECLASSIFIED BASED ON SOIL PERMEABILITIES

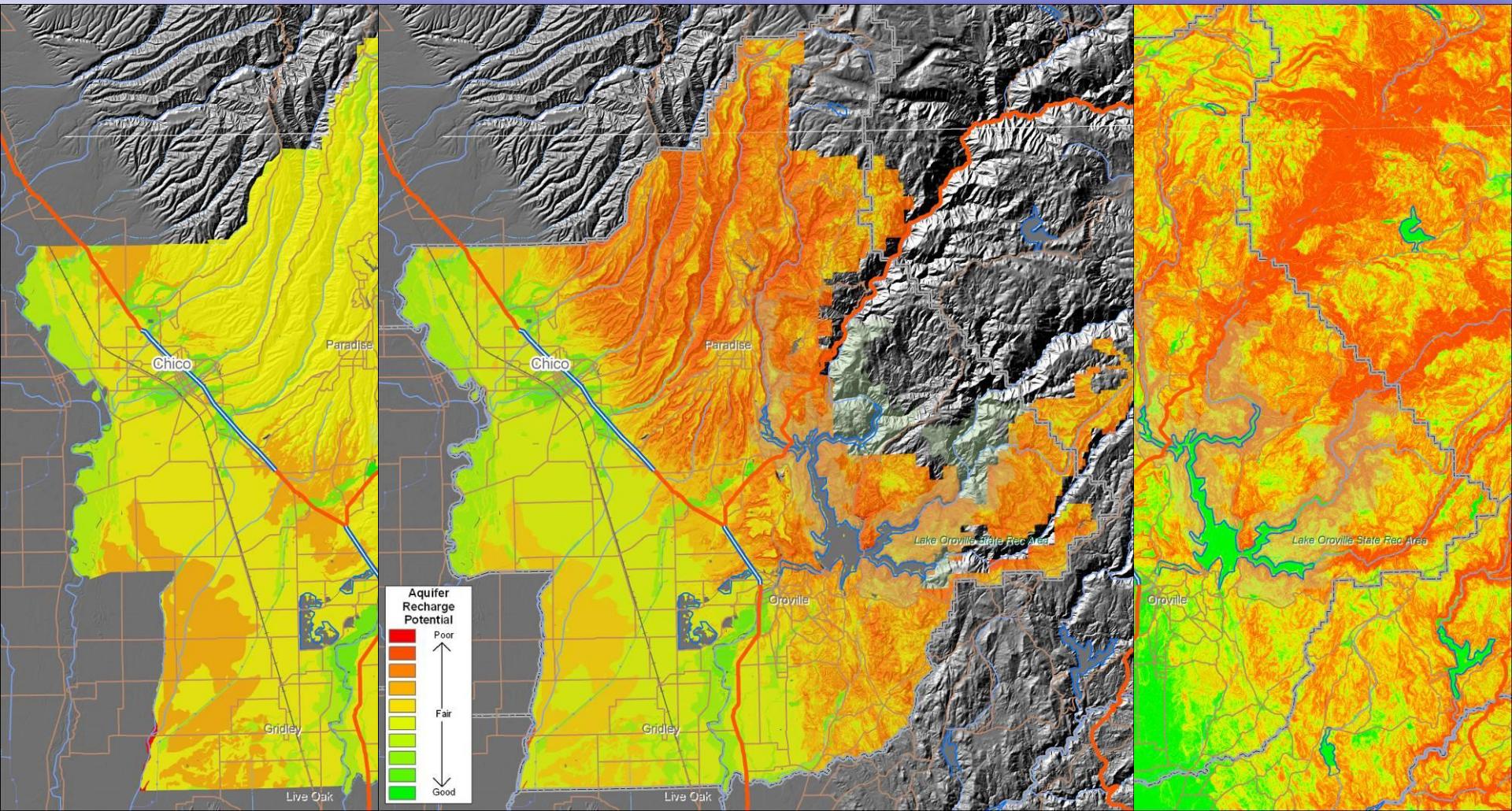




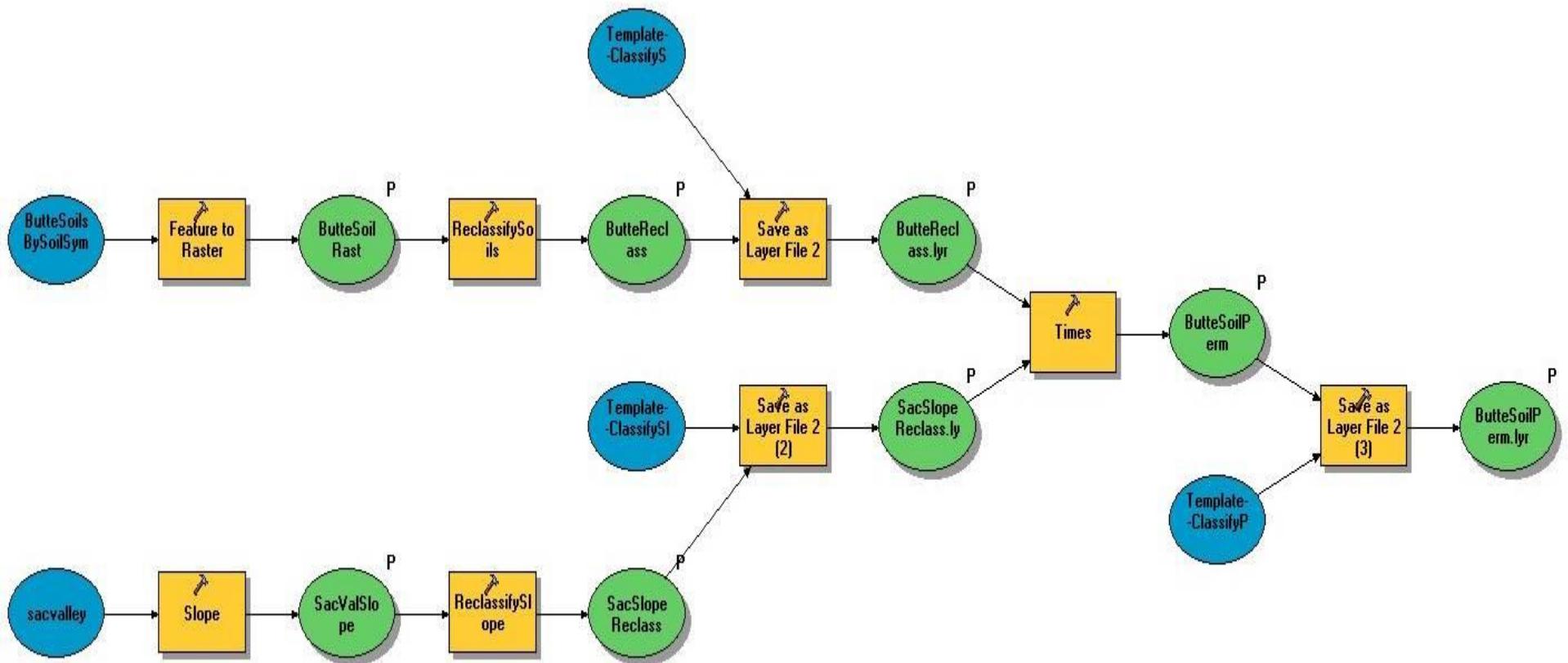
BUTTE COUNTY
REGION
DEM
RECLASSIFIED
BASED ON
SLOPE
"STEEPNESS"



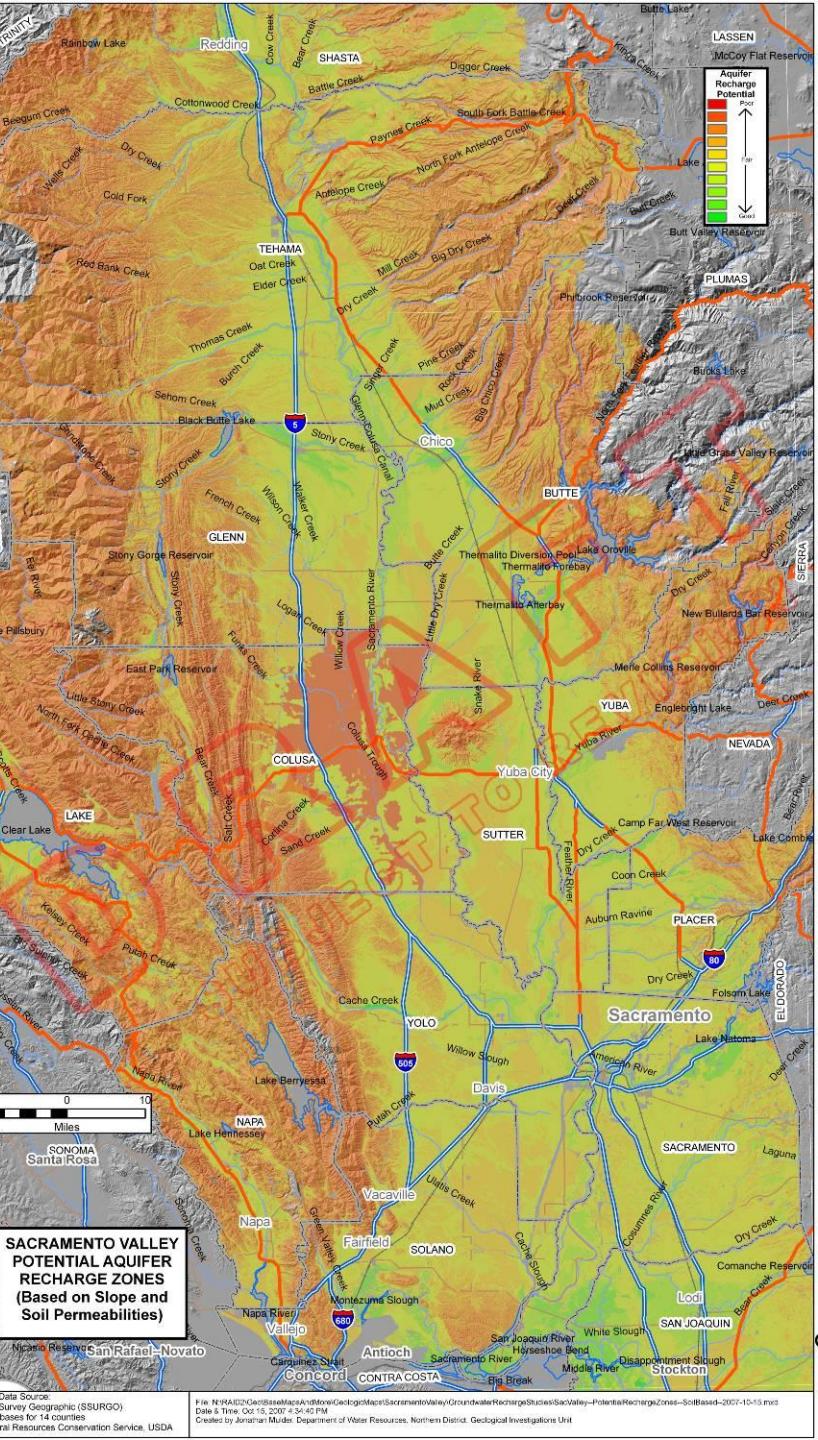
Using Raster Calculator,
multiply values from each raster layer
to combine a new layer
symbolizing potential aquifer recharge zones.

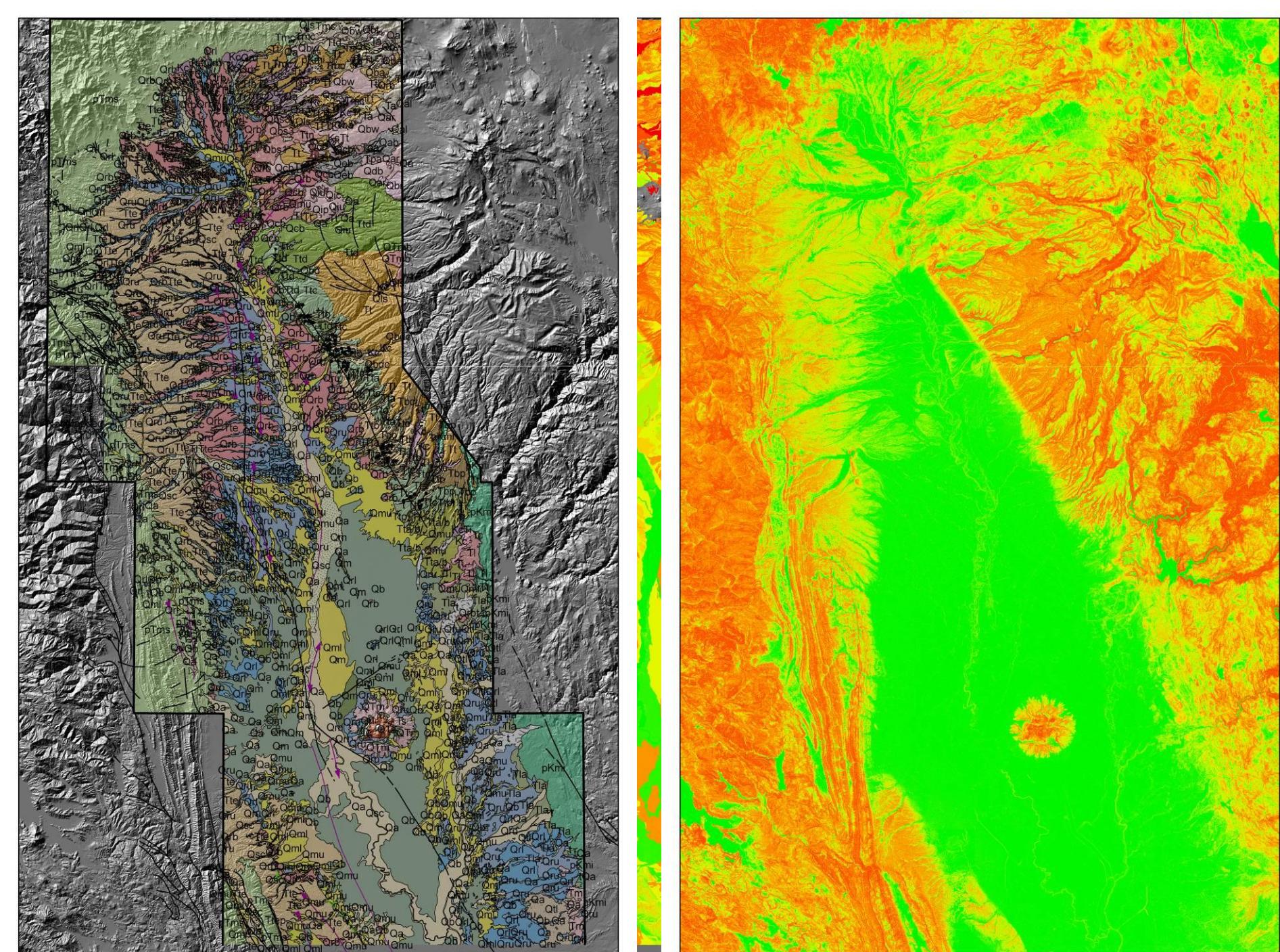


Use Geoprocessing model to automate procedure.



Potential Aquifer Recharge Zones of Sacramento Valley (utilizing soil data sets from 14 counties)







- Spatial Analysis will not solve everything!
- It is only another tool in the tool belt!





Thank you!

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