

CHAPTER 4A – STREAM TEMPERATURE AND COVER ADDENDUM

William Ehinger, Stephanie Estrella, and Greg Stewart

List of Figures	4A2
List of Tables	4A 3
List of Appendix Tables.....	4A 4
4A-1. Introduction.....	4A 5
4A-2. Results.....	4A 5
4A-2.1. Riparian Cover	4A 5
4A-2.2. Stream Temperature	4A 13
4A-3. Conclusions.....	4A 30
4A-4. Appendix Tables	4A31

CMER 2021

LIST OF FIGURES

Figure 4A-1. Mean values for riparian cover metrics by treatment and period 4A-6

Figure 4A-2. Canopy closure at individual locations within the reference sites 4A-9

Figure 4A-3. Canopy closure at individual locations within the 100% treatment sites 4A-10

Figure 4A-4. Canopy closure at individual locations within the FP treatment sites 4A-11

Figure 4A-5. Canopy closure at individual locations within the 0% treatment sites 4A-12

Figure 4A-6. Canopy closure at 1-m with standard errors plotted by buffer category over time 4A-13

Figure 4A-7. Maximum daily stream temperature over time in the reference sites 4A-14

Figure 4A-8. Maximum daily stream temperature over time in the 100% treatment sites 4A-15

Figure 4A-9. Maximum daily stream temperature over time in the FP treatment sites 4A-16

Figure 4A-10. Maximum daily stream temperature over time in the 0% treatment sites 4A-17

Figure 4A-11. Pairwise comparisons of each post-harvest year to the pre-harvest period for the seven-day average temperature response measured at the Buffer Treatment locations 4A-20

Figure 4A-12. Pairwise comparisons of each post-harvest year to the pre-harvest period for the seven-day average temperature response measured at the F/N break locations 4A-22

Figure 4A-13. Mean monthly temperature response with 95% confidence intervals for spring, summer, and fall in the 100% treatment sites 4A-23

Figure 4A-14. Mean monthly temperature response with 95% confidence intervals for spring, summer, and fall in the FP treatment sites 4A-24

Figure 4A-15. Mean monthly temperature response with 95% confidence intervals for spring, summer, and fall in the 0% treatment sites 4A-25

LIST OF TABLES

Table 4A-1. Least squares mean values for riparian cover metrics by treatment and period 4A-7

Table 4A-2. Results of the generalized linear mixed-effects model for riparian cover metrics 4A-8

Table 4A-3. Estimated change for riparian cover metrics based on pairwise comparisons using the generalized linear mixed-effects model analyses 4A-8

Table 4A-4. Maximum 7-day average daily maximum (7DADM) temperature for July–August for each site and year, number of observations, and difference between post-harvest 7DADM and the mean pre-harvest 7DADM 4A-18

Table 4A-5. Estimated mean seven-day average temperature response measured at the F/N break and at the Buffer Treatment locations 4A-21

Table 4A-6. July mean monthly temperature response at the bottom of the harvest unit, downstream of the harvest unit within a wider riparian buffer, and the difference between them 4A-26

LIST OF APPENDIX TABLES

Appendix Table 4A-1. Pair-wise comparisons with 95% confidence intervals of canopy closure1m for each combination of treatments for each post-harvest year 4A-28

Appendix Table 4A-2. Pair-wise comparisons with 95% confidence intervals of canopy closure0m for each combination of treatments for each post-harvest year 4A-30

Appendix Table 4A-3. Pair-wise comparisons with 95% confidence intervals of the seven-day average treatment response at the Buffer Treatment locations for each combination of treatments for each post-harvest year 4A-32

Appendix Table 4A-4. Pair-wise comparisons with 95% confidence intervals of the seven-day average temperature response at the F/N break locations for each combination of treatments for each post-harvest year 4A-34

Appendix Table 4A-5. Mean monthly temperature response values for OLYM-100% listed by location and treatment year 4A-36

Appendix Table 4A-6. Mean monthly temperature response values for WIL1-100% listed by location and treatment year 4A-39

Appendix Table 4A-7. Mean monthly temperature response values for WIL2-100% listed by location and treatment year 4A-41

Appendix Table 4A-8. Mean monthly temperature response values for WIL3-100% listed by location and treatment year 4A-43

Appendix Table 4A-9. Mean monthly temperature response values for OLYM-FP listed by location and treatment year 4A-45

Appendix Table 4A-10. Mean monthly temperature response values for WIL1-FP listed by location and treatment year 4A-48

Appendix Table 4A-11. Mean monthly temperature response values for WIL2-FP listed by location and treatment year 4A-49

Appendix Table 4A-12. Mean monthly temperature response values for CASC-FP listed by location and treatment year 4A-50

Appendix Table 4A-13. Mean monthly temperature response values for OLYM-0% listed by

location and treatment year 4A-52

Appendix Table 4A-14. Mean monthly temperature response values for WIL1-0% listed by location and treatment year 4A-54

Appendix Table 4A-15. Mean monthly temperature response values for WIL2-0% listed by location and treatment year 4A-57

Appendix Table 4A-16. Mean monthly temperature response values for CASC-0% listed by location and treatment year 4A-59

4A-1. INTRODUCTION

The purpose of this addendum is to update the Hard Rock Study Phase 2 report (McIntyre *et al.* 2021) with the stream temperature and riparian cover data collected since fall 2017. Data collection for the Hard Rock Study began in 2006. The Phase 1 report (McIntyre *et al.* 2018) included data collected through summer 2011 (two years post-harvest). The Phase 2 report included data collected through summer 2017 (nine years post-harvest at most sites). All data collection stopped in fall 2019 when two reference (unharvested) sites in the Willapa 1 and Willapa 2 blocks were harvested, leaving us unable to reliably calculate a temperature response at approximately one half of the study’s treatment sites.

Below we updated the pertinent tables and figures from the Hard Rock Study Phase 2 report with the 2017 to 2019 data to show the trajectory of canopy closure and stream temperature response over the entire post-harvest period. The sampling and analysis methods used to derive the tables and figures below were identical to those used in the Phase 1 and Phase 2 reports and so we do not present them here.

4A-2. RESULTS

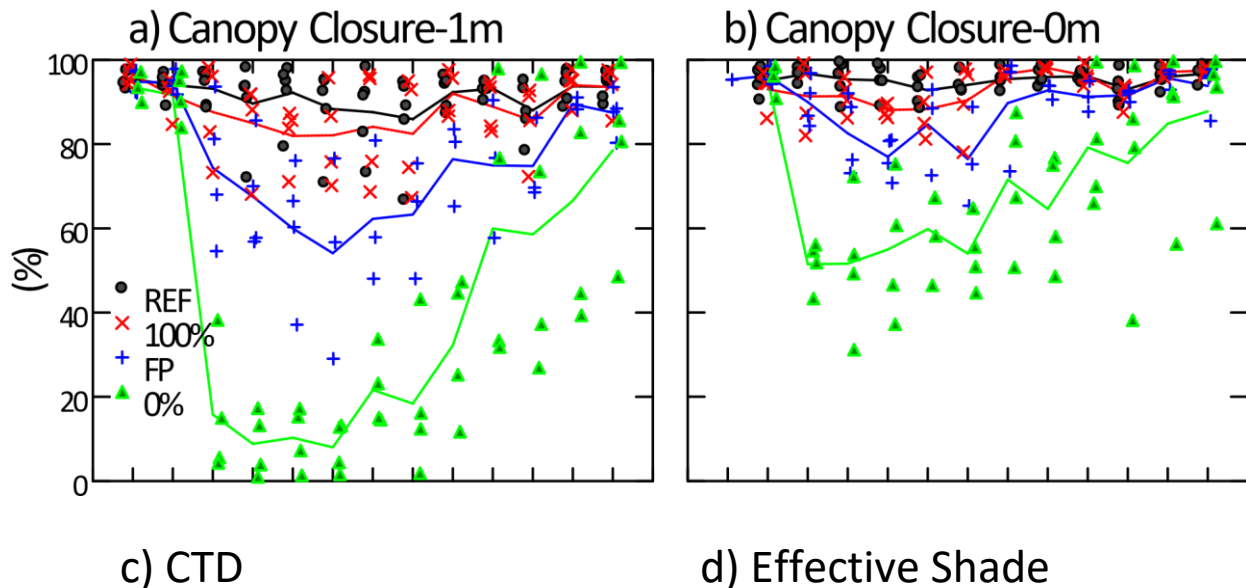
4A-2.1. RIPARIAN COVER

Mean canopy closure measured at 1 meter (CC-1m) and at the water surface (CC-0m) continued to increase in all sites and by Post 11 only one site, a 0% treatment site, had a mean CC-1m less than 80% (**Figure 4A-1**). The least squares mean CC-1m and CC-0m values were greater than 91% for all treatments except the 0% treatment, which was 84% (**Table 4A-1**). An analysis was done to compare canopy closure in the treatment sites with the reference (REF) sites (**Table 4A2**). There was little difference in canopy closure relative to the REF treatment by Post 11 (**Table 4A-3**). The generalized linear model analysis of variance estimated that, relative to the REF treatment, changes in CC-1m were 0%, -2%, and -9% at Post 11 in the 100%, FP, and 0%

treatments, respectively, with $P > 0.05$ for all three comparisons. Results for CC-0m were similar with relative changes by Post 11 estimated at 3%, -1%, and -9% in the 100%, FP, and 0%, respectively, with $P > 0.05$ for all three comparisons. All pairwise comparisons of CC-1m and CC-0m are listed in **Appendix Tables 4A-1** and **4A-2**.

Across all sites, CC-1m within the buffered reaches (i.e., REF, 100%, and FP sites) remained high with little variability among locations in sites with low tree mortality within the riparian buffer. This included the REF sites in the OLYM, WIL2, WIL3, and CASC blocks (**Figure 4A2**), the OLYM-100% and WIL3-100% sites (**Figure 4A-3**), and the CASC-FP site (**Figure 4A4**). In contrast, in sites with high tree mortality (WIL1-REF, WIL1-100%, WIL2-100%, OLYMFP, and WIL1-FP), CC-1m at some locations within the buffer was still below 80% in 2018 and 2019 (ten and eleven years post-harvest). Canopy closure in the unbuffered locations continued to increase at most locations through 2019 (**Figures 4A-4** and **4A-5**).

A comparison of CC-1m across four different buffer categories suggests that over time CC-1m in all buffer types had increased and that mean canopy closure in buffers greater than 50 feet in width, those 50 feet wide, and PIP buffers was nearly identical by Post 11 (**Figure 4A-6**). Within the unbuffered reaches, mean CC-1m remained 12 to 14 percentage points lower than the buffered categories even at Post 11.



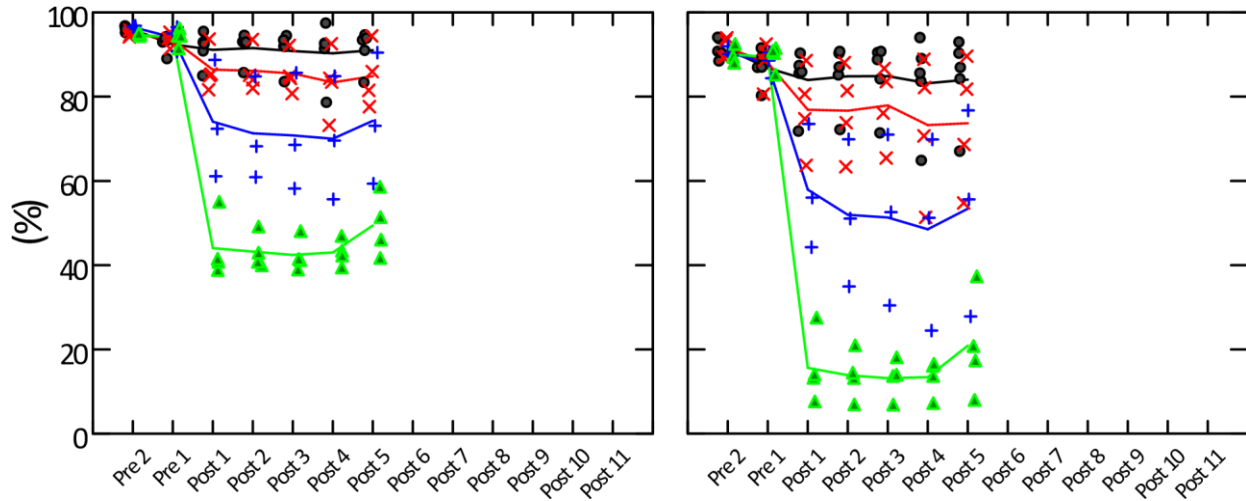


Figure 4A-1. Mean values for riparian cover metrics by treatment and period. Site means are shown by the symbols and treatment mean by the line. We did not measure canopy closure-0m until 2008 (Pre 1). Also, we were unable to calculate canopy and topographic density (CTD) and effective shade for WIL1-0% in 2008. Hemispherical photos for estimating CTD and effective shade were not collected after Post 5. (See **Figure 4-2** in the Phase 2 report.)

Table 4A-1. Least squares mean values for riparian cover metrics by treatment and period. Hemispherical photos for estimating canopy and topographic density and effective shade were not collected after Post 5. CC-1m = canopy closure at 1 m; CC-0m = canopy closure at 0 m; CTD = canopy and topographic density; Eff Shade = effective shade. Sample sizes: REF= 4 sites, 100%= 4 sites, FP= 4 sites for Pre – Post 2, otherwise 3 sites, 0%= 4 sites. (See **Table 4-1** in the Phase 2 report.)

Trmt	Period	CC-1m	CC-0m	CTD	Eff-Shade
REF	Pre	94	95	94	90
	Post 1	92	97	92	85
	Post 2	90	96	92	86
	Post 3	92	95	91	86
	Post 4	89	93	91	84
	Post 5	88	94	91	85
	Post 6	86	96		
	Post 7	91	96		
	Post 8	92	96		
	Post 9	88	93		
	Post 10	93	96		
	Post 11	93	97		
100%	Pre	95	93	95	91

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

	Post 1	89	92	87	78
	Post 2	85	92	87	78
	Post 3	82	88	86	79
	Post 4	83	89	84	74
	Post 5	85	91	85	75
	Post 6	84	97		
	Post 7	91	98		
	Post 8	88	96		
	Post 9	85	92		
	Post 10	93	97		
	Post 11	93	98		
<hr/>					
FP	Pre	94	96	96	90
	Post 1	76	90	76	59
	Post 2	68	83	73	52
	Post 3	60	77	72	51
	Post 4	61	85	71	48
	Post 5	65	76	76	54
	Post 6	66	90		
	Post 7	80	93		
	Post 8	77	91		
	Post 9	77	92		
	Post 10	90	96		
	Post 11	91	97		
<hr/>					
0%	Pre	95	96	94	90
	Post 1	11	52	44	15
	Post 2	4	52	43	14
	Post 3	6	55	42	13
	Post 4	5	60	43	13
	Post 5	20	54	49	20
	Post 6	14	72		

Post 7	30	65
Post 8	66	80
Post 9	64	76
Post 10	74	85
Post 11	84	88

Table 4A-2. Results of the generalized linear mixed-effects model for riparian cover metrics. Significant ($P < 0.05$) treatment \times period interaction terms indicate pre- to post-harvest differences among treatments. The analysis was run using the GLIMMIX procedure, Beta distribution, and logit link. CTD = canopy and topographic density; Num DF = numerator degrees of freedom; Den DF = denominator degrees of freedom. (See **Table 4-7** in the Phase 2 report.)

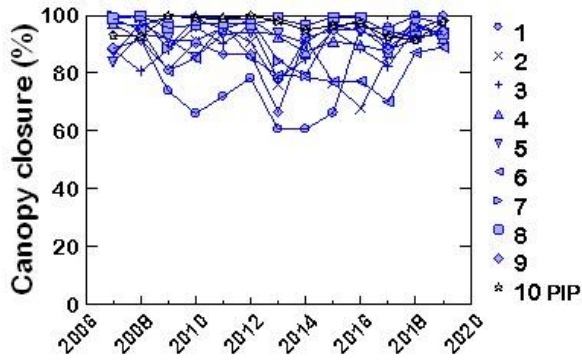
Metric	Effect	Num DF	Den DF	F Value	Pr > F
Canopy Closure-1m	Treatment	3	152.0	21.95	<0.0001
	Period	11	152.0	28.09	<0.0001
	Treatment \times Period	33	152.0	6.47	<0.0001
Canopy Closure-0m	Treatment	3	14.7	17.47	<0.0001
	Period	11	136.9	9.16	<0.0001
CTD	Treatment	3	11.9	18.05	
	Period	5	75.0	126.50	<0.0001
	Treatment \times Period	15	75.0	16.66	<0.0001
Effective Shade	Treatment	3	12.1	22.12	<0.0001
	Period	5	75.2	117.19	<0.0001
	Treatment \times Period	15	75.2	19.92	<0.0001
	Treatment \times Period	33	136.9	1.85	0.0078
					<0.0001

Table 4A-3. Estimated change for riparian cover metrics based on pairwise comparisons using the generalized linear mixed-effects model analyses. Least squares means were converted to percent and the changes was calculated per Equation 4-3. Values with $P < 0.05$ are in **bold type**.

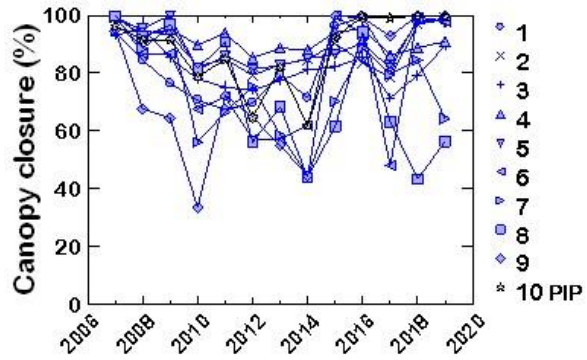
CC-1m = canopy closure at 1 m; CC-0m = canopy closure at 0 m; CTD = canopy and topographic density; Eff Shade = effective shade (See **Table 4-2** in the Phase 2 report.)

Year	CC-1m			CC-0m			CTD			Eff Shade		
	100%	FP	0%	100%	FP	0%	100%	FP	0%	100%	FP	0%
Post 1	-4	-17	-83	-3	-8	-46	-5	-18	-47	-8	-27	-70
Post 2	-5	-22	-86	-2	-14	-45	-6	-22	-49	-9	-34	-65
Post 3	-10	-32	-87	-5	-19	-41	-6	-21	-49	-7	-35	-67
Post 4	-6	-28	-85	-2	-9	-34	-7	-22	-48	-11	-36	-62
Post 5	-4	-24	-70	-1	-19	-41	-6	-18	-42	-11	-32	-55
Post 6	-3	-20	-73	3	-7	-24						
Post 7	-1	-12	-62	4	-4	-32						
Post 8	-5	-15	-27	2	-6	-17						
Post 9	-3	-11	-25	0	-3	-18						
Post 10	0	-3	-20	3	-1	-12						
Post 11	0	-2	-9	3	-1	-9						

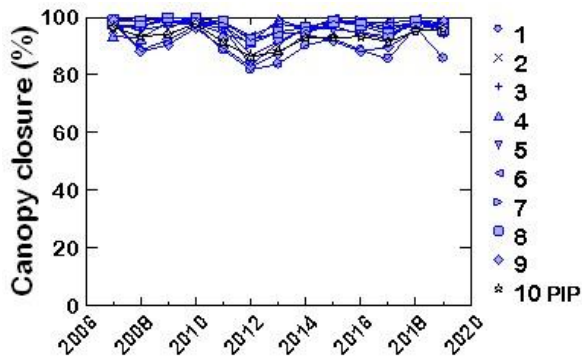
a) OLYM-REF



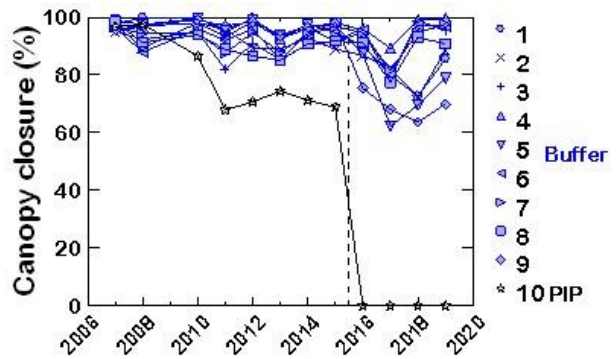
b) WIL1-REF



c) WIL2-REF



d) WIL2-FP



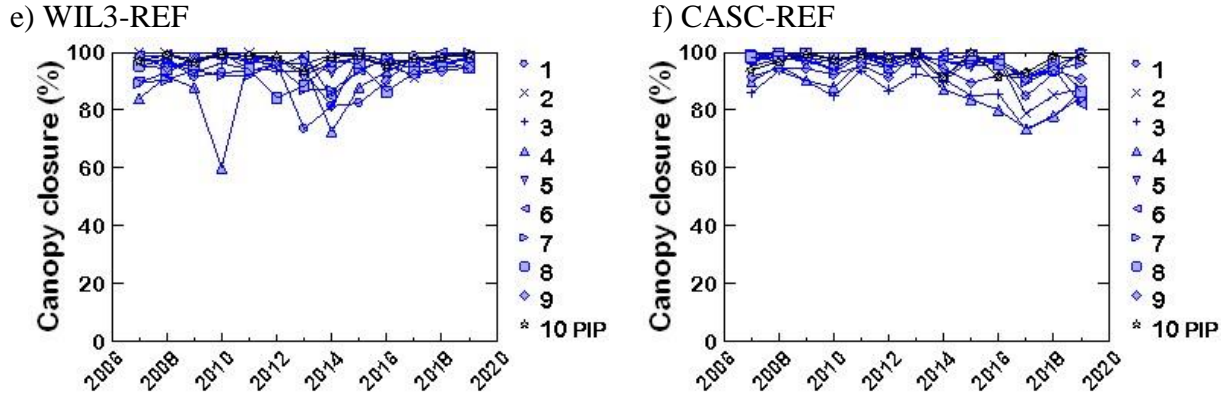


Figure 4A-2. Canopy closure at individual locations within the reference (REF) sites with perennial initiation point (PIP) locations in black. Vertical dashed line separates pre- and postharvest. Measurements were made at ten equidistant locations along the main channel between the Type F/N break (location 1) to the PIP (location 10). Panel d) WIL2-FP was a REF site until it was harvested in 2016. (See **Figure 4-1** in the Phase 2 report.)

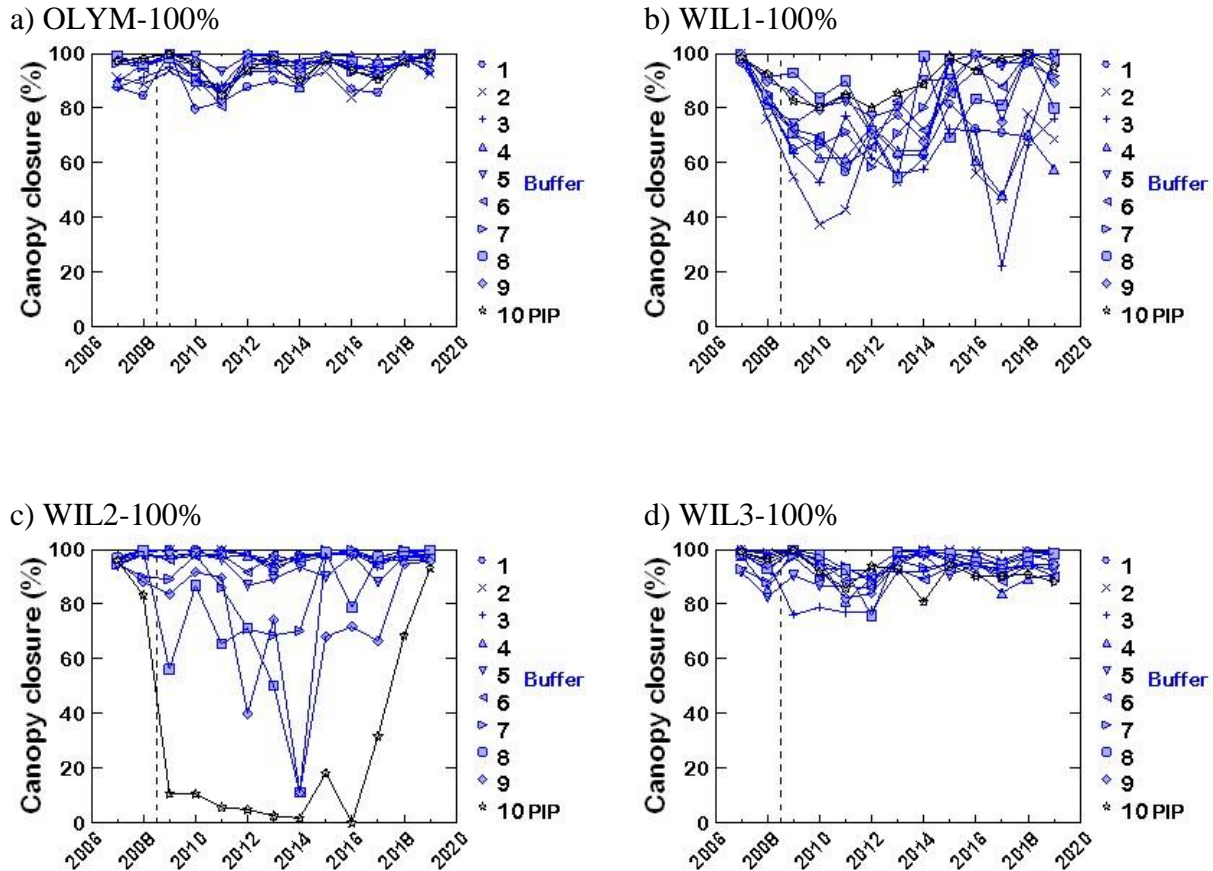


Figure 4A-3. Canopy closure at individual locations within the 100% treatment sites with perennial initiation point (PIP) locations in black. Vertical dashed line separates pre- and postharvest. Measurements were made at ten equidistant locations along the main channel between the Type F/N break (location 1) to the PIP (location 10). (See **Figure 4-4** in the Phase 2 report.)

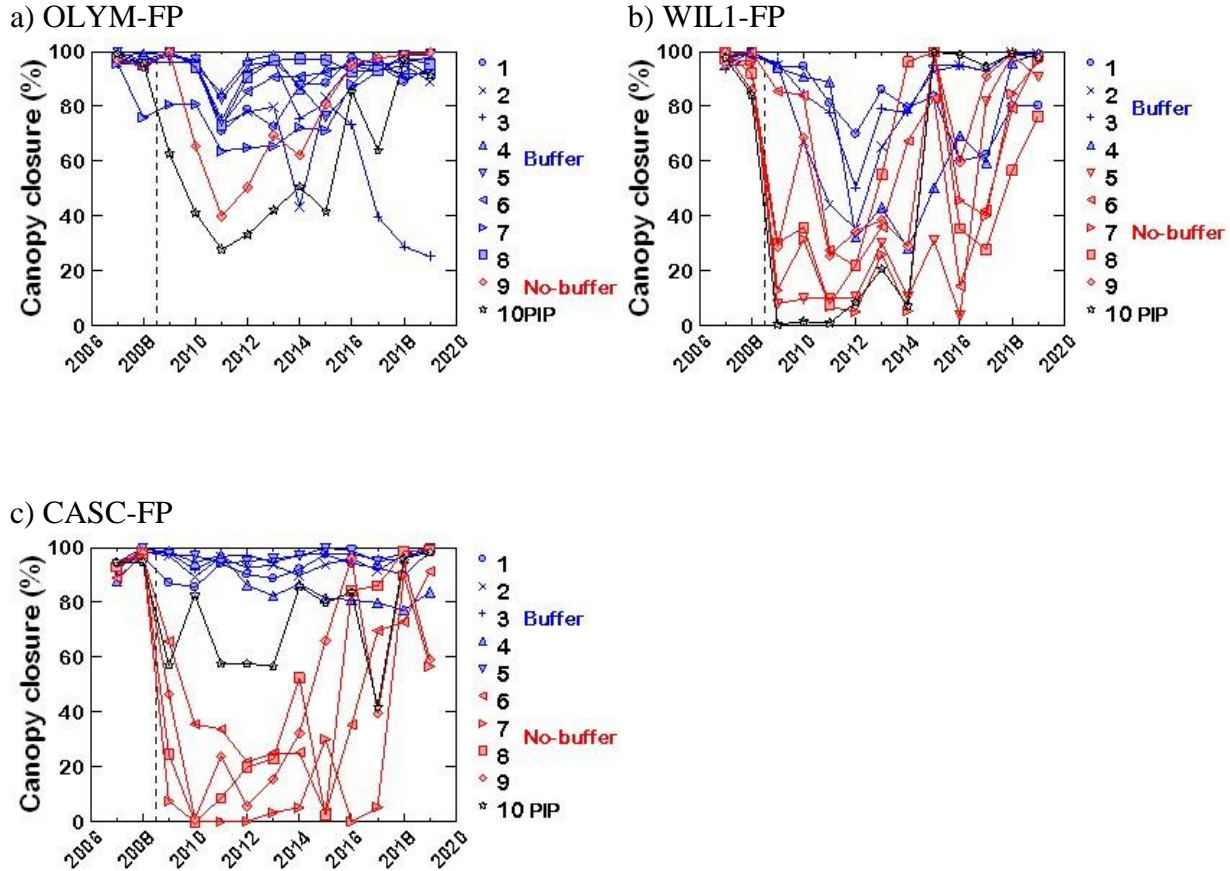
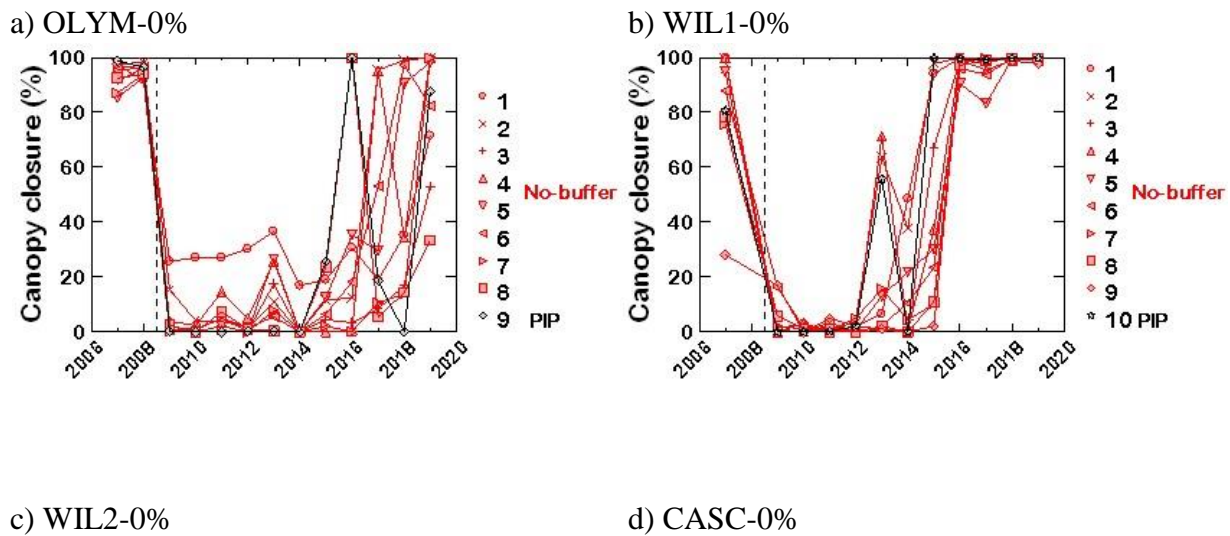


Figure 4A-4. Canopy closure at individual locations within the FP treatment sites at buffered (blue), unbuffered (red), and perennial initiation point (PIP; black) locations. Vertical dashed line separates pre- and post-harvest. Measurements were made at ten equidistant locations along the main channel between the Type F/N break (location 1) to the PIP (location 10). (See **Figure 4-5** in the Phase 2 report.)



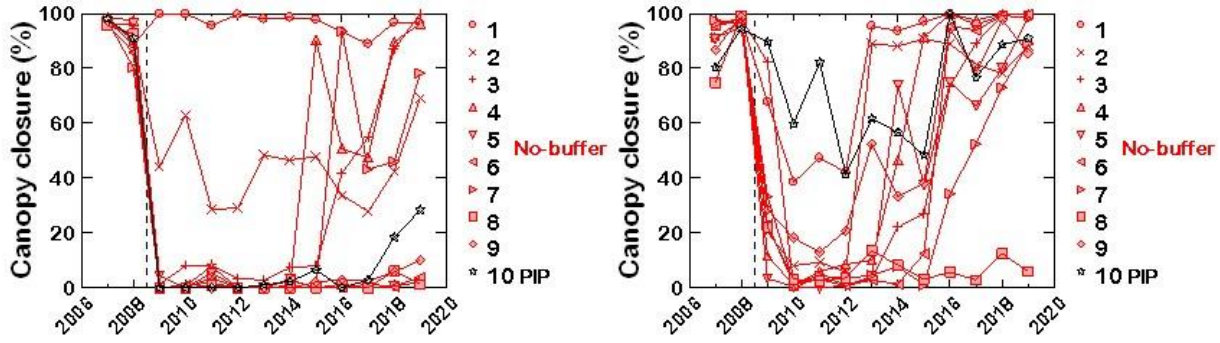


Figure 4A-5. Canopy closure at individual locations within the 0% treatment sites with perennial initiation point (PIP) locations in black. Vertical dashed line separates pre- and post-harvest. Measurements were made at ten equidistant locations along the main channel between the Type F/N break (location 1) to the PIP (location 10). (See **Figure 4-6** in the Phase 2 report.)

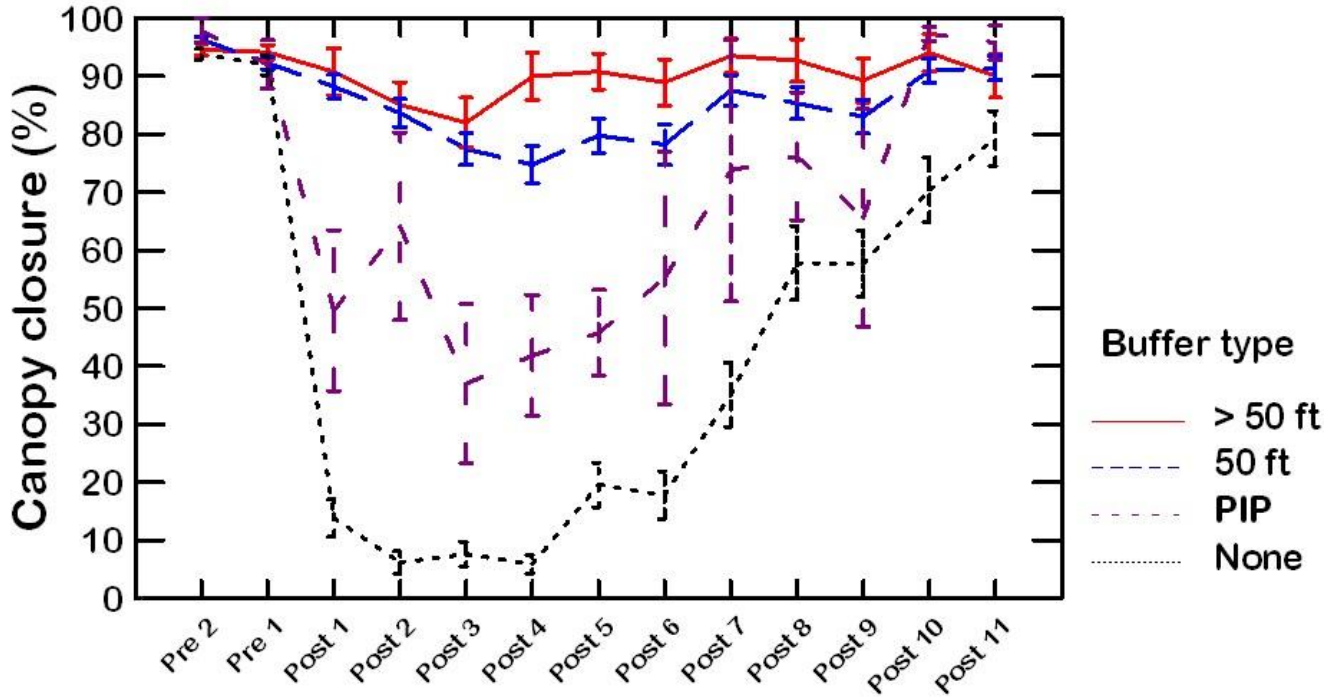


Figure 4A-6. Canopy closure (%) at 1-m with standard errors plotted by buffer category over time. Red = greater than 50 ft wide (n = 78); blue = 50 ft wide (n = 43); purple = 56 ft diameter perennial initiation point (PIP; n = 3); black = no buffer (n = 45). (See **Figure 4-7** in the Phase 2 report.)

4A-2.2. STREAM TEMPERATURE

In general, summer stream temperatures were near pre-harvest levels by 2019. (Daily maximum stream temperatures are plotted in **Figures 4A-7** through **4A-10**.) The seven-day average daily maximum (7DADM) temperature in 2018 and 2019 was lower than earlier post-harvest years and by Post 11 the mean post- to pre-harvest difference in all buffer treatments was within 0.2°C

of the mean REF treatment difference suggesting stream temperatures were at or near pre-harvest values (**Table 4A-4**).

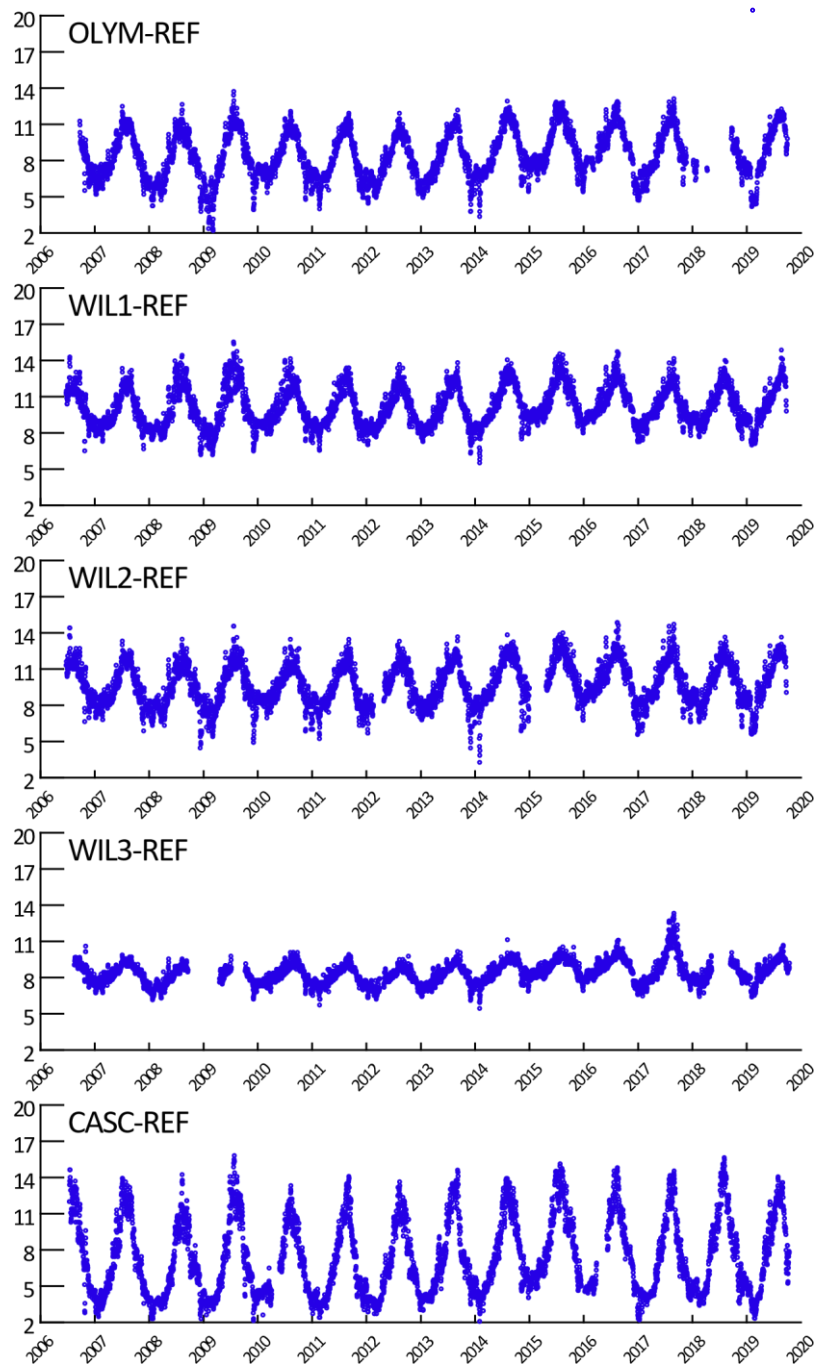


Figure 4A-7. Maximum daily stream temperature over time in the reference (REF) sites. (See **Figure 4-8** in the Phase 2 report.)

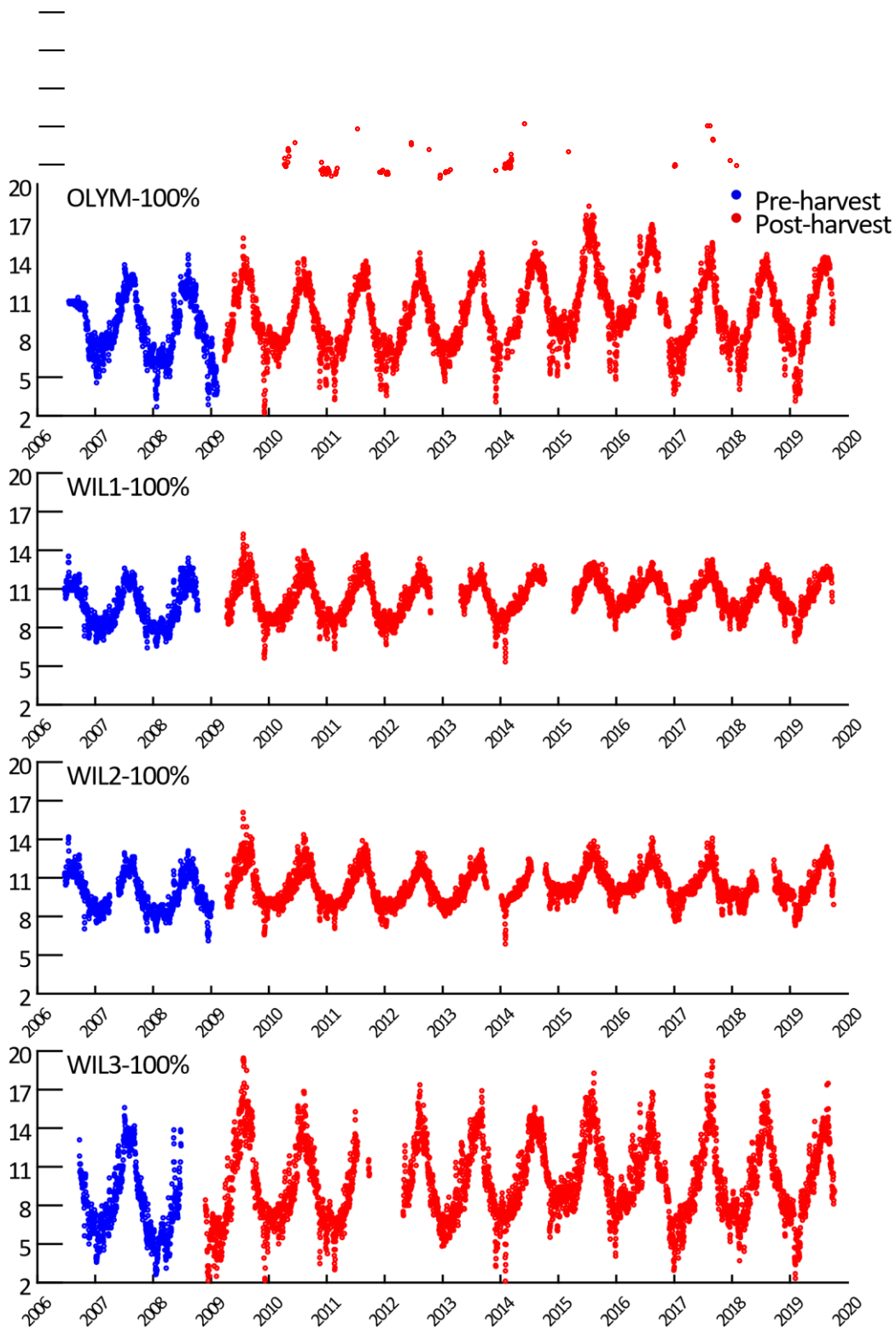


Figure 4A-8. Maximum daily stream temperature over time in the 100% treatment sites. (See **Figure 4-9** in the Phase 2 report.)

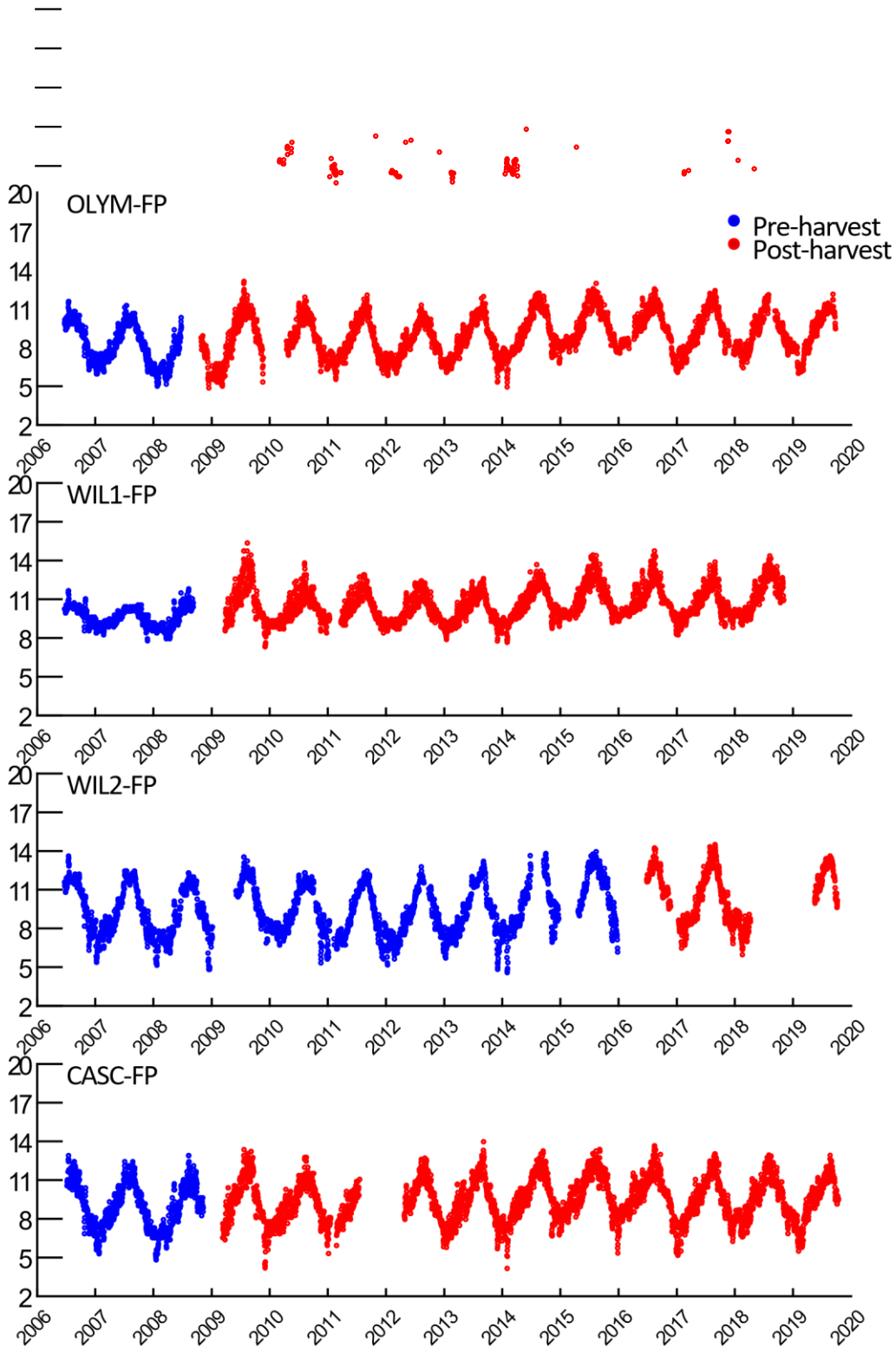


Figure 4A-9. Maximum daily stream temperature over time in the FP treatment sites. (See **Figure 4-10** in the Phase 2 report.)

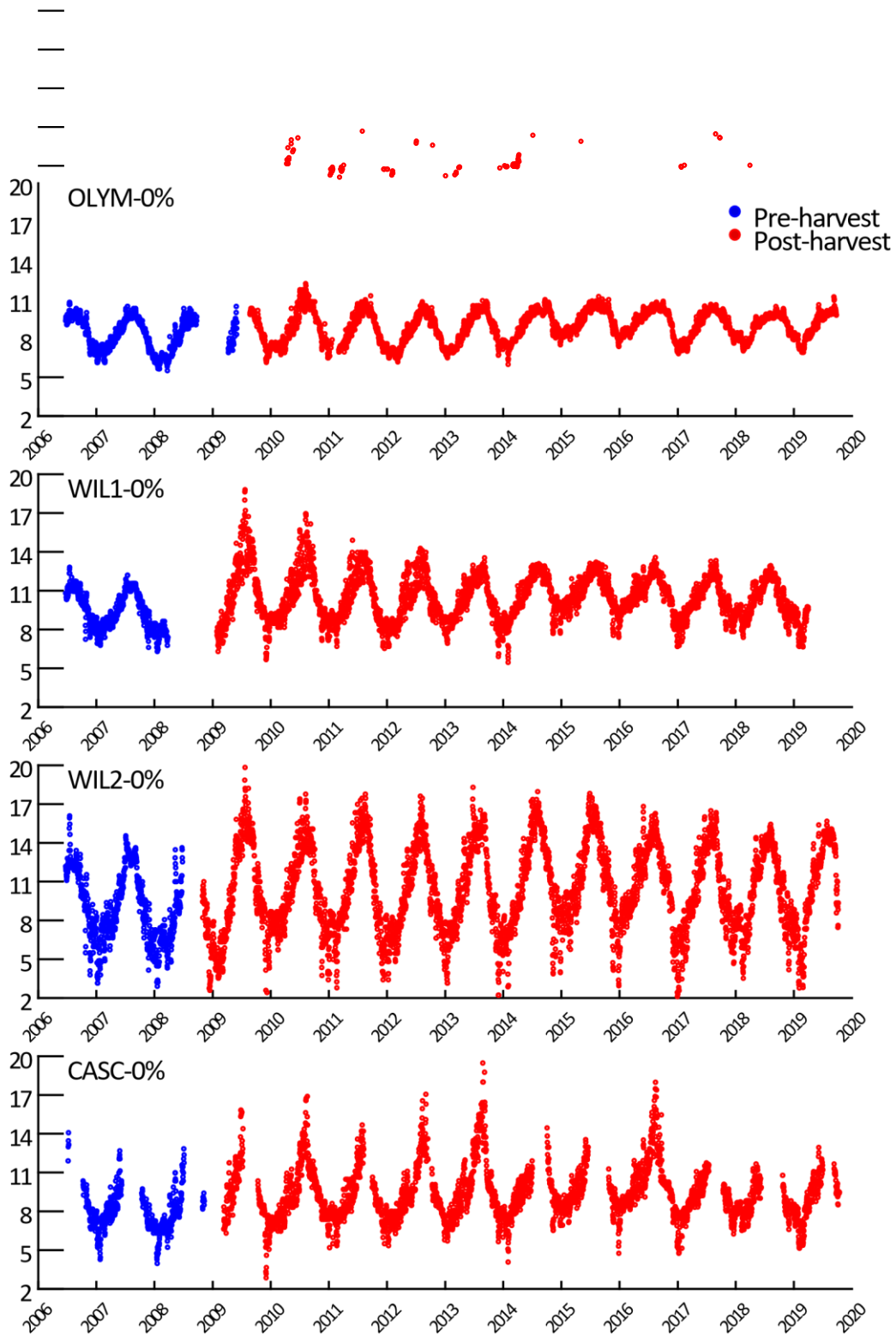


Figure 4A-10. Maximum daily stream temperature over time in the 0% treatment sites. (See **Figure 4-11** in the Phase 2 report.)

Table 4A-4. Maximum 7-day average daily maximum (7DADM) temperature (°C) for July–August for each site and year, number of observations (N), and difference (Diff) between postharvest 7DADM and the mean pre-harvest 7DADM. Shading indicates post-harvest period. (See **Table 4-11** in the Phase 2 report.)

Treatment Block 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 REF

	OLYM	11.7	11.8	12.8	11.5	11.3	11.3	11.0	12.0	12.4	12.3	12.2	11.8	
	N	62	62	62	62	62	62	62	62	62	62	62	62	
TYPE N BUFFER EFFECTIVENESS ON HARD R														
	<u>Diff</u>			<u>1.0</u>	<u>-0.3</u>	<u>-0.5</u>	<u>-0.4</u>	<u>-0.7</u>	<u>0.3</u>	<u>0.7</u>	<u>0.5</u>	<u>0.5</u>	<u>0.1</u>	
WIL1	13.2	12.4	13.2	14.6	13.4	12.8	12.8	12.4	13.2	13.8	13.6	12.9	13.0	13.6
N	62	62	62	62	62	62	62	62	62	62	62	62	62	55
	<u>Diff</u>			<u>1.7</u>	<u>0.4</u>	<u>-0.1</u>	<u>-0.2</u>	<u>-0.6</u>	<u>0.2</u>	<u>0.8</u>	<u>0.6</u>	<u>-0.1</u>	<u>0.1</u>	<u>0.7</u>
WIL2	13.3	12.4	12.5	13.4	12.3	12.3	12.3	12.2	12.7	13.2	13.6	13.3	12.8	12.7
N	62	62	62	62	62	62	62	62	62	62	62	62	62	62
	<u>Diff</u>			<u>0.6</u>	<u>-0.4</u>	<u>-0.4</u>	<u>-0.4</u>	<u>-0.5</u>	<u>-0.1</u>	<u>0.5</u>	<u>0.8</u>	<u>0.6</u>	<u>0.1</u>	<u>0.0</u>
WIL3	9.2	9.5	9.2	8.9	9.5	9.3	9.0	9.3	9.8	10.0	10.5	12.0	9.9	
N	4	62	62	3	62	62	62	62	62	62	62	62	62	
	<u>Diff</u>			<u>-0.4</u>	<u>0.3</u>	<u>0.1</u>	<u>-0.3</u>	<u>0.1</u>	<u>0.6</u>	<u>0.7</u>	<u>1.2</u>	<u>2.7</u>	<u>0.6</u>	
CASC	13.9	13.5	13.0	15.3	12.4	12.9	13.1	13.3	13.4	14.4	14.3	13.7	14.8	13.4
N	37	62	62	62	62	62	62	62	62	62	62	62	62	62
	<u>Diff</u>			<u>1.8</u>	<u>-1.0</u>	<u>-0.6</u>	<u>-0.4</u>	<u>-0.2</u>	<u>0.0</u>	<u>0.9</u>	<u>0.9</u>	<u>0.3</u>	<u>1.3</u>	<u>-0.1</u>
				<u>1.0</u>	<u>-0.2</u>	<u>-0.3</u>	<u>-0.3</u>	<u>-0.4</u>	<u>0.2</u>	<u>0.7</u>	<u>0.8</u>	<u>0.8</u>	<u>0.5</u>	<u>0.3</u>
OLYM	14.9	13.4	13.4	15.0	13.7	11.8	13.7	13.9	14.4	14.5	14.3	14.7	14.9	
N	44	62	62	62	62	23	62	62	62	62	62	62	44	
	<u>Diff</u>			<u>1.2</u>	<u>-0.2</u>	<u>-2.1</u>	<u>-0.2</u>	<u>0.0</u>	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>	<u>0.8</u>	<u>1.0</u>	
WIL1	12.7	12.0	12.4	14.3	13.2	13.0	12.6	11.9	12.1	12.6	12.4	12.5	12.3	12.2
N	62	62	62	62	62	62	62	62	62	62	62	62	62	62
	<u>Diff</u>			<u>1.9</u>	<u>0.9</u>	<u>0.6</u>	<u>0.2</u>	<u>-0.5</u>	<u>-0.2</u>	<u>0.2</u>	<u>0.1</u>	<u>0.2</u>	<u>-0.1</u>	<u>-0.2</u>
WIL2	13.0	12.1	12.3	14.3	13.3	12.8	12.2	12.2	12.2	13.0	13.0	12.6	12.7	
N	62	62	62	62	62	62	62	62	21	62	62	62	62	
	<u>Diff</u>			<u>1.8</u>	<u>0.8</u>	<u>0.3</u>	<u>-0.3</u>	<u>-0.3</u>	<u>-0.3</u>	<u>0.5</u>	<u>0.5</u>	<u>0.1</u>	<u>0.2</u>	
WIL3		14.6	15.5	19.6	16.0	13.5	16.0	14.4	14.7	16.1	15.3	16.7	15.6	14.7
N		62	62	62	62	20	62	62	62	62	62	62	62	62
	<u>Diff</u>			<u>4.6</u>	<u>1.0</u>	<u>-1.6</u>	<u>1.0</u>	<u>-0.6</u>	<u>-0.3</u>	<u>1.0</u>	<u>0.3</u>	<u>1.7</u>	<u>0.5</u>	<u>-0.4</u>
				<u>2.4</u>	<u>0.6</u>	<u>-0.7</u>	<u>0.2</u>	<u>-0.3</u>	<u>-0.1</u>	<u>0.6</u>	<u>0.3</u>	<u>0.7</u>	<u>0.2</u>	<u>0.2</u>
OLYM	11.1	10.5	10.9	12.4	11.2	11.2	10.8	10.8	11.8	12.3	12.0	11.8	11.6	11.0
N	62	62	62	62	62	62	62	62	62	62	62	62	28	62
	<u>Diff</u>			<u>1.6</u>	<u>0.3</u>	<u>0.4</u>	<u>0.0</u>	<u>0.0</u>	<u>0.9</u>	<u>1.4</u>	<u>1.1</u>	<u>1.0</u>	<u>0.8</u>	<u>0.2</u>
WIL1	11.2	10.3	11.2	14.1	12.7	12.5	11.9	11.8	12.7	13.7	13.6	12.8	13.6	
N	62	62	62	62	62	62	52	62	62	62	62	62	62	

<u>Mean w/in treatment difference</u>	Diff				3.2	1.8	1.6	1.0	0.9	1.8	2.8	2.7	1.9	2.7	
100%	WIL2	13.0	12.2	12.0	13.1	12.0	12.1	12.2	12.2	12.5	13.4	13.5	13.8	13.2	
	N	62	62	62	62	62	62	62	62	3	62	62	62	62	
	<u>Diff</u>											<u>1.1</u>	<u>1.3</u>	<u>0.7</u>	
	CASC	12.2	11.7	12.1	12.7	12.1	10.3	12.0	12.0	12.2	12.5	12.9	12.1	12.4	12.1
	N	44	62	62	62	62	21	62	62	62	62	62	62	62	62
	<u>Diff</u>				<u>0.7</u>	<u>0.1</u>	<u>-1.7</u>	<u>0.0</u>	<u>0.0</u>	<u>0.2</u>	<u>0.5</u>	<u>0.9</u>	<u>0.1</u>	<u>0.4</u>	<u>0.1</u>
<u>Mean w/in</u>					<u>1.8</u>	<u>0.8</u>	<u>0.1</u>	<u>0.3</u>	<u>0.3</u>	<u>1.0</u>	<u>1.6</u>	<u>1.4</u>	<u>1.1</u>	<u>1.3</u>	<u>0.3</u>
	OLYM	10.4	9.9	9.8	11.6	10.7	10.6	10.4	10.4	10.6	10.5	10.4	9.8	10.0	
	N	62	62	62	62	62	62	62	62	62	62	62	62	61	62
	<u>Diff</u>	12.0	11.5	11.7											
	WIL1				<u>1.6</u>	<u>0.7</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>	<u>-0.3</u>	<u>-0.1</u>	
					17.5	15.8	13.6	13.4	12.4	12.8	12.9	12.8	12.6	12.5	
	N	62	62	62	62	62	62	62	62	62	62	62	62	62	
	<u>Diff</u>				5.8	4.1	1.8	1.7	0.7	1.0	1.2	1.0	0.8	0.8	
	WIL2	14.1	13.3		18.6	15.2	14.9	14.7	14.4	14.6	14.7	14.8	15.0	14.5	14.5
	N	62	62		62	62	62	62	62	62	13	62	62	62	62
	<u>Diff</u>				<u>4.9</u>	<u>1.5</u>	<u>1.2</u>	<u>1.0</u>	<u>0.7</u>	<u>0.9</u>	<u>1.0</u>	<u>1.0</u>	<u>1.3</u>	<u>0.8</u>	<u>0.8</u>
	CASC	15.1	15.0	16.1	19.5	17.1	19.2	17.4	18.0	18.4	17.4	17.4	17.2	16.1	
	N	39	62	62	62	21	62	62	62	62	62	62	46	40	
	<u>Diff</u>				<u>4.1</u>	<u>1.7</u>	<u>3.8</u>	<u>2.0</u>	<u>2.5</u>	<u>3.0</u>	<u>2.0</u>	<u>1.9</u>	<u>1.7</u>	<u>0.7</u>	
					<u>5.3</u>	<u>2.8</u>	<u>1.3</u>	<u>1.8</u>	<u>0.9</u>	<u>1.2</u>	<u>1.5</u>	<u>1.1</u>	<u>1.1</u>	<u>0.8</u>	<u>0.5</u>
	<u>treatment difference FP</u>														

Mean w/in treatment difference
0%

Mean w/in treatment difference

The analysis of variance of the change in the seven-day average temperature response ($\Delta 7DTR$) at the Buffer Treatment locations also suggests that by Post 11 maximum daily stream temperatures were at or near pre-harvest conditions in all treatments (**Figure 4A-11; Table 4A5**). Specifically:

- 1) The mean $\Delta 7DTR$ in the 100% treatment was low ($\Delta 7DTR \leq 0.5^\circ\text{C}$ and $P > 0.05$) from Post 3 to Post 11.
- 2) The mean $\Delta 7DTR$ in the FP treatment was elevated ($\Delta 7TR \geq 0.8^\circ\text{C}$ and $P < 0.05$) for six of the first nine post-harvest years then less than 0.8°C ($P > 0.05$) in Post 10 and 11.
- 3) The mean $\Delta 7DTR$ in the 0% treatment declined steadily after harvest from 3.8°C ($P < 0.05$) in Post 1 to 0.4°C ($P > 0.05$) in Post 11.

The $\Delta 7DTR$ was less than 0.8°C ($P > 0.05$) by Post 11 in all treatments. However, there were missing data for the FP treatment for one site each in 2018 and 2019. This affected the estimates for the FP treatment in Post 10 and Post 11 but it is not possible to estimate those effects. Estimates of $\Delta 7DTR$ at the F/N break locations were nearly identical (within 0.3°C) to the Buffer Treatment locations (**Figure 4A-12**). All pairwise comparisons of treatment effects are in **Appendix Tables 4A-3 and 4A-4**.

Mean monthly temperature responses (MMTR) remained elevated ($>0.5^\circ\text{C}$ and $P < 0.05$) in the spring at many locations within most sites in all treatments into Post 11 (**Figures 4A-13 through 4A-15; Appendix Tables 4A-5 through 4A-16**). By Post 11 the magnitude of the spring MMTR tended to be greater than the summer MMTR (more warming in the spring months), but there was considerable within and between site variability. July–August MMTRs were generally low ($<1.0^\circ\text{C}$) by Post 11 in all sites except WIL2-0%, where some locations exceeded 2.0°C .

Downstream (i.e., below the harvest unit in Type F waters) warming was evident in two of the six streams where this was monitored and the effect size was 0.7°C or less (**Table 4A-6**).

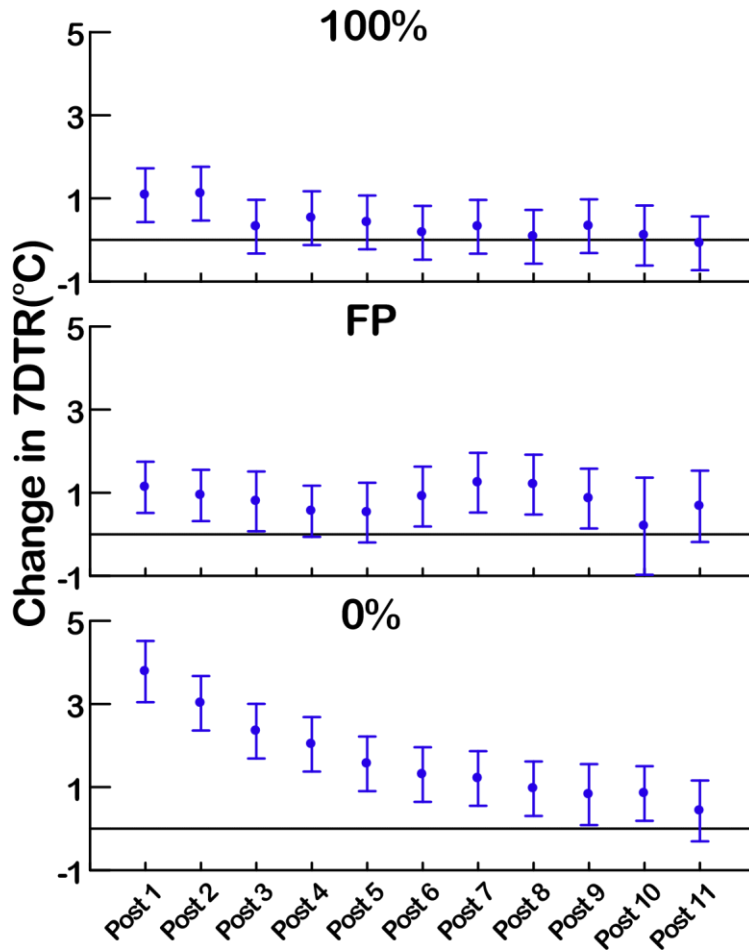


Figure 4A-11. Pairwise comparisons of each post-harvest year to the pre-harvest period for the seven-day average temperature response ($\Delta 7DTR$) measured at the Buffer Treatment locations. Estimated means and 95% confidence intervals are presented. Confidence intervals that do not cross the dashed line (0%) indicate a significant difference ($P < 0.05$). Data are shown in **Appendix Table 4A-3**. (See **Figure 4-33** in the Phase 2 report.)

Table 4A-5. Estimated mean seven-day average temperature response ($\Delta 7DTR$, °C) measured at the F/N break and at the Buffer Treatment locations. Bold type indicates a change from preharvest ($P < 0.05$). Subscripts next to the estimate list treatments where $P < 0.05$ for that year’s estimate. Estimates and 95% confidence intervals are tabulated in **Appendix Tables 4A-3** and **4A-4**. (See **Table 4-18** in the Phase 2 report.)

	F/N break			Buffer Treatment		
	100%	FP	0%	100%	FP	0%
Post 1	1.20%	1.10%	3.3	1.10%	1.10%	3.8
Post 2	0.60%	0.90%	2.7	1.10%	0.90%	3.0
Post 3	0.6	0.80%	2.0	0.30%	0.80%	2.3

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

Post 4	0.60%	0.50%	1.9	0.50%	0.60%	2.0
Post 5	0.40%	0.50%	1.7	0.40%	0.50%	1.6
Post 6	0.40%	0.9	1.3	0.20%	0.9	1.3
Post 7	1.1	1.2	1.5	0.3	1.2	1.2
Post 8	0.5FP	1.2	1.0	0.1FP	1.2	1.0
Post 9	0.4	0.8	0.9	0.3	0.9	0.8
Post 10	0.1	0.2	0.6	0.1	0.2	0.8
Post 11	0.2	0.6	0.3	-0.1	0.7	0.4

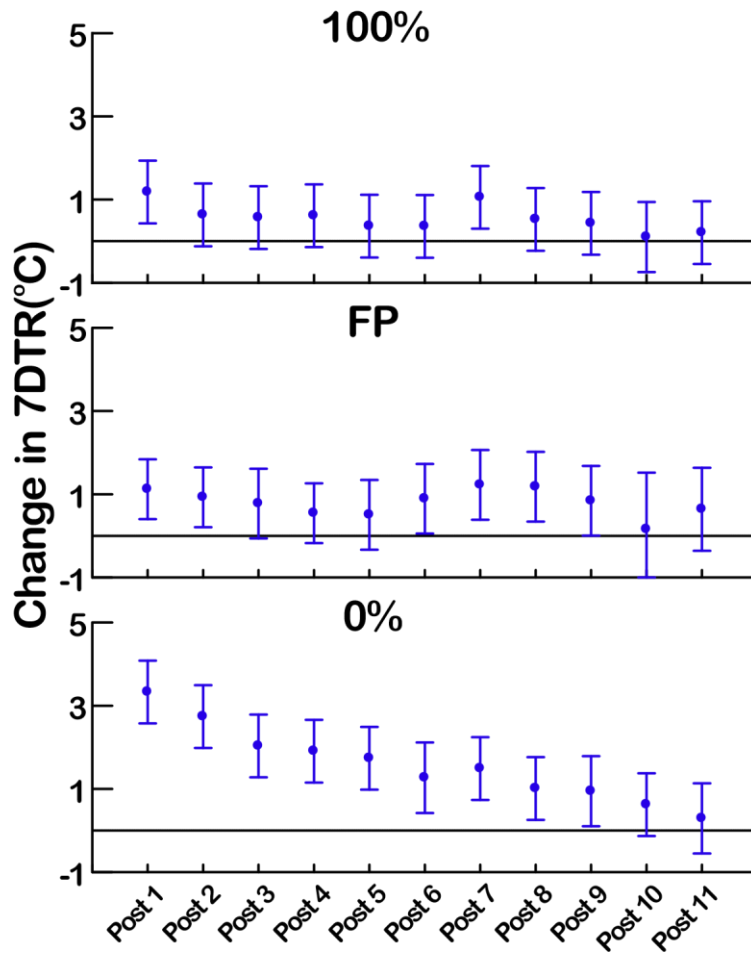


Figure 4A-12. Pairwise comparisons of each post-harvest year to the pre-harvest period for the seven-day average temperature response ($\Delta 7DTR$) measured at the F/N break locations. Estimated means and 95% confidence intervals are presented. Confidence intervals that do not cross the dashed line (0%) indicate a significant difference ($P < 0.05$). Data are shown in **Appendix Table 4A-4**. (See **Figure 4-34** in the Phase 2 report.)

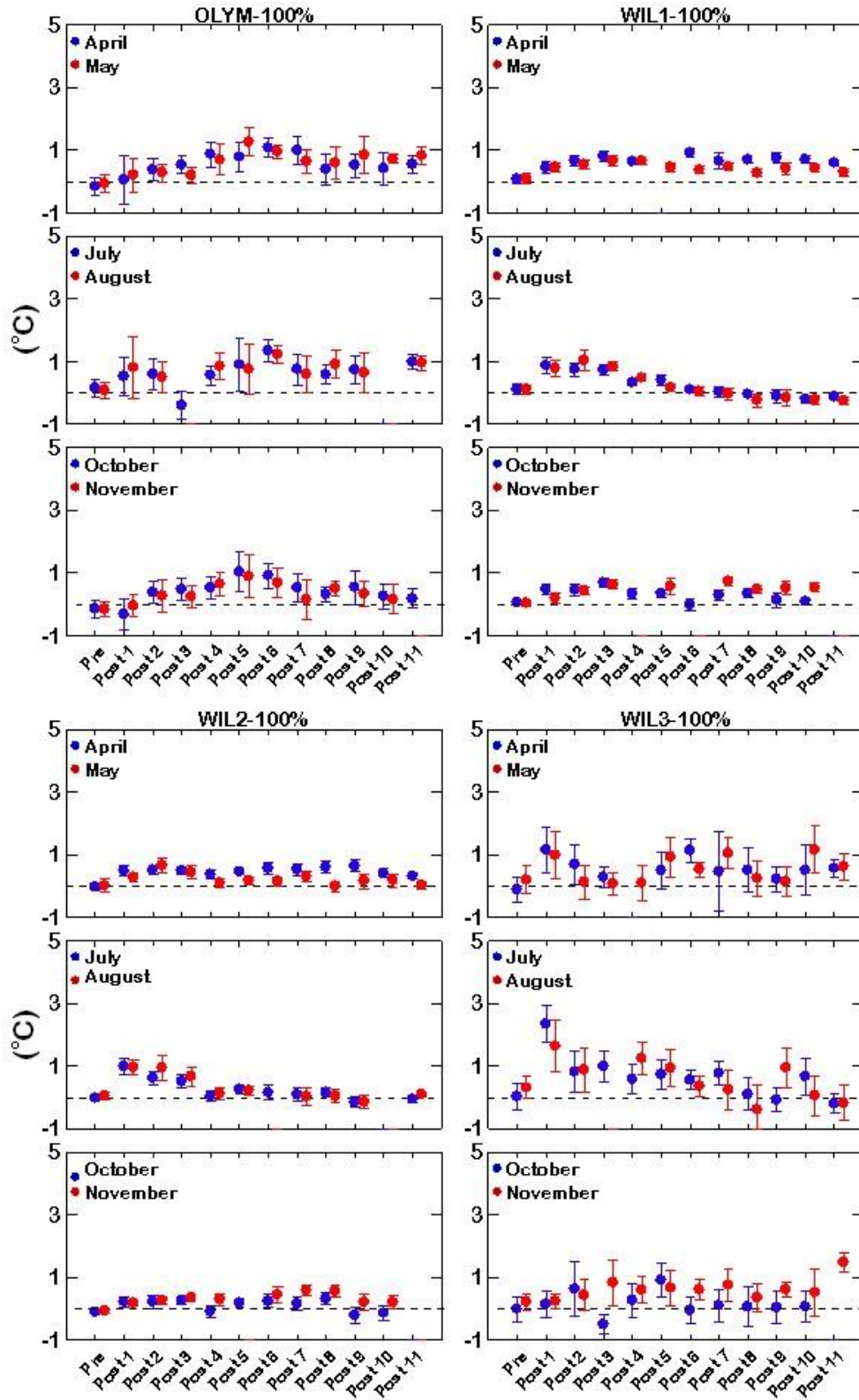


Figure 4A-13. Mean monthly temperature response (MMTR) with 95% confidence intervals for spring, summer, and fall in the 100% treatment sites. (See **Figure 4-13** in the Phase 2 report.)

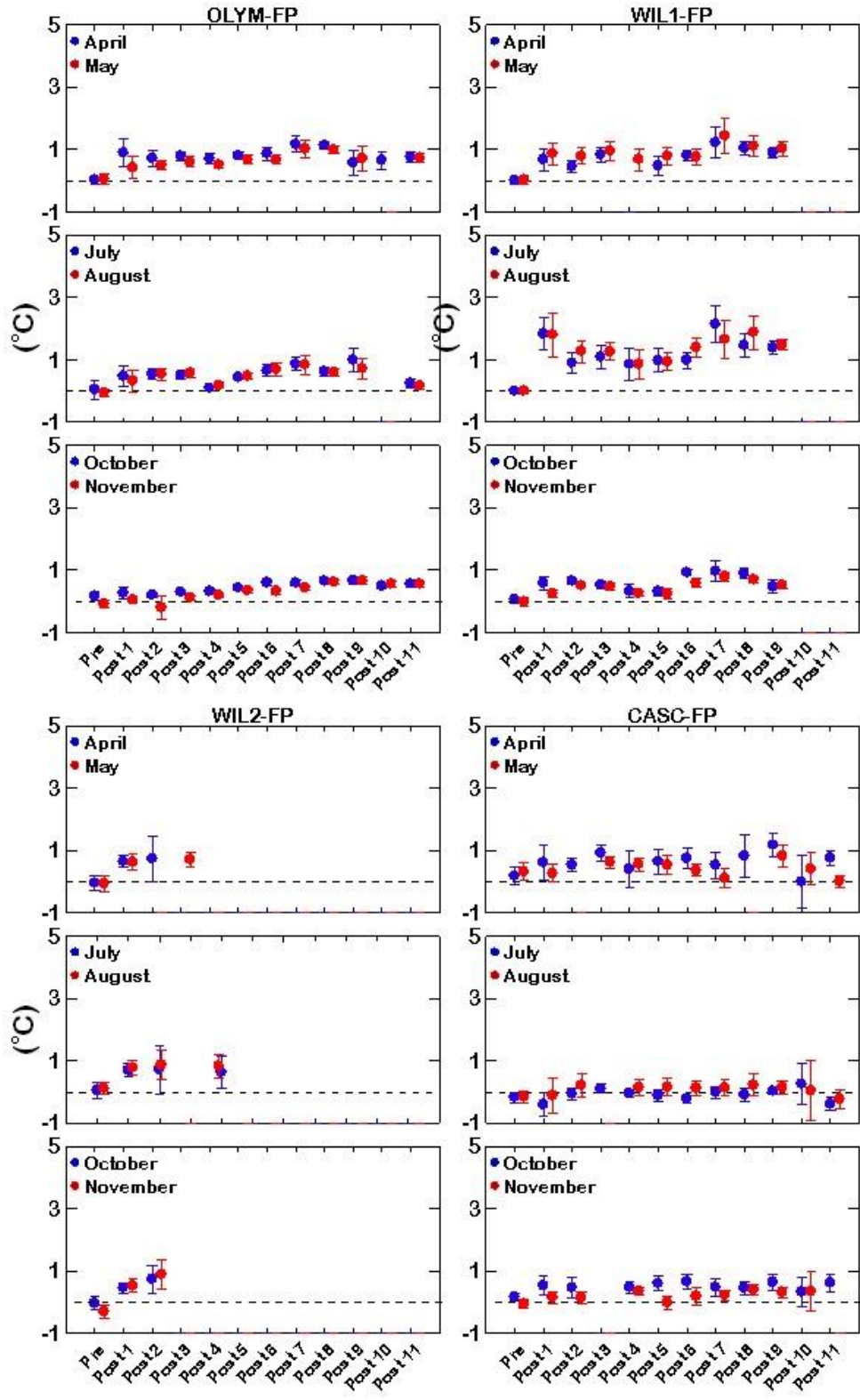


Figure 4A-14. Mean monthly temperature response (MMTR) with 95% confidence intervals for spring, summer, and fall in the FP treatment sites. WIL2-FP had only one full year of postharvest data. (See **Figure 4-14** in the Phase 2 report.)

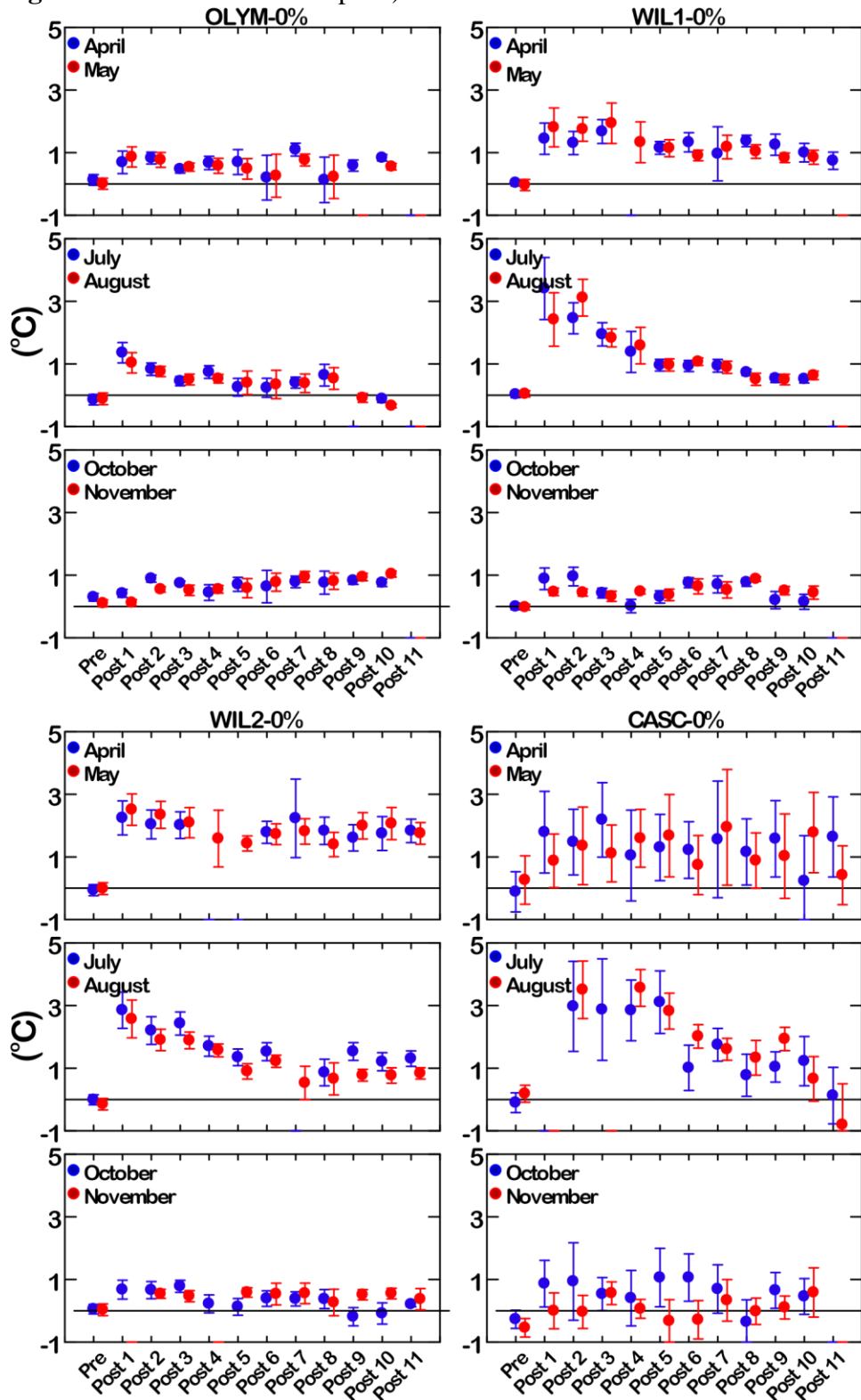


Figure 4A-15. Mean monthly temperature response (MMTR) with 95% confidence intervals for spring, summer, and fall in the 0% treatment sites. (See **Figure 4-15** in the Phase 2 report.)

Table 4A-6. July mean monthly temperature response (MMTR, °C) at the bottom of the harvest unit (Up), downstream of the harvest unit within a wider riparian buffer (Down), and the difference between them (Down minus Up). A negative difference indicates less warming downstream within the wider buffer after harvest than upstream. Shaded values indicate MMTR >0.5°C and P <0.05. (See **Table 4-16** in the Phase 2 report.)

	WIL1-100%			WIL2-100%			WIL1-FP		
	Up	Down	Diff	Up	Down	Diff	Up	Down	Diff
Post 1	0.9	0.3	-0.6	0.7	0.4	-0.2	1.8	0.4	-1.4
Post 2	0.8			0.0	0.1	0.0	0.9	0.8	-0.1
Post 3	0.7	0.2	-0.6	0.1	0.2	0.1	1.1	0.6	-0.5
Post 4	0.3	0.0	-0.3	0.0	0.0	0.0	0.9		
Post 5	0.4	0.0	-0.5	0.2	0.2	0.0			-0.4
Post 6	0.1	0.5	0.4	0.4	0.5	0.1	1.0	0.6	-0.5
Post 7	0.0	-0.4	-0.5				1.0	0.5	-1.5
Post 8	0.0	-0.4	-0.4	0.6	0.8	0.2	2.1	0.6	-0.9
Post 9	-0.1		-0.2	0.5	0.5	0.1	1.5	0.5	-0.6
Post 10	-0.2	-0.2	0.0	0.0	0.2	0.3	1.4	0.8	
				0.0	0.0	0.0		0.9	
Post 11	-0.1	-0.4	-0.3	0.3	0.5	0.2		0.7	
	OLYM-0%			WIL1-0%			CASC-0%		
	Up	Down	Diff	Up	Down	Diff	Up	Down	Diff
Post 1	1.4	0.9	-0.5	3.4	2.1	-1.3			
Post 2	0.8	0.2	-0.6	2.5	1.7	-0.8	3.4	1.7	-1.7
Post 3	0.4	0.3	-0.2	1.9	1.5	-0.5	3.0	0.9	-2.1
Post 4	0.7	0.5	-0.2	1.4		-0.2	3.0	1.6	-1.4
Post 5	0.3	0.6	0.3						-1.5
Post 6	0.2		0.1	1.0	0.8	-0.3	2.3	0.8	0.8
Post 7	0.4		0.5	0.9	0.6	-0.2	0.6	1.4	0.7
Post 8		0.5		0.9	0.7	-0.1	-0.2	0.6	1.5
Post 9	0.6	1.1	0.5	0.7	0.7	-0.1	-1.0	0.5	1.1
Post 10	0.0	0.7	0.7	0.5	0.4		-0.2	0.9	1.1
Post 11	-0.1	0.5	0.6	0.5	0.4				

Post 7	0.6	-1.0	0.3
Post 8			0.0
Post 9			
Post 10			
Post 11			

4A-3. CONCLUSIONS

Canopy closure and stream temperature in Post 10 and 11 continued the trajectories noted in the first nine post-harvest years. Canopy closure reached a minimum at Post 3–Post 4 in all treatments then began increasing by Post 5. At Post 11, canopy closure at 1-meter and at the water surface in all buffer treatments was within 10 percentage points of pre-harvest conditions ($P > 0.05$).

The $\Delta 7DTR$ was greatest in Post 1 in the 100% and 0% treatments followed by a steady decrease back to pre-harvest conditions. In contrast, $\Delta 7DTR$ in the FP treatment was similar to the 100% initially then changed little through Post 9, ranging from 0.5 to 1.2°C. Mean $\Delta 7DTR$ was less than 0.8°C ($P > 0.05$) in all treatments at both the Buffer Treatment and F/N break locations by Post 11 indicating that summer maximum stream temperatures are at or near pre-harvest conditions. Missing data from one FP site in each of the Post 10 and Post 11 years decreased our confidence in the estimates for this treatment.

The stream warming below the harvest units noted in the Phase 2 report was observed only in the WIL1-FP site and the WIL1-0% site.

4A-4. APPENDIX TABLES

Appendix Table 4A-1. Pair-wise comparisons with 95% confidence intervals of canopy closure 1m for each combination of treatments for each post-harvest year. (See **Appendix Table 4-3** in the Phase 2 report.)

Comparison	Canopy Closure 1m			95% CI	
	Estimate	t-value	P-value	Lower	Upper
REF vs. 100% Post 1	-0.55	-0.99	0.326	-1.64	0.55
REF vs. 100% Post 2	-0.55	-1.04	0.299	-1.59	0.49
REF vs. 100% Post 3	-1.01	-1.89	0.061	-2.06	0.05
REF vs. 100% Post 4	-0.60	-1.15	0.253	-1.62	0.43
REF vs. 100% Post 5	-0.38	-0.73	0.466	-1.41	0.65
REF vs. 100% Post 6	-0.31	-0.60	0.550	-1.31	0.70
REF vs. 100% Post 7	-0.11	-0.19	0.850	-1.23	1.01
REF vs. 100% Post 8	-0.57	-1.02	0.308	-1.67	0.53
REF vs. 100% Post 9	-0.32	-0.62	0.537	-1.36	0.71
REF vs. 100% Post 10	-0.09	-0.16	0.876	-1.26	1.07
REF vs. 100% Post 11	-0.06	-0.09	0.925	-1.22	1.11
REF vs. FP Post 1	-1.44	-2.74	0.007	-2.47	-0.40
REF vs. FP Post 2	-1.52	-3.00	0.003	-2.51	-0.52
REF vs. FP Post 3	-2.09	-4.07	<.0001	-3.10	-1.08
REF vs. FP Post 4	-1.69	-3.42	0.001	-2.67	-0.71
REF vs. FP Post 5	-1.49	-2.93	0.004	-2.50	-0.48
REF vs. FP Post 6	-1.24	-2.47	0.015	-2.23	-0.25
REF vs. FP Post 7	-1.09	-1.99	0.048	-2.16	-0.01
REF vs. FP Post 8	-1.35	-2.48	0.014	-2.42	-0.27
REF vs. FP Post 9	-0.86	-1.66	0.099	-1.89	0.17
REF vs. FP Post 10	-0.43	-0.73	0.466	-1.61	0.74
REF vs. FP Post 11	-0.29	-0.49	0.627	-1.48	0.90
REF vs. 0% Post 1	-4.82	-8.12	<.0001	-6.00	-3.65
REF vs. 0% Post 2	-5.46	-8.58	<.0001	-6.71	-4.20
REF vs. 0% Post 3	-5.46	-8.61	<.0001	-6.72	-4.21
REF vs. 0% Post 4	-5.21	-8.35	<.0001	-6.44	-3.98
REF vs. 0% Post 5	-3.65	-6.70	<.0001	-4.73	-2.57
REF vs. 0% Post 6	-3.83	-7.08	<.0001	-4.89	-2.76

REF vs. 0% Post 7	-3.41	-6.31	<.0001	-4.48	-2.34
REF vs. 0% Post 8	-2.02	-3.82	0.000	-3.07	-0.98
REF vs. 0% Post 9	-1.62	-3.22	0.002	-2.61	-0.63
REF vs. 0% Post 10	-1.76	-3.29	0.001	-2.82	-0.70
REF vs. 0% Post 11	-1.07	-1.94	0.054	-2.16	0.02

Appendix Table 4A-1 (continued). Pair-wise comparisons with 95% confidence intervals of canopy closure-1m for each combination of treatments for each post-harvest year. (See **Appendix Table 4-3** in the Phase 2 report.)

Comparison	Canopy Closure 1m			95% CI	
	Estimate	t-value	P-value	Lower	Upper
100% vs. FP Post 1	-0.89	-1.66	0.099	-1.95	0.17
100% vs. FP Post 2	-0.97	-1.85	0.066	-1.99	0.06
100% vs. FP Post 3	-1.08	-2.11	0.036	-2.09	-0.07
100% vs. FP Post 4	-1.10	-2.15	0.033	-2.10	-0.09
100% vs. FP Post 5	-1.11	-2.09	0.038	-2.16	-0.06
100% vs. FP Post 6	-0.94	-1.77	0.079	-1.98	0.11
100% vs. FP Post 7	-0.98	-1.69	0.094	-2.12	0.17
100% vs. FP Post 8	-0.78	-1.40	0.163	-1.87	0.32
100% vs. FP Post 9	-0.54	-0.99	0.323	-1.61	0.53
100% vs. FP Post 10	-0.34	-0.55	0.586	-1.58	0.90
100% vs. FP Post 11	-0.24	-0.37	0.710	-1.50	1.02
100% vs. 0% Post 1	-4.28	-7.10	<.0001	-5.47	-3.09
100% vs. 0% Post 2	-4.91	-7.57	<.0001	-6.19	-3.63
100% vs. 0% Post 3	-4.46	-7.05	<.0001	-5.70	-3.21
100% vs. 0% Post 4	-4.61	-7.28	<.0001	-5.87	-3.36
100% vs. 0% Post 5	-3.27	-5.80	<.0001	-4.38	-2.15
100% vs. 0% Post 6	-3.52	-6.25	<.0001	-4.63	-2.41
100% vs. 0% Post 7	-3.30	-5.75	<.0001	-4.43	-2.17
100% vs. 0% Post 8	-1.45	-2.69	0.008	-2.51	-0.39
100% vs. 0% Post 9	-1.30	-2.47	0.015	-2.34	-0.26
100% vs. 0% Post 10	-1.67	-2.92	0.004	-2.80	-0.54
100% vs. 0% Post 11	-1.02	-1.72	0.087	-2.18	0.15
FP vs. 0% Post 1	-3.39	-5.89	<.0001	-4.52	-2.25
FP vs. 0% Post 2	-3.94	-6.28	<.0001	-5.18	-2.70
FP vs. 0% Post 3	-3.37	-5.51	<.0001	-4.58	-2.16

FP vs. 0% Post 4	-3.52	-5.73	<.0001	-4.73	-2.30
FP vs. 0% Post 5	-2.16	-3.92	0.000	-3.25	-1.07
FP vs. 0% Post 6	-2.59	-4.65	<.0001	-3.68	-1.49
FP vs. 0% Post 7	-2.32	-4.20	<.0001	-3.42	-1.23
FP vs. 0% Post 8	-0.67	-1.29	0.199	-1.71	0.36
FP vs. 0% Post 9	-0.76	-1.45	0.150	-1.79	0.28
FP vs. 0% Post 10	-1.33	-2.30	0.023	-2.47	-0.19
FP vs. 0% Post 11	-0.78	-1.29	0.199	-1.97	0.41

Appendix Table 4A-2. Pair-wise comparisons with 95% confidence intervals of canopy closure0m for each combination of treatments for each post-harvest year. (See **Appendix Table 4-4** in the Phase 2 report.)

Comparison	Canopy Closure 0m			95% CI	
	Estimate	t-value	P-value	Lower	Upper
REF vs. 100% Post 1	-0.65	-0.85	0.398	-2.17	0.87
REF vs. 100% Post 2	-0.29	-0.39	0.695	-1.73	1.15
REF vs. 100% Post 3	-0.59	-0.84	0.404	-1.98	0.80
REF vs. 100% Post 4	-0.15	-0.23	0.821	-1.49	1.18
REF vs. 100% Post 5	-0.13	-0.19	0.848	-1.52	1.25
REF vs. 100% Post 6	0.72	0.87	0.388	-0.92	2.36
REF vs. 100% Post 7	1.13	1.21	0.230	-0.72	2.98
REF vs. 100% Post 8	0.41	0.50	0.616	-1.21	2.04
REF vs. 100% Post 9	0.14	0.21	0.836	-1.23	1.52
REF vs. 100% Post 10	0.74	0.85	0.397	-0.98	2.45
REF vs. 100% Post 11	0.63	0.70	0.485	-1.16	2.42
REF vs. FP Post 1	-1.43	-1.82	0.072	-3.00	0.13
REF vs. FP Post 2	-1.72	-2.36	0.020	-3.16	-0.28
REF vs. FP Post 3	-2.01	-2.81	0.006	-3.43	-0.60
REF vs. FP Post 4	-1.07	-1.54	0.126	-2.45	0.31
REF vs. FP Post 5	-1.87	-2.62	0.010	-3.29	-0.46
REF vs. FP Post 6	-1.16	-1.49	0.139	-2.70	0.38
REF vs. FP Post 7	-0.90	-1.10	0.275	-2.51	0.72
REF vs. FP Post 8	-1.13	-1.40	0.163	-2.72	0.46
REF vs. FP Post 9	-0.48	-0.63	0.530	-1.98	1.03
REF vs. FP Post 10	-0.37	-0.42	0.676	-2.11	1.37
REF vs. FP Post 11	-0.33	-0.35	0.726	-2.18	1.52

REF vs. 0% Post 1	-3.57	-4.48	<.0001	-5.14	-1.99
REF vs. 0% Post 2	-3.20	-4.23	<.0001	-4.70	-1.70
REF vs. 0% Post 3	-3.00	-3.99	0.000	-4.49	-1.52
REF vs. 0% Post 4	-2.38	-3.29	0.001	-3.81	-0.95
REF vs. 0% Post 5	-2.84	-3.86	0.000	-4.30	-1.38
REF vs. 0% Post 6	-2.33	-3.04	0.003	-3.84	-0.82
REF vs. 0% Post 7	-2.78	-3.60	0.000	-4.31	-1.25
REF vs. 0% Post 8	-2.06	-2.62	0.010	-3.61	-0.51
REF vs. 0% Post 9	-1.66	-2.27	0.025	-3.11	-0.21
REF vs. 0% Post 10	-1.65	-2.09	0.039	-3.22	-0.09
REF vs. 0% Post 11	-1.61	-1.96	0.052	-3.24	0.01

Appendix Table 4A-2 (continued). Pair-wise comparisons with 95% confidence intervals of canopy closure-0m for each combination of treatments for each post-harvest year. (See **Appendix Table 4-4** in the Phase 2 report.)

Comparison	Canopy Closure 0m			95% CI	
	Estimate	t-value	P-value	Lower	Upper
100% vs. FP Post 1	-0.78	-1.10	0.273	-2.19	0.62
100% vs. FP Post 2	-1.44	-2.09	0.038	-2.79	-0.08
100% vs. FP Post 3	-1.42	-2.16	0.033	-2.73	-0.12
100% vs. FP Post 4	-0.92	-1.37	0.174	-2.25	0.41
100% vs. FP Post 5	-1.74	-2.52	0.013	-3.10	-0.38
100% vs. FP Post 6	-1.88	-2.24	0.027	-3.53	-0.22
100% vs. FP Post 7	-2.03	-2.12	0.036	-3.92	-0.13
100% vs. FP Post 8	-1.54	-1.86	0.064	-3.17	0.09
100% vs. FP Post 9	-0.62	-0.83	0.409	-2.11	0.87
100% vs. FP Post 10	-1.10	-1.17	0.243	-2.97	0.76
100% vs. FP Post 11	-0.96	-0.97	0.334	-2.93	1.00
100% vs. 0% Post 1	-2.91	-4.07	<.0001	-4.33	-1.50
100% vs. 0% Post 2	-2.92	-4.07	<.0001	-4.33	-1.50
100% vs. 0% Post 3	-2.41	-3.45	0.001	-3.80	-1.03
100% vs. 0% Post 4	-2.23	-3.18	0.002	-3.61	-0.84
100% vs. 0% Post 5	-2.70	-3.81	0.000	-4.11	-1.30
100% vs. 0% Post 6	-3.04	-3.70	0.000	-4.67	-1.42
100% vs. 0% Post 7	-3.91	-4.26	<.0001	-5.73	-2.10
100% vs. 0% Post 8	-2.47	-3.06	0.003	-4.06	-0.87

100% vs. 0% Post 9	-1.81	-2.49	0.014	-3.24	-0.37
100% vs. 0% Post 10	-2.39	-2.78	0.006	-4.09	-0.69
100% vs. 0% Post 11	-2.25	-2.54	0.012	-4.00	-0.49
FP vs. 0% Post 1	-2.13	-2.88	0.005	-3.60	-0.67
FP vs. 0% Post 2	-1.48	-2.06	0.041	-2.90	-0.06
FP vs. 0% Post 3	-0.99	-1.40	0.165	-2.39	0.41
FP vs. 0% Post 4	-1.30	-1.80	0.073	-2.73	0.12
FP vs. 0% Post 5	-0.96	-1.33	0.187	-2.40	0.47
FP vs. 0% Post 6	-1.17	-1.52	0.132	-2.69	0.36
FP vs. 0% Post 7	-1.89	-2.37	0.019	-3.46	-0.31
FP vs. 0% Post 8	-0.93	-1.18	0.241	-2.49	0.63
FP vs. 0% Post 9	-1.18	-1.50	0.136	-2.74	0.38
FP vs. 0% Post 10	-1.28	-1.47	0.144	-3.01	0.44
FP vs. 0% Post 11	-1.28	-1.40	0.165	-3.10	0.53

Appendix Table 4A-3. Pair-wise comparisons with 95% confidence intervals of the seven-day average treatment response ($\Delta 7DTR$) at the Buffer Treatment locations for each combination of treatments for each post-harvest year. (See **Appendix Table 4-17** in the Phase 2 report.)

Comparison	$\Delta 7DTR$ Buffer Treatment			95% CI	
	Estimate	t-value	P-value	Lower	Upper
100%-Pre vs. Post 1	1.08	-3.30	0.001	0.43	1.72
100%-Pre vs. Post 2	1.11	-3.41	0.001	0.46	1.76
100%-Pre vs. Post 3	0.32	-0.97	0.332	-0.33	0.96
100%-Pre vs. Post 4	0.52	-1.61	0.111	-0.12	1.17
100%-Pre vs. Post 5	0.42	-1.29	0.200	-0.23	1.07
100%-Pre vs. Post 6	0.17	-0.53	0.600	-0.48	0.82
100%-Pre vs. Post 7	0.32	-0.97	0.334	-0.33	0.96
100%-Pre vs. Post 8	0.08	-0.23	0.817	-0.57	0.72
100%-Pre vs. Post 9	0.33	-1.01	0.314	-0.32	0.98
100%-Pre vs. Post 10	0.11	-0.29	0.773	-0.62	0.83
100%-Pre vs. Post 11	-0.08	0.25	0.801	-0.73	0.56
FP-Pre vs. Post 1	1.13	-3.63	0.000	0.51	1.75
FP-Pre vs. Post 2	0.94	-3.00	0.003	0.32	1.55

FP-Pre vs. Post 3	0.79	-2.18	0.031	0.07	1.51
FP-Pre vs. Post 4	0.55	-1.78	0.078	-0.06	1.17
FP-Pre vs. Post 5	0.52	-1.43	0.154	-0.20	1.24
FP-Pre vs. Post 6	0.91	-2.50	0.014	0.19	1.63
FP-Pre vs. Post 7	1.24	-3.42	0.001	0.52	1.96
FP-Pre vs. Post 8	1.20	-3.30	0.001	0.48	1.92
FP-Pre vs. Post 9	0.86	-2.36	0.020	0.14	1.58
FP-Pre vs. Post 10	0.19	-0.33	0.742	-0.97	1.36
<u>FP-Pre vs. Post 11</u>	<u>0.67</u>	<u>-1.55</u>	<u>0.123</u>	<u>-0.19</u>	<u>1.53</u>
0%-Pre vs. Post 1	3.78	-10.16	<.0001	3.04	4.52
0%-Pre vs. Post 2	3.02	-9.11	<.0001	2.36	3.67
0%-Pre vs. Post 3	2.34	-7.07	<.0001	1.69	3.00
0%-Pre vs. Post 4	2.03	-6.12	<.0001	1.37	2.69
0%-Pre vs. Post 5	1.56	-4.71	<.0001	0.90	2.22
0%-Pre vs. Post 6	1.30	-3.93	0.000	0.64	1.96
0%-Pre vs. Post 7	1.21	-3.64	0.000	0.55	1.86
0%-Pre vs. Post 8	0.96	-2.90	0.005	0.31	1.62
0%-Pre vs. Post 9	0.82	-2.22	0.029	0.09	1.55
0%-Pre vs. Post 10	0.85	-2.55	0.012	0.19	1.50
<u>0%-Pre vs. Post 11</u>	<u>0.43</u>	<u>-1.16</u>	<u>0.250</u>	<u>-0.31</u>	<u>1.16</u>

Appendix Table 4A-3 (continued). Pair-wise comparisons with 95% confidence intervals of the seven-day average treatment response ($\Delta 7DTR$) at the Buffer Treatment locations for each combination of treatments for each post-harvest year. (See **Appendix Table 4-17** in the Phase 2 report.)

Comparison	<u>$\Delta 7DTR$ Buffer Treatment</u>			<u>95% CI</u>	
	Estimate	t-value	P-value	Lower	Upper
100% vs. FP Post 1	0.05	0.12	0.905	-0.84	0.95
100% vs. FP Post 2	-0.18	-0.39	0.697	-1.07	0.72
100% vs. FP Post 3	0.47	0.97	0.334	-0.49	1.44

100% vs. FP Post 4	0.03	0.07	0.948	-0.86	0.92
100% vs. FP Post 5	0.10	0.20	0.838	-0.87	1.07
100% vs. FP Post 6	0.74	1.51	0.135	-0.23	1.70
100% vs. FP Post 7	0.92	1.89	0.061	-0.04	1.89
100% vs. FP Post 8	1.12	2.30	0.024	0.15	2.09
100% vs. FP Post 9	0.53	1.08	0.281	-0.44	1.50
100% vs. FP Post 10	0.09	0.13	0.898	-1.29	1.46
<u>100% vs. FP Post 11</u>	<u>0.75</u>	<u>1.39</u>	<u>0.167</u>	<u>-0.32</u>	<u>1.83</u>
100% vs. 0% Post 1	2.70	5.47	<.0001	1.72	3.68
100% vs. 0% Post 2	1.91	4.10	<.0001	0.98	2.83
100% vs. 0% Post 3	2.03	4.36	<.0001	1.10	2.95
100% vs. 0% Post 4	1.51	3.24	0.002	0.58	2.43
100% vs. 0% Post 5	1.14	2.45	0.016	0.22	2.06
100% vs. 0% Post 6	1.13	2.43	0.017	0.21	2.05
100% vs. 0% Post 7	0.89	1.91	0.058	-0.03	1.81
100% vs. 0% Post 8	0.89	1.91	0.059	-0.04	1.81
100% vs. 0% Post 9	0.49	0.99	0.323	-0.49	1.47
100% vs. 0% Post 10	0.74	1.50	0.136	-0.24	1.72
<u>100% vs. 0% Post 11</u>	<u>0.51</u>	<u>1.03</u>	<u>0.304</u>	<u>-0.47</u>	<u>1.49</u>
FP vs. 0% Post 1	2.65	5.46	<.0001	1.69	3.61
FP vs. 0% Post 2	2.08	4.58	<.0001	1.18	2.98
FP vs. 0% Post 3	1.55	3.16	0.002	0.58	2.53
FP vs. 0% Post 4	1.48	3.25	0.002	0.57	2.38
FP vs. 0% Post 5	1.04	2.12	0.037	0.07	2.01
FP vs. 0% Post 6	0.39	0.80	0.425	-0.58	1.37
FP vs. 0% Post 7	-0.03	-0.07	0.945	-1.01	0.94
FP vs. 0% Post 8	-0.23	-0.48	0.634	-1.21	0.74
FP vs. 0% Post 9	-0.04	-0.07	0.941	-1.07	0.99

FP vs. 0% Post 10	0.65	0.96	0.338	-0.69	1.99
FP vs. 0% Post 11	-0.25	-0.43	0.668	-1.37	0.88

Appendix Table 4A-4. Pair-wise comparisons with 95% confidence intervals of the seven-day average temperature response ($\Delta 7DTR$) at the F/N break locations for each combination of treatments for each post-harvest year. (See **Appendix Table 4-18** in the Phase 2 report.)

Comparison	$\Delta 7DTR$ F/N Break			95% CI	
	Estimate	t-value	P-value	Lower	Upper
100%-Pre vs. Post 1	1.18	-3.11	0.002	0.43	1.94
100%-Pre vs. Post 2	0.63	-1.66	0.099	-0.12	1.39
100%-Pre vs. Post 3	0.57	-1.49	0.138	-0.19	1.32
100%-Pre vs. Post 4	0.61	-1.61	0.111	-0.14	1.37
100%-Pre vs. Post 5	0.36	-0.95	0.346	-0.39	1.11
100%-Pre vs. Post 6	0.35	-0.93	0.354	-0.40	1.11
100%-Pre vs. Post 7	1.05	-2.77	0.007	0.30	1.81
100%-Pre vs. Post 8	0.52	-1.38	0.172	-0.23	1.28
100%-Pre vs. Post 9	0.43	-1.12	0.263	-0.33	1.18
100%-Pre vs. Post 10	0.10	-0.24	0.815	-0.74	0.94
100%-Pre vs. Post 11	0.21	-0.54	0.590	-0.55	0.96
FP-Pre vs. Post 1	1.12	-3.09	0.003	0.00	0.00
FP-Pre vs. Post 2	0.93	-2.55	0.012	0.00	0.00
FP-Pre vs. Post 3	0.78	-1.84	0.069	0.00	0.00
FP-Pre vs. Post 4	0.54	-1.50	0.136	0.00	0.00
FP-Pre vs. Post 5	0.51	-1.20	0.234	0.00	0.00
FP-Pre vs. Post 6	0.89	-2.11	0.037	0.00	0.00
FP-Pre vs. Post 7	1.23	-2.90	0.005	0.00	0.00
FP-Pre vs. Post 8	1.18	-2.80	0.006	0.00	0.00
FP-Pre vs. Post 9	0.84	-2.00	0.048	0.00	0.00
FP-Pre vs. Post 10	0.16	-0.23	0.821	0.00	0.00
FP-Pre vs. Post 11	0.64	-1.27	0.208	0.00	0.00

0%-Pre vs. Post 1	3.33	-8.75	<.0001	2.58	4.08
0%-Pre vs. Post 2	2.74	-7.20	<.0001	1.98	3.49
0%-Pre vs. Post 3	2.03	-5.34	<.0001	1.28	2.79
0%-Pre vs. Post 4	1.91	-5.01	<.0001	1.15	2.66
0%-Pre vs. Post 5	1.74	-4.56	<.0001	0.98	2.49
0%-Pre vs. Post 6	1.27	-2.97	0.004	0.42	2.12
0%-Pre vs. Post 7	1.49	-3.91	0.000	0.73	2.24
0%-Pre vs. Post 8	1.01	-2.66	0.009	0.26	1.76
0%-Pre vs. Post 9	0.95	-2.22	0.028	0.10	1.79
0%-Pre vs. Post 10	0.62	-1.64	0.104	-0.13	1.38
0%-Pre vs. Post 11	0.29	-0.69	0.495	-0.55	1.13

Appendix Table 4A-4 (continued). Pair-wise comparisons with 95% confidence intervals of the seven-day average temperature response ($\Delta 7DTR$) at the F/N break locations for each combination of treatments for each post-harvest year. (See **Appendix Table 4-18** in the Phase 2 report.)

Comparison	$\Delta 7DTR$ F/N Break			95% CI	
	Estimate	t-value	P-value	Lower	Upper
100% vs. FP Post 1	-0.06	-0.12	0.907	-1.10	0.98
100% vs. FP Post 2	0.66	1.16	0.250	-0.47	1.78
100% vs. FP Post 3	0.41	0.73	0.467	-0.71	1.54
100% vs. FP Post 4	-0.07	-0.13	0.898	-1.11	0.97
100% vs. FP Post 5	0.14	0.25	0.799	-0.98	1.27
100% vs. FP Post 6	0.54	0.95	0.346	-0.59	1.66
100% vs. FP Post 7	0.17	0.30	0.763	-0.95	1.30
100% vs. FP Post 8	0.66	1.16	0.250	-0.47	1.78
100% vs. FP Post 9	0.41	0.73	0.467	-0.71	1.54
100% vs. FP Post 10	0.06	0.07	0.945	-1.55	1.66
100% vs. FP Post 11	0.43	0.69	0.495	-0.82	1.68
100% vs. 0% Post 1	2.15	3.99	0.000	1.08	3.21

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

100% vs. 0% Post 2	2.11	3.91	0.000	1.04	3.17
100% vs. 0% Post 3	1.46	2.72	0.008	0.40	2.53
100% vs. 0% Post 4	1.30	2.41	0.018	0.23	2.36
100% vs. 0% Post 5	1.38	2.56	0.012	0.31	2.44
100% vs. 0% Post 6	0.92	1.60	0.113	-0.22	2.05
100% vs. 0% Post 7	0.44	0.85	0.050	1.17	0.00
100% vs. 0% Post 8	0.49	0.91	0.367	-0.58	1.55
100% vs. 0% Post 9	0.52	0.91	0.366	-0.61	1.65
100% vs. 0% Post 10	0.52	0.92	0.361	-0.61	1.65
<u>100% vs. 0% Post 11</u>	<u>0.09</u>	<u>0.15</u>	<u>0.881</u>	<u>-1.04</u>	<u>1.22</u>
FP vs. 0% Post 1	2.21	4.20	<.0001	1.17	3.25
FP vs. 0% Post 2	1.81	3.45	0.001	0.77	2.85
FP vs. 0% Post 3	1.26	2.21	0.029	0.13	2.38
FP vs. 0% Post 4	1.36	2.59	0.011	0.32	2.41
FP vs. 0% Post 5	1.23	2.17	0.032	0.10	2.36
FP vs. 0% Post 6	0.38	0.63	0.531	-0.81	1.57
FP vs. 0% Post 7	0.26	0.46	0.644	-0.86	1.39
FP vs. 0% Post 8	-0.17	-0.30	0.765	-1.30	0.96
FP vs. 0% Post 9	0.10	0.17	0.864	-1.08	1.29
FP vs. 0% Post 10	0.47	0.59	0.553	-1.09	2.02
<u>FP vs. 0% Post 11</u>	<u>-0.35</u>	<u>-0.53</u>	<u>0.600</u>	<u>-1.65</u>	<u>0.96</u>

Appendix Table 4A-5. Mean monthly temperature response (MMTR) values for OLYM-100% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{--}1.0^\circ\text{C}$, $> 1.0\text{--}2.0^\circ\text{C}$, $> 2.0\text{--}3.0^\circ\text{C}$, $> 3.0\text{--}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-5** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
OLYM-100%	T4	15	Pre 1	0.0	-0.1	-0.2	-0.2	-0.3	-0.1	0.2	0.3	0.3	-0.1	0.0	0.0	
			Post 1	0.2	0.1	-0.1	-0.4	0.0	0.6	1.1	0.2	0.2	0.0	0.1	0.0	-0.1
			Post 2	0.5	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.0	0.0	0.0	0.1
			Post 3	0.0	0.3	0.5	0.1	-0.1	0.0	0.0	0.1	0.2	0.1	-0.1	-0.3	
			Post 4	0.3	0.5	0.5	0.1	-0.1	0.0	-0.1	0.2	0.3	0.0	0.2	0.4	
			Post 5	0.2	0.4	0.5	0.2	0.5	0.6	0.3	0.4	0.4	0.1	0.1	0.0	
			Post 6	0.4	0.4	0.3	0.4	0.6	0.6	0.6	0.4	0.4	0.4	0.2	0.2	
			Post 7			0.3	0.1	0.0	0.0	-0.2	-0.3	0.1	0.1	-0.1	0.0	
			Post 8	0.1	0.3	0.6	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.3	0.3	
			Post 9	0.2	0.0	0.1	0.3	0.3	-0.1	-0.1	0.0	0.5	0.1	0.1	0.2	
			Post 10			0.4	0.4	0.4						-0.4		
			Post 11					0.1			0.4	0.3	0.4	0.2		
OLYM-100%	RB3	121	Pre 2	0.2	0.2	0.5	0.0	-0.2	-0.1	0.1	0.2	0.3	-	-0.5	-0.1	
			Pre 1	0.1	0.0	0.1	-0.3	-0.2	-0.2	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.0
			Post 1	0.6	0.8	0.6	0.4	0.3	0.2	0.2	0.0	0.1	0.1	0.2	0.2	
			Post 2	0.7	0.3	0.6	0.5	0.4	0.3	0.2	0.0	0.2	0.4	0.2	0.2	
			Post 3	0.6	0.7	1.0	0.7	0.4	0.4	0.2	0.3	0.4	0.4	0.3	0.3	
			Post 4	0.6	0.9	0.8	0.8	0.6	0.6	0.5	0.6	0.4	0.3	0.5	0.8	
			Post 5	0.4	0.5	0.5	0.6	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.2	
			Post 6	0.8	0.9	0.6	0.5	0.7	0.6	0.6	0.6	0.5	0.6	0.8	0.3	
			Post 7	0.7	0.7	0.9	0.2	0.0	0.1	0.2	0.0	0.4	0.4	0.4	0.5	
			Post 8	0.7	-0.2	0.0	0.0	-0.1	0.0	0.2	0.5	0.7	0.5	0.6	0.6	
			Post 9	0.3	0.2	0.1	0.3	0.3	-		0.3	-0.3	-			
			0.1	0.2	0.1	0.3	0.4				-					
0.2	Post 10	0.2	-0.2	-			0.6	0.3	0.2	0.1	-0.4	-0.3	-			
	0.0	0.1	0.2													
	Post 11			-0.2	0.0	-0.3	-0.4	-0.4	-0.2	-0.2	-0.2					
OLYM-100%	RB2	153	Pre 2	0.2	-0.1	0.4	0.0	0.0	0.2	0.3	0.1	0.1	-	-0.7	0.0	
			Pre 1	0.3	0.5	0.0	0.1	0.3	0.0	-0.1	-0.3	-0.2	-0.2	-0.3	-0.1	
			Post 1			0.2	0.1	0.3	0.0	-0.4	0.1	0.0	0.3			
			Post 2	0.6	0.2	0.6	0.5	0.4	0.3	0.1	-0.1	0.0	0.3	0.1	0.2	
			Post 3	0.2	0.5	0.6	0.2	0.2	-0.1	-0.3	-0.1	0.1	0.1	0.1	-0.1	
			Post 4	0.4	0.8	0.7	0.7	0.5	0.3	0.0	0.3	-0.1	0.4	0.4	0.7	
			Post 5	0.5	0.5	0.6	0.6	0.8	0.9	0.7	0.5	0.6	0.5	0.5	0.2	
			Post 6	1.4	1.6	1.2	1.0	0.9	0.8	0.6	0.7	0.8	1.1	0.6		
			Post 7	1.1	1.0	1.0	1.1					0.4	0.3	0.0	0.3	
			Post 8	1.0	0.2	0.0	-0.7	0.3	0.5	0.2	1.0	1.1	0.8	0.9	1.2	
			Post 9	0.6	0.4	0.4	0.1	0.6	0.3	0.6	0.4	0.9	0.4	0.4	0.5	
			Post 10	0.9		0.6	0.6	0.6	0.4	0.0	0.1	-0.1	0.3	0.2	0.3	
	Post 11			0.5	0.8	0.6	0.8	0.7	0.6	0.2						

Appendix Table 4A-5 (continued). Mean monthly temperature response (MMTR) values for OLYM-100% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-5** in the Phase 2 report.)

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
OLYM-100%	RB1	221	Pre 2	0.2	0.2	0.6	0.1	0.0	-0.1	0.2	0.0	0.3	-0.1	-0.4	-0.1	
			Pre 1	0.2	0.2	-0.3	-0.4	0.0	-0.3	0.1	0.1	0.1	0.0	0.0	-0.3	
			Post 1	0.6	0.6	0.7	0.1	0.2	0.5	0.5	0.8	0.1	-0.3	0.0	0.0	
			Post 2	0.6	0.5	0.7	0.4	0.3	0.3	0.6	0.5	0.4	0.4	0.3	0.3	
			Post 3	0.7	1.0	1.1	0.5	0.2	0.0	-0.4				0.5	0.2	0.2
			Post 4	0.6	0.8	1.2	0.9	0.7	0.6	0.6	0.8	0.6	0.6	0.5	0.6	0.7
			Post 5	0.7	0.6	0.7	0.8	1.3	1.5	0.9	0.8	1.3	1.0	0.9	0.5	
			Post 6	1.1	1.1	1.1	1.1	1.0	1.0	1.3	1.2	1.1	0.9	0.7	0.5	
			Post 7	0.9	0.8	0.9	1.0	0.6	0.6	0.8	0.6	0.6	0.5	0.1	0.3	
			Post 8	0.8	0.4	0.5	0.4	0.6	0.5	0.6	0.9	0.5	0.3	0.5	0.4	
			Post 9	0.7	0.4	0.5	0.5	0.8	0.6	0.7	0.7	1.2	0.5	0.3	0.4	
			Post 10	0.6	0.3	0.3	0.4	0.7					0.2	0.3	0.2	0.2
Post 11			0.2	0.6	0.8	0.6	1.0	1.0	0.6	0.2						
OLYM-100%	T3	270	Pre 1	0.1	0.2	0.3	0.0	0.1	0.0	0.3	0.2	0.1	-0.2	-0.2	-0.2	
			Post 1	0.4	0.3	0.4	0.2	0.5	0.8	0.8	0.4	0.4	0.2	-0.1	0.3	
			Post 2			0.4	0.4	0.3	0.5	0.7	0.6	0.6				
			Post 3	0.0	0.4	0.9	0.2	0.3	0.6	0.7	0.7	0.8	-0.1	-0.2	-0.6	
			Post 4			1.0	0.8	0.7	0.5	0.9	1.4	0.7	-0.4			
			Post 6				1.0	1.2	1.3	1.4	1.4	0.9	0.6	0.4		
			Post 7	0.5	0.5	0.6	1.1	0.7	0.9	1.3	1.4	0.4	0.1	-0.1	0.1	
			Post 8	0.1	0.4	0.8	0.6	0.6	0.7	0.7	0.9	0.4	-0.1	0.1	0.1	
			Post 9	0.2	0.0	0.3	0.4	0.7	0.6	1.0			-0.4	-0.2	0.0	
			Post 10	0.2		0.5	0.6	0.7	0.8	0.8	0.2	-0.1	-0.3	-0.1		
			Post 11			0.6	0.8	0.7	1.0	0.9	0.7					
			OLYM-100%	LB1	293	Pre 2	0.2	0.2	0.5	0.0	-0.2	-0.1	0.1	0.2	0.3	-0.1
Pre 1	0.1	0.0				0.1	-0.3	-0.2	-0.2	-0.1	0.0	-0.1	0.0	-0.1	0.0	
Post 1						-0.4	-0.1	0.1	0.6	0.8	0.4	0.2	0.1	0.3		
Post 2	0.6	0.2				0.5	0.1	-0.1	0.1	0.5	0.3	0.6	0.1	0.0	-0.1	
Post 3	0.6	0.7				1.0	0.7	0.4	0.4	0.2	0.3	0.4	0.4	0.3	0.3	
Post 4	0.6	0.9				0.8	0.8	0.6	0.6	0.5	0.6	0.4	0.3	0.5	0.8	
Post 5	0.4	0.5				0.5	0.6	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.2	
Post 6	0.8	0.9				0.6	0.5	0.7	0.6	0.6	0.6	0.5	0.6	0.8	0.3	
Post 7	0.7	0.7				0.9	0.2	0.0	0.1	0.2	0.0	0.4	0.4	0.4	0.5	
Post 8	0.6	-0.2				0.1	0.1	-0.1	0.0	0.0	0.2	0.5	0.4	0.5	0.4	
Post 9	1.6	1.8				1.1	0.9	1.0	0.7	0.8	0.6	0.9	0.6	0.7	0.6	
Post 10						1.2	1.0	0.8	0.6	0.3	0.2	0.0				
Post 11				1.0	1.1	0.9	0.9	0.8	0.6	0.2						

Appendix Table 4A-5 (continued).

OLYM-100% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^{\circ}\text{C}$, blue shading = $MMTR < -0.5^{\circ}\text{C}$ and $P < 0.05$. MMTR values $> 0.5^{\circ}\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^{\circ}\text{C}$, $> 1.0\text{-}2.0^{\circ}\text{C}$, $> 2.0\text{-}3.0^{\circ}\text{C}$, $> 3.0\text{-}4.0^{\circ}\text{C}$, and $> 4.0^{\circ}\text{C}$. (See **Appendix Table 4-5** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Pre 2	0.0	0.0	0.4	-0.2	-0.2	-0.1	0.0	-0.1	0.1	-0.2	-0.5	0.2
			Pre 1	0.0	0.4	0.1	-0.1	0.0	-0.1	0.3	0.3	0.1	-0.1	0.0	-0.1
			Post 1	0.3	0.2	0.4	0.2	0.2	0.4	0.5	0.4	0.3	0.2	0.0	-0.1
			Post 2	0.9		0.5	0.3	0.3	0.4	0.6	0.5	0.4	0.2	0.2	0.3
			Post 3	0.2	0.4	0.8	0.4	0.3	0.5	0.4	0.5	0.5	0.3	0.2	-0.1
			Post 4	0.4	0.7	0.6	0.5	0.4	0.4	0.5	0.9	0.5	0.3	0.5	0.7
			Post 5	0.2	0.3	0.5	0.4	0.6	0.8	0.8	0.9	0.7	0.3	0.3	0.0
			Post 6			0.5	0.5	0.8	0.8	0.7	0.5	0.5			
			Post 7	0.4	0.5	0.5	0.6	0.4	0.7	1.2	1.1	0.1	0.0	0.0	0.3
			Post 8	1.3	0.9	0.9	0.2	0.1	0.2	0.2	0.5	0.1	0.3	0.5	0.7
			Post 9	0.7	0.6	0.5	0.4	0.4	0.3	0.5			0.1	0.4	
			Post 11				0.4	0.5	0.5	0.8	0.7	0.3	0.0		
OLYM-100%	T1	452	Pre 2	0.3	0.0	0.6	0.1	-0.1	-0.1	0.2	-0.1	0.0	-0.2	-0.7	0.3
			Pre 1	0.0	0.3	0.0	-0.3	-0.1	-0.2	0.1	0.2	0.0	-0.2	-0.1	-0.3
			Post 1	0.3	0.4	0.4	0.1	0.3	0.5	0.6	0.3	0.3	0.2	0.1	0.0
			Post 2	0.5	0.1	0.6	0.4	0.2	0.4	0.5	0.5	0.5	0.2	0.1	0.0
			Post 3	0.2	0.4	0.8	0.3	0.2	0.4	0.4	0.7	0.7	0.1	0.0	-0.2
			Post 4	0.3	0.6	0.6	0.4	0.4	0.3	0.4	0.8	0.5	0.2	0.4	0.5
			Post 5	0.1	0.4	0.3	0.3	0.9	0.8	0.8	0.8	0.7	0.4	0.4	-0.1
			Post 6	1.1	1.0	0.7	0.7	0.9	1.0	1.0	1.0	0.8	0.7	0.6	0.3
			Post 7	1.2	1.6	1.4	2.1	1.6	1.8	1.3	1.9	1.4	1.2	1.1	1.1
			Post 8	0.3	-0.2	0.3	1.8	1.8	2.1	2.3	2.6	2.0	0.3	0.5	0.4
			Post 9	0.7	0.7	0.6	0.2	0.6	0.3	0.5	0.6	0.9	0.5	0.3	
OLYM-100%	T2	371			0.0								-0.2		
					0.4								-0.1		
					0.2								0.2		
													0.2		
													0.3		
													0.3		
													0.3		

Mean monthly temperature response (MMTR) values for
 Post 10 0.2 -0.1 -0.2 0.4 0.5 0.5 0.8 0.8 0.5 0.1 0.1 0.0 -0.1
 Post 11 0.2 0.3 0.5 0.8 0.8 0.5 0.1

Appendix Table 4A-6. Mean monthly temperature response (MMTR) values for WIL1-100% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-6** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WIL1-100%	T4	3	Pre 2	0.2	0.2	0.3	-0.1	-0.6	-0.4	0.8	0.6	-0.1	-0.7	-0.1	0.0
			Pre 1	0.0	0.3	0.0	-0.3	0.5	0.6	1.4	1.8	1.9	0.2	-0.2	0.1
			Post 1	1.1	1.9	1.7	1.3	1.4	2.1	3.6	2.9	2.9	1.1	0.6	0.9
			Post 2	1.0	0.9	1.0	0.9	0.6	0.4	2.2	2.7	2.1	0.9	0.1	0.6
			Post 3	0.7	0.7	0.9	0.7	0.6	0.7	1.7	2.5	2.4	0.6	0.6	0.4
			Post 4	0.8	0.9	0.9	0.9	0.3	0.0	0.2			0.3	0.3	0.6
			Post 5					0.8							
			Post 6	1.0	1.2	1.2	0.3	0.0	1.2	1.1	1.7	1.1	0.6	0.5	0.5
			Post 7	1.2	1.4	1.3	1.2						0.6	0.4	0.8
			Post 8										0.0	0.0	0.0
			Post 9	0.9	1.1	1.1	1.0	0.9	1.1	1.8	1.6	1.0	0.3	0.4	0.6
			Post 10	0.4	1.0	1.3	1.4	1.0	1.0	0.7	1.3	0.3	-0.1	0.5	0.5
				1.0	1.0	1.1	0.7	0.5	0.5	1.0	1.6	1.5	0.5	0.3	0.9
						0.7	0.6	1.0	0.9	1.2	1.2	0.7			1.1

WIL1-100%	LB2	9	Pre 2	-0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
			Pre 1	0.0	0.0	0.0	-0.2	-0.3	-0.4	-0.3	-0.2	-0.2	0.1	0.1	0.2
			Post 1	0.1	0.3	0.5	0.6	0.7	0.7	0.9	0.8	0.8	0.3	0.0	-0.3
			Post 2	0.2	0.2	0.5	0.5	0.5	0.3	0.6	0.8	0.4	0.3	0.1	0.1
			Post 3	0.3	0.4	0.5	0.5	0.4	0.3	0.5	0.5	0.4	0.4	0.4	0.4
			Post 4	0.2	0.4	0.5	0.5	0.4	0.2	0.2	0.4	0.6	0.3	0.1	0.2
			Post 5	0.6	0.6	0.6	0.5	0.3	0.0	0.0	-0.1	-0.1	0.2	0.4	0.5
			Post 6	0.4		0.7	0.7	0.4	0.2	0.2	0.3	0.3	0.4	0.4	0.7
			Post 7	0.9	1.0	1.1	0.7	0.5	0.2	0.0	-0.1	0.2	0.2	0.7	0.8
			Post 8	0.8	1.0	1.0	0.8	0.3	0.1	0.0	-0.2	0.3	0.3	0.5	0.8
			Post 9	0.8	0.9	0.9	0.8	0.4	-0.1	-0.4	-0.5	-0.3	0.2	0.5	0.8
			Post 10	0.9	0.9	0.8	0.7	0.4	-0.1	-0.3	-0.3	0.0	0.2	0.6	1.1
Post 11			0.5	0.6	0.2	0.0									
WIL1-100%	LB1	100	Pre 2	-0.1	0.1	0.1	0.1	0.0	-0.1	-0.2	0.1	0.1	-0.2	-0.1	-0.1
			Pre 1	0.1	0.1	0.3	0.2	-0.1	-0.4	-0.7	-0.7	-0.6	-0.1	0.1	0.0
			Post 1	0.2	0.4	0.6	0.4	0.1	-0.2	-0.4	-0.1	0.1	0.0	0.3	0.2
			Post 2			0.5	0.6	0.5	0.2	-0.1	0.0	-0.1			
			Post 3	0.4	0.5	0.5	0.7	0.5	0.1	-0.2	0.0	0.0	0.1	0.5	0.4
			Post 4	0.4	0.6	0.5	0.5	0.5	0.4	0.1	0.1	0.0	0.1	0.4	0.5
			Post 5	0.7	0.8	0.7	0.7	0.6	0.3	0.3	0.3	0.3	0.3	0.5	0.7
			Post 6	0.7	0.8	0.9	0.9	0.9					0.6	0.5	0.8
			Post 7	0.7	0.9	1.1	1.2	0.9	0.7	0.8	0.9	1.0		0.6	0.6
			Post 8	0.8	0.9	1.0	0.2	0.3	0.7	0.7	1.0	1.3	1.0	0.7	0.7
			Post 9	0.7	0.8	0.9	1.0	0.7	0.4	0.2	0.4	0.3	0.1	0.4	0.5
			Post 10	0.8	1.1	1.1	1.0	0.6				0.7	0.1	0.1	0.8
Post 11			0.7	0.7	0.7	0.5	0.6	0.6	0.6						

Appendix Table 4A-6 (continued).

WIL1-100% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading = $MMTR < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-6** in the Phase 2 report.)

Mean monthly temperature response (MMTR) values for

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WIL1-100%	T3	228	Pre 2	-0.1	0.1	0.3	0.0	0.0	-0.1	0.2	0.2	0.2	0.0	-0.1	-0.1
			Pre 1	0.2	0.2	0.3	0.1	0.2	0.3	1.2	1.2	0.5	0.1	0.0	0.2
			Post 1	0.3	0.4	0.8	0.7	0.9	1.1	1.6	1.4	1.3	0.5	0.0	0.0
			Post 2	0.4	0.4	0.7	0.7	0.6	0.5	1.0	0.9	0.6	0.2	0.1	0.2
			Post 3	0.6	0.5	0.7	0.8	0.8	0.6	0.9	0.9	0.8	0.5	0.5	0.4
			Post 4	0.5	0.7	0.7	0.7	0.7	0.3	0.4	0.6	0.4	0.2	0.3	0.4
			Post 5	1.0	1.1	0.9	0.8	0.6	0.4	0.5	0.4	0.4	0.3	0.6	0.9
			Post 6	0.8	0.8	0.9	1.1	0.7	0.4	0.4	0.5	0.5	0.6	0.5	0.8
			Post 7	0.7	0.9	1.0	0.9	0.6	0.3	0.3	0.4	0.6	0.6	0.6	0.6
			Post 8	0.7	0.9	1.1	0.8	0.4	0.2	0.3	0.3	0.5	0.3	0.4	0.5
			Post 9	0.8	0.8	1.0	0.9	0.6	0.2	0.1	0.1	0.2	0.2	0.5	0.7
			Post 10	0.9	1.0	0.8	0.9	0.7				0.2	0.3	0.6	1.0
Post 11			0.5	0.7	0.4	0.2	0.2	0.3	0.5						
WIL1-100%	T2	328	Pre 2	-0.1	0.0	0.0	-0.1	-0.1	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
			Pre 1	0.1	0.1	0.1	0.1	0.0	0.1	0.4	0.2	0.3	0.0	0.0	0.1
			Post 1	0.3	0.5	0.7	0.4	0.5	0.4	0.9	0.8	0.9	0.5	0.2	0.2
			Post 2	0.5	0.6	0.7	0.7	0.5	0.4	0.8	1.0	0.8	0.5	0.4	0.4
			Post 3	0.6	0.6	0.7	0.8	0.7	0.5	0.7	0.8	0.7	0.7	0.6	0.6
			Post 4			0.7	0.6	0.7	0.3	0.3	0.5	0.4	0.3		
			Post 5	0.8	0.9	0.7		0.5	0.3	0.4	0.2	0.2	0.4	0.6	0.8
			Post 6			0.8	0.9	0.4	0.2	0.1	0.1	0.0	0.0		
			Post 7	0.8	0.8	1.0	0.7	0.5	0.2	0.0	0.0	0.2	0.3	0.7	0.7
			Post 8	0.8	0.8	0.9	0.7	0.3	0.1	0.0	-0.2	0.1	0.3	0.5	0.7
			Post 9	0.7	0.8	0.8	0.8	0.4	0.1	-0.1	-0.2	-0.2	0.1	0.5	0.7
			Post 10	0.8	1.0	0.8	0.7	0.4	0.0	-0.2	-0.2	-0.1	0.1	0.5	0.9
Post 11			0.5	0.6	0.3	0.1	-0.1	-0.3	0.0						
WIL1-100%	D100	668	Pre 1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0
			Post 1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2
			Post 2	0.5	0.5	0.5	0.3	0.2	0.1	0.3	0.3	0.3	0.4	0.4	0.4
			Post 3	0.5	0.5	0.6	0.5	0.4	0.2	0.2	0.2	0.1	0.4	0.6	0.5
			Post 4	0.3	0.5	0.5		0.2	0.0	0.0	-0.1	-0.2	0.1	0.3	0.5
			Post 5	0.6	0.7	0.5	0.3	0.2	0.0	0.0	-0.2	-0.1	0.2	0.4	0.6
			Post 6	0.5		0.5	0.5	0.2	0.3	0.5	0.6	0.6	0.4	0.5	0.7
			Post 7	0.6	0.6	0.7	0.3	0.2	-0.1	-0.4	-0.4	-0.2	0.2	0.6	0.6
			Post 8	0.7	0.8	0.6	0.4	0.0	-0.2	-0.4	-0.7	-0.3	0.3	0.5	0.6
			Post 9	0.6	0.6	0.6	0.6	0.3	-0.1	-0.3	-0.4	-0.4	0.0	0.5	0.6
			Post 10	0.8	1.0	0.8	0.7	0.4	0.0	-0.2	-0.2	-0.1	0.1	0.5	0.9
			Post 11			0.3	0.3	0.0	-0.2	-0.4	-0.4	-0.2			
			0.0	0.0						0.0	0.0	0.0			
			0.2	0.2						0.2	0.2	0.2			
										0.4	0.4	0.4			
										0.4		0.5			
			0.3	0.5	0.5					0.1	0.3	0.5			
										0.2					

		0.4
-0.4	-0.2	0.2
	-0.3	0.3
-0.4	-0.4	0.0
-0.2	-0.1	0.1

Appendix Table 4A-7. Mean monthly temperature response (MMTR) values for WIL2-100% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-7** in the Phase 2 report.)

Mean monthly temperature response (MMTR) values for

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WIL2-100%	LB2	69	Pre 2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	-0.1	0.0	
			Pre 1	0.0	0.1	-0.2	-0.2	-0.1	-0.3	-0.4	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1
			Post 1	0.4	0.6	0.8	0.5	0.2	0.4	0.7	0.6	0.7	0.1	0.1	0.1	0.2
			Post 2	0.7	0.7	0.7	0.8	0.6	0.3	0.5	0.6	0.5	0.3	0.3	0.3	0.5
			Post 3	0.6	0.7	0.7	0.7	0.4	0.3	0.2	0.4	0.4	0.3	0.4	0.4	0.5
			Post 4	0.6	0.7	0.8	0.6	0.3	0.1	0.1	0.3	0.3	0.2	0.4	0.6	
			Post 5	0.7	0.8	0.9	0.8	0.4	0.2	0.1	0.3	0.5	0.2		0.5	
			Post 6	0.9	1.0	1.0	0.9	0.4	0.4	0.4	0.6	0.7	0.6	0.7	1.0	
			Post 7	1.1	1.3	1.4	1.0	0.7	0.5	0.4	0.5	0.4	0.6	0.8	1.0	
			Post 8	1.1	1.2	1.3	1.2	0.7	0.6	0.6	0.6	0.7	0.8	1.0	1.2	
			Post 9	1.1	1.2	1.0	1.1	0.7	0.5	0.5	0.5	0.7	0.3	0.6	0.8	
			Post 10	1.1	1.1	1.0	0.9	0.8	0.6				0.5	0.4	0.6	1.1
Post 11				0.9	0.7	0.6										
WIL2-100%	LB3	168	Pre 2	0.1	-0.1	0.2	0.1	0.2	0.2	0.2	0.0	0.0	-0.1	-0.2	0.1	
			Pre 1	0.0	0.1	0.0	0.0	-0.1	-0.2	-0.1	0.0	0.0	-0.2	-0.2	-0.1	
			Post 1	0.3	0.4	0.6	0.5	0.3	0.5	1.0	1.0	1.1	0.2	0.2	0.1	
			Post 2	0.4	0.4	0.4	0.5	0.7	0.4	0.6	0.9	0.5	0.2	0.3	0.4	
			Post 3	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.7	0.6	0.3	0.4	0.2	
			Post 4	0.3	0.4	0.5	0.4	0.1	0.0	0.0	0.1	0.2	-0.1	0.3	0.5	
			Post 5	0.5	0.5	0.6	0.5	0.2	0.2	0.3	0.2	0.2	0.2			
			Post 6	0.6	0.6	0.5	0.6	0.2	0.1	0.2			0.2	0.4	0.8	
			Post 7	0.7	0.8	0.8	0.5	0.3	0.1	0.1	0.0	0.3	0.2	0.6	0.7	
			Post 8	0.7	0.8	0.8	0.6	0.0	0.0	0.2	0.0	0.2	0.3	0.6	0.8	
			Post 9	0.7	0.7	0.5	0.6	0.2	-0.1	-0.2	-0.1	-0.1	-0.2	0.2	0.5	
			Post 10	0.7	0.6	0.3	0.4	0.2	0.0				-0.1	-0.1	0.2	0.8
Post 11				0.3	0.0	-0.1	-0.1	0.1	0.1							
WIL2-100%	LB1	181	Pre 2	-0.2	0.1	0.3		0.0	-0.1	0.2	0.2	0.1	0.0	-0.1	0.0	
			Pre 1	-0.1	0.1	-0.1	0.0	0.0	-0.3	-0.6	0.0	0.0	-0.2	0.0	0.1	
			Post 1	0.5	0.7	0.5	0.4	-0.2	-0.1	0.1	0.2	0.3	-0.1	0.2	0.0	
			Post 2	0.6	0.3	0.5	0.4	0.2	0.0	0.0	0.1	0.3	0.0	0.2	0.4	
			Post 3	0.4	0.5	0.5	0.5	0.4	0.3	0.2	0.5	0.5	0.2	0.5	0.3	
			Post 4				0.5	0.3	0.3	0.4	0.6	0.4	0.1	0.5		
			Post 5	0.7	0.7	0.8	0.7		0.4	0.3	0.6	0.6	0.4	0.5	0.3	
			Post 6				0.8	0.7	0.5	0.4	0.6	0.5	0.6			
			Post 8	0.0	0.5	0.8	0.6		0.3	0.7	0.6	0.4	0.3	0.4	0.2	
			Post 9	0.7	0.6	0.5	0.7	0.6	0.6	0.6	0.7	0.6	-0.2	0.3	0.4	
			Post 10	0.7	0.5	0.5	0.7	0.6				0.7	0.0	0.2	0.7	
			Post 11				0.5	0.6	0.5	0.8	1.0	0.8				

Appendix Table 4A-7 (continued).

WIL2-100% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^{\circ}C$, blue shading = $MMTR < -0.5^{\circ}C$ and $P < 0.05$. MMTR values $> 0.5^{\circ}C$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5-1.0^{\circ}C$, $> 1.0-2.0^{\circ}C$, $> 2.0-3.0^{\circ}C$, $> 3.0-4.0^{\circ}C$, and $> 4.0^{\circ}C$. (See **Appendix Table 4-7** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
WIL2-100%	T3	204		0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.1			
				-0.2	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
				0.2	0.4	0.8	0.8	1.0	1.3	1.7	1.1	1.0	0.4	0.4	0.1	0.4	0.1	
				0.5	0.6	0.6	0.9	1.2	0.9	1.2	1.1	0.9	0.7	0.6	0.5	0.6	0.5	
				0.3	0.4	0.4	0.9	1.0	0.9	0.9	0.9	0.9	0.5	0.3	0.4	0.3	0.3	
				0.3	0.5	0.6	0.7	0.6	0.4	0.5	0.4	0.1	0.2	0.6	0.5	0.6	0.5	
				0.5	0.6	0.8	0.9	0.6	0.5	0.4	0.4	0.3	0.4	0.5	0.5	0.5	0.5	
				0.8			1.0	0.6	0.5	0.3	0.5	0.4	0.4	0.7	0.8	0.8	0.8	
				0.8	0.9	1.1	1.0	0.8	0.9	0.9	0.6	0.6	0.5	0.8	0.8	0.8	0.8	
				0.7	0.8	0.8	0.9	0.5	0.4	0.6	0.3	0.7	0.9	0.8	0.8	0.8	0.8	
				0.8	0.9	1.0	0.8	0.7	0.4	0.5	0.4	0.5		0.7	0.7	0.7	0.7	
				0.8	0.8	0.7	0.9	0.8	0.3	0.2	0.2	0.3	0.0	0.4	0.9	0.9	0.9	
							0.8	0.6	0.4	0.3	0.3	0.4						
							0.0	-0.2	0.2	0.0	0.1	0.0	0.1	0.3	0.0	0.0	-0.3	0.0
							0.1	0.2	0.0	0.0	0.0	-0.4	-0.3	0.1	0.0	-0.3	-0.1	0.1
							0.3	0.4	0.4	0.4	0.1	0.2	0.7	0.7	0.5	0.0	0.1	0.2
							0.4	0.2	0.4	0.4	0.1	-0.1	0.0	0.4	0.5	0.0	0.1	0.3
							0.4	0.4	0.4	0.6	0.2	0.1	0.1	0.4	0.4	0.0	0.1	0.1
							0.0	0.3	0.4	0.5	0.0	-0.2	0.0	0.4	0.1	-0.2	0.3	0.4
							0.5	0.7	0.6	0.5	0.1	0.1	0.2	0.5	0.6	0.1	0.2	0.3
										0.5	0.3	0.1	0.4	0.8	0.7	0.5		
							0.5	0.5	0.8	0.4	0.3	0.3	0.6	0.7	0.3	0.3	0.2	0.4
							0.0	0.3	0.6	0.4	-0.1	0.0	0.5	0.6	0.4	0.2	0.3	0.2
							0.5	0.4	0.2	0.3	0.1	-0.1	0.0	0.4	0.4	-0.6	0.0	0.1
							0.6	0.5	0.1	0.3	0.0	-0.1			0.0	-0.3	0.0	0.6
										0.2	0.1	0.1	0.3	0.8	0.8			
							0.0	0.1	0.3	0.2	-0.1	-0.1	0.3	0.3	0.2	-0.1	-0.3	-0.1
						Pre 1	-0.1	0.3	0.0	-0.1	-0.1	-0.5	-0.3	0.2	0.1	-0.1		
			Pre 2					0.1	0.0			0.0						
			Pre 1					-0.1	-0.1			-0.1						
			Post 1					1.0	1.3			1.0						
			Post 2					1.2	0.9			0.9						
			Post 3					1.0	0.9			0.5						
			Post 4					0.6	0.4			0.1						
			Post 5					0.6	0.5			0.3						
			Post 6					0.6	0.5			0.4						
			Post 7					0.8	0.9			0.6						
			Post 8					0.5	0.4			0.7						
			Post 9					0.7	0.4			0.5						
			Post 10					0.8	0.3			0.3						
			Post 11					0.6	0.4			0.4						
WIL2-100%	T2	637	Pre 2	0.0	-0.2	0.2		0.1	0.0			0.0		-0.3	0.0			
			Pre 1	0.1	0.2	0.0		0.0	-0.4			0.0		-0.1	0.1			
			Post 1	0.3	0.4	0.4		0.1	0.2			0.5		0.1	0.2			

Mean monthly temperature response (MMTR) values for

	Post 2	0.4	0.2	0.4	0.1	-0.1		0.5	0.1	0.3					
	Post 3	0.4	0.4	0.4	0.2	0.1		0.4	0.1	0.1					
	Post 4	0.0	0.3	0.4	0.0	-0.2		0.1	0.3	0.4					
	Post 5	0.5	0.7	0.6	0.1	0.1		0.6	0.2	0.3					
	Post 6				0.3	0.1		0.7							
	Post 7				0.3	0.3		0.3							
	Post 8				-0.1	0.0		0.4							
	Post 9				0.1	-0.1		0.4							
	Post 10				0.0	-0.1		0.0							
	Post 11				0.1	0.1	0.3	0.8	0.8						
WIL2-100%	T1	775	Pre 2	0.0	0.1	0.3	-0.1	-0.1	0.3	0.3	0.2	-0.1	-0.3	-0.1	
			Post 1	0.4	0.3	0.3	0.2	0.0	0.1	0.4	0.6	0.3	0.0	0.1	0.1
				0.6	0.5	0.3		-0.1	-0.2	0.1	0.3	0.4	0.1	0.2	0.4
			Post 3	0.0	0.5	0.6		-0.1	0.2	0.2	-0.7	0.8	0.1	0.0	0.0
			Post 4				0.1	0.0	0.5			-0.2	0.6		
			Post 5	0.7	0.6	0.7	0.8	0.3	0.2	0.4	0.4	0.4	0.1		0.8
			Post 6				0.6	0.3	0.2	0.5	0.8		0.7	0.7	
			Post 7	0.4	0.6	0.7	0.5	0.2	0.4	0.8	0.9		0.5	0.5	0.4
			Post 8	0.2	0.5	0.8	0.3	0.0	0.4	0.8	0.6		0.5	0.4	0.2
			Post 9	0.6	0.5	0.4	0.4	0.3	0.2	0.5	0.7		0.5	0.4	0.5
			Post 10	0.6	0.5	0.1	0.5	0.3	0.2	0.2			0.7	-0.2	0.2
			Post 11				0.2	0.4	0.1				0.3	-0.1	0.1
								0.4	0.5	0.8	0.9				0.5

Appendix Table 4A-8. Mean monthly temperature response (MMTR) values for WIL3-100% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading = $MMTR < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5-1.0^\circ\text{C}$, $> 1.0-2.0^\circ\text{C}$, $> 2.0-3.0^\circ\text{C}$, $> 3.0-4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See Appendix Table 4-8 in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Pre 2	0.1	0.2	0.2	0.1	0.1	-0.3	-0.2		0.5	-0.3	-0.4	-0.1
			Pre 1	0.0	0.1	0.0	-0.2	-0.1	-0.6	0.7	0.6	0.2	-0.3	0.0	0.1
			Post 1	-0.1	-0.1	-0.1	-0.3					1.1	0.3	0.0	-0.4
			Post 2	0.3	0.5	0.5	0.5	0.1	0.0	1.3	1.0	0.6	-0.1	-0.2	0.0
			Post 3	0.5	0.4	0.4	0.7	0.2	0.2	1.3	2.2	1.6	-0.3	0.0	0.2
			Post 4	0.2	0.4	0.5	0.2	0.0	0.1	0.6	1.1	0.8	0.1	0.0	0.1
			Post 5	0.5	0.6	0.7	0.8	1.1	0.8	0.5	0.7	0.6	0.3	0.2	0.0
			Post 6	0.6	0.8	0.5	0.9	-0.3	-3.2			-0.4	0.5	0.3	0.5
			Post 7	0.5	0.7	0.8	1.5	1.6	1.1		0.3	0.3	-0.3	-0.1	0.3
			Post 8	0.5	1.0	1.0	0.8		0.4	0.2	-0.1	-0.2	-0.2	0.3	0.4
			Post 9	0.5	1.0	1.0	0.7	0.7	0.4	0.5	0.7	0.6	0.3	0.5	0.4
			Post 10	0.4	0.6	0.2	0.6	1.7	1.6	1.3	0.8	1.0	1.1	0.7	0.7
			Post 11	1.0	0.7	1.0	0.8	0.3	-0.1	-0.6	-1.0			1.0	1.2
WIL3-100%	LB1	77	Pre 2	0.1	0.4	0.0	1.0	1.0				-0.2	0.0	0.1	0.2
			Pre 1	-0.8	-0.2	-0.1	-0.4	0.1	-0.4			0.0	-0.4	0.3	-0.1
			Post 1	0.1	0.4	0.6	0.8	0.5	0.1	1.1	0.8	0.2	-0.1	0.1	-0.1
			Post 2	0.7	0.8	0.6	0.5	0.3	0.2	0.2	0.3	-0.5	0.0	0.4	0.0
			Post 3	0.7	0.6	0.5	0.2	0.0	-0.2	0.1	0.6	0.5	-0.7	0.5	0.9
			Post 4	0.3	0.5	0.1	0.3	-0.1	-0.3	0.6	1.6	1.4	0.2	0.5	0.2
			Post 5	0.4	0.7	0.6	0.3	0.6	0.4	1.0	1.2	0.6	0.3	0.7	0.9
			Post 6	1.2	1.3	0.9	0.8	1.0	1.2	1.5	0.9	0.1	0.0	0.3	1.3
			Post 7	1.1	1.2	1.2	1.3	1.2	1.5	2.1	1.6	0.5	0.2	0.9	1.5
			Post 8	1.1	1.2	1.3	1.1	1.1	1.0	1.4	0.5	0.3	0.7	0.5	1.1
			Post 9	0.5	1.0	0.2	0.2	0.6	0.8	0.8	0.8	0.9	0.6	0.6	0.5
			Post 10	0.8	0.7	0.7	0.5	1.2				-0.3	-0.4	0.1	0.5
			Post 11	0.9	1.0	1.0	1.0	1.3	0.9	0.5	0.4	-0.4		1.3	1.0
WIL3-100%	T3	769	Pre 2	0.3	1.0	0.8	0.5	0.3	0.1	0.7		0.2	-0.4	0.1	0.3
			Pre 1	-0.9	-0.3	-0.5	-0.1	0.0	-0.3	0.1	0.5	0.3	-0.1	0.0	-0.9
			Post 1	0.4	0.6	0.7	1.2	1.2	1.1	2.5	1.7	1.2	0.1	0.2	-0.1
			Post 2	1.1	1.5	1.6	0.9	0.4	0.2	1.7	1.4	0.0	0.1	0.4	0.1
			Post 3	1.1	0.8	0.8	0.7	0.2	0.1	0.7	1.0	0.6	-0.1	0.5	0.8
			Post 4	0.8	0.9	0.6	0.8	0.5	0.0	0.4	0.1	0.1	0.3	0.7	0.6
			Post 5	1.0	1.5	1.7	1.1	1.9						0.7	0.8
			Post 7	1.8	2.1	2.1	1.8	1.5	1.3		-0.7	0.1	0.3	0.8	1.7
			Post 8	1.4	1.6	1.9	0.8	0.8	0.2	0.5	0.0	-0.1	0.5	0.5	1.0
			Post 9	0.7	0.7	0.8	0.5	0.6	0.3	0.2	0.5	0.9	0.3	0.6	0.6
			Post 10	1.3	1.3	1.1	0.9	1.3	0.8	1.1	0.9	-0.7	-0.1	0.6	1.0
			Post 11	1.4	1.1	1.2	1.1	1.1	0.6	0.3	0.0	-0.8		1.5	1.6
WIL3-100%	T4	7						0.1	-0.3	-0.2					
								-0.1							

Mean monthly temperature response (MMTR) values for

Appendix Table 4A-8 (continued).

WIL3-100% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-8** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WIL3-100%	T2	870	Pre 2	0.0	0.3	0.2	0.1	0.0	-0.2	-0.3		0.1	-0.4	-0.2	-0.1	
			Pre 1					-0.1	-0.5	0.2	0.3	0.2				
			Post 1	0.4	0.3	0.7	0.9	0.8	0.9	2.3	1.7	1.0	0.0	0.0	0.1	
			Post 2	0.6	1.0	1.1	0.6	0.2	0.0	1.2	1.4	0.2	0.0	0.2	0.1	
			Post 3	0.6	0.4	0.3	0.3	-0.2	-0.2	0.6	0.9	0.9	0.0	0.3	0.5	
			Post 4	0.1	0.1			0.3	-0.1	0.4	0.6	0.4	0.2	0.4	0.1	
			Post 5	0.0	0.7	0.8	0.0	0.5	0.5	0.8	1.0	0.6	0.6	0.5	0.5	
			Post 6	1.3	1.5	0.8	0.8	0.2	0.3	1.0	1.0	0.4	0.1	0.3	1.1	
			Post 7	0.3	0.7	1.1	1.3	1.0	0.3	0.5	0.4	0.2	0.1	0.9	1.5	
			Post 8	0.6	0.8	1.0	0.4	0.1	-0.1	0.2	0.0	-0.4	-0.1	1.0	0.4	
			Post 9	0.5	0.5	0.3	0.0	-0.1	-0.5	-0.2	0.6	0.3	-0.6	0.2	0.2	
			Post 10	0.6	0.6	0.4	0.3	0.5	-0.1	0.4	0.4	-0.4	-0.3	0.1	0.5	
			Post 11	0.8	0.8	0.6	0.4	0.4	-0.2	-0.4	0.2	-0.7		1.2	1.1	
WIL3-100%	T1	971	Pre 2	0.4	0.6	0.5	0.4	0.2	0.0	-0.2		0.2	-0.1	-0.1	0.1	
			Pre 1	-0.7	-0.3	-0.4	-0.6	0.1	-0.6	0.1	0.3	0.2	-0.2	0.4	-0.6	
			Post 1	0.4	0.5	0.8	1.2	1.0	1.1	2.3	1.6	1.2	0.1	0.2	0.1	
			Post 2	0.9	1.0	0.8	0.7	0.1	0.0	0.8	0.9	0.1	0.6	0.4	0.1	
			Post 3	1.0	0.7	0.5	0.3	0.1	0.1	1.0		-0.7	-0.5	0.8	0.8	
			Post 4					0.1	-0.3	0.6	1.2	1.1	0.3	0.6		
			Post 5	0.7	1.3	1.4	0.5	0.9	0.3	0.7	0.9	0.7	0.9	0.7	0.9	
			Post 6	1.7	1.6	1.2	1.1	0.5	0.1	0.6	0.4	0.1	-0.1	0.6	1.1	
			Post 7	0.9			0.5	1.1	0.6	0.8	0.2	-0.1	0.1	0.8	1.6	
			Post 8	1.1	1.3	1.4	0.5	0.2	-0.1	0.1	-0.4	-0.7	0.1	0.4	0.9	
			Post 9	0.6	0.8	0.5	0.2	0.1	-0.3	-0.1	0.9	0.8	0.0	0.6	0.4	
			Post 10	0.8	0.8	0.5	0.5	1.2	0.5	0.7	0.1	-0.2	0.1	0.5	0.8	
			Post 11	1.0	0.8	0.6	0.6	0.6	0.1	-0.2	-0.2	-0.6		1.5	1.3	

Appendix Table 4A-9. Mean monthly temperature response (MMTR) values for OLYM-FP listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-9** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Pre 2	0.1	0.0	0.1	0.0	0.0	-0.2	-0.7		1.7	0.3	0.1	0.1
			Pre 1	0.0	0.0	-0.1	-0.1	0.0	0.2	0.2	-0.2	-0.2	0.0	0.1	0.0
			Post 1	0.2	0.3	0.5	0.4						0.4	0.0	-0.1
			Post 2	-0.2	-0.2	0.1	-0.1	-0.1	-0.3	-0.4	0.1	0.8	0.4	-0.1	-0.1
			Post 3	0.4	0.3	0.5	0.8	0.3	0.3	0.3	0.0	0.3	0.4	0.4	0.4
			Post 4	0.3	0.4	0.4	0.5	0.5	2.2	2.3	2.1		0.3	0.3	0.3
			Post 5	-0.4		0.5	0.7	0.8	1.0	0.6	0.8	0.5	0.5	0.2	-0.6
			Post 6	-0.2	0.0		0.7	1.0	1.1	1.9	1.9	0.7	-0.1	0.3	-0.8
			Post 7	0.5	0.5	0.6	0.8	1.4	1.8				0.7	0.4	0.5
			Post 9	0.9	1.1	1.1	1.3	1.2						0.6	0.9
			Post 10	0.9	1.0	1.0	1.0	0.4	0.2					0.8	0.9
			Post 11	1.0	1.0		0.8							0.8	0.9
OLYM-FP	T3	46	Pre 2	0.1	0.0	0.1	0.1	0.0	-0.1	0.0		-0.5	0.1	0.0	0.0
			Pre 1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
			Post 1	0.6	0.5	0.7	1.1	1.0	1.6	2.8	3.1	3.7	0.6	0.0	-0.1
			Post 2	0.2	0.5	1.0	1.0	0.9	0.8	1.5	2.5	2.0	0.8	0.2	0.3
			Post 3	0.5	0.6	0.8	1.2	1.1	1.0	1.4	1.9	1.9	0.7	0.3	0.5
			Post 4	0.5	0.6	0.8	1.0	0.9	0.8	0.7			0.7	0.5	0.5
			Post 5	0.7	0.7	0.8	1.0	0.9	0.9	0.9	1.2	1.4	0.8	0.5	0.5
			Post 6	0.5	0.6	0.8	1.1	0.7	1.0	1.4	2.5	2.4	1.8	0.6	0.5
			Post 7	0.6	0.7	0.7	1.1	1.1	1.4	1.9			0.9	0.6	0.6
			Post 8	0.8	1.0	1.3	1.1	1.1	0.6				0.9	1.0	0.8
			Post 9	1.0	1.1	1.2	1.3	1.2	1.1	1.5	1.9		0.5	0.6	0.9
			Post 10	0.9	1.1	1.1	1.2	1.4					1.2	0.8	0.8
			Post 11	1.3	1.3		1.8	1.4	1.4	1.2			1.1	1.1	1.4
OLYM-FP	T2	150	Pre 2	0.0	0.0	0.2		0.0	0.0	0.0		0.3	0.4	0.2	0.1
			Pre 1	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.0	-0.1
			Post 1	0.2	0.6	0.5	1.0	0.7	0.5	0.5	0.5	0.6	0.4	0.1	-0.1
			Post 2	0.1	0.3	0.6	0.7	0.7	0.6	1.0	1.0	1.1	0.7	0.1	0.2
			Post 3	0.5	0.6	0.9	1.2	1.1	0.7	0.7	0.8	0.7	0.6	0.3	0.4
			Post 4	0.6	0.8	1.0	1.2	1.0	0.8	0.7	0.6	0.7	0.6	0.5	0.6
			Post 5	0.7	0.7	0.9	1.0	0.7	0.6	0.6	0.6	0.5	0.7	0.5	0.5
			Post 6	0.5	0.6	0.8	0.9	0.6	0.5	0.2	0.3	0.5	0.6	0.4	0.4
			Post 7	0.6	0.7	0.8	0.9	0.7	0.4	0.2	0.4	0.7	0.6	0.4	0.6
			Post 8	0.6	0.6	0.8	1.1	0.8	0.6	0.6	0.6	0.8	0.7	0.7	0.6
			Post 9	0.8	1.0	0.9	0.9	0.9	0.9	0.7	0.7	0.4	0.8	0.8	0.8
			Post 10	0.7	0.7		0.7					0.7	0.7	0.9	
			Post 11	0.9	0.8	1.3	1.1	0.9	0.8	0.6	0.8	0.8	0.7	0.8	0.8
OLYM-FP	T4	5						0.0	-0.2	-0.7		1.7			
								0.0	0.2	0.2	-0.2	-0.2			

Mean monthly temperature response (MMTR) values for

Appendix Table 4A-9 (continued).

OLYM-FP listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading = $MMTR < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-9** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OLYM-FP	RB2	214	Pre 2	0.0	0.1	0.2	0.1	0.1	-0.1	0.6		2.1	0.8	0.2	-0.1

			Pre 1	-0.1	0.0	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	-0.2	-0.2	0.0
			Post 1	1.6	0.6	0.3	0.3	-0.1	-0.4	0.1			0.3	0.2	0.8
			Post 2	0.0	0.2	0.3	0.2	0.1	0.3	0.1	0.1	0.0	-0.1	0.0	0.0
			Post 3	0.5	0.6	0.7	0.8	0.5	-0.1	-0.2	0.4	0.6	0.2	0.1	0.3
			Post 4	0.7	0.8	0.8	0.8	0.6	0.3	0.0	0.2	0.3	0.5	0.4	0.7
			Post 5	0.4	0.4	0.6	0.4	0.5	0.5	0.5	0.6	0.7	0.4	0.4	0.5
			Post 6	0.5	0.5	0.7	0.6	0.3	0.4	0.3		1.0	0.8	0.5	0.4
			Post 8	0.6	0.6	0.7	0.6	0.5	0.5	0.2			0.8	0.6	0.6
			Post 9	0.8	0.7	0.5	0.2	0.5	0.6	0.7			0.7	0.7	0.7
			Post 10	0.7	0.8	0.7	0.9	1.1				0.7	0.8	0.5	0.5
			Post 11	0.7	0.7	0.7	0.7	0.5	0.7	-0.3		1.2	0.7	0.7	0.6
OLYM-FP	LB1	245	Pre 2	-0.1	-0.1	-0.1		0.1	-0.2	0.0	-0.1	-0.1	0.2	0.2	0.0
			Pre 1	0.1	0.0	0.0	0.0	0.1	0.2						
			Post 1	0.0		-0.2	0.7	0.2					0.5	0.4	-0.1
			Post 2	0.3	0.4	0.7	0.6	0.4	0.3	0.2	0.2	0.4	0.7	0.5	0.4
			Post 3	0.3	0.4	0.5	1.0	0.6	0.5	0.7	0.1	0.2	0.7	0.4	0.4
			Post 4	0.8	0.7	0.7	1.0	0.8	0.5	0.4	0.2	0.4	0.5	0.7	0.8
			Post 5	0.7	0.6	0.7	0.8	0.6	0.7	0.4	0.3	0.4	1.0	0.7	0.6
			Post 6	0.6	0.4	0.8	1.0	0.5	0.5	0.3	0.4	0.7	0.9	0.7	0.5
			Post 7	0.7	0.8	0.9	1.0	0.5	0.3	0.1	0.3	0.8	0.8	0.7	0.7
			Post 8	0.6	0.6	0.6	0.0	-0.2	-0.3	-0.5	-0.1	0.3	0.7	0.8	0.6
			Post 9	0.7	0.9	0.8	0.9	0.7	0.5	0.3	0.0	-0.1	0.8	0.7	0.7
			Post 10	0.8	0.9	1.1	0.7	0.7	0.9		-0.4	0.7	1.0	1.0	0.9
			Post 11	1.0	1.2	1.5	0.8	0.7	0.5	0.2	0.2	0.8	1.0	1.1	1.0
OLYM-FP	T1	248	Pre 2	0.0	0.1	0.2	0.2	0.2	0.0	0.1		0.1	0.3	-0.1	0.0
			Pre 1	-0.2	-0.1	-0.1	-0.1	0.0	-0.2	-0.1	-0.1	0.0	0.0	0.0	-0.1
			Post 1	0.2	0.4	0.5	0.9	0.4	0.5	0.5	0.3	0.4	0.3	0.1	-0.1
			Post 2				0.7	0.5	0.3	0.5	0.5	0.4	0.2	-0.2	
			Post 3	0.3	0.4	0.6	0.8	0.6	0.4	0.5	0.6	0.6	0.3	0.1	0.3
			Post 4	0.3	0.5	0.5	0.7	0.5	0.2	0.1	0.2	0.3	0.3	0.2	0.2
			Post 5	0.4	0.5	0.8	0.8	0.7	0.5	0.4	0.5	0.5	0.4	0.3	0.4
			Post 6	0.4	0.5	0.7	0.9	0.7	0.7	0.7	0.7	0.6	0.6	0.3	0.3
			Post 7	0.7	0.9	0.9	1.2	1.0	0.9	0.9	0.8	0.7	0.6	0.4	0.5
			Post 8	0.6	0.8	0.9	1.1	1.0	0.8	0.6	0.6	0.8	0.7	0.6	0.5
			Post 9	0.7	0.7	0.6	0.6	0.7	0.9	1.0	0.7	0.6	0.7	0.7	0.6
			Post 10	0.7	0.8		0.7					0.5	0.5	0.6	
			Post 11	0.7	0.7	0.9	0.8	0.7	0.6	0.2	0.2	0.5	0.6	0.6	0.6

Appendix Table 4A-9 (continued). Mean monthly temperature response (MMTR) values for OLYM-FP listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{--}1.0^\circ\text{C}$, $> 1.0\text{--}2.0^\circ\text{C}$, $> 2.0\text{--}3.0^\circ\text{C}$, $> 3.0\text{--}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-9** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OLYM-FP	RB1	313	Pre 2	0.4	0.5	0.6	0.1	0.0	-0.2	0.5		1.7	0.3	0.1	0.0

Appendix Table 4A-10. Mean monthly temperature response (MMTR) values for WIL1-FP listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-10** in the Phase 2 report.)

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WIL1-FP	T3	157	Pre 2	-0.1	-0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	0.2	0.0	
			Pre 1	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1
			Post 1	0.3	0.5	0.7	0.7	0.9	1.0	1.5	1.1	1.1	0.6	0.5	0.3	
			Post 2	0.4	0.5	0.8	0.8	1.0	0.8	1.1	1.0	0.7	0.8	0.6	0.5	
			Post 3	0.3		0.5	1.0	1.0	0.7	0.8	0.8	0.5	0.4	0.5	0.3	
			Post 4	0.3	0.4	0.5	0.8	0.8	0.5	0.4	0.5	0.4	0.4	0.5	0.5	
			Post 5	0.6	0.8	0.7	0.8	1.0	0.7	0.8	0.6	0.5	0.5	0.5	0.6	
			Post 6	0.8	0.9	0.9	1.3	1.0	0.9	0.9	0.9	0.7	0.8	0.8	1.0	
			Post 7	0.8	0.9	1.0	1.3	1.2	1.1	1.1	0.9	0.9	0.7	1.0	0.9	
			Post 8	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.2	1.0	1.0	1.0	
			Post 9			0.8	1.0	1.0	0.8	0.8	0.7	0.6	0.4	0.6		
			Post 10	0.8	0.9	1.1	1.0	1.2	0.9	0.9	0.9	0.7	0.5	0.7	0.9	
Post 11			1.2	1.1	1.2	1.0	0.9	0.8	0.8							
WIL1-FP	T2	257	Pre 2	-0.1	-0.1	0.1	0.0	0.1	0.1	0.2	-0.1	-0.1	-0.2	0.1	0.0	
			Pre 1	0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	0.0	0.2	
			Post 1	-0.1	0.0	0.2	0.6	0.6	0.6	1.2	1.2	1.5	0.5	0.3	0.1	
			Post 2	0.2	0.3	0.5	0.5	0.7	0.6	0.9	1.0	0.5	0.3	0.5	0.4	
			Post 3			0.3	0.8	0.8	0.6	0.8	0.8	0.4	0.3	0.3		
			Post 4	0.1	0.2	0.3	0.5	0.6	0.3	0.3	0.4	0.3	0.1	0.3	0.4	
			Post 5	0.3	0.4	0.4	0.6	0.6	0.5	0.7	0.3	0.1	0.2	0.3	0.5	
			Post 6	0.3	0.3	0.5	0.6	0.5	0.4	0.3	0.3	0.1	0.1	0.3	0.6	
			Post 7	0.5	0.5	0.6	0.9	0.7	0.5	0.4	0.3	0.3	0.1	0.6	0.6	
			Post 8	0.5	0.6	0.7	0.9	0.4	0.3	0.4	0.3	0.4	0.4	0.5	0.7	
			Post 9			0.5	0.8	0.5	0.2	0.1	-0.1	-0.3	-0.2	0.3		
			Post 10	0.6	0.5	0.7	0.9	1.2	1.1	1.1	1.2	0.9	0.3	0.4	0.6	
Post 11			0.8	1.0	1.1	1.0	1.1	1.2	1.0							
WIL1-FP	T1	356	Pre 2	-0.1	0.0	0.0	0.1	0.0	-0.1	-0.3	-0.3	-0.1	0.1	0.0	-0.1	
			Pre 1	0.1	0.0	-0.1	-0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	
			Post 1	-0.1	0.1	0.2	0.7	0.9	1.1	1.8	1.8	2.1	0.6	0.3	0.0	
			Post 2	0.2		0.4	0.4	0.8	0.9	0.9	1.3	0.7	0.7	0.5	0.3	
			Post 3	0.2	0.3	0.3	0.8	1.0	0.9	1.1	1.3	0.9	0.5	0.5	0.3	
			Post 4	-0.1	0.1	0.1		0.7	0.8	0.9	0.9	0.7	0.3	0.3	0.3	
			Post 5	0.2	0.4	0.5	0.5	0.8	0.8	1.0	0.9	0.8	0.3	0.2	0.2	
			Post 6	0.5		0.5	0.8	0.8	1.1	1.0	1.4	1.4	0.9	0.6	0.6	
			Post 7	0.5	0.6	0.5	1.2	1.4	1.9	2.1	1.7	1.5	1.0	0.8	0.5	
			Post 8	0.5	0.7	0.7	1.0	1.1	1.3	1.5	1.9	1.5	0.9	0.7	0.7	
			Post 9	0.6	0.7	0.7	0.9	1.0	1.1	1.4	1.5	1.3	0.5	0.5	0.5	
			Pre 2				0.1	0.0	0.0	0.0	0.0	0.0	0.1			
Pre 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.1				
Post 1	0.1	0.1	0.3	0.3	0.4	0.3	0.4	0.5	0.4	0.2	0.2	0.0				
Post 2	0.3	0.4	0.4	0.5	0.7	0.6	0.8	0.7	0.5	0.4	0.4	0.3				
Post 3	0.3	0.3	0.4	0.6	0.6	0.5	0.6	0.5	0.3	0.3	0.4	0.1				
Post 5	0.2	0.4	0.4	0.6	0.6	0.6	0.6	0.4	0.3	0.1	0.2	0.2				
Post 6	0.4		0.5	0.8	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.6				
Post 7	0.5	0.7	0.7	0.7	0.7	0.8	0.6	0.5	0.4	0.4	0.6	0.6				
Post 8	0.7	0.8	0.9	0.9	0.7	0.7	0.5	0.5	0.5	0.7	0.7	0.8				
Post 9			0.8	1.0	0.9	0.8	0.8	0.6	0.4	0.2	0.5					
Post 10	0.6	0.7	0.7	0.8	0.9	0.8	0.9	0.7	0.6	0.3	0.4	0.6				
Post 11			0.5	0.7	0.8	0.8	0.7	0.6	0.5							

0.1
0.0
0.6
0.7
0.5

WIL1-FP D100 469

0.3
0.3
0.9
1.0
0.9
0.5
0.1
0.0
0.2
0.4
0.3
0.1
0.4
0.4
0.7
0.2
0.3

Appendix Table 4A-11. Mean monthly temperature response (MMTR) values for WIL2-FP listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{--}1.0^\circ\text{C}$, $> 1.0\text{--}2.0^\circ\text{C}$, $> 2.0\text{--}3.0^\circ\text{C}$, $> 3.0\text{--}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See Appendix Table 4-11 in the Phase 2 report.)

				Pre 8	0.0	0.0	-0.1	-0.3	-0.3	-0.5	0.3	0.3	0.1	0.0	0.1	0.1			
				Pre 9	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.2	0.6	0.1	-0.2	-0.1			
				Pre 5	0.2	0.2	0.2	0.0	-0.1	-0.2	-0.2	0.1	0.0	-0.1	0.0	0.1			
												-0.1							
												0.1							
												0.3							
												0.8							
												1.5							
												1.6							
											1.5	0.9				0.6			
				Post 4								0.9	0.9	0.5					
WIL2-FP	T1	602		Pre 6	0.3	0.1	0.2	0.1	-0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.3			
				Pre 7	0.0					0.2	-0.2	0.0	-0.1	-0.3	-0.3	-0.2			
Site	Location	Distance			Feb	Mar	Apr	May					Ju	Ju	Au	Se	Oc	Nov	
WIL2-FP	T3	76		Pre 6	0.1	0.1	0.1	0.0	-0.1				n	l	g	p	t	Dec	
				Pre 7	-0.1	-0.2	-0.1	-0.2	-0.3				-	0.	0.	0.	-	-0.2	-
													0.34	4	4	0.	0.1		
													-	-	0.	0.2	-		
													0.20	1	1	-	0.1	0.0	
													4	0.					
				Pre 4	0.2	0.2	0.1	0.0	-0.1	-0.3	-0.3		0.2	-0.1	0.2		0.1		
				Pre 3	0.1	0.2	0.1	0.0	0.0	-0.2	-0.3		0.3	0.1	0.0		0.0		
				Pre 2	0.4	0.6	0.4	0.3	0.1	0.1	0.2		0.1	0.1	0.2		0.3		
				Pre 1	0.7	0.7	0.6	0.5	0.5	0.5	0.6		0.9	0.5	0.4		0.6		
				Post 1	0.3	0.3	0.5	0.4	0.7	0.6	1.2		1.0	0.2	0.2		0.3		

Post 2	0.5	0.5	0.7	0.4			1.5		1.1	0.3	0.1	
Post 3	0.6								0.6	0.2	0.3	
Pre 5	-0.2	0.3	0.0	-0.4	-0.7	-0.4	-0.1	-0.1	0.0	-0.2	-0.2	-0.1
Pre 4	-0.2	0.1			-0.6	-0.7	-0.2	-0.1	-0.3	-0.3	-0.4	-0.3
Pre 3	-0.1	0.4	0.3	0.3	-0.1	-0.1	0.0	-0.1	0.0	-0.2	-0.2	-0.1
			0.2	0.3	0.4	0.8						
				0.5	0.5	0.5						
	1.0	0.9	0.9	0.6	0.6	0.6		0.8				
	0.8	0.6	1.0	0.7				0.9				1.1
					0.7	0.7						
Post 4							0.6	0.8	0.8			
Pre 8	-0.2	0.0	0.0	-0.1	-0.4	-0.4	0.2	0.1	0.1	-0.2	-0.2	-0.1
Pre 9	0.3	0.3	0.1	0.0	0.0	0.0	0.2	0.2	0.1	0.1	-0.4	0.2
Pre 2	0.5	0.1					0.4	0.3	0.1	-0.2	-0.1	0.5
Pre 1							1.1		0.8	1.0	1.2	0.5
Post 1	0.7	0.6	0.5	0.5	0.5	0.5	0.7	0.9	0.7	0.9		
Post 3												

Appendix Table 4A-12. Mean monthly temperature response (MMTR) values for CASC-FP listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{--}1.0^\circ\text{C}$, $> 1.0\text{--}2.0^\circ\text{C}$, $> 2.0\text{--}3.0^\circ\text{C}$, $> 3.0\text{--}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-12** in the Phase 2 report.)

Site	Location	Distance	TRYSR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Pre 2	-0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.0	-0.1	-0.1	-0.1	-0.2
			Pre 1	0.0	0.0	0.0	-0.1	0.0	-0.3	-0.1	-0.4	-0.2		-0.1	0.0
			Post 1	-0.2	-0.1	-0.2	-0.1	-0.4	-0.1	0.1	0.0	0.2	-0.2	-0.4	-0.5
			Post 2	0.2	0.4	0.2	0.1	0.1	-0.2	0.3	0.6	0.3	-0.2	-0.1	0.1
			Post 3	0.3	0.2	0.4	0.3	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	-0.1
			Post 4	0.0	0.2	0.2	0.3	-0.2	-0.4	-0.4	-0.2	0.1	-0.1	-0.1	-0.1
			Post 5	-0.2	-0.2	0.2	0.3	0.4	-0.1	-0.1	0.3	0.1	-0.2	-0.3	-0.2
			Post 6	0.2	0.3	0.4	0.6	0.4	0.7	0.3	0.1	0.3	0.3	0.1	0.1
			Post 7	0.5	0.7	0.7	0.6	0.6	0.7	0.9	0.8	0.8	0.8	0.4	0.6
			Post 8	0.8	0.4	0.6	0.6	0.7	0.8	0.8	1.5		1.0	0.7	0.9
			Post 9	0.5	0.5	0.4	0.6	0.8	0.7	0.6	0.6	0.7	0.6	0.5	0.6
			Post 10	0.4	0.4	0.2	0.2	0.6	0.6	0.5			0.4	0.5	0.3
CASC-FP	LB1	249	Pre 2	-0.1	-0.2	0.4	0.1	0.2					0.2	0.0	-0.3
			Pre 1	0.1	-0.2	-0.1	-0.4	-0.1	-0.4	-0.2				0.0	0.2
			Post 1	0.6	0.8	0.0	1.0	1.3	1.3				0.2	0.3	-0.1
			Post 2	1.2	1.3	1.1			-0.3	0.0	-0.7	2.0	1.5	0.7	1.0
			Post 3	0.4	0.6	0.7	1.0	1.0	0.7				1.0	0.8	0.0
			Post 4	0.2	0.7	0.9	1.7	1.5	1.3	2.5	4.0		0.5	0.7	0.4
			Post 5	0.3	0.3	1.0	1.4	2.1	2.6	3.4	4.5	4.3	1.3	0.1	0.0
			Post 6	0.6	1.0	1.3	1.5	1.2	1.6	2.4	2.7		0.6	0.5	0.5
			Post 7	1.1	1.2	1.2	1.5	1.4	1.0				-0.1	0.1	0.9
			Post 8	1.7	0.7	0.9	-1.1	-2.0					0.8	1.1	1.5
			Post 9			1.4	1.6	1.5	1.3	2.1					
CASC-FP	T3	331	Pre 2	-0.3	0.6	0.6	0.3	0.5	0.5				0.3	-0.3	-0.4
			Pre 1	0.8	0.1	0.0	0.1	0.7	-0.3	0.0				-0.9	0.4
			Post 1			0.2	1.1	0.6	0.3	1.3					
			Post 2	0.8	0.6	1.0			-0.4	0.4	1.3	0.1	0.5	0.5	0.9
			Post 3	0.5	0.5	0.9	0.9	0.2	-0.1	0.7	1.2		0.5	1.1	0.4
			Post 4	0.5	0.6	0.9	1.2	0.1	-0.2	0.1	1.3	2.1	0.3	0.7	0.8
			Post 5	0.2	0.0	0.9	0.4	0.2	0.0	0.6	2.2	1.7	0.8	0.2	0.2
			Post 6	0.3	0.2	0.3	0.3	-0.3	-0.9	-1.8			1.2	0.4	0.6
			Post 7	0.8	0.9	0.4	0.0	-0.2	-0.3				-0.9	0.2	0.7
			Post 8	0.3	0.6	0.7	0.1	-0.4	-0.6	0.1	1.4	1.0	0.1	0.4	0.5
			Post 9	0.5	0.1	0.4	0.5	0.7	0.1	0.2			0.4	0.3	0.4
			Post 10	0.5	0.2	-0.5	-0.3	0.0	0.1				0.9	1.0	0.6
			Post 11			0.6	0.4	-0.6	-0.6	-0.7		0.1	0.2		
CASC-FP	T4	0							0.1	0.2	0.0	-0.1	-0.1		
									-0.3	-0.1	-0.4	-0.2			
									-0.1	0.1	0.0	0.2	-0.2	0.3	0.3
									0.2						
									-0.1	-0.1		0.0	0.0		
									-0.4	-0.4		0.1	-0.1		
									-0.1	-0.1		0.1	-0.2		
									0.7	0.3		0.3	0.3		
									0.7	0.9		0.8	0.8		
									0.8	0.8			1.0		
									0.7	0.6			0.6		
									0.6	0.5			0.4		
													0.2		

Appendix Table 4A-12 (continued).

CASC-FP listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading = $MMTR < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-12** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
CASC-FP	T2	431	Pre 2	-0.3	0.0	-0.2	-0.3	-0.4	-0.6	-0.4	-0.2	-0.2			-0.3	
			Pre 1	-0.4	Post		0.6		0.3	0.1	0.6	0.7	0.5			
			1	-0.2	0.1		0.10	0.0	-0.4	0.2	-	0.2	0.6			
			Post 2	-0.2	-0.2	-0.3	0.3	0.1	-0.2	0.7	0.1	0.2			-0.5	
			Post 3			0.1	0.4	0.30	0.2	0.5	0.4	1.0	0.9	0.5		
			Post 4	-	-0.2		0.6	0.40	0.4	0.3	0.1	0.0	0.3	0.40	0.6	0.1
			Post 5	0.5	-0.5	0.2		0.3	0.2	-0.1	-0.10	0.0		0.5		-0.1
			Post 6	-0.1	0.0	0.3	0.2	0.3	0.1	0.0	-0.1	0.1	0.1	0.5	0.2	-0.4
			Post 7			0.2	0.5	0.3	0.1							0.0
			Post			0.4	0.4	0.1	-0.1							
			8	0.0	0.0	0.3	-	0.7	0.8	0.1	-0.1	0.00	0.4	0.4	0.5	
9	0.1	0.1	0.50	0.4		0.3		0.40	0.1							
	Post 10	0.0	0.0	-0.2	0.3	0.5	0.8	-0.2	0.1	0.1	0.1	0.1	0.0	-0.1		
	Post 11			0.4		-0.1	-0.3	-0.3	-0.3	0.4	0.8					
CASC-FP	T1	528	Pre 2	-0.3	0.0	0.4	0.1	-0.2	-0.4	-0.3	-0.2	0.0	0.3	0.0	-0.1	
			Pre 1	-0.2	-0.2	-0.1	0.2	0.7	-0.1	-			0.7	0.5		
			0.1	0.0	0.3	0.2	-0.2	0.0								
			0.10.2	Post 1	-0.1	0.3	-0.1	0.6	0.3	-0.2	-				0.4	-
				Post 2	0.3	0.2	0.5	0.0	-0.1	0.2	0.4	0.5				
				0.1	0.2	Post 3	0.8	0.9	0.6						0.2	
				0.1								0.6	0.5			
			0.2	Post 4	-							0.3	0.6			
				0.2	0.7	0.4	0.6	0.3	0.0	0.10	0.4	0.1	0.4	0.7		
			0.1	Post 5	-0.2	-0.2	0.8	0.7	0.5	0.2	-		0.7	0.5		
				0.20.0	-0.4								0.7	0.5		
0.2	Post 6	0.1	0.3	0.6	0.7	0.4	0.0	-		0.7	0.5					
	0.10.2	0.1								0.3	0.6					
0.1	Post 7	0.6	0.8	0.7	0.5	0.1	-									
	0.0	0.10.2	0.6													
	Post 8	-0.2	0.3		0.8	0.8	-0.1	-0.1	0.20.4	0.0	Post					
	9	0.3	0.2		0.8	1.2	0.8	0.3	0.0	0.10.3						
							0.0									
	Post 10	0.2	0.1	-0.2	0.0	0.4	0.4	0.3	0.0	0.6	0.3	0.3	0.1			
	Post 11			1.0	0.8	0.0	-0.3	-0.4	-0.2	0.5	0.6					

Appendix Table 4A-13. Mean monthly temperature response (MMTR) values for OLYM-0% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading =

Mean monthly temperature response (MMTR) values for MMTR <-0.5°C and P <0.05. MMTR values >0.5°C and P <0.05 are shown in a gradient of light to dark brown shading showing changes of >0.5-1.0°C, >1.0-2.0°C, >2.0-3.0°C, >3.0-4.0°C, and >4.0°C. (See **Appendix Table 4-13** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
OLYM-0%	T4	1	Pre 2	0.0	-0.1	-0.2	0.0	0.2	0.1	1.5	0.0	-0.1	-0.1	0.1	-0.1	
			Pre 1	0.3	0.1	0.2	0.6	-0.2	-0.4	0.6	0.4	-0.4	-0.6	-0.5	0.3	
			Post 1	0.7	1.0	1.1	1.3	1.4	1.7	2.5	2.1	0.3	0.3	0.5	0.1	
			Post 2	0.5	0.5	0.6	1.1	0.7	0.8	0.9	1.0	1.0	0.8	0.6	0.6	
			Post 3	0.6	0.6	0.5	0.7	0.6	0.7	0.6	0.6	1.0	0.8	0.6	0.4	
			Post 4	0.7	0.7	0.7	0.8	0.7	0.8	1.2	1.0	0.7	0.8	0.9	0.8	
			Post 5	0.7	0.7	0.7	0.8	0.7	0.8	1.2	1.0	0.7	0.8	0.9	0.8	
			Post 6	0.8	0.7	1.0	1.1	1.2	1.7	2.8	2.2	1.7	0.8	0.8	0.7	
			Post 8	1.1	0.9	0.9	0.8	0.5	0.5					1.1	1.1	1.1
			Post 9	1.2	1.2	1.1	1.0	0.9						0.8	1.1	1.2
			Post 10	1.2	1.3		0.7								1.1	1.2
OLYM-0%	RB1	31	Pre 2	-0.1	-0.1	-0.1	0.3	0.1	-0.3	-0.4	0.1	0.4	0.1	0.2	0.0	
			Pre 1	0.1			0.8	0.1	-0.3	-0.3	-0.2	0.1	0.1	0.1	0.1	
			Post 1	0.1	0.0	0.4	0.7	0.5	0.8	1.6	1.4	-0.4	0.4	0.3	0.1	
			Post 2				1.3	0.7	0.3	-0.2	0.3	1.1				
			Post 3	0.6	0.5	0.7	0.6	0.5	0.6	0.8	1.0	0.6	0.6	0.9	0.8	
			Post 4	0.7	0.5	0.7	0.6	0.4	0.5	1.1	1.8	1.8	1.2	0.8	0.8	
			Post 5	0.7	0.8	1.0	1.3	0.8	0.8	1.5	2.1	1.3	0.7	0.4	0.8	
			Post 6	1.3	1.3	1.9	2.5	2.6	1.8		0.7	1.1	1.3	1.1	1.2	
			Post 7	0.7	0.8	0.8	0.8					0.7	0.4	0.5	0.6	
Post 8							0.7	0.8	1.1							
OLYM-0%	T3	114	Pre 2	-0.1	-0.1	-0.2	-0.1	0.0	-0.5	-0.3	-0.9	-0.6	-0.7	-0.5	-0.3	
			Pre 1	0.2	0.3	0.2	0.0	-0.4	-0.7	-1.0	-0.8	-0.8	-0.6	-0.4	-0.1	
			Post 1	0.2	0.6	0.8	1.0	0.8	0.5	0.7	0.4	-0.6	-0.4	-0.5	-0.1	
			Post 2	0.3	0.6	0.6	1.1	0.8	-0.2	-0.5	-0.3	-0.3	-0.1	-0.2	-0.1	
			Post 3	0.3	0.4	0.5	0.5	0.3	-0.2	-0.2	0.3	0.1	-0.3	-0.1	0.1	
			Post 5	0.4	0.5	0.7	0.8	0.6	0.1	-0.3	-0.7	-0.6	-0.2	-0.1	0.2	
			Post 6	0.7	0.9	1.1	1.1	1.4			-0.8	-0.5	-0.3	-0.1	0.2	
			Post 7	0.5	1.0	1.2	1.3	0.7	0.0	-0.5	-0.4	0.2	-0.1	0.1	0.1	
			Post 8	0.5	0.7	0.9	0.8	0.5	-0.2	-0.6	-0.7	-0.3	-0.2	0.0	0.3	
			Post 9	0.7	1.0	1.1	0.9	0.4	-0.2	-0.7	-0.4	-0.1	0.0	0.1	0.4	
			Post 10	0.8	1.0	1.0	0.9	0.3	-0.1	-0.3	-0.3	-0.3	-0.3	0.1	0.5	

Appendix Table 4A-13 (continued).

OLYM-0% listed by location and treatment year. No shading = P >0.05 or |MMTR| <0.5°C, blue shading = MMTR <-0.5°C and P <0.05. MMTR values >0.5°C and P <0.05 are shown in a gradient of light to dark brown shading showing changes of >0.5-1.0°C, >1.0-2.0°C, >2.0-3.0°C, >3.0-4.0°C, and >4.0°C. (See **Appendix Table 4-13** in the Phase 2 report.)

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

Site	Location	Distance	TRYSR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OLYM-0%	T2	242	Pre 2	-0.2	-0.2	0.0	0.1	0.0	0.0	0.1	0.3	0.0	-0.1	-0.1	-0.2
			Pre 1	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.8	0.4	-0.1	-0.3	-0.3
			Post 1	0.2	0.6	0.9	1.2	1.2	1.3	1.1	0.9	0.4	0.1	0.0	-0.1
			Post 2	0.3	0.5	0.7	1.1	1.0	0.9	1.0	0.8	0.5	0.6	0.4	0.2
			Post 3	0.4	0.5	0.6	0.9	0.9	0.8	1.1		1.0	0.7	0.4	0.3
			Post 5	0.7	0.8	1.3	1.4	1.4			0.3	0.3	0.7	0.5	
			Post 7	0.9	1.2	1.2	1.4	1.1	1.0	0.9	0.8		0.9	1.0	0.8
			Post 8	0.5	0.8	1.0	1.3	1.1	1.0	0.8	0.6	0.6	0.8	0.8	0.6
			Post 10	0.8	1.1	1.2	1.3	1.3	1.5				0.9	0.8	0.7
			OLYM-0%	T1	319	Pre 2	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.0
Pre 1							0.2	0.1	-0.1	-0.2	-0.3	0.0			
Post 1	0.0	0.1				0.5	0.7	0.9	1.0	1.4	1.0	0.3	0.4	0.1	0.0
Post 2	0.2					0.4	0.8	0.8	0.7	0.8	0.8	1.0	0.9	0.5	0.3
Post 3	0.2	0.2				0.3	0.5	0.5	0.5	0.4	0.5	0.4	0.7	0.5	0.4
Post 4	0.4	0.3				0.4	0.7	0.6	0.7	0.7	0.5	0.3	0.4	0.5	0.4
Post 5	0.6	0.6				0.6	0.7	0.5	0.4	0.3	0.4	0.4	0.7	0.6	0.6
Post 6	0.8	0.8				0.8	0.2	0.3	0.4	0.2	0.3	0.6	0.6	0.8	0.8
Post 7	0.8	0.8				0.7	1.1	0.8	0.7	0.4	0.4	0.7	0.8	0.9	0.8
Post 8	0.6	0.5				0.3	0.1	0.2	0.6	0.6	0.5	0.7	0.8	0.8	0.7
Post 9	0.6	0.7		0.6					-0.1	0.2	0.8	0.9			
Post 10	0.7	1.1	1.1	0.8	0.6	0.6	-0.1	-0.3	0.4	0.8	1.0	0.8			
OLYM-0%	D100	423	Pre 2	-0.1	0.0	0.1	0.1	0.0	-0.2	0.0	0.0	0.1	0.0	0.0	-0.2
			Pre 1				-0.3	0.1	-0.1	-0.2	0.0	0.1			
			Post 1	0.2	0.5	0.7	0.7	0.8	0.8	0.9	0.6	0.5	0.2	0.0	0.0
			Post 2	0.2	0.5	0.6	0.7	0.6	0.4	0.2	0.0	0.6	0.4	0.2	0.1
			Post 3	0.3	0.4	0.6	0.7	0.6	0.4	0.3	0.2	0.2	0.3	0.2	0.2
			Post 4	0.3	0.5	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.2	0.2	0.2
			Post 5	0.4	0.5	0.8	1.0	0.8	0.6	0.6	0.6	0.6	0.3	0.3	0.3
			Post 6	0.7	1.0	1.0	1.1	0.9	0.7		0.8	0.9	0.6	0.4	0.4
			Post 7	0.7	0.9	1.1	1.2	0.9	0.7	0.5	0.7	0.5	0.6	0.6	0.5
			Post 8	0.5	0.7	0.9	0.9	1.0	1.0	1.1	1.3	0.6	0.6	0.6	0.6
Post 9	0.6	1.0	1.0	0.9	0.8	0.5	0.7	1.4	2.8	0.6	0.5	0.5			
Post 10	0.8	1.2	1.3	0.9	0.6	0.4	0.5	0.5	0.7	0.5	0.6	0.5			

Appendix Table 4A-14. Mean monthly temperature response (MMTR) values for WIL1-0% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading = $MMTR < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5-1.0^\circ\text{C}$, $> 1.0-2.0^\circ\text{C}$, $> 2.0-3.0^\circ\text{C}$, $> 3.0-4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See Appendix Table 4-14 in the Phase 2 report.)

Site	Location	Distance	Feb	Mar	Apr	May	Ju	Ju	Au	Se	Oc	No
							n	l	g	p	t	v
WIL1-0%	T4	2	Pre 2	0.2	0.2	0.2	0.3	0.	0.	0.		De
			Pre 1	0.1	0.0	-0.1	-0.1	-0.3	3	1	2	-
							-	0.	0.	0.10.	1	0.
							0.30	0			1	
												0.1
												-
												0.2
												0.0

Mean monthly temperature response (MMTR) values for

				Post 1	0.2	0.8	1.1	1.1	1.2	1.2	1.5	1.0	0.6	-0.1	0.1	-0.1		
				Post 2	0.4	0.5	0.5	0.0	-0.1	0.0	-0.1	0.1	0.2	0.2	0.2	0.3	0.4	
				Post 3		0.0	0.0	-0.1	-0.1	-0.3	0.1	0.4	-0.8	-1.0	-1.7	-2.1		
					-0.2				0.6	0.5	0.4	0.3	0.1	0.0	-0.3	-0.1		
					0.2	0.0	-0.1	0.0	-0.1	-0.1	-0.1	0.2	0.1	0.0	0.2	0.1		
					0.2	0.3	0.5	0.5	0.3	1.2	1.0	1.6	1.4	1.1		0.1		
					-0.2	0.3	0.5	0.7	1.0	1.1	1.5	1.8				-0.5		
					0.3	0.0	0.2	0.1	0.6	0.7	0.7	0.8	-0.4	-0.1	0.3	0.4		
					0.3	0.1	0.2	0.3	0.2	0.0	0.1	0.5	0.8		0.1			
					0.2	0.3	0.2	0.4	0.6				0.4	-0.5	-0.1	0.0		
					-0.7	-0.1	0.4		0.7	0.6	0.7							
WIL1-0%	LB2	25	Pre 1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.2	-0.1	0.0	0.1	0.2	-0.3			
			Post 1	0.1	-0.2	0.0						0.4	0.1	0.3	-0.1			
			Post 2	0.3	0.3	0.3	-0.2	-0.2	-0.5	-0.6	-0.3	-0.1	0.1	0.3	0.3			
				0.1	0.1	0.0	0.0	0.0	0.8	1.4	1.7	1.5	0.2	0.1	0.0			
				-0.1	0.2	-0.1	-0.1	-0.5	-0.6	-0.6	-0.3	-0.4	-0.1	0.3	0.3			
				0.1	-0.1	-0.1	0.0	-0.2	0.4	0.3	0.1	-0.1	0.1	0.1	0.1			
				0.7	0.3	0.3	0.2	-0.1	-0.1	0.0	0.2	0.3	0.5	0.8	0.9			
				0.5	0.4	0.4	0.3	0.3	0.5	0.4	0.6	0.5	1.0	1.0	0.5			
					0.6	0.6	0.6	0.6	1.0	0.7								
				0.4	0.4	0.3	0.2	-0.1	-0.2	-0.4	0.3	0.3	0.2	0.3	0.3			
					0.2	-0.2	-0.1	-0.2	-0.4									
WIL1-0%	LB1	106		0.0	0.1	0.4	-0.2		0.0	0.1	0.0	0.3	-0.1	-0.2	-0.1			
				0.1	0.2	-0.1	-0.2	-0.3	-0.2	0.2	0.1	0.1	-0.1	-0.3	0.1			
				0.7	0.8	1.2	1.3	1.5	1.5	1.2	0.8	1.1	0.8	0.7	0.3			
				0.8	1.0	1.4	1.1	1.4	1.1	1.7	1.7	1.1	0.3	0.5	0.6			
				0.7	0.8	1.0	1.2	1.2	1.3	1.8	1.8	1.3	0.4	0.6	0.4			
				0.6	0.8	0.8	1.1	1.0	0.8	0.8	1.0	0.6	0.1	0.5	0.8			
				0.7	1.1	1.1	1.2	0.9	0.6	0.5	0.7	0.8	0.1	0.4	0.5			
					0.9	1.2	1.2	0.7	0.6	0.7	1.0	0.9	0.8					
				1.1	1.0		0.8	0.9	0.8	1.0	1.0	0.6	0.6	0.5	0.9			
				0.7	1.1	1.2	1.1	0.6	0.5	0.8	0.8	0.6	0.6	0.7	0.7			
				1.0	1.0	1.1	1.0	0.7	0.4	0.3	0.6	0.6	-0.2	0.3	0.6			
				1.1	1.0	0.9	0.9	0.6				0.1	-0.1	0.4	0.8			
			Post 11		0.8	0.4	0.6	0.5	0.2	0.5	0.9	0.9						
			Post 4					0.6		0.4		0.1	0.0	-0.3				
			Post 5		0.0	-0.1		-0.1		-0.1		0.1	0.0	0.2				
			Post 6		0.3	0.5		0.3		1.0		1.4	1.1					
			Post 7	0.3		0.5	1.0	1.5	Post 80.0									
					0.2	0.6	0.7											
			Post 9	0.1	0.2	0.2	0.1	Post 10	0.3	0.2	0.6							
			Post 11		-0.7	-0.1		0.7	0.6	0.7								
			Post 3	0.1	0.1	0.0	0.0	0.2	0.1	0.0	Post 4	-0.1	0.2	-0.1	-0.5	-0.1	0.3	0.3
			Post 5	0.1	-0.1	-0.1		-0.2		0.3	0.1	-0.1	0.1	0.1	0.1	0.1		
			Post 6		0.3	0.3		-0.1		0.0	0.2	0.3	0.5	0.8	0.9			
			Post 7	0.5	0.4	0.4		0.3		0.4	0.6	0.5	1.0	1.0	0.5			

TYPE N BUFFER EFFECTIVENESS ON HARD ROCK LITHOLOGIES—PHASE 2

Post 8	0.6	0.6	0.6	0.7				2.1	1.3	
Post 10	0.4	0.4	0.3	-0.1	-0.4	0.3	0.3	0.2	0.3	0.3
Post 11		0.2	-0.2	-0.2						
Pre 2		0.1	0.4							
Pre 1		0.2	-0.1							
Post 1		0.8	1.2							
Post 2		1.0	1.4							
Post 3		0.8	1.0							
Post 4		0.8	0.8							
Post 5		1.1	1.1							
Post 6		0.9	1.2							
Post 7		1.0								
Post 8		1.1								
Post 9		1.0								
Post 10		1.0								

Appendix Table 4A-14 (continued).

WIL1-0% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^\circ\text{C}$, blue shading = $\text{MMTR} < -0.5^\circ\text{C}$ and $P < 0.05$. MMTR values $> 0.5^\circ\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^\circ\text{C}$, $> 1.0\text{-}2.0^\circ\text{C}$, $> 2.0\text{-}3.0^\circ\text{C}$, $> 3.0\text{-}4.0^\circ\text{C}$, and $> 4.0^\circ\text{C}$. (See **Appendix Table 4-14** in the Phase 2 report.)

Mean monthly temperature response (MMTR) values for

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WIL1-0%	T3	347	Pre 2	-0.1	0.0	0.2	0.2		-0.1	-0.1	-0.1	0.0	-0.2	0.1	0.0	
			Pre 1	-0.1	0.0	0.0	0.0	-0.1	-0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
			Post 1	0.3	-0.1	0.2	0.7	0.9	1.1	1.5	1.1	1.0	0.2	0.4	0.0	0.0
			Post 2	0.3	0.4	0.7	0.6	0.8	0.6	1.0	1.0	0.7	0.3	0.3	0.4	0.4
			Post 3	0.3	0.3	0.5	0.8	0.7	0.6	0.8	0.8	0.5	0.3	0.3	0.2	0.2
			Post 4	0.0	0.4	0.4	0.6	0.5	0.2	0.3	0.4	0.1	-0.1	0.3	0.4	0.4
			Post 5	0.3	0.4	0.7	0.8	0.7	0.4	0.4	0.4	0.5	0.1	0.2	0.3	0.3
			Post 6	0.6	0.5	0.8	1.0	0.5	0.4	0.3	0.5	0.4	0.5	0.5	0.7	0.7
			Post 7	0.6	0.7	0.9	0.8	0.8	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.6
			Post 8	0.2	0.8	1.1	1.1	0.6	0.3	0.5	0.4	0.5	0.5	0.6	0.5	0.5
			Post 9	0.5	0.5	0.6	0.9	0.5	0.2	0.2	0.1	0.1	-0.2	0.2	0.2	0.2
			Post 10	0.6	0.5	0.5	0.6	0.6	0.3	0.3	0.3	0.3	-0.1	0.3	0.6	0.6
Post 11		0.6	0.3	0.3	0.3	0.3	0.3	0.2	0.2							
WIL1-0%	T2	467	Pre 2	-0.1	-0.1	0.3	0.0		-0.1	0.0	0.1	0.1	-0.2	0.0	0.0	
			Pre 1	0.0	0.1	0.0	0.0	-0.1	-0.1	0.1	0.1	0.1	-0.1	-0.1	0.1	
			Post 1	0.7	0.2	0.9	1.8	1.7	2.8	4.2	3.6	3.8	1.3	0.6	0.3	
			Post 2	0.6	0.9	1.6	1.7	2.2	1.7	3.2	3.7	2.6	1.0	0.6	0.7	
			Post 3	0.6	0.7	1.0	1.6	1.9	2.1	2.9	2.9	1.9	0.7	0.6	0.4	
			Post 4	0.3	0.7	0.9	1.4	1.6	1.2	1.4	1.8	1.2	0.2	0.5	0.7	
			Post 5	0.5	0.9	1.3	1.7	1.6	1.3	1.4	1.5	1.2	0.4	0.4	0.4	
			Post 6	0.7	0.8	1.3	1.8	0.9	1.0	1.1	1.4	1.1	0.8	0.6	0.9	
			Post 7	0.8	0.9	1.0	1.3	1.2	0.9	0.9	0.8	0.7	0.6	0.5	0.7	
			Post 8	0.4	0.9	1.2	1.3	0.8	0.6	1.0	0.9	0.8	0.6	0.7	0.7	
			Post 9	0.8	0.7	0.8	1.1	0.6	0.3	0.4	0.5	0.5	-0.2	0.3	0.4	
			Post 10	0.8	0.8	0.7	0.9	0.7	0.5	0.7	1.0	0.6	-0.2	0.3	0.8	
Post 11		0.7	0.7	0.9	0.5	0.4	0.5	0.8	0.7							
WIL1-0%	RB1	518	Pre 2	0.0	0.2	0.1	0.1		0.1	0.1	0.1	0.1	-0.1	0.1	0.1	
			Pre 1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.2	
			Post 1	0.6			1.2	1.7	2.4	3.0	2.2	1.8	0.7	0.6	0.2	
			Post 2	0.9	0.7	1.1	1.1	1.4	1.4	1.7	1.3	1.0	0.6	0.6	0.7	
			Post 3		1.2	1.1	1.1	1.1	1.1	1.4	1.3	0.8	0.5	0.5	0.4	
			Post 4	0.3				0.7	0.6				0.6	0.5	0.6	
			Post 5	0.4	0.6	0.7	0.8	0.7	0.7	0.6	0.5	0.5	0.3	0.3	0.4	
			Post 6	0.8	0.7	0.8	0.8	0.7	0.7	0.6	0.8	0.5	0.5	0.6	0.7	
			Post 7	0.7	0.9	0.9	1.0	1.1	1.0	0.9	0.7	0.6	0.6	0.5	0.6	
			Post 8	0.4	0.9	1.2	1.2	0.9	0.7	0.8	0.6	0.6	0.7	0.8	0.6	
			Post 9	0.7	0.7	0.8	1.0	0.7	0.4	0.4	0.2	0.2	0.1	0.5	0.4	
			Post 10	0.9	0.7	0.7	0.8	0.7	0.5	0.5	0.6	0.4	0.0	0.5	0.7	
Post 11		0.9	0.9	1.0	0.7	0.6	0.7	0.7	0.7							

Mean monthly temperature response (MMTR) values for

Appendix Table 4A-14 (continued).

WIL1-0% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^{\circ}C$, blue shading = $MMTR < -0.5^{\circ}C$ and $P < 0.05$. MMTR values $> 0.5^{\circ}C$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5-1.0^{\circ}C$, $> 1.0-2.0^{\circ}C$, $> 2.0-3.0^{\circ}C$, $> 3.0-4.0^{\circ}C$, and $> 4.0^{\circ}C$. (See **Appendix Table 4-14** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WIL1-0%	T1	557	Pre 1	-0.1	0.0	-0.1	0.1	0.0	-0.1	0.0	0.0	0.1	0.0	-0.1	0.0
			Post 1	0.4	0.2	0.9	1.4	1.8	2.4	3.4	2.4	2.3	0.9	0.5	-0.1
			Post 2	0.5	0.6	1.1	1.3	1.7	1.5	2.5	3.1	2.2	1.0	0.4	0.5
			Post 3	0.2	0.7	1.0	1.7	1.9	1.7	1.9	1.8	1.2	0.4	0.3	0.1
			Post 4	0.3	0.3			1.3	1.0	1.4	1.6	0.8	0.0	0.5	0.6
			Post 5	0.4	0.8	1.0	1.1	1.1	1.0	1.0	1.0	0.9	0.3	0.4	0.4
			Post 6	0.9	0.8	0.9	1.3	0.9	1.0	0.9	1.1	0.8	0.8	0.6	0.8
			Post 7	0.8	0.6		1.0	1.2	1.0	0.9	0.9	0.7	0.7	0.5	0.7
			Post 8	0.5	1.1	1.3	1.4	1.0	0.6	0.7	0.5	0.6	0.8	0.9	0.7
			Post 9	0.8	0.9	1.0	1.3	0.8	0.5	0.5	0.5	0.4	0.2	0.5	0.4
			Post 10	0.8	0.8	0.9	1.0	0.9	0.6	0.5	0.6	0.5	0.1	0.4	0.7
			Post 11		0.5	0.4	0.7								
WIL1-0%	D100	671	Pre 1	-0.1	0.1	0.0	0.0	0.0	-0.1	0.0	0.1	0.1	-0.1	0.0	0.0
			Post 1	0.4	0.0	0.6	0.9	1.3	1.6	2.1	1.6	1.5	0.4	0.4	0.0
			Post 2	0.5	0.6	1.0	1.0	1.3	1.1	1.7	1.6	1.1	0.4	0.3	0.5
			Post 3	0.4	0.6	0.8	1.0	1.2	1.2	1.5	1.4	0.8	0.4	0.4	0.3
			Post 5	0.3	0.7	0.9	1.0	0.9	0.8	0.8	0.7	0.6	0.1	0.2	0.3
			Post 6	0.7	0.8	0.9	1.1	0.7	0.7	0.6	0.8	0.5	0.5	0.5	0.7
			Post 7				0.9	0.9	0.8	0.7	0.6	0.6			
			Post 8	0.4	0.8				0.5	0.7	0.5	0.4	0.5	0.6	0.6
			Post 9	0.7	0.8	0.9	1.1	0.7	0.3	0.4	0.4	0.4	-0.1	0.4	0.3
			Post 10	0.7	0.8	0.8	0.8	0.6	0.4	0.4	0.6	0.3	-0.1	0.3	0.7
			Post 11		0.7	0.5	0.7	0.5	0.4	0.6	0.7	0.7			

Appendix Table 4A-15. Mean monthly temperature response (MMTR) values for WIL2-0% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^{\circ}C$, blue shading = $MMTR < -0.5^{\circ}C$ and $P < 0.05$. MMTR values $> 0.5^{\circ}C$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5-1.0^{\circ}C$, $> 1.0-2.0^{\circ}C$, $> 2.0-3.0^{\circ}C$, $> 3.0-4.0^{\circ}C$, and $> 4.0^{\circ}C$. (See **Appendix Table 4-15** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
WIL2-0%	T4	4	Pre 2	0.1	0.4	0.9	0.3	-0.2	-0.2	0.0	-0.3	0.8	0.3	-0.2	-0.5	
			Pre 1	0.7	-0.1	-0.6	-0.3	0.1	-0.2	0.7	0.3	0.0	0.0	-0.4	0.6	
			Post 1	0.0	0.2	1.0	1.2			2.5	2.3	2.1	1.6	1.5	0.2	0.0
			Post 2												0.5	
				1.4	2.1	2.2	2.0	1.8	2.0	2.2	1.9	1.8	1.1			

				Post 3	0.8	0.5	1.8	2.7	2.0	1.6	1.6	1.5	1.2	0.8	0.1	-0.8	-
				Post 4	0.5				1.9	1.7	2.1	2.7	1.4	0.3	0.0	0.1	
				Post 5											0.6	-0.6	
				Post 6	0.8	1.1	1.1	1.1	1.7	1.4	1.8	1.7	1.4	0.6			0.7
				Post 7													
				Post 8	1.1	1.1	1.9	3.0	2.0	2.2	2.2	2.4	1.9	1.1	0.9	0.3	
				Post 9	1.6	2.0	2.1	2.1	2.5	2.1	2.2	1.6	0.8	0.9	0.9	1.0	
				Post 10	1.4	1.7	1.6	1.5	1.8	1.3	1.1	1.0	0.8	0.8	0.0	0.7	
				Post 11	0.2	0.2	0.6	1.0	1.2	1.1	1.1	1.3	1.7	0.4	0.7	0.3	
					0.9	1.0	1.0	1.0	1.9	2.0	1.1	1.0	0.8	0.5	0.6	0.5	
					1.1	1.0	0.9	1.3	0.9	1.2	1.3	0.7			0.8	0.7	
WIL2-0%	LB2	47	Pre 2	-0.1	0.2	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	-0.2	-0.1	
			Pre 1				-0.3	-0.5	-0.6	0.5	0.1	0.0					
			Post 1	0.6	0.6	1.1	0.6	0.6	0.5	0.5	0.4	0.7	0.8	0.5	1.1		
			Post 2	0.5	1.0	1.3	1.3	0.9	0.8	0.9	0.9	1.1	2.2	0.6	0.3		
			Post 3	0.7	1.1	1.1	1.2	0.7	0.7	0.6	0.4	0.1	1.0	1.0	0.5		
			Post 4	0.7	0.9	0.9	1.2	0.9	0.5	0.9	1.1		0.7	1.0	0.8		
			Post 5	0.3	0.8	0.8	1.0	0.5	0.1	-0.2	-0.5	-0.1	0.6	0.8	0.6		
			Post 6	1.1	1.3	1.1	1.0	0.7	0.4	0.1	-0.1	0.3	0.7	1.0	1.3		
			Post 7	1.1	1.4	1.6	1.3	0.8	0.2	-0.5	-0.2	0.4	0.8	1.1	1.4		
			Post 8	1.0	1.4	1.6	1.4	0.6	0.1	-0.4	-1.0	-0.1	1.0	1.3	0.8		
			Post 9	0.7	0.6	0.6	1.0	0.5	-0.2	-0.8	-1.0	-0.7	0.3	0.9	0.7		
			Post 10	1.0	1.2	1.0	1.1	0.6	-0.2	-0.9	-1.0	-0.3	0.5	1.0	0.8		
			Post 11	1.0	1.3	0.6	0.8	0.5	-0.1					1.3	1.3		
WIL2-0%	LB1	119	Pre 2	-0.2	0.3	0.7	0.0	-0.1	-0.1	-0.1	-0.2	0.0	-0.1	-0.2	-0.2		
			Pre 1	0.4	0.3	-0.3	-0.3	-0.1	-0.3	0.3	0.1	0.2	0.2	0.1	-0.2		
			Post 1	0.9	1.6	3.0	4.0	4.8	4.8	5.6	4.4	4.3	2.4	0.9	0.5		
			Post 2	1.4	2.9	4.1	3.5	4.4	4.4	4.9	5.0	3.6	2.2	1.3	-0.3		
			Post 3	1.2	1.5	2.2	3.8	3.9	4.3	5.0	5.6	4.5	2.1	1.1	0.5		
			Post 4	0.9	1.3	1.8	3.3	4.2	3.5	4.3	4.3		1.0	1.3	0.4		
			Post 5	0.9	2.0	2.0	2.3	3.2	4.2	4.1	4.3	3.2	2.0	1.4	0.9		
			Post 6	1.5	2.0	2.6	4.7	3.9	4.8	5.2	5.2	4.2	2.4	1.1	0.6		
			Post 7	1.7	2.7	3.2	3.5	4.3	6.2	6.9	5.0	3.6	2.0	1.2	1.2		
			Post 8	1.1	2.0	2.8	3.9	4.3	3.9	3.3	3.9	3.1	1.3	0.9	0.7		
			Post 9	-0.1	0.8	1.1	2.3						1.3	1.1	0.0		
			Post 10	1.2			2.2						0.6	1.0	0.1		
			Post 11	1.2	1.4			2.4	3.5			1.8		1.1	0.8		

Appendix Table 4A-15 (continued).

WIL2-0% listed by location and treatment year. No shading = P >0.05 or |MMTR| <0.5°C, blue shading = MMTR <-0.5°C and P <0.05. MMTR values >0.5°C and P <0.05 are shown in a gradient of light to dark brown shading showing changes of >0.5-1.0°C, >1.0-2.0°C, >2.0-3.0°C, >3.0-4.0°C, and >4.0°C. (See **Appendix Table 4-15** in the Phase 2 report.)

Mean monthly temperature response (MMTR) values for

Site	Location	Distance	TRYSR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WIL2-0%	T3	295	Pre 2	-0.2	0.2	0.5	0.0	0.0	0.0	-0.1	-0.3	0.0	0.0	-0.2	-0.1
			Pre 1	-0.2	0.1	-0.1	-0.2		0.2	0.0	0.1	0.1	0.3	0.0	
			Post 1				2.2	2.5	2.4	2.9	2.6	1.6	0.7		
			Post 2	0.7	0.9	1.8	2.0	2.3	2.3	2.2	1.9	1.4	0.7	0.5	-0.3
			Post 3	0.5	0.4	1.3	2.0	2.1	2.1	2.4	1.9	1.0	0.8	0.5	0.3
			Post 4					1.6	1.8	1.7	1.6	0.7	0.2		
			Post 5	-0.2	0.9	1.2		1.4	1.6	1.3	0.9	0.6	0.1	0.6	0.4
			Post 6	0.7	1.1	1.3	1.8	1.7	1.8	1.5	1.2	0.8	0.4	0.5	0.8
			Post 7	0.4	1.3	1.5	2.2	1.8	1.9		0.5	0.4	0.4	0.6	0.9
			Post 8	0.4	0.9	1.3	1.8	1.4	1.2	0.9	0.7	0.7	0.4	0.3	0.1
			Post 9	-0.3	0.3	1.0	1.6	2.0	1.4	1.5	0.8	0.3	-0.2	0.5	-0.2
			Post 10	0.6	0.7	1.0	1.7	2.1	1.6	1.2	0.8	0.3	-0.1	0.6	0.1
Post 11	0.4	0.9	0.7	1.8	1.7	1.4	1.3	0.8	0.8	0.2	0.4	0.7			
WIL2-0%	T2	660	Pre 2	0.0	0.2	0.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3	-0.2	-0.1
			Pre 1	0.0	0.3	-0.1	-0.2	0.0	-0.2	0.3	0.1	0.2	0.0	0.2	0.1
			Post 1	0.1		1.3	1.7				2.7	1.8	0.4	0.1	0.3
			Post 2	0.7	1.0	1.5	0.7	1.1	0.8	0.1	0.6	1.3	1.7	0.5	0.0
			Post 3	0.5	0.2	0.7	1.3	1.4	2.1	2.6	2.7	1.6	0.8	0.4	0.3
			Post 4	0.5	0.5	1.0	1.6	2.1	2.4	3.1	3.5	1.7	0.2	0.3	-0.1
			Post 5	0.2	1.0	1.5	2.1	2.7	3.2	3.7	3.3	2.0	0.5	0.6	0.6
			Post 6	0.6	1.1	1.5	2.5	2.6	3.5	4.0	3.8	2.2	0.8	0.5	0.5
			Post 7	0.5	1.1	1.4	2.1	3.0	3.9	3.8	2.5	1.3	0.7	0.4	0.7
			Post 8	0.6	1.1	1.7	2.6	2.9	2.8	2.5	2.2	1.4	0.7	0.3	0.2
			Post 9	-0.2	0.3	1.0	1.6	2.0	1.4	1.5	0.8	0.3	-0.2	0.5	-0.2
			Post 10	0.7	0.9	1.2	2.0	3.0	3.2	3.2	2.6	0.8	0.0	0.5	0.1
Post 11	0.4	1.0	0.7	2.0	2.4	2.6	2.5	2.0	1.5	0.2	0.0	0.6			
WIL2-0%	T1	745	Pre 2	0.6	0.4	0.5	-0.2	-0.3	-0.2	0.0	-0.1	-0.3	-0.4	-0.3	-0.2
			Pre 1	0.1	0.4	-0.2	-0.2	0.0	-0.3	0.3	0.3	0.3	0.1	0.0	0.0
			Post 1	0.3	0.1	0.8	0.8	2.0	1.9	2.3	2.0	1.8	0.8	0.3	0.2
			Post 2	0.9	0.8	1.3	1.4	1.5	1.6	2.2	2.2	1.6	0.6	0.5	-0.4
			Post 3	1.0	0.5	1.3	1.7	1.7	2.2	2.9	2.9	1.9	1.0	0.5	0.5
			Post 4	0.9	1.0			1.4	1.6	1.9	2.2	1.0	0.4	0.4	0.2
			Post 5	0.7	0.8	1.1	1.6	1.8	1.8	2.1	1.9	1.4	0.5	0.5	0.6
			Post 6	0.6	0.7	1.0							-0.1	0.2	0.5
			Post 7	1.6			1.9	2.2	2.1	2.2	1.7	1.1	0.8	0.7	0.8
			Post 8	0.5	0.7	0.8	1.3	1.5	1.4	1.3	1.2	0.9	0.7	0.2	0.2
			Post 9	0.0	0.4	0.9	1.1	1.5	1.3	1.4	1.4	0.8	-0.3	0.7	0.0
			Post 10	0.7	0.6	0.5	0.9	1.5	1.4	1.0	1.0	0.4	-0.1	0.5	0.3
Post 11	0.5	0.6	0.1	1.1	1.2	1.2	1.2	1.3	1.1	0.4	0.2	0.5			

Appendix Table 4A-16. Mean monthly temperature response (MMTR) values for CASC-0% listed by location and treatment year. No shading = $P > 0.05$ or $|MMTR| < 0.5^\circ\text{C}$, blue shading =

MMTR $< -0.5^{\circ}\text{C}$ and $P < 0.05$. MMTR values $> 0.5^{\circ}\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^{\circ}\text{C}$, $> 1.0\text{-}2.0^{\circ}\text{C}$, $> 2.0\text{-}3.0^{\circ}\text{C}$, $> 3.0\text{-}4.0^{\circ}\text{C}$, and 4.0°C . (See **Appendix Table 4-16** in the Phase 2 report.)

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
CASC-0%	T4	0	Pre 2	-0.1	-0.1	0.1	0.0	0.1	0.0	-0.1	0.1	0.1	0.1	-0.1	-0.1		
			Pre 1	0.0	0.0	0.0	-0.3	-0.4	-0.3	-0.2	-1.2	-0.3			0.0	0.0	
			Post 1	-0.2	0.1	0.1	-0.1	-0.5	-0.4	-0.7	-0.5	-0.4	-0.3	-0.4	-0.3	-0.4	-0.6
			Post 2	0.0	0.2	0.2	0.1	-0.1	-0.7	-0.6	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2
			Post 3	-0.2	0.1	0.1	0.1	-0.2	-0.4	-0.7	-0.8	-0.5	-0.3	-0.3	-0.3	-0.3	-0.3
			Post 4	-0.2	0.0	0.1	0.0	-0.2	-0.4	-0.7	-0.7	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
			Post 5	-0.1	0.0	0.2	0.1	0.0	-0.4	-0.6	-0.5	-1.5	-0.3	-0.2	-0.1		
			Post 6	0.3	0.5	0.3	0.3	0.2	0.2	-0.2	0.1	0.1	0.0	0.3	0.2		
			Post 7	0.3	0.6	0.6	0.7	0.7	0.9	0.7	1.0	0.9	1.5	0.5	0.5		
			Post 8	0.9	0.6	0.7	0.8	0.6	0.5	0.3	0.2		1.2	0.6	0.6		
			Post 9	0.5	0.3	0.4	0.7	0.7	0.7	0.2	0.3	0.6	0.6	0.4	0.6		
			Post 10	0.5	0.5	0.5	0.4	0.5	0.4	0.2			1.0	0.5	0.5		
Post 11			0.4	0.5	0.5	0.3						0.2					
CASC-0%	T3	220	Pre 2	0.1	0.3	0.6	-0.5	-0.5	-0.5	-0.2	0.2	0.1	-0.6	-0.7	-0.4		
			Pre 1	0.7	0.4	0.5	0.3	1.2	-0.4	0.0	0.5	0.5	-0.3	-0.8	0.2		
			Post 1	0.4	1.5	0.6	1.8	0.9					2.1	0.9	0.0	-1.0	
			Post 2	0.9		1.3	1.5	1.4	1.2	3.0	3.5	2.2	0.9	0.0	0.3		
			Post 3	0.3	-0.5	1.8	2.2	1.1	1.5	2.9			0.5	0.6	-0.3		
			Post 4	0.4	0.9	1.5	1.0	1.6	1.4	2.8	3.6	3.2	0.4	0.1	0.3		
			Post 5	0.1	0.1	1.5	1.3	1.7	1.9	3.1	2.8	1.7	1.1	-0.3	-0.2		
			Post 6	0.4	0.9	1.0	1.2	0.7	0.7	1.0	2.0	1.9	1.1	-0.3	-0.1		
			Post 7	0.7	1.5	1.3	1.6	1.9	1.0	1.7	1.6	1.4	0.7	0.3	0.2		
			Post 8	0.3	1.1	1.6	1.2	0.9	0.0	0.8	1.3	0.9	-0.4	0.0	0.2		
			Post 9	0.8	0.8	1.3	1.6	1.0	0.6	1.0	1.9	1.3	0.7	0.1	0.5		
			Post 10	0.2	0.6	0.0	0.2	1.8	2.1	1.2	0.7	0.2	0.5	0.6	0.5		
Post 11			2.0	1.6	0.4	0.4	0.1	-0.8		-1.5							

Appendix Table 4A-16 (continued).

CASC-0% listed by location and treatment year. No shading = $P > 0.05$ or $|\text{MMTR}| < 0.5^{\circ}\text{C}$, blue shading = MMTR $< -0.5^{\circ}\text{C}$ and $P < 0.05$. MMTR values $> 0.5^{\circ}\text{C}$ and $P < 0.05$ are shown in a gradient of light to dark brown shading showing changes of $> 0.5\text{-}1.0^{\circ}\text{C}$, $> 1.0\text{-}2.0^{\circ}\text{C}$, $> 2.0\text{-}3.0^{\circ}\text{C}$, $> 3.0\text{-}4.0^{\circ}\text{C}$, and 4.0°C . (See **Appendix Table 4-16** in the Phase 2 report.)

Mean monthly temperature response (MMTR) values for

Site	Location	Distance	TRYR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
CASC-0%	T2	340	Pre 2	0.2	0.3	0.4	-0.5	-0.7	-1.1	-0.9		-0.1	-0.1	0.0	0.1	
			Post 1	0.7	1.7	0.7	1.3	0.2					2.6	1.4	0.6	-0.7
			Post 2	0.6	0.0	1.6	2.0	2.2	1.9	3.4	3.2	2.5	1.1	0.2	0.4	
			Post 3			1.4	1.7	1.6	2.1	3.0	2.6		0.8	0.9	-0.5	
			Post 4	0.2	0.7	1.6		2.2	1.9	3.0	2.9	1.7	0.0	0.3	0.2	
			Post 5	0.0	-0.1	1.6	1.5	2.1	1.9	2.3	1.8	0.9	0.8	-0.2	-0.3	
			Post 6	0.4	0.7	1.0	1.7	1.2	0.7	0.6	1.1	0.7	0.4	-0.3	0.0	
			Post 7	1.3	1.5	0.8	0.6	0.5	0.3	-0.2	-0.6	-0.4	-1.0	-0.5	0.6	
			Post 8	-0.2	0.7	1.3	1.3		-1.1	-1.0	-0.8	-0.5	-0.4	0.1	-0.1	
			Post 9	0.8	0.5	1.4	1.6	1.1	0.0	-0.2	-0.2	-0.1	0.2	0.2	0.2	
			Post 10	0.2	0.1	-0.1	0.1	0.7	-0.1				-0.1	0.4	0.3	
			Post 11			1.8	1.2	-0.2	-1.2	-1.0	-0.8	-0.3	-0.1			
CASC-0%	T1	415	Pre 2	-0.2	0.0	0.4	0.0	-0.2	-0.4	-0.6	-0.3	0.0	0.2	0.1	0.0	
			Pre 1	0.0	-0.2	-0.3	0.3	1.1	0.2	0.3	-0.2	0.2	0.0	-0.4	0.1	
			Post 1	0.1	0.8	0.2	0.9	1.5	1.0	0.2	0.0	0.3	0.6	0.2	-0.8	
			Post 2	0.4	0.1	1.1	1.1		1.1	1.7	1.5	1.6	0.8	0.6	0.2	
			Post 3	0.0	0.3	1.0	1.1	0.8	0.9	0.9	0.3	0.3	0.7	0.6	-0.1	
			Post 4	-0.1	0.2	0.8	1.9	1.7	1.7	1.6	0.8	0.4	0.5	0.5	0.0	
			Post 5	-0.1	-0.2	0.9	0.8	1.4	0.8	0.8	0.5	0.8	0.6	0.1	-0.2	
			Post 6	0.3	0.6	0.7	1.5	1.3	1.3	1.4	0.9	0.5	0.6	0.3	0.1	
			Post 7	0.7	1.1	0.9	0.8	0.8	0.8	0.6	0.2	0.2	0.3	0.1	0.5	
			Post 8	-0.2	0.4	1.0	0.9		0.3	0.5	0.2	0.4	0.6	0.5	0.0	
			Post 9	0.4	0.5	1.1	1.4	1.5	1.1	0.9	0.6	0.5	0.6	0.4	0.2	
			Post 10	0.2	0.1	0.2	0.6	0.9	0.4	0.3	0.2	0.3	0.3	0.4	0.1	
Post 11			1.4	1.3	0.5	0.3	0.0	-0.3	0.9	0.7						