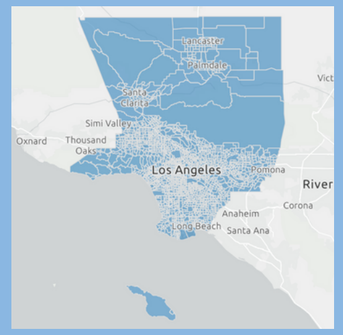
Environmental Justice in LA County through the lens of Remote Sensing

Kaylan Soares

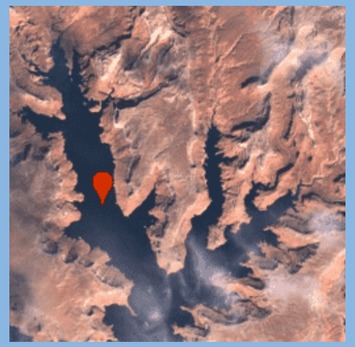
Datasets

Sentinel - 2 MSI: Multispectral Instrument, Level-1C

Median Income and AMI (census tract)



USGS Landsat 8 Collection 2 Tier 1 TOA Reflectance



GEE LST Algorithm

Google Earth Engine Open-Source Code for Land Surface Temperature Estimation from the Landsat Series

by Sofia L. Ermida [1,2,*], Patrícia Soares [3], Vasco Mantas [3], Frank-M. Göttsche [4] and Isabel F. Trigo [1,2]

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*Edited by David Butman

Equations

NDVI (NIR-Red)/(Red+NIR)

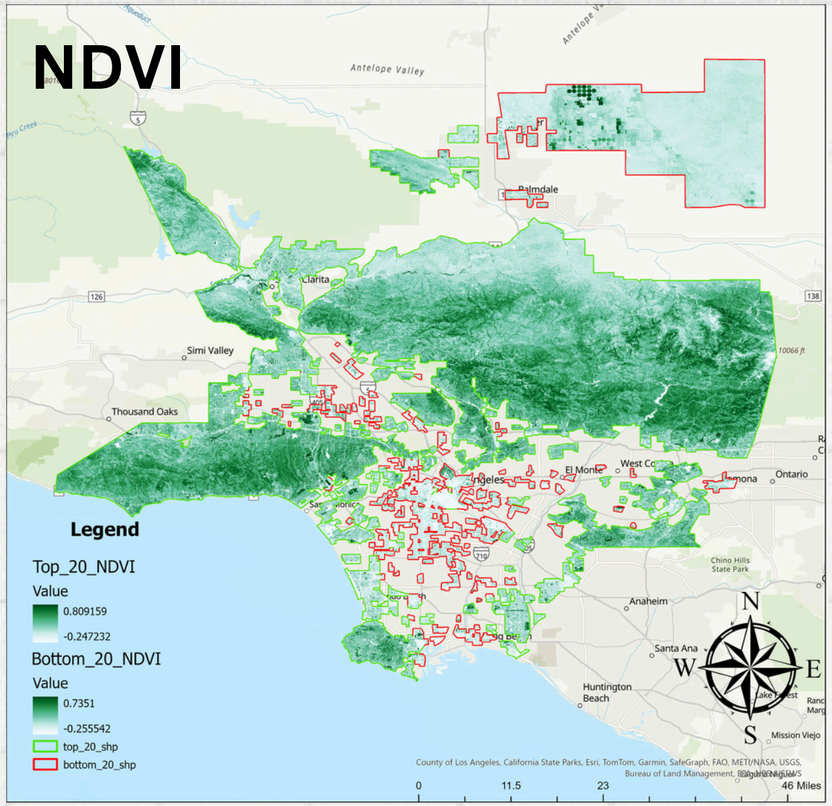
NDWI (Green-NIR)/(Green+NIR)

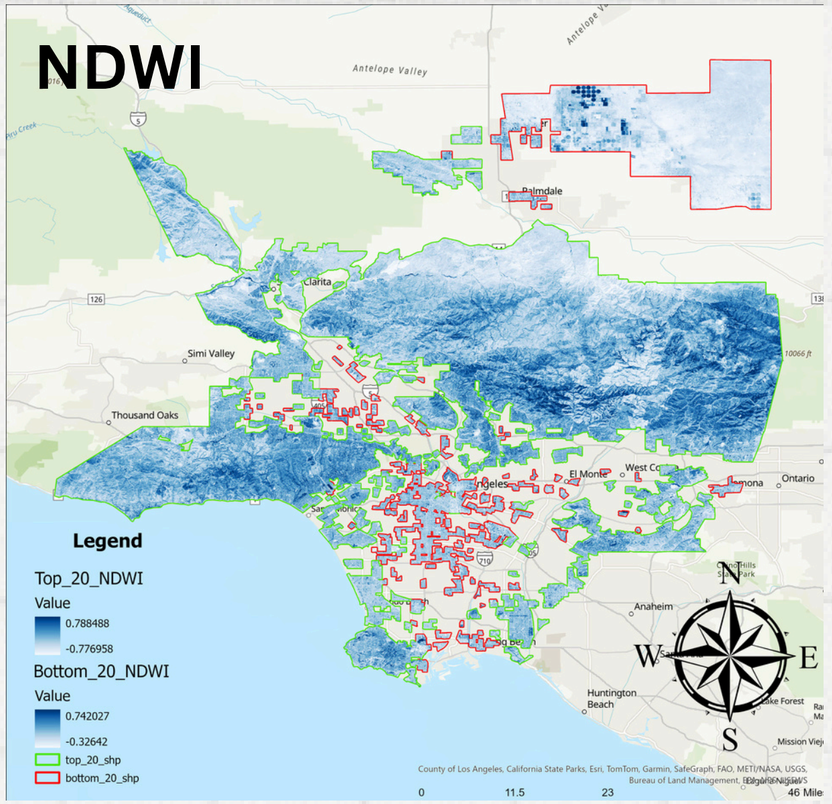
SAVI [(NIR– Blue) / (NIR + Blue + 0.5)] * (1.5)

Tassel Cap Transformation

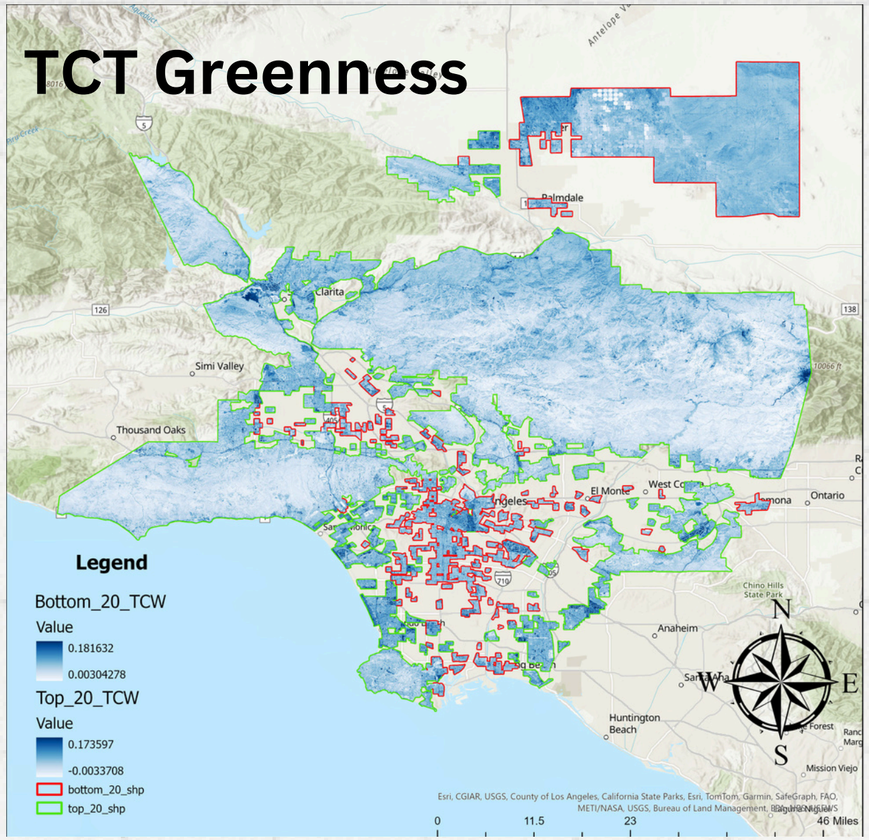
Type	TCT	Coastal	Blue	Green	Red	RE-1	RE -2	RE-3	NIR-1	NIR-2	WV	Cirrus	MIR-1	MIR-2
13 bands	B	0.2381	0.2569	0.2934	0.3020	0.3099	0.3740	0.4180	0.3580	0.3834	0.0103	0.0020	0.0896	0.0780
	G	-0.2266	-0.2818	-0.3020	-0.4283	-0.2959	0.1602	0.3127	0.3138	0.4261	0.1454	-0.0017	-0.1341	-0.2538
	W	0.1825	0.1763	0.1615	0.0486	0.0170	0.0223	0.0219	-0.0755	-0.0910	-0.1369	0.0003	-0.7701	-0.5293
6 bands	B		0.3510	0.3813	0.3437				0.7196				0.2396	0.1949
	G		-0.3599	-0.3533	-0.4734				0.6633				0.0087	-0.2856
	W		0.2578	0.2305	0.0883				0.1071				-0.7611	-0.5308

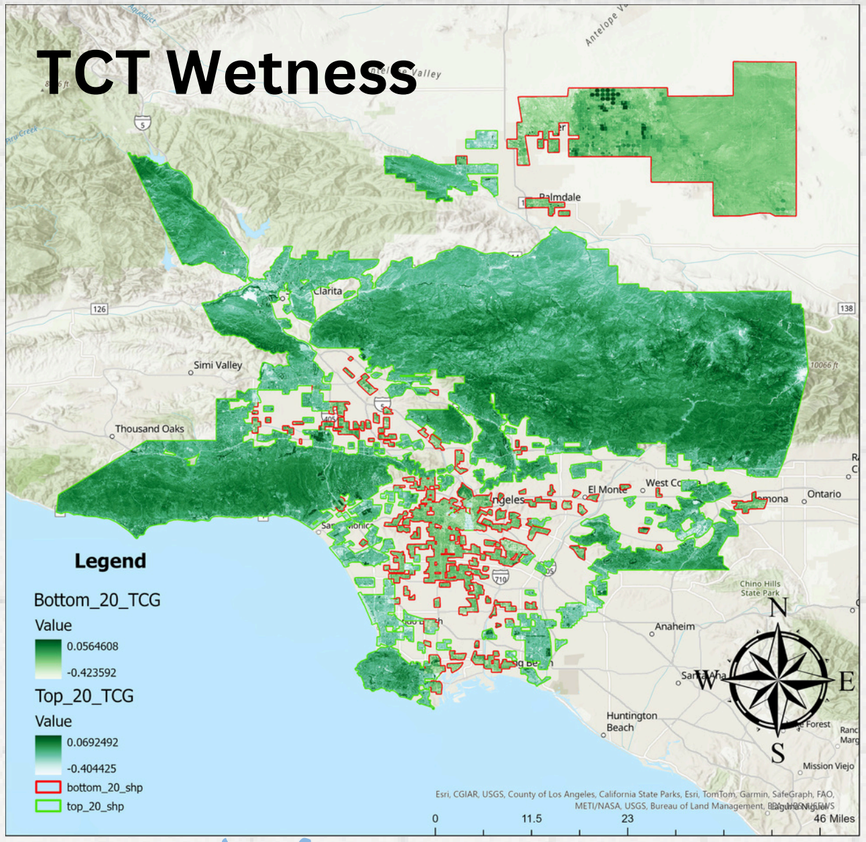
Normalized Difference Indexes



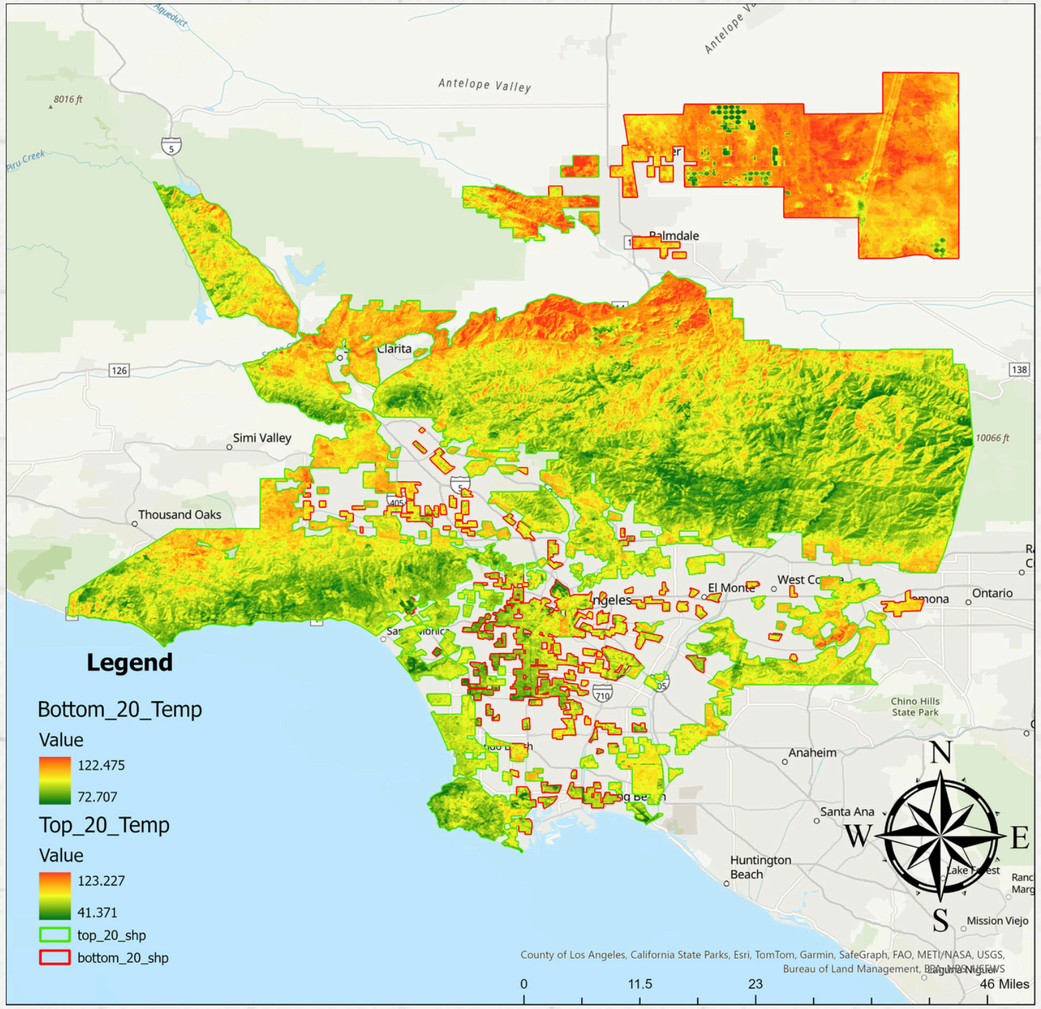


Tassel Cap Transformation

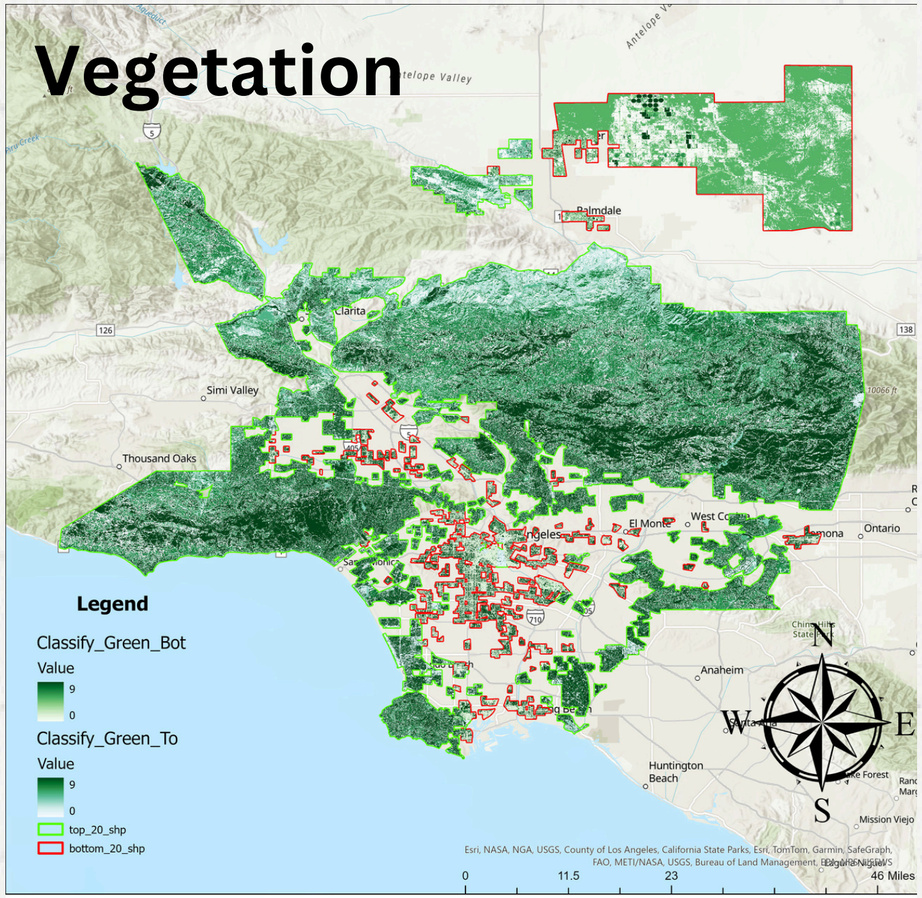


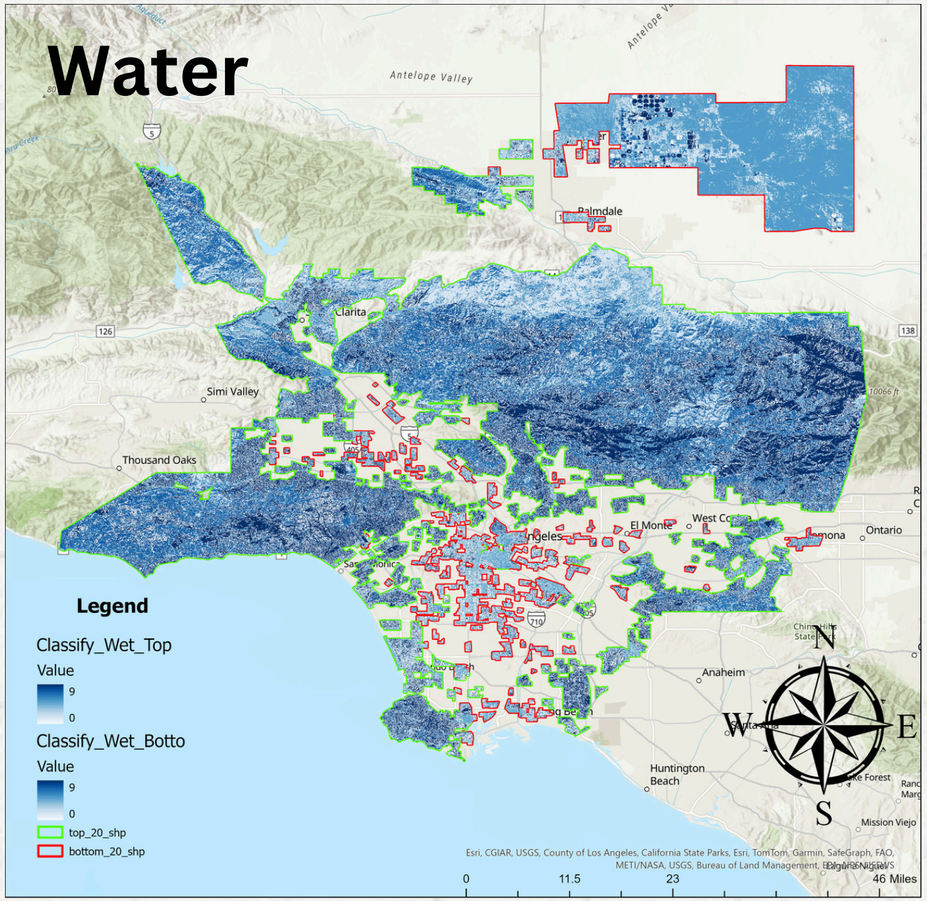


Temperature

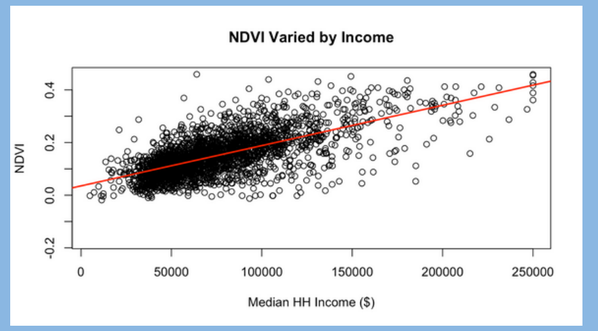


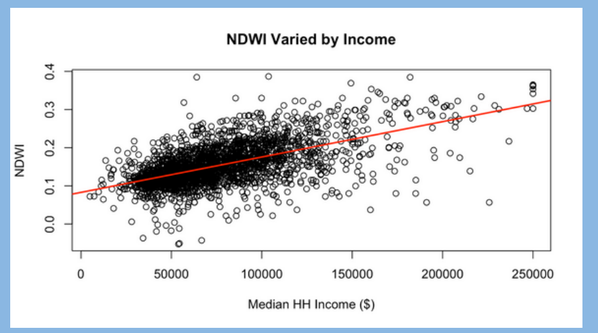
Classification

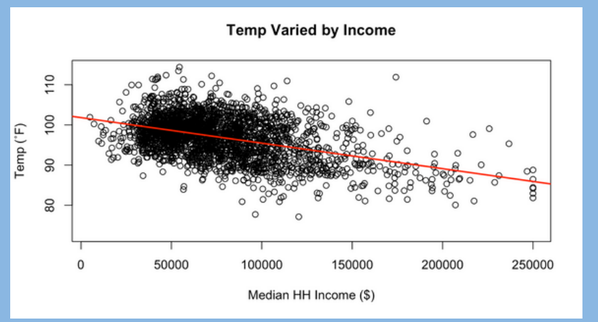


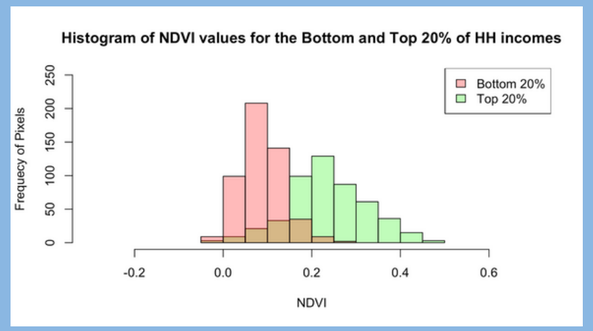


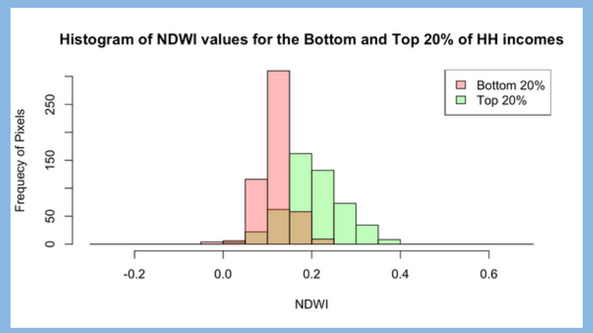
Imagery Analysis

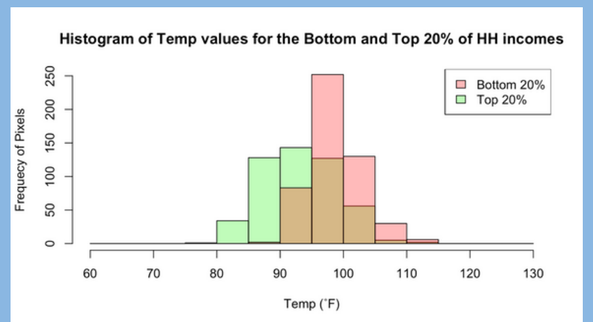












Conclusions

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GEE LST Code

https://code.earthengine.google.com/31e88a3389ab8f1043b4bce53acffa04

GEE Classifcation Code

https://code.earthengine.google.com/?scriptPath=users%2Fkaylanso%2FESRM432LAB1%3ASymposium_Classification

Assets

projects/esrm432-lab1-kaylanso/assets/income_id