

A 2012 Survey of Butterflies at West Eugene's Coyote Prairie



Coyote Prairie

By Eugene/Springfield
North American Butterfly Association
Summer 2012
Reported by David & Lois Hagen

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Background

In 2012, a volunteer group from the Eugene/Springfield chapter of the North American Butterfly Association (NABA-E/S) surveyed the butterfly population of Coyote Prairie

Coyote Prairie, located on Cantrell Road about four miles west of the Eugene city limits, is a 240 acre site managed for wetlands restoration by the City of Eugene, Parks and Open Space Division. The site was formerly a rye grass field. The site is divided into four contiguous zones (see Figure 1) corresponding to the phases of the restoration project:

- Phase 1 ("Zone 1") is 26 acres and began in 2007
- Phase 2 ("Zone 2") is 38 acres and began in 2008
- Phase 3 ("NE Zone") is ~85 acres and began in 2009
- Phase 4 ("NW Zone") is now partially in experimental plots (~11 acres) and partially leased for rye grass farming (~67 acres)

Our survey group sought to identify butterfly species, to count the total number of butterflies, and to comment on the general quality of the butterfly habitat. This year was a particularly challenging butterfly year for Lane County in general due to a cool, rainy spring. Therefore, our observations at Coyote Prairie may be atypically low in count numbers and late in butterfly emergence times.

Procedures

At Coyote Prairie for 2012 we conducted surveys across the butterfly season at intervals of approximately two weeks. We followed a route (see Figure 1) which we had established during our first survey season (2011). Each day we recorded the weather, the number and names of the participants, and the time on site. Our tally sheets contained separate columns for the four zones of Coyote Prairie. Photographs taken by team members served to document the survey.



Results

Nine volunteers participated in the 2012 study of Coyote Prairie. The group completed fourteen surveys extending from April 13th through September 28th. The volunteers spent 82 person-hours in the field (Tables 1 and 6). In total, we logged about 135 person-hours on this project when travel, prep work, and analysis times are included.



Surveyor at Coyote Prairie

In this survey, we identified 16 different butterfly species (Table 1). We counted 1664 individual butterflies — 40 in the NW Zone (Table 2), 777 in the NE Zone (Table 3), 409 in Zone 1 (Table 4), and 438 in Zone 2 (Table 5).



Eastern Tailed-blue (2011)

The top six butterflies observed were: Sachem Skippers (*Atalopedes campestris*), with 731 individuals counted; Ochre Ringlets (*Coenonympha tullia*), with 398; Orange Sulfurs (*Colias eurytheme*), with 124; Field Crescents (*Phyciodes pulchella*), with 92; Eastern Tailed-blues (*Cupido comyntas*), with 89; and Common Wood-nymphs (*Cercyonis pegala*), with 80 — see Table 1 and Figure 2. The top butterfly plants were: gumweed (*Grindelia*), used by Sachem Skippers and Orange Sulphurs; grasses, used by Ochre Ringlets and Common Wood-nymphs; Spanish clover (*Lotus unifoliolatus*), used by Eastern Tailed-blues; and lupines, used by a variety of butterflies.



Field Crescents mating

We have compared the butterfly occurrences in the four distinct restoration zones of Coyote Prairie. The Northwest Zone (Table 2 and Figure 3) houses several experimental plots, but a large acreage is still leased out for grass-seed farming. The NW Zone was very low on butterflies. However, we occasionally spotted a few Ochre Ringlets and Wood-nymphs plus a few accidental visitors.

The Northeast Zone (Table 3 and Figure 3) has been restored with a variety of native plants, many of which attract butterflies. Especially late in the season, there are vast tracts of gumweed. The long-blooming period of these flowers attracts Sachem

Skippers in multitudes (we counted 515 there), as well as other species. In the future, this zone should attract higher numbers of butterfly species, especially Orange Sulphurs. Great Coppers should also thrive in this area once they discover it.

Zone 1 (see Table 4 and Figure 3) provided a good variety of butterflies. This zone benefits from being surrounded by woodland and riparian strips on all edges. The butterfly numbers, high in the early part of the season, dropped off significantly as the area dried out.

Finally, Zone 2 (see Table 5 and Figure 3) shares many of the features of the zones it lies between: the NE Zone and Zone 1.

This year was our second year to survey Coyote Prairie, so we were able to compare our observations from this year with our observations from 2011. Furthermore, in 2010 and 2009, NABA-E/S conducted a butterfly survey of a nearby wetlands area: Dragonfly Bend (plus the adjacent Briggs Site). Therefore, we have included all four surveys in our analysis. It should be noted that 2012, 2011, and 2010 were all years with cool, rainy springs, and the butterfly populations were generally down across the region. In contrast, the spring weather in 2009 was much more favorable for butterfly numbers.

The results of our counts in 2012 and 2011 at Coyote Prairie were quite similar (Figure 4). In 2012 we counted more Orange Sulphurs than in 2011; but fewer SACHEM Skippers in 2012 than in 2011. In both cases the timing was about the same.

Coyote Prairie is the better site for spotting SACHEM Skippers (at least in 2011 and 2012); however, Dragonfly Bend is better for Orange Sulphurs and Eastern Tailed-blues (at least in 2009 and 2010).

Finally, the butterfly-friendly weather conditions of 2009 can be seen in the graphs (Figure 4) as higher numbers and earlier appearances of Orange Sulphurs and Eastern Tailed-blues at Dragonfly Bend in that year.

Comments on the Habitat at Coyote Prairie

The Coyote Prairie site is quite beautiful, and the habitat restoration is very impressive. Unfortunately, we did not survey the site at the beginning of the project; however, we can speculate that, as a rye-grass farm, there would not have been many butterflies. Currently, the NW zone is still farmed, and there the species diversity and individual numbers are considerably lower than in the restored NE zone, Zone 1, and Zone 2 (Tables 2–5 and Figure 3).



The ecotomes (edges) of all of the zones — especially Zone 1 and 2 — provide for butterfly diversity that would not be seen otherwise. The Common Wood Nymph is an example of a species seen predominantly at the forest edges and in the hedgerows.

All four zones dry out during the arid Oregon summers. There are a few seasonal streams and vernal pools, but these have no water by mid July. There would likely be

better butterfly populations if water was nearby year-round.

We saw more Sachem Skippers in the NE Zone in 2011 than in 2012 (Figure 4). These butterflies nectar on gumweed flowers. Gumweed here may be a biennial-flowering plant, as it was apparently “on” in 2011 and “off” in 2012. This flowering pattern forced the butterflies into a similar cycle. In a few seasons, the blooming cycle will probably randomize relative to the cycle set by the initial planting, and this imbalance will disappear.

Future Plans

The Eugene/Springfield chapter of NABA will possibly repeat our survey of Coyote Prairie again in year 2013. Other options for us to consider are a return to Dragonfly Bend or a survey at a new location, such as the Willamette Confluence bordering Lane County’s Buford Park. Regardless of our choice, if we enjoy warmer, drier spring weather, we expect to see higher numbers of butterflies, new species as well as more individuals of a given species.

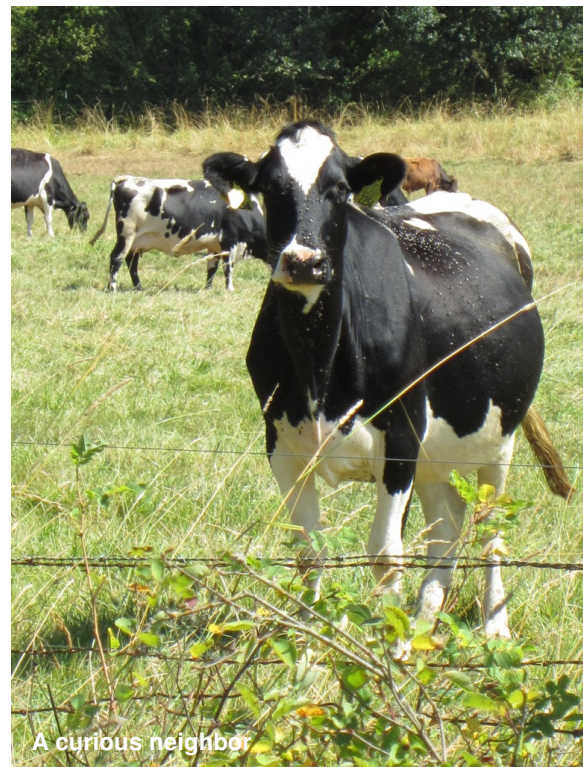


Figure 1. Survey Route (bold white line)

Coyote Prairie

Site Overview

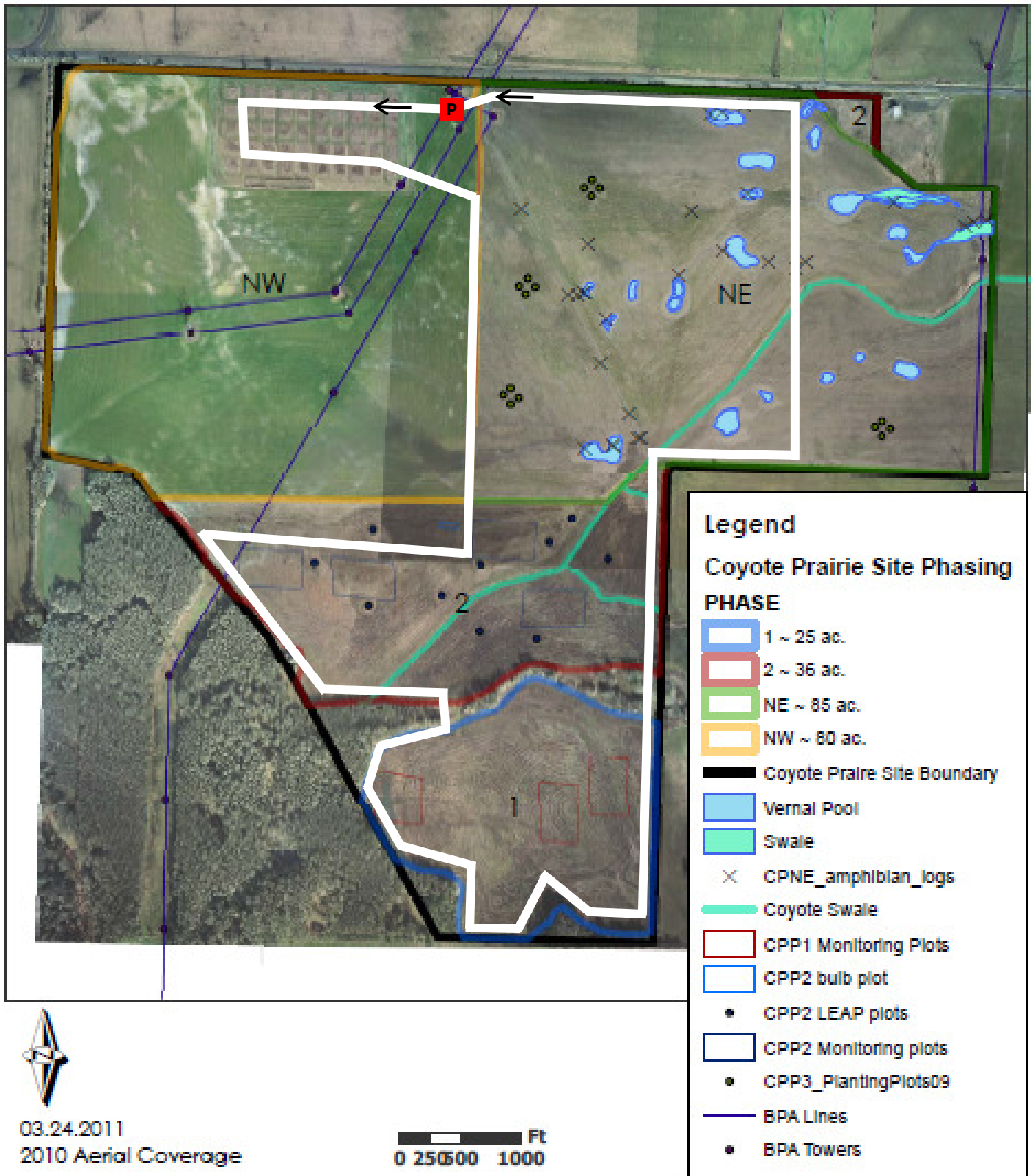
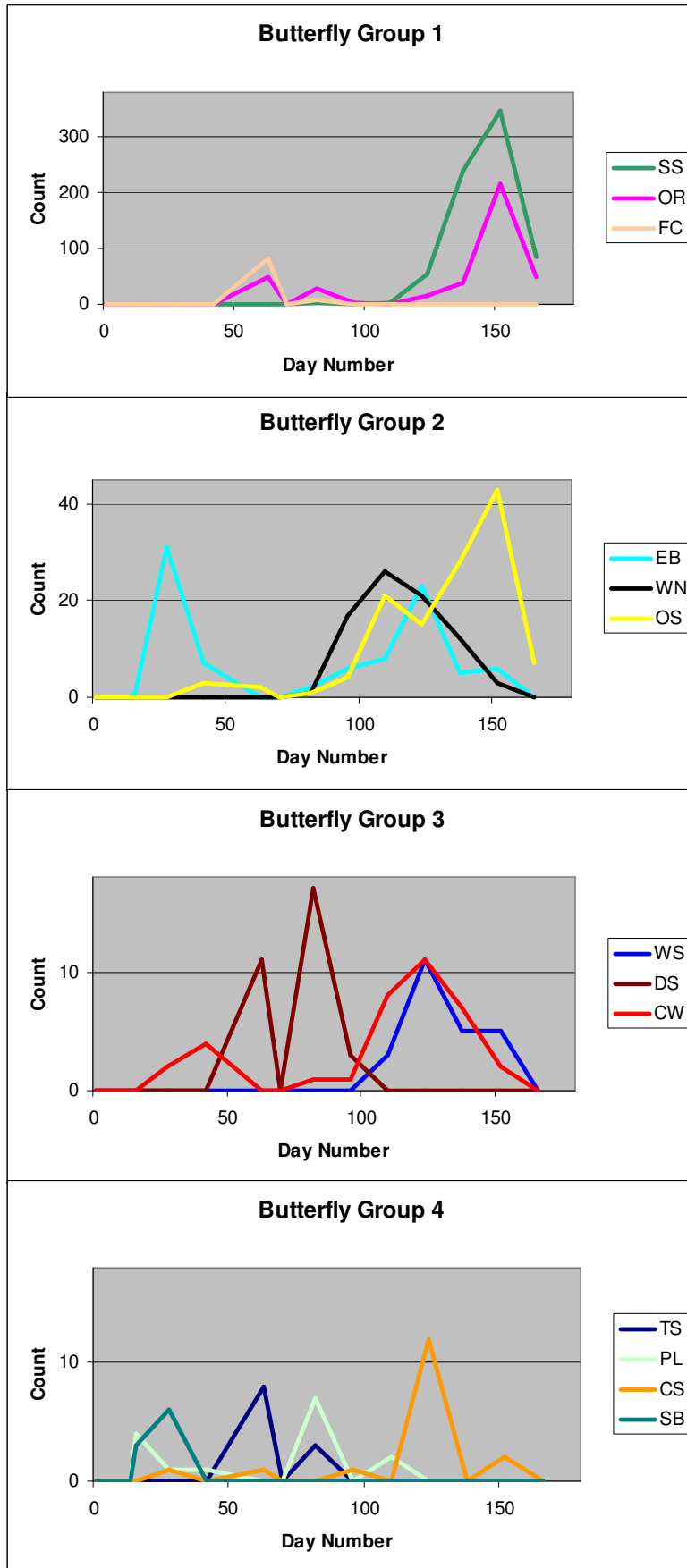


Figure 2. Coyote Prairie 2012 Survey Graphs



Notes:

Day 1 = Apr 13
 Day 50 = Jun 1
 Day 100 = Jul 21
 Day 150 = Sep 19
 Day 200 = Nov 8

Apr 1 = Day -11
 May 1 = Day 19
 Jun 1 = Day 50
 Jul 1 = Day 80
 Aug 1 = Day 111
 Sep 1 = Day 142
 Oct 1 = Day 172

CW = Cabbage white
 CS = Checkered-skipper
 DS = Dun skipper
 EB = Eastern tailed-blue
 FC = Field crescent
 OR = Ochre ringlet
 OS = Orange sulphur
 PL = Painted lady
 SB = Silvery blue
 SS = Sachem skipper
 WN = Wood nymph
 WS = Woodland skipper
 TS = W. tiger swallowtail

Table 1. Coyote Prairie 2012 Survey Summary

Total species no: 16

Day number: 1 14 16 28 42 63 70 82 96 110 124 138 152 166
 Date: 4/13 4/27 4/29 5/11 5/25 6/15 6/22 7/6 7/20 8/3 8/17 8/31 9/14 9/28

Common Name															Ind. Tot.	
Western Tiger Swallowtail	0	0	0	0	0	8	0	3	0	0	0	0	0	0	0	11
Cabbage White	0	0	0	2	4	0	0	1	1	8	11	7	2	0	36	
Orange Sulphur	0	0	0	0	3	2	0	1	4	21	15	28	43	7	124	
Gray Hairstreak	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
Eastern Tailed-blue	0	0	1	31	7	0	0	2	6	8	23	5	6	0	89	
Silvery Blue	0	0	3	6	0	0	0	0	0	0	0	0	0	0	9	
Field Crescent	0	0	0	0	0	83	0	8	0	0	0	0	1	0	92	
Mylitta Crescent	0	0	0	0	0	0	0	1	0	0	0	0	3	1	5	
American Lady	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Painted Lady	0	0	4	1	1	0	0	7	0	2	0	0	0	0	15	
Common Wood-Nymph	0	0	0	0	0	0	0	1	17	26	21	12	3	0	80	
Ochre (Common) Ringlet	0	0	0	0	0	50	0	27	2	0	15	39	216	49	398	
Common Checkered-Skipper	0	0	0	1	0	1	0	0	1	0	12	0	2	0	17	
Sachem Skipper	0	0	0	0	0	1	0	2	0	2	55	239	346	86	731	
Woodland Skipper	0	0	0	0	0	0	0	0	0	3	11	5	5	0	24	
Dun Skipper	0	0	0	0	0	11	0	17	3	0	0	0	0	0	31	
Indiv. totals:	0	0	8	41	15	156	0	70	35	70	164	335	627	143	1664	
Surveyors:	4	3	2	3	2	3	1	3	2	2	2	2	5	4	6	
Field hours:	1.30	0.25	2.00	2.75	2.50	2.50	0.25	2.50	2.50	3.25	2.50	2.75	2.75	2.00	29.80	
Field-person-hours:	5.20	0.75	4.00	8.25	5.00	7.50	0.25	7.50	5.00	6.50	5.00	5.50	13.75	8.00	82.20	
Tavel person-hours:	4.00	3.00	2.00	3.00	2.00	3.00	1.00	3.00	2.00	2.00	2.00	2.00	5.00	4.00	38.00	
Extra vol pers-hrs (prep):	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	11.25	14.75	
Volunteer-person-hours:	9.70	4.00	6.25	11.50	7.25	10.75	1.50	10.75	7.25	8.75	7.25	7.75	19.00	23.25	134.95	
Weather notes: †	c / b / d	c / b / d	c / c / p	w / s / b	c / c / p	w / b / s	c / c / r	w / c / s	w / b / c	h / b / s	h / c / s	w / c / s	h / c / p	h / c / s		
Date:	4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28		

* Volunteer hours

Volunteer hours include hours in the field, travel time to and from the site, and prep time. Travel time was estimated at 30 minutes each way, "Extra" volunteer hours includes meeting time, prep time, report writing, etc. sometimes before or after the date.

† Weather notes

Total volunteer hours: 134.95

This is encoded as Temperature/Wind/Sky using the following abbreviations:

Temperature: h = hot (>80F), w = warm (65-80F), c = cool (<65F)

Wind: c = calm (0-5mph), b = breezy (5-15mph), w = windy (15-25mph), s = strong (>25mph)

Table 2. Coyote Prairie NW Zone

		Total species no: <input type="text" value="9"/>														
Day number:		1	14	16	28	42	63	70	82	96	110	124	138	152	166	
Date:		4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28	
Common Name																Ind. Tot.
Western Tiger Swallowtail		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cabbage White		0	0	0	0	0	0	0	0	0	2	1	2	2	0	7
Orange Sulphur		0	0	0	0	0	0	0	0	0	1	0	0	3	0	4
Gray Hairstreak		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eastern Tailed-blue		0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Silvery Blue		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Field Crescent		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mylitta Crescent		0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
American Lady		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painted Lady		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Wood-Nymph		0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Ochre (Common) Ringlet		0	0	0	0	0	3	0	0	0	0	1	0	7	8	19
Common Checkered-Skipper		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sachem Skipper		0	0	0	0	0	0	0	0	0	0	0	0	3	1	4
Woodland Skipper		0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Dun Skipper		0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Indiv. totals:		0	0	0	0	1	3	0	2	0	4	3	3	15	9	40

Table 3. Coyote Prairie NE Zone

		Total species no: <input type="text" value="14"/>														
Day number:		1	14	16	28	42	63	70	82	96	110	124	138	152	166	
Date:		4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28	
Common Name																Ind. Tot.
Western Tiger Swallowtail		0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Cabbage White		0	0	0	1	0	0	0	1	1	5	9	3	0	0	20
Orange Sulphur		0	0	0	0	1	0	0	0	1	10	3	12	11	5	43
Gray Hairstreak		0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Eastern Tailed-blue		0	0	0	4	0	0	0	1	2	0	7	5	2	0	21
Silvery Blue		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Field Crescent		0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Mylitta Crescent		0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
American Lady		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painted Lady		0	0	1	0	0	0	0	6	0	0	0	0	0	0	7
Common Wood-Nymph		0	0	0	0	0	0	0	1	4	1	4	2	0	0	12
Ochre (Common) Ringlet		0	0	0	0	0	8	0	7	1	0	2	15	92	17	142
Common Checkered-Skipper		0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Sachem Skipper		0	0	0	0	0	1	0	1	0	2	10	133	285	83	515
Woodland Skipper		0	0	0	0	0	0	0	0	0	0	0	2	5	0	7
Dun Skipper		0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
Indiv. totals:		0	0	1	5	1	10	0	20	11	18	35	172	398	106	777

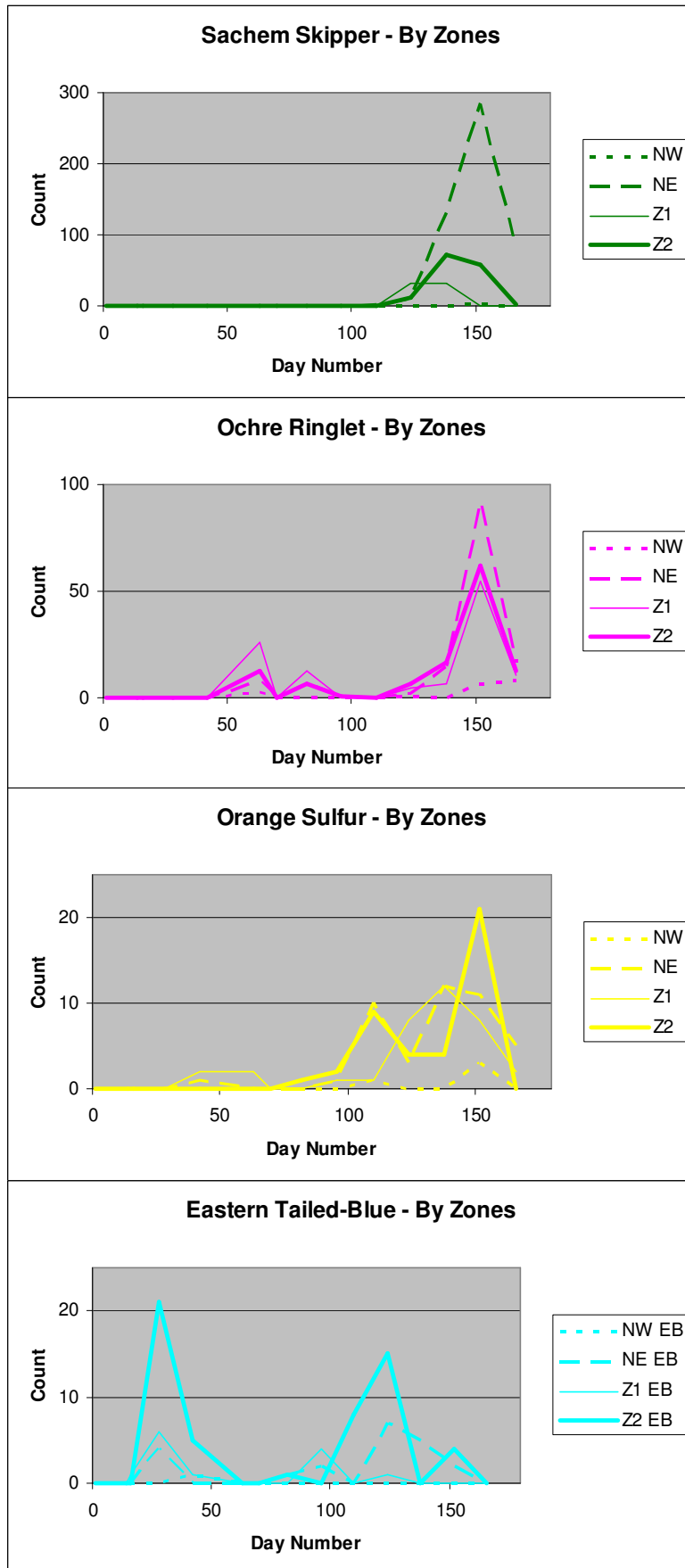
Table 4. Coyote Prairie Zone 1

		Total species no: 14														
Day number:		1	14	16	28	42	63	70	82	96	110	124	138	152	166	
Date:		4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28	
Common Name																Ind. Tot.
Western Tiger Swallowtail		0	0	0	0	0	5	0	3	0	0	0	0	0	0	8
Cabbage White		0	0	0	0	1	0	0	0	0	1	0	0	0	0	2
Orange Sulphur		0	0	0	0	2	2	0	0	1	1	8	12	8	2	36
Gray Hairstreak		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eastern Tailed-blue		0	0	1	6	1	0	0	0	4	0	1	0	0	0	13
Silvery Blue		0	0	3	6	0	0	0	0	0	0	0	0	0	0	9
Field Crescent		0	0	0	0	0	79	0	5	0	0	0	0	0	0	84
Mylitta Crescent		0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
American Lady		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painted Lady		0	0	2	1	1	0	0	1	0	0	0	0	0	0	5
Common Wood-Nymph		0	0	0	0	0	0	0	0	7	11	10	3	2	0	33
Ochre (Common) Ringlet		0	0	0	0	0	26	0	13	0	0	5	7	55	11	117
Common Checkered-Skipper		0	0	0	1	0	1	0	0	0	0	11	0	1	0	14
Sachem Skipper		0	0	0	0	0	0	0	0	0	0	33	33	0	0	66
Woodland Skipper		0	0	0	0	0	0	0	0	0	0	5	1	0	0	6
Dun Skipper		0	0	0	0	0	5	0	8	2	0	0	0	0	0	15
Indiv. totals:		0	0	6	14	5	118	0	30	14	13	73	56	67	13	409

Table 5. Coyote Prairie Zone 2

		Total species no: 13														
Day number:		1	14	16	28	42	63	70	82	96	110	124	138	152	166	
Date:		4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28	
Common Name																Ind. Tot.
Western Tiger Swallowtail		0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Cabbage White		0	0	0	1	3	0	0	0	0	0	1	2	0	0	7
Orange Sulphur		0	0	0	0	0	0	0	1	2	9	4	4	21	0	41
Gray Hairstreak		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eastern Tailed-blue		0	0	0	21	5	0	0	1	0	8	15	0	4	0	54
Silvery Blue		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Field Crescent		0	0	0	0	0	4	0	3	0	0	0	0	0	0	7
Mylitta Crescent		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
American Lady		0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Painted Lady		0	0	1	0	0	0	0	0	0	2	0	0	0	0	3
Common Wood-Nymph		0	0	0	0	0	0	0	0	6	13	7	6	1	0	33
Ochre (Common) Ringlet		0	0	0	0	0	13	0	7	1	0	7	17	62	13	120
Common Checkered-Skipper		0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
Sachem Skipper		0	0	0	0	0	0	0	1	0	0	12	73	58	2	146
Woodland Skipper		0	0	0	0	0	0	0	0	0	3	5	2	0	0	10
Dun Skipper		0	0	0	0	0	6	0	5	1	0	0	0	0	0	12
Indiv. totals:		0	0	1	22	8	25	0	18	10	35	53	104	147	15	438

Figure 3. Zone by Zone Comparisons

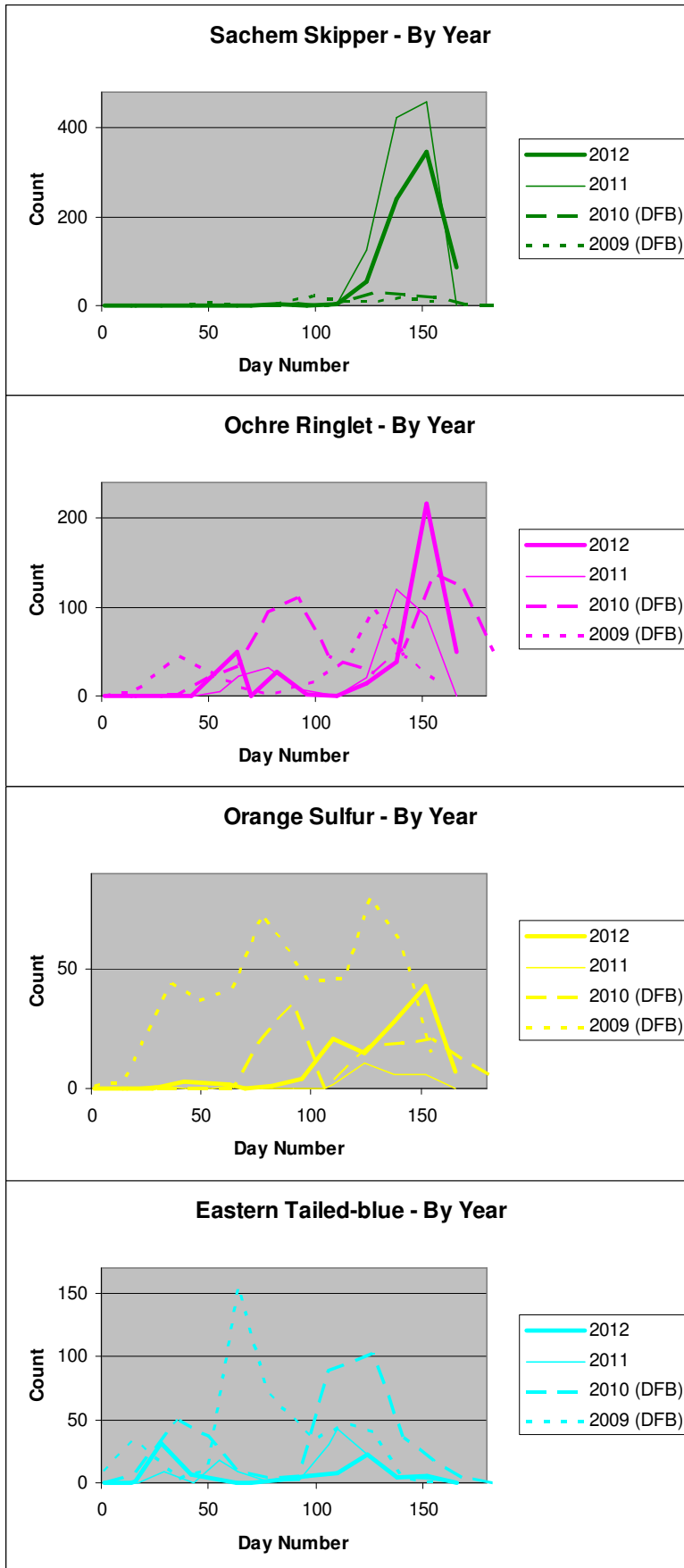


Notes:

Day 1 = Apr 13
 Day 50 = Jun 1
 Day 100 = Jul 21
 Day 150 = Sep 19
 Day 200 = Nov 8

Apr 1 = Day -11
 May 1 = Day 19
 Jun 1 = Day 50
 Jul 1 = Day 80
 Aug 1 = Day 111
 Sep 1 = Day 142
 Oct 1 = Day 172

Figure 4. Year by Year Comparisons



Notes:

Day 1 = Apr 13
 Day 50 = Jun 1
 Day 100 = Jul 21
 Day 150 = Sep 19
 Day 200 = Nov 8

Apr 1 = Day -11
 May 1 = Day 19
 Jun 1 = Day 50
 Jul 1 = Day 80
 Aug 1 = Day 111
 Sep 1 = Day 142
 Oct 1 = Day 172

Table 6. Volunteers & Volunteer Hours

		Day number:	1	14	16	28	42	63	70	82	96	110	124	138	152	166	
		Date:	4/13	4/27	4/29	5/11	5/25	6/15	6/22	7/6	7/20	8/3	8/17	8/31	9/14	9/28	
Surveyor Name																	Ind. Tot.
David Hagen	Field hrs:	1.30	0.25	2.00	2.75	2.50	2.50	0.25	2.50	2.50	4.50	2.50	0.00	2.75	2.00		28.30
	Travel & Extra Vol. hrs:	1.50	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	0.25	1.25	10.25		25.75
Lois Hagen	Field hrs:	1.30	0.25	2.00	2.75	0.00	2.50	0.00	2.50	0.00	0.00	2.50	0.00	2.75	2.00		18.55
	Travel & Extra Vol. hrs:	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	3.00		11.00
Lori Humphreys	Field hrs:	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	2.50	0.00	0.00	2.75	2.75	2.00		12.50
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00		5.00
Donald Gudehus	Field hrs:	0.00	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00	0.00		5.25
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00		2.00
Paula Graff	Field hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00		2.75
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00		1.00
Rick Ahrens	Field hrs:	0.00	0.00	0.00	2.75	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	2.75	2.00		10.00
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00		4.00
Jo von Hippel	Field hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00		2.00
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00		1.00
Thea Evenstad	Field hrs:	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1.30
	Travel & Extra Vol. hrs:	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1.00
Ingrid Ford	Field hrs:	1.30	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1.55
	Travel & Extra Vol. hrs:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.00
Total field hours:																	82.20
Total volunteer hours: †																	134.95