Colvin Timbers: Understanding Site Conditions For Further Research

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Introduction

Colvin Timbers is in South-Central Oregon within Lake County just south of the town Paisley. It is situated on Abert Rim, America's longest continuous fault scarp. Located approximately five miles from the other forested stands, the Timbers contains a diverse group of trees which have yet to be commercially logged. The Timbers are a Ponderosa Pine (Pinus ponderosa) dominant community, which is unusual for that region. The purpose of this project of the Colvin Timbers is to help build an understanding of the conditions in which the site lies. Understanding elements such as soil type, watershed boundaries, land cover, and elevation will provide an informative basis to help determine why this stand is unusually Pinus ponderosa dominant in future studies.

Results

- *Elevation, Hill Shade, & Slope:* The elevation data has the site between 2500 and 1960 ft in elevation. Hill shade and slope analyses are in conflict as the hill shade demonstrates the site as having large hilly surfaces and slope shows that the study area should be relatively flat. These discrepancies are planned to be groundtruthed in further survey.
- *Landcover, & Soil:* Land cover within and around the study area is accurate to current field ground studies and demonstrates evergreen forest dominance within the Colvin Timbers Boundary. The soil map shows three different soil types that align directly with land cover results.
- *Watershed Boundaries:* The site sits on three different watersheds, the boundaries of all three converging almost in the middle of the timber stands.

Methods

- *Data Collection:* Raster and vector data for soil type, watershed boundaries, land cover, and elevation was retrieved through data file downloads from various governmental and nongovernmental sources.
- *Boundaries:* The watershed boundary was masked using a geoprocessing tool in order to have relevant data display within its bounds. The Colvin Timbers boundary was created in its own feature class using heads-up digitizing.
- *Rasters:* I used two raster datasets, land cover and elevation, and clipped both to the watershed boundary. These were used to determine slope and hill shade.
- *Presenting:* The various data layers were modified in order to properly present the data in a way that both made sense and was visually appealing.

Conclusion

In conclusion, there are three main takeaways from these maps:

- *Contradictions & Further Research:* The presence of this Ponderosa Pine dominate stand in this region is unusual, and piques further research into its presence and survivability. The resulting hill shade poses many questions as the North-facing slope appears to be getting more light than the South-facing slope. It also contradicts with the slope analysis as this suggests a flat study area. This information results in the need for further research and ground studies.
- *Aligning Results:* The alignment of both the soil types and land cover lead to questions about how site conditions could be aiding Ponderosa Pine trees in survival at such a high elevation. Further research is needed to determine soil types and more precise influence.
- *Additional Information:* Being on the boundary of three different watersheds provides interesting future studies into water availability and further vegetation studies.

More analysis and overall study is needed to determine why this Pinus ponderosa dominant stand is taking root on this fault scarp in South-Central Oregon.

References

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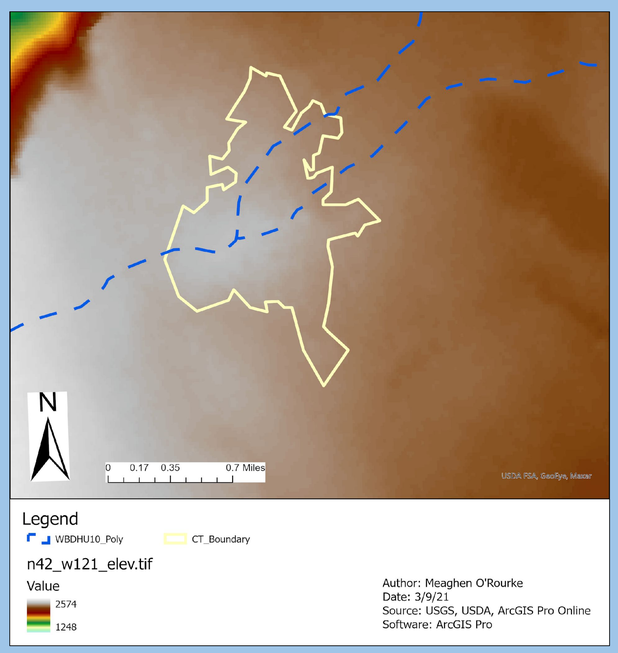
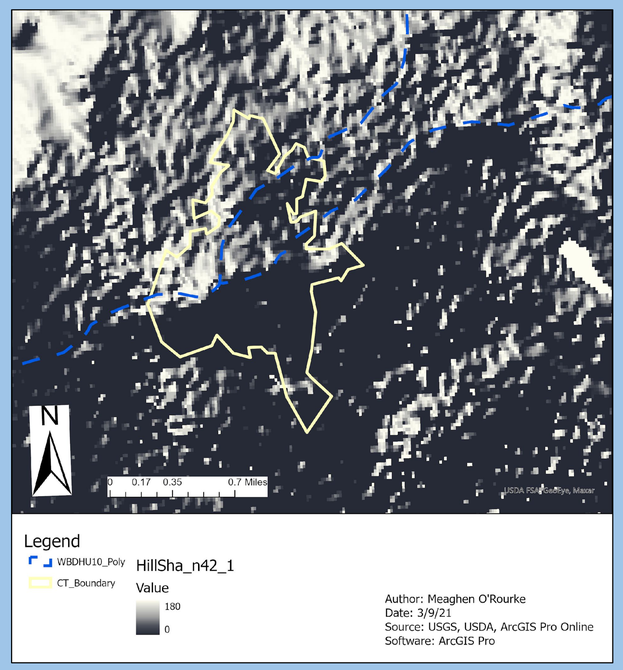
Colvin Timbers- Elevation

This map reveals that the Colvin Timbers study area is at a high elevation. Much of the site is at approximately 2,500 feet in elevation, with the rest falling at approximately 1,960 feet in elevation.



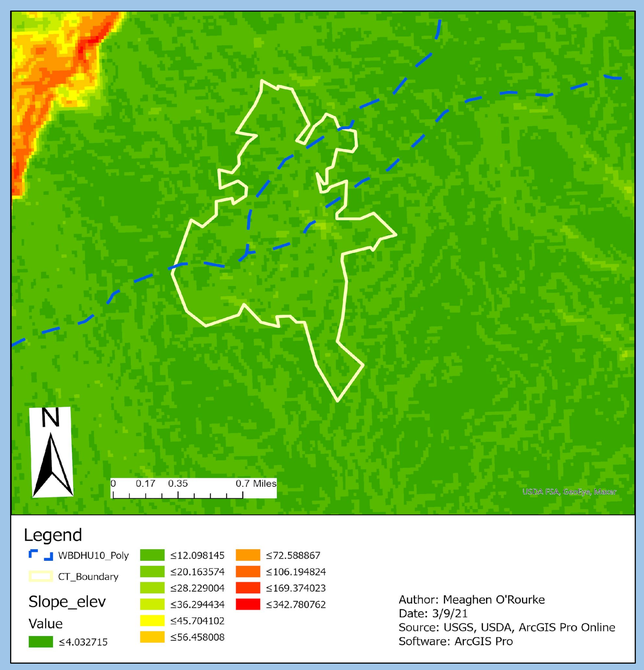
Colvin Timbers- Hill Shade

This map shows that the study area has a hilly surface resulting in the Northern slope receiving more light than the Sothern slope, which is unusual.



Colvin Timbers- Slope

This map shows that the Colvin Timbers study area has low slope percentages, resulting in a relatively flat area.



Colvin Timbers- Landcover & Soil

This map shows evergreen landcover within the study area, it also shows that this landcover corresponds with different soil types within the area.