

Appendix 20

Temperature dataset 11-day term per month and residuals 1995-2001 Wetland Bird Survey

Table															
Temperature Index															
	1995	1996	1997	1998	1999	2000	2001	Median							
September					0	0		0							
October		0	0	0	1	0		0							
November		5	3	2	1	2		2							
December	5	6	3	9	4	3		5							
January	4	1	10	0	1	6	7	4							
February	3	5	5	2	3	1	4	3							
March	5	2	2	2	1	3		2							
April		0	2	3	5	6		3							
Table															
Temperature Index Residuals															
	1995	Resid 1995	1996	Resid 1996	1997	Resid 1997	1998	Resid 1998	1999	Resid 1999	2000	Resid 2000	2001	Resid 2001	Median
September									0	0	0	0			0
October			0	0	0	0	0	0	1	1	0	0			0
November			5	3	3	1	2	0	1	-1	2	0			2
December	6	1	6	1	3	-2	9	4	4	-1	3	-2			5
January	4	0	1	-3	10	6	0	-4	1	-3	6	2	7	3	4
February	3	0	5	2	5	2	2	-1	3	0	1	-2	4	1	3
March	5	3	2	0	2	0	2	0	1	-1	3	1			2
April			0	-3	2	-1	3	0	5	2	6	3			3

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Table C														
Corresponding outliers of Mute Swan and Temperature Index WeBS														
Month	Mute Swan populations						Temperature Index							
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
September	-	-	-	-	r	2 m	-	-	-	-	-	-	(0)	-
December	r	2 a	3 b	14 a	0 b	r	-	(6) -4.9	(3) -1.5	(9) -7.6	(4) -8.8	r	r	-
January	r	0 b	5 a	r	r	r	r	(1) -0.1	(10) -8.2	r	r	r	r	r
February	r	r	r	r	3 m	2 b	9 a	r	r	r	r	(3) -5.3	(1) 0.6	(4) -4.4
March	2 a	r	r	r	0 b	7 a	-	(5) -4.0	r	r	r	(1) -2.3	(3) -1.5	-

a: above trend b: below trend m: median () : numbers of low temperature days
 -: no count and no temperature data c: corresponding outliers r: reverse corresponding outliers

Table D														
Reverse corresponding outliers of Mute Swan and Temperature Index WeBS														
Month	Mute Swan populations						Temperature Index							
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
September	-	-	-	-	8 a	c	-	-	-	-	-	(0)	c	-
October	-	7 a	3 b	5 m	1 b	28 a	-	(0)	(0)	(0)	(1) -0.3	(0)	(0)	-
November	-	0 b	2 b	13 a	7 a	9 a	-	(5) -4.0	(3) -3.4	(2) -1.0	(1) -3.1	(2) -2.7	(2) -2.7	-
December	0 b	c	c	c	c	2 a	-	(5) -5.3	c	c	c	c	(3) -3.0	-
January	5 a	c	c	9 a	-	2 b	0 b	(4) -9.0	c	c	(0)	-	(6) -5.8	(7) -5.9
February	10 a	0 b	0 b	3 m	c	c	c	(3) -3.2	(5) -10.0	(5) -4.1	(2) -0.7	c	c	c
March	2 a	0 b	4 a	0 b	c	c	-	(5) -4.0	(2) -4.1	(2) -3.3	(2) -1.6	c	c	-
April	-	2 a	1 m	5 a	1 b	0 b	-	(0)	(2) -3.4	(3) -0.5	(5) -3.5	(6) -4.8	(6) -4.8	-

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Corresponding outliers of Whooper Swan and Temperature Index WeBS														
Month	Whooper Swan populations						Temperature Index							
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
December	r	16 a	r	r	r	r	r	r	(6) -4.9	r	r	r	r	r
January	r	0 b	r	0 b	3 a	10 a	r	r	(1) -0.1	r	(0)	r	(6) -5.6	(7) -5.9
March	r	0 m	0 m	0 m	r	r	r	r	(2) -4.1	(2) -3.3	(2) -1.6	r	r	r
Table H														
Reverse corresponding outliers of Whooper Swan and Temperature Index WeBS														
Month	Whooper Swan populations						Temperature Index							
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
November	-	0 m	0 m	4 a	0 m	2 a	-	(5) -4.0	(3) -3.4	(2) -1.0	(1) -3.1	(2) -2.7	-	-
December	0 m	c	0 m	0 m	2 a	0 m	-	(6) -5.3	c	(3) -1.5	(6) -7.6	(4) -9.6	(3) -3.0	-
January	23 a	c	0 b	c	-	c	c	(4) -8.0	c	(10) -8.2	c	-	c	c
February	13 a	0 b	0 b	0 m	3 a	0 m	0 m	(3) -3.2	(5) -10.0	(5) -4.1	(2) -0.7	(3) -5.3	(1) -0.6	(4) -4.4
March	0 m	c	c	c	1 a	0 m	-	(5) -4.0	c	c	c	(1) -2.3	(3) -1.5	-

Tables: corresponding and reverse corresponding outliers of Eurasian Wigeon and Temperature Index 1995-2001 Welland Bird Survey

		Table I																		
		Corresponding outliers of Eurasian Wigeon and Temperature Index WeBS																		
Month	Eurasian Wigeon populations										Temperature Index									
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001						
October		0 m	0 m	0 m	85 a	r			(0)	(0)	(0)	(1) -0.3	r							
December	r	52 a	0 b	48 a	r	r		r	(6) -4.9	(3) -1.5	(9) -7.6	r	r							
January	r	53 b	r	r		155 a	r	r	(1) -0.1	r	r		(6) -5.6	r						
February	r	r	109 a	0 b	r	r	r	r	r	(5) -4.1	(2) -0.7	r	r	r						
March	769 a	r	r	r	8 b	192 a		(5) -4.0	r	r	r	(1) -2.3	(3) -1.5							
		Table J																		
		Reverse corresponding outliers of Eurasian Wigeon and Temperature Index WeBS																		
Month	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001						
		c	c	c	c	2 a			c	c	c	c	c	(0)						
October																				
November		0 b	0 b	60 a	16 a	210 a			(5) -4.0	(3) -3.4	(2) -1.0	(1) -3.1	(2) -2.7							
December	19 b	c	c	c	246 a	1370 a		(6) -5.3	c	c	c	(4) -9.8	(3) -3.0							
January	240 a	c	0 b	80 a		c	12 b	(4) -9.0	c	(10) -8.2	(0)		c	(7) -5.9						
February	246 a	30 b	c	c	150 a	87 m	20 b	(3) -3.2	(5) -10.0	c	c	(3) -5.3	(1) -0.6	(4) -4.4						
March	c	126 a	110 a	80 b	c	c		c	(2) -4.1	(2) -3.3	(2) -1.6	c	c							

Tables: corresponding and reverse corresponding outliers of Eurasian Teal and Temperature Index 1996-2001 Wetland Bird Survey

Table K												
Corresponding outliers of Eurasian Teal and Temperature Index WeBS												
Month	Eurasian Teal populations						Temperature Index					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
October	0 m	0 m	0 m	200 a	r	-	(0)	(0)	(0)	(1) -0.3	r	-
November	r	r	40 m	r	r	-	r	r	(2) -1.0	r	r	-
December	r	0 b	4 a	r	r	-	r	(3) -1.5	(9) -7.6	r	r	r
January	r	0 b	r	-	155 a	r	r	(1) -0.1	r	r	(6) -5.6	r
February	84 m	r	0 b	r	r	r	(3) -3.2	(5) -10.0	r	(2) -0.7	r	r
March	362 a	r	r	r	100 a	-	(5) -4.6	r	r	r	(3) -1.5	-
April	-	r	r	r	35 a	-	r	r	r	r	(6) -4.8	-

Table L												
Reverse corresponding outliers of Eurasian Teal and Temperature Index WeBS												
Month	Eurasian Teal populations						Temperature Index					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
October	-	c	c	c	13 b	-	c	c	c	c	(0)	-
November	-	0 b	c	80 a	160 a	-	(5) -4.0	(5) -3.4	c	(1) -3.1	(2) -2.7	-
December	0 b	c	c	100 a	201 a	-	(6) -5.3	(6) -4.9	c	(4) -6.8	(3) -3.0	-
January	1200 a	c	0 b	36 a	c	0 b	(4) -9.6	(10) -8.2	(0)	-	c	(7) -5.9
February	84 a	c	6 b	c	125 a	15 b	(3) -3.2	(5) -4.1	c	(3) -5.3	(1) -0.6	(4) -4.4
March	c	34 b	10 b	36 b	57 a	c	(2) -4.1	(2) -3.3	(2) -1.6	(1) -2.3	c	-
April	-	3 m	70 a	2 b	0 b	-	(0)	(2) -3.4	(3) -0.5	(5) -3.5	c	-

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Table M														
Corresponding outliers of Mallard and Temperature Index WeBS														
Month	Mallard populations						Temperature Index							
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
September					r	r						r	r	
October		26 m	r	r	500 a	r			(0)	r	r	(1) -0.3	r	
November			r	r	r	r				r	r	r	r	
December	r	24 m	r	53 a	12 b	0 b		r	(6) -4.9	r	(9) -7.6	(4) -9.8	(3) -3.0	
January	r	22 b	r	r		107 a	r	r	(1) -0.1	r	r		(6) -5.6	r
February	54 m	84 a	r	9 b	r	r	r	(3) -3.2	(5) -10.0	r	(2) -0.7	r	r	r
March	87 a	r	r	r	20 b	29 a		(5) -4.0	r	r	r	(1) -2.3	(3) -1.5	
April		7 b	r	12 m	20 a	r			(0)	r	(3) -0.5	(5) -3.5	r	

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Month	Table N Reverse corresponding outliers of Mallard and Temperature Index WeBS																		
	Mallard populations						Temperature Index												
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001					
September	-	-	-	46 a	2 b	-	-	-	-	-	-	(0)	(0)	-					
October	-	c	5 b	12 b	c	133 a	-	c	(0)	(0)	(0)	c	(0)	-					
November	-	83 a	19 b	138 a	84 m	86 a	-	(5)	-4.0	(3)	-3.4	(2)	1.0	(1)	-3.1	(2)	-2.7		
December	6 b	c	37 a	c	c	c	-	(6)	-5.3	c	(3)	-1.5	c	c	c	c	c		
January	162 a	c	17 b	30 a	-	c	0 b	(4)	-9.0	(10)	-8.2	(6)	-	-	-	c	(7)	-5.9	
February	c	c	12 b	c	112 a	121 a	31 b	c	c	(6)	-4.1	c	c	(3)	-5.3	(1)	-0.6	(4)	-4.4
March	c	27 b	50 b	21 b	c	c	-	c	(2)	-4.1	(2)	-3.3	(2)	-1.6	c	c	c	c	-
April	-	c	26 a	c	c	9 b	-	-	c	(2)	-3.4	c	c	(6)	-4.8	(0)	(0)	(0)	-

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Table O															
Coreesponding outliers of Northern Pintail and Temperature Index WeBS															
Month	Northern Pintail populations						Temperature Index								
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001	
October		0 m	0 m	0 m	4 a	0 m	-	(0)	(0)	(0)	(0)	(1)	-0.3	(0)	
November		r	r	10 m	r	r	-	r	r	r	(2)	-1.0	r	r	
December	r	r	0 b	r	r	r	-	r	r	(3)	-1.5	r	r	r	
January	r	4 b	r	r	-	135 a	r	r	(1)	-0.1	r	r	(6)	-5.6	
February	r	260 a	r	2 b	r	r	r	r	(5)	-10.0	r	(2)	-0.7	r	
March	65 a	r	r	r	5 b	38 a	-	(6)	-4.0	r	r	(1)	2.3	(3)	-1.5
April		r	r	0 m	r	r	-	r	r	r	(3)	-0.5	r	r	

Table P																	
Reverse Corresponding outliers of Northern Pintail and Temperature Index WeBS																	
Month	Northern Pintail populations						Temperature Index										
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001			
November		0 b	0 b	c	10 a	320 a	-	(5)	-4.0	(3)	-3.4	c	(1)	-3.1			
December	0 b	2 m	c	2 m	140 a	198 a	-	(6)	-5.3	(6)	-4.9	c	(9)	-7.6	(4)	-9.8	
January	85 c	c	0 b	127 a	-	c	0 b	(4)	-9.0	c	(10)	-8.2	(0)	c	(7)	-5.9	
February	70 a	c	0 b	c	15 b	42 a	40 b	(3)	-3.2	c	(5)	-4.1	c	(3)	-5.3	(1)	-0.6
March	c	9 b	12 b	42 a	c	c	-	c	(2)	-4.1	(2)	-3.3	(2)	-1.8	c	c	
April		4 a	0 m	c	0 m	0 m	-	(0)	(0)	(2)	-3.4	c	(5)	-3.5	(6)	-4.8	

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

Table Q												
Corresponding outliers of Northern Lapwing and Temperature Index WeBS												
Month	Northern Lapwing populations								Temperature Index			
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
October	0 m	0 m	0 m	8 a	r	-	(0)	(0)	(0)	(1) -0.3	r	-
December	40 a	r	r	r	0 b	-	(6) -5.3	r	r	r	(3) -3.0	-
January	r	r	r	-	r	r	r	r	r	r	r	r
February	r	650 a	r	r	28 b	r	(5) -10.0	r	r	r	(1) -0.6	r
March	157 a	r	r	8 b	r	-	(5) -4.0	r	r	(1) -2.3	r	-
April	-	2 b	r	5 b	r	7 a	(0)	r	(3) -0.5	(9) -4.8	-	-

Tables: corresponding and reverse corresponding outliers of Species and Temperature Index 1995-2001 Wetland Bird Survey

		Table R													
		Reverse corresponding outliers of Northern Lapwing and Temperature Index WeBS													
Month		Northern Lapwing populations								Temperature Index					
		1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
September															
October															
November															
December															
January															
February															
March															
April															

Tables: corresponding and reverse corresponding outliers of Eurasian Curlew and Temperature Index 1995-2001 Wetland Bird Survey

Table S														
Corresponding outliers of Eurasian Curlew and temperature Index WEBS														
Month	Temperature Index													
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
October	-	0 m	0 m	0 m	1 a	0 m	-	-	(0)	(0)	(0)	(1) -0.3	(0)	(0)
January	0 m	r	r	r	-	r	r	(4) -9.0	r	r	r	r	r	r
February	r	48 a	r	r	r	r	r	(5) -10.0	r	r	r	r	r	r
March	124 a	r	r	r	24 b	3 b	-	(5) -4.0	r	r	r	(1) -2.3	(3) -1.5	-
April	-	r	r	r	3 a	2 a	-	-	r	r	r	(5) -3.5	(5) -4.8	-
Table T														
Reverse corresponding outliers of Eurasian Curlew and Temperature Index WEBS														
Month	Temperature Index													
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
January	c	4 a	0 m	0 m	-	0 m	0 m	c	(1) -0.1	(10) -8.2	(0)	-	(5) -5.6	(7) -5.9
February	1 b	c	0 b	15 a	50 a	35 a	0 b	(3) -3.2	c	(5) -4.1	(2) -0.7	(3) -5.3	(1) -0.6	(4) -4.4
March	c	52 a	40 a	23 b	c	3 b	-	c	(2) -4.1	(2) -3.3	(2) -1.6	c	(3) -1.5	-
April	-	1 m	1 m	0 b	c	c	-	(0)	(0)	(2) -3.4	(3) -0.5	c	c	-

Appendix 22
4-day term per month Wind Index and residuals 1981-1983

		Table					
		Wind Force Index residuals					
	1981	Resid 1981	1982	Resid 1982	1983	Resid 1983	Median
Sept	1	-0.5					1.5
	2	0.5					
	2	0.5					
Oct	1	-0.5					1.5
	3	1.5	1	-0.5			
	3	1.5	1	-0.5			
	1	-0.5	1	-0.5			
Nov	1	-0.5	3	1.5			3
	1	-2	1	-2			
	2	-1	5	2			
	2	-1	3	0			
Dec	3	0	5	2			1.75
	1	-0.75	2	0.25			
	1	-0.75	1	-0.75			
	1	-0.75	3	1.25			
Jan	3	1.25	3	1.25			3
			3	0	4	1	
			2	-1	3	0	
			3	0	4	1	
Feb			2	-1	3	0	2
			1	-1	2	0	
			2	0	2	0	
March			2	0	1	-1	2.75
			2	0	5	3	
			5	2.25	2	-0.75	
			4	1.25	2	-0.75	
			2	-0.75	1	-1.75	
			4	1.25	1	-1.75	

Appendix 22
4-day term per month Wind Force Index and residuals 1995-2001 Wetland Bird Survey

	1995	1996	1997	1998	1999	2000	2001	Median
Sept					1	3		1.75
					2	2		
					2	2		
					1	1		
Oct	3	1	3	3	2	2		2.00
	3	1	2	2	1			
	2	3	2	2	2			
	1	2	2	2	2			
Nov	3	3	3	6	2	2		2.00
	1	1	2	2	2			
	1	2	1	5	2	2		
	1	1	1	1	5	2		
	1	1	1	3	3	2		
Dec	1	2	1	1	3	1		1.25
	1	2	1	2	5	1		
	2	1	2	2	5	1		
	1	1	1	2	3	2		
Jan	2	3	2	3	3	2	1	2.00
	2	3	1	3	4	2	1	
	2	2	2	3	4	2	2	
	3	1	4	4	2	2	3	
Feb	2	4	3	3	4	2	3	3.00
	2	4	3	2	3	4	3	
	3	4	3	2	3	2	1	
	2	2	3	3	3	4	2	
March	3	1	1	2	4	1		2.50
	3	2	2	2	2	2		
	2	3	3	2	3	4		
	2	3	2	4	3	3		
April	3	3	1	3	2	2		2.50
	2	2	3	2	1	2		
	2	3	3	3	2	1		
	4	3	3	2	1	1		

Appendix 22
4-day term per month Wind Force Index and residuals 1995-2001 Welland Bird Survey

		Table											Resid 2001
		Wind Force Index residuals									Resid 2000	Resid 2000	Resid 2001
		1996	1997	1998	1999	2000	2001	2000	2001	2001	2000	2001	2001
		Resid 1996	1997	1998	1999	2000	2001	2000	2001	2001	2000	2001	Resid 2001
		0	1	3	1	3	1	1	3	2	1	3	1.25
		1	1	2	0	2	0	2	2	1	2	2	0.25
		0	3	2	0	2	0	2	2	2	2	2	0.25
		-1	2	2	0	2	0	2	2	2	2	2	0.25
		1	3	3	1	3	1	3	4	2	1	3	-0.75
		-1	1	5	3	2	2	2	6	2	2	2	0
		-1	2	1	-1	5	3	2	2	2	2	2	0
		-1	1	3	1	3	1	3	2	2	2	2	0
		0.75	1	1	-0.25	1	-0.25	3	3	1	1	1	-0.25
1995	Resid 1995	0.75	1	2	0.75	2	0.75	5	5	1	1	1	-0.25
		-0.25	2	2	0.75	2	0.75	5	5	1	1	1	-0.25
		-0.25	1	2	0.75	2	0.75	3	3	2	2	2	0.75
		1	2	3	1	3	1	3	3	2	2	2	0
		1	1	3	1	3	1	3	4	2	2	2	0
		0	2	3	1	3	1	3	4	2	2	2	0
		-1	2	4	2	2	2	2	4	2	2	2	0
		1	3	3	0	3	0	4	4	1	2	2	0
		1	3	2	-1	3	-1	3	3	0	4	4	0
		-1	3	3	0	3	0	3	3	0	4	4	-1
		1.5	1	2	-0.5	2	-0.5	4	4	1	1	1	-1.5
		-0.5	2	2	-0.5	2	-0.5	2	2	2	2	2	-0.5
		0.5	3	2	-0.5	2	-0.5	3	3	0.5	4	4	1.5
		0.5	2	4	1.5	4	1.5	3	3	0.5	3	3	0.5
		0.5	1	3	0.5	3	0.5	2	2	-0.5	2	2	-0.5
		-0.5	3	2	-0.5	2	-0.5	1	1	-1.5	2	2	-0.5
		-0.5	3	3	0.5	3	0.5	2	2	-0.5	1	1	-1.5
		1.5	3	2	-0.5	2	-0.5	1	1	-1.5	1	1	-1.5
		0	3	3	0.5	3	0.5	3	3	0.5	1	1	-1.5
		0	3	3	0.5	3	0.5	2	2	-1.5	1	1	-1.5
		0	2	2	-0.5	2	-0.5	1	1	-1.5	1	1	-1.5
		1	1	3	1	3	1	3	3	1	1	1	-1

Appendix 24
 3-day per month dataset of water stage heights and residuals at Crew Green 1995-2001 Wetland Bird Survey

Month	Table																
	Water stage heights of raw dataset and residuals																
	1996	1996	1996	1996	1996	1997	1997	1998	1998	1999	1999	2000	2000	2001	2001	2001	2001
Sept																	
Oct																	
Nov																	
Dec																	
Jan																	
Feb																	
March																	
April																	