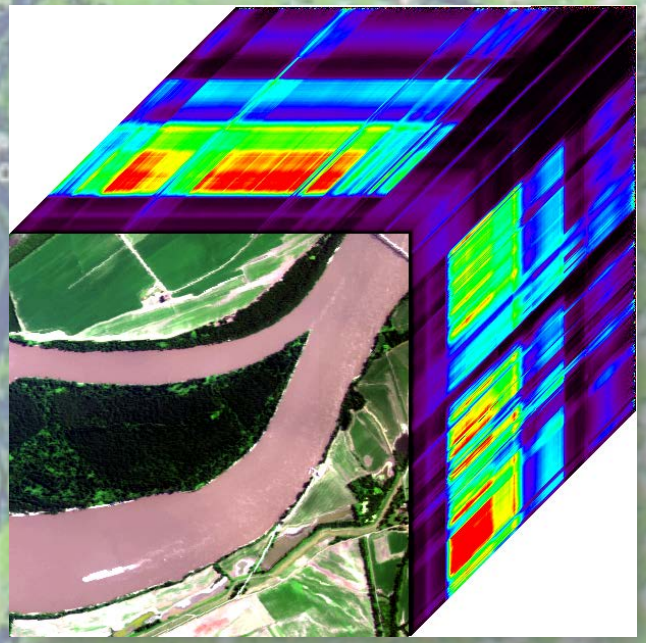
Imaging Spectroscopy for Characterizing Soil Properties over Large Areas



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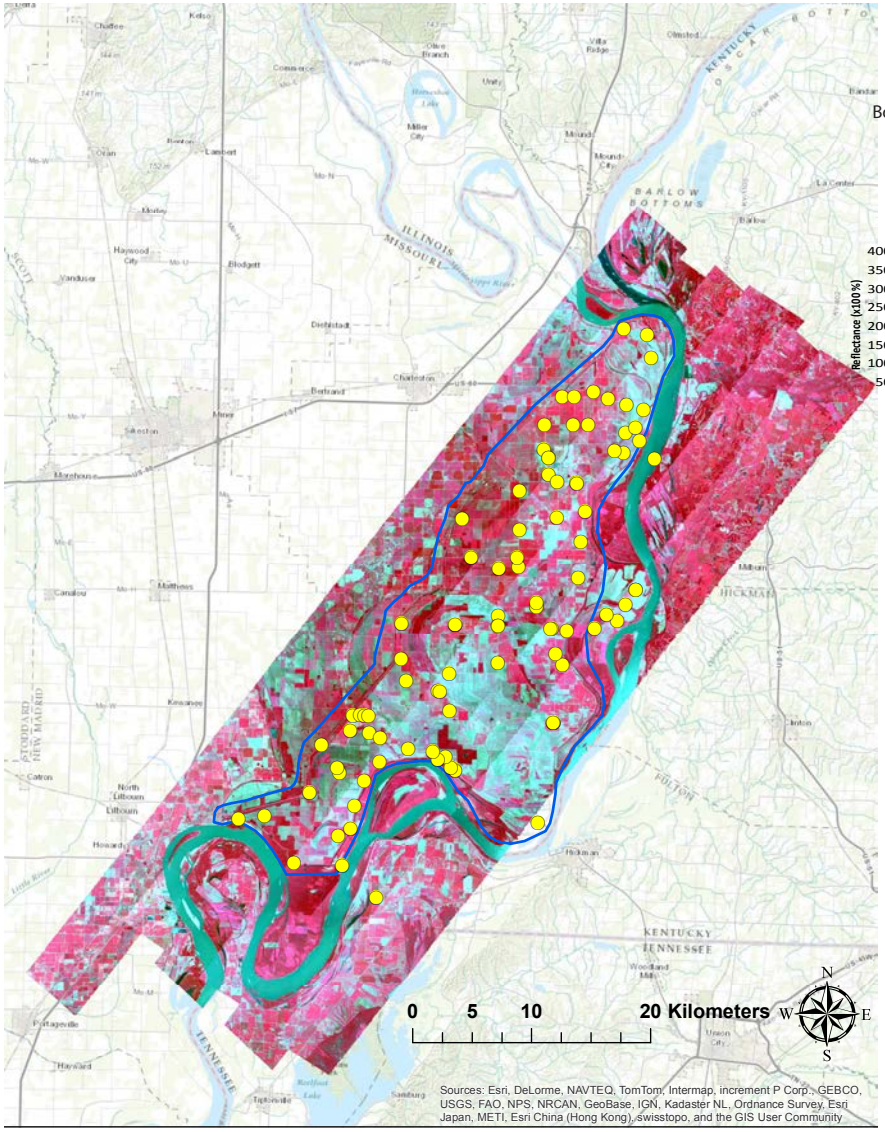
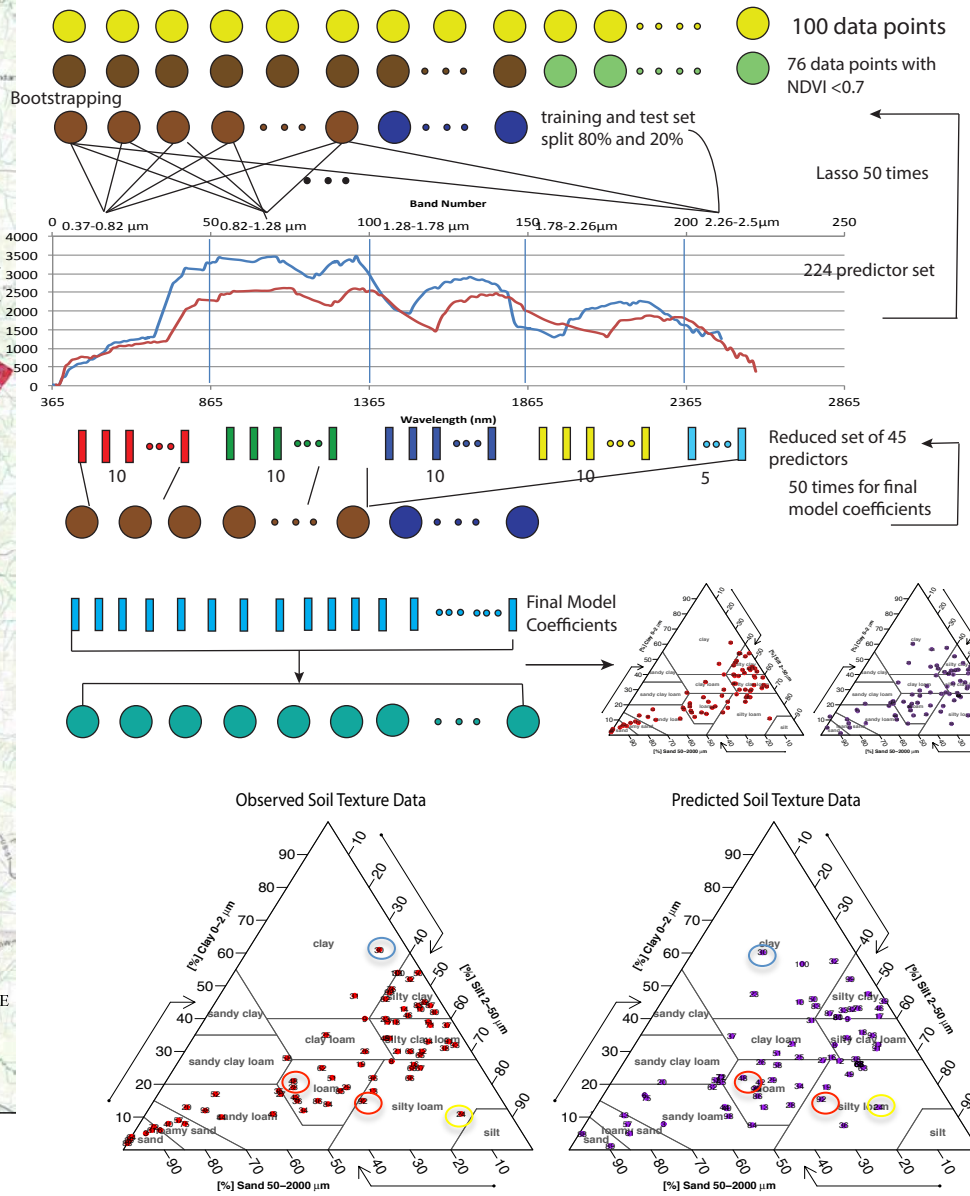
[2]Department of Geography and Geographic Information Science

University of Illinois at Urbana Champaign

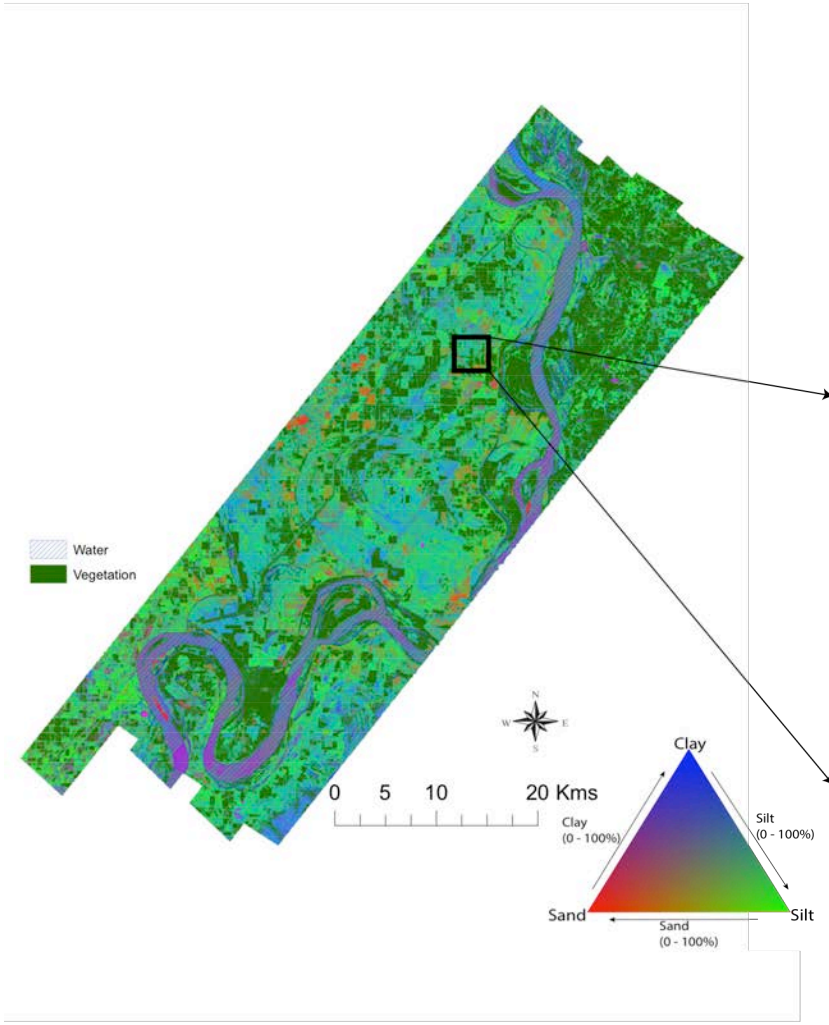
2015 HyspIRI Science Symposium

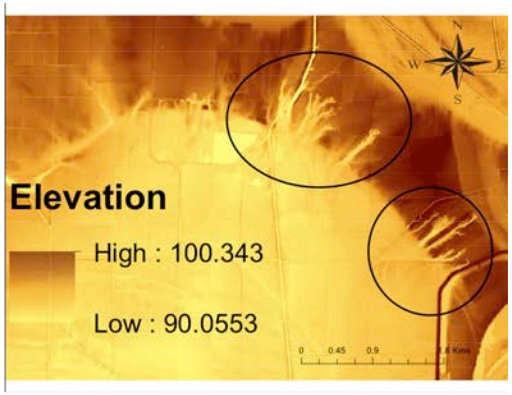
Study Area and Methods

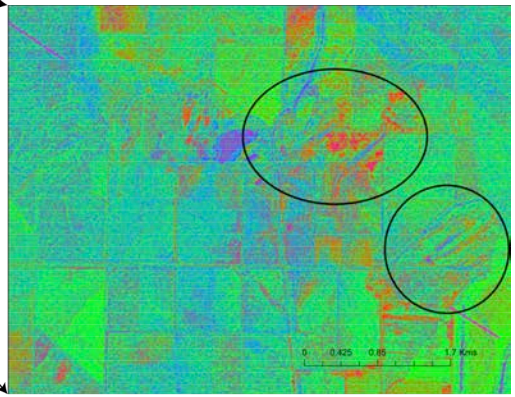




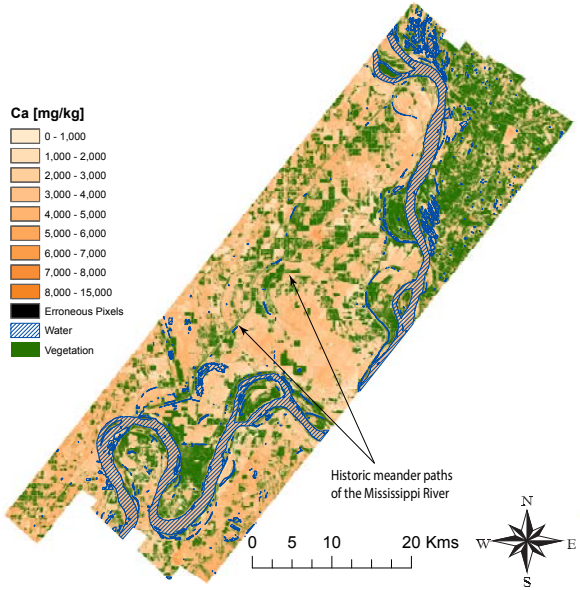
Spatial Correlation of Soil Constituents

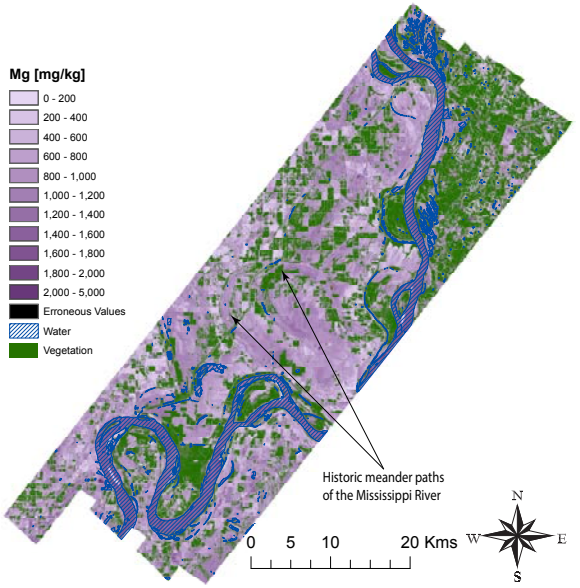


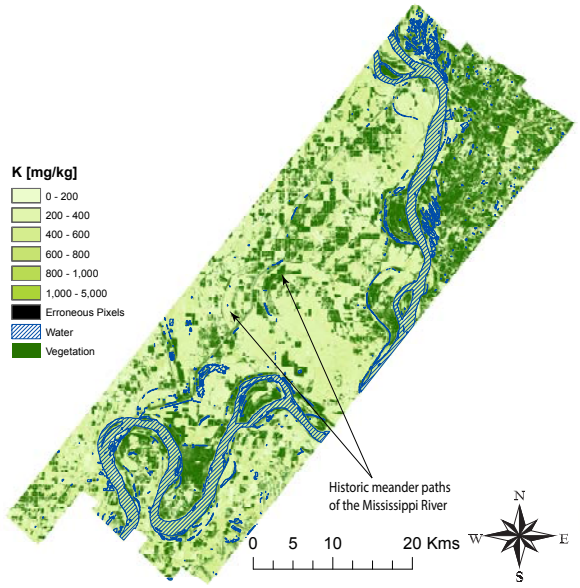




Spatial Correlation of Soil Constituents





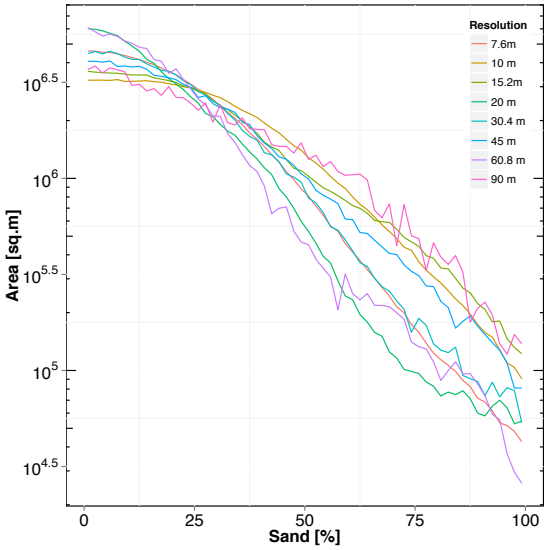


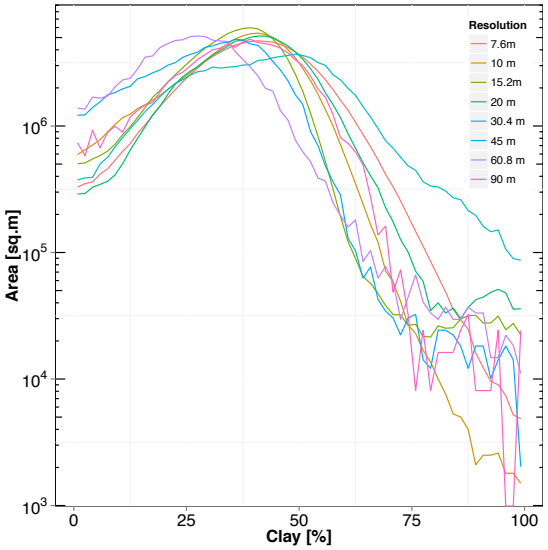
Effects of Spatial Resolution on Prediction of Soil Constituents

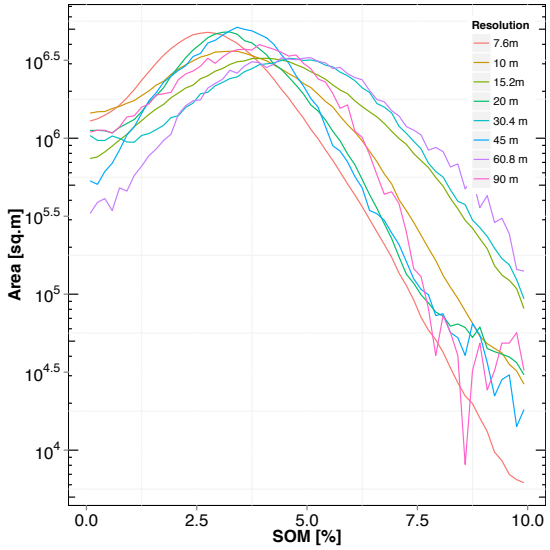
2-dimensional Gaussian function was used as the PSF and was used to design the kernel used for convolution of the images for upscaling.

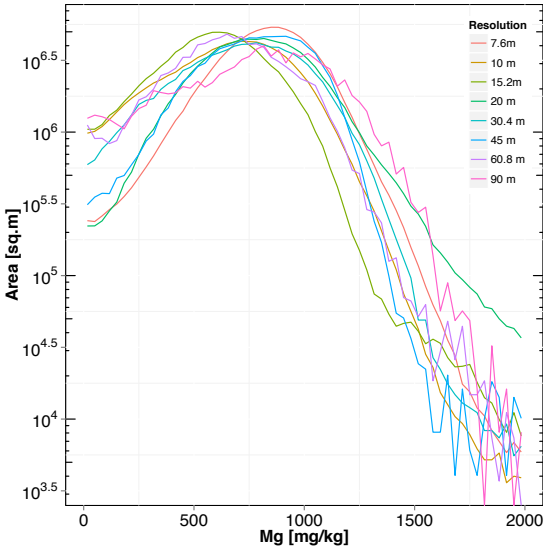
The full width at half maximum (FWHM) of the kernel is taken to be the spatial resolution of upscaled images and specially of HyspIRI

Convolve and Resample Resolution	Kernel Size
15.2 m	5 x 5
30.4 m	11 x 11
60.8 m (HyspIRI resolution)	21 x 21

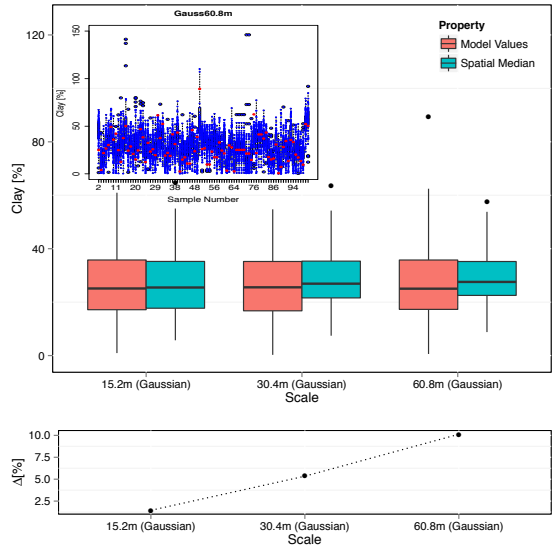


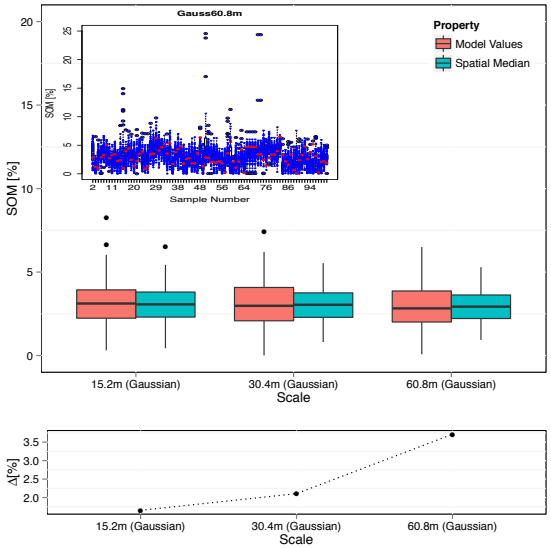


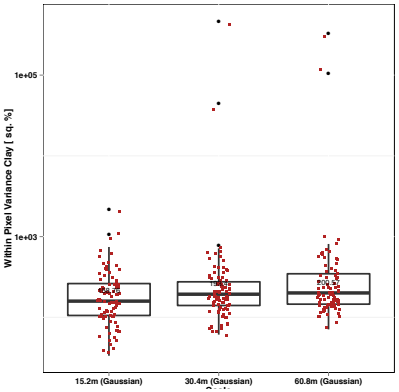


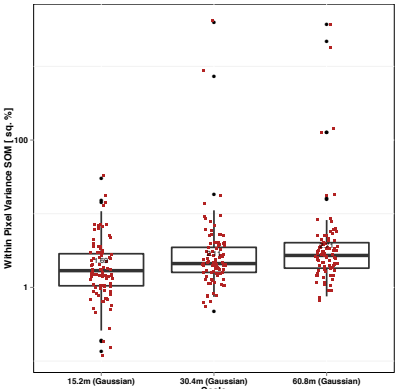


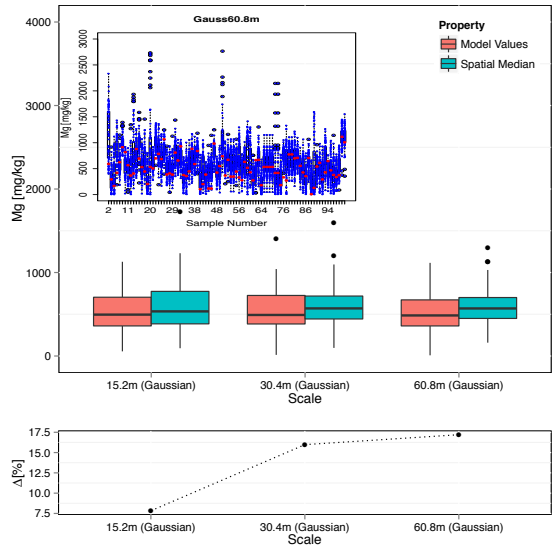
Effects of Spatial Resolution on Prediction of Soil Constituents

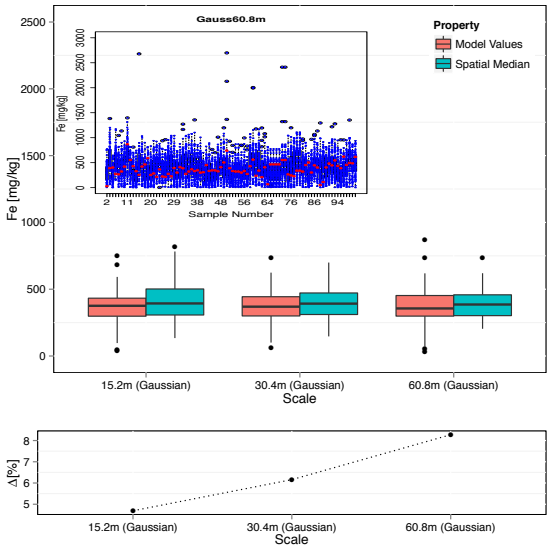


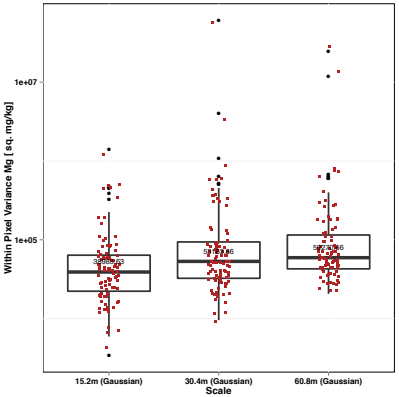


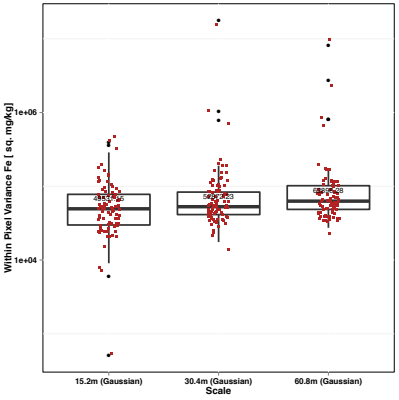




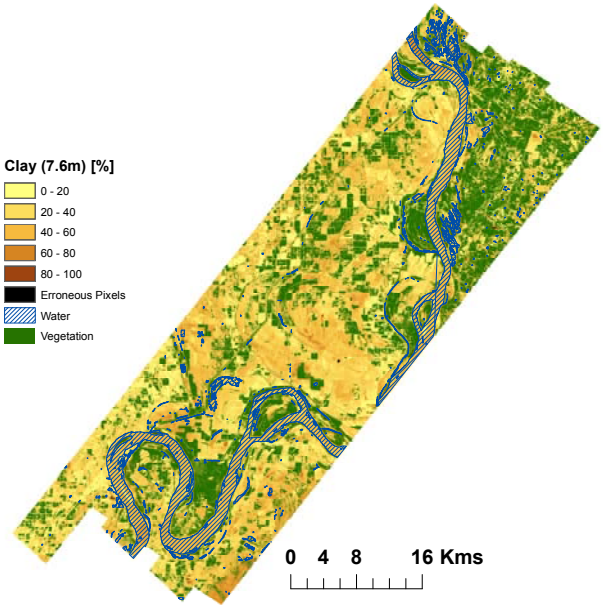


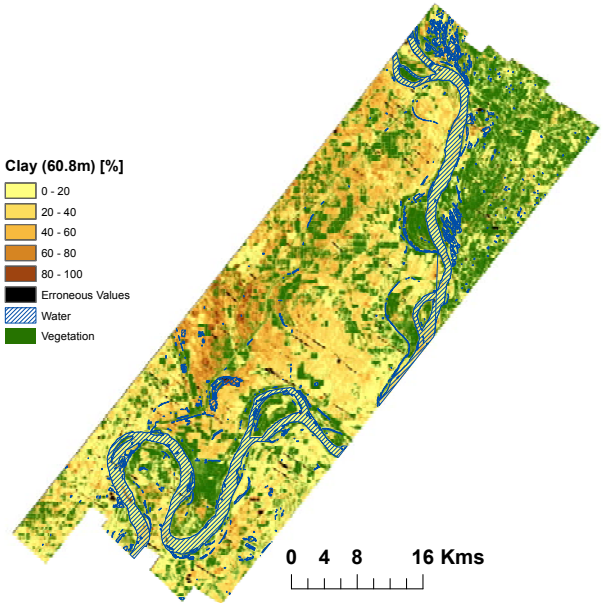


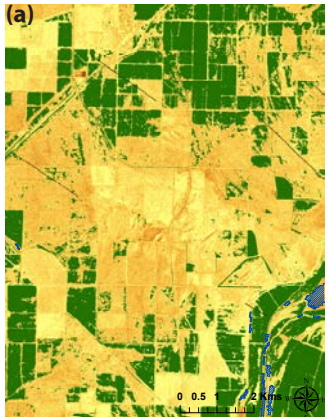


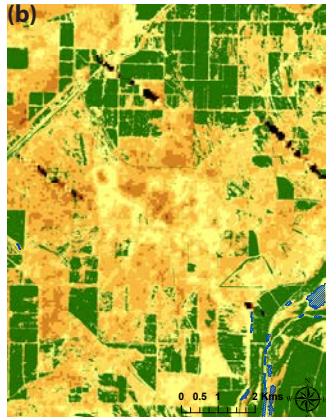


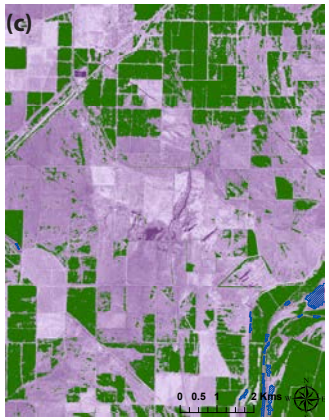
Effects of Spatial Resolution on Prediction of Soil Constituents

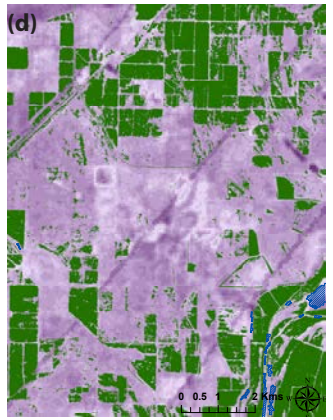


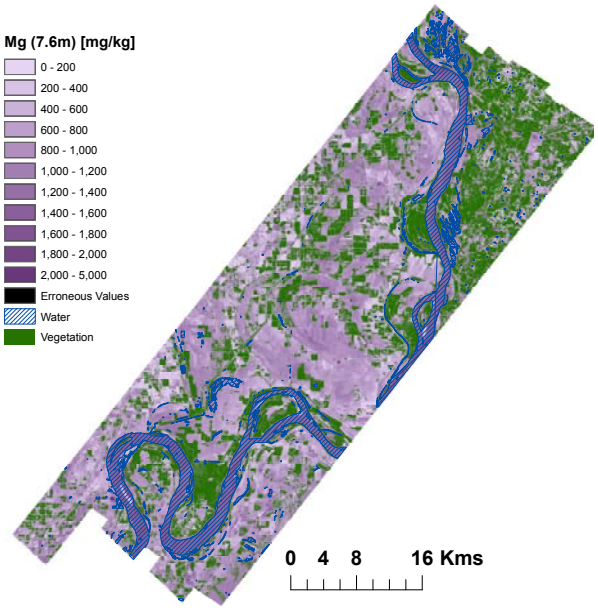


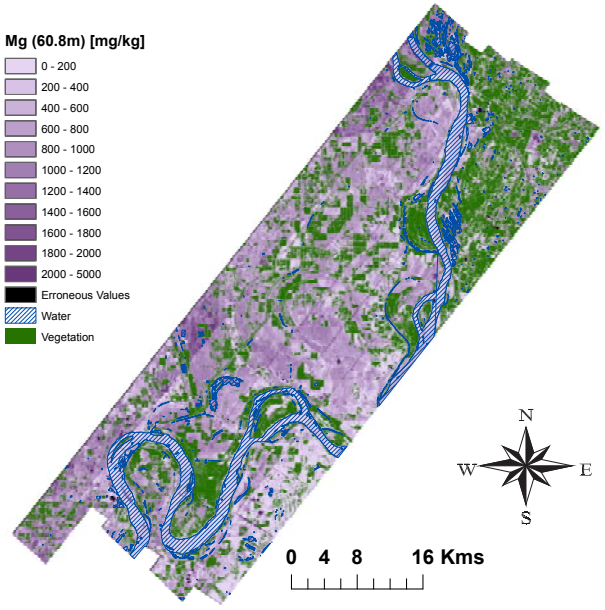












Thank You!