

Detecting compositional variation in granites – a method for remotely sensed platforms

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An area of leucomonzogranite and muscovite-biotitemonzogranite, north of Herring Cove, Nova Scotia provides a well exposed section of nearly continuous outcrop beneficial for remotely sensed image analysis. The objectives are to build a two tiered, GIS based approach for remotely sensed platforms. Three test sites were imaged using a near-infrared (NIR) converted Nikon D40 SLR camera with filters in the blue, green, red, and NIR range, comparable with the four multispectral bands from the Quickbird satellite (450–900 nm). Samples from each test site were imaged at a fine spatial resolution using a bellows, with the same filters as the field test sites. Images will be processed using IDRISI's GIS Analysis and Image Processing tools to produce a single pixel value corresponding to the mineralogical composition of the outcrop. Fine scale bellows images will be compared to the coarser scale test site images for similarities in pixel values from each spectral band. The two classes of multispectral images will then be compared to the Quickbird multispectral pixel values each test site. If effective, this method will allow for the detection of compositional changes in the visible-NIR spectral range.