ENHANCING FOREST RECOVERY MONITORING WITH REMOTE SENSING

MONITORING FOREST RECOVERY FOLLOWING DISTURBANCE IS IMPORTANT FOR UNDERSTANDING FOREST DYNAMICS AND INFORMING FOREST MANAGEMENT, RESTORATION AND CLIMATE MITIGATION.

However, accurately and effectively monitoring forest recovery after a disturbance – and over a large area – is challenging, especially in areas that are difficult to access. Remote sensing is an effective tool that can be leveraged to map and monitor forest recovery dynamics, supplementing other monitoring approaches, such as field plots.

REMOTE SENSING HAS COME A LONG WAY IN RECENT YEARS, AND SOME KEY TOOLS INCLUDE:

AIRBORNE LIDAR (or airborne laser scanning)



LANDSAT

- Freely available satellite data.
- 30m spatial resolution.
- Helps characterize forest change over time, such as post-disturbance forest recovery.

- Can map a range of forest attributes (i.e., forest canopy cover and height).
- Can help confirm spectral observations of recovery derived from Landsat.

The data generated from remote sensing provide key baseline information on forest disturbance recovery trends, which can be combined alongside existing data to **capture a more complete picture of forest dynamics over time and space**.

LEVERAGING EXISTING DATASETS

For large-scale programs, like Two Billion Trees (2BT), accurate, up-to-date and nationally consistent data regarding forest dynamics is important for guiding future tree planting and forest management activities.

The 2BT program plans to integrate remotely sensed data to support monitoring its mass plantation sites. There are multiple remotely sensed data sources that can be leveraged for monitoring, and there are open-source information products derived from Landsat data that are available on Canada's National Forest Information System:

- opendata.nfis.org/downloads/forest_change /CA_forest_fire_recovery_rate.zip;
- opendata.nfis.org/downloads/forest_change /CA_forest_harvest_recovery_rate.zip;
- opendata.nfis.org/downloads/forest_change /CA_forest_fire_years2recovery.zip;
- opendata.nfis.org/downloads/forest_change /CA_forest_harvest_years2recovery.zip

In less remote areas that are easier to access, field visits will continue to be an important component of the 2BT monitoring strategy.

2BILLION TREES

The 2BT program, led by the federal government, provides funding to organizations to plant trees over 10 years, in order to help Canada meet its climate change and biodiversity goals. Science and monitoring are key components of the program.



Canadian Conservation and Land Management

TO LEARN MORE ABOUT REMOTE SENSING, VISIT WWW.CCLMPORTAL.CA

Reference: White, J.C., Hermosilla, T., Wulder, M.A., Coops, N.C. 2022. Mapping, validating, and interpreting spatio-temporal trends in post-disturbance forest recovery. Remote Sensing of Environment 271, 112904. https://doi.org/10.1016/j.rse.2022.112904

Landsat: https://www.usgs.gov/landsat-missions