

Dashwood Meteorological Station: AWATERE VALLEY																			
Mean Maximum Monthly Air Temp																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	23.2	22.9	20.8	25.8	24.3	22	24	22.7	23.3	24.9	22.8	24.2	23.3	24.9	23.7	23.5	23.2		23.5
Feb	21.8	23.2	23.6	26.9	23.9	24	25.4	20.7	22.9	22.4	25.1	22.8	22.1	23.1	21.9	23.4	24.3		23.4
March	21.7	20	20.2	23.7	23.8	21.2	21.9	22.5	21.5	21	21.3	20.3	23.3	21.9	20.5	22.9	21.8		21.7
April	18	19.6	18.3	19.6	19.3	19.5	20	18.5	17	17.2	18.3	19.9	17.6	18	17.5	20.6	17.5		18.6
May	16.2	16.1	16.8	16.8	14.5	17	18.1	16.8	11.4	15.7	15.9	15.6	17.9	14.1	12.1	15.6	17.3		15.8
June	12.7	13	13.4	14	14.5	12.2	14.7	14.8	10.5	14.6	12.5	12.2	12.2	14.1	10	13	14.1		13.1
July	12.1	11.8	12.8	14	13.5	12.8	12.1	12.5	12.3	12.1	13.4	13.1	11.6	12.3	10.6	12.2	12.5		12.5
Aug	13.4	13.4	13.3	13.2	16.9	13.9	14.9	14	12.9	12.4	15.1	13.5	13.6	12.2	14.6	14	13.9		13.8
Sep	15.6	17.3	13.4	17.3	14	17.4	17	17	15.5	15	16.6	17.3	15.5	15.6	15.4	15.9	15.2		15.9
Oct	16.7	18.6	18.9	18.2	19.3	18.5	18.2	17.5	16.6	16.9	17.1	17.6	17.4	17.7	15.8	16.9	17		17.6
Nov	19.4	19.2	22.8	18.7	19.5		18.5	19.2	19.1	20.2	21	20	19.9	19.6	19.6	21.2	20		19.9
Dec	23.9	22.1	23.5	22.7	20.5	25.9	21.9	21.3	24.1	20.5	23.7	20.1	21.3	21.6	22.2	22.7	19.1		22.2
Mean	17.9	18.1	18.2	19.2	18.7	18.6	18.6	18.1	17.3	17.7	18.6	18.1	18.0	17.9	17.0	18.5	18.0		18.1
Mean Minimum Monthly Air Temp																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	12.1	13.2	10.3	13.9	13.9	11.8	10.3	12.1	10.7	13.9	11.9	12.1	11.9	12.8	10.8	12.6	12.7		12.2
Feb	12	13	12.3	15.6	12.4	11.4	12.1	9.3	11	12.1	13.6	11.8	11	11.7	11.5	11.8	12.6		12.1
March	11.4	9.4	9.8	14.1	13.1	9.4	10.8	10.6	9.9	8.9	10.8	9.2	12	11.2	8	10.1	10.3		10.5
April	9.5	8.9	7.1	9.1	8.6	9.3	8	6	6.4	6.6	6.2	10.6	7	8.3	7	9.1	7.6		8.0
May	6.3	4.3	6.8	6.1	6.8	6.1	7	4.8	6.4	7.4	7	6.5	7.6	2.8	2.8	6.7	7.9		6.1
June	2.5	2.7	3.7	3.8	3	4.5	1.9	4.3	5.6	4.9	2.4	2.7	2.8	3	-0.1	4.7	3.8		3.3
July	1.6	2.9	2.4	5.1	3.1	5.2	1.7	2.5	1.5	1.9	4.5	3.6	3.9	2.1	1.7	2.4	1.9		2.8
Aug	2.9	2.5	4.3	3.6	3.2	3.9	4.9	2.9	3.2	2.8	4.3	3.5	3.4	3	5.5	5.5	2		3.6
Sep	6.1	7.4	4.6	5.9	5.4	6.4	5.1	5.7	6.6	5.1	5.6	6.6	5.5	6.4	4.3	7.1	3.9		5.7
Oct	7.2	8.7	7.4	9.5	9	7.2	8	4.5	6.5	7.3	6.2	7.6	6.5	6.3	4.9	6.3	8.1		7.1
Nov	7.9	7.4	9.3	8.2		8.5	9.7	7.5	7.3	9.2	8.3	9.5	7.2	9.4	8.3	8.4	8.9		8.4
Dec	13.4	10.2	11.9	11.7	9.3	13.9	12	11	11.1	8.2	13.1	8.3	11.8	10.9	11.1	13.2	10.4		11.3
Mean	7.7	7.6	7.5	8.9	8.0	8.1	7.6	6.8	7.2	7.4	7.8	7.7	7.6	7.3	6.3	8.2	7.5		7.6

Dashwood Meteorological Station: AWATERE VALLEY																			
Mean monthly air temperature																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	17.7	18.1	15.6	19.9	19.1	16.9	17.2	17.4	17.0	19.4	17.4	18.2	17.6	18.9	17.2	18.1	17.9		17.8
Feb	16.9	18.1	18.0	21.3	18.2	17.7	18.8	15.0	16.9	17.3	19.3	17.3	16.6	17.4	16.7	17.6	18.4		17.7
March	16.6	14.7	15.0	18.9	18.5	15.3	16.3	16.5	15.7	14.9	16.1	14.7	17.6	16.5	14.2	16.5	26.8		16.7
April	13.8	14.3	12.7	14.4		14.4	14.0	12.3	11.7	11.9	12.2	15.2	12.3	13.1	12.3	14.9	12.5		13.2
May	11.3	10.2	11.8	11.5		11.6	12.6	10.8	11.4	11.6	11.4	11	12.7	8.5	7.5	11.2	12.6		11.1
June	7.6	7.9	8.6	8.9	8.8	8.4	8.3	9.5	10.5	9.8	7.4	7.4	7.5	8.5	5	8.8	8.9		8.3
July	6.9	7.4	7.6	9.6	8.3	9.0	6.9	7.5	6.9	7	9	8.4	7.7	7.2	6.2	7.3	7.2		7.6
Aug	8.2	8.0	8.8	8.4	10.1	8.9	9.9	8.5	8.0	7.6	9.7	8.5	8.5	7.6	10.1	9.8	7.9		8.7
Sep	10.9	12.4	9.0	11.6	9.7	11.9	11.1	11.4	11.1	10	11.1	11.9	10.5	11	9.9	11.5	9.6		10.9
Oct	12.0	13.7	13.2	13.9	14.2	12.9	13.3	11.0	11.6	12.1	11.6	12.6	12	12	10.4	11.6	12.5		12.4
Nov	13.7	13.3	16.1	13.5	9.8	17.0	14.1	13.4	13.2	14.7	14.7	14.7	13.6	14.5	14	14.8	14.4		14.1
Dec	18.7	16.2	17.7	17.2	14.9	19.9	17.0	16.1	17.6	14.4	18.4	14.2	16.6	16.3	16.7	18	14.7		16.7
Mean	12.8	12.8	12.8	14.1	13.1	13.7	13.3	12.4	12.6	12.6	13.2	12.8	12.8	12.6	11.7	13.3	13.6		13.0
Maximum Monthly Air Temp																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	30.6	28.6	32.9	32.9	34.5	28.1	33.7	28.3	29.6	30.6	29	33.5	32.6	32.5	31.4	31.3	30		31.2
Feb	27.3	31	31.8	34.5	29.8	33	35.4	25.1	31.3	29.7	31	30.3	31.2	28.8	31.2	28	34.2		30.8
March	25.7	27.8	31.8	28.8	28.6	28.8	29.7	27.2	27.2	26.1	27.7	27.4	29.7	28.2	26.1	28.2	27.6		28.0
April	23.6	24.3	25.5	24.4		25.4	25.2	24	21.8	24	23.3	24.2	24	24.6	22.9	25.1	22		24.0
May	20.9	22.6	21.7	23.1	22.7	19.9	24.4	22.8	21.2	21.2	20.7	18.8	22.8	17.4	18.9	21.8	21.4		21.3
June	18	16.4	18.5	19.5	19.1	16.2	18.4	19.3	21	18.8	17.3	17.6	17.7	19.9	16.2	18.4	20.3		18.4
July	15	16.7	16.4	17.9	18.5	16.7	17	18.1	16.5	16.8	18.2	17.1	17.9	17.3	16	16.5	15.5		16.9
Aug	19.4	17.9	19.3	17.4	19.2	18.3	19	20	16.1	19.6	19.3	20.5	17.6	17	18.1	17.9	21.5		18.7
Sep	22.2	23.3	19.2	22.9	20.3	23.2	22.6	22.3	21.7	21	21.6	21.7	19.1	21.5	20.3	20.2	18.7		21.3
Oct	23	25.2	25.1	22.3	24.4	22.9	23.3	22.5	22.7	28.2	24.1	26.7	24.2	26.1	22.3	21.9	23.7		24.0
Nov	27.7	27.8	31.8	25	27.2		26.6	27	28.9	26.1	30.2	25	31.8	27	24.8	29.9	25.5		27.6
Dec	31.5	29.2	29.3	33.0	25.1	33.9	26.7	27.1	30.2	25.9	30.7	31.4	28	29.6	29.4	28.5	27.1		29.2
Mean	23.7	24.2	25.3	25.1	24.5	24.2	25.2	23.6	24.0	24.0	24.4	24.5	24.7	24.2	23.1	24.0	24.0		24.3

Dashwood Meteorological Station: AWATERE VALLEY																			
Minimum Monthly Air Temp																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	1.9	8.2	5.1	5.2	8.6	3.2	3.2	4.1	2.3	8.3	5.7	5.5	2.3	7.1	3.1	7.6	5.4		5.1
Feb	6.5	3.9	3.6	9.8	4.9	4.7	6.3	2.6	2.2	3.7	6.1	5.3	5.8	6.1	2.3	5.3	4.3		4.9
March	2.8	2.8	3.7	5.3	6	3.7	3.3	2.9	4.6	2	4.3	3.7	3.5	5.7	0.7	1.6	0.8		3.4
April	0.2	1.8	0	2.7		2.2	2.3	-2.4	0.4	1	-0.9	3.8	1.9	-0.6	-0.2	0.1	0.1		0.8
May	-1.3	-1.4	1.3	-1.4	-0.4	0.5	-3.2	-2.6	-0.7	0.8	-1.2	1.1	0.9	-1.8	-3.3	0.3	-0.4		-0.8
June	-2.5	-4	-2	-2.5	-3.7	0.1	-2.4	-2.5	-1.8	-2.8	-3.7	-1.5	-3.6	-4.2	-4.7	-2.2	-1.9		-2.7
July	-3.1	-2.9	-1.5	-0.8	-2.8	1.4	-4.5	-3.5	-4.5	-2.7	-4.2	-1.6	-2.9	-3.1	-2.6	-3.8	-4.7		-2.8
Aug	-2.6	-2.7	-3.3	-2.1	-2.2	-0.2	0	-4.1	-2.1	-3.7	-1.3	-3.3	-1.6	-3.3	-2	-0.7	-3.9		-2.3
Sep	-1.2	-0.1	-1.4	0.2	-1.7	0.9	-1	-1.1	-0.7	-1	-1	-0.5	-2.4	-2.1	-3.6	-1.8	-0.2		-1.1
Oct	-1.1	0.7	-0.4	0.8	0.5	0.5	-1.5	-3.6	-1.8	-1.2	-1.8	-1.1	-2.1	0.7	-0.5	0.8	-0.6		-0.7
Nov	-1.2	-0.6	1.2	0.9	1.2	3	-0.3	-2	-0.1	1	1.7	-1.3	1.5	-0.2	1.2	0.3	1.9		0.5
Dec	4.7	2.3	2.2	3.7	2.8	7.5	5.1	1.7	2.7	0.4	4.5	1.2	4.6	2.9	3.6	4.6	2.7		3.4
Mean	0.3	0.7	0.7	1.8	1.2	2.3	0.6	-0.9	0.0	0.5	0.7	0.9	0.7	0.6	0.5	0.5	0.5		0.7
Average Daily Range in Air Temp																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	11.1	9.7	10.5	11.9	10.4	10.2	13.7	10.6	12.6	11.0	10.9	12.1	11.4	12.1	12.9	10.9	10.5		11.4
Feb	9.8	10.2	11.3	11.3	11.5	12.6	13.3	11.4	11.9	10.3	11.5	11.0	11.1	11.4	10.4	11.6	11.7		11.3
March	10.3	10.6	10.4	9.6	10.7	11.8	11.1	11.9	11.6	12.1	10.5	11.1	11.3	10.7	12.5	12.8	11.5		11.2
April	8.5	10.7	11.2	10.5	10.7	10.2	12.0	12.5	10.6	10.6	12.1	9.3	10.6	9.7	10.5	11.5	9.9		10.7
May	9.9	11.8	10.0	10.7	7.7	10.9	11.1	12.0	5.0	8.3	8.9	9.1	10.3	11.3	9.3	8.9	9.4		9.7
June	10.2	10.3	9.7	10.2	11.5	7.7	12.8	10.5	4.9	9.7	10.1	9.5	9.4	11.1	10.1	8.3	10.3		9.8
July	10.5	8.9	10.4	8.9	10.4	7.6	10.4	10.0	10.8	10.2	8.9	9.5	7.7	10.2	8.9	9.8	10.6		9.6
Aug	10.5	10.9	9.0	9.6	13.7	10.0	10.0	11.1	9.7	9.6	10.8	10.0	10.2	9.2	9.1	8.5	11.9		10.1
Sep	9.5	9.9	8.8	11.4	8.6	11.0	11.9	11.3	8.9	9.9	11.0	10.7	10.0	9.2	11.1	8.8	11.3		10.1
Oct	9.5	9.9	11.5	8.7	10.3	11.3	10.2	13.0	10.1	9.6	10.9	10.0	10.9	11.4	10.9	10.6	8.9		10.6
Nov	11.5	11.8	13.5	10.5	19.5		8.8	11.7	11.8	11.0	12.7	10.5	12.7	10.2	11.3	12.8	11.1		12.0
Dec	10.5	11.9	11.6	11.0	11.2	12.0	9.9	10.3	13.0	12.3	10.6	11.8	9.5	10.7	11.1	9.5	8.7		11.1
Mean	10.2	10.6	10.7	10.4	10.7	10.4	11.0	11.4	10.1	10.4	10.7	10.4	10.4	10.6	10.7	10.3	10.5		10.5

Dashwood Meteorological Station; AWATERE VALLEY																			
Rainfall (mm)																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	119.8	26.4	60.6	5	50.6	53	3	71.6	28.4	13.4	44.6	56.4	29.4	7	7	32	58.8		39.2
Feb	72.8	35.6	26.8	31	15.4	14	6.2	33.2	36.4	83.2	21.4	37.4	6.6	13.8	98	5.2	19.8		32.8
March	50.4	61.6	32.8	35.4	57.8	36.8	10	16.2	29.8	12.8	71.4	11.8	8.8	21.4	1.8	10	26.8		29.2
April	144	39.8	27.6	33.2		58.8	10.8	12.4	10.4	47.4	17	49	43.6	111.6	31.2	2.2	47.2		42.9
May	70.6	23.2	27.6	33		49.6	26.6	19.2	34	48	127	38.2	51.6	7.8	38	173.8	96.8		54.1
June	99	52.4	58.2	52	45	47	42.8	109.8	64.6	38.8	18	53.4	35.8	23	44	184.6	43.6		59.5
July	158.6	111	42.6	130.6	119.6	39.6	39.4	17	13	60.4	74.8	37.2	42.2	132	30.4	61.2	37.4		67.5
Aug	107.6	47	28.2	37.2	25.6	54.8	28.2	22	32.4	39.4	12.6	53.2	33.6	144.8	61.4	81.4	52		50.7
Sep	86.4	43.6	38.6	35.2	13.2	50.6	4	31	71.2	74.6	20.4	7.4	23.2	42.4	52	97.8	19		41.8
Oct	46.4	47.8	23.8	102.4	34.7	30.2	124.6	24	60.2	59	38.2	66	64	47.8	85	31	84.4		57.0
Nov	45.8	36	8.2	52.2	139.6	13.4	105.8	34.8	50.4	48.6	19.4	62.4	11.4	30.2	35.8	14.6	25.8		43.2
Dec	40.2	75.4	22.2	40.8	30.8	7.2	45.4	57.4	13.2	43	40.8	14	82	54	25.4	68.2	94.8		44.4
Total	1042	599.8	397.2	588	532.3	455	446.8	448.6	444	568.6	505.6	486.4	432.2	635.8	510	762	606.4		556.5

Dashwood Meteorological Station; AWATERE VALLEY																			
Total number of Ground Frosts = number of times grass temp was $\leq -1.0^{\circ}\text{C}$																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan								0	0	0	0	0	1	0	0	0	0		0.1
Feb								0	0	0	0	0	0	0	0	0	0		0.0
March								0	0	1	0	2	0	0	2	1	2		0.8
April								2	6	3	5	1	3	1	4	3	5		3.3
May								12	11	3	3	6	3	11	11	7	5		7.2
June								14	8	13	13	15	15	15	19	9	10		13.1
July								19	18	18	8	14	10	15	16	18	16		15.2
Aug								19	15	16	8	14	14	10	9	5	14		12.4
Sep								10	5	9	3	5	9	1	10	1	13		6.6
Oct								12	6	3	2	4	5	1	2	0	2		3.7
Nov								5	2	1	3	1	1	1	1	1	0		1.6
Dec								1	0	2	0	1	0	0	0	0	0		0.4
Total								94	71	69	45	63	61	55	74	45	67		65.4
Total number of Air Frosts = number of times air temp was $< 0.0^{\circ}\text{C}$																			
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0
April	0	0	1	0			0	3	0	0	1	0	0	1	1	0	0		0.5
May	1	1	0	2			7	5	1	0	2	0	0	5	8	0	1		2.2
June	7	10	6	9	12		7	5	3	6	9	5	7	9	18	2	5		7.5
July	11	6	9	2	7		10	9	13	12	7	6	6	11	13	8	11		8.8
Aug	7	7	7	8	10		0	8	7	8	4	7	6	8	3	1	12		6.4
Sep	4	1	3	0	2		3	1	2	4	3	1	7	1	7	1	3		2.7
Oct	2	0	1	0	0		2	6	3	2	1	3	2	0	2	0	1		1.6
Nov	1	1	0	0	0		1	2	1	0	0	1	0	1	0	0	0		0.5
Dec	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0		0.0
Total	33	26	27	21	31		30	39	30	32	27	23	28	36	52	12	33		29.5

Dashwood Meteorological Station; AWATERE VALLEY														
Average monthly minimum grass temperature														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan			11.9	9.4	12.6	10.2	10.3	10.7	11	8.8	12.6	10.8		10.8
Feb			8.0	8.8	10.6	11.7	9.3	9.2	10.2	10.6	10	10.8		9.9
March			8.3	7.7	5.9	8.8	6.1	9.7	9.9	6.2	7.7	7.9		7.8
April			5.0	3	4	3.8	7.9	4.4	6.7	5.8	6.6	5.2		5.2
May			1.2	3.5	4.4	4.4	3.3	5	0.6	1.3	4.6	5.6		3.4
June			-0.1	2.3	1.3	-0.1	-0.6	-0.4	0.7	-0.9	2.2	1.4		0.6
July			-1.7	-2.1	-1.6	2.5	0	1.2	-0.4	-0.2	-0.7	-1.1		-0.4
Aug			-1.2	0.2	-0.8	1.7	0.1	0.4	1.2	2.9	3.3	-0.9		0.7
Sep			2.4	3.8	1.9	3.8	3	2.8	4.6	2	5.1	1.1		3.1
Oct			1.1	4	5.4	4.6	5.9	4.1	4.6	3.2	5.7	6.9		4.6
Nov			5.1	5.3	6.8	5.3	8.2	4.3	7.5	6.3	6.2	8.2		6.3
Dec			8.8	9.7	6.5	11.7	6.6	8.8	9.1	9.2	11.7	9.3		9.1
Mean			4.1	4.6	4.8	5.7	5.0	5.0	5.5	4.6	6.3	5.4		5.0
Minimum monthly grass temp														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan			5.2	-0.6	6.8	3.9	1.1	-1.2	4.9	0.5	4.8	1.9		2.7
Feb			1.5	-1	0.3	2.5	1.7	2.1	3.3	0.2	2.6	1.6		1.5
March			2.7	1.5	-2.3	1.3	-1.3	0.2	3.1	-1.5	-1.4	-2.4		0.0
April			-4.9	-3.9	-3.3	-4.3	-1.3	-2	-3.6	-2.5	-3.3	-3.2		-3.2
May			-7.9	-4.8	-2.2	-5	-3.5	-2.8	-4.6	-5.5	-2.9	-3.7		-4.3
June			-9.2	-6.2	-2.8	-7.6	-6.9	-7.9	-6.8	-7	-5.7	-6.1		-6.6
July			-9.3	-9.3	-7.1	-6.8	-5.8	-8	-6.8	-5.4	-7.2	-9		-7.5
Aug			-8.9	-5.8	-8	-3.3	-6.6	-5	-6	-4.4	-4.4	-7.8		-6.0
Sep			-5.1	-5.3	-6.9	-2	-3.5	-6.6	-2.6	-6.7	-3.9	-3.4		-4.6
Oct			-6.6	-5.9	-4.1	-2.5	-3.9	-4.6	-1.3	-2	0.6	-2.4		-3.3
Nov			-5.4	-2	-1.7	-2.6	-4.4	-1.3	-2.2	-1.4	-3.1	0.6		-2.4
Dec			-2.8	1.9	-2.3	1.1	-1.1	0.9	-0.2	0.5	2.7	0.7		0.1
Mean			-4.2	-3.5	-2.8	-2.1	-3.0	-3.0	-1.9	-2.9	-1.8	-2.8		-2.9

Dashwood Meteorological Station; AWATERE VALLEY															
Average monthly 10cm soil temperature at 9am															
	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	18.4			18.8	20.4	22.9	18.9	21.3	19.8	21.5	19.5	19.2	18.2		19.9
Feb	18.5			17.2	19.4	18	21.2	19.9	20.3	19.2	17.9	19.1	18.6		19.0
March	16.4			16.9	17.5	15.9	17.3	16.8	19	17.3	15.1	16	15.7		16.7
April	13.5			12.9	11.6	12.6	11.3	14.1	13.1	12.6	12.6	13.5	11.9		12.7
May	10			10.3	9.8	11.1	9.6	9.4	10.6	7.3	7.2	10.2	11		9.7
June	6.4			8.0	7.5	9.6	6.3	5.1	6	5.9	4.8	6.9	8.2		6.8
July	7.2			6.4	4.4	6.2	7	5.2	6.1	5.5	4.9	4.9	5.1		5.7
Aug	7.4		6.7	7.4	6.5	6.8	7.2	6.1	7.1	8.3	7.2	7.8	5.6		7.0
Sep	10.6		9.3	9.8	9.3	8.5	9.6	10	9.7	10	8.4	9.2	8.6		9.4
Oct	16		13.0	12.1	11.9	12.1	11.9	13.1	12.4	12.6	10.5	11.4	12.1		12.4
Nov			14.9	15.1	15	16.5	17.6	17.5	17	15.1	15.2	16.2	14.5		15.9
Dec			18.1	18.7	20.1	16.9	20.7	18.8	18.6	17.6	18.2	18.6	16.9		18.5
Mean	12.4		12.4	12.8	12.8	13.1	13.2	13.1	13.3	12.7	11.8	12.8	12.2		12.9
Average monthly 30cm soil temp at 9am															
	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan				18.9	20.7	22.9	19.5	19.6	19.3	21.6	19.9	19.7	19.1		20.1
Feb				18.1	20.2	19.7	21.6	19.7	20	20.5	19	20	19.6		19.8
March				17.5	18.6	17.6	19	17.5	19	18.7	16.9	17.9	17.5		18.0
April				14.2	14	14.2	14.1	15.5	15.3	15.2	14.6	15.4	14.2		14.7
May				11.6	11.8	12.5	11.6	12	12.6	10.7	10.1	12.7	12.6		11.8
June		7.4		9	9.5	9.6	8.7	8.2	8.8	8.4	7.3	8.9	10.1		8.7
July		8.1		8	7	7.7	8.6	7.5	7.8	7.6	6.9	7.3	7.2		7.6
Aug		6.8	10.3	8.6	8.5	8.1	9.1	8.1	9	9.1	8.8	9.3	7.4		8.6
Sep		9.5	11.3	10.7	10.4	9.5	10.8	10.8	10.6	10.9	10.1	10.4	10		10.4
Oct		11.9	13.6	12.2	12.6	12.5	12	12.9	12.4	12.9	11.3	12.4	12.6		12.4
Nov		13.9	15.3	15	15.4	16.4	15.6	16	16.5	15.2	14.7	15.9	15		15.4
Dec			18	18.4	20	17.3	18.2	17.5	19.1	17.8	17.7	18.8	17.1		18.2
Mean			13.7	13.5	14.1	14.0	14.1	13.8	14.2	14.1	13.1	14.1	13.5		13.9

Dashwood Meteorological Station; AWATERE VALLEY														
Solar Energy (mj/m2)														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan	587.9		634.7	746	714.6	676	726	707	753	777	733	713		706.1
Feb	532.2		550.6	612	490.8	580	597	541	608	477	587	597		561.2
March	483.5		494.9	539	522.9	478	471	518	505	452	568	533		505.9
April	294.4		285	327	320.8	344	323	325	310	295	377	324		320.5
May	215.2		217.1	247	225.6	212	228	254	260	229	210	232		229.9
June	152.7		154.8	195	170.9	171	169	180	204	182	163	170		173.9
July	186.9		193.9	228	219.7	183	201	169	183	194	218	223		200.0
Aug	264.8	281	292.1	290	297.6	315	289	314	282	303	294	342		297.0
Sep	353.7	396	414.6	416	381.6	393	423	357	389	407	422	475		402.3
Oct	589	484	615.3	561	489.3	553	550	636	553	587	632	490		561.6
Nov		539	655.1	677	733	670	664	710	698	632	748	707		675.5
Dec		655	723.7	803	689.7	663	720		704	785	752	644		713.9
Total	3660	2354	5232	5642	5257	5237	5362	4711	5446	5320	5703	5448		4947.7

Dashwood Meteorological Station; AWATERE VALLEY																				
NB: Up until Nov 1999 total Dashwood Evapotranspiration was calculated manually using Priestly Taylor method and Blenheim Solar Energy																				
From Dec 1999 it is Penman Evapotranspiration calculated on Dashwood logger																				
	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	PrTaylor Mean	Penman Mean
Jan	136	133	131.8	152	147	126.7	143	125.9	164	168.7	142	189	152	165	169	149	155		139.9	154.0
Feb	90.1	121	108.3	125	117	138	112	100.2	113	132.2	153	127	118	137	105	128	142		112.2	125.4
March	96.6	90.3	85.8	101	95.4	114.6	106	145	109	123.1	112	123	154	126	117	146	119		93.7	124.4
April	39.7	57.1	57.7	64.5	56.3	79.5	66.1	73.7	73.5	68.2	77.2	90	70.2	66.7	80.7	110	72.7		55.1	77.4
May	34.5	37.6	35.6	32.3	43.6	61.7	45.1	75	69.7	54.3	57.7	49.2	78.6	50.8	51.2	52.7	56.7		36.7	58.6
June	22.1	26.3	26.3	20.2	23.8	41.7	34.1	54.1	62.1	53	41.6	43.1	44.2	53.6	32.5	35.5	35.2		23.7	44.2
July	30.1	22.6	31.0	24.9	23.9	41	32.5	44.8	51.9	44	43.8	53.7	41.7	39.9	40.4	42.5	53.1		26.5	44.1
Aug	42.9	45.9	44.8	40.2	41	49.1	63.1	60.2	51	55.8	64.1	62.8	58.9	48.8	60.5	48.3	65.6		43.0	57.4
Sep	59.1	68.8	63.3	70.9	58.1	73.1	73.8	93.5	83.6	75.5	77	93.4	72.4	66.5	76.7	81.3	76.8		64.0	78.6
Oct	86.5	101	106.7	88	96.6	119.9	85.2	114.5	89.5	84	90.6	111	122	104	84.3	91.6	76.6		95.7	97.8
Nov	113	124	151.0	117	106	113.2	85.8	121	126	125.9	148	132	124	120	117	130	122		122.3	122.0
Dec	142	162	148.9	146.3	120	165.2	125	142.3	187	135.2	161	143	137	141	158	156	102		143.8	146.1
Total	892	988	991	982	929	1124	971	1150	1180	1120	1167	1217	1171	1121	1092	1169	1077		956.6	1129.8
Values in italics have been substituted from Blenheim as Awatere data missing																				

Dashwood Meteorological Station; AWATERE VALLEY															
Average Monthly Soil Moisture 0-200mm															
	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan		11.4		21.8	8.6	7.8	16.8	10.1	7.4	7.9	NA	9.5	10.2		11.2
Feb		9.3		21.0	8.3	10.1	9.3	11	6.1	5.7	NA	7.3	7.2		9.5
March		9.6		15.3	7.7	11.9	9.2	6.3	5.6	5.6	NA	8.5	7.8		8.8
April		16.4		13.9	9.4	12.4	16.8	7.6	6.4	14.9	NA	7.1	10.5		11.5
May		20.4		26.5	8.4	14.8	22.3	15.5	18.3	21	NA	15.8	20.7		18.4
June		27.7		36.4	15.8	18	28	21.9	15.7	14.1	NA	42.5	25.5		24.6
July		29.3		37.2	20.8	22	32.2	25.2	24.1	20	NA	39.1	30.3		28.0
Aug		29.7		32.8	17.4	25.4	28.2	25.5	25.4	43.3	NA	39.4	33.2		30.0
Sep		33.5		25.4	20	25.2	16.4	18.5	16.6	40.7	NA	37.7	24.2		25.8
Oct		15.2	26.6	15.2	21.8	25.8	14.1	15.1	17.7	NA	31.6	23.3	28.7		21.4
Nov		10.5	31.6	10.0	11.7	17.3	9.4	13	9.4	NA	18.8	10.8	19.3		14.7
Dec			20.6	12.8	9.1	12.6	9.4	8.2	12.6	NA	14.4	12.8	13.7		12.6
Mean		19.4	26.3	22.4	13.3	16.9	17.7	14.8	13.8			21.2	19.3		18.5
Average monthly Soil Moisture 200-400mm															
	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean
Jan		14.4		22.8	13.9	11.1	19.9	12.8	12	12.9	NA	14.1	14.7		14.9
Feb		12.7		23.4	13.7	12.6	11.7	14.1	11.3	10.5	NA	12.4	12.6		13.5
March		13.4		19.1	12.3	14.8	12.4	10.5	10.6	10.4	NA	14	12.8		13.0
April		20.6		17.2	14.3	15.9	20.2	11.4	11.3	18.9	NA	12.4	NA		15.8
May		22.2		30.3	14.3	16.9	25	16.7	22.8	24.1	NA	22.2	NA		21.6
June		28.5		38.4	22.5	19.1	30.9	22.7	19.7	18.4	NA	44.3	NA		27.2
July		30.7		39.3	24.9	22.9	34.3	26.8	26	22.2	NA	41.7	NA		29.9
Aug		30.5		33.4	20.3	28.5	30.5	27.4	28.5	46.2	NA	41.2	38.1		32.5
Sep		34.9		27.7	21.5	27.5	19.6	21.7	21	43.6	NA	40.1	27.1		28.5
Oct		16.9	29	19.5	24.7	29	16.5	17.7	20.5	NA	34.2	27.3	32.2		24.3
Nov		12.8	33.5	14.5	13.3	17.7	12.2	16.2	14.3	NA	22.6	16.5	23		17.9
Dec			22.1	18.5	11.8	15.2	11.7	12.7	16.4	NA	17.5	17.7	17.7		16.1
Mean		21.6	28.2	25.3	17.3	19.3	20.4	17.6	17.9			25.3	22.3		21.5

Dashwood Meteorological Station; AWATERE VALLEY compared with Blenheim																		
Growing degree days calculated from absolute daily maximum and minimum temperatures (not from hourly averages)																		
Both sites are calibrated annually by NIWA.																		
The Dashwood records lower minimum temperatures than Blenheim and it is this that gives rise to lower GDD's																		
Dashwood Monthly Growing Degree Days above 10°C																		
	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Mean
July	1.1	6.4	4.9	30.2	7.4	11.3	4.4	7.1	4.4	5.3	20.2	13.6	17.7	5.1	5.4	2.7	2.4	9.6
Aug	15.5	9.5	27.7	21.4	11.2	8.9	29.6	15.6	4.2	12.5	29	14.3	12.9	3.8	31.4	25.1	16.6	17.0
Sep	55.2	83.4	14.7	65.2	40	61.4	52.5	59.6	53.6	32.1	55.9	69.7	51.7	51	34	57.9	22.6	50.6
Oct	69.3	119.1	103.9	122.9	134.7	94.7	102.6	61.1	68.1	77.7	61.8	93	78.2	68.8	33.2	60.3	88	84.6
Nov	112.1	105.4	182.1	105.3	162.8	175.2	125.5	111.3	99.4	143.5	143.1	144.9	107.5	139.2	119.4	146.1	133.4	132.7
Dec	268.3	190.1	240.4	222.2	151.9	265.3	215.7	189.9	235.4	137.1	260.1	132.9	204.1	194.5	206.5	247.1	147.1	206.4
Jan	248.6	171.5	306	279.8	213.5	222.2	228.5	216.6	291.8	227.9	253.3	235.0	266.6	224.6	249.6	245.5		242.6
Feb	234.5	221.9	315.7	228.1	223.3	245.2	140.5	194.6	210.7	261.7	204.2	183.5	214.3	188.5	212.0	235.6		219.6
March	145.5	156.1	276.3	261.6	165.3	196.7	202.9	175.9	153.3	188.3	147.0	236.5	202.9	133.7	201.5	186.5		189.4
April	129.2	95.2	130.7	153	131.3	120.2	76.7	61.3	65.1	79.6	157.0	74.6	99.0	83.8	147.8	82.3		105.4
May	33.9	58.2	63	93	56.8	90.5	54.7	66.7	62.5	56.4	45.7	89.8	7.1	14.3	53.9	88.5		58.4
June	8.5	17.7	21.5	20.9	10.2	28.1	26.8	43.5	39.2	4.5	6.0	20.5	22.8	1.3	11.2	18.0		18.8
Dashwood Total Growing Degree Days above 10°C																		
	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Mean
July	1.1	6.4	4.9	30.2	7.4	11.3	4.4	7.1	4.4	5.3	20.2	13.6	17.7	5.1	5.4	2.7	2.4	9.6
Aug	16.6	15.9	32.6	51.6	18.6	20.2	34	22.7	8.6	17.8	49.2	27.9	30.6	8.9	36.8	27.8	19	26.1
Sep	71.8	99.3	47.3	116.8	58.6	81.6	86.5	82.3	62.2	49.9	105.1	97.6	82.3	59.9	70.8	85.7	41.6	78.1
Oct	141.1	218.4	151.2	239.7	193.3	176.3	189.1	143.4	130.3	127.6	166.9	190.6	160.5	128.7	104	146	129.6	164.1
Nov	253.2	323.8	333.3	345	356.1	351.5	314.6	254.7	229.7	271.1	310	335.5	268	267.9	223.4	292.1	263	295.9
Dec	521.5	513.9	573.7	567.2	508	616.8	530.3	444.6	465.1	408.2	570.1	468.4	472.1	462.4	429.9	539.2	410.1	503.5
Jan	770.1	685.4	879.7	847	721.5	839	758.8	661.2	756.9	636.1	823.4	703.4	738.7	687	679.5	784.7		745.8
Feb	1005	907.3	1195	1075	944.8	1084	899.3	855.8	967.6	897.8	1028	886.9	953	875.5	891.5	1020		964.4
March	1150	1063	1472	1337	1110	1281	1102	1032	1121	1086	1175	1123	1156	1009	1093	1207		1154.0
April	1279	1159	1602	1490	1241	1401	1179	1093	1186	1166	1332	1198	1255	1093	1241	1289		1261.0
May	1313	1217	1665	1583	1298	1492	1234	1160	1249	1222	1377	1288	1262	1107	1295	1378		1317.4
June	1322	1235	1687	1604	1308	1520	1260	1203	1288	1227	1383	1308	1285	1109	1306	1396		1336.2

Blenheim Monthly Growing Degree Days above 10°C																		
	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Mean
July	0.0	1.0	1.6	24.1	8.6	18.5	3.2	9.1	2.2	0.2	24.5	11.2	20.5	9.1	6.3	1.8	5.1	9.3
Aug	11.1	5.2	26.5	15.5	7.1	10.6	21.2	18.7	5.8	13.6	26.3	11.4	17.2	12.4	41.3	25	18.1	14.6
Sep	60.1	72.3	19.3	66.7	64.1	48.9	63.3	73.3	52.2	32.5	66.3	82.2	60	60.8	43.9	72.2	23.7	58.6
Oct	59.2	120.7	115.2	128.8	135.7	106.3	135.6	84.3	73.4	87.8	85.8	102.9	98.6	94.7	54.1	78.4	93	102.6
Nov	130.7	108.2	168.6	116.3	155.6	80.7	149.3	138.5	122.2	165.1	153.2	171	140.6	150.1	145.4	165.5	145.8	138.5
Dec	241.1	185.6	223.5	212.3	150.2	264.5	244.4	205.5	239.3	137.8	265.2	144	220.6	208.5	222	252.7	185.4	210.3
Jan	237.6	166.5	281.8	270.8	201.1	231	256.9	234.6	291.7	224.8	253.2	241.4	286.6	252.7	262.2	251.8		244.5
Feb	219.5	210.7	299.8	226.9	213.3	243.1	169.7	212.9	205.5	260.3	216.6	212.9	227.1	209.5	223.6	239.6		224.5
March	149.3	159.7	253.9	244.5	168.4	189.6	226.9	206.9	155.9	192.3	153.2	242.9	220.2	174.1	212.7	191.8		196.4
April	127.9	88.6	121.9	112.8	122.3	112.1	100.2	73.8	77.6	92	151.8	89.3	118.6	103.8	145.8	84.1		107.7
May	29.0	66.4	50.7	83.4	46.5	90.5	64.6	64.5	61.3	60.4	43.8	95.9	11.6	19.2	53.2	92		58.3
June	6.6	8.0	15.8	21.0	18.2	19.9	36	51.5	37.8	4	7.6	19.7	19.6	7.1	7	18.7		18.7
Blenheim Total Growing Degree Days above 10°C																		
	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	Mean
July	0.0	1.0	1.6	24.1	8.6	18.5	3.2	9.1	2.2	0.2	24.5	11.2	20.5	9.1	6.3	1.8	5.1	9.3
Aug	11.1	6.2	28.1	39.6	15.7	29.1	24.4	27.8	8	13.8	50.8	22.6	37.7	21.5	47.6	26.8	23.2	25.6
Sep	71.2	78.5	47.4	106.3	79.8	78	87.7	101.1	60.2	46.3	117.1	104.8	97.7	82.3	91.5	99	46.9	83.3
Oct	130.4	199.2	162.6	235.1	215.5	184.3	223.3	185.4	133.6	134.1	202.9	207.7	196.3	177	145.6	177.4	139.9	182.2
Nov	261.1	307.4	331.2	351.4	371.1	265	372.6	323.9	255.8	299.2	356.1	378.7	336.9	327.1	291	342.9	285.7	321.9
Dec	502.2	493	554.7	563.7	521.3	529.5	617	529.4	495.1	437	621.3	522.7	557.5	535.6	513	595.6	471.1	532.9
Jan	739.8	659.5	836.5	834.5	722.4	760.5	873.9	764	786.8	661.8	874.5	764.1	844.1	788.3	775.2	847.4		779.1
Feb	959.3	870.2	1136	1061	935.7	1004	1044	976.9	992.3	922.1	1091	977	1071	997.8	998.8	1087		1002.5
March	1109	1030	1390	1306	1104	1193	1271	1184	1148	1114	1244	1220	1291	1172	1212	1279		1199.2
April	1237	1119	1512	1419	1226	1305	1371	1258	1226	1206	1396	1309	1410	1276	1357	1363		1308.4
May	1266	1185	1563	1502	1273	1396	1435	1322	1287	1267	1440	1405	1422	1295	1411	1455		1364.5
June	1272	1193	1579	1523	1291	1416	1471	1374	1325	1271	1448	1425	1441	1302	1418	1474		1383.1

Dashwood Meteorological Station; AWATERE VALLEY																		
Average daily wind run (km).																		
	98	99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean		
Jan			356.3	407.2	339.7	410.3	392.4	353.9	456.5	409.3	387.2	386.2	403.9	439.9		395.2		
Feb			345	359.2	437.1	402.8	452.9	389	357.8	324.6	365.3	358.6	333	372.4		374.8		
March			384.6	391.2	402.4	296.3	399.4	378.2	456.2	396.7	381.9	361.3	381.7	360.7		382.6		
April			346.9	369.4	275.7	334.9	312.3	346.6	396.4	264.9	293.7	369.3	406.3	345.4		338.5		
May			308	333.6	358.9	341.9	365.8	373.5	269.8	367.5	301.6	378	284	290.9		331.1		
June			350.8	326.6	344.9	428.2	373.3	342.6	368.5	370.9	372.2	266.1	305.9	246.2		341.4		
July			323.9	326	346.7	333.4	287.8	359.5	429.7	405.9	339.8	325.2	288.2	417.1		348.6		
Aug			329.9	359.2	347.1	365.5	388.3	359.7	351.6	335	338.8	394.7	310.7	342.9		352.0		
Sep			381.4	345.2	437.9	470.4	412	381.2	430.2	439	386.9	408.7	500.4	334.2		410.6		
Oct			444.1	362.8	413.6	398.6	393.3	381.3	517.2	552.9	406.7	420.8	413.8	355.6		421.7		
Nov			404.8	376	448.2	442.7	423.9	454	495.2	374.1	454.2	425.2	338.8	419.7		421.4		
Dec			430.3	394.8	402.4	471.8	387.5	388.1	395.3	372.2	376.3	433.8	406.8	349.1		400.7		
Mean			367.2	362.6	379.6	391.4	382.4	375.6	410.4	384.4	367.1	377.3	364.5	356.2		380.1		
Blenheim average daily wind run (km)																		
			2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Awat-Blenheim Comparison	
Jan			270.7	328.3	254.7	311.2	277.5	280.8	308.4	262.8	270.8	250.2	256.1	262.7		277.9	117.4	1.42 % of Blenheim
Feb			258.7	271.4	280.2	298.2	312.9	260.5	240.4	221.5	241.3	226.7	220	224.5		254.7	120.1	1.47 wind run
March			267.1	302.5	301.9	226.2	278.9	243.8	249.8	296.2	226.8	227.5	277.4	221.2		259.9	122.6	1.47
April			237.6	263.9	193.1	213	225.6	218.3	241.9	195.3	193.8	236.4	274.8	191		223.7	114.8	1.51
May			229.7	244.3	252.3	255.4	240.7	218.1	162.6	258	179.8	218.6	173.2	201.3		219.5	111.6	1.51
June			236.5	231.4	257.2	293.9	276.7	205.7	219.6	245.4	245.2	186.2	202	165.5		230.4	110.9	1.48
July			248.9	221.3	237	243.6	206.2	231.2	248.7	238.5	217.8	235.6	196.9	249.6		231.3	117.3	1.51
Aug			240.8	244.9	242.8	254.4	270.1	231.7	221.5	244.7	228.7	269.7	207.1	218.1		239.5	112.4	1.47
Sep			297.1	258.1	341.8	327.4	303.8	266.9	305.8	279.9	240	267.9	351.7	230.6		289.3	121.4	1.42
Oct			342.2	266.5	329.2	270.7	296.5	252.9	331.7	385.7	282.6	238.4	280.9	201.6		289.9	131.8	1.45
Nov			324.5	278.5	314.5	321.1	333.9	303.8	340.5	260.7	303.1	291.1	240.4	288.9		300.1	121.3	1.40
Dec			357	268.9	331.2	340.8	293.9	266.9	262.8	295.7	236.7	305.3	271.7	203.9		286.2	114.5	1.40
Mean			275.9	265.0	278.0	279.7	276.4	248.4	261.1	265.4	238.9	246.1	246.0	221.6		265.4	114.7	1.43