

FOURTH OF JULY BUTTERFLY COUNTS IN SASKATCHEWAN – 1997 - 1999

J. B. GOLLOP¹

The 25th annual 4th of July Counts (4JCs) – the only international survey of butterflies in Canada, the United States and Mexico – were held in 1999. They are organized by the North American Butterfly Association and are usually conducted within a month of 4 July. Like Christmas Bird Counts, they are 1-day counts done within a 24-km-diameter circle. With the bird counts, 10 or more parties are usual per count in much of the continent so that each area is thoroughly surveyed. Saskatchewan's 1-3 parties per butterfly count can only handle a fraction of the circle. 4JCs are also comparable to Breeding Bird Surveys (BBS) in that they are 1-day counts at the peak of the breeding season, although the BBS is conducted along a 25-mile route, half a mile wide and one observer spends three minutes at each of 50 stops to record all birds seen *and heard*. It occupies 12.5 sq mi compared to the 177 for the circle.

Like the BBS, a 4JC is not an adequate indicator of the animal population that year because all species are not at their peak on any one day (some butterflies have even disappeared as a species for the year and others have not yet arrived) and because weather significantly affects counts from year to year in both cases. For birds, the saving grace is the number of counts which, when combined, helps to offset (or mask) some of the

deficiencies of a single count. There have been about 30 BBSs in Saskatchewan compared to 12 4JCs. Alberta has gone from three 4JCs in 1997 to 13 in 1998 to 28 in 1999. When Saskatchewan reaches that level, we'll be in much better shape.

All of which points to the need for more butterfly surveys in Saskatchewan. The best evaluation of birds or butterflies at a given site, regardless of size or shape, is repeated counts through the season. For birds, with practically all species being present throughout the breeding season, the minimum number per season is considered to be eight counts. Because butterfly species have shorter life spans with few being present all summer, more counts are desirable. For butterflies, counts at two-week intervals from April through September along a km of lane or trail, or checking several flower gardens or crisscrossing a piece of native habitat would be superb - 12 counts for a perfect record (but something - even if you can't identify all species - is infinitely better than nothing).

Which just about gets us to Table 3 - Saskatchewan 4JCs for 1997 through 1999. The table of 1998 and 1997 data in *Saskatchewan Butterflies 1998* should be ignored because there were several errors in it. This year's table is a little closer to perfection.

Table 3A. 4TH OF JULY BUTTERFLY COUNTS - SASKATCHEWAN - 1999/98/97 ::: SPECIES: 69/80/77 = 91

4JC # yrs	Yr	Date	Spp	No. Butt/ ph	Obs- ers	Party- hours	Party- Hours	Party- on foot	Party-km by car	Time	% Sun am/pm	Temp deg. C	Wind kph	4JC
Camp	99	Jun 10	21	432	2	12.2	12.2	18	0	0900-1640	100/25	14-21	24	Camp
Dundurn/ 7	98	Jun 10	21	163	2	12.9	12.9	16	0	0910-1630	90/90	17-26	6-14	Dundurn
	97	Jun 11	23	556	2	10.6	10.6	14	0	0925-1605	25/100	19-26	23-40	
Cypress Hills/ 5	99	Jun 23	35	756	4	16.2	16.2	27	0	0910-1630	100/25	13-18	24	Cypress Hills
	98	Jun 23	45	1236	3	15.1	15.1	27	0	0900-1630	40/70	16-21	10-19	
	97	Jul 3	39	2066	2	19.3	19.3	39	0	0850-1730	62/100	11-19	16-24	
Eastend/ 3	99	Jun 22	22	136	4	16.3	16.3	21	0	0920-1615	75/25	16-22	32	Eastend
	98	Jun 24	26	493	3	13.6	13.6	31	0	0830-1600	50-90	17-25	19-35	
	97	Jul 2	24	220	3	15.9	15.9	28	0	0930-1740	0/80	14-18	19	
Fort	99	Jun 18	25	120	8	9	8	10	51	0830-1730	100/75	18-23	24	Fort
Qu'Appelle/ 9	98	Jun 25	27	125	2	8	7	6	32	0900-1600	100/90	18-26	8-16	Qu'Appelle
	97	Jun 23	32	153	2	5.5	4.5	5	19	0900-1430	100/100	18-23	16-32	
Matador/ 5	99	Jun 15	19	696	2	13.4	13.4	24	0	0900-1640	90/80	16-24	16-24	Matador
	98	Jun 22	20	311	2	11.3	11.3	20	0	0900-1610	100/70	22-24	32-40	
	97	Jun 27	24	607	2	9.5	9.5	20	0	0915-1700	100/100	17-23	18-34	
Nisbet	99	Jul 26	17	357	2	11.2	11.2	23	0	0925-1545	100/75	14-22	24	Nisbet
Forest/ 5	98	Jul 31	23	629	3	12.3	12.3	22	0	0925-1520	100/100	22-28	6-13	Forest
	97	Aug 6	21	370	2	9.2	9.2	21	0	0900-1530	100/100	29-33	8-27	
Regina/ 4	99	Jun 17	18	256	7	11.5	11.5	11	0	0900-1600	70/60	18-21	25-30	Regina
	98	Jun 23	14	192	9	13	13	12	0	0900-1600	45/40	19-25	17-25	
	97	Jun 19	26	517	9	11	11	10	0	0900-1500	80/50	16-21	16-24	
Rocanville/ 3	99	Jul 1	26	131	2	9.2	9.2	16	0	0900-1600	75/50	15-20	8	Rocanville
	98	Jul 1	22	325	2	9.1	9.1	17	0	0945-1620	100-100	23-27	8-16	
	97	Jul 29	20	433	2	10.4	10.4	20	0	0915-1605	95/100	20-30	10-35	
Roche	99	Jul 27	22	754	2	11	11	22	0	0835-1625	100/100	20-31	24	Roche
Percee/ 3	98	Jul 28	22	866	2	13.3	13.3	14	0	1820-1550	50/40	23-27	8-16	Percee
	97	Jul 31	21	611	2	9.9	9.9	14	0	0830-1530	100/100	21-30	10-35	
Saskatoon East/ 5	99	Jul 4	22	206	8	15.5	15.5	24	0	0920-1920	50/50	14-18	24	Saskatoon East
	98	Jul 11	32	593	8	19.6	19.6	34	0	0820-1550	90/100	20-29	13-27	
	97	Jul 12	35	857	7	24.3	24.3	26	0	0900-1800	100/100	15-27	10-26	
Sonningdale/ 6	99	Jun 14	25	393	2	11.8	11.8	20	0	1000-1630	75/75	15-22	24	Sonningdale
	98	Jun 18	21	386	2	12.1	12.1	21	0	0945-1700	50/80	16-19	6-19	
	97	Jun 25	18	511	2	13.2	13.2	21	0	0905-1635	60/85	15-23	14-24	
Waskeflu River/ 2	99	Jun 7	23	200	2	8.2	8.2	16	0	0850-1430	75/25	15-20	8	Waskeflu River
	98	Jun 8	21	215	2	6	6	12	0	1040-1655	50/30	8-21	10-19	
TOTAL	99	12 4JCs	69	4437	30	145.5		232	51	0820-1920				TOTAL
	98	12 4JCs	80	5534	38	146.3		232	32	0820-1700				
	97	11 4JCs	77	6901	50	138.8		218	19	0830-1800				

* As corrected from published version by Keith Roney

jbg26feb2000

Table 3B. 4TH OF JULY BUTTERFLY COUNTS - SASKATCHEWAN -1999.98.97 - SPECIES: 69.80.77 = 91

Camp Dundurn	Cypress Hills	Eastend	Fort Qu'Appelle	Matador	Nisbet Forest	Regina	For explanation, see text	TOTAL	Rocanville	Roche Percee	Saskatoon East	Sonningdale	Waskesiu River
0.5	1.10		1.15	0.13		0.012	Silver-spotted Skipper Large Dark Skipper Small Dark Skipper	6.726 0.02 4.00	1.00	1.20	2.21 0.02		
1.0	3.00						Northern Cloudywing Duskywing Duskywing	21.3819 53.418 51.321	2.20			5.130 1.00 1.00	4.13 43.29 47.32
10.11	8.83	0.41	1.03	0.42 2.00			Dreamy Africanus Persius Pyrgus	0.13 14.72 1.00		0.01		1.00	4.1 1
0.03	7.54		0.01	1.00			Common Checkered Skipper	112.4788		0.30	2.01		
1.00	1.00		2.00			7.00	Arctic Skipper	17.14.7		0.04		11.05	4.13
1.0	1.00	0.05	2.00	0.01		2.00	Orange Skipper	7.920	0.50		0.45	4.00	
1.01	0.11 7.81		0.01			438.17	Ganta Skipperling Uncas Skipper Hesperia Skipper	71.187139 0.10 0.170	8.00		15.43	0.09	
0.12	1.00	2.104	1.22	99.32.81			Nevada Skipper	0.11				0.10	
0.10	1.05	0.05	2.00	0.01			Peck's Skipper Draco Skipper	3.49 1.12	2.00		0.39	1.00	
	3.214	4.4224	16.11.14	23.88.58c			Tawny-edged Skipper	0.128					
	0.130	0.10	0.10	0.20			Long Dash Skipper Delaware Skipper	9.1520 0.10	0.10 4.20	0.01	0.11.7 1.23	0.75	
0.01	0.20		2.24			2.07	Hobomok Skipper Dun Skipper Common Roadside Skipper	17.424 25.18.6 9.319	1.00 0.22	17.72	0.20 0.01	6.04 0.10 4.00	1.1 0.25
1.28	0.10	1.10	1.10	1.10	8.62	4.016	Dark (Black) Swallowtail Old World Swallowtail Anise Swallowtail	2.13 0.3 0.01				0.10	0.3
0.01	0.02	1.00		1.00			Canadian Tiger White White White	192.278.261 17.67.116 23.181.104	3.30 1.123 5.00		2.11 0.1145 0.22	72.93.125 0.30	17.8 1
15.24.51	67.133.68	8.80	5.4.12	0.10		3.34	Margined White Mustard White Cabbage	4.40 0.15 33.119.414		12.19.8	0.60.243	2.00	
1.10	5.64	4.251	1.1.13	1.13	2.86	2.00	Large Marble Olympia Marble	1.25.10 20.01	1.1.38				
0.50	6.61	10.104.8	0.01	1.48.52	0.724	0.011	Sulphur Sulphur Sulphur	14.45.346 975.783.467 0.23	2.050 1.1.108	0.0148 584.525.140 0.11	0.062 10.152c.106	0.33 18.4.7	1
	4.0				0.01		Queen Alexandra's Sulphur Christina Sulphur Giant Sulphur	0.01 1.45 1.010		1.00	0.03	0.20	
1.1.1	1.00	2.30	2.43	3.24.79	6.2.11	3.531							
1.00	1.25.10			0.01									
0.01				20.00									
0.212	12.27.35	0.139		0.019	0.08	107.10.10							
77.14.49	17.96	22.24	13.4.4	124.03	3.72.30	0.01							
	0.01	0.01	0.20										
	0.11		0.11										
	1.0.10												

Table 3B (p. 3) 4JCs

Camp Durdum	Cypress Hills	Eastend	Fort Qu'Appelle	Matador	Nisbet Forest	Regina	TOTAL	Rocanville	Roche Percee	Saskatoon East	Sonningdale	Waskestu River
99.98.97 10 June. 10.11 Jn	99.98.97 23 June. 24 Jn.3 Jy	99.98.97 22 June. 24 Jn.4 Jy	99.98.97 18 June. 25.23 Jn	99.98.97 15 June. 22.27 Jn	99.98.97 26 July. 31 Jy.6 Au	99.98.97 17 June. 23.19 Jun	1999.98.97	99.98.97 1 July. 1.31 Jul	99.98.97 27 July. 28.29 Jul	99.98.97 4 July. 11.12 Jul	99.98.97 14 June. 18.25 Jun	99.98 7 June. 8 Jun
	85.102.215 0.6.1	0.0.1			1.1.0		85.102.215 5.11.5 1.1.1	1.0.2	1.1.0 1.1.1	0.0.1		2.3
1.0.0	2.1.0 2.1.0		0.0.1		0.2.0		5.3.5 8.6.0 2.1.1		1.0.0 1.0.0	0.2.4	2.0.0 1.0.0 1.0.0	4.3 0.1
4.3.3	3.9.1 9.25.26	1.0.0 3.1.4	2.1.1 1.0.2	2.5.10	0.2.0 0.1.6	0.10.18	0.14.8 14.34.23 23.52.66	0.0.1 1.1.6 2.1.0	1.2.3	0.12.7 1.14.3 6.2.6	1.2.0 0.8.0	7.1
0.1.2 0.1.0	0.1.2.0 2.3.29 0.1.29	0.4.1 2.4.9 4.14.10	0.0.1 0.6.1 0.1.15	0.0.3 0.0.14 0.1.10	2.1.0	0.5.3 1.45.18 0.1.6	0.21.8 6.66.78 52.80.185	0.4.0 6.6.7	0.2.3 6.4.5	0.0.1	0.0.2 0.0.2 0.20.60	1.1
		0.0.1			28.1.1		0.0.2 51.15.7 30.9.0	1.10.2 30.9.0	22.4.4			
171.39.218	13.14.15	31.20.6	31.5.8	191.23.99	111.83.49	64.51.220	579.158.596 155.285.425	1.0.0 0.0.83	44.152.166	16.0.4 0.50.127	61.4.26	
6.2.8	179.164.101C	9.0.0 0.1.0 2.0.1		0.0.1		0.0.1	254.172.123			1.0.0	59.4.13	0.2
80.6.58		0.0.1	1.0.0	134.1.13		0.0.1	0.1.0 2.0.1					
	0.0.1	0.0.1	5.0.3	1.0.1	0.0.1	1.0.3	0.0.1 3.0.- 138.7.72	6.0.0	2.1.15	1.1.1	3.0.0 1.0.1	3

jbg15may2000

* 1989 & 1986 include Waskestu River (not done in 1997)

** Anise/Old World Swallowtail except for Sonningdale where it could also be Kahli.

jbg13may2000

Explanation

The conditions under which each count was conducted are presented in *Table 3A* - date, time, # of observers & weather - as well as some of the results - numbers of species, butterflies, party-hours (ph), party-km & butterflies/party hour. The results for each count are in *Table 3B*. The sequence for number of butterflies is 1999, 1998, 1997. Totals for 1999 and 1998 are for 12 counts; 1997 is for 11 (the Waskesiu River count started in 1998). The six species found in 1999 and 1998 only at Waskesiu River are designated by a *dash* in the 97 column.....Group names (genus & family because of no more precise identification) are in *italics*; they do not count as a species unless no other member of that group was found on the 4JC.....A small "c" means that at least one copulating pair was noted.....*Dark (black)* Swallowtail is either an Old World or Anise Swallowtail, except at Sonningdale where it could also be a Kahli Black Swallowtail.....For *Northwestern Fritillary* at Eastend, B = Bean's Northwestern Fritillary & N = Northern Northwestern.

Discussion of totals for the 12 4JCs

The number of species for 1999 was 69, 11 fewer than 1998 and 8 fewer than in 1997 (even with one less 4JC - Waskesiu) - another indication that 1999 was not a good year for butterflies in Saskatchewan. Fifteen species found in *both* 1998 and 1997 were not reported in 1999: Afranius Duskywing, Nevada and Tawny-edged skippers, Mustard White, Orange and Pink-edged sulphurs, Ruddy Copper, Striped Hairstreak, Lupine (once Acmon) Blue, Zerene, Callippe, Atlantis and Mormon fritillaries, Compton Tortoiseshell and Painted Lady - heavy on fritillaries.

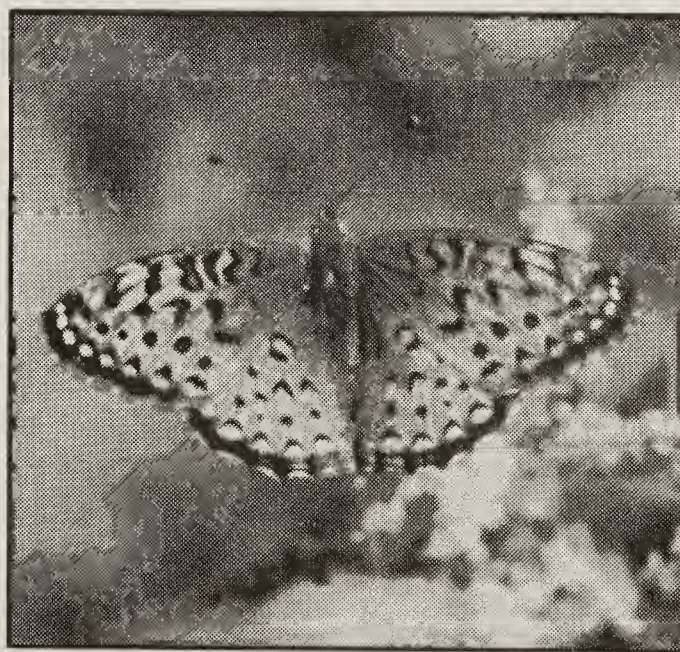
The greatest decreases for species reported in 1999 from 1998 involved 11

species: Garita Skipperling (71 in 1999 vs. 187 in 1998), Common Roadside Skipper (9 / 31), Western White (23 / 181), Cabbage White (33 / 119), Eastern Pine Elfin (6 / 32), Greenish Blue (64 / 231), Great Spangled Fritillary (30 / 116), Silver-bordered Fritillary (7 / 41), Arctic Fritillary (9 / 107), Northern Crescent (96 / 419) and Red Admiral (6 / 66).

Major increases in numbers for 1999 over 1998 involved eight species: Common Checkered Skipper (112 in 1999 vs 47 in 1998); Olympia Marble (20 / 0, apparently due to a corresponding flower ratio for the 2 years), Pearl Crescent (56 / 19), Northern Pearly-eye (51 / 15), Little Wood Satyr (30 / 9), Common Ringlet (579 / 156), Uhler's Arctic (138 / 7) and Monarch (17 / 2).

One segment of the Waskesiu River 4JC was not done because Mike Gollop turned a corner and found he was following a bear. No dedication!

1. Article reprinted from *Saskatchewan Butterflies 1999* compiled by J. B. Gollop and Anna Leighton and printed in July 2000.



Atlantis Fritillary

Juhachi Asai