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GEOG 593

Final Project

Assessing Land Value for Small Scale Agriculture in Marion County, Oregon

Abstract

Agricultural lands in urban area in Marion County, Oregon command higher prices per acre for scenic vistas, land cover, distance from a nearest city and other parameters. According to the analysis of environmental amenities and agricultural land values in Wyoming (Bastian et. al. 2002), different combinations of land attributes or characteristics potentially impact on land values. Bastian et al. proposed that such of values as scenic view, aspect of land plots, landcover, distance to the markets or cities, soil types can impact on land price. However, they also mentioned that real market does not provide any directions what land parameters should be considered to evaluate lad price (Bastian et al. 2002). The selection of evaluation parameters should be considered in local scale. For assessing land value in Marion County slightly different parameters were used. According to the local real market sales, most valuable lands in rural area around Silverton have scenic view of Mt. Hood, they are flat or their aspect is toward west, their slope is no more than 5%, they are covered by the mixed forests, and they are located close to county's urban areas. Geographic information systems (GIS) data were used to measure these parameters associated with land parcels with area greater than or equal 5 acres. Each parameter was reclassified with values from 0 to 9. Final land values were estimated by summing the listed land parameters. Derived mean land value indexes with variation from 0 to 36 were compared with the land real market values. In result, the conception of the maximum mean land values increase the land price was proved.

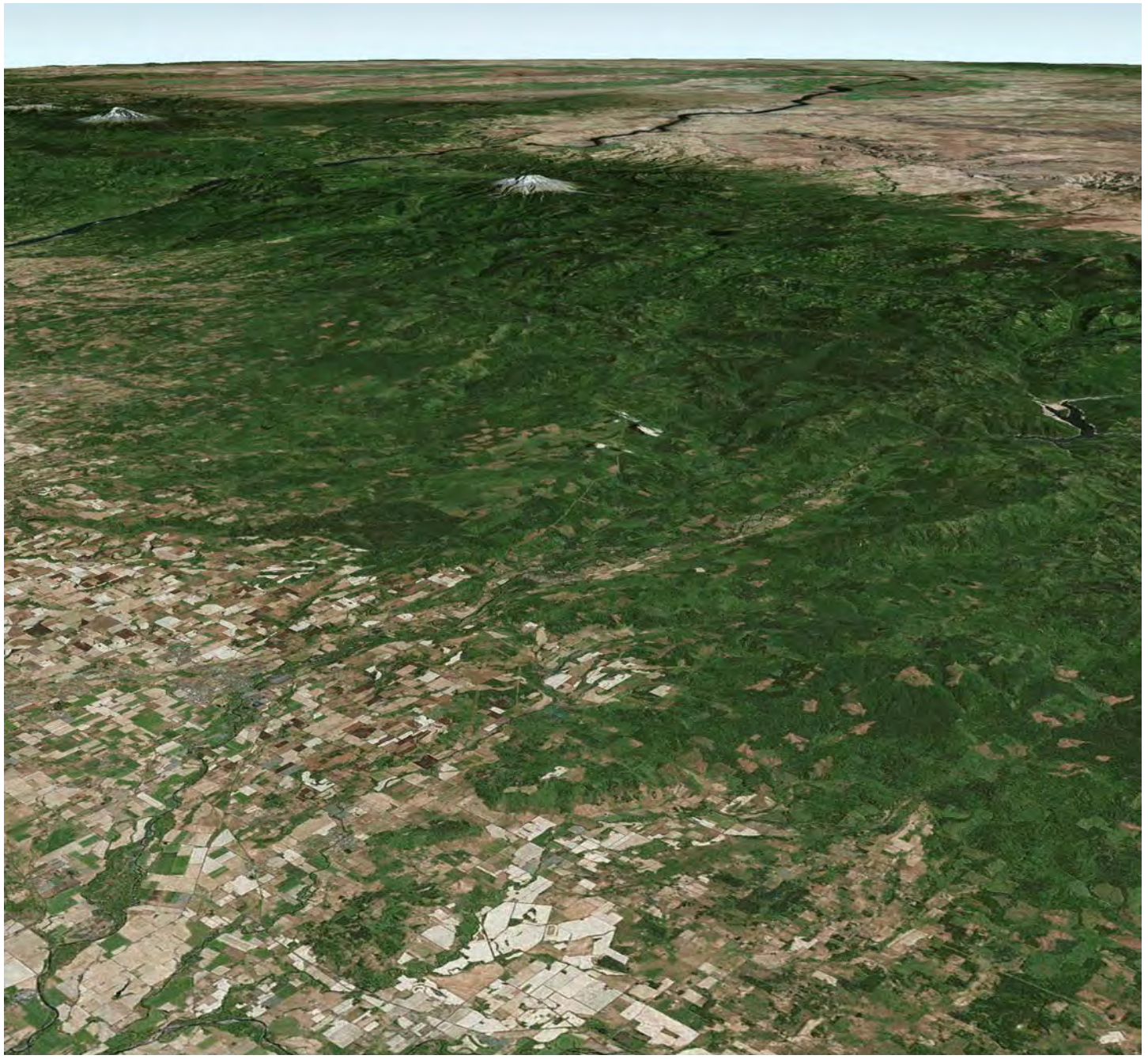
Keywords: GIS data; Land values; Rural; Agriculture; Marion County; Silverton.

Assessing Land Value for Small Scale Agriculture in Marion County, Oregon

By Stephen Dodson, Alex Troy

GEOG 493/593 Digital Terrain Analysis

Fall, 2016



STUDY AREA

- Marion County is located south of the Portland area;
- Area is nearly 1,200 square miles;
- Population is 315,900;
- The study area is located around Silverton the city to the east of Salem;
- Large land parcels, proximity to the forest zone, scenic vistas, cheaper prices for the land

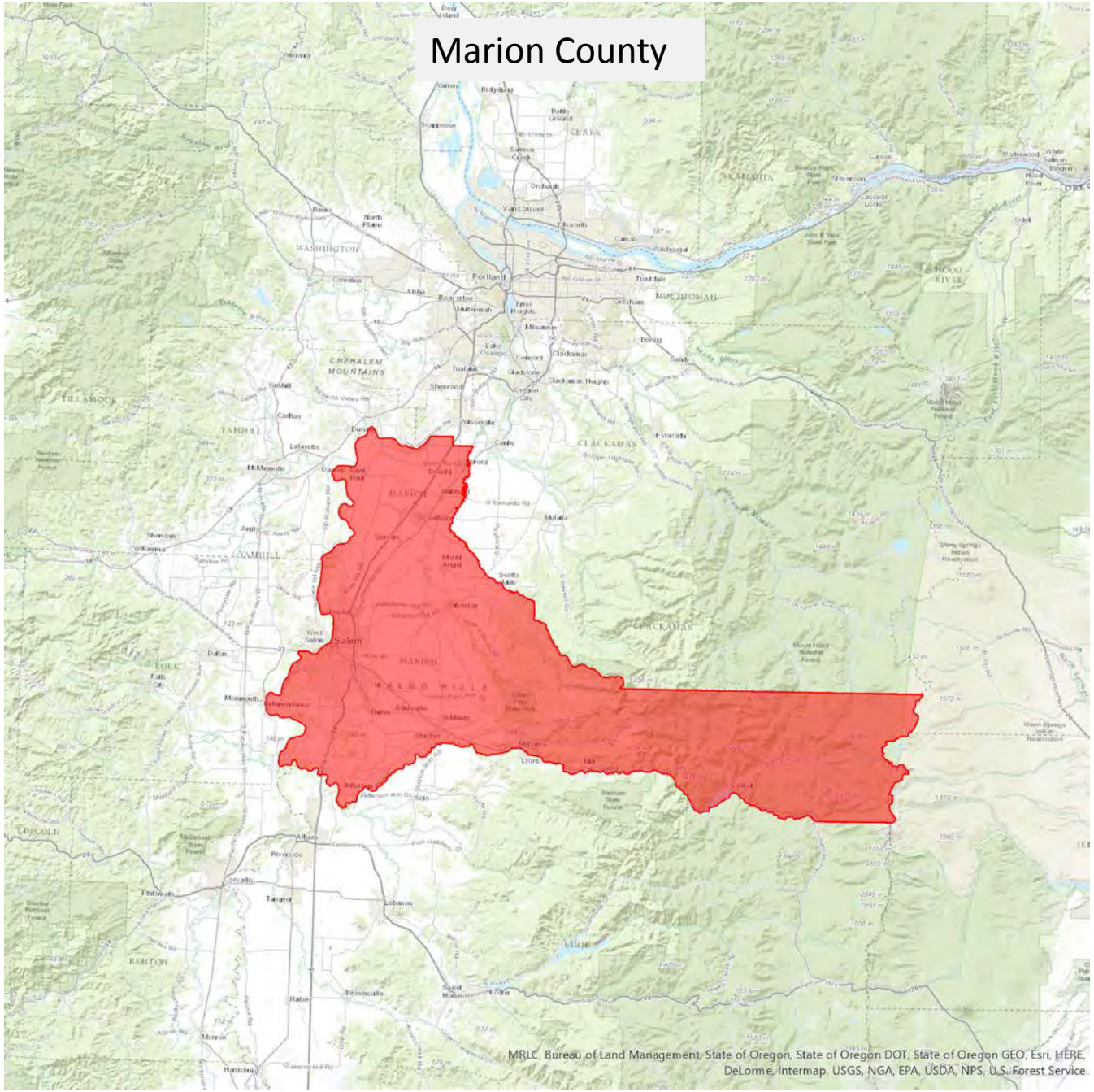


Fig. 1. Study Area

Research Question

How the following variables:

1) Mt. Hood View;
2) Land Cover Type;
3) Plots Aspect;
4) Land Slope;
5) Distance from a Nearest City

can affect the land price values in rural area around Silverton.

METHODS

- Data preparation (merging and resampling 10m DEM's, selecting tax lots with criteria >= 5 Acres);
- Creating of 85 view points on DEM of Mt. Hood area;
- Viewshed analysis for Marion County;
- Analyzing variables and creating series of raster maps for view, land cover, aspect, slope variables and distances from a nearest city;
- Reclassification of variables to assign new values from 0 to 9;
- Creating a final map of land values with summed variables values.

RESULTS – Viewshed Analysis

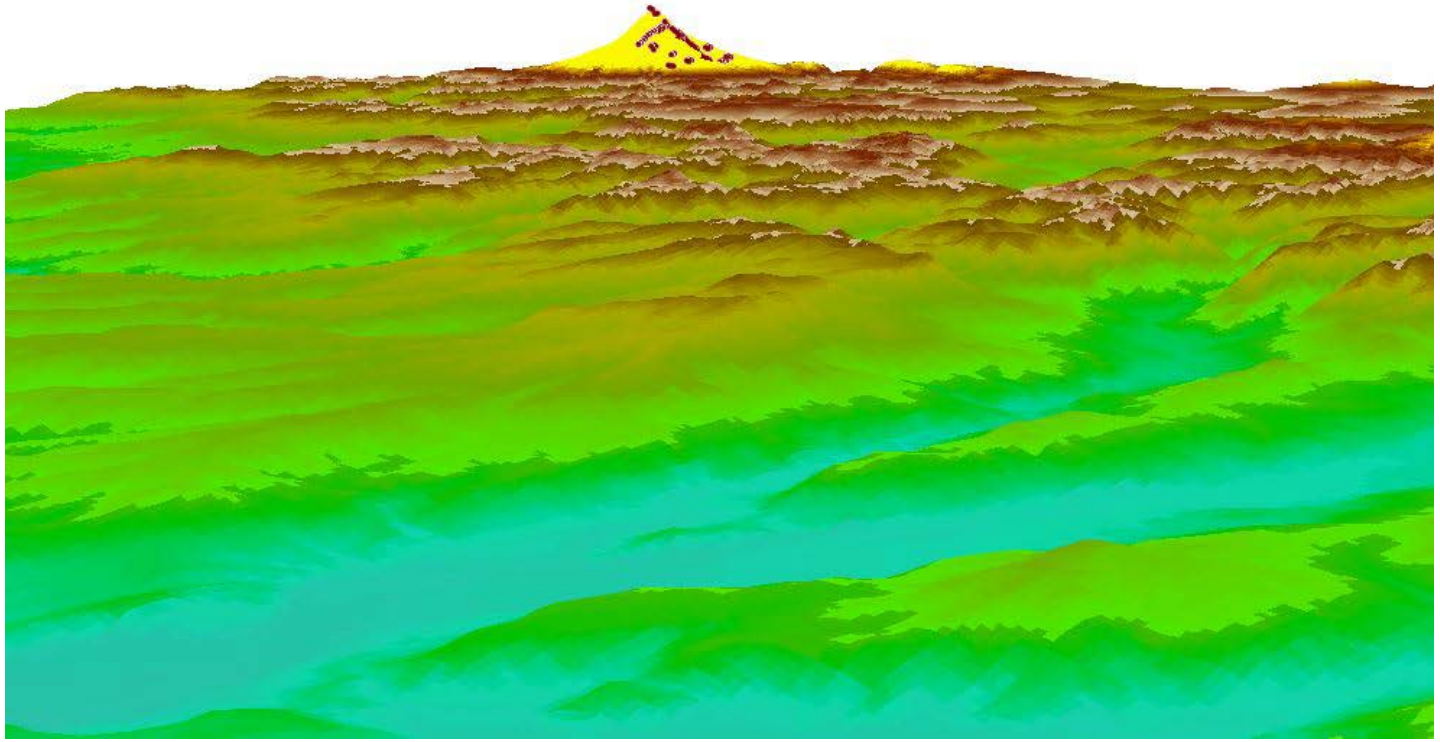


Fig. 2. View Points on 3-D Model of Mt. Hood

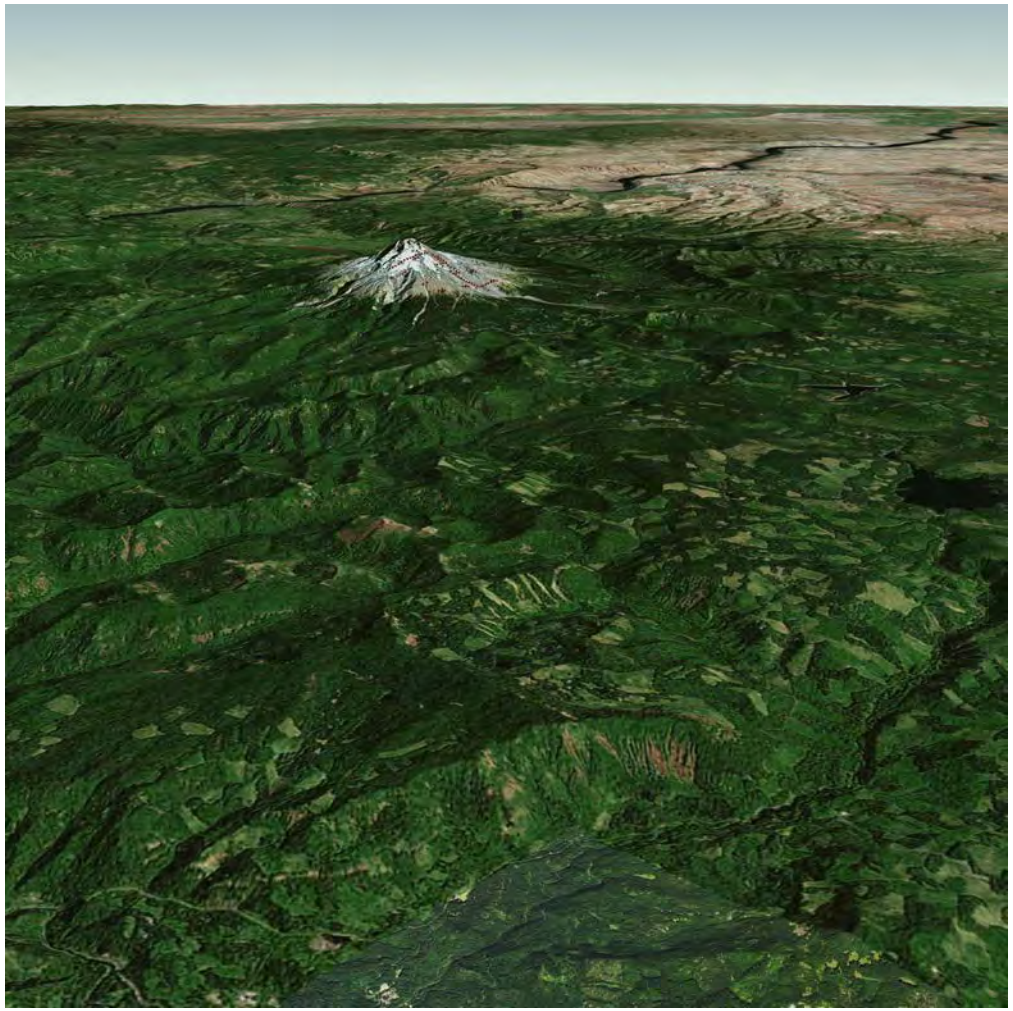
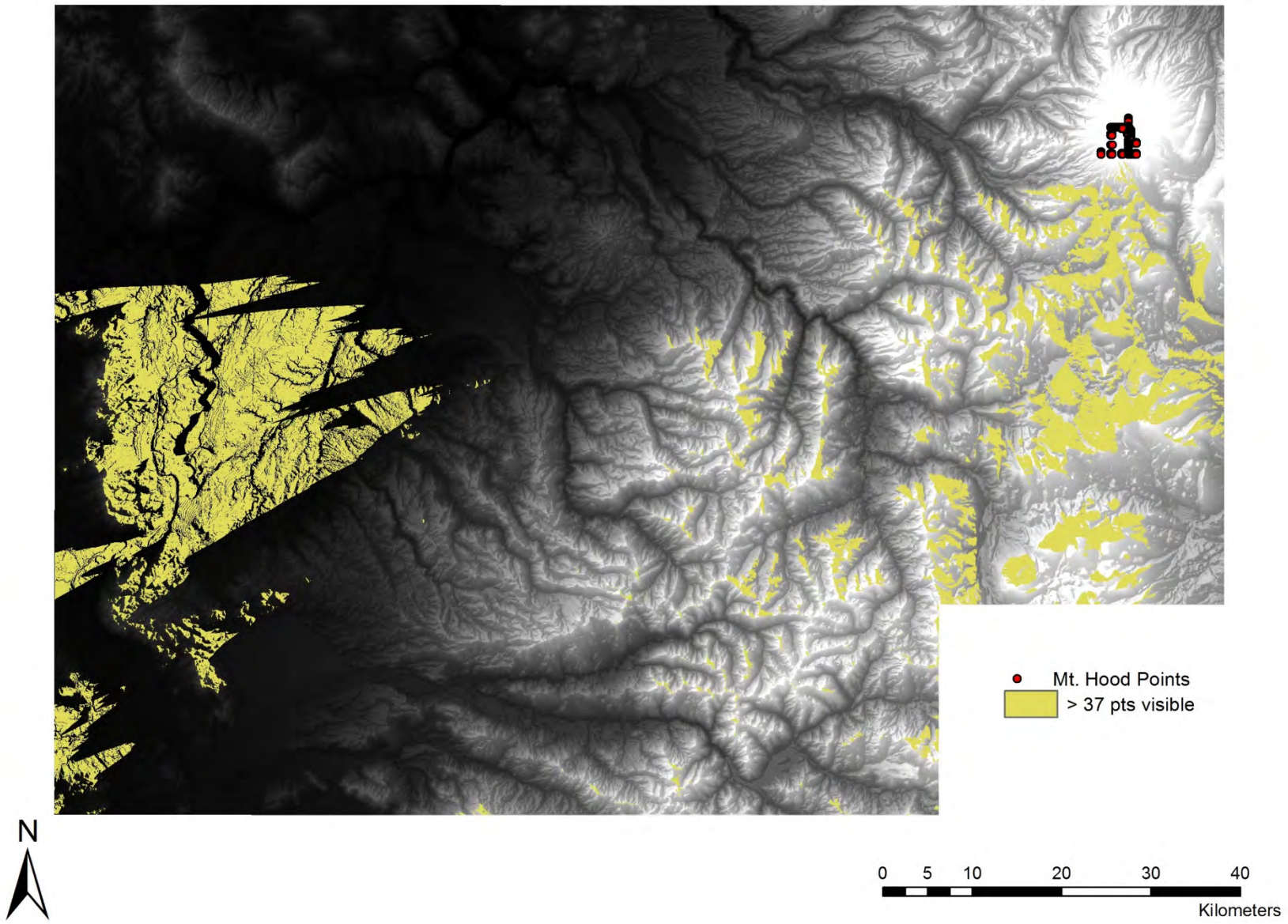


Fig. 3. Mt. Hood View

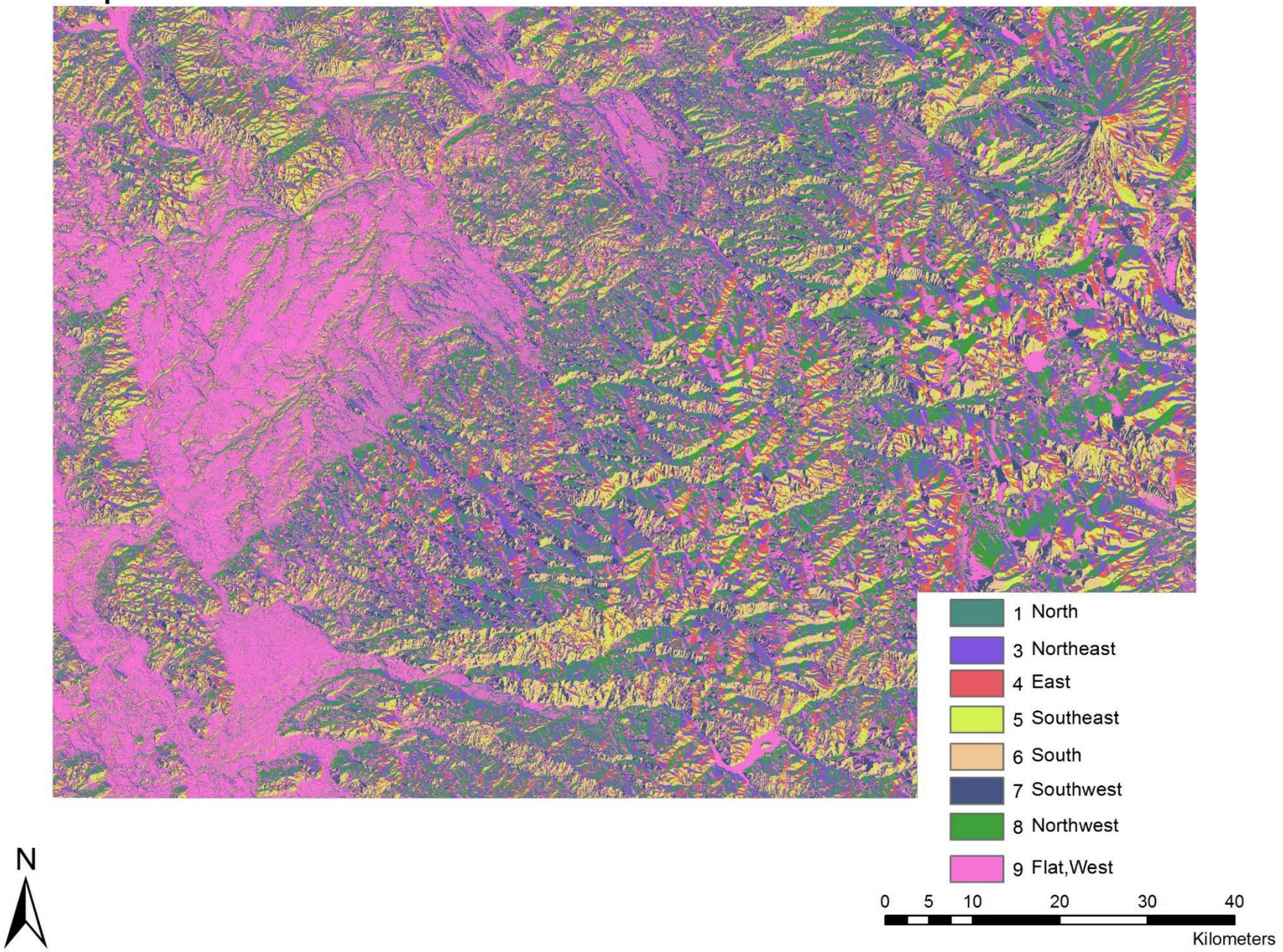
RESULTS – Variables Analysis

A: Viewshed



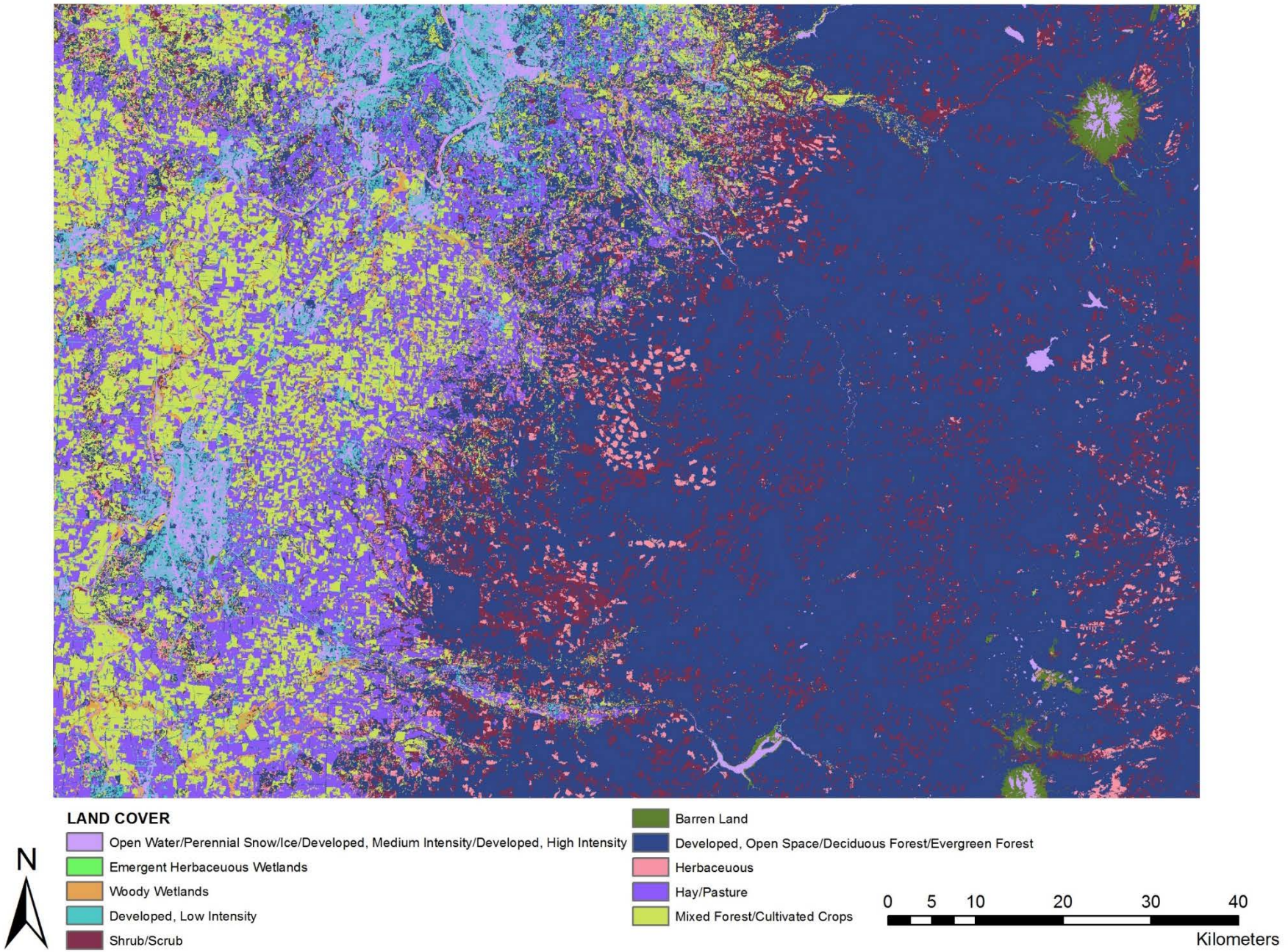
RESULTS – Variables Analysis

B: Aspect



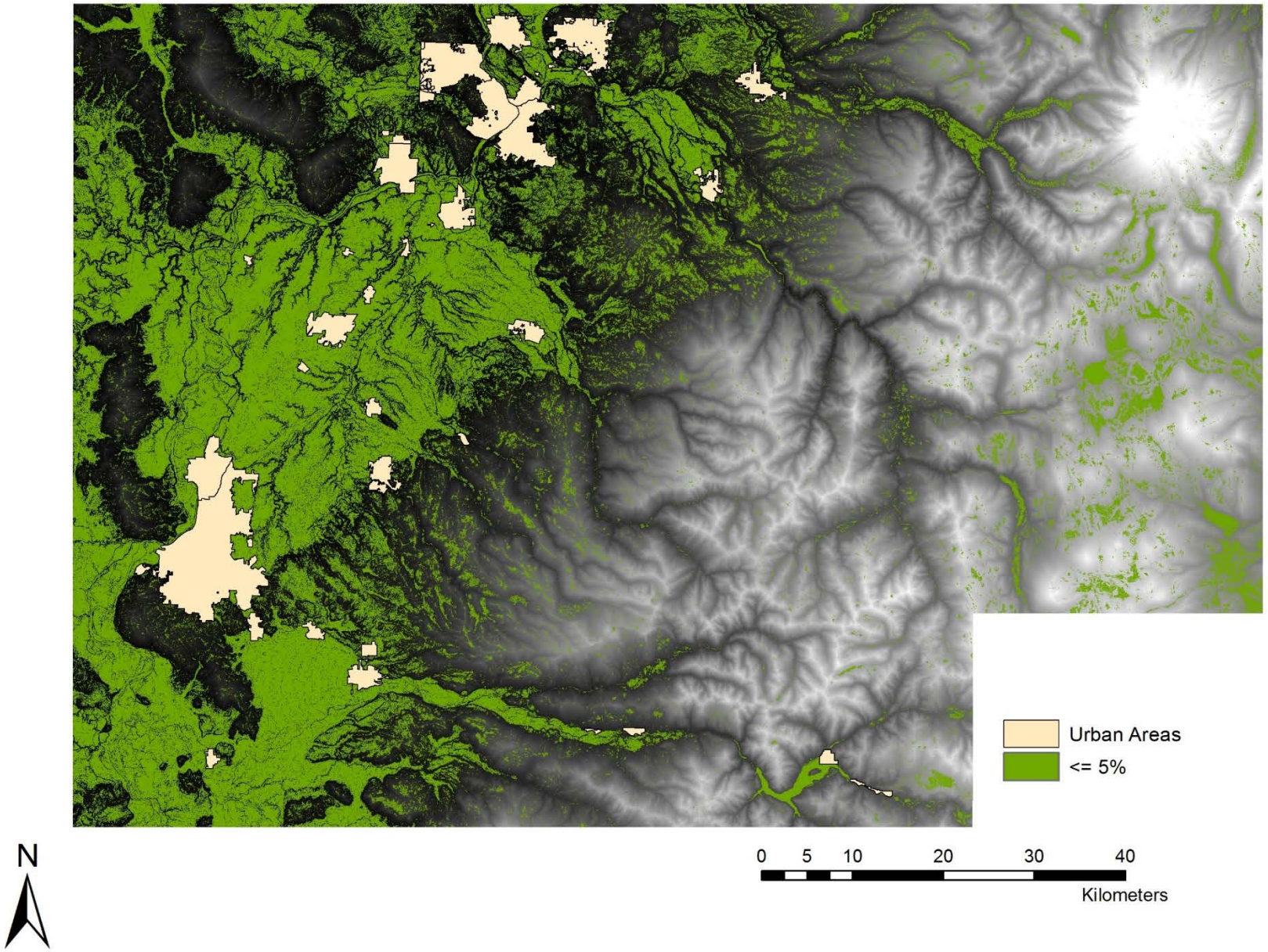
RESULTS – Variables Analysis

D: Land Cover

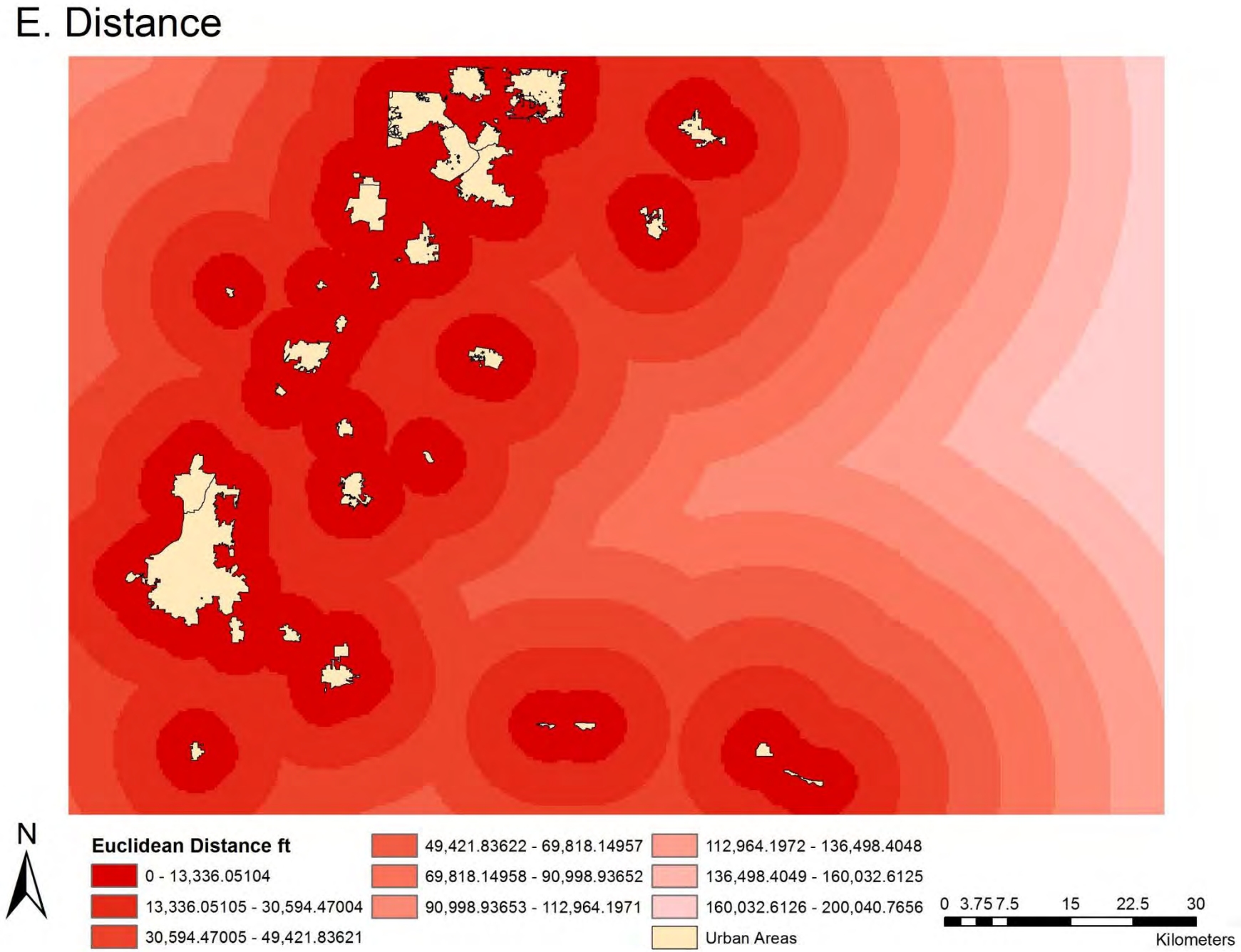


RESULTS – Variables Analysis

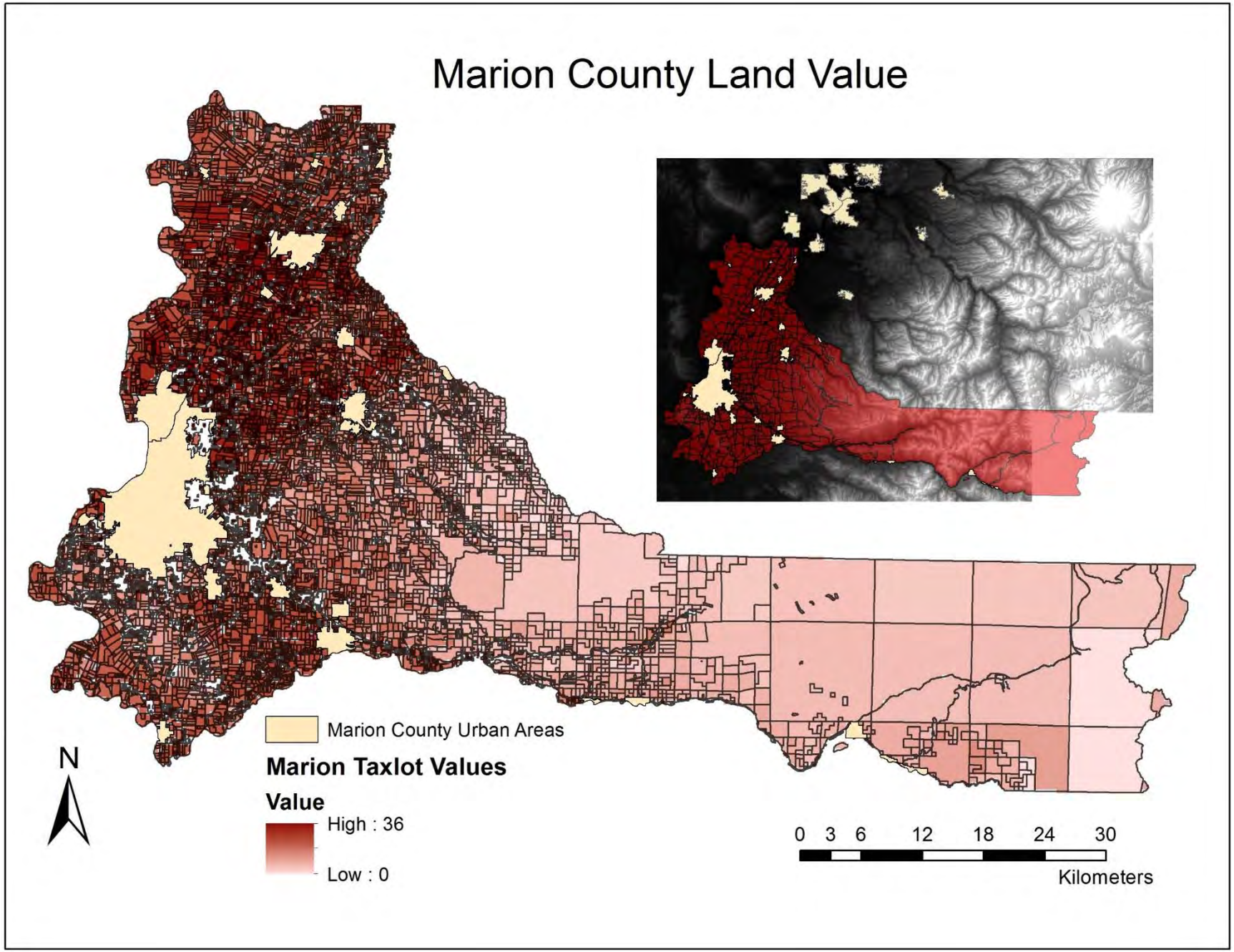
C. Slope <= 5%



RESULTS – Variables Analysis

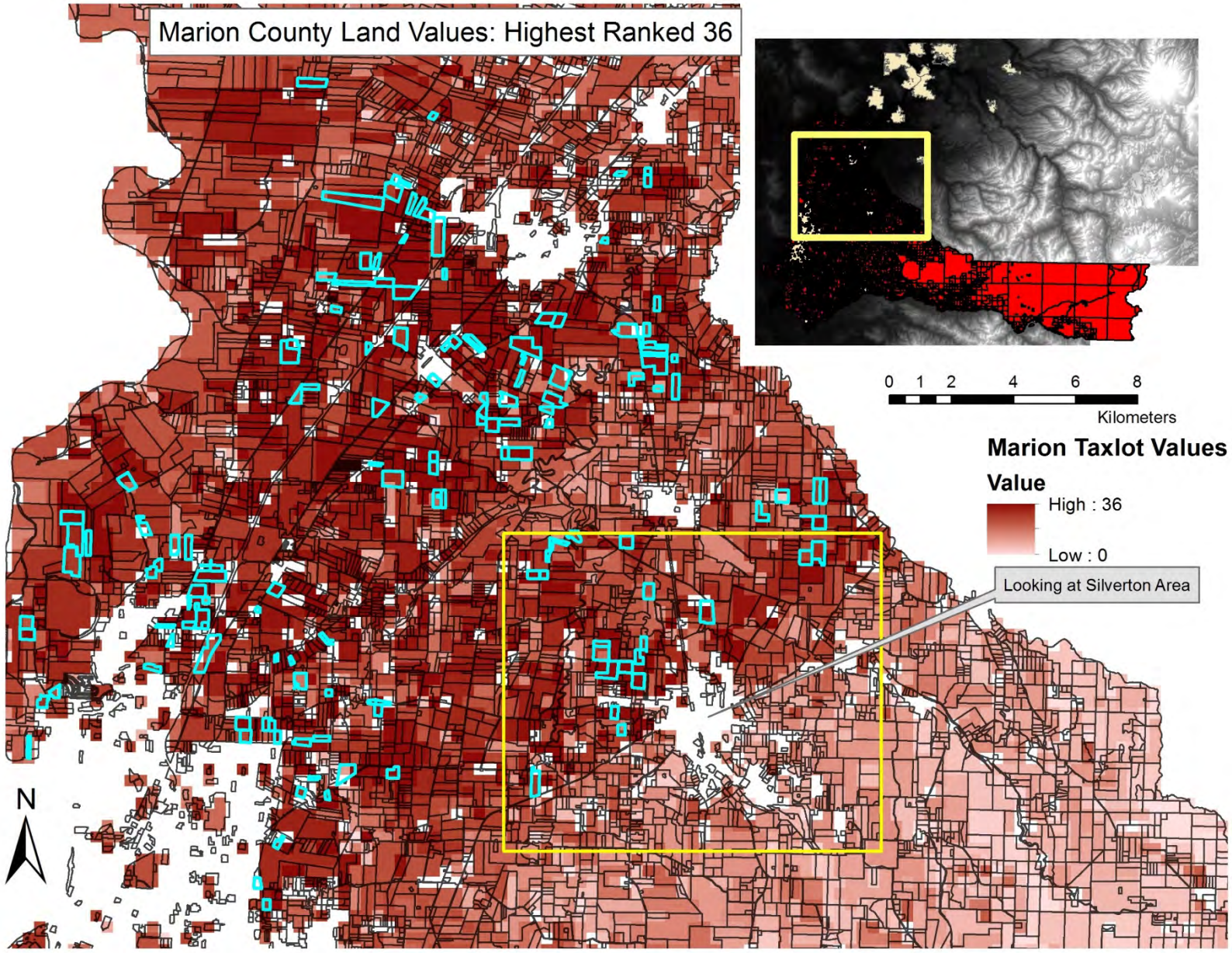


RESULTS – Final Map



CONCLUSION

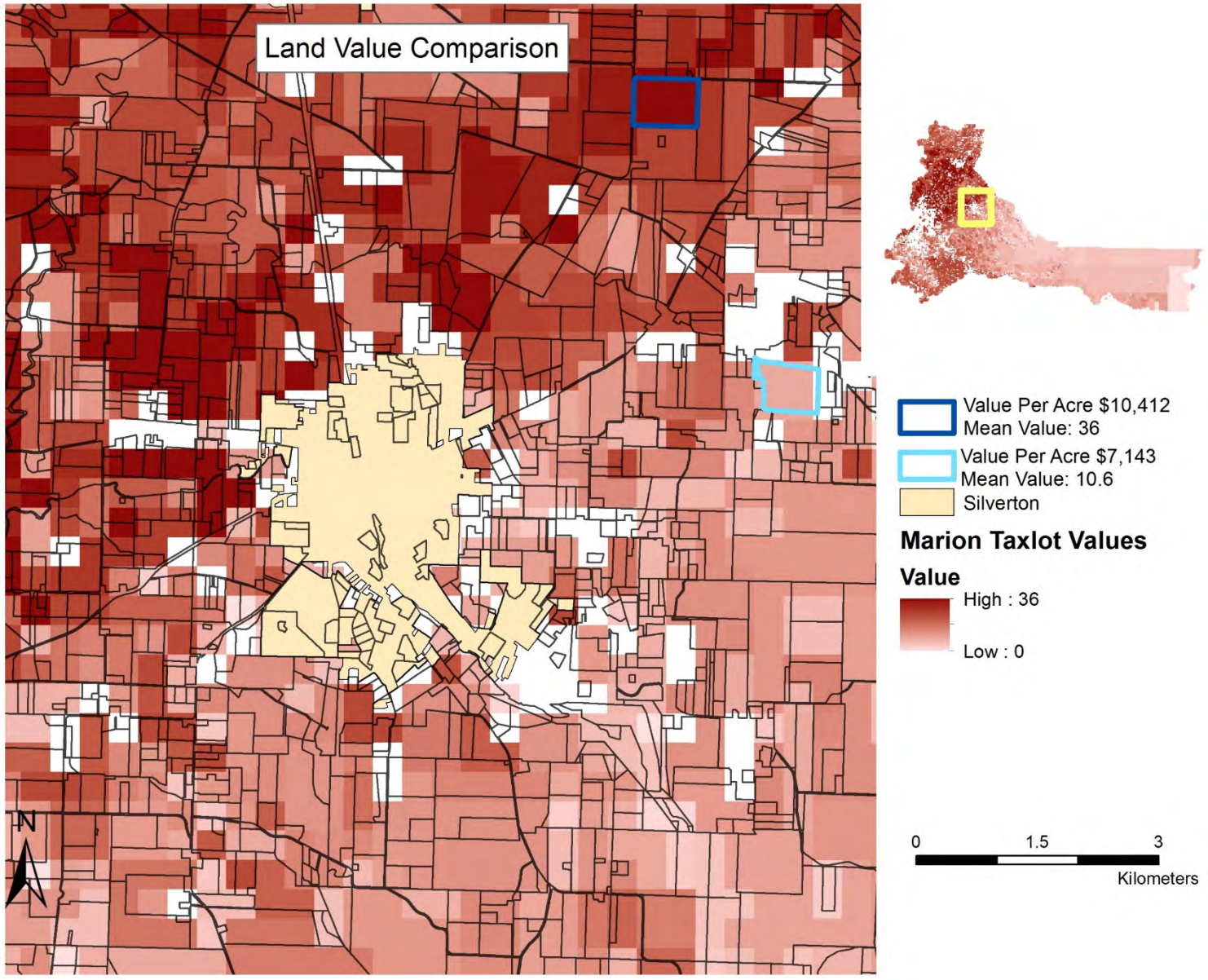
- The most valuable parcels are located in North part of Marion County



CONCLUSION

Looking at the Silverton area:

- Two parcels were selected for comparison with mean values 36 and 10.6;
- Mean value 36 equals the real market price of $10,412 per acre;
- Mean value 10.6 equals the real market price of $7,143 per acre



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