Evaluation of Geological resources in the Cobequid Highlands using LiDAR data

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This project uses light detection and ranging (LiDAR) data to examine potential locations of geological resources such as gold, in the Cobequid Highlands. LiDAR characterization is an accurate and effective way to map surficial deposits in order to better interpret till/stream surficial geochemical data and glacial dispersal. This surficial data can be used to help locale mineralization areas. The LiDAR produced map is useful to examine areas of mineralization by looking at structural controls at the deposit scale that are not visible on other digital elevation models DEMs. LiDAR produced maps eliminate traditional mapping technique limitations such as limited field access or time. Furthermore, the maps produced by LiDAR have been found to be 80% as accurate as their traditionally mapped counterparts. With the recent availability of LiDAR data, figuring out how to utilize such technology to characterize landforms is still undefined. The applicable input data for this project is LiDAR point-cloud data, raster-based DEMs, and shaded relief images provided by the Department of Natural Resources. This project aims to produce a usable surficial map of the Cobequid highlands for further exploration as well as help in the creation of a standardized method to map areas from LiDAR data. The output map and base dataset of the surficial landforms can be used in a variety of mapping applications such as more accurate interpretation of till and stream surficial geochemical data.