

## **Detecting Soil Salinity Levels in Agricultural Lands Using Satellite Imagery**

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**Abstract.** Soil salinity is a problem that affects agriculture and reduces crop yields. Mapping soil salinity is the first step in identifying the magnitude of the problem. Elevated levels of soil salinity will affect the growth of most crops as well as their appearance. This can be detected remotely using satellite imagery. By enhancing the image, we can separate the crop condition into several classes that we can then extract from the satellite image. Using spatially referenced ground data collected at the study area, we can relate each class in the satellite image to a level of soil salinity. We can use these classes to create a signature file and classify (supervised classification) other areas planted with the same crop. The multi-spectral image used for this project was a 4 band (red, green, blue and near infrared) image with 4 m resolution from the IKONOS satellite. Results of applying the methodology to several fields will be presented.