



Apr 08, 2020

Tree Mapping for Leaf Collection (Megantic Only)

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Canadian Airborne Biodiversity Observatory

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Vellend Cabo



ABSTRACT

Here, we describe the standardized protocol used by the [Canadian Airborne Biodiversity Observatory](https://www.caboscience.org) (CABO) in preparation of the collection of trees during the leaf spectra effort at Parc national du Mont-Mégantic. It represents what the leaf spectra crew asked the veg crew to do prior to their arrival at the Megantic site, in order to save time, as the veg crew has easier access to this site and is familiar with it.

EXTERNAL LINK

<http://www.caboscience.org>

ATTACHMENTS

[CABO_species_list_per_site_2019.xlsx](#)

MATERIALS TEXT



Hammer and nails

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Numbered Aluminium Tree Tags

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BEFORE STARTING
SITE SPECIFIC INFORMATION

Parc national du Mont-Mégantic

- Project: "2019-Crofts-PhD-UdeS".
- Site: "MtMeg-1".
- Address: For plots in the Mont-Saint-Joseph area, park at 4491 Chemin de la Montagne, Val-Racine, QC G0Y 1E1. For plots in the Franceville area, park in the Franceville parking lot.
- Project Leaders: Anna Crofts and Mark Vellend.
- Local crew for 2019: Anna Crofts, Sabine St-Jean, Guillaume Tougas, Charlotte Taillefer, Florence Normand-Boisseau and Juliette Frappier-Lecomte.
- Park contacts: Camille-Antoine Ouimet, Head of Conservation, Maintenance and Infrastructures (ouimet.camilleantoine@sepaq.com) and Mélina Dubois-Verret, Partnership Consultant (duboisverret.melina@sepaq.com).
- Notice: The park patrol officers need to be notified via email on the same day or before of details about the upcoming tree surveys (where, when, how many people; see the attached "Sample_notice_park_rangers.txt" file under the "Abstract" tab of this protocol). A research permit has to be carried by each team during the surveys.
- Number of plots: 30 in 2019.
- Site gradients of interest: species composition, elevation, slope orientation, and logging history.
- Conservation value: high, but trampling is only a problem in the wet areas.
- Magnetic declination: about -15° 21' (West).

/!\ Magnetic declination changes with time, and has to be verified shortly before fieldwork on <http://www.magnetic-declination.com/>

- Plant ID resources:

- Arbres et plantes forestières du Québec et des Maritimes, Michel Leboeuf, Éditions Michel Quintin, 2016.

Tree Selection and Scouting

- 1 During site reconnaissance (walking between plots), pay attention to: 1) individuals of rare tree species (see attached Species List per Site and [step 11 of the Canopy Trees Survey Protocol - Forests of Southern Québec](#)), and 2) trees that meet the Leaf Spectra selection criteria.



Leaf Spectra Selection Criteria:


- Leaves exposed to direct sunlight for at least 6 hrs a day.
- Tree height that allows for leaf collection (target leaves located at ____ m at most).
- Within 30 mins, ideally 15 mins, from parking spots for the Leaf Spectra van.
- If possible, sample individuals of the same species across the park (i.e., in both sectors and across the altitudinal gradient).
- Goal: 10 individual trees per species, for the common species; and 5 individual trees per species, for rare species (see attached Species List).

Details to know to assist the Leaf Spectra Crew during leaf collection:

- The Leaf Spectra van, once settled, won't move for the rest of the day.
- Once harvested from the tree, the leaves must remain attached to the branch during transportation to the Leaf Spectra van.
- If leaf collection occurs before aerial imagery, do not collect leaves inside the plots.

Record Creation and Tree Marking


From the *Fulcrum* main menu, go to the Plants app to create and save individuals.





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Cellphone


CAT - [🔗](#)


Fulcrum

CABO CABO



Exports Imports

Active
Sort by Last Activity







Plots

Small areas of well-defined shape/size, within which environmental conditions are relatively homogenous. Example: forest inventory plots.

Last activity 19 minutes ago

139 records






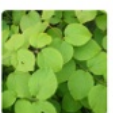
Bulk Leaf Samples

Bulk samples of fresh leaves for spectral and trait measurements.

Last activity about 21 hours ago

940 records







Plants

Individual plants that are georeferenced, identified, measured, and/or sampled.

Last activity about 21 hours ago

1,160 records











Vegetation Surveys: Herbs and Shrubs

Surveys of low-lying herbaceous and/or woody vegetation.


106 records


19 minutes ago


Sabine St-Jean submitted 1 record in Plots.

0 created 1 updated 0 deleted


28 minutes ago


Sabine St-Jean submitted 1 record in Plots.

1 created 0 updated 0 deleted


21 hours ago


Paul Hacker submitted 9 records in Bulk Leaf Samples.

0 created 9 updated 0 deleted


21 hours ago


Paul Hacker submitted 9 records in Plants.

0 created 9 updated 0 deleted


21 hours ago


Paul Hacker submitted 1 record in Bulk Leaf Samples.

0 created 1 updated 0 deleted


21 hours ago

Paul Hacker submitted 9 records in Plants.

0 created 9 updated 0 deleted

 protocols.io

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04/08/2020

Citation: Sabine St-Jean, Anna Crofts (04/08/2020). Tree Mapping for Leaf Collection (Megantic Only). <https://dx.doi.org/10.17504/protocols.io.baaciaaw>

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Fulcrum CABO ? ⚙️

Plants

Individual plants that are georeferenced, identified, measured, and/or sampled.
 Last activity about 21 hours ago

Activity

Paul Hacker submitted 9 records 20 hours ago	0 created 9 updated 0 deleted
Paul Hacker submitted 9 records 20 hours ago	0 created 9 updated 0 deleted
Paul Hacker submitted 1 record 5 days ago	1 created 0 updated 0 deleted
Paul Hacker submitted 3 records 5 days ago	3 created 0 updated 0 deleted
Paul Hacker submitted 1 record 5 days ago	1 created 0 updated 0 deleted

Records View/Edit Data

Importer Import Data

Exporter Export Data

3 Create a new record.

Fulcrum Plants

Search your data... 1002 records

Download Data

- 4 Under Plants → Metadata → Project, select the appropriate project name (see Site Specific Info).

Plants *(editing)*

44678725, 147, Larix laricina (Du Roi) K. Koch

Metadata

Created (device)22/07/2019 à 14:46:22 4 months ago by Anna Crofts

Updated (device)01/11/2019 à 22:37:56 3 weeks ago by Anna Crofts

Created (web)22/07/2019 à 18:05:25 4 months ago by Anna Crofts

Updated (web)01/11/2019 à 22:43:58 3 weeks ago by Anna Crofts

Duration
 1 minute, 23 seconds (Total Time)
 14 seconds (Most Recent Update)
 1 minute, 2 seconds (First Creation)

Source
 Fulcrum Android 2.33.5 / Android 8.0.0 / BullittGroupLimited S41

Location
 45.474250, -71.200653 [Change](#)

Created Location
 45.474202, -71.200667 (3m accuracy, 5.4m from the record)

Updated Location
 45.386962, -71.912398 (3m accuracy, 56399.2m from the record)

Record Status
 Pending Verification

Project
 2019-Crofts-PhD-UdeS

- 5 Under Plants → Site and Plot, select the appropriate Site and leave the Plot field blank (see Site Specific Information).

Plants *(editing)*

44678725, 147, Larix laricina (Du Roi) K. Koch

Site and Plot

Site

MtMeg-1

×

?

Plot


Select


?



Site Plot information



Site ID
 MtMeg-1


- 6 Permanently tag the tree using aluminium tree tags numbered 1-200 –place tag on the far side of tree, so it cannot be seen from the trail. Under Plants → Plant, answer 'Yes' to Plant Tagged?, record the tag number next to Tag ID, and answer 'aluminium tag' to Tag Type. Add any other relevant info next to Plant Remarks.


 Hammer and nails
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 Numbered Aluminium Tree Tags
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 **Plants** *(editing)* 


44678725, 147, Larix laricina (Du Roi) K. Koch  


 **Plant**

Plant ID44678725 

Plant Tagged?


Tag ID*147 

Tag Type*aluminium tag 

Tag RemarksLL4 (on flagging) 


Plant Photos


Select File



Close-Up Photos

Select File



Plant RemarksFor leaf collection 

- 7 Under Plants → Plant First Occurrence, indicate the names of the team members (one or more) who first observed the plant as well as the date of the first observation of the plant.

✕

Plants *(editing)*

✓

44678725, 147, Larix laricina (Du Roi) K. Koch

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Plant First Occurrence

^

First Observed By

*

Alizée Girard

Anna Crofts

Antoine Mathieu

Alexandra Massey

Charlotte Taillefer

Clément Robert-Bigras

Deep Inamdar

Etienne Laliberté

Florence Blanchard

Guillaume Tougas

Isabelle Gareau

Kathryn Elmer

Madeleine Trickey-Massé

Margaret Kalacksa

Maria Juliana Pardo Losada

Mark Vellend

Myriam Cloutier

Oliver Lucanus

Pablo Arroyo

Paul Hacker

Rime Néron

Rosalie Beauchamp-Rioux

Sabine St-Jean

Sabrina Demers-Thibeault

Xavier Guilbeault-Mayers

Other

ⓘ

Date First Observed

*

22 / 07 / 2019

✕ ⓘ

First Occurrence Remarks

ⓘ

- 8 Under Plants → Location, precisely georeference the tree location by clicking Update location with GPS on your field cellphone connected to the Trimble GPS –coordinates will automatically be imported to the Latitude, Longitude, Horizontal Accuracy and Altitude fields.

Plants (editing)

44678725, 147, Larix laricina (Du Roi) K. Koch

Location

Latitude (degrees) 45.47425

Longitude (degrees) -71.2006533

Horizontal Accuracy (m) 3

Altitude (m) 488.1

Vertical Accuracy (m)

Current GPS Information

Your GPS is not accessible. No Location Available

Update Location with GPS [Update Location with GPS](#)

- 9 Under Plants → Taxon, select the name of the plant species from the VASCAN Taxon list.

Plants (editing)



44678725, 147, Larix laricina (Du Roi) K. Koch



Taxon



Taxon Checklist * VASCAN

VASCAN Taxon * Larix laricina (Du Roi) K. Koch

- 10 Under Plants → Taxonomic Identification, indicate the team members (one or more) the tree was Identified By, enter the Date Identified, and indicate the Identification Protocol.

 **Plants** *(editing)* 

44678725, 147, Larix laricina (Du Roi) K. Koch  

 **Taxonomic Identification** 

Identified By *

Alizée Girard

Anna Crofts

Antoine Mathieu

Alexandra Massey

Charlotte Taillefer

Clément Robert-Bigras

Deep Inamdar

Etienne Laliberté

Florence Blanchard

Guillaume Tougas

Isabelle Gareau

Kathryn Elmer

Madeleine Trickey-Massé

Margaret Kalacksa

Maria Juliana Pardo Losada

Mark Vellend

Myriam Cloutier

Oliver Lucanus

Pablo Arroyo

Paul Hacker

Rime Néron


Rosalie Beauchamp-Rioux

Sabine St-Jean



Sabrina Demers-Thibeault

Xavier Guilbeault-Mayers

Other



Date Identified *

22 / 07 / 2019  


Identification Protocol *

botanical knowledge only


field guide, flora or other published source

comparison with herbarium specimen


Other




Identification Qualifier




Identification Remarks




Identification Audio Remarks

Select File 



11 Save your record.




Plants *(editing)*




44678725, 147, Larix laricina (Du Roi) K. Koch







Taxon



Taxon Checklist

*



VASCAN



VASCAN Taxon

*

Larix laricina (Du Roi) K. Koch





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