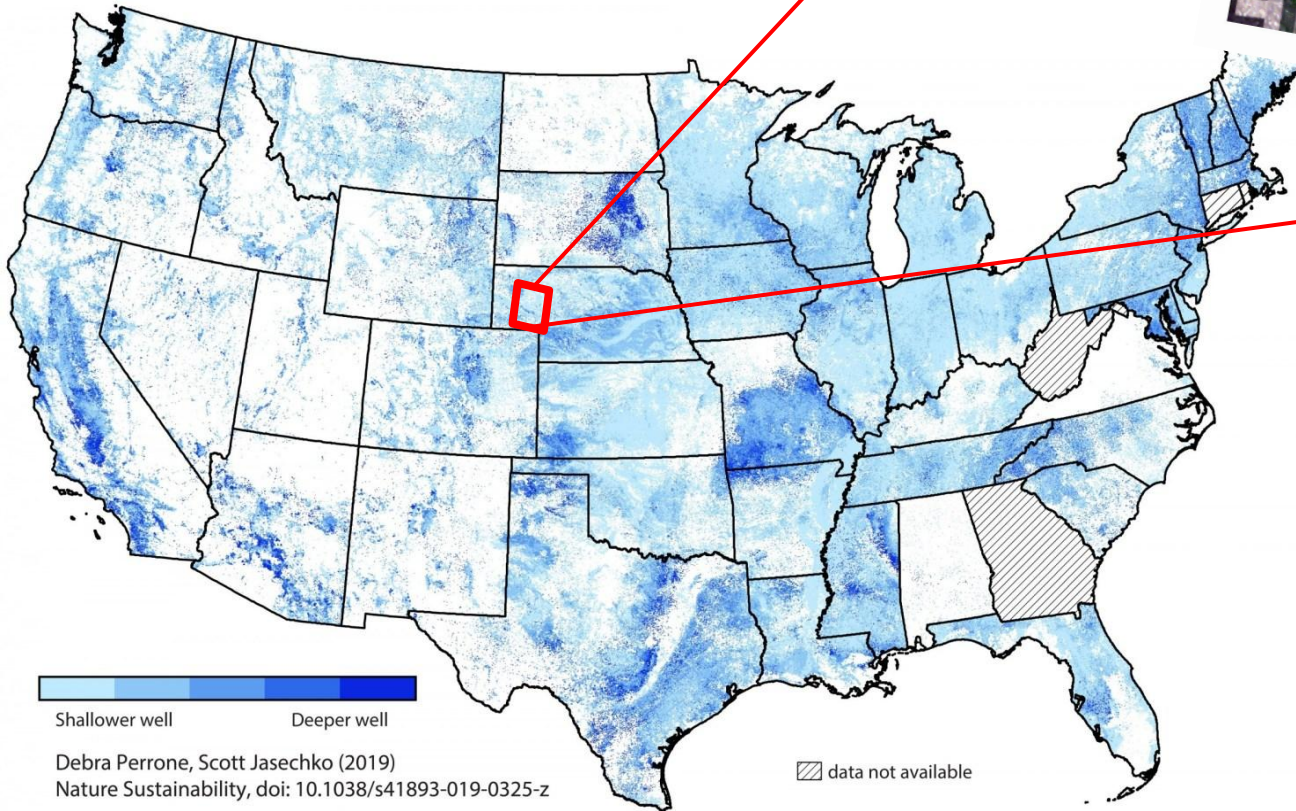


# Ryan Avery, UCSB

Problem: We know that globally, wells are being drilled deeper and deeper and water resources are increasingly strained.

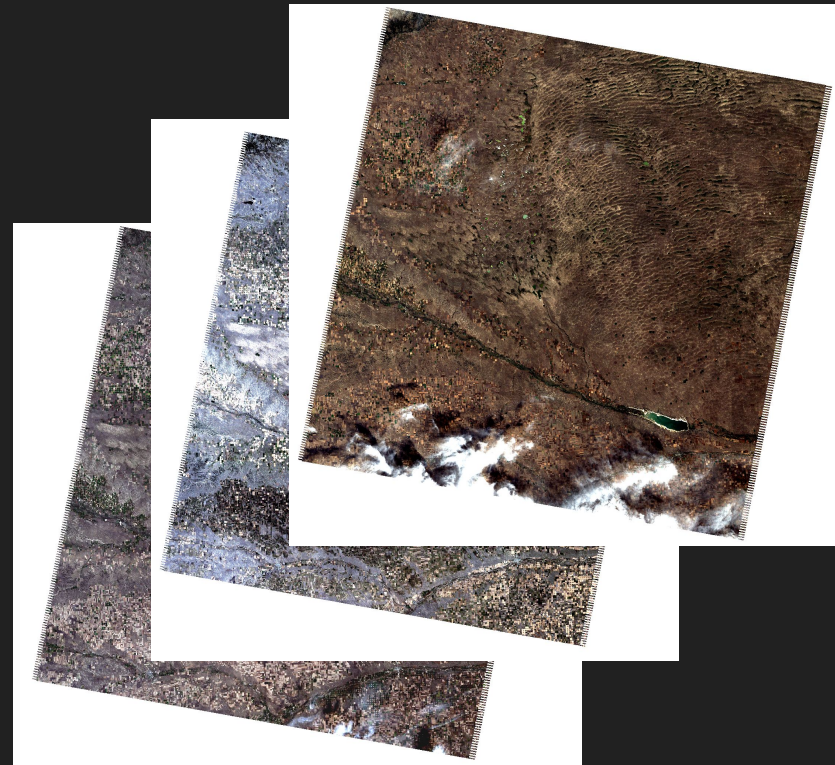
But there is a lack of water use monitoring in developing regions.



Question: Can we train a model that can generalize across arid agricultural zones to locate past and future agricultural fields? Can we then locate hotspots (agricultural expansion) and cold spots (abandonment) with satellite imagery?

4 scene footprints \* 4 seasonal images \* 1.5 Gb per image = **24 Gb of imagery for training the Keras Mask R-CNN model**

~ 40 scene footprints \* ~10 seasonal images \* ~30 years of Landsat imagery \* 1.5 Gb per image = **18 Tb of imagery for inference**



I'm here to get experience with profile my code (check!), parallelizing my preprocessing routines with dask (check!), and getting experience with multi GPU and multi node architecture and programming.