

# **fuelinex dailylog**

*Christophe Rouleau-Desrochers*

**2023**

## August

*Saturday, August 22nd, 2023*

This is a test to see if it works

*Friday, August 23th, 2020*

Another day

*Tuesday, August 24th, 2020*

## September

*Tuesday, September 1st, 2023*

Write some more the next month!

**2024**

# January

*Monday, January 1st, 2024*

This is a test to see if it works

## February

***Thursday, February 1, 2024***

Christophe

***Friday, February 2, 2024***

Christophe

***Monday, February 5, 2024***

Christophe

***Tuesday, February 6, 2024***

Christophe

***Wednesday, February 7, 2024***

Christophe+Britany+Justin Started measuring the trees.

***Thursday, February 8, 2024***

Christophe

***Friday, February 9, 2024***

Christophe

***Sunday, February 11, 2024***

Christophe Started measuring the trees.

***Monday, February 12, 2024***

Christophe Had a talk with Lizzie regarding dendrometer modification. This will allow us to charge them all at one time. Dajeong will work in the next few weeks to move the board in a position where the wire will be able to go through the hole.

***Tuesday, February 13, 2024***

Christophe I flew back to Montreal

***Wednesday, February 14, 2024***

Christophe

*Thursday, February 15, 2024*

Christophe

*Friday, February 16, 2024*

Christophe

*Monday, February 19, 2024*

Christophe

*Tuesday, February 20, 2024*

Christophe

*Wednesday, February 21, 2024*

Christophe

*Thursday, February 22, 2024*

Christophe

*Friday, February 23, 2024*

Christophe

*Monday, February 26, 2024*

Christophe

*Tuesday, February 27, 2024*

Christophe

*Wednesday, February 28, 2024*

Christophe

*Thursday, February 29, 2024*

Christophe



## March

*Monday, March 1st, 2024*

*Friday, March 1, 2024*

Christophe

*Monday, March 4, 2024*

Christophe

*Tuesday, March 5, 2024*

Christophe

*Wednesday, March 6, 2024*

**Mao** All CoolS replicates moved in the climate chamber after discussion with Lizzie and Mao regarding the potential warm and early spring, we wanted to make sure to have a meaningful difference between treatments.

We are having a early warm spring this year, and to help cold spring treatments to stay cold, we decided to put them inside the growth chambers

Results: All the cold spring treatments were put inside the growth chambers, we used one walk-in chamber, two medium chambers and one small chamber. We stacked the pots into two layers to make sure every individual can get light

Comment: We might need to rotate the pots inside the growth chamber to reduce chamber effect

*Thursday, March 7, 2024*

**Mao** Hobo loggers were set up To record temperature and moisture changes in different growth chambers and green house

Results: One in each type of growth chamber, one at ceiling level in the green house, one at plant level in the green house, one outside the green house

*Friday, March 8, 2024*

*Monday, March 11, 2024*

*Tuesday, March 12, 2024*

Mao

*Wednesday, March 13, 2024*

Mao

*Thursday, March 14, 2024*

*Friday, March 15, 2024*

Mao

*Monday, March 18, 2024*

Mao

*Tuesday, March 19, 2024*

Mao

*Wednesday, March 20, 2024*

Mao

*Thursday, March 21, 2024*

Mao

*Sunday, March 24, 2024*

Mao+Justin+Julie

**Task:**Install dendrometers

**Results:**We installed dendrometers to the warm spring treatments (ones in the green house for the moment) in block 2, and made sure they were all working (with the green light on)

**Comments:** Charging: “It takes about 31 hours to get from 3.6 to 4.2V, they should last about 3 weeks once they’re fully charged (Dajeong, 2024).” We will charge them every two weeks for 1 day.

*Monday, March 25, 2024*

Mao

**Task:** Charge dendrometers

**Results :** Charged dendrometers

*Tuesday, March 26, 2024*

Mao

**Task:** Charge dendrometers

**Results :** Charged dendrometers

### ***Wednesday, March 27, 2024***

**Mao**

**Task:** Charge dendrometers

**Results :** Charged dendrometers

### ***Thursday, March 28, 2024***

**Mao + Britany**

**Task:** Rotate pots

**Reasons:** Reduce chamber effect

**Results:** We rotated pots from bottom to top and randomly put the pots in. We also watered the plants

### ***Friday, March 29, 2024***

**Mao**

### ***Saturday, March 30, 2024***

**Mao + Sylvia**

**Task:** Arrange plants in the green house

**Results:** We arranged all plants in the green house based on the layout design. We also watered the dry pots.

## April

### *Wednesday, May 1st, 2024*

**Christophe** Last few miles of my trip with Charlotte. For our last morning, we went to Billy Frank NWR. 41 species. Heard a Sora. We headed to Vancouver and set my things up in the afternoon.

### *Thursday, May 2, 2024*

**Christophe+Deirdre + Ken + Selena**

**Task:**Orientation Move Cool/Cool treatments back to Totem for following species: - Acne - Bepa - Prvi

**Reasons:** These species don't look too happy in the chambers and most of the replicates are fully leafed out

**Results:** Deirdre got me orientated on the project and trained me on the phenological monitoring. I met with Ken and Selena so we can move the first batch of species Cool/Cool treatments back to Totem: Acne Bepa Prvi Alru \*\*\* we decided to move also Alru as they are probably dead. Plants in chambers watered

**Comments:** I need to request Totem truck a few days before I need it – Dan was using it that day. Therefore, we used the Subaru to move the trees. POT Effect : The roots for Bepa and Alru seem to be limited by the pots. Need to repot them ASAP.

### *Friday, May 3, 2024*

**Christophe+ Ken**

**Task:**Water B3 – not currently irrigated. Set up irrigation lines in B3 Print shoot elongation rulers Map how many drippers per line Make these decisions: 1. Whether or not to abandon dendrometers 2. Abandon Alru and Segi 3. Which potting mix to use 4. Pot size to use

**Reasons:** Don't want plants to dry Since we will install more lines and the irrigation system is at max capacity, we need to make sure to not overload it to avoid not having enough pressure. On decisions: 1. Many problems (too much time required to trouble-shoot them) 2. Not doing great either at Totem or in the chambers 3. Should I add clay (raise water retention) to the mix. Should I use the leftovers from last year? 4. 4-gal: extremely time consuming to build, repot and heavy to move around. 2-gal: should be enough for current growing season.

**Results:**Installed irrigation in B3. On one line, there is a fitting missing (will need to ask Dan to figure it out). In the mean time, I watered them manually. Ken counted drippers on each line and noted them in my note pad. Decisions: \*\*\* had a quick chat with Fredi in the afternoon to ask for his opinion. 1. Agreed to abandon dendrometers for now. We will reinstall them later in the summer. 2. Agreed to abandon Alru and Segi 3. Agreed to reuse potting mix from last year 4. 2-gal.

**Comments:**Need to fix the water hose: leaking from 2 places. Reasons to abandon Alru and Segi: 1. Loss of many replicates. 2. Even if they would suddenly come alive,

there wouldn't be a meaningful difference between the plants in the chambers and the ones outside. Since we reuse potting mix from last year, it's probably low on nutrient content. We need to solve this – should create a Git issue on this.

## ***Saturday, May 4, 2024***

**Christophe**

**Task:** Repot Acne and Bepa

**Reasons:** 2 most advanced species and the most limited by pot size

**Results:** Repotted Acne and Bepa

**Comments:** Time to repot Acne: 2 hours for +- 30 trees. Time to repot Bepa: 3.5 hours for +- 60 trees, which includes removing dendrometers.

## ***Monday, May 6, 2024***

**Christophe + Ken + Deirdre**

**Task:** Find a solution for paper rulers. Go to Staples (Amazon package never arrived)

**Reasons:** Talked with Deirdre and Ken about how we should avoid what happen last year where the rain ruined the rulers. Taping the end of the ruler should avoid them falling. Also helps the tape sticking to the ruler.

**Results:** Decided to use packaging tape to protect the end of rulers. Went to Staples. Going to return everything I bought.

**Comments:** Notes on repotting: I fill a layer at bottom and compact it very tight (about 1-2 inches depending on how much soil there is in the old pot. I delicately remove the tree from its current pot and place it in its new home. I had pot mix to fill the gaps. I compact the sides with my fingers and add mix until the pot is full.

## ***Tuesday, May 7, 2024***

**Christophe**

**Task:** Tape the end of the rulers. Paint Acne to mark from which point the shoot will be measured. Install rulers on Acne

**Reasons:** Installing rulers on trees is really time consuming. I thought I will try only 30 replicates (Acne B1) for now. I will keep going once all the species have had at least one shoot elongation measurement.

**Results:** 99 rulers have their end taped. Acne B1 have their rulers. Acne B1-B2-B3 were all measured. Set up a calendar

**Comments:** It takes 0,73 minutes to tape the end of 1 ruler. It takes 2.5 minutes to install the ruler on 1 tree. \*\*\* I am not too good at this right now so I will probably get faster soon.

## ***Wednesday, May 8, 2024***

**Christophe+ Ken**

**Task:** Paint on Bepa and Prvi Shoot elongation measurements on Bepa and Prvi

**Results:** Repotted Prvi Painted Bepa+Prvi Measured Prvi+Bepa

**Comments:** I need to buy more medical tape. 2 trees completely dead for prvi. Need to figure out what to do with resprouting and when there is more than 2 trunks.

***Thursday, May 9, 2024***

Christophe

- Answered a few emails.
- Move back Segi that I removed previously to the greenhouse (warm spring treatments).
- Phenological monitoring for all species
- Paint Pist/Poba
- Measure shoot elongation Pist/Poba
- Water plants in CC

**Comments** Once I realized Segi were turning back from brown to green, I decided to bring them back to the experiment. Issue 12 on Git describes this.

**On methods for shoot elongation:** I always measure the center shoot of Pist. If there is no “central” shoot, I put a red dot on the measured shoot.

***Friday, May 10, 2024***

Christophe

Painted Segi, Quma and Acma.

- Took pictures of all Segi replicates as I want to keep track of their color change.
- Ken removed some dendrometers.
- Shoot elongation measurements for Segi, Quma and Acma (both in field and CC)
- Plants were rotated and watered in the chambers
- Worked 2 hours on irrigation and greenhouse arrangement.
- Started pruning Alru and weeding plants.

**Comments** I was not feeling well this morning, so I came in at 11 and finished at 8:30. I realized pruning Alru, weeding the plants outside the greenhouse will take many hours. Dan and I will install automatic watering for trees outside the greenhouse.

## ***Monday, May 13, 2024***

### **Christophe**

- Moved Poba/Pist back to Totem
- Repotted Pist (all of them)
- Brought home and aped the end of roughly 100 rulers in the evening

**Comments** : Pist show root limitation. Will post pictures on git. Poba didn't need to be repotted as they were already in 2-gal pots from the cuttings planted in March

## ***Tuesday, May 14, 2024***

### **Christophe**

Personal appointment to fix my car. So did mostly computer work. Emails, git issues, update data, etc. Came in for 3 hours in the afternoon to move around some plants and start weeding some from outside of the greenhouse.

## ***Wednesday, May 15, 2024***

### **Christophe+Ken+Justin**

- I bought tape.
- Taped the end of rulers.
- Shoot elongation measurements of:-Acne -Bepa -Poba -Prvi

**Comments** : Before May 15, Hobo loggers were very much exposed to the sun. Therefore, they are heating which I assume influences the temperature sensor greatly.

**On phenological monitoring of Pist:** Justin and I talked about it and we figure that for this species, from 1-2-3 are the shoot elongation and 4 is leaf emergence. This species elongates its shoots before the needles emerge. Justin will start an issue on this with upcoming pictures.

## ***Thursday, May 16, 2024***

### **Christophe+Justin** I came in at 9:30 and Justin at 10

- We did shoot elongation measurements for : -Quma -Segi
- We took pictures of Segi, Quma and Pist for phenostages. Justin started an issue to figure out Segi phenostages.
- We watered and rotated Acma, Segi and Quma (in chambers).
- 
- I installed white paper with a half pot to protect Hobo loggers from getting sun heat.
- I installed a bird feeder.

**Comments** : left early for an appointment at ICBC.

### ***Friday, May 17, 2024***

**Christophe+Selena** I arrived at Totem at 11am. I had to go back to ICBC to get my Driver's license done. Selena arrived at Totem at 11am.

- We installed the paper rulers on Poba and Quma, both in the greenhouse and in the chambers.
- I had to buy more medical tape.
- I fixed a couple of leaks on the irrigation system .
- I saved the vegetable plants for Dan that he forgot in the truck.
- I weeded almost all the plants outside of the greenhouse. I finished at 8:30.

### ***Friday, May 20, 2024***

**Christophe**

- 
- Started a git issue on nutrient addition and answered a few emails.
- I removed 2 species from the chambers: -Quma -Acma
- I took the hobo loggers from those chambers as I want to install them at Totem. CC4 and CC1 are the ones removed.
- I placed all the Segi in the Walk-in chambers.
- Since the Subaru was very dirty from all the plants moved around, I cleaned it with a very bad vaccum that I found in the basement.
- First visitor at my bird feeder! Black-capped chickadee. I am very excited.
- I did the phenomonitoring for all trees.
- Put back drippers in Quma

### ***Tuesday, May 21, 2024***

**Christophe**

- Took some time to learn Latex.
- I attended a talk on AI in Academia with Deirdre. Then we talked about a few questions I had regarding how to organize my data, the summer plans of the lab and other stuff.



- Then I chatted with Mao about our respective projects and how Mount Rainier is going to be like.
- Then I answered a few get issues and emails.
- 
- I changed the photoperiod in CCWalkin and set the remaining chambers to a constant 10 PAR and 15 degrees so they consume less energy.

### ***Wednesday, May 22, 2024***

**Christophe + Ken** I started marking the rulers and Ken arrived at 10. We finished marking the rulers at 12 and Ken went to get extra paper rulers because we forgot some trees on Friday. I talked with Dan, we will shrink the irrigation system, remove the compost and cut the grass around the greenhouse. I talked with Deirdre regarding the car battery A crow stole my granola bar :( We finished taking the measurements around 3. I left as I had another appointment at ICBC to register my car. I went to Costco during the night to buy a new car battery for the lab.

**Comments** :

### ***Thursday, May 23, 2024***

**Christophe** Started the day with some readings on growing season extensions. Added two quick notes in my obsidian slip box. I have been procrastinating on this and should be more consistent. I answered emails to Lizzie, Deirdre and Mao regarding egret retreat, lab meeting, rbs retreat, etc. Submitted my expenses to Lizzie Lizzie agreed to the switch of car responsibility from Deirdre to me.

### ***Friday, May 24, 2024***

**Christophe** Went back to ICBC to register my car in BC. Came back at Totem to clean the greenhouse so it's presentable for my presentation on Sunday Last step of fixing the irrigation has been done with Dan in the morning. We I changed the Subaru's battery with the one I bought at Costco. I charged it so it's at maximum capacity with the car charger at Totem. Met with Deirdre and Mao at 1pm to discuss: -Egret retreat, -Mao's fieldwork, -General plan for the summer I also mentioned to them that I thought of removing the Segi from the chambers because they've been there for a long time and because of the power outage that will happen the day after (Saturday). We agreed to remove them and place them back at Totem. I moved the Segi back to Totem, and placed the irrigation back into the pots.

### ***Saturday, May 25, 2024***

**Christophe** Came in at 5pm to prepare my presentation for tomorrow. I installed dendrometers on trees and prepared a bunch of graphs. I finished cleaning the greenhouse

## ***Sunday , May 26, 2024***

**Christophe + Justin** Came in at 8am to set up my monitor and my presentation. Justin came in at 10:30 to take pictures of my presentation while I was presenting the graphs to him! Grad students from Isabelle Laforest's lab came to my talk Another student from Ontario also came.

In the night, I went to the reception. It was very nice. Mao and Deirdre were also there, and I saw Steven K who just arrived in Vancouver.

## ***Monday, May 27, 2024***

**Christophe** CSEE conference Deirdre and I met with Patrick from biochambers in the morning. We decided to meet with him on Friday morning and since Deirdre won't be able to attend, Mao will join. Attended many talks In the night, I went to the grad/post doc mix at Koerners.

## ***Tuesday, May 28, 2024***

**Christophe** I started the day with a visit of the greenhouse for the students of Steven K lab. Then I came back to the nest with them. Attended many talks once again

## ***Wednesday, May 29, 2024***

**Christophe + Britany** Came in at 9:30 and Britany at 11. Started marking the rulers for shoot elongation measurements. We finished the measurements with the metal ruler at 2pm. I went back to the nest to attend the last talks. Britany finished logging in the paper rulers marks. She didn't finish it. I fill finish logging in the data tomorrow. Had a chat with Dan regarding the mildew that's attacking the Acne. We decided to spray them with systemic fungicide. It was done the same day by Dan

## ***Thursday, May 30, 2024***

**Christophe** First work day after the conference. Lots of things to do:

- Bring 20 plants in the lab to start testing the dendrometers
- Attend Deirdre and Britany's graduation and take pictures of them – done
- Meet with Rob Guy – done
- Update nutrient issue to inform Lizzie/Freddi – done
- Check Segi W/W 14 and 15. They were switched, so I wanted to make sure that phenomonitoring was done properly – done
- Phenomonitoring
- Add archive folder to fuelinex repo – done
- Email Lizzie for next week meeting – done

- Student profile on Forestry site – done
- Review notes from last year's egret retreat – done
- Start issue on disease management – done
- Answer Lizzie on aseiversity – done
- Finish setting up Hobo loggers

### ***Friday, May 31, 2024***

**Christophe, Mao, Britany** Started the day with the interview with Patrick from Biochambers. It went great! He answered many concerns I had with the chambers and found possible reasons why the trees were not doing great in the spring. After that, I started repotting the Segi around noon. Britany arrived shortly later. She left at 1:30 and I finished alone around 4pm. I worked on my computer for the rest of the day,

### ***Monday, June 3, 2024***

**Christophe** Started the day by answering many emails. I answered the git issue on nutrient depletion which took my quite some time. I also finished installing the dendrometer. I did this just so I can check if they are all working. Met with Mao at 3:30pm to discuss worklearn. We updated the offer and will send to Lizzie to confirm the info with her.

# May

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**Reasons:** These species don't look too happy in the chambers and most of the replicates are fully leafed out

**Results:** Deirdre got me orientated on the project and trained me on the phenological monitoring. I met with Ken and Selena so we can move the first batch of species Cool/Cool treatments back to Totem: Acne Bepa Prvi Alru \*\*\* we decided to move also Alru as they are probably dead. Plants in chambers watered

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**Comments** :

### ***Thursday, May 23, 2024***

**Christophe** Started the day with some readings on growing season extensions. Added two quick notes in my obsidian slip box. I have been procrastinating on this and should be more consistent. I answered emails to Lizzie, Deirdre and Mao regarding egret retreat, lab meeting, rbs retreat, etc. Submitted my expenses to Lizzie Lizzie agreed to the switch of car responsibility from Deirdre to me.

### ***Friday, May 24, 2024***

**Christophe** Went back to ICBC to register my car in BC. Came back at Totem to clean the greenhouse so it's presentable for my presentation on Sunday Last step of fixing the irrigation has been done with Dan in the morning. We I changed the Subaru's battery with the one I bought at Costco. I charged it so it's at maximum capacity with the car charger at Totem. Met with Deirdre and Mao at 1pm to discuss: -Egret retreat, -Mao's fieldwork, -General plan for the summer I also mentioned to them that I thought of removing the Segi from the chambers because they've been there for a long time and because of the power outage that will happen the day after (Saturday). We agreed to remove them and place them back at Totem. I moved the Segi back to Totem, and placed the irrigation back into the pots.

### ***Saturday, May 25, 2024***

**Christophe** Came in at 5pm to prepare my presentation for tomorrow. I installed dendrometers on trees and prepared a bunch of graphs. I finished cleaning the greenhouse

## ***Sunday , May 26, 2024***

**Christophe + Justin** Came in at 8am to set up my monitor and my presentation. Justin came in at 10:30 to take pictures of my presentation while I was presenting the graphs to him! Grad students from Isabelle Laforest's lab came to my talk Another student from Ontario also came.

In the night, I went to the reception. It was very nice. Mao and Deirdre were also there, and I saw Steven K who just arrived in Vancouver.

## ***Monday, May 27, 2024***

**Christophe** CSEE conference Deirdre and I met with Patrick from biochambers in the morning. We decided to meet with him on Friday morning and since Deirdre won't be able to attend, Mao will join. Attended many talks In the night, I went to the grad/post doc mix at Koerners.

## ***Tuesday, May 28, 2024***

**Christophe** I started the day with a visit of the greenhouse for the students of Steven K lab. Then I came back to the nest with them. Attended many talks once again

## ***Wednesday, May 29, 2024***

**Christophe + Britany** Came in at 9:30 and Britany at 11. Started marking the rulers for shoot elongation measurements. We finished the measurements with the metal ruler at 2pm. I went back to the nest to attend the last talks. Britany finished logging in the paper rulers marks. She didn't finish it. I fill finish logging in the data tomorrow. Had a chat with Dan regarding the mildew that's attacking the Acne. We decided to spray them with systemic fungicide. It was done the same day by Dan

## ***Thursday, May 30, 2024***

**Christophe** First work day after the conference. Lots of things to do:

- Bring 20 plants in the lab to start testing the dendrometers
- Attend Deirdre and Britany's graduation and take pictures of them – done
- Meet with Rob Guy – done
- Update nutrient issue to inform Lizzie/Freddi – done
- Check Segi W/W 14 and 15. They were switched, so I wanted to make sure that phenomonitoring was done properly – done
- Phenomonitoring
- Add archive folder to fuelinex repo – done
- Email Lizzie for next week meeting – done

- Student profile on Forestry site – done
- Review notes from last year's egret retreat – done
- Start issue on disease management – done
- Answer Lizzie on aseiversity – done
- Finish setting up Hobo loggers

### ***Friday, May 31, 2024***

**Christophe, Mao, Britany** Started the day with the interview with Patrick from Biochambers. It went great! He answered many concerns I had with the chambers and found possible reasons why the trees were not doing great in the spring. After that, I started repotting the Segi around noon. Britany arrived shortly later. She left at 1:30 and I finished alone around 4pm. I worked on my computer for the rest of the day,

### ***Monday, June 3, 2024***

**Christophe** Started the day by answering many emails. I answered the git issue on nutrient depletion which took my quite some time. I also finished installing the dendrometer. I did this just so I can check if they are all working. Met with Mao at 3:30pm to discuss worklearn. We updated the offer and will send to Lizzie to confirm the info with her.

## June

### *Monday, June 3, 2024*

**Christophe** Started the day by answering many emails. I answered the git issue on nutrient depletion which took my quite some time. I also finished installing the dendrometer. I did this just so I can check if they are all working. Met with Mao at 3:30pm to discuss worklearn. We updated the offer and will send to Lizzie to confirm the info with her. I checked in with Dan regarding mildew on the Acne. They don't look great right now. He told me it can take up to a week before we see any improvement. Also, I thought we had the same problem with Prvi, but its just residu of the fongicide on their leaves.

### *Tuesday, June 4, 2024*

**Everyone from the lab** Reifel Bird Sanctuary retreat. When we arrived, it was raining a bit, but it slowed down after 15 minutes. It was very quiet. Justin will do a slideshow of the pictures that were taken. I started working for real at 3pm. I added 2 notes to my slipbox! It was on the paper Fredi shared in git issue 14 about how to define stress in plants. I still need to cross-reference those. After this, I replied to a couple of emails that Lizzie and Christine sent me about my expense report. It took me about an hour to get this done.

### *Wednesday, June 5, 2024*

**Christophe** I went to get the Subaru serviced. I also filled up the gas tank. While I was waiting, I finished what Christine told me to do to get my expense report done. I also registered to my classes in the fall. I talked to Deirdre on my way back to talk about my talk with Christine which was very difficult. We had an idea of getting a list of things over the course of the summer of things that Deirdre should teach us. TO DO TODAY

- Scan the receipts from yesterday (dominos and rbs) – done
- Scan the receipts from today (Chevron and Kon auto) – done
- Go back downstairs to grab the ziplock in the Xterra with the maintenance. Add maintenance to Git? – done
- Start a list of things Deirdre should pass on to us. – done

### *Thursday, June 6, 2024*

**Christophe** Lizzie and I met over Zoom in the morning to discuss many things. Details are in my notes. Main conclusion is that we will drop using the dendrometers in the fall and I should reach out to the people at OpensLab to see if they can help me troubleshoot the dendrometers. We also talked about which classes I should and shouldn't take in the fall. We talked about the nutrients and I told her that I was concerned trees were showing nutrient stress symptoms. So she gave me green light to give them liquid nutrients. I searched lots of

papers to figure out what would be a good nutrient concentration to add to the trees because we want to mimic natural conditions. I asked Dan's opinion and he brought fertilizer from the greenhouse. In his opinion, this will work perfectly and will provide fast release nutrients to the plants. Mao and I met at 3pm, so I can show her how to take the shoot elongation measurements and finish the pheno monitoring. We had to leave before we finished because we had a lab meeting. We presented the trips we had been doing in the following weeks. I came back to Totem after to finish phenomonitoring and take the measurements on the paper rulers.

### ***Friday, June 7, 2024***

**Christophe** Started at 10am. I kept on looking at how much fertilizer I should add to the trees. It's very ambiguous, so I decided to add very small amounts at first and readjust later on. For now, I diluted the solution Dan gave me by half with tap water. I added 125mL of liquid fertilizer to all plants today. In the afternoon, I downloaded all the data from the hobo loggers that were already in the greenhouse. Then, I added 22 temp/light hobo sensors all over the greenhouse, because I strongly suspect that we will have a big light effect because of the forest behind the greenhouse. The plants at the front of the greenhouse most likely receive much more light than the ones at the back of the greenhouse. I also took some time to move my bird feeders because I caught a squirrel eating in them.

- Figure out fertilization and do it – done
- Reserve camping
- deliver Mao's package – done
- 

### ***Friday, June 7, 2024***

**Christophe** Came in at noon, mainly to take care of the plants at Totem. I finished setting up the light meters. I decided to remove logging in the temperature data, because anyway it's extremely biased because the sun directly hits them and make them really hot. I need to finish the greenhouse design with them in.

### ***Monday, June 10, 2024***

**Christophe**

- check new hobo sensors – done
- update the greenhouse arrangement with all the new loggers
- make sure irrigation is back on – done
- start writing up the methodology on hobo loggers and fertilizer – done
- shoot elongation protocole – done
- DEFENETILY do the apical shoot death monitoring – done

- Write to Mao to tell her what she will need to do – done
- phenomonitoring – done
- load shoot elongation measurements in excel file – done
- write to Lizzie and colleagues to tell them that I won't be checking my email – done
- Move Alru back to the soil pit – done
- Weed all the plans – done
- update the pheno monitoring and shoot elongation of all the segi that I removed from the experiment.
- Email Lizzie about her class– done
- return book to Amazon
- Add notes to the labgit on chambers
- email Melina regarding the greenhouse – done
- Inventory of trees outside at Totem – done
- Clean up the mess at Totem – done
- Answer Lizzie's email on Google Drive issue. – done
- start loggers at the top of Greenhouse – done
- add csv file description for aserdiversity – done
- text dan to spray again – done

I worked a lot on the methodology today. I wrote up on the hobo loggers, fertilization, shoot elongation monitoring. I also added a file of apical shoot monitoring because many trees have a dead apical shoot. Therefore, I don't think we will be able to estimate their initial biomass.

I followed up on the git issue regarding fertilization

Asevdiversity: reuploaded the methodology text and added column description to the .tex file as requested by Lizzie.

Big day! I did pretty much all the things I listed today! I finished with weeding all the plants in and out the greenhouse. I replied to Lizzie and Mao to finish. Break is tomorrow!

***Tuesday, June 11, 2024***

Christophe Vacation

***Wednesday, June 12, 2024***

Christophe Vacation

***Thursday, June 13, 2024***

Christophe Vacation

***Friday, June 14, 2024***

Christophe Vacation

***Monday, June 17, 2024***

Christophe Vacation

***Tuesday, June 18, 2024***

Christophe Vacation

***Wednesday, June 19, 2024***

**Christophe** Hectic mess with the UBC residences. They kicked me out of my place on my last day of vacation and I needed to fix this issue in the morning. Therefore I arrived at the office around 11.

Read all the emails I received during my holidays and. Following is the to do list I need to do today:

- Start git issue on the tree inventory
- update the greenhouse arrangement with all the new loggers – done
- update the pheno monitoring and shoot elongation of all the segi that I removed from the experiment – done
- Add notes to the labgit on chambers
- elongation monitoring – done
- check hobo loggers with the lights –done
- check hobo temperature loggers and replace the one that isn't working – done
- contact opens lab to trouble shoot the dendrometers

I noticed Mao didn't do phenomonitoring last Thursday (doy165). It's not a big deal since most plants are already at phenostage 3-4.

Britany came to meet me at 2pm to do the shoot elongation monitoring. We finished around 4, but we didn't fill in the trees with paper rulers.

## ***Thursday, June 20, 2024***

**Christophe** I started a R script to check the hobo light loggers. It took me quite some time. After, I met Britany again to finish shoot elongation logging in the excel. I also did phenomonitoring of Segi as it's the only species that has not fully leafed out.

I also finished the greenhouse arrangement with the light loggers that are now included in it.

In the afternoon, we had a nice lab meeting at the Botanical Garden.

## ***Friday, June 21, 2024***

**Christophe** I worked from home this morning. I did some emails. Then I went to Totem to maintain the plants and clean around a little.

I modified how the comments were entered in the shoot elongation file on doy164 (moved them back to the note column)

## ***Monday, June 24, 2024***

**Christophe** Started the day with a meeting with Roman. I took some notes on the chambers that I should add to the lab git. After, I finally started a document on the notes on the climate chambers maintenance and schedule creation.

- Start git issue on the tree inventory – done
- Change the schedule in the CC so they are at 20C and the lights were turned down.
- Email the maintenance guy for the biochambers for 2 things: clean the filters and tell him not to repair the copper pipes. – done
- Add notes to the labgit on chambers – done
- contact opens lab to trouble shoot the dendrometers

In the afternoon, I went back to Totem so I can install 6 more temperature loggers. Lizzie came to meet me at 2:30. We discussed the project, expectations for the summer and the egret retreat. To do list for tomorrow is the things I will need to get done soon.

## ***Tuesday, June 25, 2024***

**Christophe** I started the day with the creation of a new spreadsheet: miscellaneous which includes the different monitoring. Either if the apical shoot is dead, if there was chlorosis, mildew, etc.

After this, I started rearranging my repo because it started to be quite messy. I also created some notes on how to use the hobo loggers. Then I wrote a blog post for the trip at RBS.

- Check how much light difference there is between the loggers. Ideally, we would remove this factor from the models as it would complicate things a lot. I will talk with Fredi about this.
- Email the person Lizzie recommended on the Segi physiology



- make a note of chlorosis monitoring and the plants that got light damage in the spring (this might not be possible anymore) – done
- Change the schedule in the CC so they are at 20C and the lights were turned down.

In the afternoon, I got lots of things done: finalized the hobo loggers description, I reorganized my repo and I did some research on the bud set. Then I read 2 papers and made two permanent notes out of them. Lizzie stopped by and asked me to figure out which software, languages and others she could explain during the lab meeting.

### ***Wednesday, June 26, 2024***

**Christophe+Mao** Emailed Alana Chin. Lizzie recommended reaching out to her cause she might have information on growing sequoia. After I kept working on some notes that I started yesterday.

At 1 pm, I went to pick up Fredi at the airport. His flight was delayed so I returned to the office at 3 pm. Mao and I went to monitor the shoot elongation together. We didn't finish all the measurements as it was raining quite much. We'll get it done tomorrow morning.

I came back to the office and worked on the script for the light hobo loggers. I want to find out if there is a big difference between the light intensity between the different blocs.

I read two more papers. Took fleeting notes, but I have to make them permanent

### ***Thursday, June 27, 2024***

**Christophe+Mao** Mao and I finished the shoot elongation measurements this morning. I started around 9:45. I replied to Alana regarding the phenology of Segi and to Sally Otto for the biomathematics class in the fall.

I started taking the bayesian class Lizzie recommended. Then I worked again on my script for the light hobo loggers.

We had the training on wilderness at 1 pm.

### ***Friday, June 28, 2024***

**Christophe** Started the day with a meeting with Alana Chin to discuss how should I monitor better the Se **To do list for today**

- Install Stan on R
- Make sure to run the script Deirdre told me to run. 8 school tutorial
- Finish first class of the Stats class
- Finish organizing the repo: Objects, greenhouse design, ordering, equipments, in the note folder. Once methods are typed nicely, it goes in docs folder.
- contact opens lab to trouble shoot the dendrometers

in the afternoon, I met with Fredi for 2 hours to discuss many things I have yet to answer. All the notes are in my obsidian folder. I finished the day with some quick questions I asked Lizzie. One of them was in regards to using the tidyverse. She recommends not using it if

there is a way with base R because it's less future proof and running pieces of code by itself isn't good.

Then, we went to get icecream and beers.

# July

## *Monday, July 1, 2024*

**Christophe** This morning, I tried adding a table of contents to this dailylog. I don't know why it's so complicated, but I couldn't figure out a way to do it. I let that go.

Then I tried installing Stan on R, as Deirdre suggested. It didn't work either. I will ask her when she's back from vacation.

I worked for most of the afternoon on my script for the shoot elongation measurements. It doesn't look too bad! I needed a break, so I went to install hobo light loggers in the climate chambers so I can see how much light they are giving to the trees when they are in there. I also brought back the bepás that were in the lab to totem field.

at totem, I monitored bud set for prvi and took pictures of the acne. For prvi, I think they are far more advanced than I was expecting. Some of them seem to already be at complete dormancy. For acne, it's confusing. Mildew have impacted them a lot. They show very tiny leaves, but they have been there for a while now, so as Fredi told me, it might just be the upcoming scales that will cover the bud.

I removed the drippers from the Segi. I will put them back on Friday. After discussing with Fredi, we thought giving them a water break would be good.

I came back to the office to finish what I started.

I modified slightly Fredi's notes on budset so they keep going after 4 (5,6,7,0)

## *Tuesday, July 2, 2024*

**Christophe** Lizzie, Mao and I talked about getting a power bank for the lab. Lizzie ordered it. It should arrive on Friday. Fredi and I discussed about literature reviews, how he does them and where I should start

Britany and I discussed the fertilization plan and we figured that there are no good amount we could add to the trees. We rather run in the problem of the studies used seedlings and not saplings. A lot of them were using % of N, P or K of leaf tissue and not actually of much mg were added to the plants. I also discussed this with Fredi. He suggested looking at the atmospheric deposition, but I argued that this is for a whole ecosystem and figuring out how much nutrients a sapling is actually getting would be hard and perhaps impossible. So I just decided to be consistent and add nutrients again this week. I'll do this just after we weed all the plants.

## *Wednesday, July 3, 2024*

**Christophe + Britany** We started the shoot elongation measurements. As I won't be there next week, I showed Britany how to take the measurements. We didn't have time to log in the paper ruler measurements.

Dan delivered the organic spray bottles to keep killing the powdery mildew (some of the new shoots are getting it again). He also delivered the fertilizer. It's the same one as last time. I will fertilize the trees perhaps on Thursday

I asked him to reduce the watering of all trees to once a day, in the morning for 15 minutes, instead of 3x a day.

In the afternoon, I started a new cv file on latex  
Deirdre and I talked about literature reviews

I finished my power point presentation for the lab meeting tomorrow on research tools. Deirdre and I tried to trouble shoot the installation of Stan on my computer. It still doesn't work. I'll try again maybe tomorrow – although I won't have time with the budset and other things

### ***Thursday, July 4, 2024***

**Christophe+Britany+Ken+Selena+Justin** Came in at 8 to check the egret coordinates. I checked the data, and then cleaned the entries I could. Then I went to Totem to meet Britany and figure out budset. She worked on this during the week, and we needed to figure out some other species. Acne is most likely ongoing budset, so we took photos of those. We did the same for the oaks and the pines. These two were tricky, because some of the oaks are doing a second flush, but some don't seem like they will. For the pines, I had no photos to base budset on, so we discussed what stages they could be. I'll talk to Fredi about that tomorrow.

At 1pm, Ken and Selena arrived to weed the plants. Justin arrived at 2:15pm and we finished at around 3. Britany and I finished taking photos of some good budset examples after I went to pick

### ***Friday, July 5, 2024***

**Christophe** Britany and I finished login in the data for shoot elongation and budset. Then I finished the document for budset, I still need to figure out pist.

I met with Lizzie in the afternoon to talk about literature reviews, who will take care of my experiment while I am gone. She asked me to ask Britany to meet with rob with ken and Justin.

### ***Saturday, July 6, 2024***

**Christophe** I came in to finish egret coordinates cleaning. I managed to fix almost all issues. Some remain.

I did the map for egret also

**I went to totem to fertilize the trees for the second fertilization of the season.** I used the same method as the first time. I diluted the fertilizer by half and added 125mL. Sprayed Acne for a second time.

### ***Monday, July 8, 2024***

**Christophe** Egret Retreat! We started the day with some break-out teams. I was with Fredi to try to figure out question 2. We came back 1 hour later and debriefed. In the afternoon, Lizzie showed me how I could proceed with the experiment design with a for loop.

### ***Tuesday, July 9, 2024***

**Christophe** Egret Retreat! I arrived late this morning. We worked for 2 hours before leaving for the ferry. On the ferry Lizzie helped me with some tasks I had.

### ***Wednesday, July 10, 2024***

**Christophe** Egret Retreat! We went to the pub for beers, onion rings and fried pickles. We went to the eastern point to see if we could spot whales but we couldn't find any...

### ***Thursday, July 11, 2024***

**Christophe** Egret Retreat! We finished around 4pm after a long discussion about authorship. I found this talk very insightful and got to address my concerns of me being a co-author. We worked for a little bit after and drove dan to the plane in the evening.

### ***Friday, July 12, 2024***

**Christophe** Egret Retreat! Last day of the retreat! Not the most productive on a coding basis, but we had a lot of fun! We did the 4hour hike Lizzie recommended. It was beautiful. The weather was great. We came back to the cabin, packed, cleaned the place and left. Lizzie bought us an early dinner at the pub right next to the ferry. The second ferry after we left Saturna was left so we had a chance to have Deirdre give us a small talk about phylogeny. In the ferry I worked on my code to clean coordinates. I thought I solved the issue, but I didn't. I came back home around 10pm.

### ***Monday, July 15, 2024***

**Christophe** I had a quick chat with Ken about the monitoring of shoot elongation and phenology in the following weeks. We walked to the lab after to start packing the gear for Smithers. We left at 12pm after saying bye to Lizzie.

The drive went pretty well. We saw a wild fire on our way up. We stayed at the camping Juniper Beach. Worst ever!! It was so warm (about 32o)

### ***Tuesday, July 16, 2024***

**Christophe** Smithers

### ***Wednesday, July 17, 2024***

**Christophe** Smithers

### ***Thursday, July 18, 2024***

**Christophe** Smithers

### ***Friday, July 19, 2024***

**Christophe** Smithers

### ***Saturday, July 20, 2024***

**Christophe** Smithers Went birding at Round Lake in the evening, since we came back early and it was the first day we were not exhausted.

### ***Sunday, July 21, 2024***

**Christophe** Smithers We hiked up, but on our way, we did soil moisture since it's been 48 hours for the last rain. We finished dendrometer measurements and seedling monitoring for plot 11 and 14. They had so much. We lost the toothpicks and anyway we wouldn't have enough. We replaced them with popsicle sticks instead. We saw an American Three Toed Woodpecker at plot 11!!! Since we finished early, we hiked up to the summit. Mao and Deirdre stayed just after plot 17. It was so beautiful! We went for beers at the local pub. Really smokey.

### ***Monday, July 22, 2024***

**Christophe** We did a small hike to Hudson Bay Mountain because I saw on eBird that a rock ptarmigan has been spotted. We finally saw one, but I still can't identify it...

### ***Tuesday, July 23, 2024***

**Christophe**

### ***Wednesday, July 24, 2024***

**Christophe** Came at Totem to take a look at the trees. I noticed the moldy of some leaves of Quma. I sprayed them and did a third spray of Acne.

### ***Thursday, July 25, 2024***

**Christophe**

### ***Friday, July 26, 2024***

**Christophe** Meeting with Rob Guy in the afternoon. All of my notes on this meeting are in my note file in Obsidian of Rob Guy

### ***Monday, July 29, 2024***

**Christophe** We left Vancouver at 7am. It's rainy and cold. I picked up the Subaru at Forestry and went to pick up Brittany, Mao and Justin at Dunbar Loop. The road went well! No traffic at the border. We did two stops, one at Trader Joe and one at Costco. Then, we headed to MORA to meet with Andy and his crew. He told us about the project for about an hour and we then had dinner with everyone. It was great!

### ***Tuesday, July 30, 2024***

**Christophe** First day of fieldwork with Andy! He showed us the job. He took a lot of time to explain things well to us, it was very interesting.

### ***Wednesday, July 31, 2024***

**Christophe** Second half of AV06. Everything went well beside the wasps.

## August

### ***Thursday, 1 August 2024***

Last day of fieldwork with Andy. We finished AV06 and headed to another site that is a 40 minute walk away from the parking lot. We did 1/4 of it and left. On our way back, we saw a wasp nest that has been eaten recently by a bear. It's funny because Andy was just telling us about this.

### ***Friday, 2 August 2024***

We woke up, packed and said farewells to Andy and then headed to Paradise for our hike. We saw a bear cub near the parking lot! We were short on time, so we did it fast and had to cut halfway. We left for Seattle at 11:30. Before Justin took the train, we had bubble tea. He left around 6pm. Mao, Britany and I had amazing Korean food in Tacoma and stayed in a Mariott there.

### ***Saturday, 3 August 2024***

We woke up at the hotel and went to get some breakfast. Mao hated her drink which tasted like red bull. It was guava and passion fruit. I loved it! Then we went to get some car seats and gear for the field.

We picked up Avery in the afternoon and went to get ice cream. I had butter pecan and salted caramel.

We headed to Longmire.

### ***Sunday, 4 August 2024***

First day of Mao's fieldwork!. We woke up at Longmire campground and left for Nesquali House. We dropped our stuff there and headed to AV06.

Mao showed us how to install dendrometers and how to core trees. One problem we encountered was flattening the bark. I proposed getting a file. We then left early so we could go in town to buy a bunch of stuff. I cleaned the house when we got back because it was disgusting.

### ***Monday, 5 August 2024***

Second day of fieldwork. I work with Brittany. We managed to finish half of AV06

### ***Tuesday, 6 August 2024***

NA

### ***Wednesday, 7 August 2024***

NA

### ***Thursday, 8 August 2024***

I forgot my boots this morning and got stung twice by stepping on a wasp nest that was eaten by a bear. We finished the plot and left around 6. We hiked back up towards the falls.

### ***Friday, 9 August 2024***

Started the day with a meeting that Mao requested. Change of plan: I will be working alone for coring trees and Britany will be installing all the dendrometers. We drove to Longmire campground wifi spot. After hiking up to the trail and started the plot. We managed to finish 12 out of 16 plots.

We drove back to Nisqually House, got changed and drove to the nearest town to eat at a Mexican restaurant, called Puerto Vallarta. We also did the groceries. Mao and I had a talk in the night.

### ***Saturday, 10 August 2024***

We finished the stand near Longmire campground. Britany and I still had a bunch of dendrometers left to install when we finished coring the trees, so we helped Mao and Avery. We finished around 1pm, hiked down, had lunch and left for the Devil's Club plot. It beautiful but it sucks. Trees are enormous and it's mossy everywhere. However, the Devil's club sucks the life out of me (slight exaggeration).

The cores are hard to extract because the trees are so big, plus the Devil's club are usually in the way. I fell from a log, but didn't hurt my self that much.

We finished half of the plot and went home. We took half of the day off. Avery, Britany and Mao went to the beach. I didn't feel good so I stayed at the house and slept for most of the afternoon.

### ***Sunday, 11 August 2024***

Slow morning today. We left to go back at the Devil's club stand. It was terrible again. The THPL are probably the hardest trees I have cored so far. They are so big, it's hard to extract the cores.

Mao got stung 8x today. We finished around 2pm. I saw 3 whisky jacks.

### ***Monday, 12 August 2024***

Britany felt under the weather today, so she stayed home. We went to Sunrise Stand and parked at the Reflexion lake parking lot. We hiked for 15 minutes before realizing that we weren't at the right place.

Fortunately, the other plot wasn't far. It was full of yellow cedars which was very nice. Very steep thought.

### ***Tuesday, 13 August 2024***

Rainy and cold today. We realized it wouldn't be safe to work in these conditions. We drove back home.



### ***Wednesday, 14 August 2024***

We left again around 8:30 for AE10 and Paradise. It's cloudy and cold again for the second day in a row. We hiked all the way to paradise when we realized that it was very wet and slippery. We decided it wasn't safe to work so we hiked down and went back home. Avery, Britany and Mao went to core 6 new trees from the first plot we did because they weren't great when we first cored them. I took a nap and worked on my project. Mostly for the fall biochambers schedule and looked at the data Justin and Ken recorded. Lizzie and Jonathan came to meet me at the house. We discussed gps points and how the fieldwork was going. I made fritata for dinner.

### ***Thursday, 15 August 2024***

We left at 8:15. Cloudy and cold again. We went to meet Lizzie and Jonathan at Longmire campground at 8:30 and headed up to AE10. We forgot the box with all the data sheets which slowed us down a bit. We finished the plot around 10:30 and headed to Paradise. We hiked up and started the plot. On our way up, we tried to trouble shoot working in these plots when it's raining.

### ***Friday, 16 August 2024***

Going back to Vancouver! We left at 8:00, first stopped at UW to drop off the tree cores and dendrometers. Then we went to REI to buy hiking poles and bear box. We went to eat at the very cool Korean Restaurant Mao, Britany and I went when we stayed in Tacoma. After, I picked up my back-pack that I found on marketplace. No wait at the border. I dropped the car off around 10pm.

### ***Monday, 19 August 2024***

I went for an apartment visit this morning. I arrived there and the landlord told me he would increase the rent by 500\$. I declined it. I was really upset. Then I went back to UBC to pick up Avery, Britany and Mao. We left around 11am.

A lot of wait at the border (something like 2 hours). We at Chipotle on the road and arrived at UW around 4pm. We picked up the new vest, increment borers and left for MORA.

On our way, we stopped at Costco, Safeway and Home Depot. We arrived at the campsite at 9pm. We set up the tent and went to bed

### ***Tuesday, 20 August 2024***

First day of the second trip! Pretty cloudy and cold

We left for Paradise around 8:30. We hiked up and managed to do more than half of the plot in during the day. The spikes and poles work really well.

We forgot the foot of the tent at Longmire, so we had to drive back there. We arrived at the campground around 6, made dinner and went to bed quite early.

### ***Wednesday, 21 August 2024***

Cold and cloudy again. We left at 8:20, but we had to buy a stove for the backpacking trip we will be doing on Thursday. We bought a Coleman. We went back to the campground because Avery forgot his rainjacket and it started to rain. We drove to Paradise

I found another way yesterday to get to the stand faster. It's 12 minutes longer to drive to the pulloff, but it's like 100 meters away from the stand. So we saved a lot of time. However, Mao didn't like it because we damaged the plants.

Mao got stung twice by wasps.

We finished at 1:30pm, walked back to the car and drove up to Paradise for the hike. Since I had a lot of work to do and because I was tired, I didn't do the hike with them.

I went to gift shop. I bought a patch for Charlotte. It's not very nice. I also found an expensive JET boil. I bought it for the backpacking trip. I went to another gift shop. I found another patch that is nicer, but stupid expensive. I bought it and returned the other one.

The team came back. Mao got her first allergic reaction and she isn't feeling great. I was concerned and we discussed all night what we should do about that. I also contacted Lizzie so she knows what's up. I am happy about the sticker I found.

### ***Thursday, 22 August 2024***

Cloudy and cold this morning. Mao and Avery are going to town for an appointment with a doctor so we can get an epipen prescription. In the meantime, they dropped us off at TA01. It's so nice. Really easy to walk around and locate the trees. We managed to finish coring my trees around 1:30pm. While Britany and I were discussing what we should do next, we heard Avery scream. They came back from town with 2 epipens!

I helped them finishing their trees and we drove back to the campsite at 4:45pm. We went to the gift shop when we went to get wifi. I found a very beautiful limited edition patch for the 125th anniversary of Mount Rainier. I bought it and bought the same, but sticker version to stick it on the lab bear canister.

Mao and I made Chili for dinner. After, it started raining and Avery and I walked so we could go take a bath in the hot springs. No bath going on there. It's a swampy hot spring, so we took a quick dip in the very cold river.

It's raining a lot now as I write these lines. We went to bed at 9:12pm.

### ***Friday, 23 August 2024***

Very wet. We got up and ate breakfast standing because the picnic table is soaked. We left for site AB08 that was a 30-minute drive and 10 minute hike. I found an elk leg that was relatively fresh. We kept on going and found the site. I had the hemlocks that day. The first quarter of the stand sucked. In one plot I had to core 6 trees before finding one that wasn't rotten. It was probably a zone affected by root rot.

I only had time to finish one quarter before lunch. While eating, I prepped my straws better so I could be more efficient in the afternoon.

The second half of the day was better tree-wise. Only for the quality of the trees because it started raining a lot. It was hard to keep the straws dry. At some point during the day, Mao asked if we wanted to keep going. I really wanted to get that site done, because we knew that it would rain tomorrow. So we kept going.

We finished around 5:30. Mao cut her finger after corring their last cedar. Since it was still pooring rain, we decided to go eat out in packwood. We went to the local brewery first. I got some very nice nachos. A full size that I ate for myself. It was delicious. Then Mao really wanted fries, so we went to the saloon. We got fries and Mao got me a beer. We sat a table with a very nice couple from Texas. We got some interesting discussions about health care, school, how weird Texas is and why the lady was not vaccinated but the gentleman was.

### ***Saturday, 24 August 2024***

Very wet again. We left for AO03 quite late because we took some time to pref the old straws because their are more waterproof. The drive wasn't very long, probably around 20 minutes. However, the hike was about 40 minutes. Very beautiful and easy though. The stand was gorgeous; magnificent huge douglas firs and red cedars. We started the site and I got a tree core stuck in my borer on my second tree. I couldn't get it out until the end of the day. In the afternoon, I got stung by a wasp near the spot where we left our backpack. I finished my trees around 3pm and helped Mao and Avery to finish their trees and then Britany. Then I hurt my knew. We packed and hiked back towards the car.

On our way back, I got stung again by a wasp and then 5 minutes later, I got stung in 3 different places even though I never saw the wasp itself. It really hurt!.

We drove back to the campground, had leftover chili for dinner and went to the wifi spot. I replied to a bunch of emails and we went to bed. As I am writting these lines, Mao fell just fell on my mattress while getting in the tent. It also just started leaking, so that kinda sucks.

### ***Sunday, 25 August 2024***

Since we finished all of our stands in the last three days and because our reservation for the backcoutry campground isn't until Monday, we decided to go for a hike. Britany took the day off. I made pancakes for breakfast with the maple sirup I brought.

After asking the rangers advices, we aimed to do the Boroughs in the Sunrise area.

We hiked up for 2-3 hours. The clouds were covering MORA and I kept on searching for a ptarmigan, without seing one. However, a ranger first told us about the Mountain goats that were on the other side of the valley. It was really cool to see them. A first for me. Then we left for the first Burrough where we had lunch.

After, we reached the second Burrough and decided we won't have tehme to make it to the third opne. We found some pikahs and more mountain goats. We looped the train adn when the mountain was partially showing up, we arrived at a well established switch back and saw an American Marten. Another first for me! I was so excited.

We made our way back to the car and went to meet Britany. We made grilled cheese with tomato soup. We then went to our hotel, all took a well-deserved shower and went to sleep.

### ***Monday, 26 August 2024***

We woke up at the hotel this morning. We packed and left for Sunrise. We started hiking down to the campground. My bag was really heavy, therefore, we were really slow.

We got to the campground in the beginning of the afternoon and the weather was fantastic.

We got to see MORA really well! We left a lot of stuff there and went to to find the site. It was kinda hard to navigate in that site since we didn't have a stem map, but after maybe 30 minutes, we figured it out and started working.

### ***Tuesday, 27 August 2024***

Last day of fieldwork today. We tried to wake up at 5am to watch the sunrise on Rainier. However, it was raining and probably around 4C. I slept very bad and I was freezing even in my sleeping bag, so we decided to skip the early hike. I went back to sleep until 7am.

We made coffee on the ground and had oatmeal. It was so cold. Then, we left for the site and started coring. Nothing crazy happened and we we're pretty efficient, even though Mao has never been able to warm herself up.

We finished around 3:30 and went back to the campground to pack out tent that we left out to dry.

When we saw the campground from far, our tents weren't there. When we got closer, I noticed the Marmot tent in the bushes and Avery noticed my MSR in the lake... Pretty frustrating, but also funny. Even if it was very cold, Avery and I took a dip to go fish the tent out the lake. After shaking it a bit, we packed it up and hiked back up to the car.

On our way back, we saw a marmot, I surprised a bear that stumbled in rocks and ran away from me. We also saw a goat and right after that, it started hailing again.

We finally drove off Sunrise and went into town towards the saloon so we can get some well deserved junk food!

### ***Wednesday, 28 August 2024***

We packed up quickly this morning and left straight for UW to drop off the cores we have been collecting in the past days.

After, we headed towards Vancouver. Low traffic and little time at the border.

In the evening, I went to meet everyone at Fredi's goodbye party. It was nice seeing him one last time!

### ***Thursday, 29 August 2024***

This morning, I slept late because I was still very tired. I had to deal with my parking which is really complicated. I went to the office, helped Mao unpacking the car and met with Lizzie in the afternoon. We had the last lab meeting of the summer with some pancakes, mimosas and ice cream!

### ***Friday, 30 August 2024***

I had an appointment at the garage. While my car was getting fixed, I worked on egret, emails, dailylogs, fall treatment and other stuff. After, I went to Totem to look at the plants and went to the office after. We went for beers and pizza at Bevruginos later.

# September

## *Sunday, 1 September 2024*

I went to the campus in the morning to fix the biochambers. It took me a couple of hours. I had to fix the drains, clean the filters. It was a mess.

## *Monday, 2 September 2024*

Had something to do downtown this morning. Then, I got an apartment visit and arrived on campus around 10:30 to meet with Fredi so we could discuss about the senescence monitoring and other stuff.

Then Mao and I met with Mark for an interview at 1pm.

I worked on the chambers again in the afternoon.

I worked on a figure Fredi and I discussed it could be good to have to visualize the warm fall treatment. I updated my futur daily logs and finished the one from August.

I emailed Patrick for the schedule of the fall treatment.

## *Tuesday, 3 September 2024*

I arrived at the office around 9am. Since it's Imagine day, I didn't have the biomathematics class. I emailed a bunch of people and went to check how the bio-chambers repairs were going. It should be done by the end of the day. However, two of the lights won't be installed for my experiment. I met with Lizzie in the afternoon to talk about senescence monitoring, the frequency at which I should monitor this, etc.

I kept on doing some figures for my treatment schedule in the climate chambers.

## *Wednesday, 4 September 2024*

Arrived at the office around 9:00 to interview Anoya. At 10:00 I went to fix the walk in chamber only to realize that there is no drain to evacuate the water. That will require me to remove the plants every two days from the chambers. Then I went to Totem to take pictures of the plants to monitor senescence. It took me 34 minutes to photograph 180 trees. I might not even ever use this data.

I met Teresa at 11:30 to talk about the agroforestry class. We talked for a bit and then walked to the class. I attended the class and I think it will be very cool and interesting!

After this, I went back to Totem to finish taking pictures of the plants and Mao joined me so we could start monitoring senescence. It took about 45 minutes/species and we had 5 species to monitor. We discussed what Fredi told me to do i.e. estimation of green leaf coverage and chlorophyll content. We both guessed the percentage by comparing to what 100 % green leaf coverage would look like. Then we measured the chlorophyll content by selecting 3 leaves randomly and taking one measurement.

We did 3 species and then start moving the plants to the climate chambers. We came back to the greenhouse, measured the 2 remaining species and Mao left as it was 7pm already.

I kept moving the plants, until it was too dark and my fingers were so tired, I could barely hold the pots. I stopped at 9pm.

## ***Thursday, 5 September 2024***

I started the day with Sally's class at 8am. I talked to her after the class so I could register to it. Then I went to Totem to finish moving my plants.

I started by performing the nutrient boost treatment. I added nutrients to all the CSCF\_nitro that remained there. Then I added nutrients to the WSWF\_nitro for pines that I didn't have time to move yesterday night. For I added 250mL of the solution that wasn't diluted (as opposed to what I added to the plants during summer. This means I added 4x of what they had during the summer.

Then I took an inventory of how many replicates were left from my segi. For this, I took some replicates from the nutrient boost treatment and will be further moved to the non-nutrient boost treatments further during the analysis. For now, I think it is better for them to retain their original name so I don't confuse things. The notes I took on this can be found in the following directory: /fuelinex/notes/miscellaneous/segireplication.md

I moved the pines and the Segi to the walk-in climate chamber and added nutrients to all the WSWF\_nitro replicates that were already in there. So far the room arrangement are: CC1 : Acne. CC2: Prvi, CC3: Bepa, CC4: Poba, CC5 : Quma and the walk in : Pist and Segi. I came back to the office, uploaded the photos from the greenhouse, responded to some emails and then headed to my agroforestry class for the first tutorial of the semester.

## ***Friday, 6 September 2024***

Small day today! I went to check in on my plants and watered them. I started reading for biomath and agroforestry. I updated some notes for my experiment and read Patrick's email on the schedule for biochambers. He recommended I add far red light, but I decided that for consistency, I will only ramp the light and temperature better than for the spring treatment. I replied to a bunch of emails and wrote to Mark so we can start working next week.

I received the fan for the greenhouse.

## ***Monday, 9 September 2024***

Came in around 9:30 and started with a list of things I will need to get done this week.

I read chapter 1 for biomath and chapter 1, 2 and 3 for agroforestry. I finished assignment 1 for BIO301.

Just so I can help Mark with git, I redid the sandbox exercise.

I finished reading Piao and al 2016.

I emailed Mark to appoint him with the different tasks needed to be done.

## ***Tuesday, 10 September 2024***

Biomath class this morning. Even if I did all of my readings, I didn't understand anything. I went to the post office after to mail the extra gps I bought.

Then I attended the session for new grad students. 90% was boring and not useful.

I got some pizza, went to eat it at my desk, worked on my schedules and then attended the lab for BIO301. It was terrible. My team doesn't care and is completely lost. I went to Assad's office hours and he helped me a lot for the assignment.

I came back to the office, finished assignment 1

### ***Wednesday, 11 September 2024***

Mao and I started monitoring senescence at 8am. Mao left at 9:45am to attend her class. I kept going until 10:45 and then left for BRC to attend our bi-weekly egret meeting.

We discussed our issues. I updated everyone on the provenance issue and we figured there are two steps in this issue that we aren't sure what to do about. We finished around 11:30. I left for the office, quickly had lunch and left for pharmacy building to attend my agroforestry class.

I filled out my expenses.

I came back to the office, did my biomath readings and Mark came to join me at 2:15. We left for the greenhouse to finish senescence monitoring. I took about 40 minutes and we left for the climate chambers. He stayed until 5 and I finished by myself. We rotated the plants in their chambers, watered them and monitored senescence.

Schedule changed for the one of Sept 11. I left Forestry at 7pm.

### ***Thursday, 12 September 2024***

Biomath class this morning. Then Mao and I came back to the office. I scraped out the papers I will read for my literature review. I finished around 11am and started reading 2 papers that were not really relevant for my project, so I got through them quickly.

I installed Hobo connect on the lab computer.

I did bud set monitoring. I didn't do it last week since I didn't have time with the moving of the plants and everything.

Picked up the lab bike and put it in Lizzie's office

Attended agroforestry and left office at 5pm to go for volleyball.

### ***Friday, 13 September 2024***

Started at 10. Responded to Chet from OpensLab and to Dolph.

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## October

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## November

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## December

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