Water Estimator Tool for Verde Valley, AZ

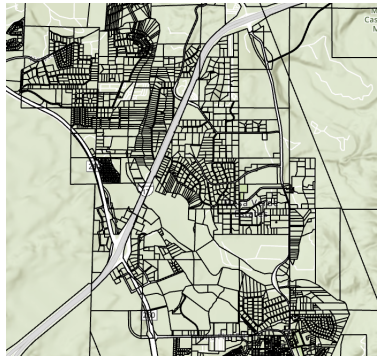
Marie Bear, Mentors: Muenich & Williams

Project Summary

The goal of this project is to develop a tool to estimate evaporative losses for farmers in the Verde Valley, in Arizona.

Background

Farmers in the Verde Valley of Arizona face increasing concerns of water scarcity under a changing climate. Many are now considering alternative cropping systems and irrigation methods as an adaptation to more constrained water resources. In this project in partnership the larger Water for Ag group, we aim to develop a tool that provides estimates of evaporative losses based on crop type for specific parcels in the Verde Valley.



Methods

ET estimation using FAO 56 Method:

- Climate data
- Crop coefficients
- Soil and water conditions

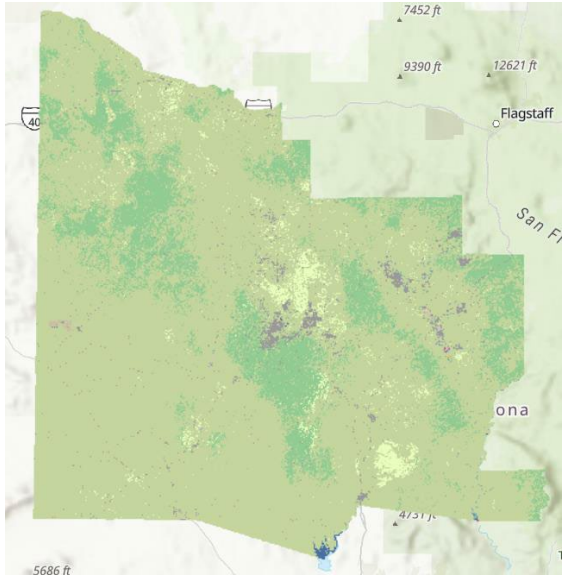
$$ET_o = \frac{0.408\Delta(R_n - G) + \gamma\frac{900}{T+273}u_2(e_s - e_a)}{\Delta + \gamma(1+0.34u_2)}$$

Integrating geospatial data into an interactive ArcGIS Story Map:

- USDA climate zones
- Elevation
- Land cover
- Crop type
- Parcel data resolution

Outcomes

The ArcGIS Story Map allows users to select a specific parcel and determine how ET would change based on different crop types.



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