

Smithers - 2021 - Dailylog

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July 21, 2021

1 Pre-fieldwork notes

Looked into measuring canopy density using a densiometer. In emailing with Suzanne Simard and Jean Roach, I was advised that they are not very accurate and that it would be better to use either fisheye photography or to just visually estimate it. The Angert lab does have a densiometer that we can borrow.

2 July 12, 2021

First day in the field. Resampled plot JCHM03 with Lizzie and Jonathan, and resampled most of JCHM01 and all of JCHM04, with issues and changes made noted below.

- Tags of the germinate plots were all moved to the upper left-hand corner when facing the transect from A-F and a second flagged tag added in the bottom right corner
- For percent cover:
 - We did not record categories that were 0%
 - Each category could not exceed 100%
 - For plots with fallen logs over the plot, only include the growing area, ie under the log
- Had issues with the soil moisture meter in the moss, it appears to be less accurate but we did not want to disturb the plots
- Switched the setting of the soil moisture meter from ML2 to ML3
- MAD = missing and assumed dead

- Heights of trees were defined as the maximum point to the shoot apical meristem, not to the tip of the longest branch, some heights are quite different from last year.

2.1 JCHM03

- on right side of the trail when walking up
- Tree 1: NW - most northern, closets to the trail
- Tree 2: SW - ALNVIR with only one stem, few leaves
- Tree 3: SE - ABILAS
- Tree 4: NE - no tag, ABILAS but dead
- Transect runs from 2 to 4
- Subplot E: moved flag to under the log
- Found ABILAS 33 tag on the ground, retagged the tree 1 m away
- ABILAS 06-09 found on ground, reattached to the nearest ABILAS

2.2 JCHM01

- on left side of trail
- Tree 1: S - closest to trail
- Tree 2: NE - attached to ABILAS
- Tree 3: SE - attached to ABILAS
- Tree 4: SW - attached to ABILAS, also close to the trail
- transect runs from 2 to 4
- Could not find germinate plot B – found on July 13

2.3 JCHM04

- on the right side of the trail
- Found this plot when trying to find JCHM02
- Very unclear which tree was which, the shape was of a skewed rhombus but below are my best guess
- Tree 1: - very close to the trail but closer than it should be to make a square
- Tree 2: N - very close to the trail and much farther back then the germinate plots suggest
- Tree 3: NE/E - attached to a menfer
- Tree 4: S - attached to ABILAS
- GPS'd subplot A for simplicity
- Diagonal goes S-SW
- Plot B: Had to take soil moisture around the branch of the nurse log because it was too hard
- Plot D: Log suspended over the plot was included in the percent cover – decided to not do this moving forward

3 July 13, 2021

Went for a hike with Lizzie and Jonathan to find germinates on the twin falls trail in the morning. In the afternoon, we sampled plots 5 & 6 and added the additional tags to plots 3, 1, 4.

3.1 JCHM05

- on left side of trail
- Tree 1: NE - closest to trail, large hemlock tagged so can't be seen from trail!
- Tree 2: SE
- Tree 3: Couldn't find
- Tree 4: NW
- ASSUMING tree numbers, transect runs from 2 to 4 in the NW direction
- Found an additional seedling in plot F with current quadrature placement

3.2 JCHM06

- on right side of trail
- Tree 1: NW - closest to trail
- Tree 2 or 3: SE (only three flags found)
- Tree 4: N/NW
- transect runs from 2 to 4 potentially
- It was difficult to determine the shape of the plot – an additional GPS point was taken for the start of the transect

4 July 14, 2021

Sampled plots 14, 10, 02. Left the car at 8:40, arrived at plot 14 at 10 am. Sampled 14, 10 and 2 while walking down. Had lab meeting in the afternoon.

4.1 JCHM02

- on left side of trail
- Tree 1 or 3: NW/W
- Tree 2: N/NW
- Tree 3: Not found
- Tree 4: SE
- Reflagged one tree with light blue tape, the others are pink
- Plot D: said bottom right, but toothpick was found outside and no orientation with bottom right made sense. We moved the plot to the top left.
- Plot F: Moved plots tag about 10 cm down to include the toothpick.

4.2 JCHM10

- on right side of trail
- Tree 1: S/SW
- Tree 2: E/SE
- Tree 3: N/NE
- Tree 4: W/NW
- Transect runs from 2-4
- Subplot C: Had a nurse log suspended over it with a toothpick in it
- Subplot D: Has a dead leaning tree over the plot - be careful when walking around the plot.

4.3 JCHM14

- on right side of trail
- Tree 1: SW
- Tree 2: SE
- Tree 3: NE
- Tree 4: NW
- Assume the transect runs from 2-4 and that 4 is the one closest to the trail

5 July 15, 2021

Set up one of the three new plots and met with Jim Pojar about species identification. Subplots were set up to be 4m from tree 2 and every 4m from the middle of the plot from then on. We only established the four corners of the plot and the six subplots. We did not tag and measure the DBH of the adult trees.

Jim confirmed that our identifications were correct. One year germinates of ABILAS has longer needles than the TSUHET and when you look at them above, ABILAS are offset while the needles of TSUHET line up to be symmetrical. He recommended looking in more detail at the descriptions in the Franklin plant germinate guide he sent Lizzie.

Individuals that were greater than 50cm were not included in our measurements of seedlings.

5.1 JCHM15

- on right side of trail, established with light blue flagging tape
- Tree 1: NW
- Tree 2: NE
- Tree 3: SE
- Tree 4: SW
- Transect runs from 2-4, NE to SW, downslope
- Plot A was established on the right
- Soil was very shallow so it was difficult to measure soil moisture

6 July 16, 2021

Raining! No soil moisture measurements could be taken (supposed to rain for the next week!). We Sampled one plot and established two new ones. Had to stop working because we ran out of flagging tape. Today we encountered a offshoot branch from an adult tree in a plot and we did not include it because it was clearly not from a seedling We also encountered lichen for the first time and included this in the vegetation category of our percent cover measurements. The heather at the higher elevation does look similar to a woody seedling, but the "needles" are darker, glossy, and the general shape is different.

6.1 JCHM07

- on right side of trail
- Tree 2: NW of tree 1 (just off trail)
- Tree 3: Not found
- Tree 4: S
- Transect runs from 4 to 2 SE/S to NW/N, but is very off from 2 at the beginning
- This plot was very shrubby which made it difficult to locate the previous plots, we laid out a transect, but still could not find them

- Plot A: large fallen tree brought another very large tree down beside the plot
- Plot D: couldn't find, but no germinates last year so established a new one
- Plot F: couldn't find, but no germinates so we made a new one and flagged the shrub with light blue tape to be easier to find

6.2 JCHM17

- on left side of trail
- Tree 1: NE/E – light blue flagging
- Tree 2: N/NW – orange flagging
- Tree 3: SW/W – light blue flagging
- Tree 4: S/SW – light blue flagging
- Transect runs from 2-4
- Started plot A on the left side of the transect
- Plot C had a buried conifer branch that we did not measure since it was clearly an offshoot of the adult tree

6.3 JCHM16

- on left side of trail
- Tree 1: S, near the trail
- Tree 2: N of 1
- Tree 3: NW
- Tree 4: W, also near the trail
- Transect runs from NW to SW, downslope from tree 2 to 4 and heading back to the trail
- Plot A was started on the right of the transect
- Plot F also had small individuals that we feel might be from the nearby adult, but it was less obvious than before. We did measure them, since it is better to have the data and not use it.

7 July 17, 2021

It rained buckets! We were soaking wet and the write in the rain paper became too saturated to use, so we entered all the data on one sheet instead of flipping between the wet sheets (to reduce the risk of ripping them). We finished sampling the remaining 5 plots. Two of the plots were on very steep slopes and difficult to traverse without causing significant damage, the soil was loose and the moss easily disturbed.

We also revisited the two plots at the base of Hudson that were located along the Seymour Lake trail. We found both plots, but it was difficult to find actual tags. For JCMH01 we only found 8 tags, but for JCMH02 we found 23 tags. We definitely did not find all the tags in either plots, so it could be worth revisiting and trying to find a few more.

7.1 JCHM08

- on right side of trail
- Tree 1: Right off trail
- Tree 2: S/SE, right off trail too
- Tree 3: Couldn't find
- Tree 4: N of trail
- Transect runs from NW/N to SE
- Had difficulty finding the plot A because of the plot orientation

7.2 JCHM13

- on right side of trail
- Tree 1: W of trail, very close
- Tree 2: NE, start of transect
- Tree 3: E/SE, short ABILAS
- Tree 4: Couldn't find
- Transect runs E to W, ending at large tree near the trail

7.3 JCHM12

- on right side of trail, uphill
- Tree 1: NW
- Tree 2: NE, visible to the right of tree 1
- Tree 3: Did not find
- Tree 4: Did not find
- Transect runs from E to W from the 2nd tree with no bark
- Transect starts flat but then goes up sharply

7.4 JCHM11

- on right side of trail at the bend
- Tree 1: S
- Tree 2: SE
- Tree 3: N, a very large hemlock uphill
- Tree 4: NW
- Transect runs SE to NW
- The transect starts at 2, but appears pretty close to 3
- F is up on the steep hill just above the boulder and you can see the trail from it

7.5 JCHM09

- on left side of trail
- Tree 1: E, can see it from the trail, up a slight slope
- Tree 2: E/NE, to the right of tree 1 if entering the plot
- Tree 3: Did not find
- Tree 4: Did not find

- Transect runs from SE to NW, starting at 2, up a very steep hill
- Could not find all the corners, but did stumble upon the subplots and was able to figure it out from there