



State of Oregon Department of Environmental Quality

Temperature and Shade Values

Temperature Total Maximum Daily Load Replacements

Lower Columbia-Sandy Subbasin

April 5, 2023

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1 BUFFER: TEMPERATURE CHANGE DATA

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Dent and Walsh (1997)	Coast Range, Oregon	100	0.35	0.6	7-day Maximum	Upstream/downstream of harvest	Table 3, Pg. 18	Upstream - Downstream of harvest; no pre-harvest data
Dent and Walsh (1997)	Coast Range, Oregon	98	1.83	3.3	7-day Maximum	Upstream/downstream of harvest	Table 3, Pg. 18	Upstream - Downstream of harvest; no pre-harvest data
Dent and Walsh (1997)	Coast Range, Oregon	75	1.56	2.8	7-day Maximum	Upstream/downstream of harvest	Table 3, Pg. 18	Upstream - Downstream of harvest; no pre-harvest data
Dent and Walsh (1997)	Interior, OR	80	1.61	2.9	7-day Maximum	Upstream/downstream of harvest	Table 3, Pg. 18	Upstream - Downstream of harvest; no pre-harvest data
Newton and Cole (2013)	Interior, OR	49	0.2	0.4	Avg. daily max	Upstream/downstream of harvest	Obtained by ODF, Newton&ColeData.docx; last table	(Post.Downstream-post.upstream) - (Pre.downstream-pre.upstream)
Newton and Cole (2013)	Coast Range, Oregon	49	1.0	1.8	Avg. daily max	Upstream/downstream of harvest	Obtained by ODF, Newton&ColeData.docx; last table	(Post.Downstream-post.upstream) - (Pre.downstream-pre.upstream)
Newton and Cole (2013)	Coast Range, Oregon	49	2.1	3.7	Avg. daily max	Upstream/downstream of harvest	Obtained by ODF, Newton&ColeData.docx; last table	(Post.Downstream-post.upstream) - (Pre.downstream-pre.upstream)
Brazier and Brown (1973)	Interior, OR	47	3.33	6.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Interior, OR	10	4.17	7.5	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Brazier and Brown (1973)	Interior, OR	40	1.67	3.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Interior, OR	50	1.11	2.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	100	2.22	4.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	100	0.56	1.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	30	1.67	3.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	60	1.11	2.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	60	0.56	1.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	50	1.67	3.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Brazier and Brown (1973)	Coast Range, Oregon	8	5.00	9.0	Mean	Upstream/downstream of harvest	Table 1, Observed Temp change	Upstream - Downstream temp
Groom et al (2018)	Coast Range, Oregon	20	2.00	3.6	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	30	1.70	3.1	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Groom et al (2018)	Coast Range, Oregon	40	1.41	2.5	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	50	1.15	2.1	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	60	0.86	1.6	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	70	0.64	1.2	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	80	0.44	0.8	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	90	0.29	0.5	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	100	0.18	0.3	median 40 day mean daily maximum	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					(July 23 to August 15)			
Groom et al (2018)	Coast Range, Oregon	110	0.08	0.1	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Groom et al (2018)	Coast Range, Oregon	120	0.02	0.0	median 40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, model results	Figure 11, raw data obtained from authors	
Veldhuisen and Couvelier (2006)	Western Washington	9	2.4	4.3	7-DAD max temp	Upstream/downstream of harvest	Appendix 2, Powell Cr.	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	15	1.1	2.0	7-DAD max temp	Upstream/downstream of harvest	Appendix 2, Savage	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	6	3.2	5.8	7-DAD max temp	Upstream/downstream of harvest	Appendix 3, Long Tom	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	11	2.5	4.5	7-DAD max temp	Upstream/downstream of harvest	Appendix 3, Round Again	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	6	8.3	14.9	7-DAD max temp	Upstream/downstream of harvest	Appendix 3, Single Shot	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	52	1.4	2.5	7-DAD max temp	Upstream/downstream of harvest	Appendix 4b, Powell	Buffer, Appendix 4a
Veldhuisen and	Western Washington	36	1.4	2.5	7-DAD max temp	Upstream/downstream of harvest	Appendix 4b, RedDog	Buffer, Appendix 4a

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Couvelier (2006)								
Veldhuisen and Couvelier (2006)	Western Washington	34	1	1.8	7-DAD max temp	Upstream/downstream of harvest	Appendix 4b, AnchorStm	Buffer, Appendix 4a
Veldhuisen and Couvelier (2006)	Western Washington	43	2.2	4.0	7-DAD max temp	Upstream/downstream of harvest	Appendix 4b, Miller Pt.	Buffer, Appendix 4a
Gomi et al. (2006)	British Columbia	33	1	1.8	Daily Max temp	Paired catchment	Table 3, C (Trmt effect, mean, summer)	Tobs - Tpred
Gomi et al. (2006)	British Columbia	98	-0.2	-0.4	Daily Max temp	Paired catchment	Table 3, D (Trmt effect, mean, summer)	Tobs - Tpred
Gomi et al. (2006)	British Columbia	98	0.4	0.7	Daily Max temp	Paired catchment	Table 3, H (Trmt effect, mean, summer)	Tobs - Tpred
Janisch et al. (2012)	Western Washington	40	2	3.6	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Janisch et al. (2012)	Western Washington	40	0.4	0.7	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Janisch et al. (2012)	Western Washington	40	1.4	2.5	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Janisch et al. (2012)	Western Washington	40	0.3	0.5	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Janisch et al. (2012)	Western Washington	40	0	0.0	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Janisch et al. (2012)	Western Washington	40	0.5	0.9	Maximum daily temp	Paired catchment	Fig. 3b (Continuous buffers)	Tobs - Tpred (adjusted for autocorrelation)
Bladon et al. (2017)	Coast Range, Oregon	65.6	-0.2	-0.3	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	0.0	2.8	5.1	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Bladon et al. (2017)	Coast Range, Oregon	0.0	2.7	4.8	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	55.8	0.5	0.9	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	36.1	0.3	0.6	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	39.4	0.7	1.2	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	26.2	2.0	3.6	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	26.2	3.0	5.4	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Bladon et al. (2017)	Coast Range, Oregon	49.2	0.6	1.1	7-Day Maximum	Paired catchment	Fig. 3 (temp); Table 1 (buffer)	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
McIntyre et al. (2018)	W. Washington	50.0	0.5	0.9	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 100% OLYM August	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	50.0	0.9	1.6	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 100% WIL1	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	50.0	1.0	1.8	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 100% WIL2	Tobs - Tpred (July); MMTR

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
McIntyre et al. (2018)	W. Washington	50.0	2.3	4.1	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 100% WIL3	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	31.0	0.5	0.9	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; FP OLYM	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	37.0	1.8	3.2	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; FP WIL1	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	28.0	-0.4	-0.7	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; FP CASC	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	0.0	1.4	2.5	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 0% OLYM	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	0.0	3.4	6.1	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 0% WIL1	Tobs - Tpred (July); MMTR
McIntyre et al. (2018)	W. Washington	0.0	2.2	4.0	Maximum Mean monthly (July) daily	BACI, pre/post harvest	Table 7-6 CMER Report; 0% WIL2	Tobs - Tpred (July); MMTR

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					temperature change			
McIntyre et al. (2018)	W. Washington	0.0	3.0	5.4	Maximum Mean monthly (July) daily temperature change	BACI, pre/post harvest	Table 7-6 CMER Report; 0% CASC	Tobs - Tpred (July); MMTR
Volpe (2009)	Siskiyou, OR	0.0	2.56	4.6	7 DAY AVG MAX	Paired catchment	Table Temp 2.; US 2	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Volpe (2009)	Siskiyou, OR	0.0	4.12	7.4	7 DAY AVG MAX	Paired catchment	Table Temp 2.; F2	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Volpe (2009)	Siskiyou, OR	0.0	4.34	7.8	7 DAY AVG MAX	Paired catchment	Table Temp 2.; B1	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Volpe (2009)	Siskiyou, OR	33.0	2.46	4.4	7 DAY AVG MAX	Paired catchment	Table Temp 2.; LS 2	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Volpe (2009)	Siskiyou, OR	30.0	-0.59	-1.1	7 DAY AVG MAX	Paired catchment	Table Temp 2.; F1	(Post.trtmt-Pre.trtmt) - (Post.ref-Pre.ref)
Ehinger et al (2021)	Western Washington	56	2.2	4.0	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT1
Ehinger et al (2021)	Western Washington	50	0.9	1.6	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT2
Ehinger et al (2021)	Western Washington	47	1.4	2.5	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT3
Ehinger et al (2021)	Western Washington	56	1.0	1.8	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT4
Ehinger et al (2021)	Western Washington	48	1.8	3.2	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT5

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
Ehinger et al (2021)	Western Washington	47	1.0	1.8	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT6
Ehinger et al (2021)	Western Washington	74	1.0	1.8	7DADM (July - August)	BACI, pre/post harvest, field measurements	Table 4-16	TRT7
Groom et al (2011b)	Coast Range, Oregon	157	0.00	0.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5101
Groom et al (2011b)	Coast Range, Oregon	164.5	-0.09	-0.2	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5102
Groom et al (2011b)	Coast Range, Oregon	167.5	-0.28	-0.5	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5103
Groom et al (2011b)	Coast Range, Oregon	165	0.00	0.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5104
Groom et al (2011b)	Coast Range, Oregon	97.5	0.53	1.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5106
Groom et al (2011b)	Coast Range, Oregon	170	-0.07	-0.1	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5201
Groom et al (2011b)	Coast Range, Oregon	167.5	0.02	0.0	40 day mean daily maximum	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5202

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					(July 23 to August 15)			
Groom et al (2011b)	Coast Range, Oregon	56	0.90	1.6	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5203
Groom et al (2011b)	Coast Range, Oregon	36.5	1.31	2.4	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5204
Groom et al (2011b)	Coast Range, Oregon	53.3	2.07	3.7	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5205
Groom et al (2011b)	Coast Range, Oregon	43.5	0.58	1.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5206
Groom et al (2011b)	Coast Range, Oregon	125	0.45	0.8	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5207
Groom et al (2011b)	Coast Range, Oregon	166.5	1.18	2.1	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5253
Groom et al (2011b)	Coast Range, Oregon	160	1.21	2.2	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5301
Groom et al (2011b)	Coast Range, Oregon	125	-0.56	-1.0	40 day mean daily maximum	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5302

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					(July 23 to August 15)			
Groom et al (2011b)	Coast Range, Oregon	165	0.00	0.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5354
Groom et al (2011b)	Coast Range, Oregon	157.5	-0.13	-0.2	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5355
Groom et al (2011b)	Coast Range, Oregon	111.5	0.03	0.1	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5502
Groom et al (2011b)	Coast Range, Oregon	167.5	-0.47	-0.8	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5503
Groom et al (2011b)	Coast Range, Oregon	74	0.78	1.4	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5506
Groom et al (2011b)	Coast Range, Oregon	72.5	1.14	2.1	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5556
Groom et al (2011b)	Coast Range, Oregon	75	2.00	3.6	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5557
Groom et al (2011b)	Coast Range, Oregon	70	0.19	0.3	40 day mean daily maximum	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5558

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					(July 23 to August 15)			
Groom et al (2011b)	Coast Range, Oregon	37.5	1.56	2.8	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5559
Groom et al (2011b)	Coast Range, Oregon	25	0.96	1.7	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5560
Groom et al (2011b)	Coast Range, Oregon	165.5	-0.08	-0.1	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	5561
Groom et al (2011b)	Coast Range, Oregon	132.5	0.42	0.7	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7353
Groom et al (2011b)	Coast Range, Oregon	160	2.11	3.8	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7452
Groom et al (2011b)	Coast Range, Oregon	165	0.00	0.0	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7453
Groom et al (2011b)	Coast Range, Oregon	112.5	0.53	0.9	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7454
Groom et al (2011b)	Coast Range, Oregon	168.5	-0.82	-1.5	40 day mean daily maximum	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7801

Study	Region	Buffer width (feet)	Change in temp (°C)	Change in temp (°F)	Temperature Change Metric	Design	Temperature Data Source	Notes
					(July 23 to August 15)			
Groom et al (2011b)	Coast Range, Oregon	160	0.15	0.3	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7803
Groom et al (2011b)	Coast Range, Oregon	69.5	2.51	4.5	40 day mean daily maximum (July 23 to August 15)	BACI, pre/post harvest, field measurements	obtained from authors (shade_EDITED_ALL.xlsx)	7854

2 BUFFER: SHADE CHANGE DATA

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Janisch et al 2012	SW Washington	65.6	8	6	Mean of all sites (20 meters) estimated via aerial imagery. Buffer likely horizontal distance because of GIS, not confirmed.	Mean percentage point change of sky blocked	Hemispherical camera, Hemiview		Section 3.1.1. 94% - 86% = 8%	Peter Leinenbach (EPA) obtained buffer width data from the lead author.	
Shuett-Hames et al 2012	Western Washington	50.0	13	13	?	Mean percentage point change	Densimeter held at waist height	Reference sites compared to treatment sites	Table 49, Table 51	Table 49	There were no pre harvest data shade data collected. The treatment shade was compared to nearby reference sites with similar conditions
Shuett-Hames	Western Washington	0.0	77	8	?	Mean percentage	Densimeter held at waist height	Reference sites compared to	Table 49, Table 51	Table 49	There were no pre harvest data shade data

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
et al 2012						point change		treatment sites			collected. The treatment shade was compared to nearby reference sites with similar conditions
Allen and Dent (2001)	Oregon Coast Range	67.5	20	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	67.0	4	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	55.1	6	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	50.0	13	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Allen and Dent (2001)	Oregon Coast Range	48.7	17	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	20.0	27	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	70.0	19	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	50.0	18	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	50.6	20	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	30.0	10	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Allen and Dent (2001)	Oregon Coast Range	25.0	13	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	46.9	9	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Allen and Dent (2001)	Oregon Coast Range	60.0	12	1	Mean buffer width, slope distance	Mean percentage point change	Hemispherical camera, Hemiview	Treatment Reach vs Unharvested Reach	Table A-1, Table B-1, Figure 11. Raw data obtained from authors	obtained from authors	
Bladon et al (2016)	Oregon Coast Range	49.2	7	1	Mean buffer width, slope distance	Before/After	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	20	30	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	30	26	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Groom et al (2018)	Oregon Coast Range	40	21	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	50	17	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	60	13	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	70	10	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	80	7	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	90	4	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Groom et al (2018)	Oregon Coast Range	100	3	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	110	1	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
Groom et al (2018)	Oregon Coast Range	120	0	33	Slope distance	median change	model results, Hemispherical camera, Hemiview	BACI, pre/post harvest shade	Included in model but shade specific results not presented in in paper.	obtained from authors	
McIntyre et al. (2018)	Western Washington	50	3	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	OLYM - 100% 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	50	17	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	WILL1 - 100% 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	50	16	1	Assume horizontal distance as is WA	Mean percentage point change	Hemispherical camera,	BACI, pre/post	Appendix Table 7-B-2	Page 2-10 - 2-11	WILL2 - 100% 2008-

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					Forest Practice method	(June 22– July 21)	Hemiview (1-GSF)	harvest shade			Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	50	8	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22– July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	WILL3 - 100% 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	28	33	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22– July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	CASC - FP 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	31	16	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22– July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	OLYM - FP 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	37	40	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22– July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	WIL1 - FP 2008-Pre minus 2009-Post1

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
McIntyre et al. (2018)	Western Washington	0	63	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	CASC - 0% 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	0	84	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	OLYM - 0% 2008-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	0	72	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	WIL1 - 0% 2007-Pre minus 2009-Post1
McIntyre et al. (2018)	Western Washington	0	76	1	Assume horizontal distance as is WA Forest Practice method	Mean percentage point change (June 22–July 21)	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	Appendix Table 7-B-2	Page 2-10 - 2-11	WIL2 - 0% 2008-Pre minus 2009-Post1
Ehinger et al (2021)	Western Washington	56	58	1	mean treatment buffer width,	Mean canopy closure values	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2013/2015	Table 2-1	TRT1

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					horizontal distance	(PRE - POST1)					
Ehinger et al (2021)	Western Washington	50	23.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2014/2015	Table 2-1	TRT2
Ehinger et al (2021)	Western Washington	47	42.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2013/2014	Table 2-1	TRT3
Ehinger et al (2021)	Western Washington	56	15.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2014/2015	Table 2-1	TRT4
Ehinger et al (2021)	Western Washington	48	5.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2014/2015	Table 2-1	TRT5
Ehinger et al (2021)	Western Washington	47	10.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2014/2015	Table 2-1	TRT6

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Ehinger et al (2021)	Western Washington	74	5.0	1	mean treatment buffer width, horizontal distance	Mean canopy closure values (PRE - POST1)	Densiometer	BACI, pre/post harvest shade	Table 4-2, 2014/2015	Table 2-1	TRT7
Groom et al (2011b)	Coast Range, Oregon	157	7	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5101
Groom et al (2011b)	Coast Range, Oregon	164.5	-3	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5102
Groom et al (2011b)	Coast Range, Oregon	167.5	3	1	mean treatment buffer width,	Mean treatment Reach (PRE -	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A	5103

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					slope distance	POST1) Shade				Table 1 (table says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	165	8	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5104
Groom et al (2011b)	Coast Range, Oregon	97.5	4	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5106
Groom et al (2011b)	Coast Range, Oregon	170	-4	1	mean treatment buffer width,	Mean treatment Reach (PRE -	Hemispherical camera,	BACI, pre/post	obtained from authors	Groom et al 2018, Appendix	5201

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					slope distance	POST1) Shade	Hemiview (1-GSF)	harvest shade	(shade_EDITED_ALL.xlsx)	ix A Table 1 (table says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	167.5	-1	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5202
Groom et al (2011b)	Coast Range, Oregon	56	0	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5203

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Groom et al (2011b)	Coast Range, Oregon	36.5	2	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5204
Groom et al (2011b)	Coast Range, Oregon	53.3	31	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5205
Groom et al (2011b)	Coast Range, Oregon	43.5	7	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but	5206

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
										actually feet)	
Groom et al (2011b)	Coast Range, Oregon	125	5	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5207
Groom et al (2011b)	Coast Range, Oregon	166.5	-3	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5253
Groom et al (2011b)	Coast Range, Oregon	160	2	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters)	5301

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
										but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	125	2	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5302
Groom et al (2011b)	Coast Range, Oregon	165	5	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5354
Groom et al (2011b)	Coast Range, Oregon	157.5	7	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says	5355

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
										meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	111.5	-10	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5502
Groom et al (2011b)	Coast Range, Oregon	167.5	-5	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5503
Groom et al (2011b)	Coast Range, Oregon	74	10	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table	5506

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
										says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	72.5	16	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5556
Groom et al (2011b)	Coast Range, Oregon	75	15	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5557
Groom et al (2011b)	Coast Range, Oregon	70	5	1	mean treatment buffer width,	Mean treatment Reach (PRE -	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1	5558

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					slope distance	POST1) Shade				(table says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	37.5	17	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5559
Groom et al (2011b)	Coast Range, Oregon	25	24	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	5560
Groom et al (2011b)	Coast Range, Oregon	165.5	-2	1	mean treatment buffer width,	Mean treatment Reach (PRE -	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A	5561

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					slope distance	POST1) Shade				Table 1 (table says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	132.5	-1	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7353
Groom et al (2011b)	Coast Range, Oregon	160	5	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7452
Groom et al (2011b)	Coast Range, Oregon	165	-5	1	mean treatment buffer width,	Mean treatment Reach (PRE -	Hemispherical camera,	BACI, pre/post	obtained from authors	Groom et al 2018, Appendix	7453

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
					slope distance	POST1) Shade	Hemiview (1-GSF)	harvest shade	(shade_EDITED_ALL.xlsx)	ix A Table 1 (table says meters but actually feet)	
Groom et al (2011b)	Coast Range, Oregon	112.5	19	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7454
Groom et al (2011b)	Coast Range, Oregon	168.5	-4	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7801

Study	Region	Buffer width (feet)	Reduction in shade (percentage point)	number of sites (N)	Buffer width metric	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Buffer Width Source	Notes
Groom et al (2011b)	Coast Range, Oregon	160	1	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7803
Groom et al (2011b)	Coast Range, Oregon	69.5	16	1	mean treatment buffer width, slope distance	Mean treatment Reach (PRE - POST1) Shade	Hemispherical camera, Hemiview (1-GSF)	BACI, pre/post harvest shade	obtained from authors (shade_EDITED_ALL.xlsx)	Groom et al 2018, Appendix A Table 1 (table says meters but actually feet)	7854

3 SHADE: TEMPERATURE CHANGE DATA

Study	Region	Change in shade (percentage point)	Change in temp (°C)	number of sites (N)	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Temperature Change Metric
Roon et al 2021a, 2021b	Northern Coastal California	25.5	3.6	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	24.0	2.1	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	26.2	3.5	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	27.2	4.2	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	23.6	2.7	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	19.8	2.8	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	19.2	1.8	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	30.5	3.8	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT

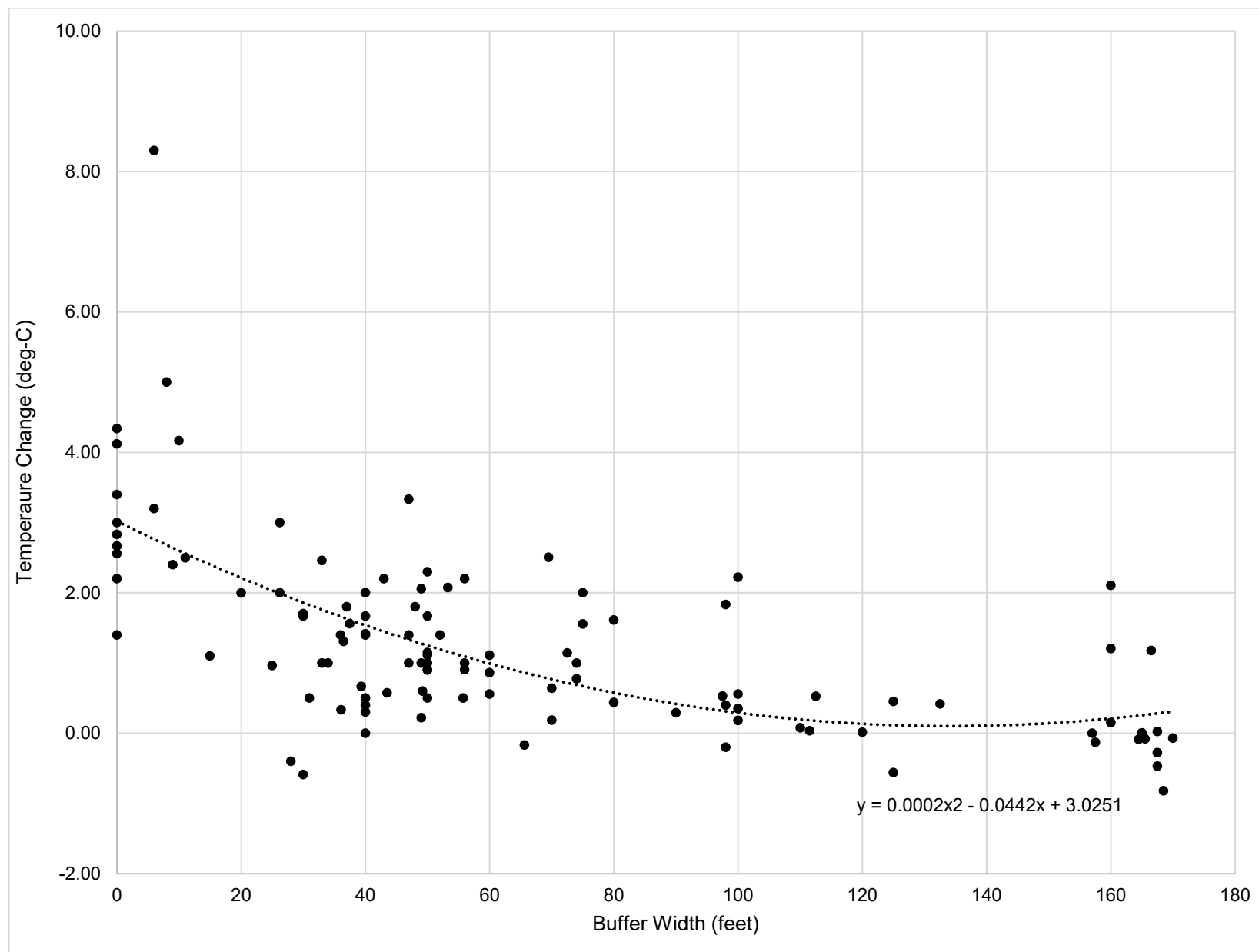
Study	Region	Change in shade (percentage point)	Change in temp (°C)	number of sites (N)	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Temperature Change Metric
Roon et al 2021a, 2021b	Northern Coastal California	4.1	0.3	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Roon et al 2021a, 2021b	Northern Coastal California	4.7	0.4	1		Hemispherical camera, Hemiview	BACI	Roon et al 2021b, Table 1	MWMT
Groom et al (2011b)	Coast Range, Oregon	7.3	0.00	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-3.4	-0.09	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	3.2	-0.28	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	8.2	0.00	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	4.3	0.53	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-4.3	-0.07	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-1.2	0.02	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)

Study	Region	Change in shade (percentage point)	Change in temp (°C)	number of sites (N)	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Temperature Change Metric
Groom et al (2011b)	Coast Range, Oregon	-0.4	0.90	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	2.3	1.31	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	30.7	2.07	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	7.0	0.58	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	4.9	0.45	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-3.5	1.18	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	1.7	1.21	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	2.1	-0.56	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	5.4	0.00	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)

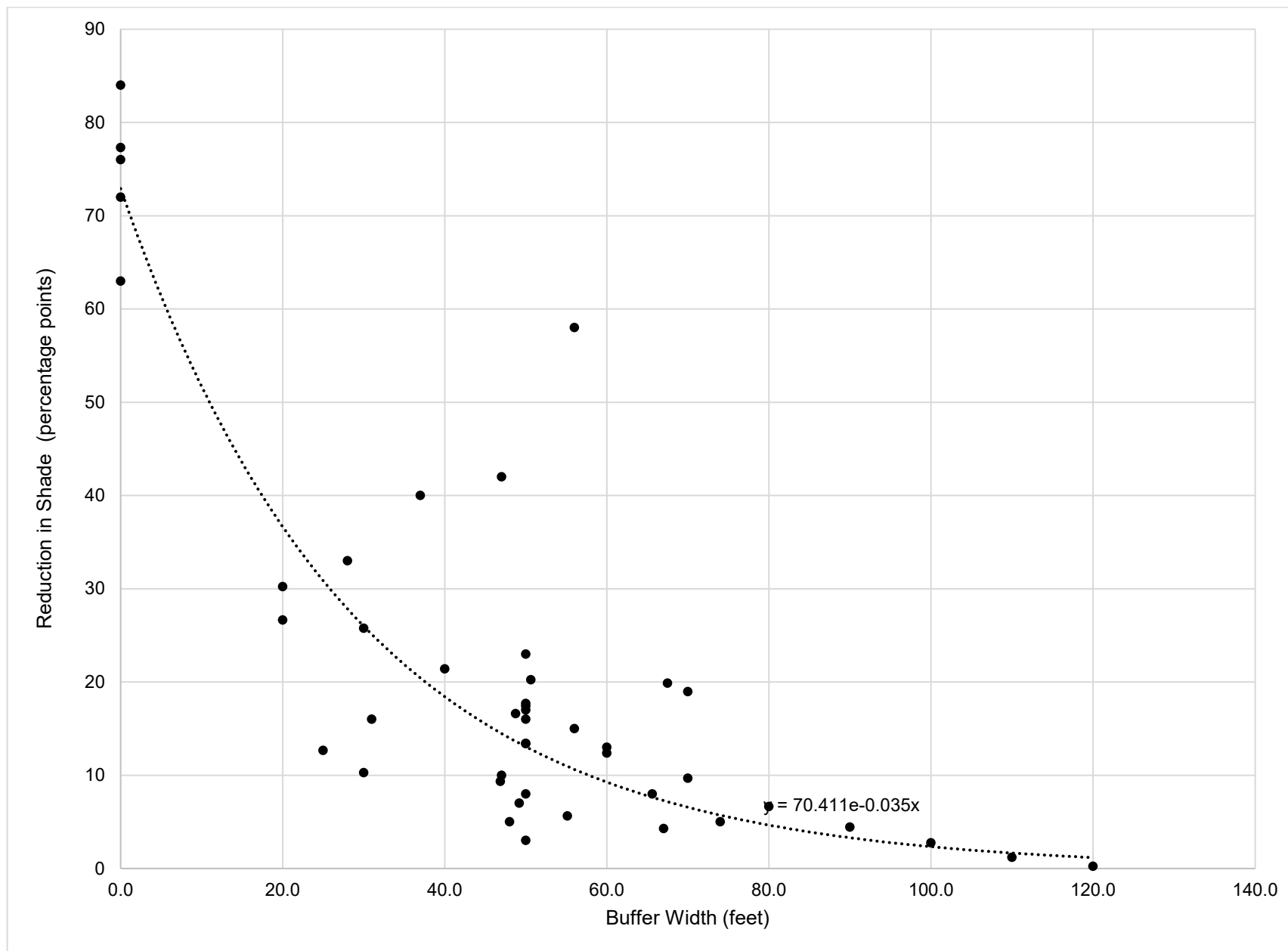
Study	Region	Change in shade (percentage point)	Change in temp (°C)	number of sites (N)	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Temperature Change Metric
Groom et al (2011b)	Coast Range, Oregon	7.1	-0.13	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-10.2	0.03	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-5.4	-0.47	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	10.0	0.78	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	16.3	1.14	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	15.5	2.00	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	4.9	0.19	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	16.9	1.56	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	24.5	0.96	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)

Study	Region	Change in shade (percentage point)	Change in temp (°C)	number of sites (N)	Shade change metric	Shade Instrument	Study Design	Shade Change Source	Temperature Change Metric
Groom et al (2011b)	Coast Range, Oregon	-1.9	-0.08	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-0.8	0.42	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	4.5	2.11	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-4.7	0.00	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	19.4	0.53	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	-3.9	-0.82	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	1.1	0.15	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)
Groom et al (2011b)	Coast Range, Oregon	15.7	2.51	1		Hemispherical camera, Hemiview	BACI	Mean treatment Reach (PRE - POST1) Shade	40 day mean daily maximum (July 23 to August 15)

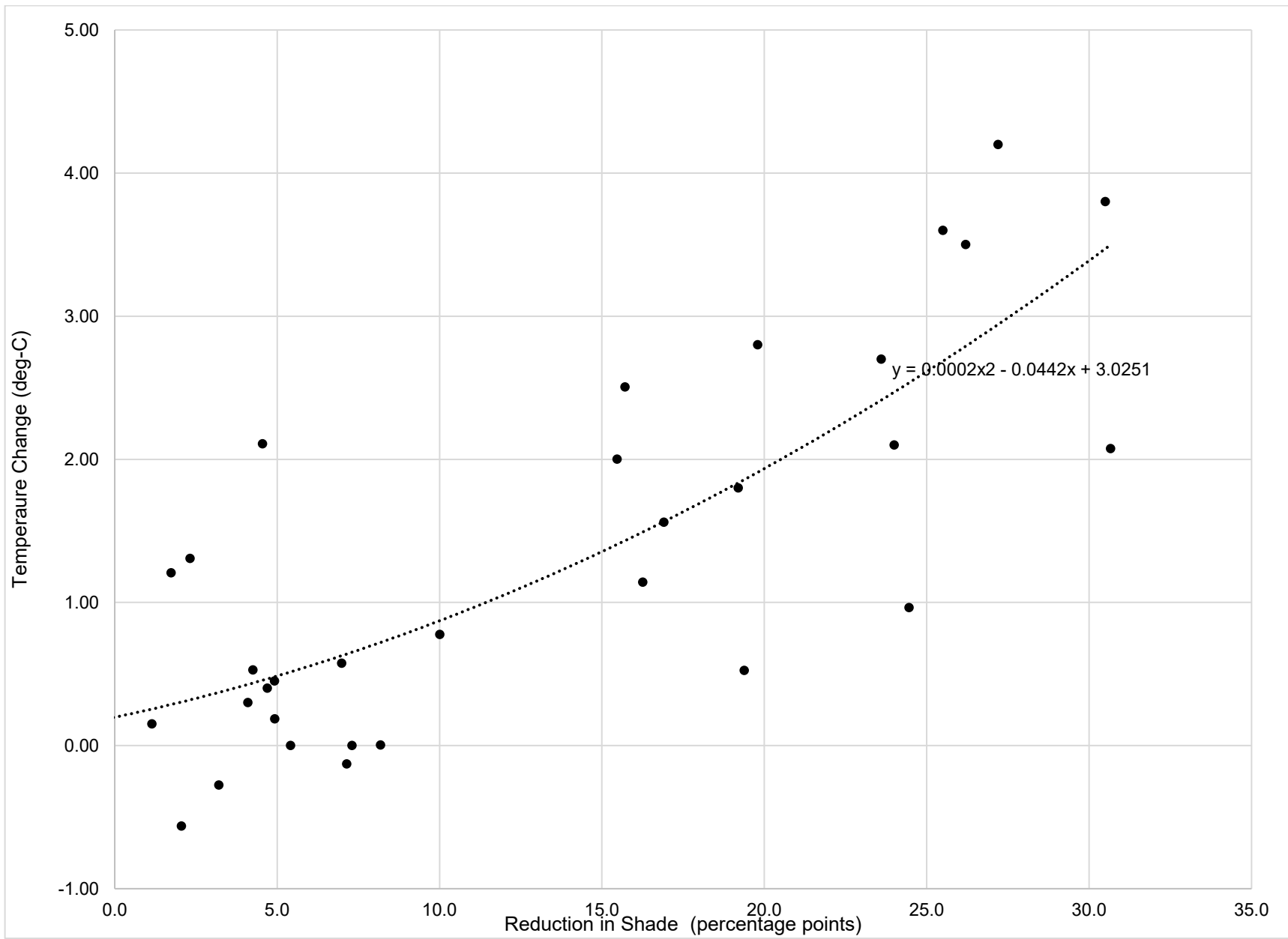
4 TEMPERATURE PLOT



5 SHADE PLOT



6 SHADE-TEMPERATURE PLOT



7 EHINGER ET AL 2021

Site	Buffer Width	PRE	POST1	Shade Change	Temp Change
TRT1	56	94	36	58	2.2
TRT2	50	95	72	23	0.9
TRT3	47	97	55	42	1.4
TRT4	56	94	79	15	1.0
TRT5	48	94	89	5	1.8
TRT6	47	94	84	10	1.0
TRT7	74	92	87	5	1.0
TRT1a	50				
TRT1b	65				

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