

Tree pit at Watson :

BW_TP1 [Botanical garden Watson Tree Pit]
offset values

2.25 2 1.5 (in centimeters)
Soil T 11-12°C

BW_TP2 12-13°C!

BW_TP3 (no trees) 15°C

BW_TP4 (no trees) 13-14°C

Lawn at Watson 40.867631050

BW_HL1

BW_HL2

73.87804 40.86763

95 40.8676411

BW_HL1

40.8676~~40.8676~~²⁹⁷
73.8780359

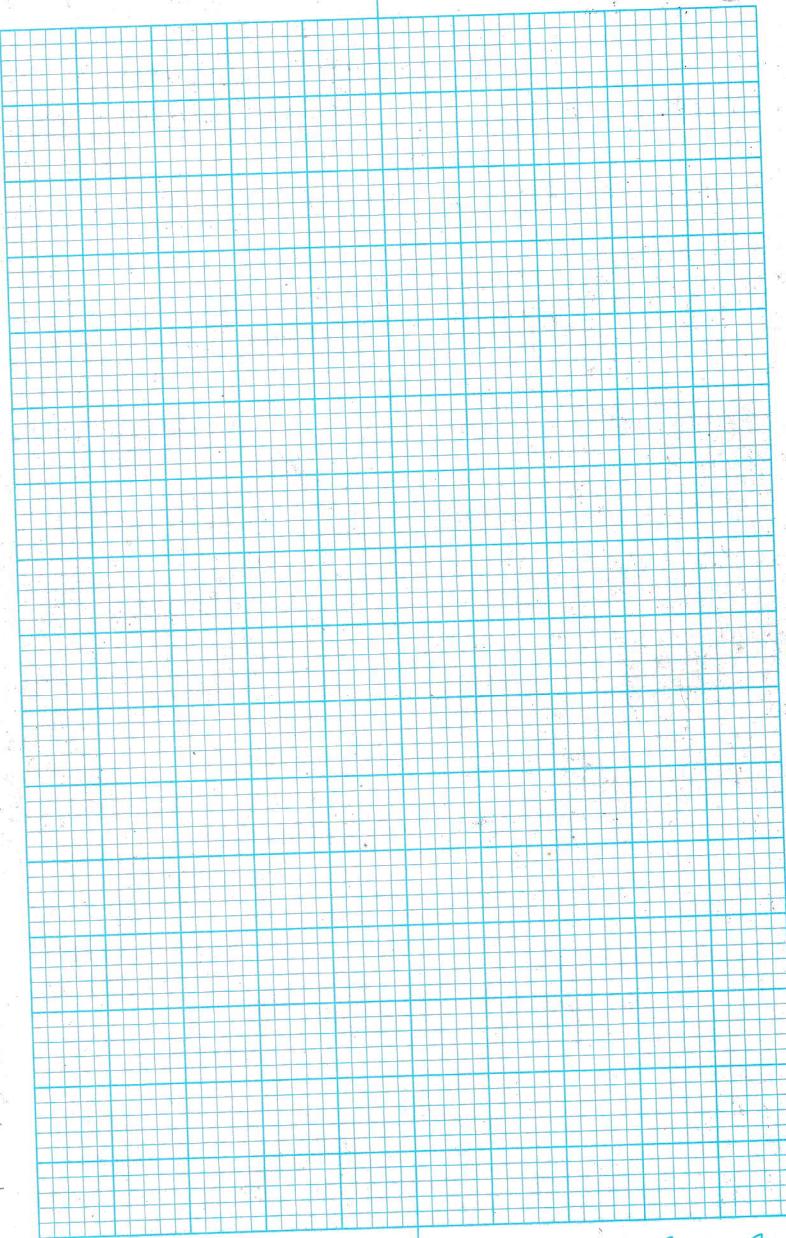
BW_TP1 : test run $13.99 \mu\text{mol CO}_2 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$

BW_HL1 : test run $10.79 \mu\text{mol CO}_2 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$

BW_TP3 : .. $7.87 \mu\text{mol CO}_2 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$

Rite in the Rain

Soil temperature Sensors	Degree	Distance	Depth	Frequency	Bluetooth
BW_TPI	340°	30 cm	5 cm	15 min	BT on
BW_TP3	239°	30 cm	5 cm	15 min	"
BW_HLI	343°	"	"	"	"
BL_SV1	58°	30 cm	5 cm	"	"
BL_ML1	28°	30 cm	5 cm	"	"
BL_ML3	65°	30 cm	"	"	"
BR_HLB	27°	30 cm	"	"	"
BE_VLI	48°	"	"	"	"
BE_SV3	52°	30 cm	"	"	"
BG_UL3	58°	30 cm	"	"	"
BT_FE2	marker	12 inch			
BT_FII	marker	12 inch			
BT_FE3	64°	27 cm	"	"	
BT_FI3	248° (flagged)	13 inch			



Rite in the Rain

Dendrometers

	Tree tag	Initial (in)	Diameter [cm] Tap measure
1. BW_TP_D1	919/2001 I	1.253 in	22.29 cm
2. BW_TP_D2	402/2006 A	3.670 in	27.8 cm
3. 5/12/2022	770/89A	55.03 cm	red oak
4. 5/12/2022	345/89A	50.44 cm	<i>Q. Coccinea</i>
5. 5/12/2022	238/2000A	48.50 cm	red oak
6. 5/12/2022	238/2000C	40.75 cm	red oak
7. 5/12/2022	2041/2007A	33.19 cm	sugar maple
8. 5/12/2022	No tag; 40.8606389, -73.8766123	50.06 cm	sweet gum 1
9. 5/12/2022	tag NO.: 61 40.8619169, -73.8760293	43.05 cm	sweet gum 2
10. 5/12/2022	40.8618956, -73.8760692 (moved to another tree uphill)	41.52 cm	red maple 1

11. 5/12/2022 tag NO. : 56
40.8609696, -73.8718229 44.95cm
red maple-2

12. 5/12/2022 tag NO. : 94
40.8635415, -73.8760447
55.64 cm
red maple-3

13. 5/12/2022
40.8644046, -73.8757200
59.26 cm red oak 1

14. 5/12/2022
40.8650811, -73.8768674 56.18 cm
red oak 2

15. 5/12/2022
40.8650595, -73.8770311
37.87 cm sugar maple 1

16. 5/12/2022 tag NO. : 152
40.8637980, -73.8770062 48.22 cm sweet gum 3

17. 5/12/2022 tag NO. 28
40.8626264, -73.8775346 32.13 cm red oak 3

18. 5/12/2022
40.8624334, -73.8767471 50.42 cm
sugar maple 2

192.168.46.1 Smart Chamber IP

Po

4-25-2022

8200 Smart chamber parameters:

volume = 4244.1 cm³,

testing measurement in the morning -

(i) BW-TP2 : 7.95 $\mu\text{mol CO}_2 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ (deadband = 20s)
8.75 .. (deadband = 40s)

4.5 cm (flexible collar)

(ii) BW-HL1 : 8.24 $\mu\text{mol CO}_2 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$
-1.30 $\mu\text{mol CH}_4 \cdot \text{m}^{-2} \cdot \text{s}^{-1}$

Botanical Library Sites : (Soil moisture 38-40 WW)

BL-SV1 ← oak (50659 F)

(7 meters from the closest tree)

(40.8654972, 73.878986)

BL-SV2 (soil moisture 45-55 UW)

(5m and 7.5 m from the tree) → closest trees

(depth 1.0 cm)

pin oak
o3904C

oak and sweet gum

(40.865667, 73.878945)

Rite in the Rain

(grass only) 16 m from ~~white~~^{red} oak

P4

BL-ML1 : depth 1 cm ; 37-45% UVW
(40.8654710, 73.8796194)

BL-ML2 : Blue ash tree

(grass+clover)

SM: 35-40% UVW

ST: 12.5-13.5°C

(40.8656782, 73.8796089)

19 m from BL-ML1, 14°N

BL-ML3 (by Wamsler Rock) ^{May 23, 2022}
10:14 AM
soil moisture : 65-85% UVW +500 (PAR)
Soil temperature:
(40.8639810, -73.8795749)

BL-ML4 :

SM: 55-60% UVW

BR-ML3 :

(40.8653050, 73.8833816)

BR-ML4 :

(40.8652045, 73.8835981)

Rite in the Rain

BE_UL1:

SM: 40-50% UVW

(40.8568287, 73.8784399)

BE_UL2:

20m from the red oak

(40.8569182, 73.8783162)

BE_SV3:

5m from the closest tree

Soil temperature:

(40.8571314, 73.8785676)

BE_SV4:

7m from the closest tree

Soil temperature:

(40.8572453, 73.8784550)

BG_UL3: (irrigation)

BE_VL1:

SM: 40-50% UVW

(40.8568287, 73.8784399)

BE_VL2:

20m from the red oak

(40.8569182, 73.8783162)

BE_SV3:

5m from the closest tree

Soil temperature:

(40.8571314, 73.8785676)

BE_SV4:

7m from the closest tree

Soil temperature:

(40.8572453, 73.8784550)

BG_VL3: (irrigation)

P6

BG-UL4 (Irrigation)

BT-FE1+2

edge collars are $\approx 15\text{m}$ from
one another + flagged

BT-FEI 1+2

interior collars $\approx 25\text{m}$ from
forest edge in line w/
edge collars + $\approx 15\text{m}$ from
one another

BT

BT-FE1

40.8663955, -73.8760464

BT-FE2

40.8663435, -73.8759639

BT-FI 1

40.8661447, -73.8762106

Rite in the Rain

BT_FI 2

40.8662238, -73.8760346

BT_FI 4 (four!)

40.864749, -73.8774890

Soil moisture : 35%

~~BT_FI 1~~, BT_FI 3

40.8616124, -73.8773107

BT_FE 3

Soil moisture 45-53

40.8613773, -73.8778364

BT_FE 4

40.8617587, -73.8777935

May 23, 2022

soil Temp: 19.5 °C

Soil moisture: 43.7 %VWC

BL-ML3: 57.9 %VWC; 19.3 °C

NEE chamber: 10:14 AM

PAR 1800

gets condensation 30 sec
into measurement

Adjacent ①: gets foggy 40 sec into it
(without a collar)

Adjacent ②:

BL-ML4: missing !!

BR-HL3: 1 cm depth, PAR 1800
21.5 °C; 52.8 %VWC

BR-HL4: 20.5 °C, 46.0 %VWC, 1-5cm depth

BW-HL2: 1-5cm; 39.7 %VWC; 22.48 | PAR

BW-HL1: 1.0cm; 40.3 %VWC; 23.3 °C | 2010

→ foggy 20%

Rite in the Rain.

BG-UL3:

37.4% VWC; 22.1°C; 1850 PAR

(shaded) 650 PAR
BE-UL1: 1-2 cm; 42.5% VWC; 22.9°C

BE-UL2: 1250 PAR
0.5 cm; 44.3% VWC; 24.2°C

BE-SV3: 0 cm; 55.1% VWC; 19.3°C
350 PAR

BT-FE3: 2:53 PM May 23

3.5 cm; PAR
17.0°C; 36.8% VWC

BT-FE4: 4 cm; 2:56 PM

20.3% VWC; 16.7°C

BT-FI4: 3 cm; 2:59 PM

30% VWC; 16.9°C

BT-FI4: 3 cm; 3:03 PM

40.8% VWC; 16.7°C

BT-FE1: 5 cm; 3:34 PM

52.2% VWC; 17.8°C

Rite in the Rain.

P10

BTLFE2: 4 cm; 49.4% VWC; 17°C

3:40 PM

BTLFI1: 5 cm; 18.0% VWC; 16.2°C

3:45 PM

BTLFI2: 3:49 PM; ~~at~~ 3.5 cm

37.8%; 16.5°C

Rite in the Rain.

0531 NY
BG

P11

9:22 AM

BW-TP1: 23.1°C; 38% VWC; 2.0 cm

BW-TP2: 23.4°C; 38% VWC; 1.0cm

BW-TP3: 23.6°C; 51.1% VWC; 0+1cm

9:52 AM

BR-HL3: 22.3°C; 47.1% VWC; 0+5cm

10:25 AM

BW-HL2: 22.2°C; 26.0% VWC; 0cm+5cm

10:42 AM

BW-HL1: 23.0°C; 32.3% VWC; 0cm+5cm

11:00 AM

BT-FE1: 19.4°C; 61.4% VWC; 4cm

11:13 AM

BT-FE2: 18.6°C; 43.7% VWC; 4cm

continued

Rite in the Rain

05/31/22

11:18 AM

BT-FI1: 18.9°C, 20.9% VWC; 4cm

11:22 AM

BT-FI2: 19.8°C; 26.0% VWC; 4cm

19.8°C

BE-SV3: 20.9°C; 45.4% VWC; 0+5cm
20.9°C

BE-UL2: 22.7°C; 40.8% VWC; 0+5cm

12:27 PM

BE-UL1: 22.8°C; 46.0% VWC; 1cm

1:14 PM

BR-HL4: 25.3°C; 48.8% VWC; 1cm

1:12 PM

BR-HL3: 48.8% VWC; 25.6°C; 1cm
(NEE)

June 7 2022

9:10 AM BW-TP4 : 1cm, 49.4%, 21.7°C

BW-TP3 . 0.5cm, 21.8°C, 50.0%

BW-TP1 , 2 cm	, 34.6%	, 19.6°C
BW-TP2 , 1 cm	, 31.7 %	, 21.2°C
9:45 AM BR-HL3 , 0.5cm,	42.5%	, 21.1°C
9:51 AM BR-HL4 , 0.5 cm,	48.8%	, 20.8°C
10:24 AM BE-SV3 , 0cm ,	56.2%	, 19.1°C
10:28 AM BL-HL2 , 0cm ,	39.7%	, 20.1°C
10:35 AM BE-HL1 , 1 cm ,	35.7%	, 19.2°C
11:03 AM BG-HL3 , 0cm ,	28.9%	, 20.1°C
11:30 AM BT-FE3 , 4cm ,	39.1%	, 17.1°C
11:34 AM BT-FE4 , 4 cm	, 23.2%	, 17.3°C
11:38 AM BT-FI4 , 3 cm ,	33.4%	, 17.4°C
11:42 AM BT-FI3 , 2.5cm ,	35.7%	, 17.1°C
12:07 PM BL-SV2 , 0 cm ,	60.2%	, 18.6°C
12:48 PM BW-HL3 , 0.5cm ,	34.0%	, 23.4°C
13:10 PM BW-HL2* , 1 cm ,	44.3%	, 23.1°C

* change species of
chamber

Rite in the Rain

13:28 pm	BT-FE1	4 cm	61.4%	18.3°C
13:33 pm	BT-FE2	3.5 cm	49.4%	17.3°C
13:38 pm	BT-FI1	3.5 cm	27.7%	16.1°C
13:43 pm	BT-FI2	4 cm	31.1%	17.7°C

June 5th, 2022, NYBG

Sunny!

		cm	[mmol.m ⁻² .s ⁻¹]	%VWC	
Time	Type	Depth	PAR	Temp(°C)	Moisture
BW-TP1	8:58	R	200	22.1	33.4
BW-TP2	9:03		125	23.6	23.2
BW-TP4	9:10		55	—	46.5
BW-TP3	9:16	↓	5.5	—	44.8
BW-FE1	9:37	R	35	—	54.5
BW-FE2	9:43		3.5	—	44.8
BW-FI1	9:48		4	—	26.6
BW-FI2	9:53		4	—	23.2
BW-FE3			—		
BW-FE4			—		
BW-FI			—		
BW-FD		↓	—		
BL-SV2	10:07	R	5	—	54.5
BL-SV2	10:13	NEE	5	100	
BR-HL3	10:35	NEE	1	1500 ^{20%}	23.2
BR-HL4	10:44	NEE	1	1360 ^{20%}	22.0
BR-HL3	10:50	R	06		46.5
BR-HL4	10:55	R	06		

	Time	Type	Depth	PAR	TEMP	Moisture	%
BF-SU3	11:13	R	5.0	NA	21.2	50.5	
BE-UL1	11:21		5.5	NA	21.0	43.7	
BE-UL2	11:17	↓	5.0	NA	21.4	40.3	
BE-SU3	11:49	NEE	5.0	35	T	T	
BE-UL4	11:30		5.5	1700			
BE-UL2	11:49	↓	5.0	1100	↓	↓	
BE-U	11:45						
→ fog started at 30%, but very light							
BG-UL3	12:05	NEE	0.5	1900	22.9	30.0	
BG-UL3	12:10	R	5.5	—	—	—	
*BT-FF3	12:27		3.5	—	18.5	43.1	
BT-FF4	12:31		3.5	—	18.4	23.7	
BT-FF10	12:37		3	—	18.7	27.2	
BT-FF10	12:41		4	—	18.6	34.0	
BW-HL2	13:25		5	—	25.1	35.7	
BW-HL2	13:33	↓	6	—	25.2	47.1	
BW-HL2	13:39	NRF	1	1900			
BW-HL1	13:43	NEE	0.5	2000			

PFB

*Forgot to change height.

Rate in the Rain.

June 17th, 2022 * need to rename file

Labels	Time	Type (cm) PAR	Depth [cm]	Temp [°C]	[%VWC]	Moisture
LH-UL-1	9:42	R 2cm	22.2	36.8	—	—
LH-UL-2	9:46	6.5	22.1	36.3	—	—
LH-UL-3	9:51	1.5	22.6	40.3	45.1	—
LH-UL-4	9:54	7.5	22.1	40.3	—	—
LH-UL-5	9:58	6.5	22.1	46.5	—	—
LH-UL-6	10:01	1.5	22.2	44.3	—	—
LH-SV1	10:05	10	22.2	40.8	—	—
LH-SV2	10:09	1.5	19.7	48.8	—	—
LH-SV2	10:15	1.5	100	—	—	—
LH-SV1	10:18 ²⁰	1	1080	—	—	—
LH-UL1	10:23	2	1500	22.6	—	—
LH-UL2	10:26	1.5	1340	22.8	—	—
LH-UL3	10:30	1.5	1400	23.2	—	—
LH-UL4	10:33	2.5	1600	23.0	—	—
LH-UL5	10:35	1.5	1350	22.8	—	—
LH-UL6	10:38	1.5	1200	22.7	—	—

→ This is cutting Day 4.
"C4"

		Correct to 2cm Chamber Height	PAR	Temp	Relative Time
LC-HL1	NE50	1.5	650	22.7	39.1 / 11:00
LC-HL2		1.0	1650	22.8	38.6 11:02
LC-HL3		1.0	1630	23.4	39.1 10:58
LC-HL4		15cm	1610	24.2	39.7 10:55
LC-HL5		1.5	1700	23.8	37.9 0:52
LC-HL6	Q	2cm	1650	24.1	40.3 10:48
LC-HL1	R	6.5			11:15
LC-HL2		7.0			11:18
LC-HL3		6.0			11:22
LC-HL4		6.5			11:24
LC-HL5		6.5			11:27
LC-HL6		2.0			11:30

P14

Rate in the Rain.

00621 was a cloudy day

Time	Collar	Height	Orientation	PAR	Temp	Moisture
10:31	LC-HLG	7.5	R		22.3	32.9
10:34	LC-HL5	6.5			21.7	23.2
10:36	LC-HL4	6.5			21.7	34.0
10:39	LC-HL3	6.5	R		21.5	27.2
*10:41	LC-HL2	7			21.4	30.6
10:44	LC-HL1	6.5			22.9	25.4
*10:50	LC-HL1	1.5 ^{down}	NEE	550	35%	veigh
10:54	LC-HL2	2		750	100%	
10:57	LC-HL3	1		670	40%	
11:02	LC-HL4	1.5		520	50%	
11:05	LC-HL5	1.5		550	40%	
11:08	LC-HL6	2.0		500	80%	
11:43	LH-UL1	2.0	NEE	1650	30%	21.3% 27.2%
11:47	LH-UL2	1.5		1700	21.3	24.9
11:51	LH-UL3	2		830	22.3	32.9
11:54	LH-UL4	2.5		760	22.1	27.7
11:57	LH-UL5	1.5		860	21.2	38.0
11:59	LH-UL6	1.5		1000	21.4	34.6
12:02	LH-SU1	1		650	21.4	31.7
12:07	LH-SU2	1.5		220	18.3	43.1
12:21	LH-SU1	6	R			
12:16	LH-SU2	1.5		FLUX		
12:26	LH-UL1	2.0		10		
12:31	LH-UL2	6.5		11.18		
12:33	LH-UL3	7.0		12.29		
12:39	LH-UL4	2.5		8.17		

* change weight to 7, was 6

			CO_2 Flux
12:41	LH-UL5	6.5	R 10.96
12:44	LH-UL6	1.5	11.86
12:49	LH-UL4	2.5	7.51 REDD ↓
2:55	LH-UL2	0.5	9.44 REDD

D15

(5+6)
* UL Collars were irrigated w/ ~600ml of water, then were cut (#1+2)

(5+6)
* LH Collars were irrigated w/ ~600ml of water before #1-4 were cut

Rate in the Rain.

06/29/2022 — 7820 w/ crumby collage
(cm) ext

collar	time	height (cm)	chamber	grass?	
LC-HL1	11:56	5.5 *	R2	very dead + dry	—
LC-HL1-2	12:00	5.5 *		green , dry	—
LC-HL2	12:05	2.0		green, dry	—
LC-HL2-2	12:07	2.0			—
LC-HL3	12:09	5.0 *		some green, dry	—
LC-HL4	12:13	5.5 *		some green, dry	—
LC-HL4-2	12:15	5.5 *			—
LC-HL5	12:19	5.5 *		lots of cuttings	—
LC-HL6	12:21	6.0 *	↓	some green, dry	—
LC-HL6-2	12:23	6.0 *	↓		—
		1			—

Bluetooth soil temp + moist. sensors:

FOUND - see google sheet

UH-UL1	12:37	2.0			—
UH-UL1-2	12:39	2.0			—
UH-UL2	12:42	5.5 *		dry, mostly dead	—
UH-UL3	12:44	2.0		clippings, some green	—
UH-UL4	12:47	2.5		clippings, mostly dead	—
UH-UL4-2	12:49	2.5		clippings, some green	—
UH-UL5	12:51	2.5			—
UH-UL5	12:53	5.5 *		clippings, mostly dead	—
UH-UL6	12:55	5.5 *	↓	clippings, mostly dead	—
UH-UL6-2	12:57	5.5 *			—
					—
					—
					—

6/29/22

* labelled wrong

UH-SV1.13:26 5.2 R2 leaf litter, some grass, clippings

UH-SV1.2 13:08

UH-SV3.1 13:11 0.5

1/4s of clippings

UH-SV3.2 13:13 1.5

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Rite in the Rain

220629

P19

2022.Jul.01 NYB6

Very hot day: high - 35°; sunny

Labels		PAR	Temp	Moisture	Depth	Notes
BW-TP1	R					
BW-TP2						
BW-TP3						
BW-TP4	↓					
BW-TP						
BW-TP						
BR-H4	R	100	22.9	57.4	1.0	8:01
BR-HL3	R	150	23.4	46.5	1.0	8:06
BR-H3	NEE WEF					
BF-SV3	R	650	21.5	34.6	5.0	8:31
BF-UL2	R	80	22.6	37.4	5.0	8:45
BF-UL1	R	110	21.5	40.3	6.0	8:50
BG-UL3	R	1000	22.7	27.7	5.5	9:17
BT-FE3	R		20.2	27.2	3.5	9:33
BT-FE4	R		19.6	18.0	3.5	9:38
BT-F14	R		20.1	24.3	3.0	9:42
BT-F13	R		20.1	22.6	4.0	9:45
BL-SV2	R	100	21.5	59.9	5.0	10:16
BT-FE1	R		20.2	42.0	4.0	10:28
BT-FE2	R		19.9	42.5	3.5	10:32
BT-F11	R		20.1	16.9	4.0	10:37
BT-F12	R		19.9	29.3	4.0	10:40 <i>4.0 in the rain</i>

