Project Profile

Project Name:	Restoration Status Accuracy Assessment
Project Number:	BCIP-2016-23
Proponent:	Caslys Consulting Ltd.
Funding Envelope:	Boreal Caribou
Timeframe:	March 21, 2016 – August 30, 2016

Project objectives

The province's Integrated Transportation Network, together with the Terrain Resource Inventory Mapping (TRIM), and datasets from the BC Oil and Gas Commission, map the locations of the majority of linear and polygonal disturbance features in the province. However, due to the level of effort associated with maintaining the data, much of the information within these datasets is not current. Numerous linear features (e.g., seismic lines and resource roads), not in active use, have become overgrown and therefore do not have the same environmental impact as more recent disturbances. In addition, many wellpads and other areal features are in various stages of regrowth. In a previous project, Caslys developed a cost effective approach to updating the restoration status of these features to improve the temporal accuracy of the data. The objective of the proposed project is to conduct an accuracy assessment using field data collected by the BC Oil and Gas Commission (OGC) for a portion of the mapped area to quantify the accuracy of the restoration status attributes.

Project background

The objective of the initial disturbance classification project was to conduct a pilot to assess the cost, practicality and accuracy of using SPOT imagery to attribute existing disturbance features with a restoration status. The results of the classification method also facilitated the addition of any unmapped features (i.e., recent disturbances) absent from the current datasets. A method was developed to classify the imagery to effectively model the amount of disturbance activity, allowing a use level to be assigned to each feature. To calibrate the results, the data for roads, trails and polygonal features were edited to incorporate any missing features and resolve any spatial differences between the vector features and their location in the imagery. The amount of each feature captured by the classification model was then quantified and summarized. The results of this summary were then examined to determine if class breaks were present in the data that would facilitate the assignment of an activity level to the features to indicate whether the feature was being used frequently, infrequently or was not being utilized (i.e., the feature was overgrown). The preliminary results indicated that a restoration status could successfully be assigned to the features.

One of the recommendations coming out of the pilot study was to conduct a field program to help further ground truth the model-based approach. Therefore, in the summer of 2015, OGC representatives conducted a survey where they visited a series of different disturbance types (e.g., wellpads, cutlines and roads). Information related to disturbance type and vegetation regrowth (e.g., type and height) was recorded for each site and a series of photographs were taken to facilitate a review of the model results.

Project approach

The field data and associated photos will be georeferenced and overlaid with the results of the classification. An accuracy assessment will be conducted to compare the field data with the restoration status attributes that resulted from the classification process. The accuracy results will then be summarized in the form of tables and graphs. The assessment results will be evaluated to determine if any patterns are present in the data and recommendations made on how to improve the mapping process.

Project deliverables

The following deliverables will be provided upon completion of the project:

- A data file depicting the field sample locations with hotlinks to photos.
- A summary report documenting the methods applied and the results of the project.
- An executive summary summarizing the results, interpretations and recommendations for future projects.