



## Evaluating Technology-based Assessments for Use in Reclamation Certification of Footprint

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In Alberta, when a site is disturbed by industrial activity, the company responsible for the site is required to obtain a reclamation certificate to demonstrate that the site is self-sustaining and meets equivalent land capability. Labor- and time-intensive in-field assessment are currently used to evaluate sites, and implementation of remote sensing techniques could reduce costs while improving safety and data quality. This project will provide guidance on the use of technology-based assessment to augment field-based assessment of reclaimed sites for the purpose of achieving reclamation certification under government policies and practices.

Repeatability of results will be measured across practitioners, site, and habitat types to understand how well remote sensing approaches can assess across landscape, soil, and vegetation parameters. Risks and benefits underlying the use of field- and technology-based assessments for reclamation certification will be evaluated, including consideration of ecological impacts. A guidance document for practitioners and regulators will identify best practices for key technologies. The outcome of this project is a scientifically defensible evaluation of technologies that can be used to support the reclamation certification process and assessments of industrial impacts on the landscape.

A summary of technology-based practitioner results, including challenges and opportunities, will be shared along with an initial assessment of outcomes in relation to field-based approaches.

### Stefan Schreiber

Stefan holds a BSc and MSc in Biology from the University of Bochum in Germany with a focus on plant ecology and molecular phylogeny. In 2008, Stefan moved to Edmonton to pursue a PhD in Forest Ecology and Management at the University of Alberta. His research centered around tree water relations and climate change adaptation strategies in forestry, leading to his PhD in 2012. Following his doctorate, Stefan remained at the University of Alberta as a postdoctoral research fellow where he transitioned towards applied questions in forestry, particularly in tree improvement. Since then, he has continued to work as a researcher in forest reclamation and forest resource management. Stefan's enduring interest in statistics and experimental design led him to establish his own statistical consulting firm in 2018. Stefan joined InnoTech Alberta in July 2024 as a senior researcher in the Environmental Services division.