Hatfield-4101: Assess fragmentation of natural habitat and cumulative disturbance

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Challenge

Challenge ID:	HCP-4101	Originator:	Onshore: Hatfield
Title:	**Assess fragmentation of natural habitat and cumulative disturbance.**		
Theme:	ON 4.1: Environmental monitoring - Baseline historic mapping of environment and ecosystems		
Consortium Lead:	Hatfield	Interviewed Company:	Hatfield
Geography:	ON.REG.00 - Generic onshore		
Challenge Description			
What is not possible / not adequately addressed at present?			
There is a need to improve the process to assess cumulative impacts of regional development over widespread areas. Specifically, there is a need to identify fragmentation due to natural causes or human activity prior to seismic surveys or other development and to determine amount linear disturbance and "edges" within forest areas. This information would support assessing impact on wildlife behaviour. Within the context of this issue, there is an information need for disturbance inventories for areas at the pre-license stage.			
What effect does this challenge have on operations?			
Regulatory obligations and environmental impact assessments require assessment of cumulative environmental effects. This is an environmental management issue related to reduced environmental impact from operations. Ability to develop project may be affected in environmentally sensitive areas with existing disturbance /activity. Can be a no-go criteria for exploration or development.			
Thematic information requirements:	Land cover Land use Ortho base images		
What do you currently do to address this challenge? How is this challenge conventionally addressed?			
Use existing government (national and/or regional) base data, aerial photography and other available satellite images are used in combination, but not systematically. Permitting records are also used where available.			
What kind of solutions do you envisage could address this challenge?			
Efficient extraction of linear disturbance and calculation of fragmentation metrics from high-resolution images or airborne LiDAR.			
What is your view on the capability of technology to meet this need? Are you currently using EO tech? If not, why not?			
High cost of LiDAR and high-resolution images, cloud cover affects optical satellite EO images, and it is difficult to extract linear disturbance features from satellite images in an automated fashion. Use of Landsat due to limited other options is not id			
Challenge Classification			

Impact on Lifecycle (0=none, 4=high):		Climate / Topography / Urgency:	
Pre-license:	3	Climate class:	Generic climate
Exploration:	3	Topographic class:	Forest / woodland
Development:	3	Seasonal variations:	Warmer weather focus
Production:	2	Impact area:	Environmental
Decommissioning:	2	Technology urgency:	3 - Immediately (0-2 years)
Challenge Information Requirements			
Update frequency:	Snapshot		

Data currently used:	Surficial geology, climate and topographic maps. Stereo photo interpretation for vegetation. Field plots for vegetation inventory. Aerial photography High resolution imagery LiDAR
Spatial resolution:	Regional, Basin
Thematic accuracy:	Not specific
Required formats:	Not Specific
Timeliness (Vintage):	Within six months
Geographic extents:	Regional
Existing standards:	By jurisdiction, e.g. BC RISC standards http://www.for.gov.bc.ca/hts/risc/pubs/teecolo/whrs/assets/whrs.pdf

Relevant products

Content by label

There is no content with the specified labels