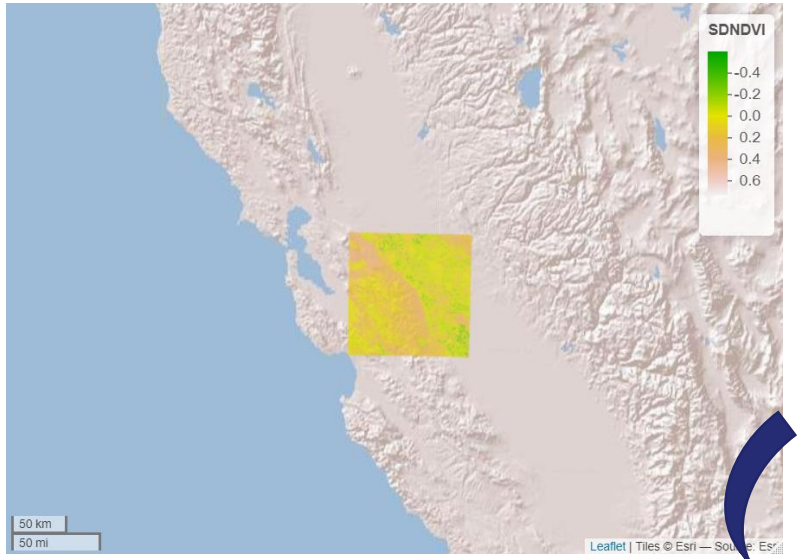
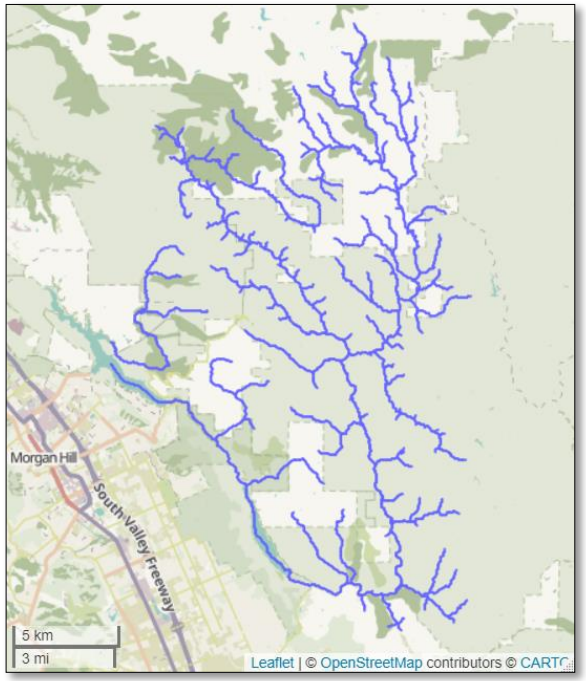


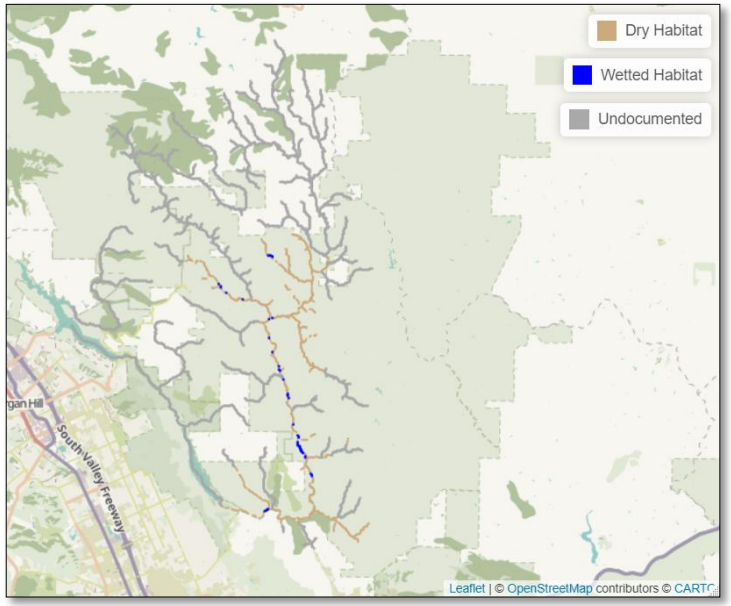
A Dowsing Stick for the 21st Century: Infrared Satellite (NDVI) Seasonal Variation as a Tool to Find Refugia in Intermittent Streams

Presented by: **Taylor F. Haas**, Research Fellow

Why…?

- Building a spatial temperature model

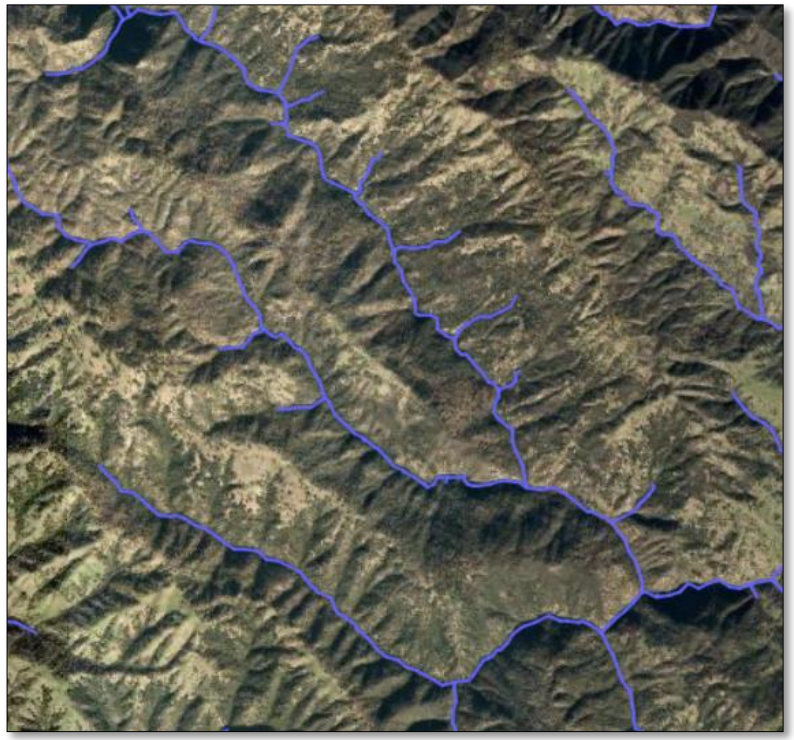




…Covariates?

Potential Covariates

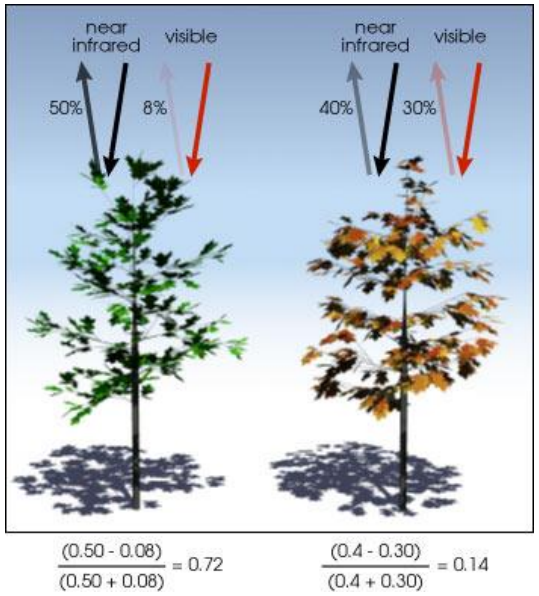
- Elevation
- Gradient
- Canyon vs. Open
- **Vegetation/Shade %**

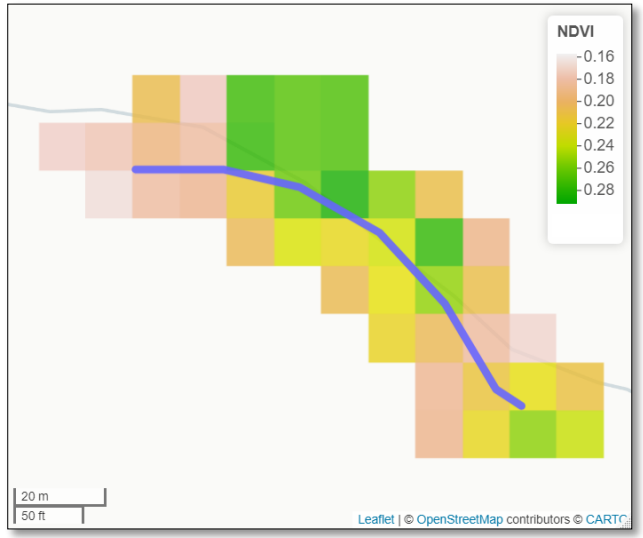


Alternatives?

OTHER Satellite Imagery…

- NDVI (Normalized Difference Vegetation Index), NDWI, etc.
- “Vegetation” indices based on satellite infrared imagery.
- Raster format in 10x10m pixels taken at regular intervals.





$$P(water) = \frac{1}{1 + e^{-(a+b*NDVI)}}$$

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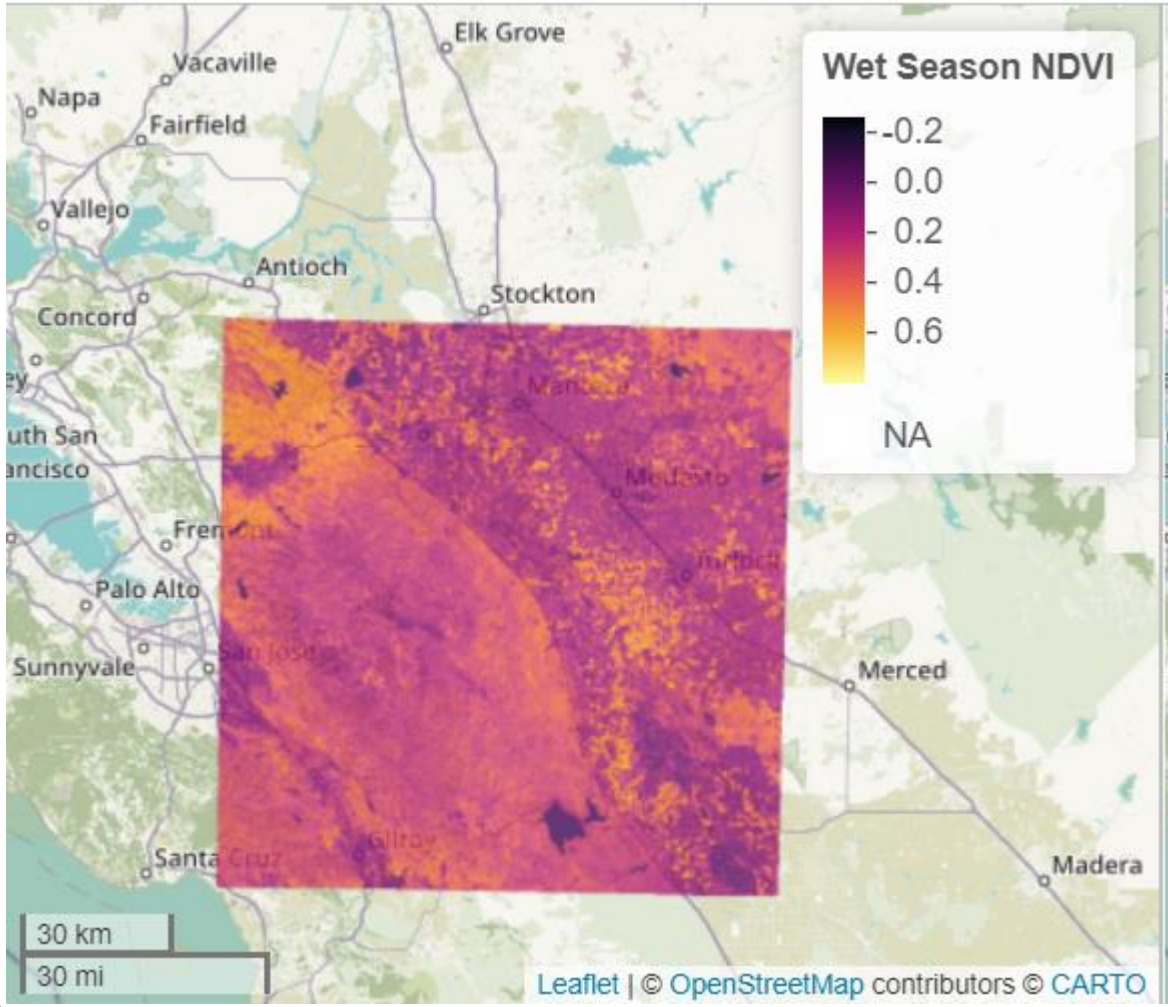
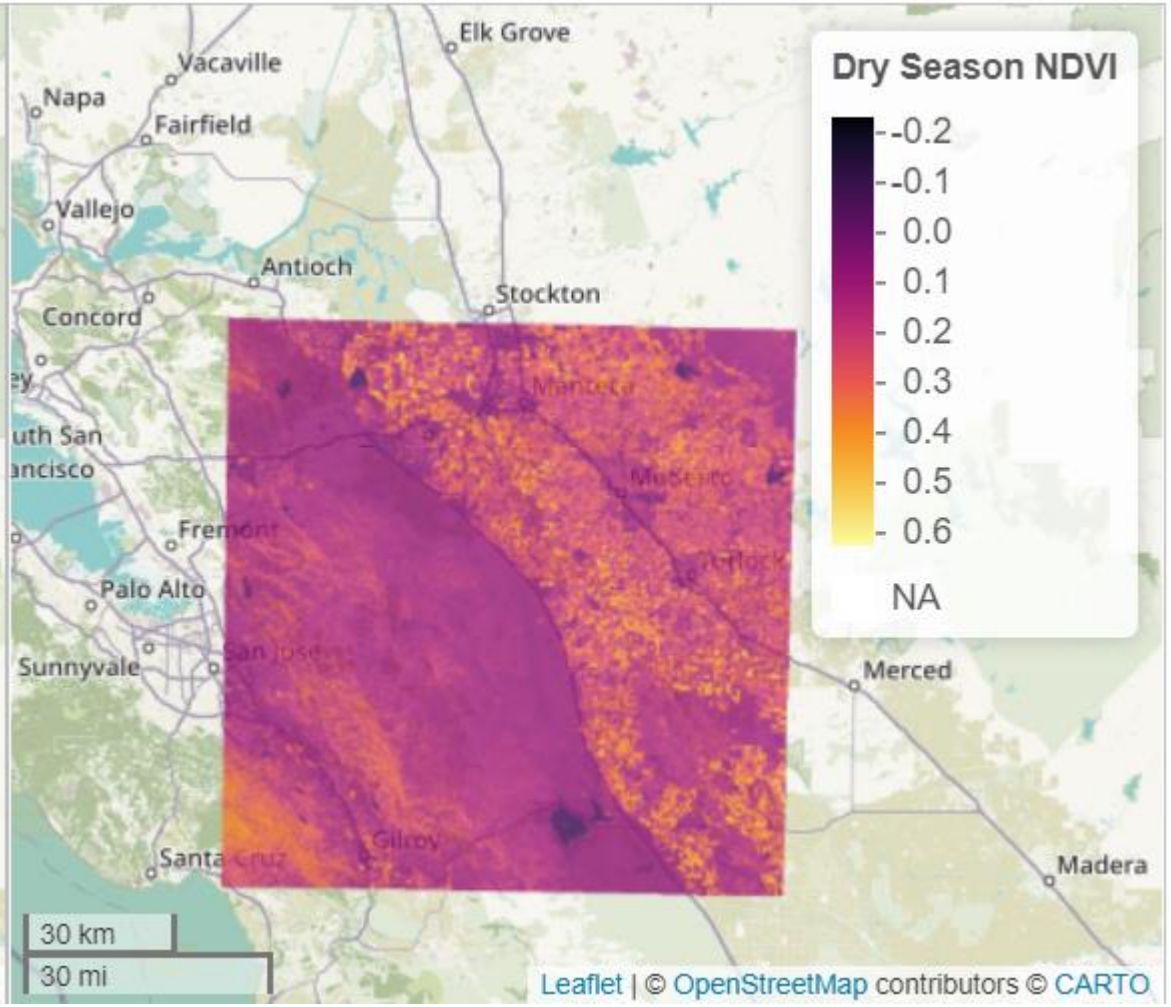
Valley Water

OTHER Satellite Imagery…





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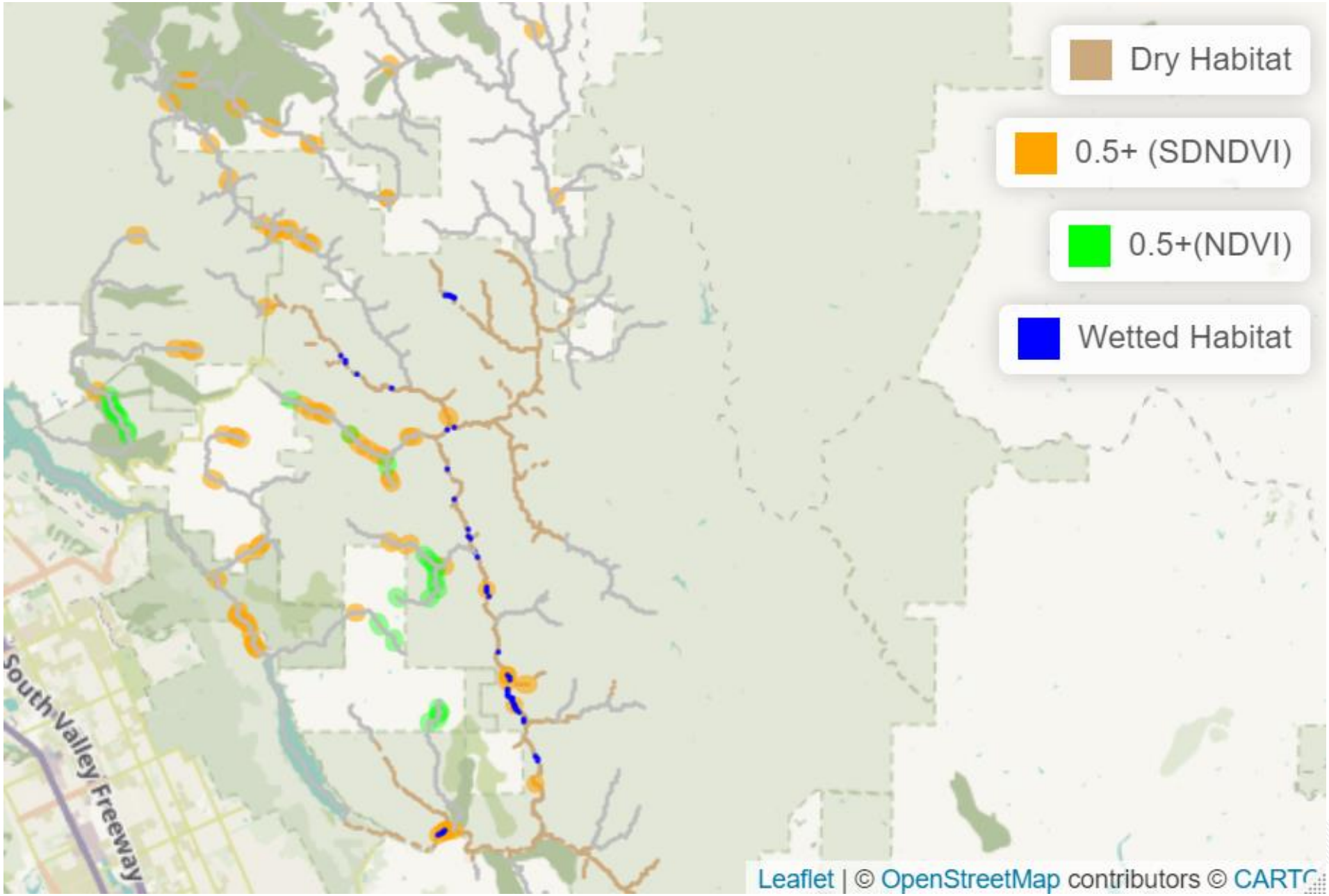

NDVI vs SDNDVI

R^2 = .19 vs. .29

AIC = 136.2 vs. 124.3

ΔAIC = 11.9

Applications:

- Finding refugia
- Spatially classifying streams for models
- Save time, effort, and costs
- More to come

Thanks!