



WEST VIRGINIA WATERSHED ASSESSMENT PILOT PROJECT

Stakeholder Workshop: Gauley River Watershed
May 8, 2013

Gauley River Watershed

1. Watershed Overview
2. Current Condition Results
Streams, Wetlands, Uplands
3. Consolidated Analysis Results
Threats, Opportunities
4. Web Map Tool Demo
Potential Use Scenario

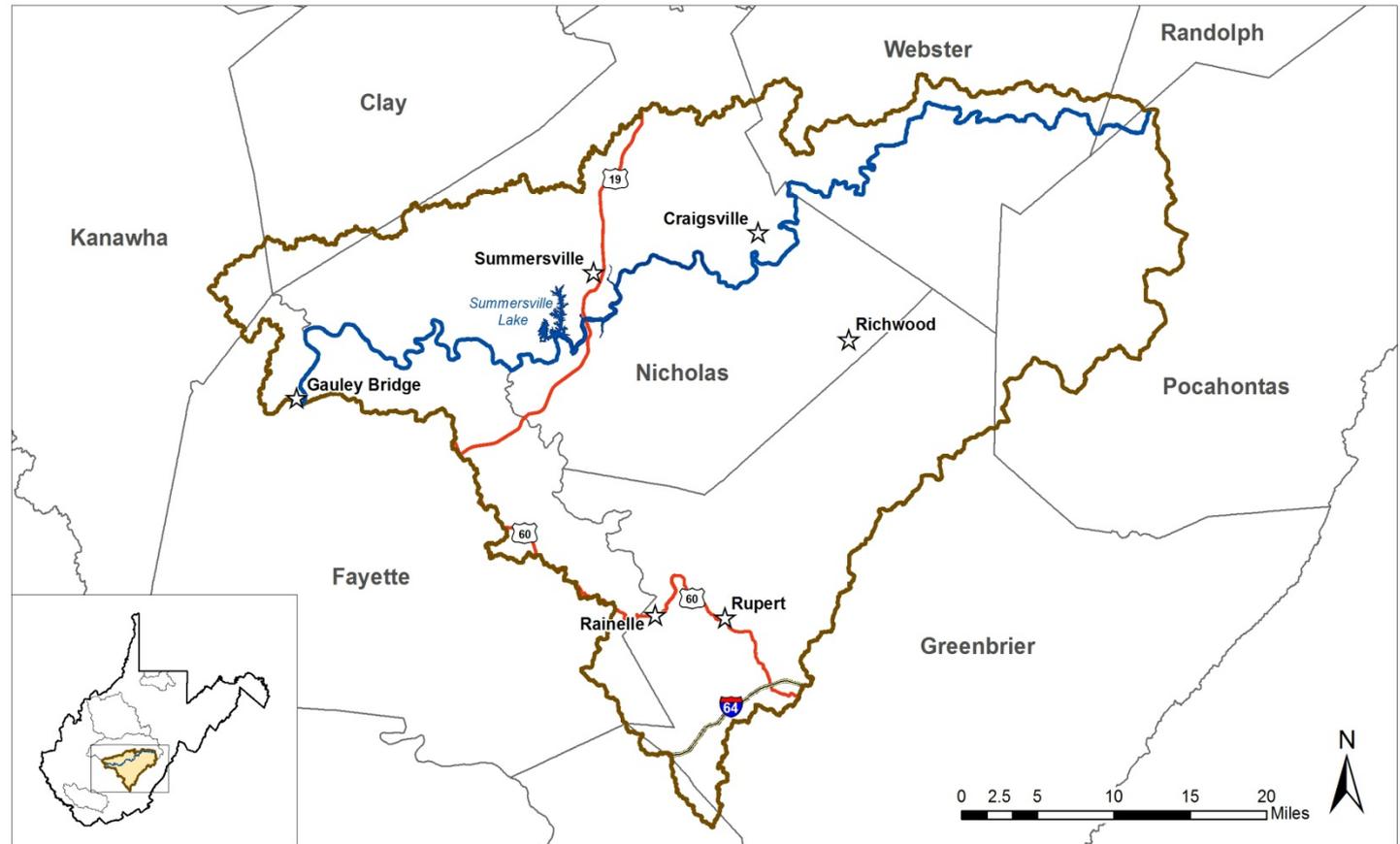
Gauley River Watershed

Watershed
Overview:

Counties

Cities &
Towns

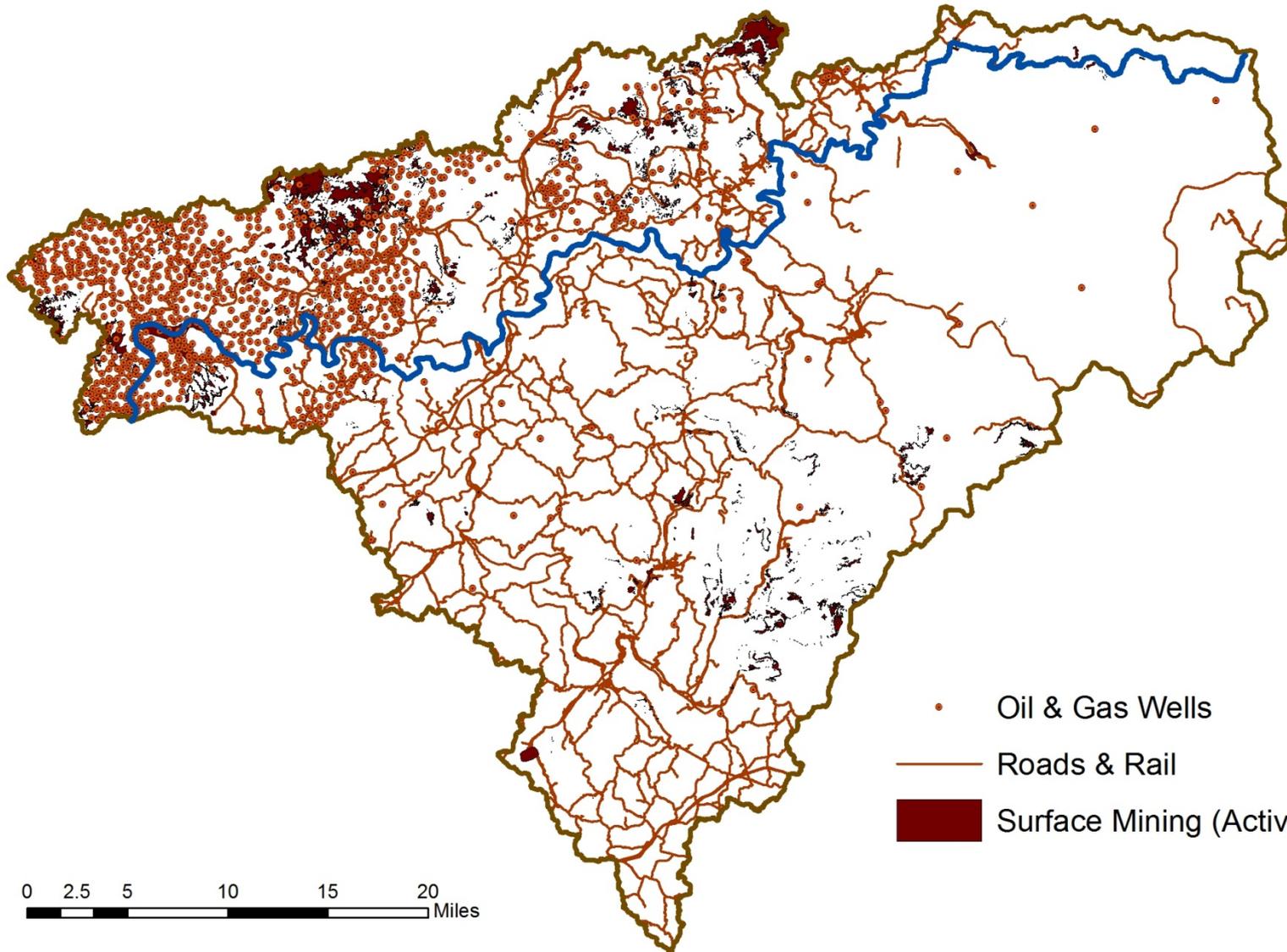
Major
Roads



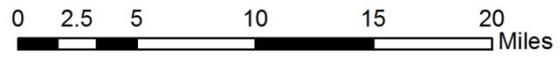


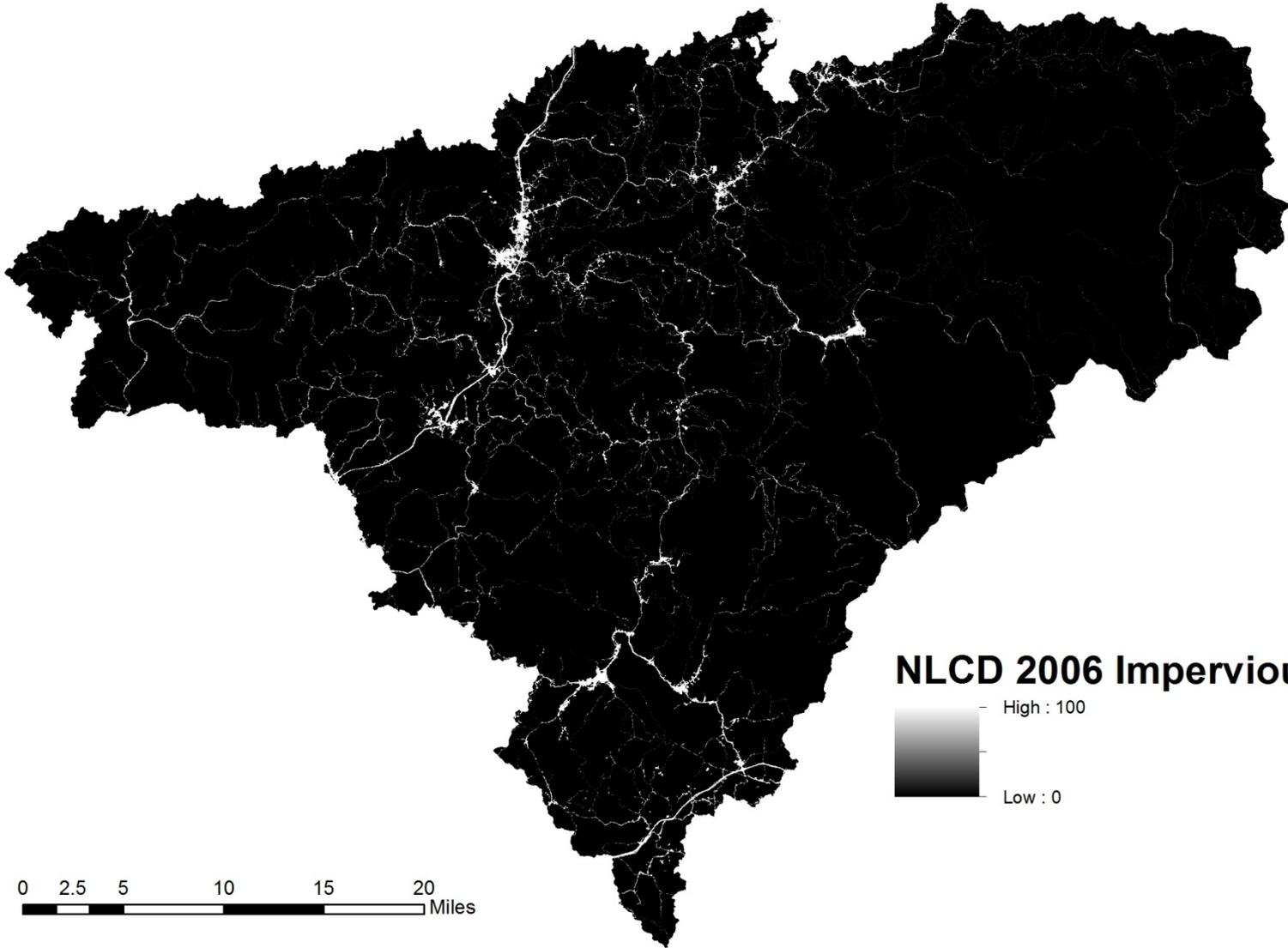
Land Use/Land Cover 2009-10 (WVU/NRAC)

- | | |
|---|---|
|  Water |  Mixed Forest |
|  Barren/Developed |  Grasslands |
|  Mine Disturbance |  Agriculture |
|  Reclaimed Mine Lands |  Grazing |
|  Deciduous Forest |  Woody Wetlands |
|  Evergreen Forest |  Herbaceous Wetlands |

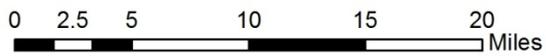
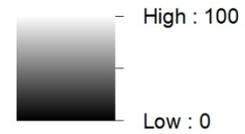


- Oil & Gas Wells
- Roads & Rail
- Surface Mining (Active & Legacy)





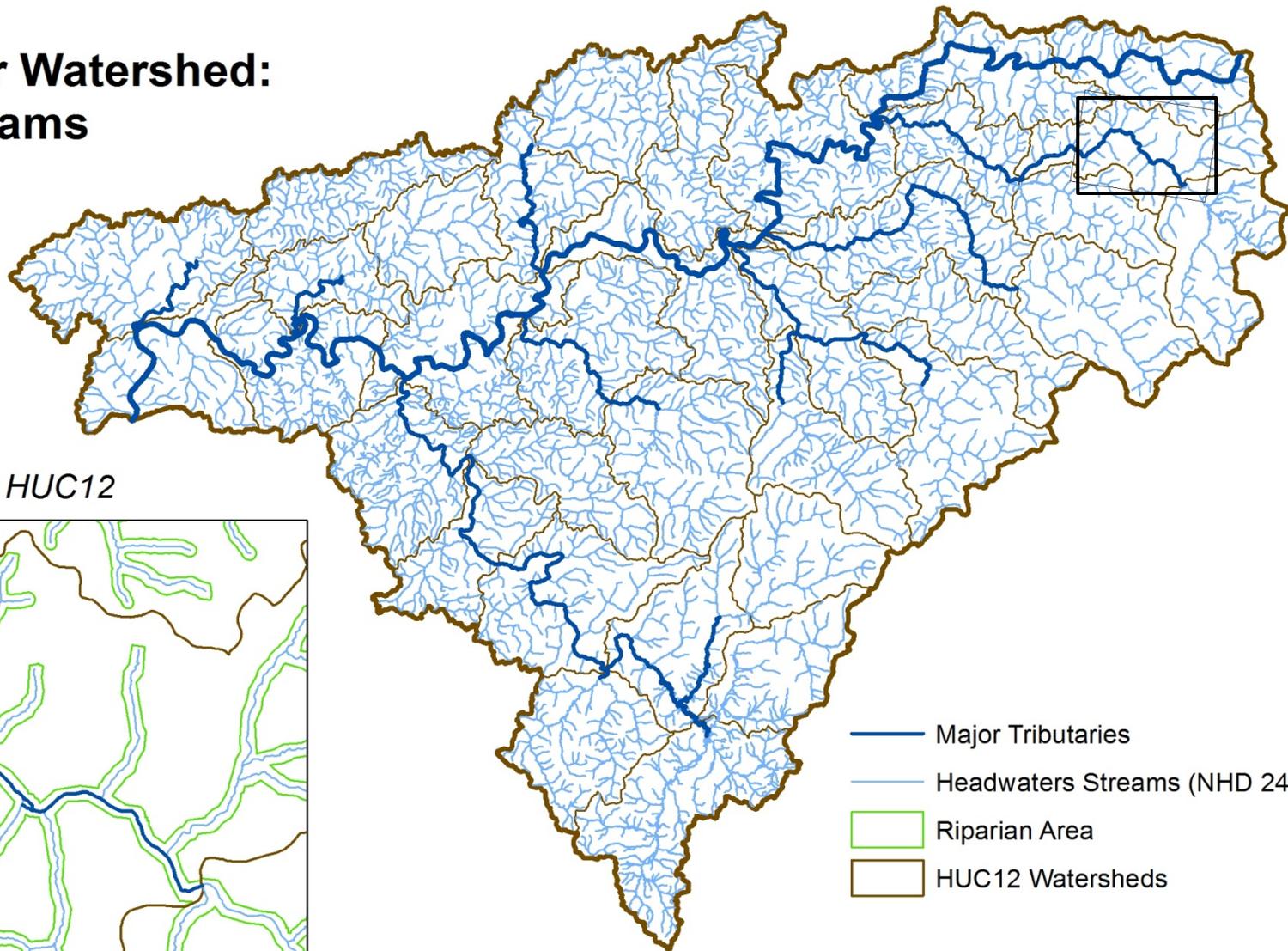
NLCD 2006 Impervious Cover



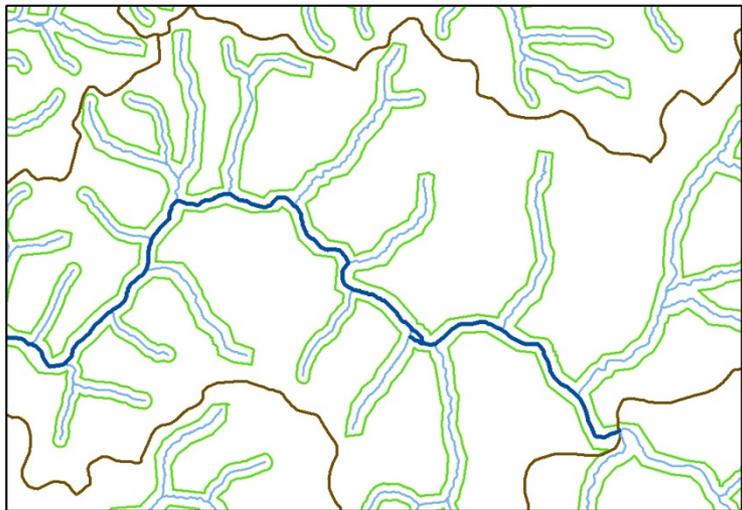
Gauley Watershed: Streams



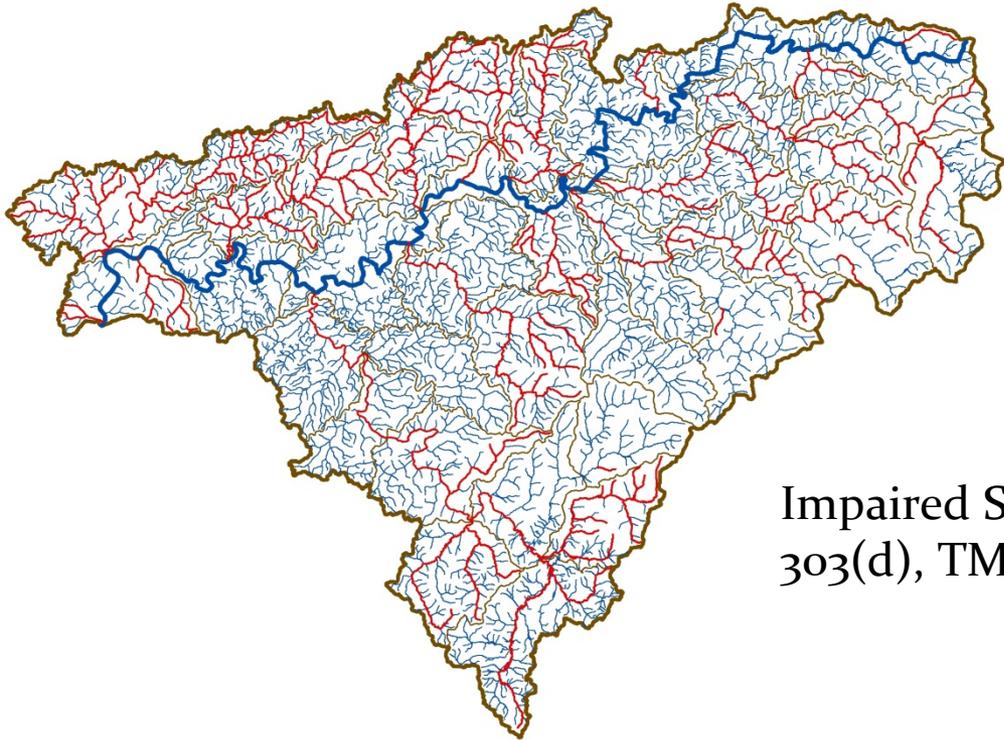
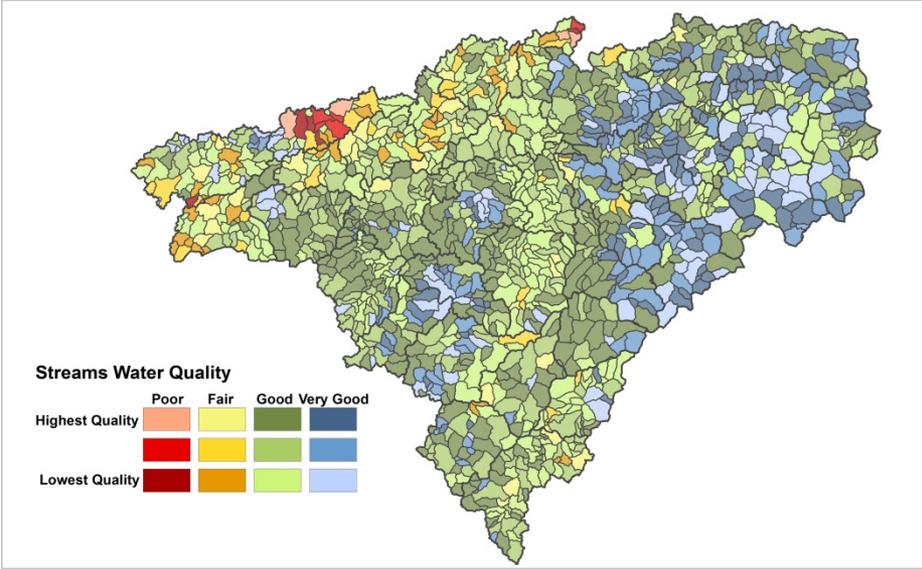
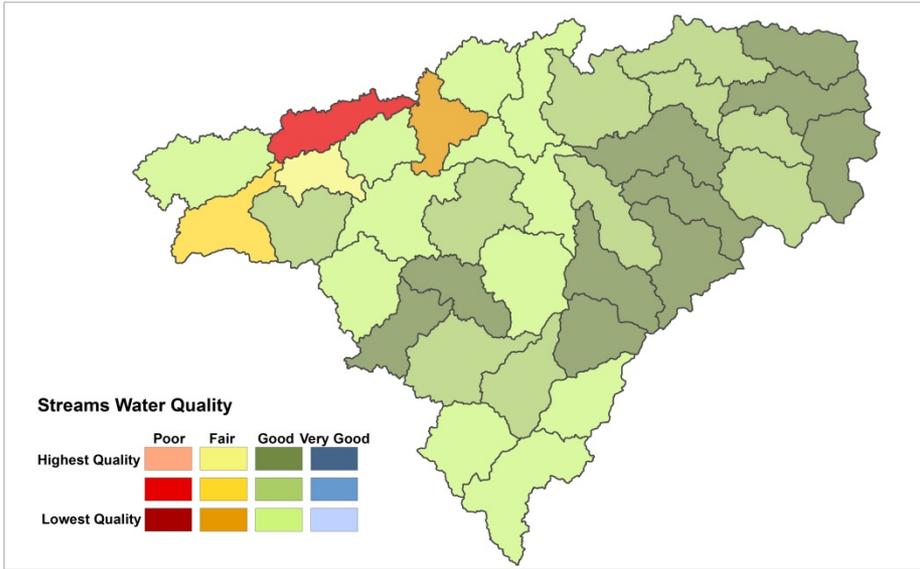
Gauley River Watershed: Streams



Middle Williams River HUC12

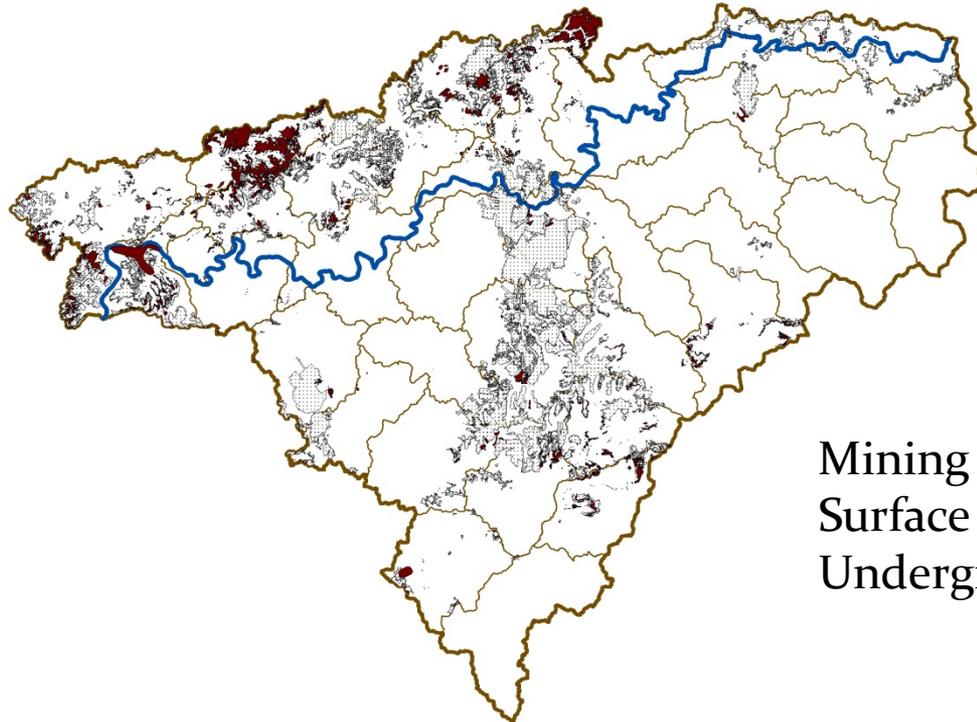
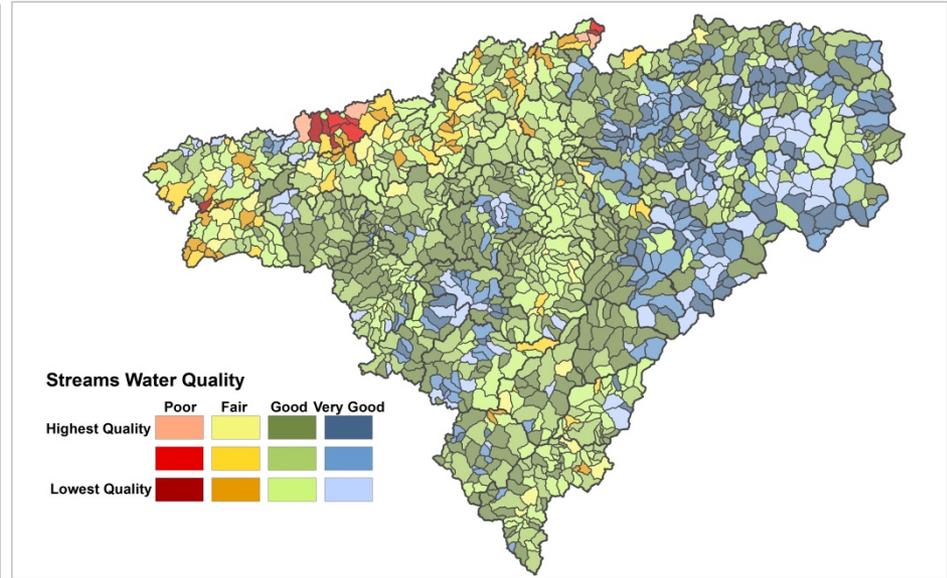
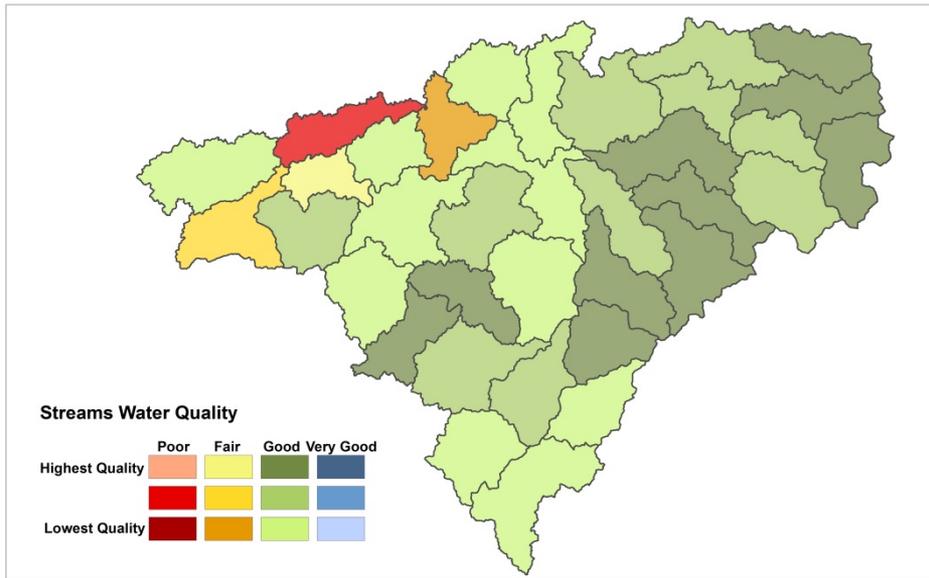


- Major Tributaries
- Headwaters Streams (NHD 24k)
- Riparian Area
- HUC12 Watersheds



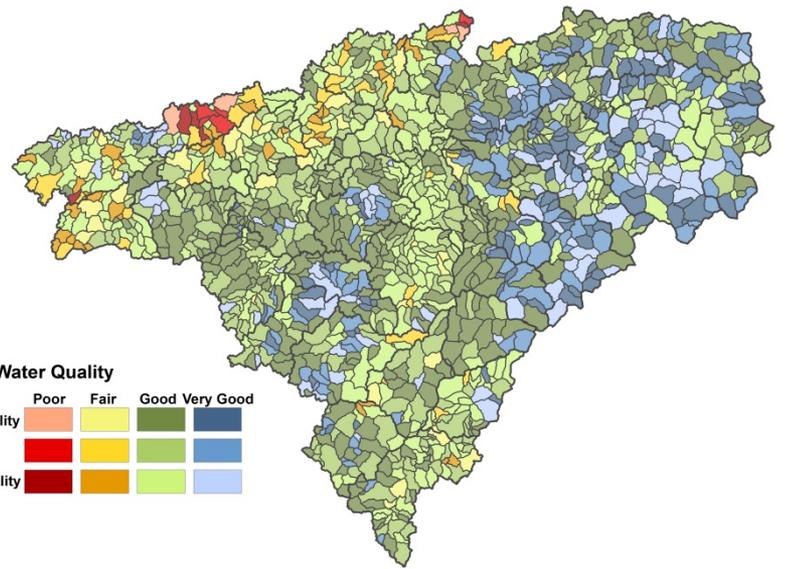
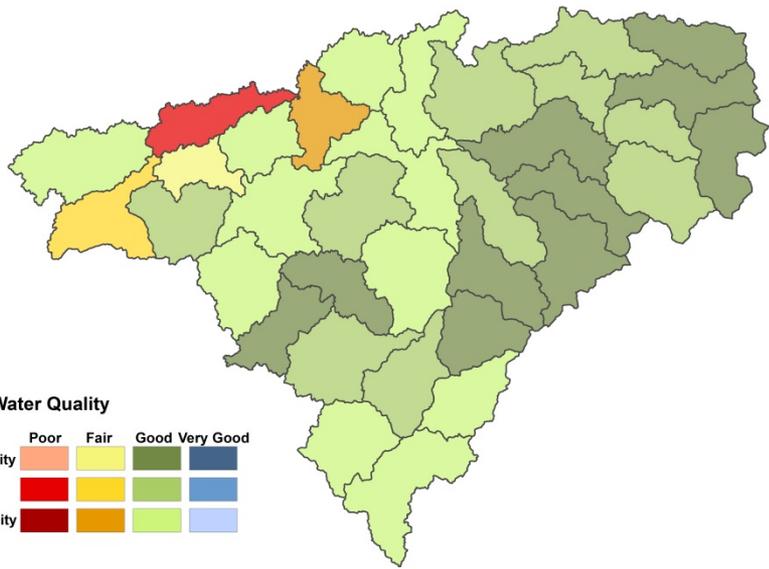
Impaired Streams:
303(d), TMDL, AMD

Streams
Water
Quality



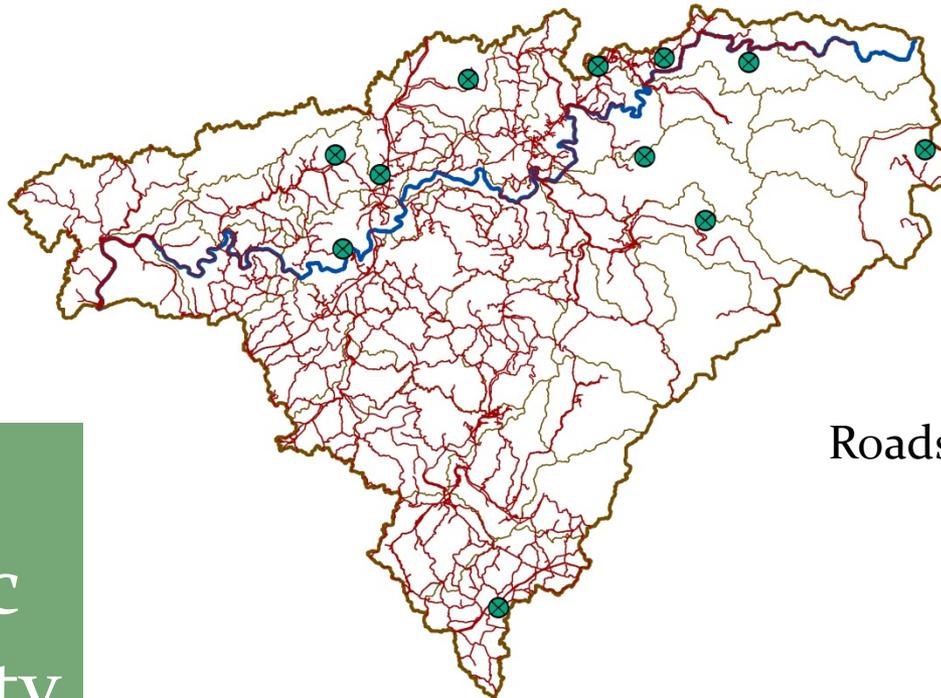
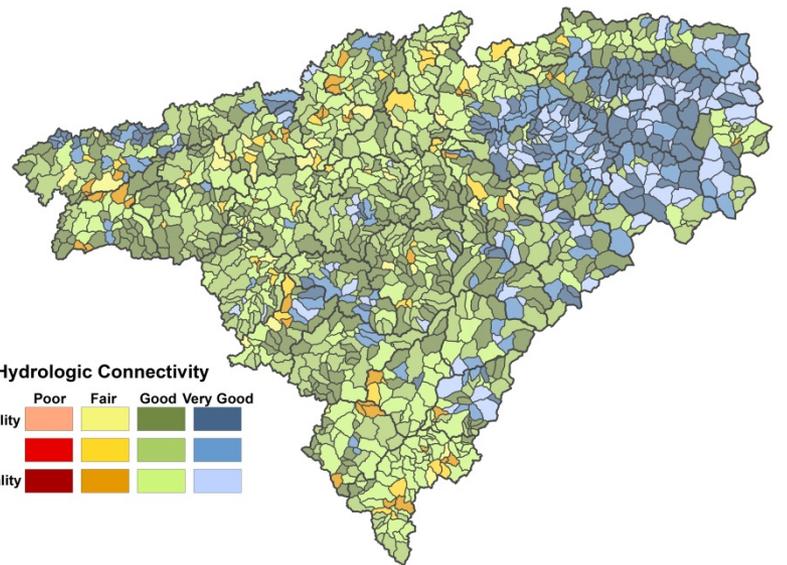
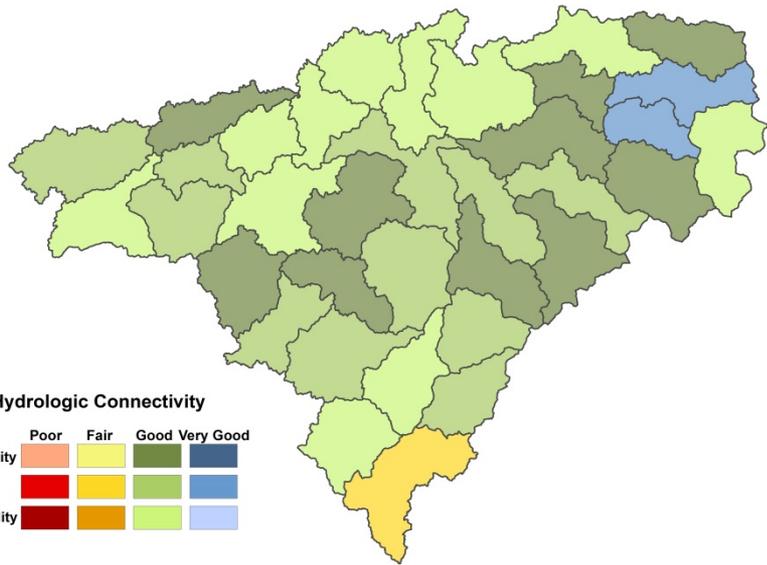
Streams
Water
Quality

Mining Activity:
Surface (Active and Legacy)
Underground



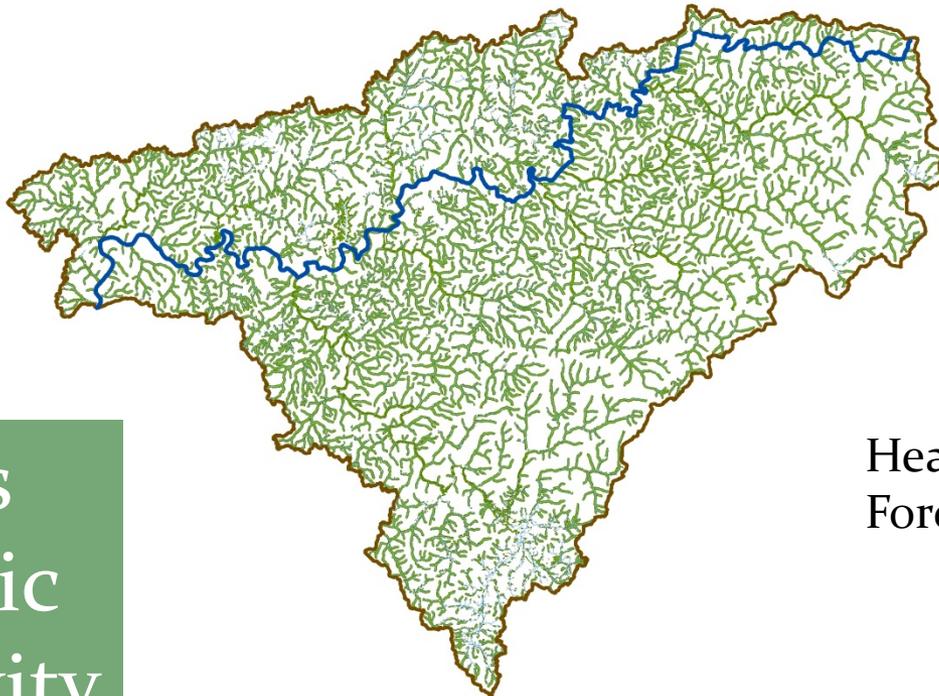
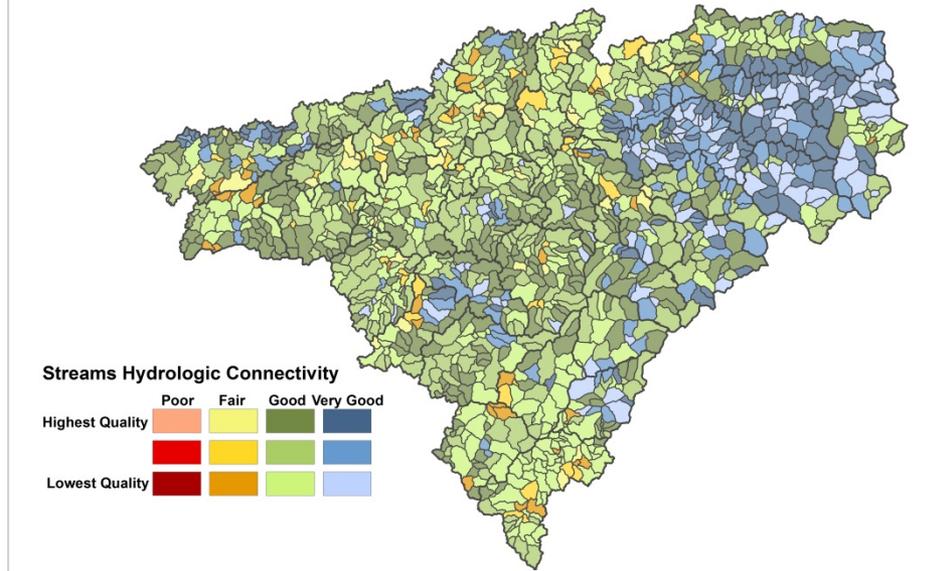
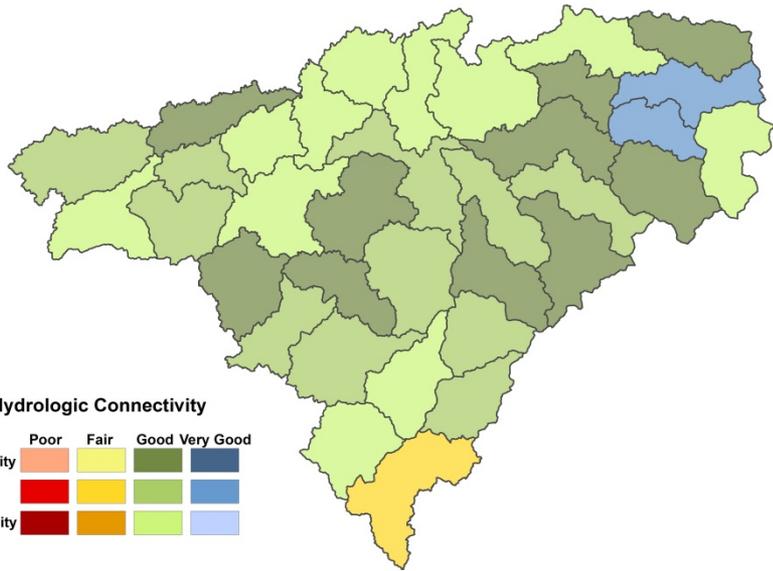
Streams
Water
Quality

Natural Cover:
Forest, Grasslands, Wetlands



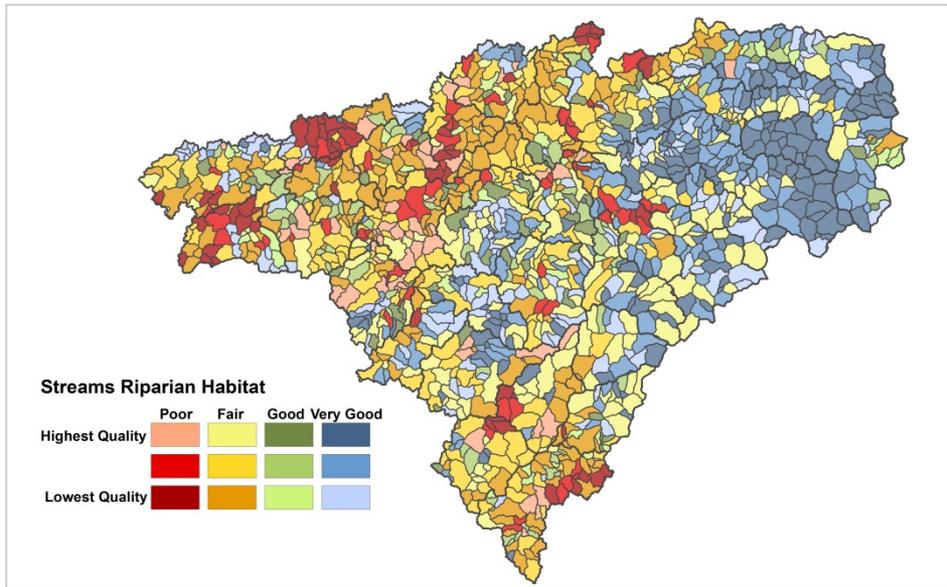
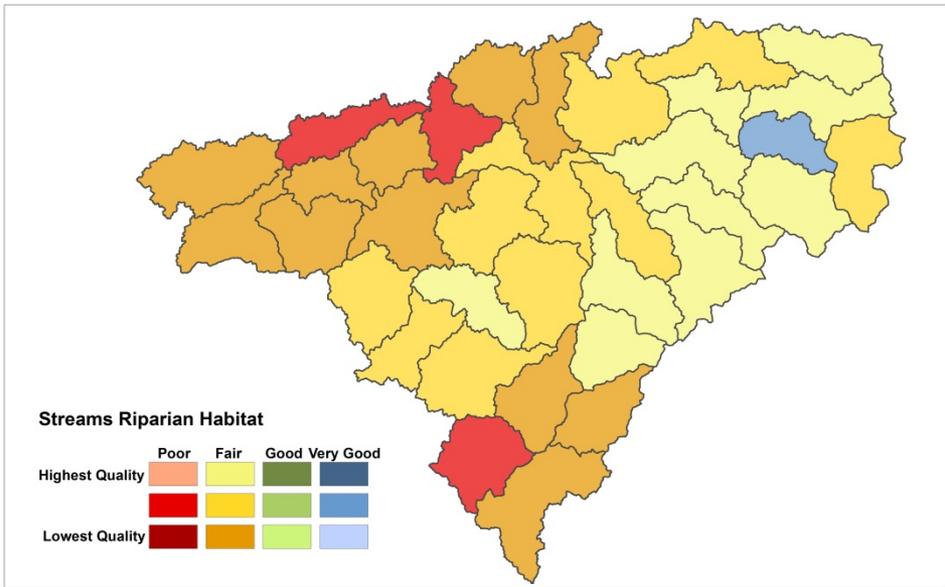
Roads & Rail, Dams

Streams
Hydrologic
Connectivity



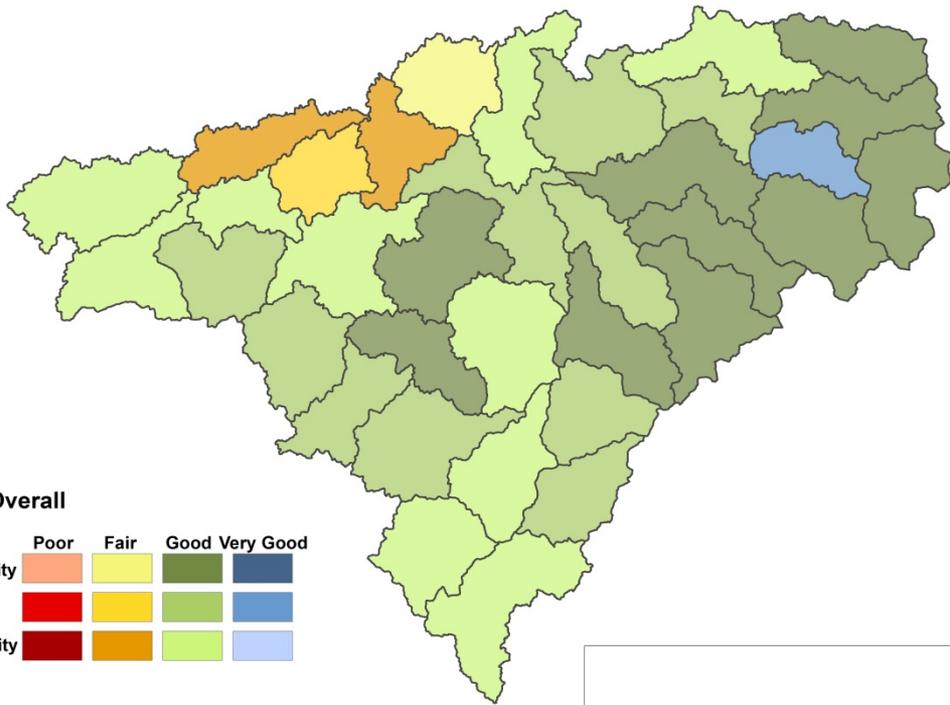
Headwaters streams (1a)
Forested riparian area

Streams
Hydrologic
Connectivity

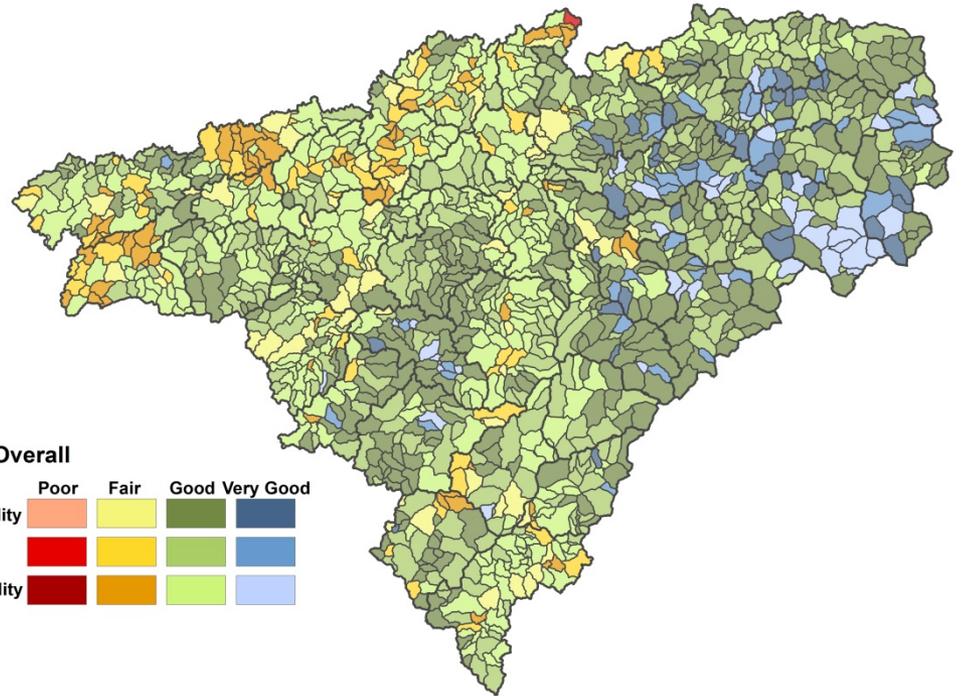
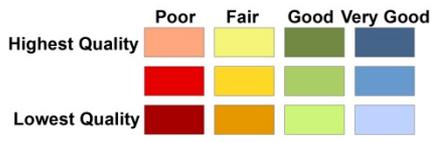


Riparian Area
Land Use/Land Cover

Streams
Riparian
Habitat



Streams Overall



Streams Overall



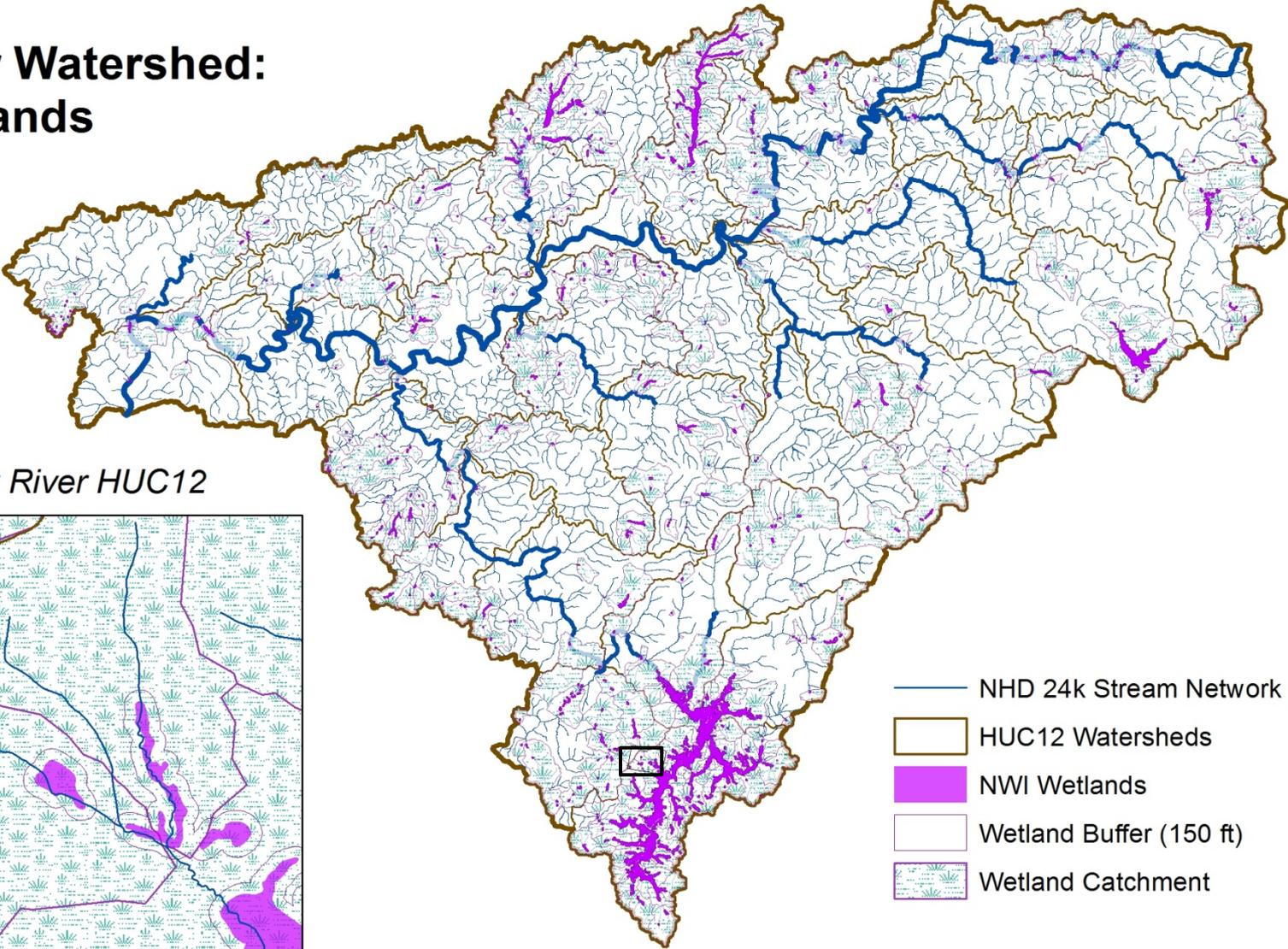
Streams
Model
Overall

Gauley Watershed: Wetlands



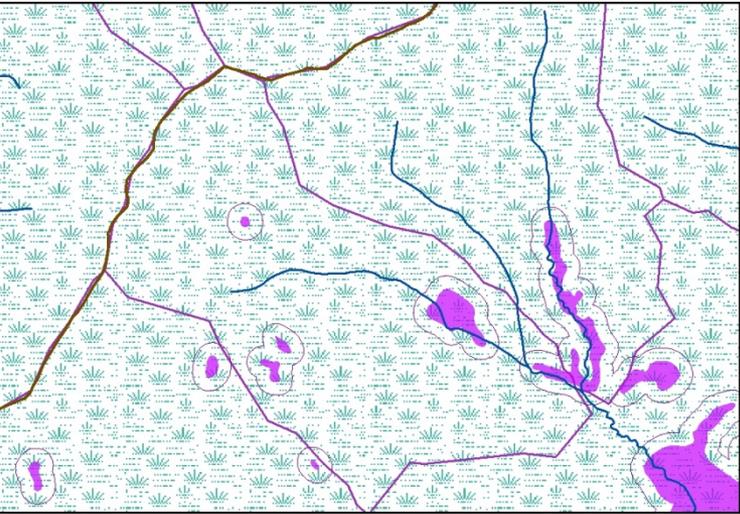
Cranberry Glades ©pocahontascountywv.com

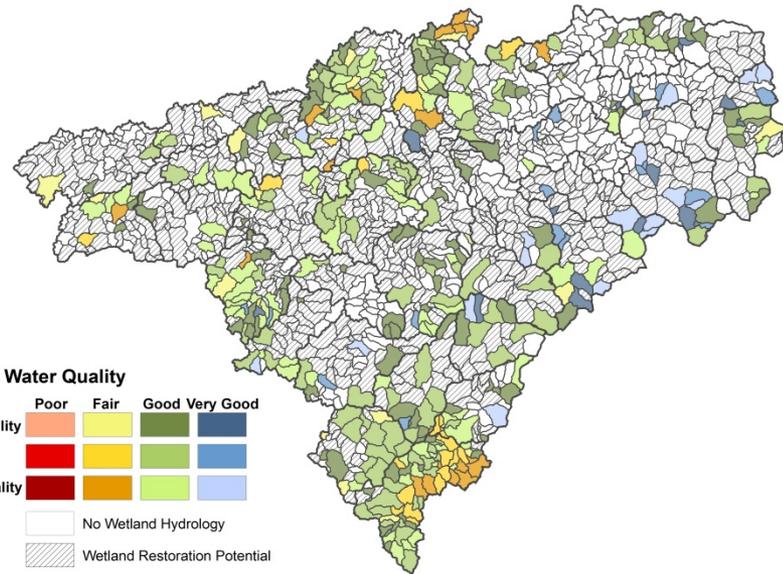
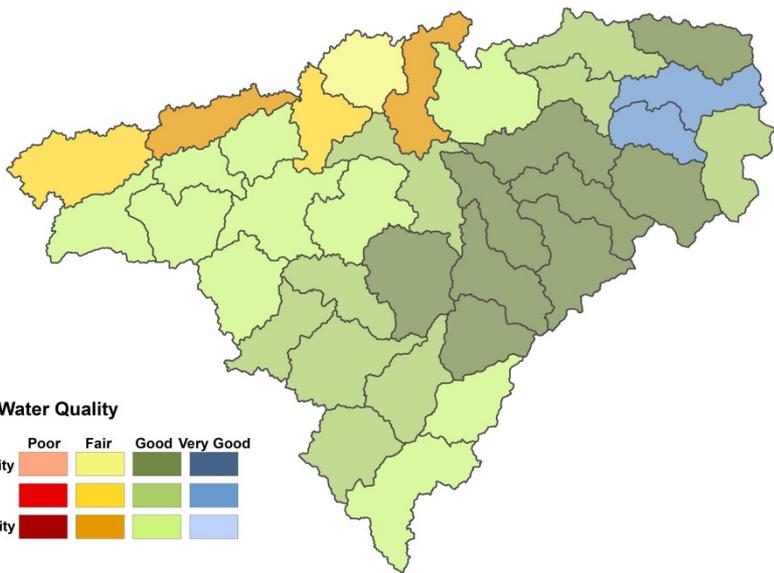
Gauley River Watershed: Wetlands



- NHD 24k Stream Network
- HUC12 Watersheds
- NWI Wetlands
- Wetland Buffer (150 ft)
- Wetland Catchment

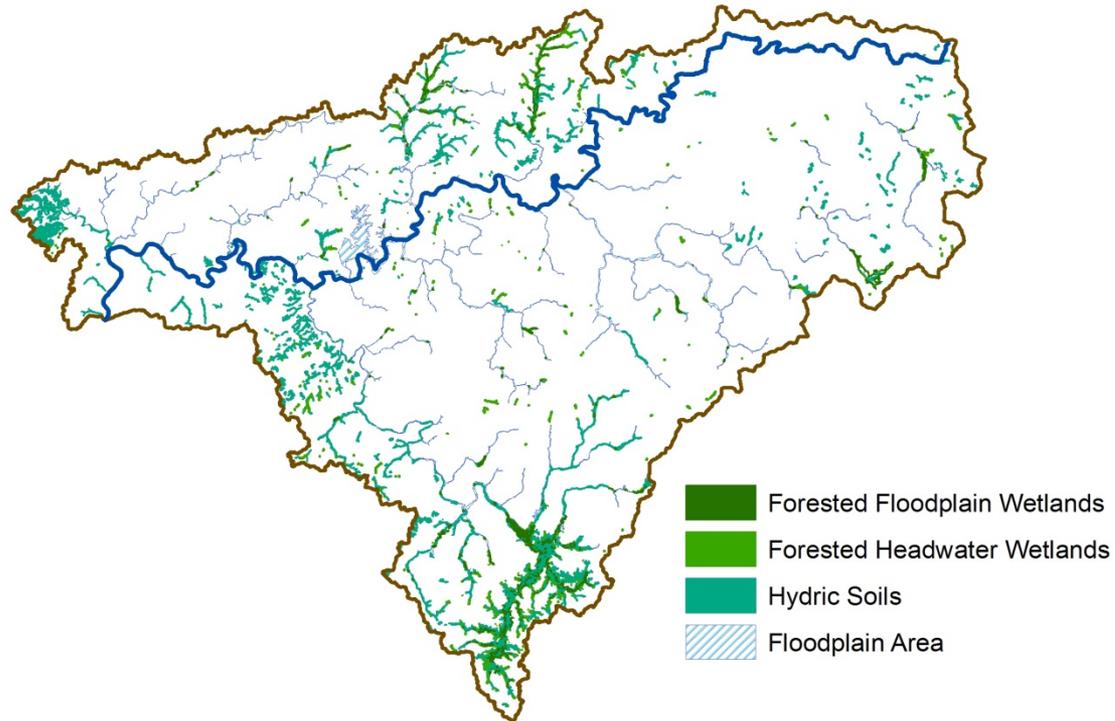
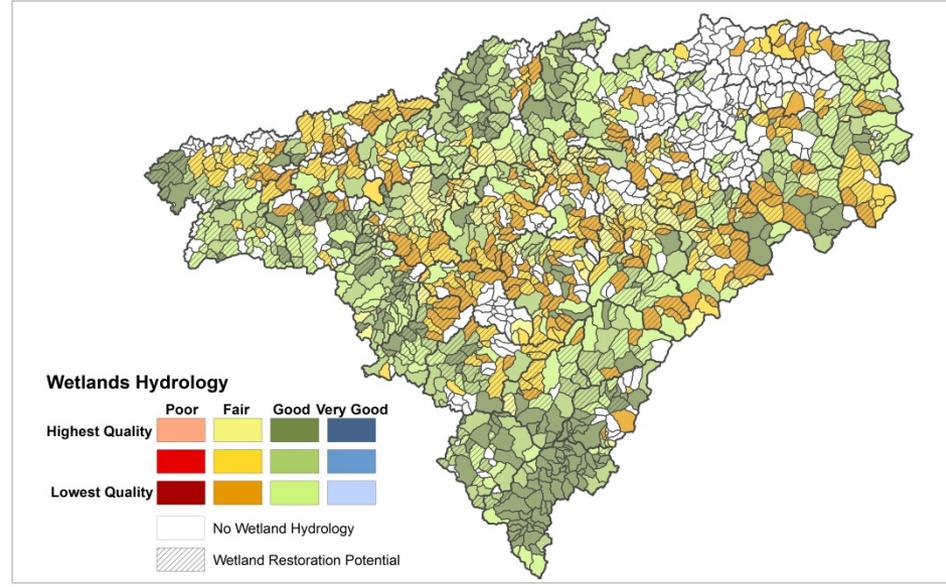
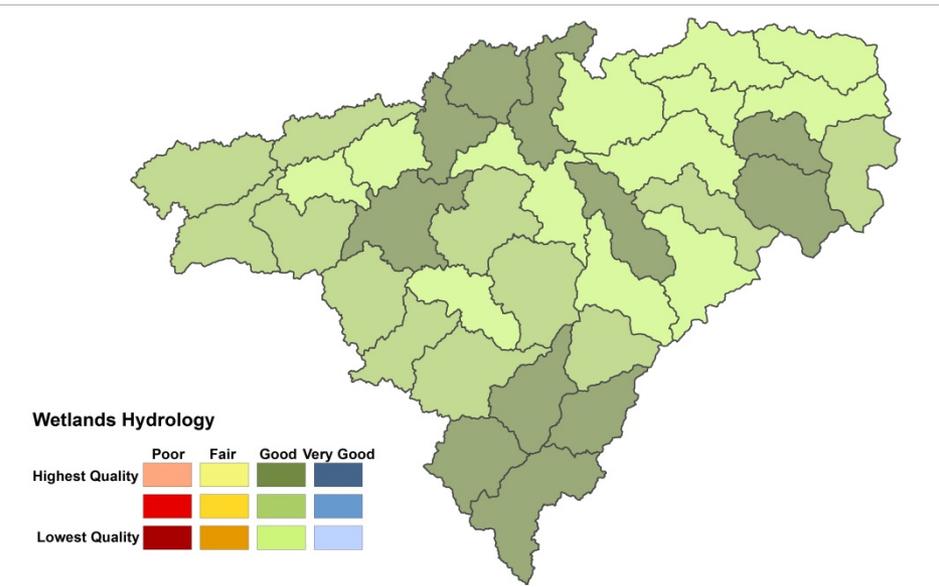
Otter Creek - Meadow River HUC12



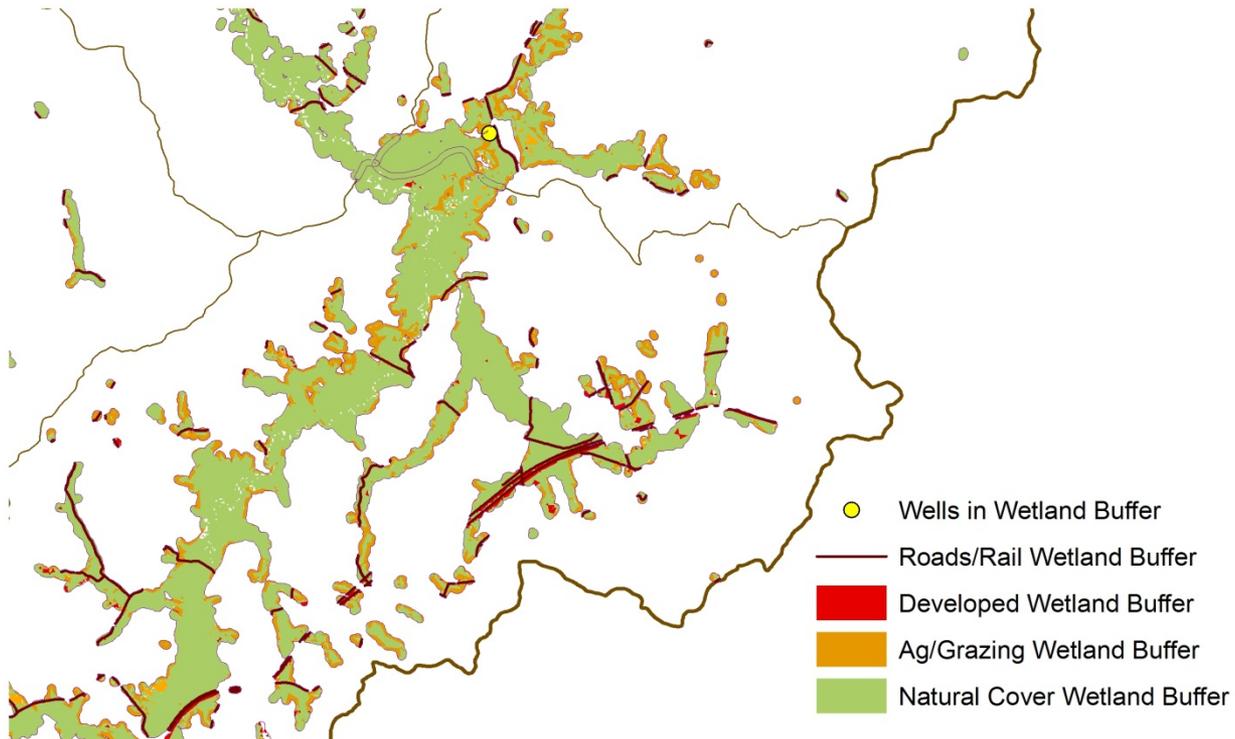
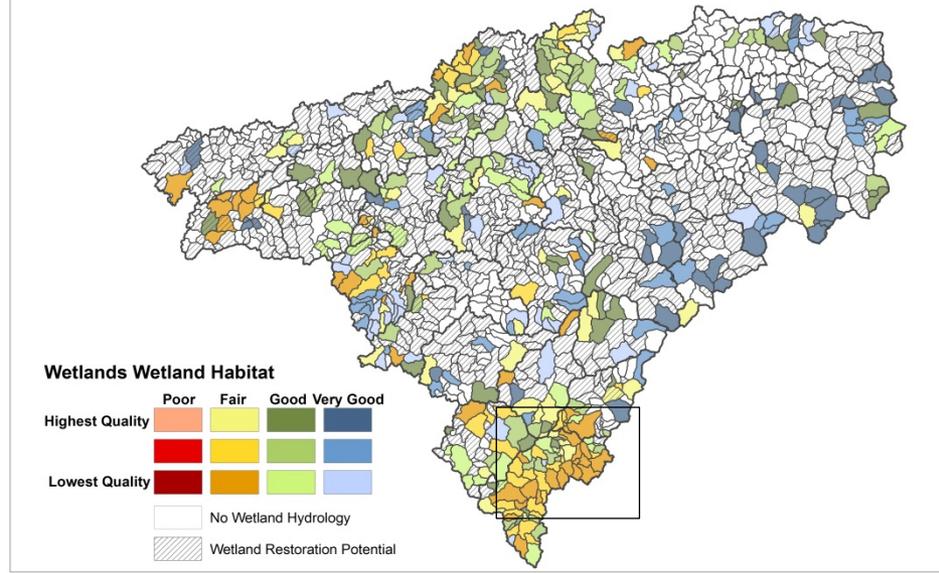
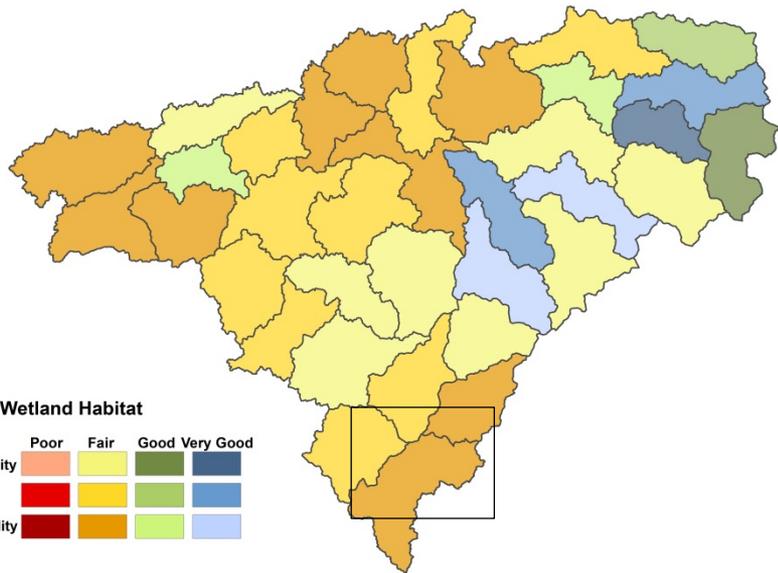


Land Use/Land Cover
in Wetland Catchment

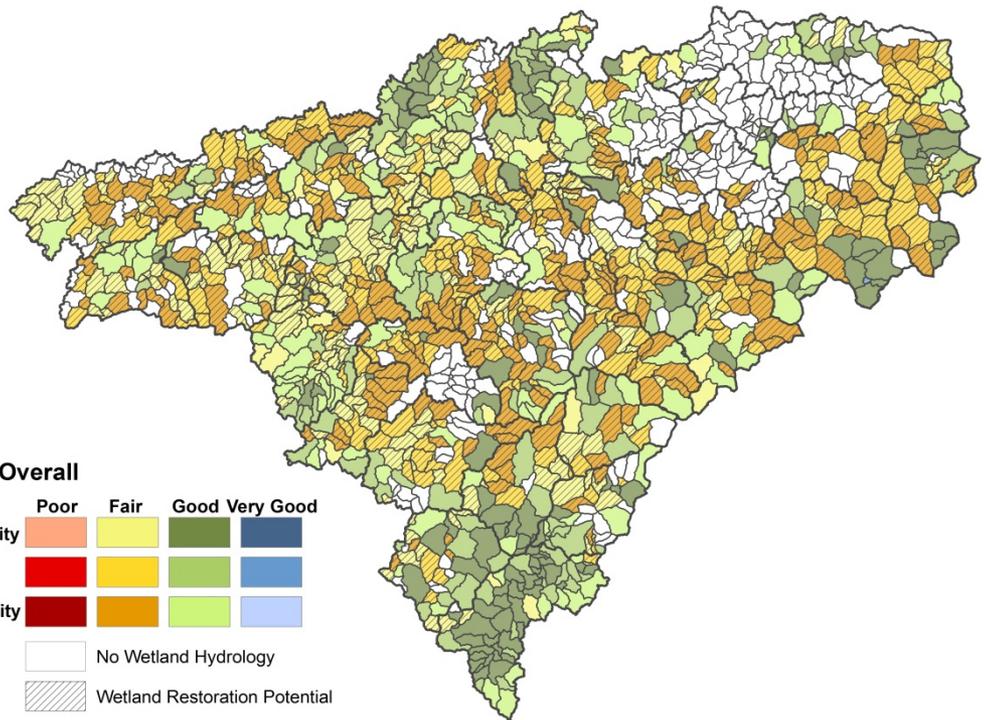
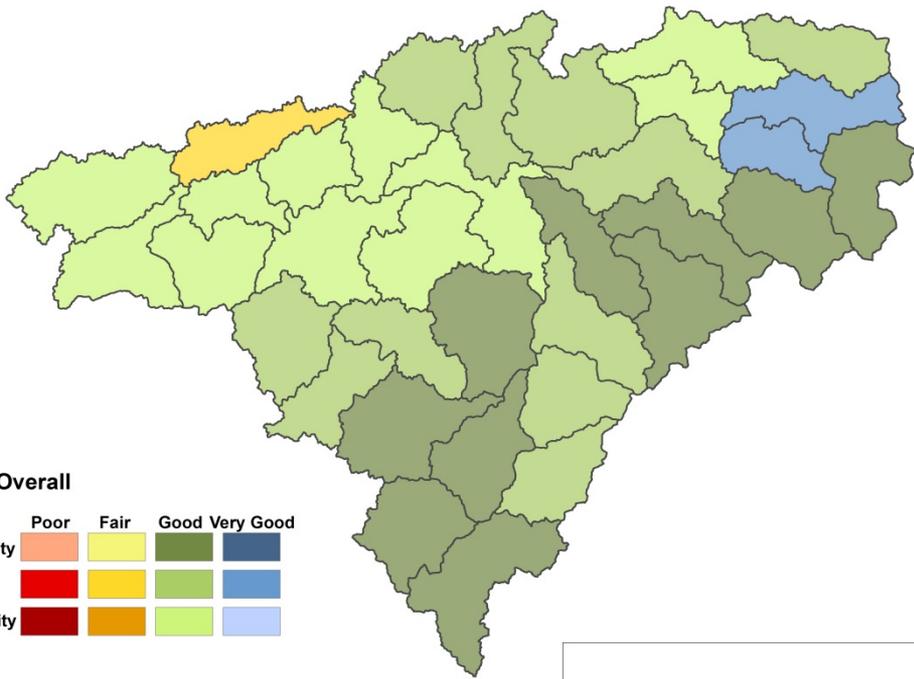
Wetlands
Water
Quality



Wetlands Hydrology



Wetlands Wetland Habitat



Wetlands Model Overall

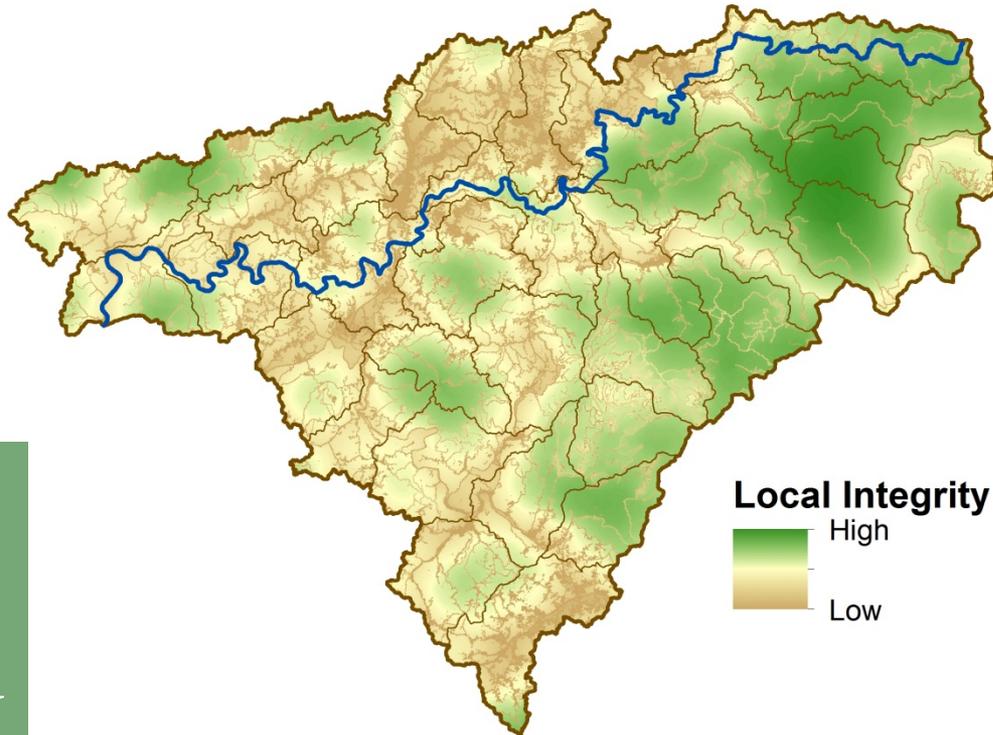
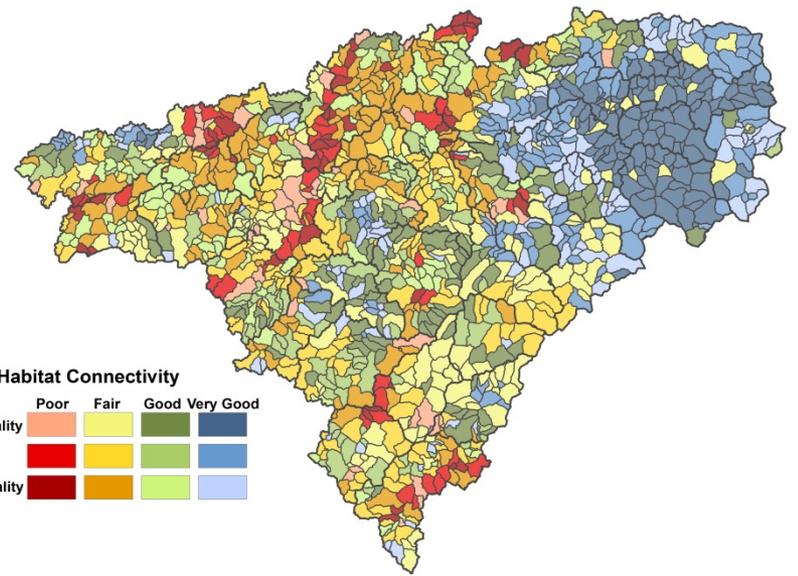
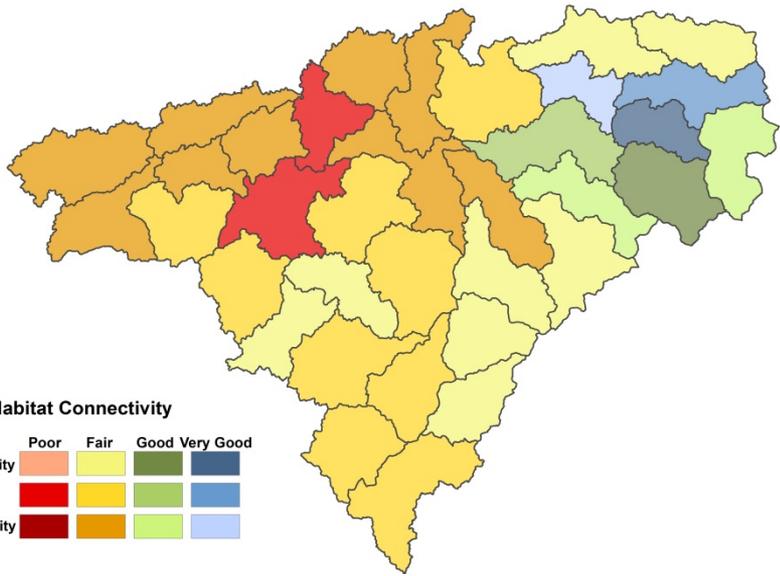
Gauley Watershed: Uplands



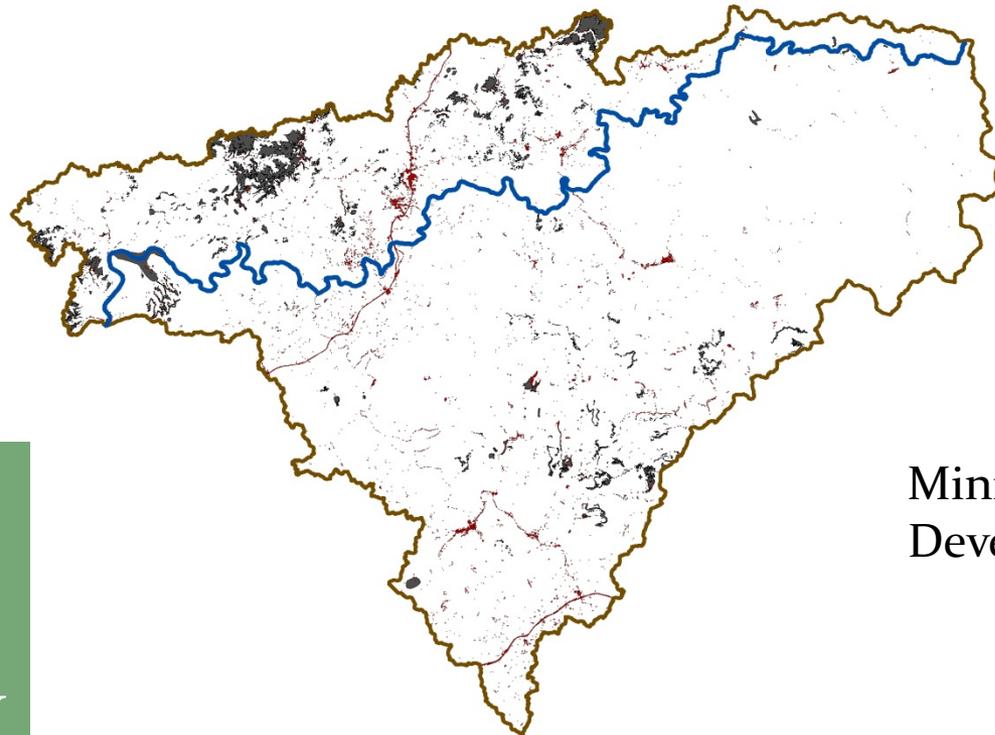
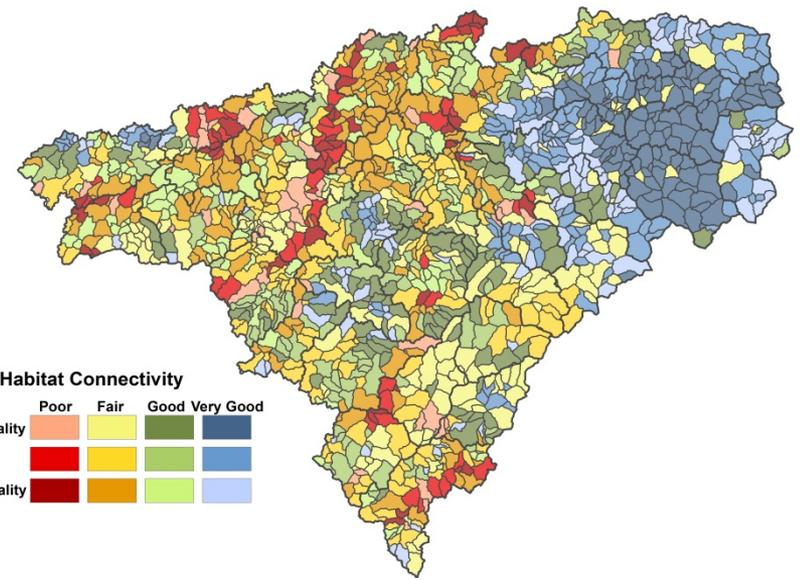
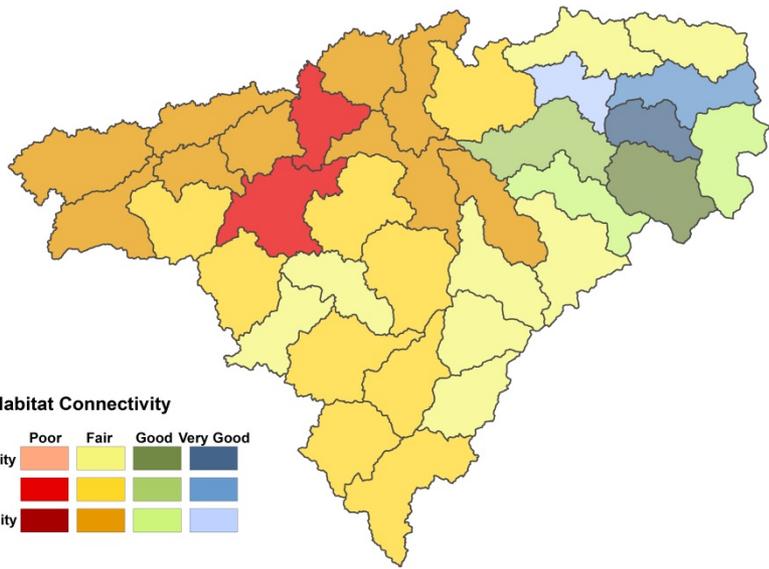


Land Use/Land Cover 2009-10 (WVU/NRAC)

- | | |
|---|---|
|  Water |  Mixed Forest |
|  Barren/Developed |  Grasslands |
|  Mine Disturbance |  Agriculture |
|  Reclaimed Mine Lands |  Grazing |
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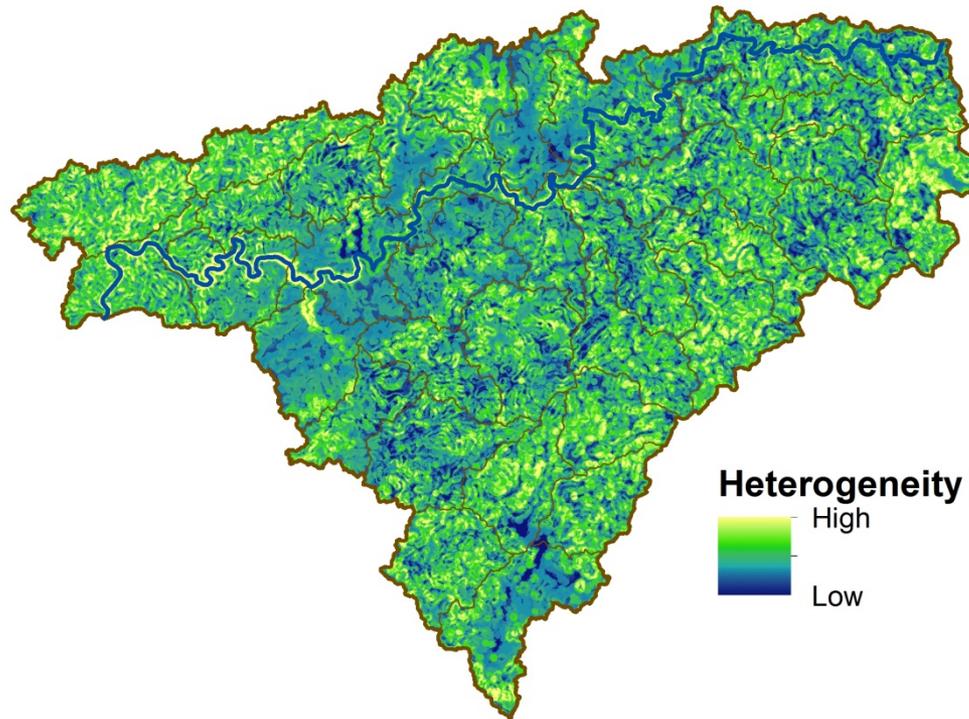
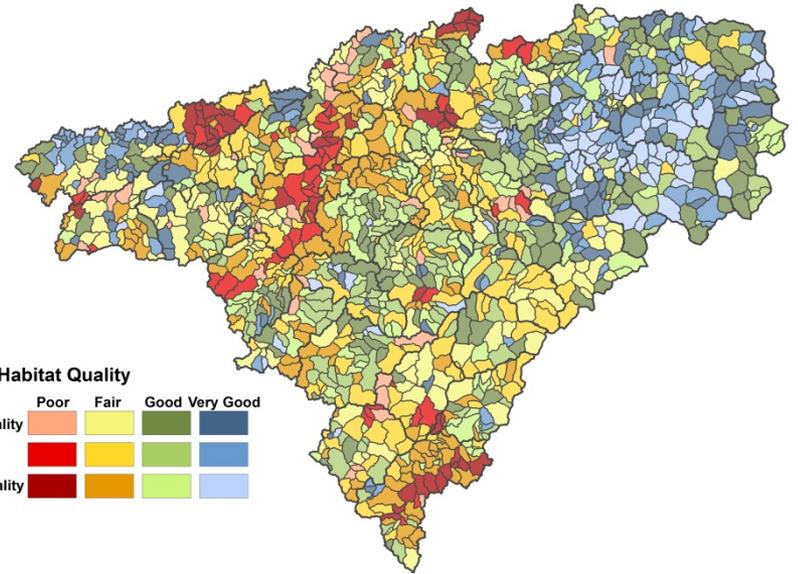
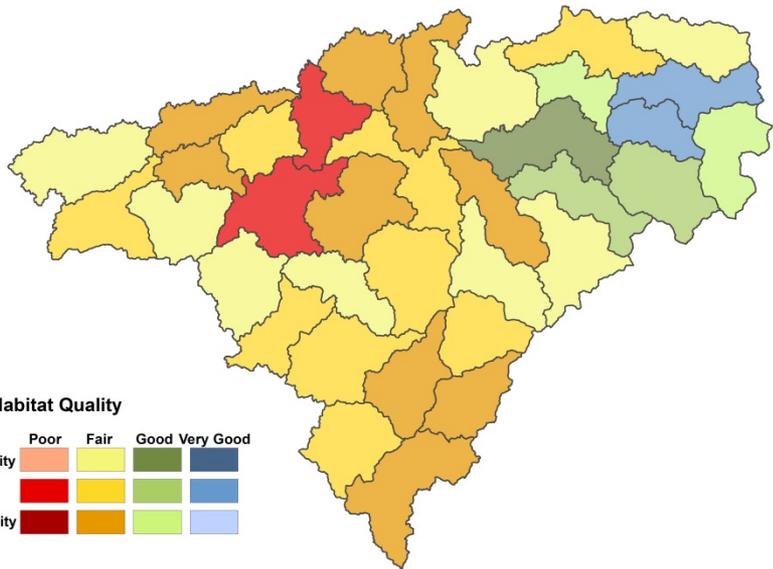


Uplands
Habitat
Connectivity

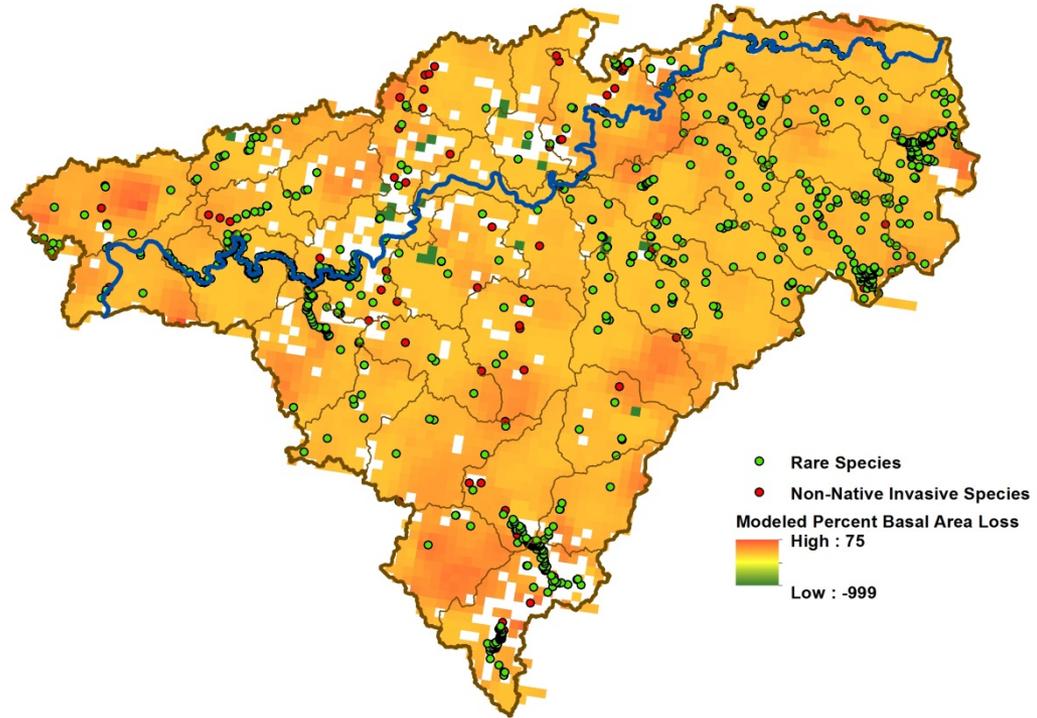
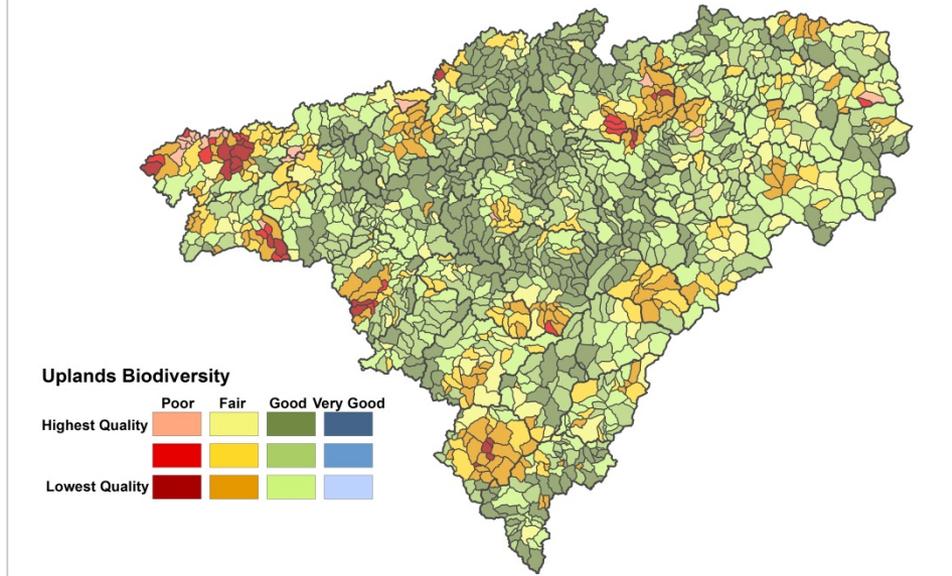
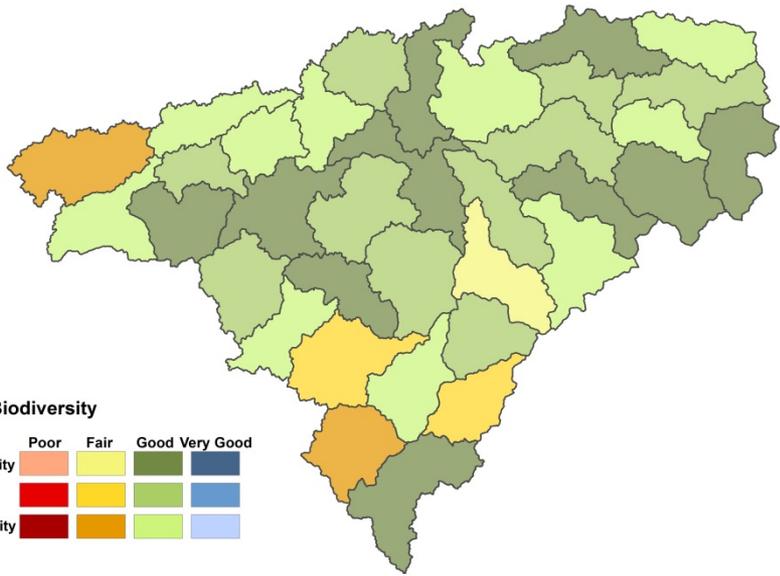


Uplands
Habitat
Connectivity

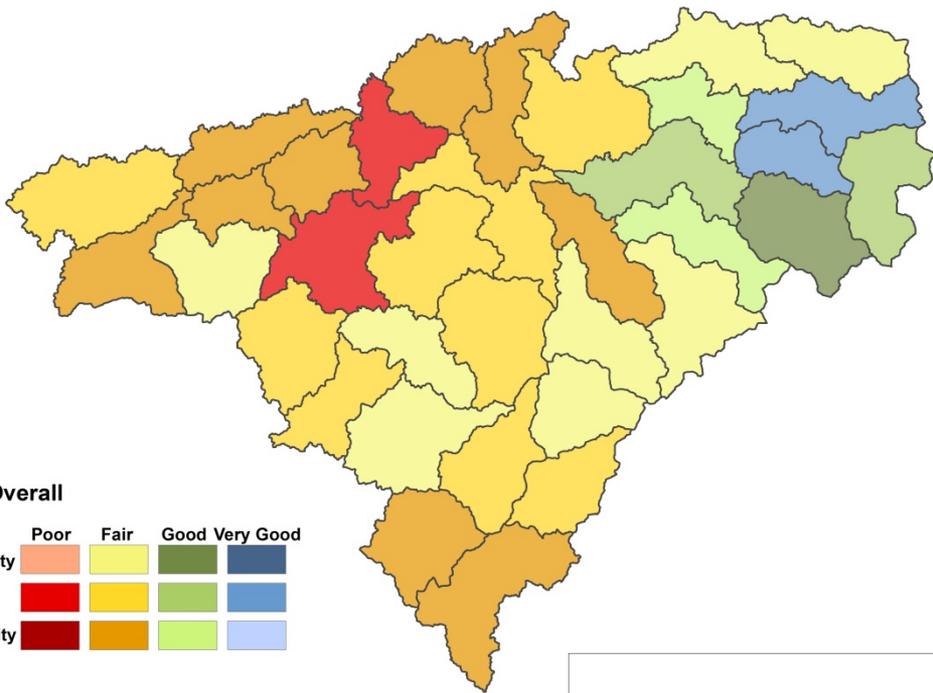
Mining
Development



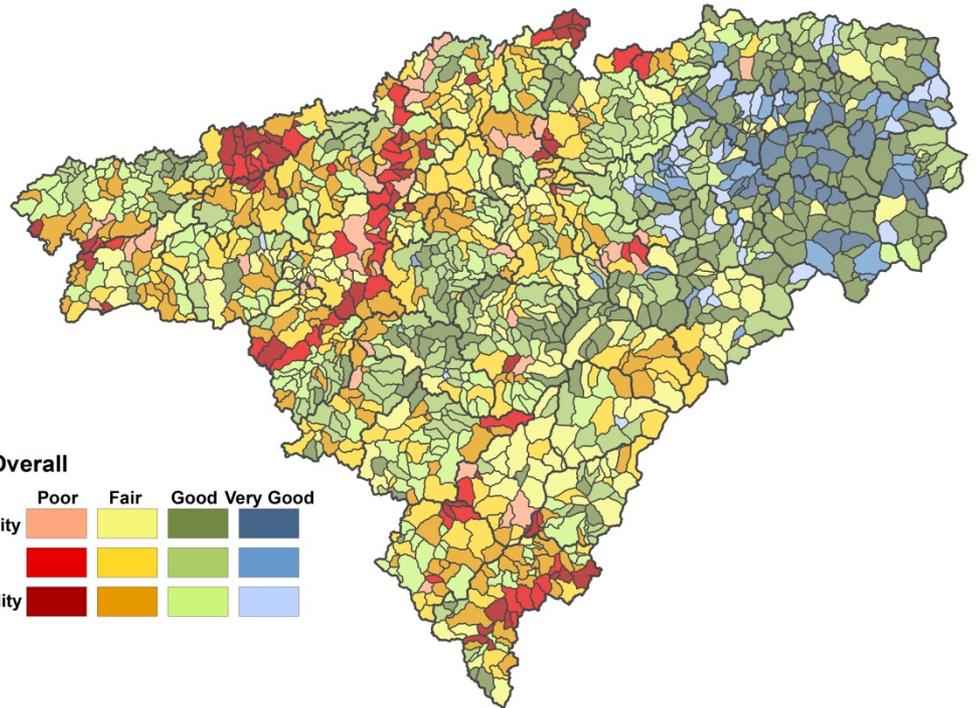
Uplands
Habitat
Quality



Uplands Biodiversity



Uplands Overall



Uplands Overall



Uplands
Model
Overall



COMMENTS/QUESTIONS?

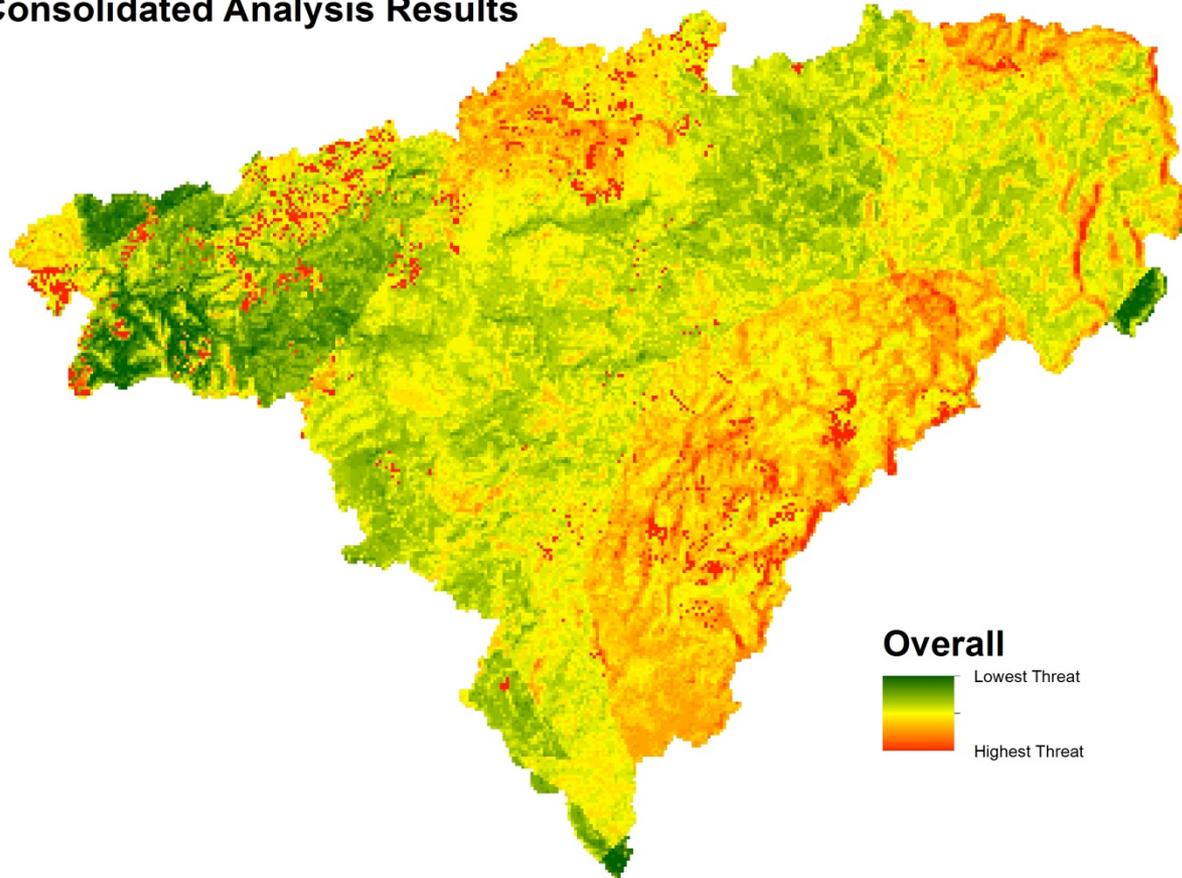
Gauley Watershed: Consolidated Analysis



Gauley River © www.ytravelblog.com

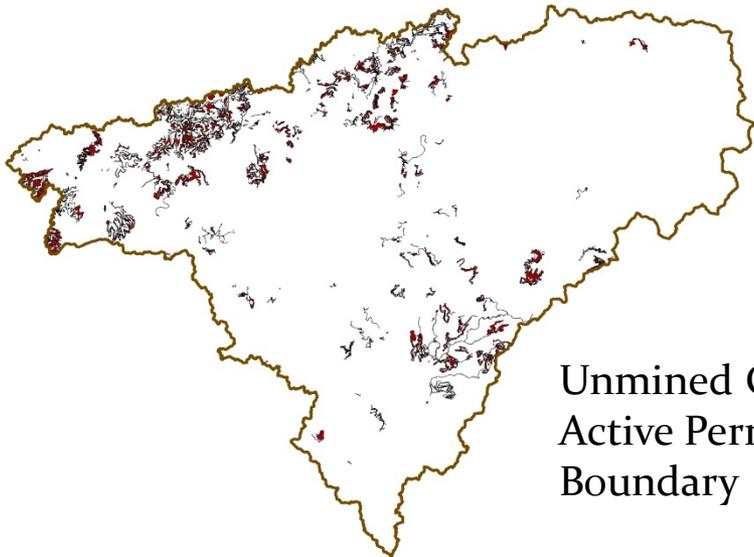


**Gauley River Watershed
Consolidated Analysis Results**

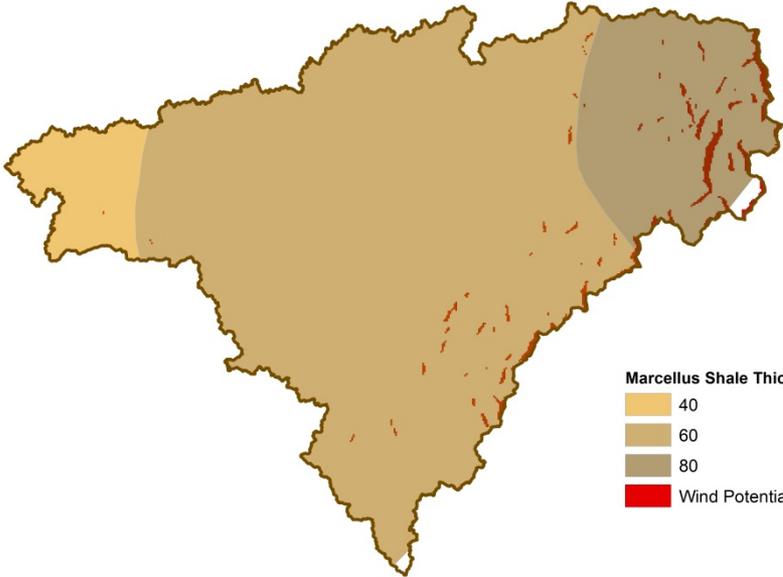


Energy: Unmined coal, Marcellus shale thickness,
Wind development potential, Proposed
transmission lines/pipelines/power plants/wind,
Geothermal development potential
Population/Development: Population projections
Climate Change: TNC Resiliency & Current density models

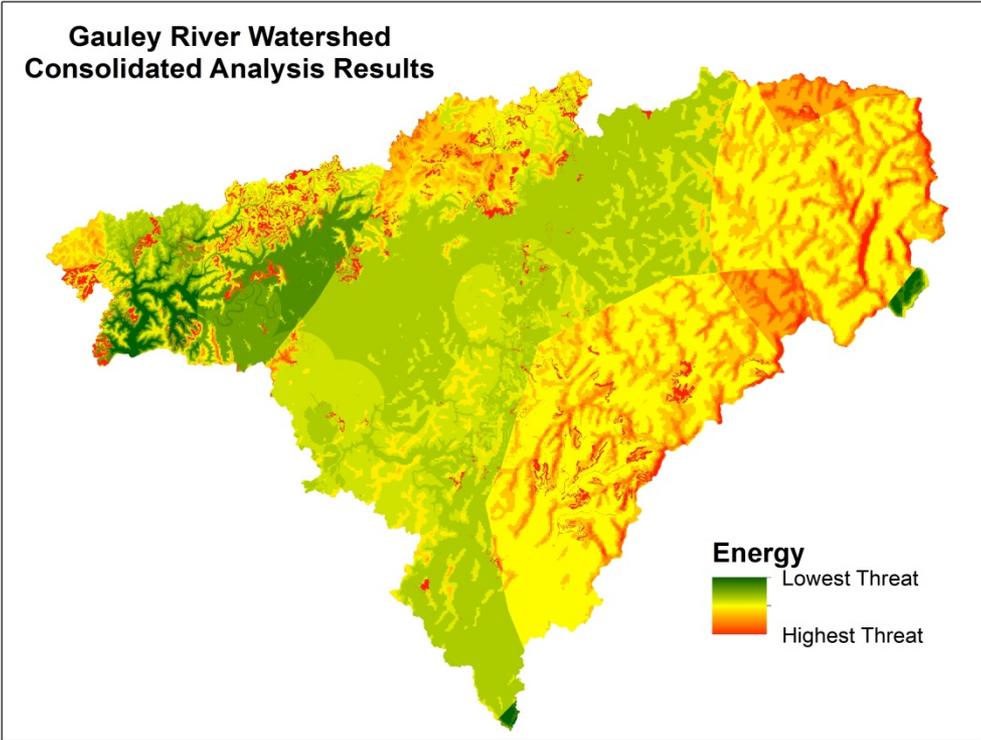
Consolidated
Analysis
Overall



Unmined Coal in
Active Permit
Boundary



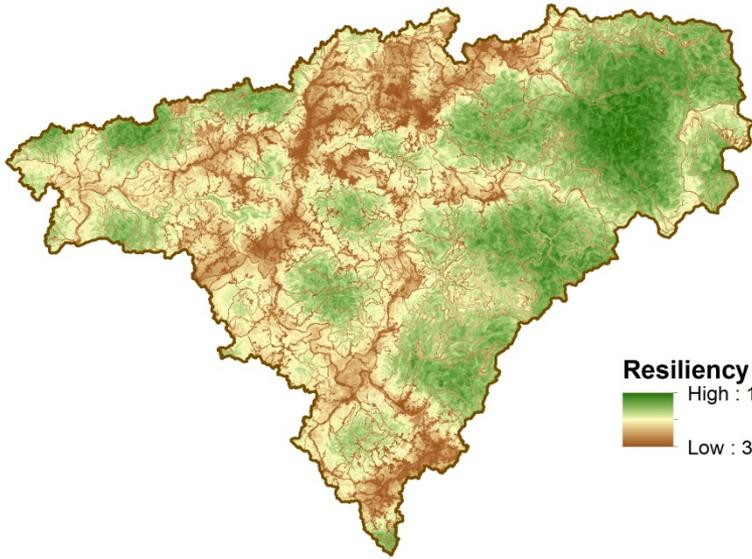
Marcellus Shale Thickness
40
60
80
Wind Potential



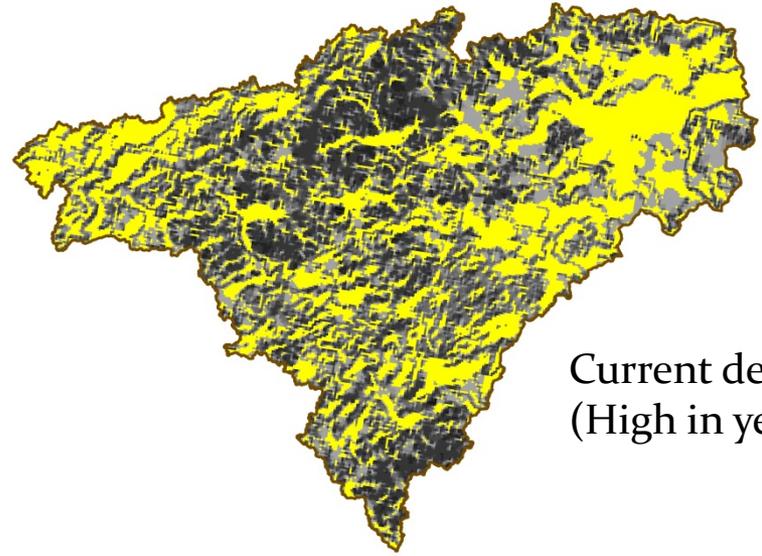
Gauley River Watershed
Consolidated Analysis Results

Energy
Lowest Threat
Highest Threat

Consolidated
Analysis
Energy

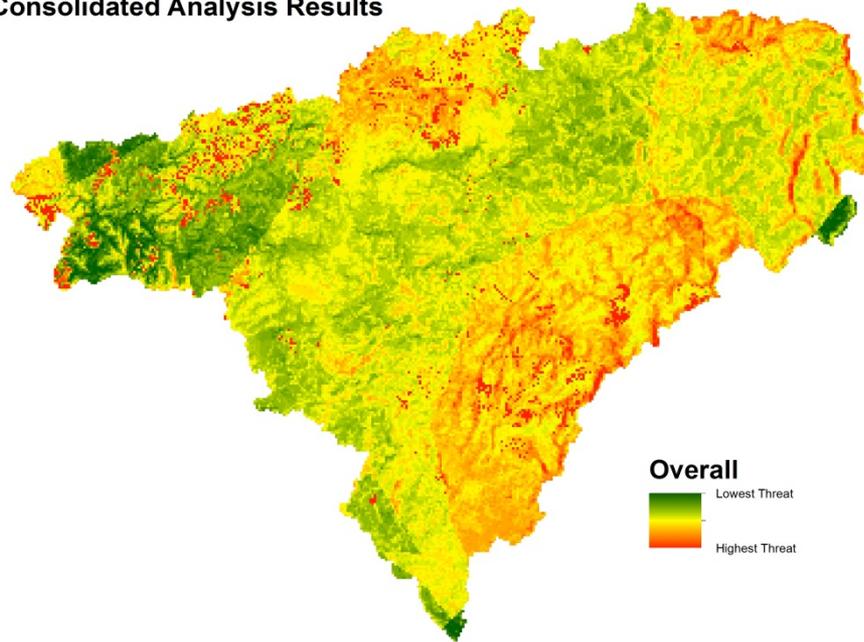


Resiliency
High : 167
Low : 3



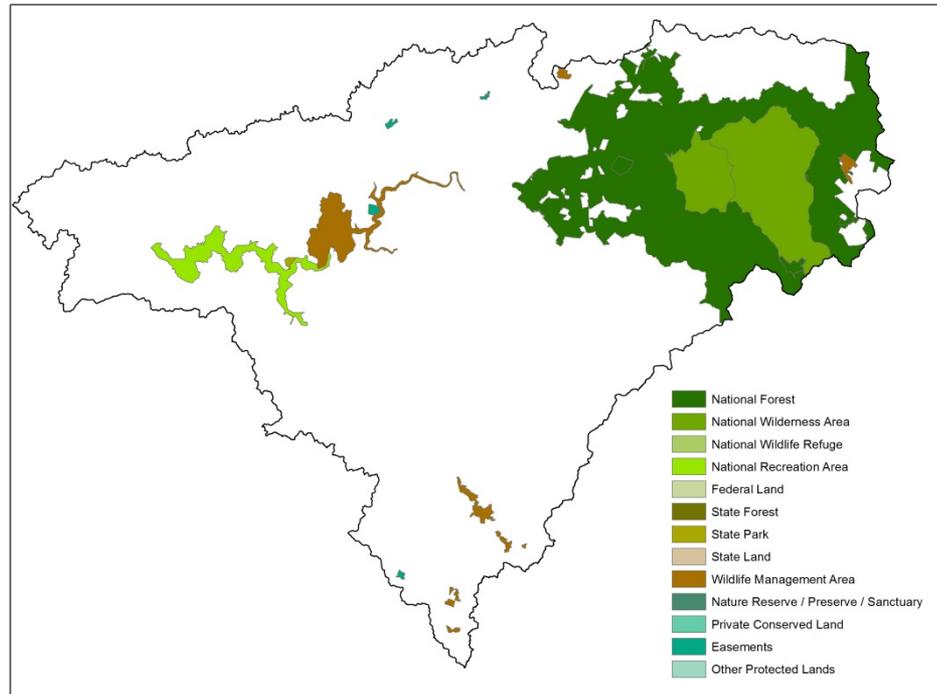
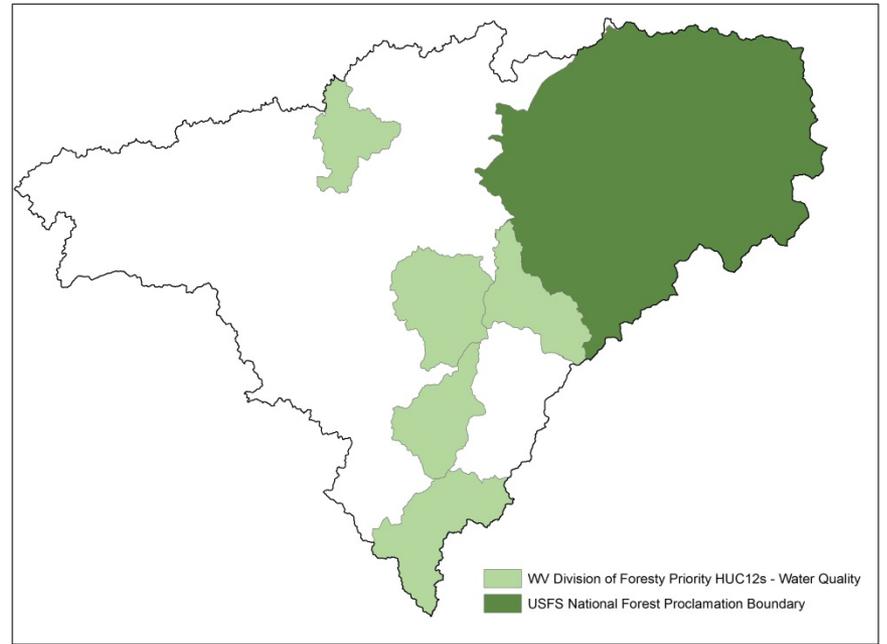
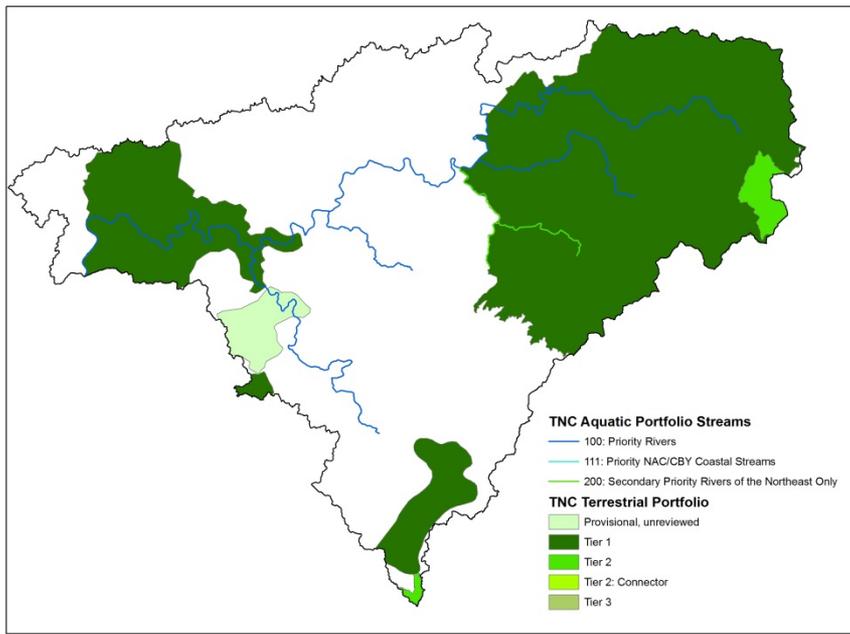
Current density
(High in yellow)

**Gauley River Watershed
Consolidated Analysis Results**



Overall
Lowest Threat
Highest Threat

Consolidated
Analysis
Climate Change



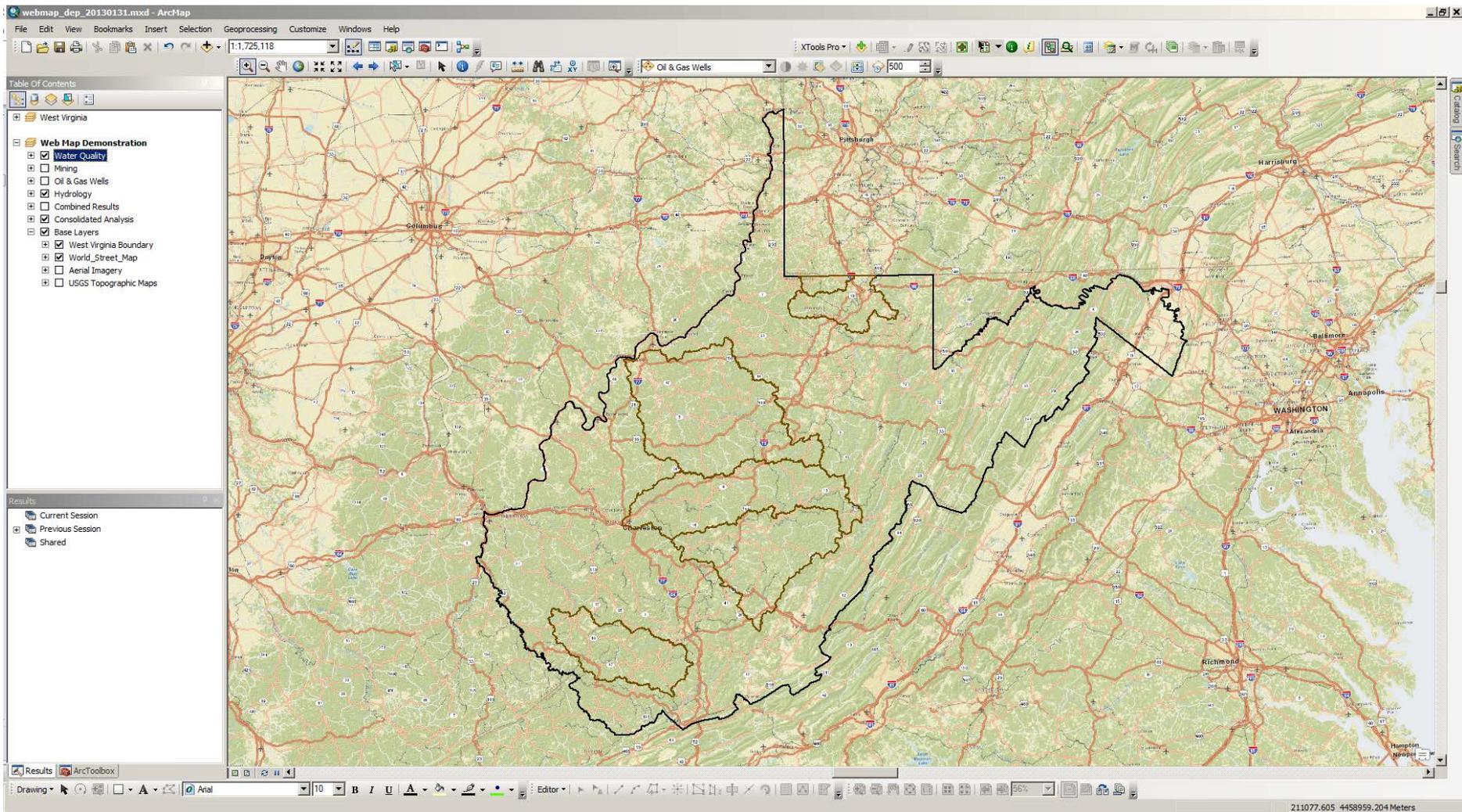
Consolidated Analysis Opportunities

Web Map Tool Demo

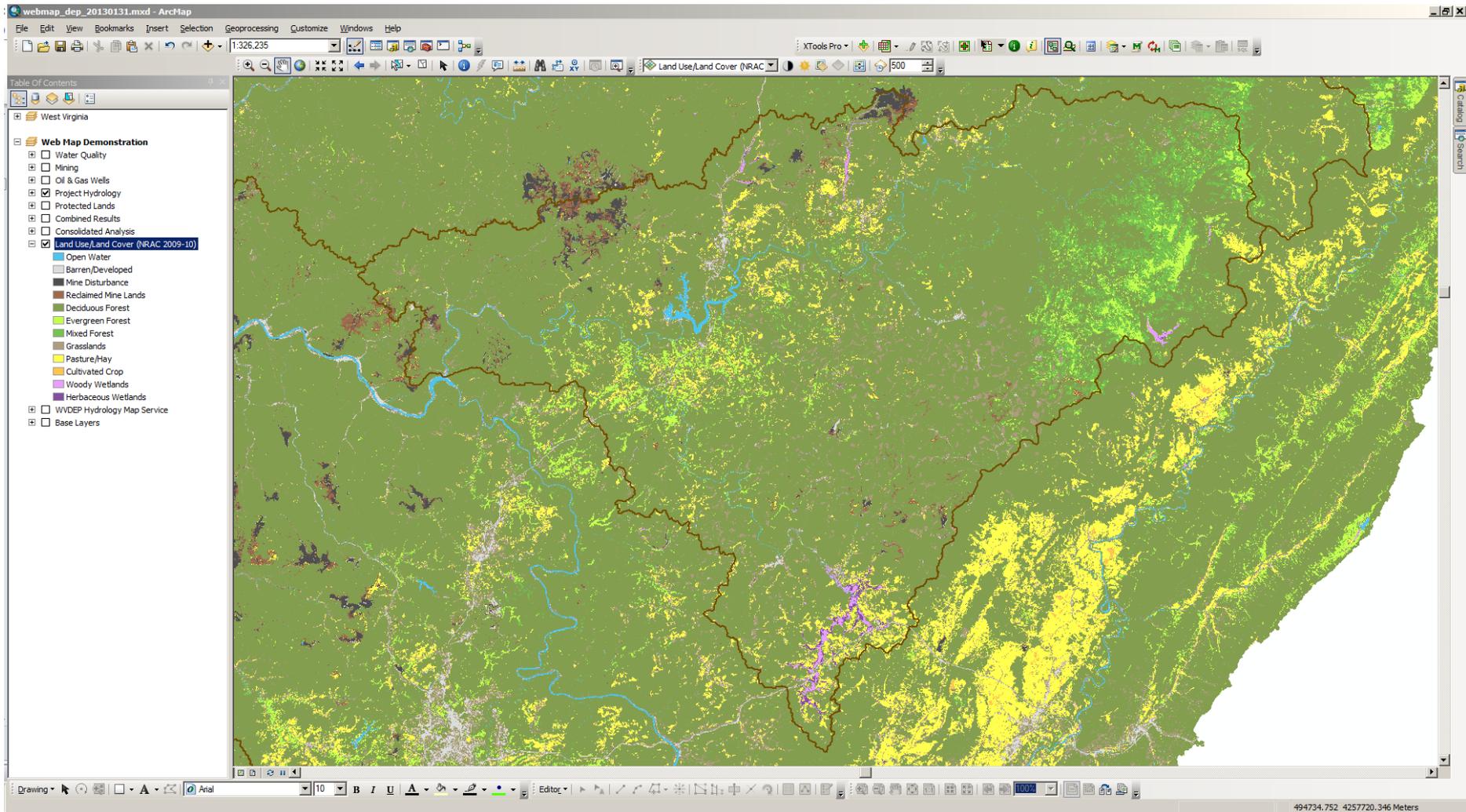


Web Map Base Layers

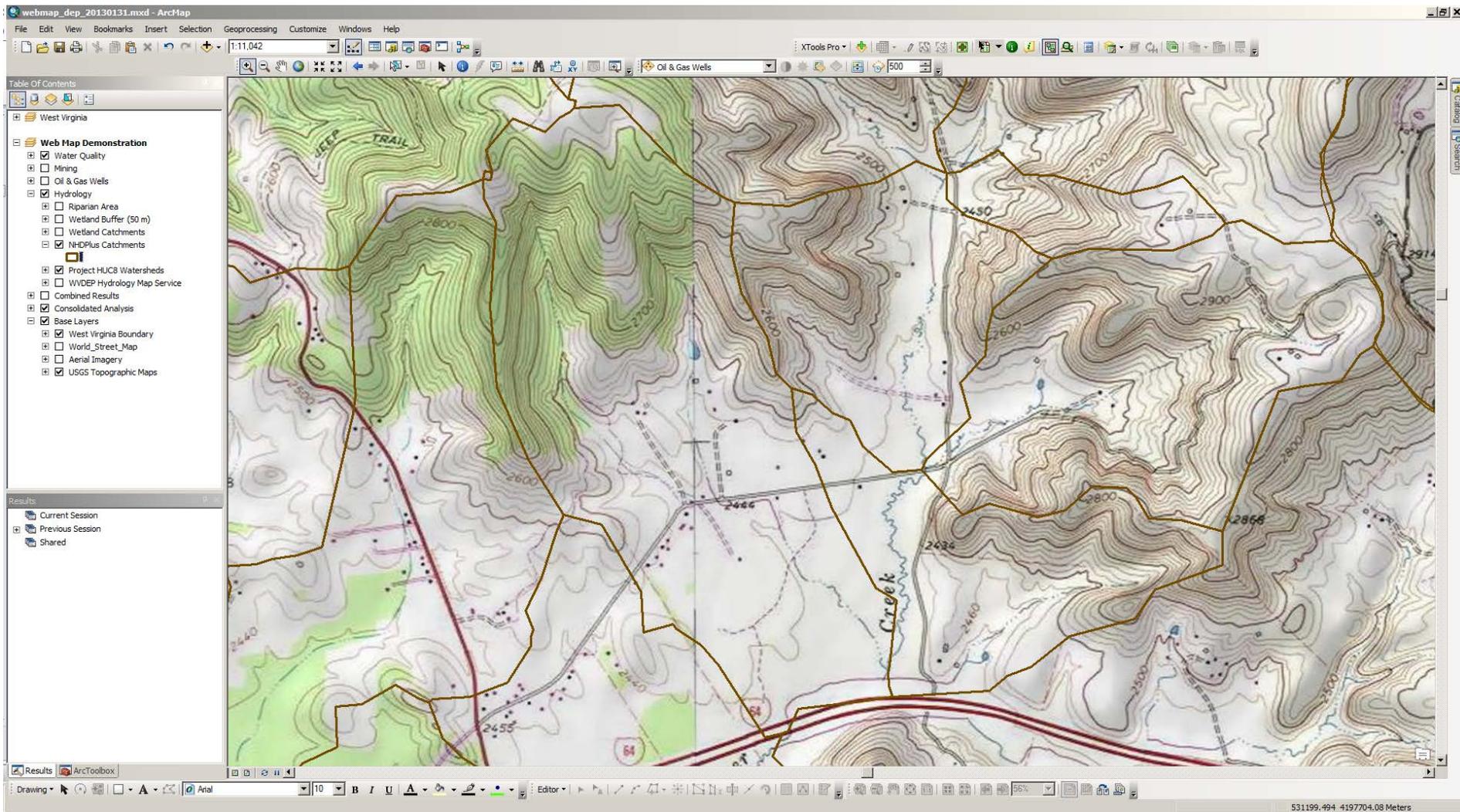
1. Political boundaries
2. Hydrography
3. Land use/land cover
4. Topographic maps
5. Aerial imagery
6. Elevation/Shaded relief



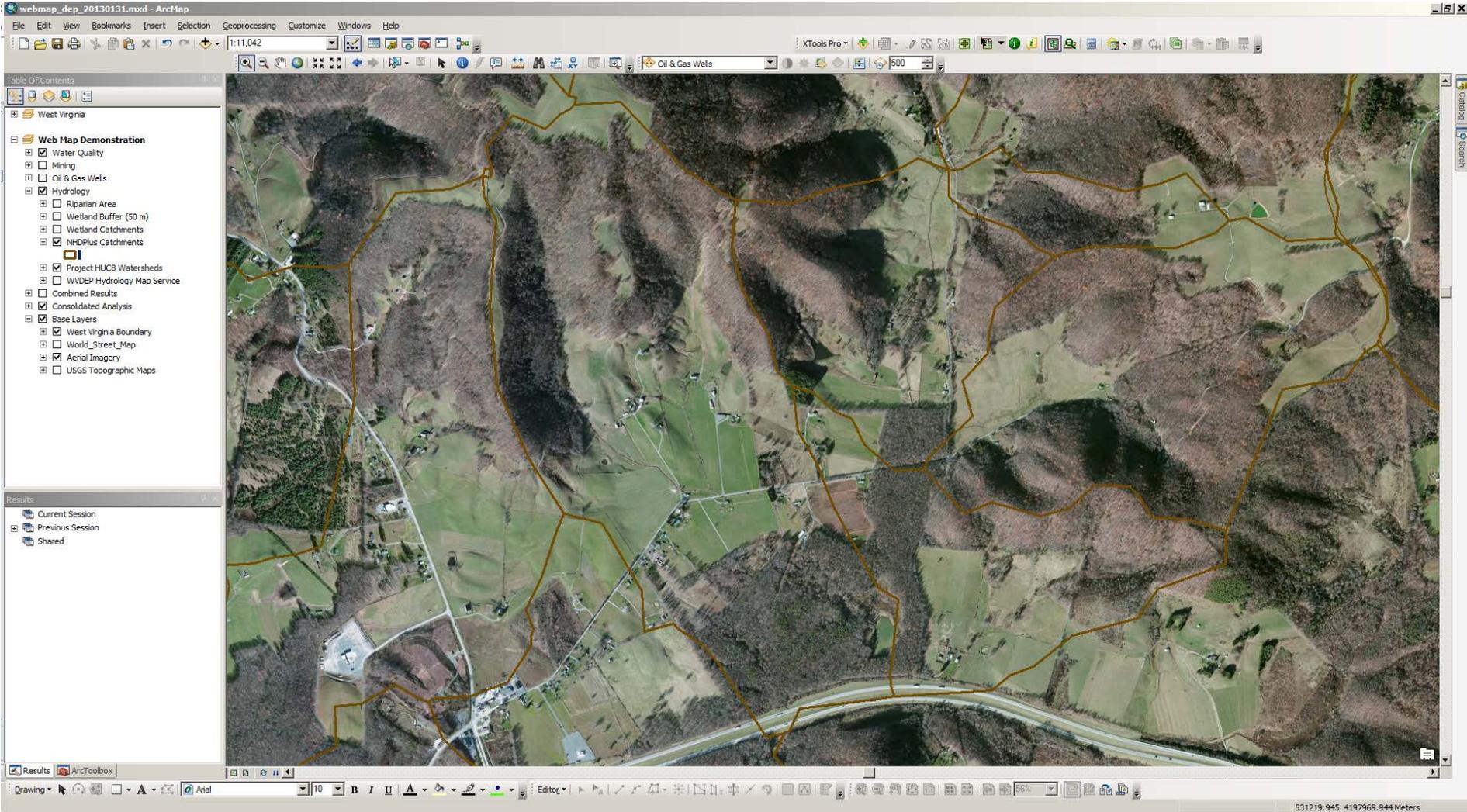
Example Streets base map
(with 5 Pilot HUC8 Watersheds)



Example Land Use/Land Cover base map
(zoomed to Gauley watershed level)



Example USGS topos base map
(zoomed to Catchment level)

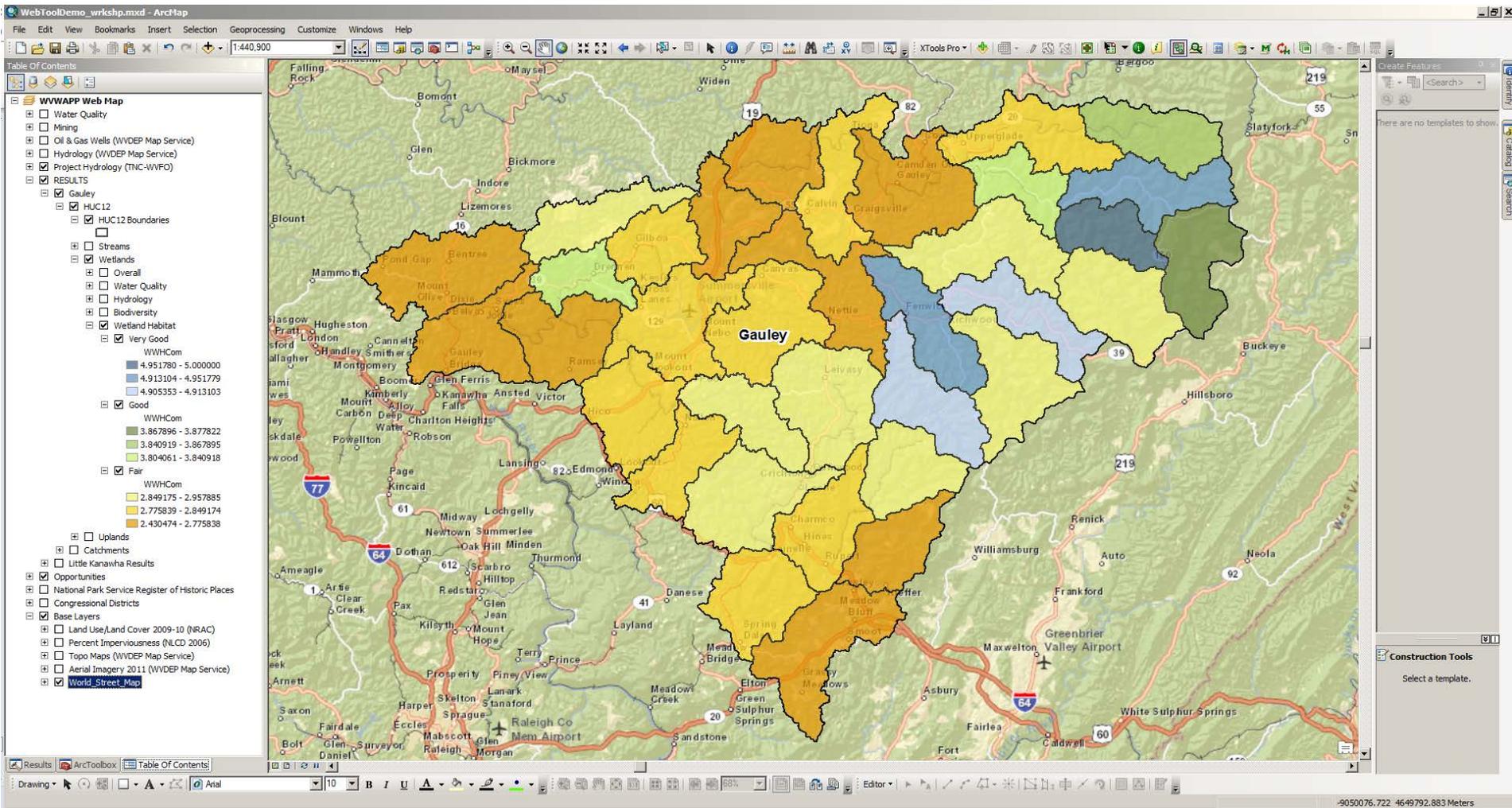


Example Imagery base map
(zoomed to Catchment level)

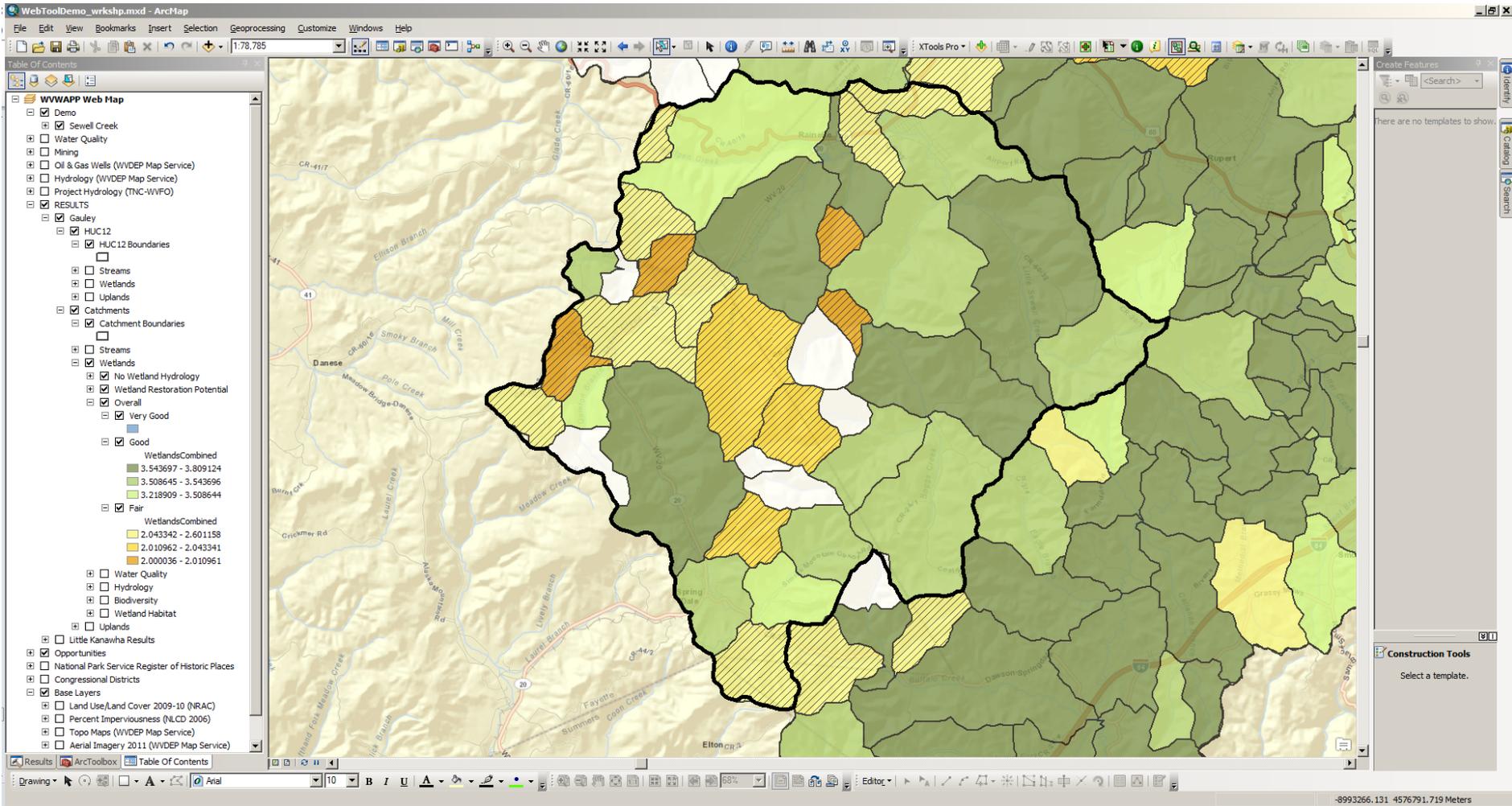
Potential Use Scenario

Gauley River Watershed Wetlands Restoration

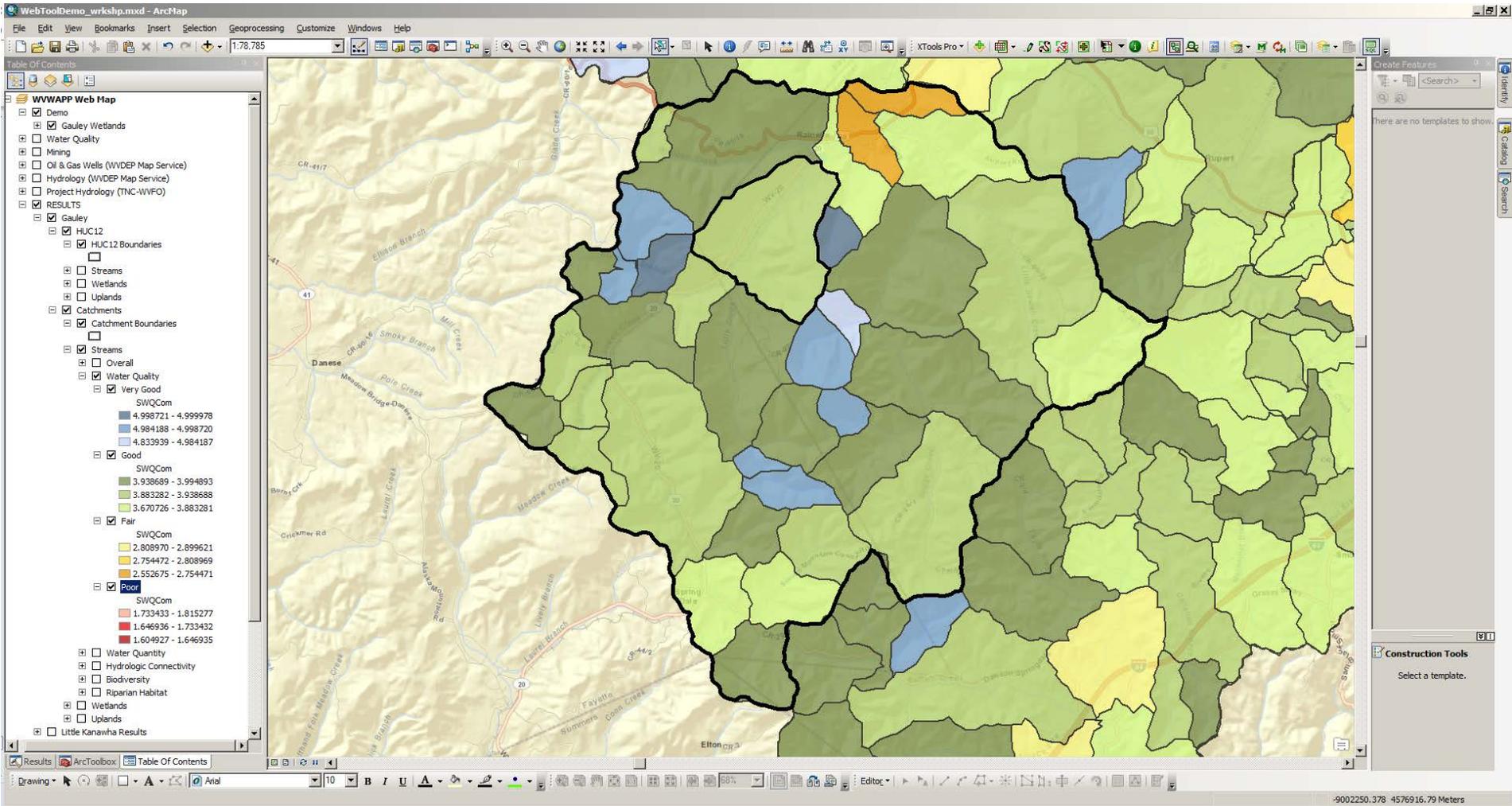




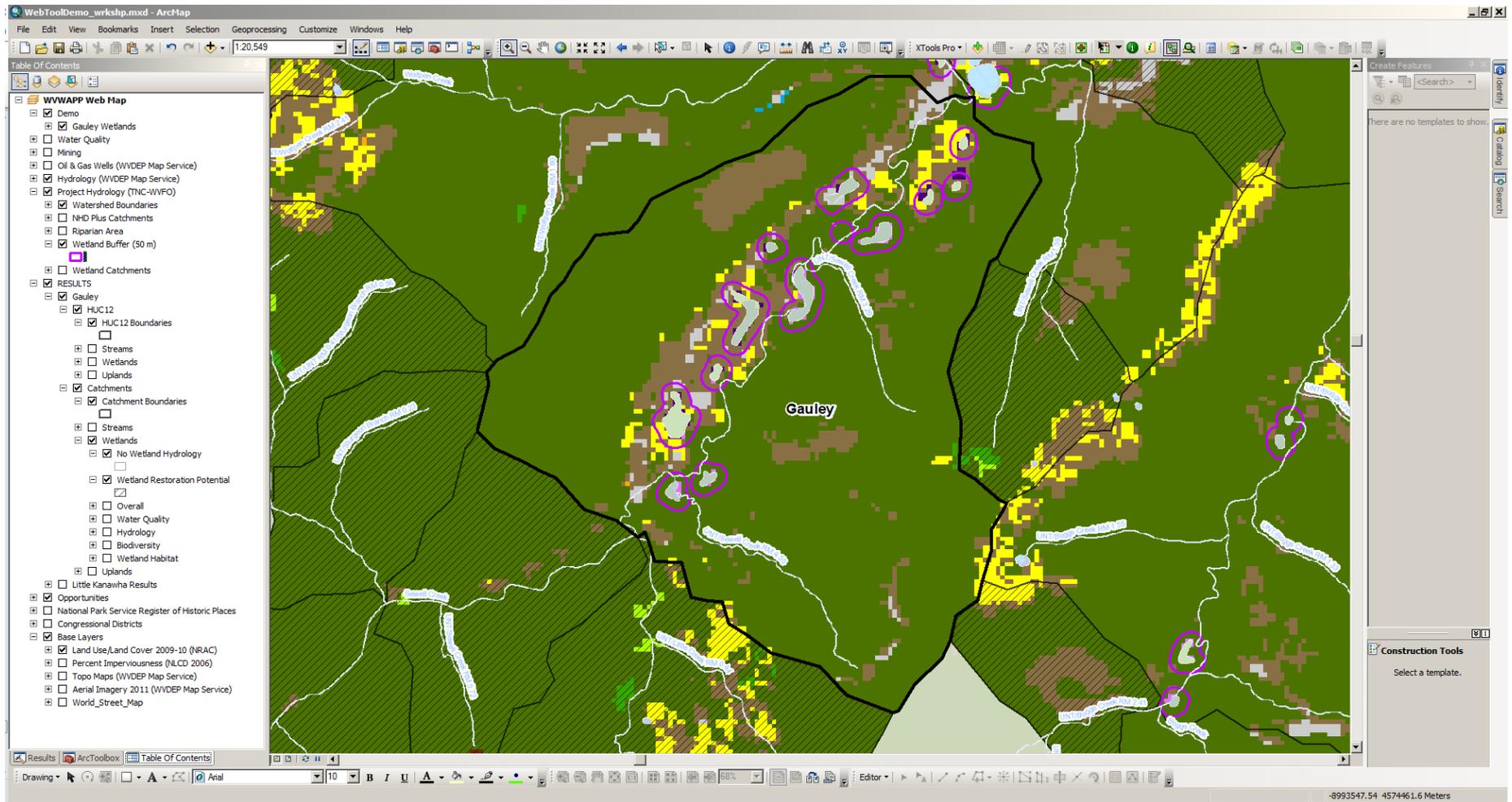
Gauley – HUC12 Level
Wetlands Wetland Habitat Combined Results



Sewell Creek – Catchment Level Wetlands Overall Results



Sewell Creek– Catchment Level Streams Water Quality Results



Sewell Creek – Catchment Level
 Wetlands Wetland Habitat Results
 WVU-NRAC LULC 2009-10



Summersville Lake ©visitwv.com

COMMENTS/QUESTIONS?