BERA NEWS

UPDATES

We are pleased to announce that [Alberta Environment and Protected Areas](#) has joined BERA as an official partner.

Xue Yan Chan was a finalist in the University of Calgary's [Three Minute Thesis competition](#)

Marlis Hegels completed her MSc thesis on [characterizing solar radiation on linear disturbances](#)

Jasper Koch completed his MSc thesis on [LiDAR-based assessment of microtopography](#)

Niklas Heiss completed his MSc thesis on [Radar interferometry for mapping peatland surface deformation](#)

BERA FALL WORKSHOP

BERA held its annual fall workshop at the University of Alberta on November 15. The research team tabled their vision for BERA Tools – an intellectual framework and software package for translating research results into practice. The group also took in lightning talks, poster sessions, and a roundtable activity that featured a spectacular [drone image of a fen](#) created by Xue Yan Chan.

RESEARCHER PROFILE

Leonardo Viliani is a PhD student at the University of Alberta and part of the Vegetation Team. His academic interests are in Landscape Ecology and Biodiversity Analyses. The aim of his research is to study how cumulative disturbances and climate change affect seismic lines regeneration and landscape defragmentation. In his spare time Leonardo enjoys watching movies and tv series, listening to music, reading, and cooking.

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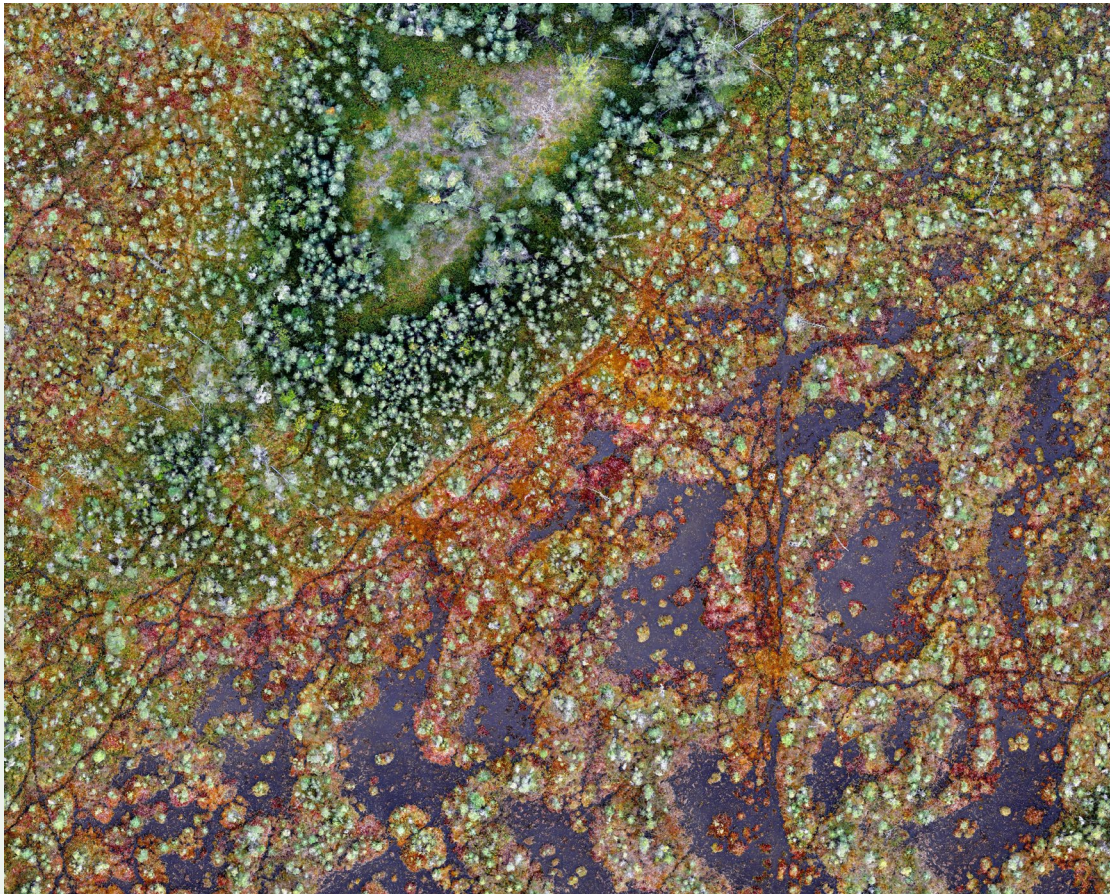
I Spy With My Sky-High Eye
I spy larch, bushes of Labrador tea, pools of water, piles of woody debris; canopy openings, trails where caribou tread, tiny magenta blooms, and hummocks of orange, green, and red.

The peatlands of Alberta offer crucial ecosystem services, yet their well-being faces threats from human activities—among them, oil and gas development, off-road vehicle use, and logging. Assessing human impact on peatland health poses a massive challenge, given their vast geographic extent. However, drones present a valuable tool to gain insights on ecosystem health from a sky-high view.

This image of a peatland results from merging drone photos using photogrammetry, transforming it into more than a mere picture. Instead, it becomes a dataset, enabling us to engage in an "I Spy" game for ecosystem research. Those little green clumps? Each is a treetop, some reaching 20 m tall. Whether through our eyes or artificial intelligence models, we can extract a spectrum of health metrics—ranging from tree density to water table depth and light availability. Leveraging the power of drones, my research assesses how these health metrics change with human disturbance. When you look at this picture, what do you spy?

- Xue Yan Chan