BERA NEWS

Fall 2021

UPDATES

BERA welcomes MSc Student Yusif Abdullai to the BERA Remote Sensing Team and PhD Student Maryam Bayat to the BERA Ecohydrology Team

Congrats go to BERA graduate Kimberley Kleinke (UWaterloo) for successfully defending her MSc thesis!

New Publications:

- Effects of Fire Severity and Woody Debris on Tree Regeneration for Exploratory Well Pads in Jack Pine Forests
- Linear disturbances shift boreal peatland plant communities toward earlier peak greenness

SUMMER 2021 FIELD WORK!

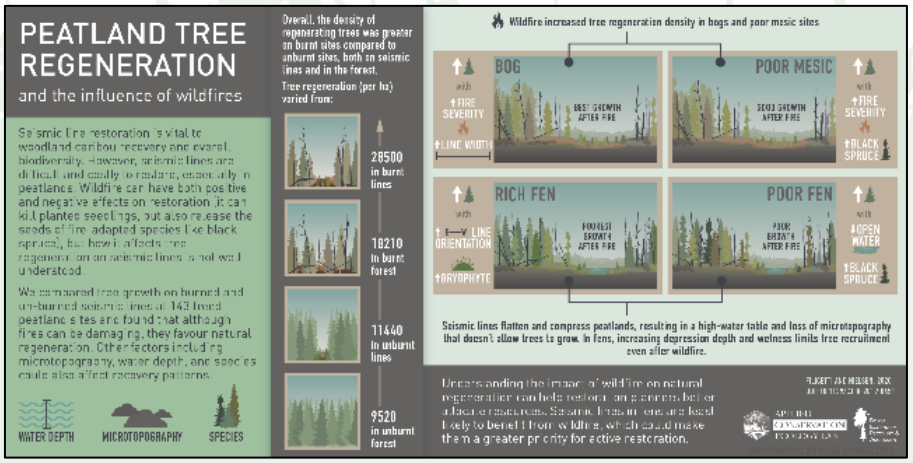
After a quiet, COVID-limited 2020 field season, BERA researchers were thrilled to get back into the field in 2021.

- Colette Shellian handled thousands of seedlings for growth analysis and remote sensing. She noted the largest mortality in jack pine seedlings and documented some interesting responses to treatment.
- Alistair Baron lead the installation of 10 new fen sites for forthcoming collaborative work with Anna Dabros of the Canadian Forest Service on plant functional traits.
- Lelia Weiland sampled soil, water table, and surface topography in Stoney Mtn and Kirby. Lelia noted that seismic lines in some upland sites were unexpectedly wetter than their surroundings, and tagged these locations for re-visit.
- Jennifer Fliesser compared four different mounding techniques for growth and survival of planted seedlings. She noted that the hummock transfer appeared to hold their shape best.
- Tharindu Kalukapuge set up autonomous recording units (ARUs) around seismic lines to understand how these features influence bird communities as a function of line width and recovery status.

RESEARCHER PROFILE

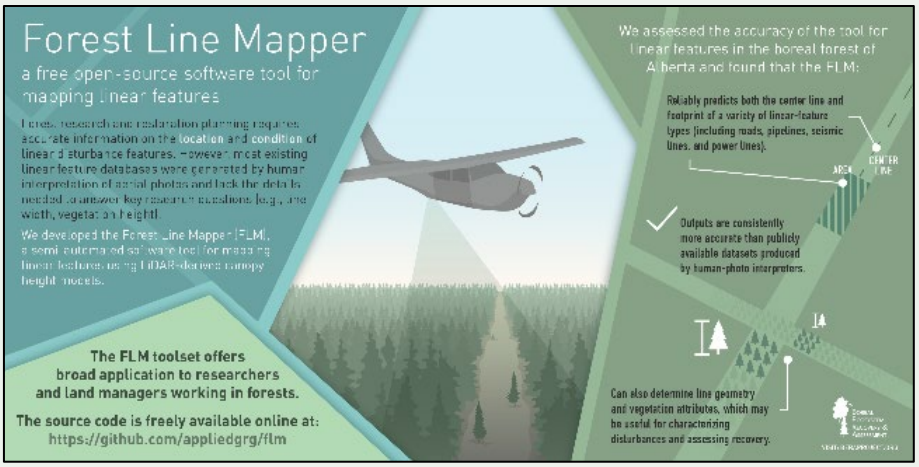
Dr. Ellie Goud is a postdoc in Dr. Maria Strack's lab at the University of Waterloo. Ellie is a broadly trained plant scientist with a focus on plant ecophysiology, stable isotopes, and ecosystem ecology. Her BERA research is examining how plant function and diversity are impacted by seismic lines and restoration treatments. Being from New Brunswick, Ellie is happiest in a bog surrounded by blueberries! We look forward to hearing about Ellie's latest research during the **BERA lunch-hour seminar on Oct 21, at noon**.

RESEARCH HIGHLIGHTS



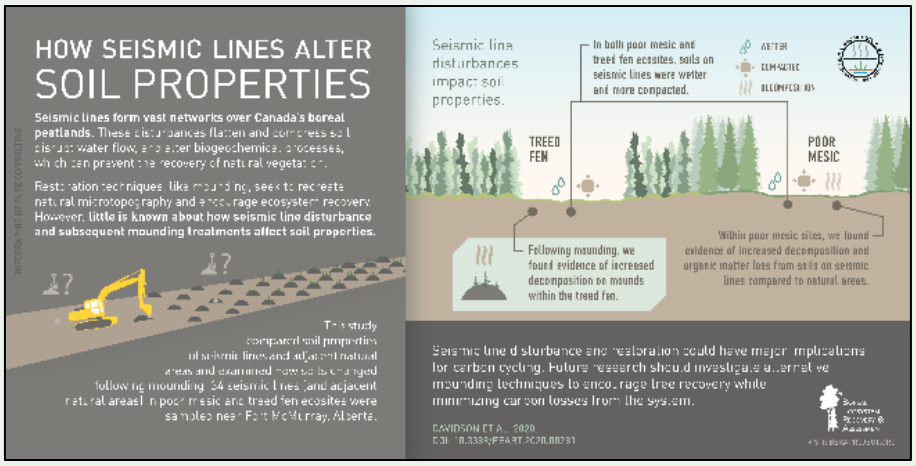
Fires Help Erase Seismic Lines in Peatlands

Seismic lines alter a host of ecosystem processes in the boreal forest, and many of those lines are in a state of arrested succession. Restoration managers have to choose: active restoration (mounding, planting, other treatments) or passive (leave for natural)? Researchers in BERA's Vegetation Team are helping to understand the role of fire in this equation. Read about some of their work here.



Open Access Software Tools for Researchers and Land Managers

Most linear-feature databases work fine for cartographic purposes but are not up to the demands of detailed research and restoration planning. Researchers in BERA's Remote Sensing Team tackled this problem by developing the Forest Line Mapper: a free, open-access software kit you learn more about here.



Seismic Line Treatments Alter Peatland Soil Properties

Mounding – the process of using machinery to create artificial hummocks in peatlands – helps tree regeneration on seismic lines, but what other effects might they have? BERA researchers on the Soils and Hydrology Team have uncovered alterations that might have major implications for carbon cycling. Read the manuscript here.

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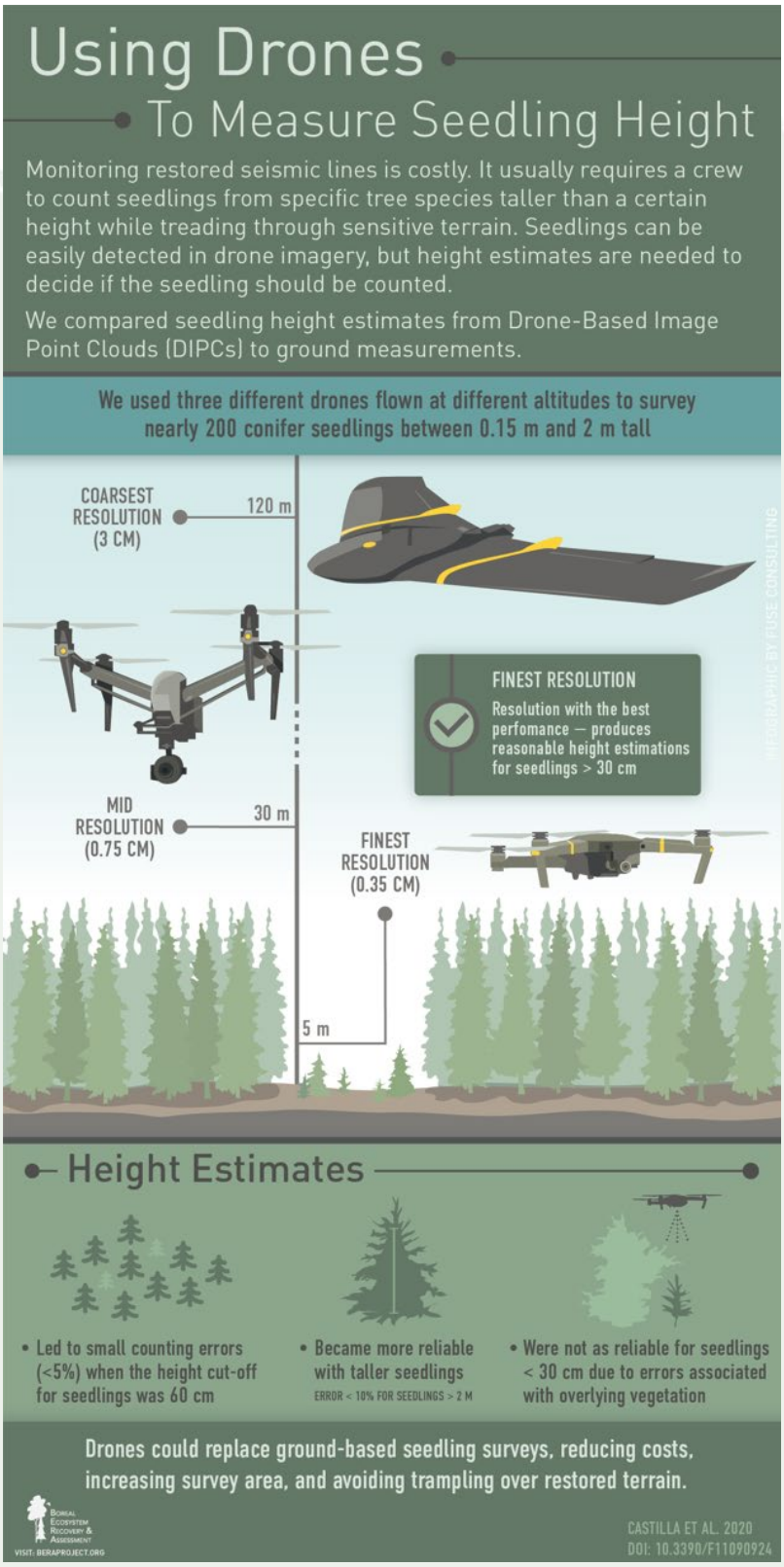

RESEARCH HIGHLIGHTS

Towards Drone-Based Establishment Surveys

BERA researchers at the Canadian Forest Service and University of Calgary are teaming up to show how drones could potentially replace ground-based seedling establishment surveys, reducing costs, increasing survey area, and avoiding trampling over restored terrain. One important step towards that process involves using drones to measure seedling height. Read the manuscript here.

BERA is currently in its second phase. We also invite you to learn about the key outcomes from **BERA Phase 1**

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