

# A 2014 Survey of Butterflies at the Confluence \*



**By Eugene/Springfield  
North American Butterfly Association  
Summer 2014  
Reported by David Hagen**

**\* The Confluence of  
the Middle and  
Coast forks of the  
Willamette River**

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## Background

In 2014, a volunteer group from the Eugene/Springfield chapter of the North American Butterfly Association (NABA-E/S) surveyed the butterfly population in the The Nature Conservancy’s “Confluence” preserve — near the confluence of the Middle and Coast Forks of the Willamette River.

After a consulting with Jason Nuckols of the local branch of TNC, we decided to confine our survey to a portion of this large preserve (over 1000 acres; see Figure 1). Because this site displays a variety of habitats, we recorded our observations separately for four distinct “zones” (see Figure 2) in the survey area:

- Pudding Ponds (west end) Zone
- Low Road (to the hillside meadow) Zone
- Hillside Meadow (near the power lines) Zone
- High Road and Upper Meadow Zone

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



Mylitta crescent  
—Lori Humphreys

## Procedures

At the Confluence in 2014 we conducted surveys throughout the butterfly season. In the early part of the season, we surveyed twice a month; later on, after conditions had dried out, we surveyed once a month (see Table 1). We followed a route (see Figure 2), which we had established during our first survey: the west end of Pudding Pond, up the road toward the power line, up into the open hillside meadow, and farther up the road to an upper meadow. Each survey 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 our survey area.



The Confluence in April  
—David Hagen

## Results

### Overview

Eight volunteers participated in the 2014 study at the Confluence. The group completed nine surveys extending from April 18th through October 4<sup>th</sup>. (A planned tenth survey was cancelled due to rain.) The volunteers spent almost 90 person-hours in the field (Tables 1 and 7). In total, we logged about 140 person-hours on this project when travel, prep work, and analysis times are included.

In this survey, we identified 25 different butterfly species (Table 1). We counted 471 individual butterflies — 29 in the Pudding Ponds Zone (Table 2), 69 in the Low Road Zone (Table 3), 259 in Hillside Zone (Table 4), and 114 in the Upper Road Zone (Table 5).

The five most common butterflies observed were: Ochre ringlets (*Coenonympha tullia*), with 96 (mostly in the open Hillside Zone); Spring (Echo) azures (*Celastrina echo*), with 71 (in all zones in early part of the season); Mylitta crescents (*Phyciodes mylitta*), with 61; Woodland skippers (*Ochlodes sylvanoides*), with 58; and Common wood-nymphs (*Cercyonis pegala*), with 50



The butterflies seen at the Confluence showed us a different spectrum from what we have observed previously at comparable areas in the Willamette Valley, in other years (more on this, below).

The top five butterflies, as they were observed at different times of the year, are shown graphically in the top panel of Figure 3 (Butterfly Group 1). Spring azures appeared the earliest – primarily in April and May. Ochre ringlets appeared to have two broods, one in early June and one towards the end of August. Mylitta crescents also appeared at two times; early in the season (April) and late (July/August/September). Woodland skippers and Common wood-nymphs were seen only late in the butterfly season (August/September and July/August/September, respectively).

The middle panel of Figure 3 (Butterfly Group 2) shows the results for Propertius duskywings, California sisters, and Gray hairstreaks. The bottom panel of Figure 3 (Butterfly Group 3) shows the results for Tiger swallowtails, Lorquin’s admirals, and Orange sulfurs. The numbers in Group 2 and especially in Group 3 are fairly low, so it is unwise to draw any conclusions about the occurrence of these butterflies. The numbers for other species were even lower and are not represented graphically (for these, see Table 1).

It is noteworthy that, in September, we observed three Common buckeyes in the High Road/Upper Meadow Zone. This beautiful butterfly is common elsewhere; however, some of us had never seen them in Lane County before!





### Zone-by-zone comparisons

We have compared the butterfly occurrences in the four zones which we surveyed at The Confluence. The results are presented in Tables 3–6 and graphically for the top five butterflies (Butterfly Group 1) in Figure 4. The Pudding Ponds Zone (Table 2 and Figure 4) showed the fewest butterflies. However, early in the season, we saw many Spring azures at the side of the ponds. Later this area was the site of some heavy reconstruction by The Nature Conservancy (TNC), which may have impacted the number of butterflies. The few butterflies that we did see appeared to be in transit.

The Low Road Zone (Table 3 and Figure 4) and the High Road/Upper Meadow Zone (Table 5 and Figure 4) also had low numbers of butterflies. These zones were also impacted by on-going TNC restoration efforts, which included logging operations to remove Douglas firs and to thin-out the oak forest. Furthermore, these two zones were fairly shady. We did, however, count a fair number of California sisters, whose host plant is the Oregon white oak, a prevalent tree in these zones. Also, Spring azures were abundant early in the season (April/May), and Woodland skippers were abundant late in the season (August/September).

The Hillside Meadow Zone (Table 4 and Figure 4) was the most productive for us. It is a well-flowered, sunny area, and it was minimally impacted by TNC’s restoration work.



### Comparisons to previous surveys

NABA-ES has performed surveys in other, nearby wetland areas in recent seasons. In 2009 and in 2010 we surveyed Dragonfly Bend (and the adjacent Brigg’s Site), in 2011 and 2012 we surveyed Coyote Prairie, and in 2013 we surveyed Willow Creek. Although these surveys were in different areas and in different years, we can make some tentative comparisons.

1). We counted strikingly fewer butterflies at the Confluence. For example, at the Confluence in 2014 we counted only 471 individual butterflies compared to 1664 at Coyote Prairie in 2012 and 1586 at Willow Creek in 2013. The disparity could be that we had a “bad butterfly year”, in general in 2014; we had fewer volunteer hours on site; or, most likely, the restoration efforts at the Confluence in 2014 devastated (temporarily) much of the butterfly habitat in the understory. Also, perhaps we made

some poor choices in the zones in which we surveyed — many were shady areas without many flowers for the butterflies to nectar on.

2). Despite the relative low numbers of individuals seen, we observed a respectable number of species — 25 in all. This number is comparable to the 20 seen at Coyote Prairie in 2012 and the 25 seen at Willow Creek in 2013.

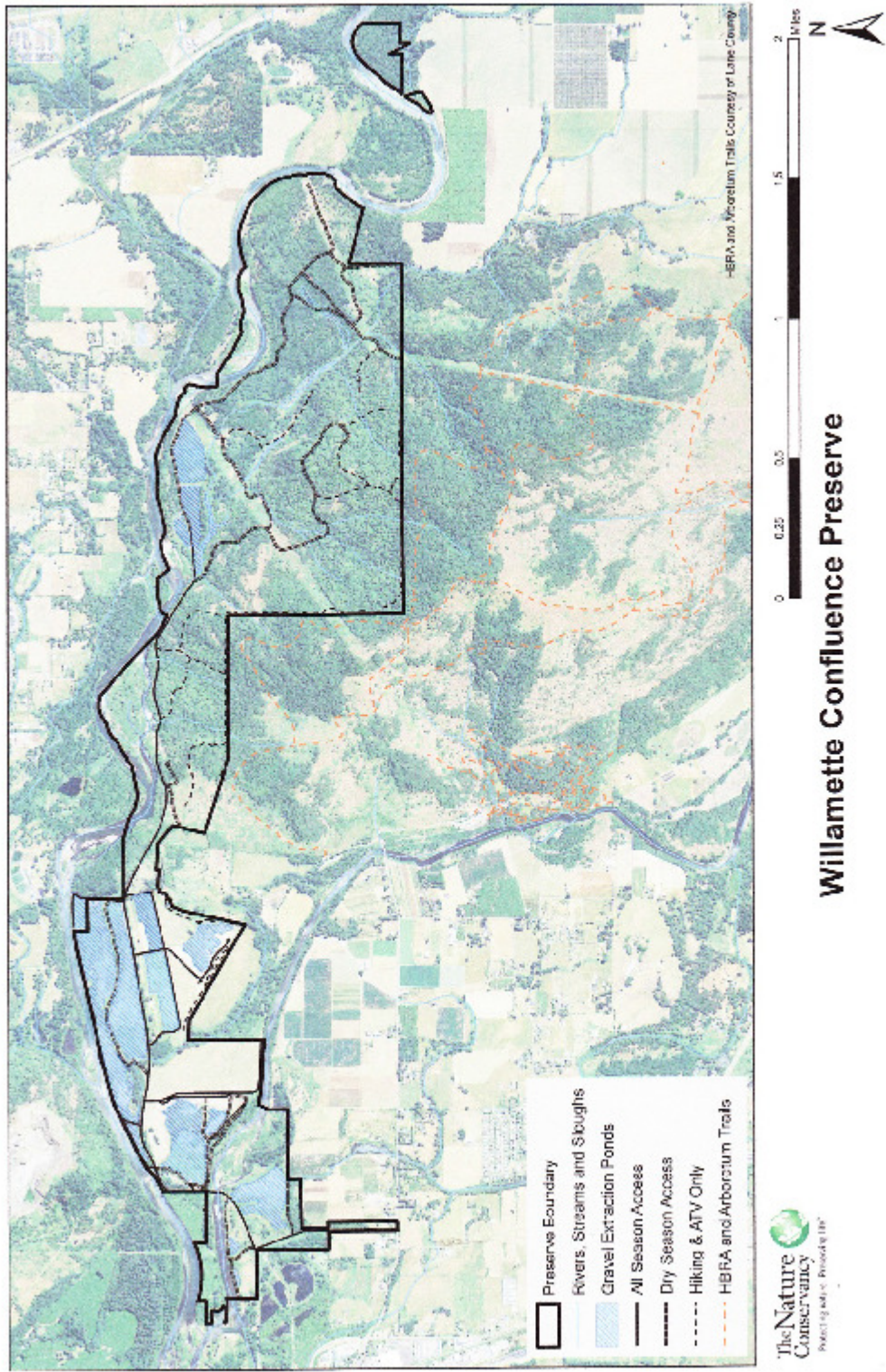
3). Even with the comparable number of species seen, the top five butterflies were significantly different from the top five seen at the other areas (see Table 6). Not surprisingly, Ochre ringlets (OR) and Wood-nymphs (WN) made the list for most areas. However, Spring azures, Mylitta crescents, and Woodland skippers were in the top five only at the Confluence. Conversely, at the other sites, SACHEM skippers had high numbers, but we saw none at the Confluence. Other prominent butterflies at the other sites were Orange sulfurs, Checkered skippers, and Eastern tailed-blues. Habitat differences between the Confluence and the other sites accounts for some of this disparity. Another cause could be that this was simply a different butterfly year that favored a different range of species.

## Future Plans

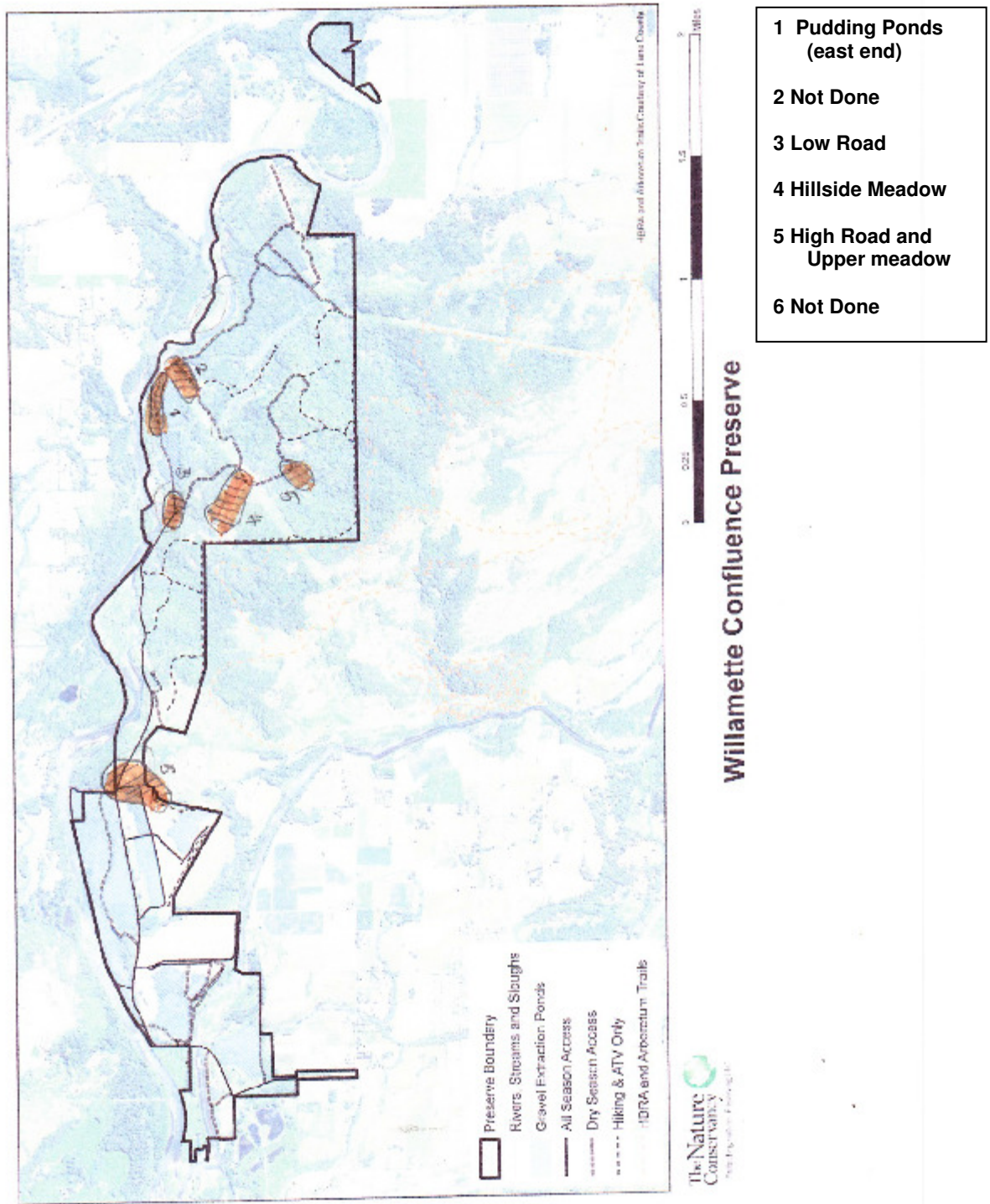
The Eugene/Springfield chapter of NABA will possibly repeat our survey of The Confluence again in year 2015. It is a beautiful site and conveniently nearby. However, we will also consider returning to re-survey sites we have visited previously: Willow Creek, Coyote Prairie, or Dragonfly Bend. Alternatively, we may choose to survey a new location. Regardless of our decision, we hope to see numerous butterfly individuals and many different species.



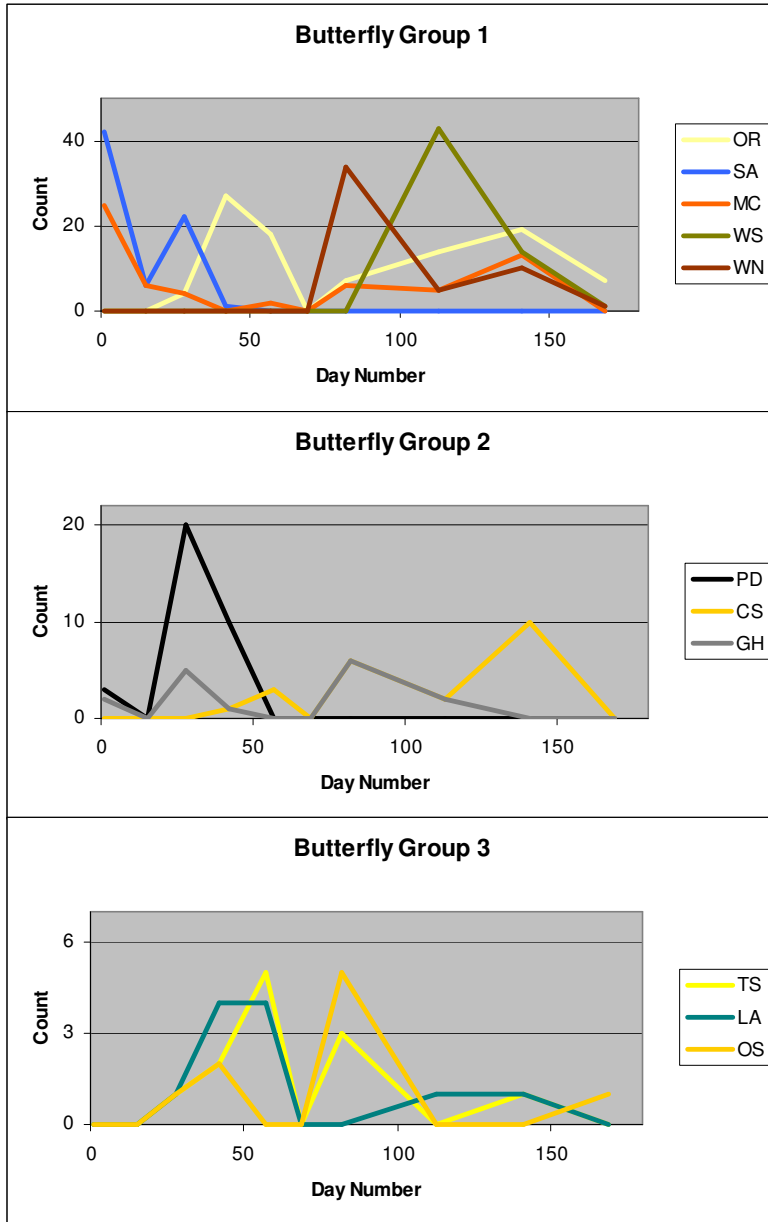
Figure 1. The "Confluence"



**Figure 2. The Survey Zones**



**Figure 3. The Confluence 2014 Survey Graphs**



**Notes:**

Day 1 = Apr 18  
 Day 50 = June 7  
 Day 100 = Aug 27  
 Day 150 = Sep 15

Apr 1 = Day -16  
 May 1 = Day 13  
 Jun 1 = Day 44  
 Jul 1 = Day 74  
 Aug 1 = Day 105  
 Sep 1 = Day 136  
 Oct 1 = Day 166

CS = California sister  
 GH = Gray hairstreak  
 LA = Lorquin's admiral  
 MC = Mylitta crescent  
 OR = Ochre ringlet  
 OS = Orange sulfur  
 PD = Propertius duskywing  
 SB = Silvery blue  
 SA = Spring azure  
 WN = Wood-nymph  
 WS = Woodland skipper  
 TS = W. tiger swallowtail



### Figure 4. Zone-by-zone Comparison

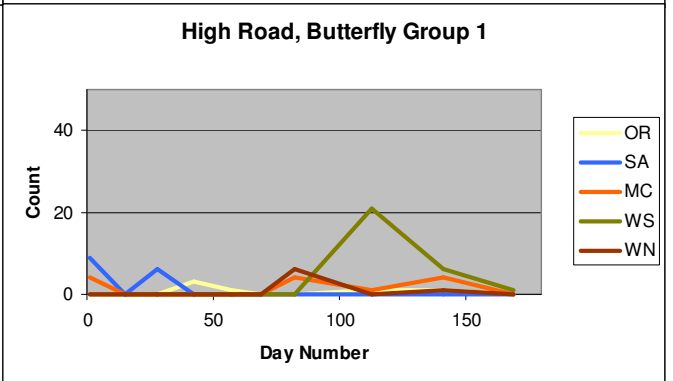
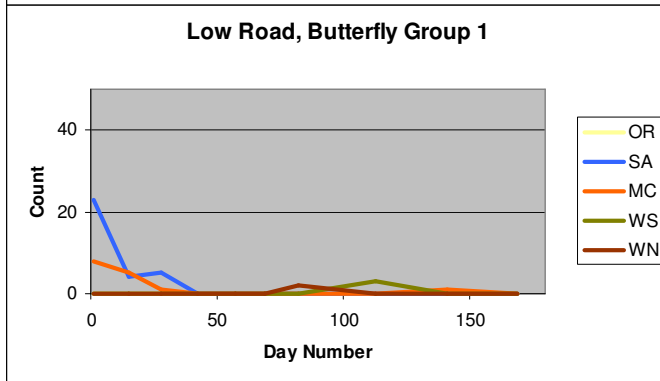
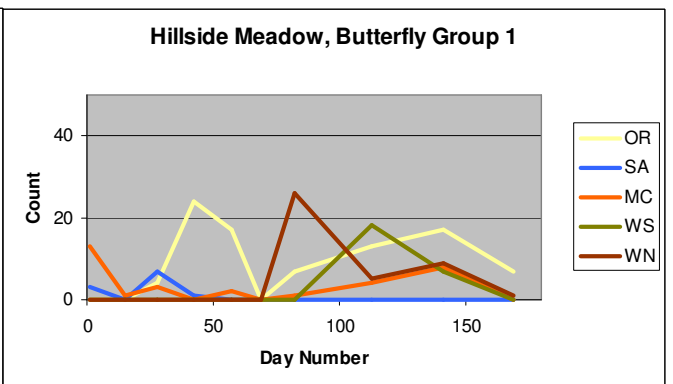
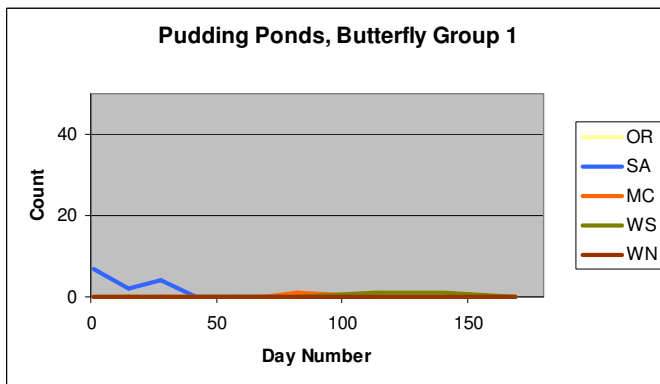
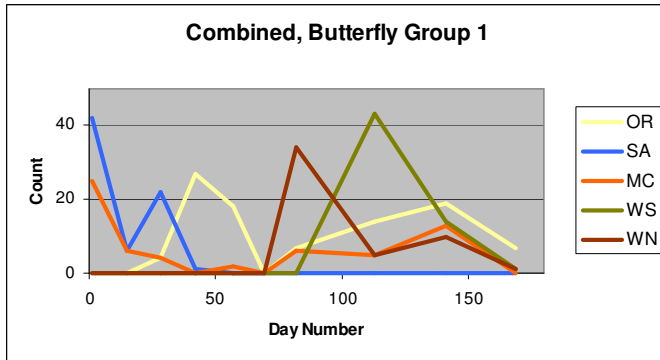
MC = Mylitta crescent  
 OR = Ochre ringlet  
 SA = Spring azure  
 WN = Wood-nymph  
 WS = Woodland skipper

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Day 1 = Apr 18  
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 Aug 1 = Day 105  
 Sep 1 = Day 136  
 Oct 1 = Day 166

MC = Mylitta crescent  
 OR = Ochre ringlet  
 SA = Spring azure  
 WN = Wood-nymph  
 WS = Woodland skipper



**Table 1. The Confluence 2014 Survey Summary**

											Total species no:	25
Day number:	1	15	28	42	57	69	82	113	141	169		
Date:	4/18	5/3	5/16	5/30	6/14	6/26	7/9	8/9	9/6	10/4		
Common Name											Ind Tot	
Western Tiger Swallowtail	0	0	1	2	5	0	3	0	1	0	12	
Clodius Parnasian	0	0	0	1	0	0	0	0	0	0	1	
Pale Swallowtail	0	0	0	1	0	0	0	0	0	0	1	
Anise Swallowtail	2	0	0	0	0	0	0	0	0	0	2	
Mustard White	1	0	0	0	0	0	0	0	0	0	1	
Orange Sulphur	0	0	1	2	0	0	5	0	0	1	9	
Nelson's Hs.	0	0	1	0	0	0	0	0	0	0	1	
Gray Hairstreak	2	0	5	1	0	0	6	2	0	0	16	
Eastern Tailed-blue	0	0	1	0	0	0	2	1	0	0	4	
Silvery Blue	1	0	0	0	0	0	0	0	0	0	1	
Spring (Echo) Azure	42	6	22	1	0	0	0	0	0	0	71	
Field Crescent	0	0	0	1	3	0	0	0	0	0	4	
Mylitta Crescent	25	6	4	0	2	0	6	5	13	0	61	
Mourning Cloak	1	2	1	0	0	0	1	0	0	0	5	
Satyr Comma	0	0	0	0	0	0	1	0	0	0	1	
Red Admiral	0	0	1	0	0	0	0	0	0	0	1	
Painted Lady	1	0	1	0	0	0	1	1	0	0	4	
Lorquin's Admiral	0	0	1	4	4	0	0	1	1	0	11	
California Sister	0	0	0	1	3	0	6	2	10	0	22	
Common Wood-Nymph	0	0	0	0	0	0	34	5	10	1	50	
Ochre (Common) Ringlet	0	0	4	27	18	0	7	14	19	7	96	
Common Buckeye	0	0	0	0	0	0	0	0	3	0	3	
Properius Duskywing	3	0	20	10	0	0	0	0	0	0	33	
Sonoran Skipper	0	0	0	0	3	0	0	0	0	0	3	
Woodland Skipper	0	0	0	0	0	0	0	43	14	1	58	
<b>Indiv. totals:</b>	<b>78</b>	<b>14</b>	<b>63</b>	<b>51</b>	<b>38</b>	<b>0</b>	<b>72</b>	<b>74</b>	<b>71</b>	<b>10</b>	<b>471</b>	
<b>Surveyors:</b>	5	4	4	4	5	0	2	5	3	5		
<b>Field hours:</b>	2.00	2.50	2.50	2.00	2.75	0.00	2.00	2.75	2.50	2.50	21.50	
<b>Field-person-hours:</b>	10.00	10.00	10.00	8.00	13.75	0.00	4.00	13.75	7.50	12.50	89.50	
<b>Tavel person-hours:</b>	5.00	4.00	4.00	4.00	5.00	0.00	2.00	5.00	3.00	5.00	37.00	
<b>Extra vol pers-hrs (prep):</b>	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	10.25	12.75	
<b>Volunteer-person-hours: *</b>	15.50	14.25	14.25	12.25	19.00	0.25	6.25	19.00	10.75	27.75	139.25	
<b>Weather notes: †</b>	c / c / c	w / c / c	w / c / p	w / c / s	w / c / c	c / b / d*	h / c / s	h / c / s	h / c / s	w / c / s		
<b>Date:</b>	<b>4/18</b>	<b>5/3</b>	<b>5/16</b>	<b>5/30</b>	<b>6/14</b>	<b>6/26</b>	<b>7/9</b>	<b>8/9</b>	<b>9/6</b>	<b>10/4</b>		

\* 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.  
**Total volunteer hours: 139.25**

† Weather notes

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)  
 Sky: s = sunny, p = partly cloudy, c = cloudy, d = drizzly, r = rainy, \* = cancelled

## Table 2. Pudding Ponds Summary

Total species no:

Day number: 1 15 28 42 57 69 82 113 141 169  
 Date: 4/18 5/3 5/16 5/30 6/14 6/26 7/9 8/9 9/6 10/4

Common Name											Ind Tot
Western Tiger Swallowtail	0	0	0	2	0	0	1	0	1	0	4
Clodius Parnasian	0	0	0	0	0	0	0	0	0	0	0
Pale Swallowtail	0	0	0	0	0	0	0	0	0	0	0
Anise Swallowtail	0	0	0	0	0	0	0	0	0	0	0
Mustard White	0	0	0	0	0	0	0	0	0	0	0
Orange Sulphur	0	0	0	0	0	0	3	0	0	0	3
Nelson's Hs.	0	0	0	0	0	0	0	0	0	0	0
Gray Hairstreak	0	0	0	0	0	0	1	0	0	0	1
Eastern Tailed-blue	0	0	0	0	0	0	0	0	0	0	0
Silvery Blue	1	0	0	0	0	0	0	0	0	0	1
Spring (Echo) Azure	7	2	4	0	0	0	0	0	0	0	13
Field Crescent	0	0	0	0	0	0	0	0	0	0	0
Myllitta Crescent	0	0	0	0	0	0	1	0	0	0	1
Mourning Cloak	0	0	0	0	0	0	0	0	0	0	0
Satyr Comma	0	0	0	0	0	0	0	0	0	0	0
Red Admiral	0	0	0	0	0	0	0	0	0	0	0
Painted Lady	0	0	0	0	0	0	1	0	0	0	1
Lorquin's Admiral	0	0	0	0	0	0	0	1	0	0	1
California Sister	0	0	0	0	0	0	0	0	0	0	0
Common Wood-Nymph	0	0	0	0	0	0	0	0	0	0	0
Ochre (Common) Ringlet	0	0	0	0	0	0	0	0	1	0	1
Common Buckeye	0	0	0	0	0	0	0	0	0	0	0
Propertius Duskywing	0	0	0	1	0	0	0	0	0	0	1
Sonoran Skipper	0	0	0	0	0	0	0	0	0	0	0
Woodland Skipper	0	0	0	0	0	0	0	1	1	0	2
<b>Indiv. totals:</b>	<b>8</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>29</b>

### Table 3. Low Road Summary

Total species no:

Day number: 1 15 28 42 57 69 82 113 141 169  
 Date: 4/18 5/3 5/16 5/30 6/14 6/26 7/9 8/9 9/6 10/4

Common Name											Ind Tot
Western Tiger Swallowtail	0	0	0	0	1	0	1	0	0	0	2
Clodius Parnasian	0	0	0	0	0	0	0	0	0	0	0
Pale Swallowtail	0	0	0	0	0	0	0	0	0	0	0
Anise Swallowtail	0	0	0	0	0	0	0	0	0	0	0
Mustard White	0	0	0	0	0	0	0	0	0	0	0
Orange Sulphur	0	0	0	2	0	0	0	0	0	0	2
Nelson's Hs.	0	0	0	0	0	0	0	0	0	0	0
Gray Hairstreak	0	0	0	0	0	0	1	0	0	0	1
Eastern Tailed-blue	0	0	0	0	0	0	0	0	0	0	0
Silvery Blue	0	0	0	0	0	0	0	0	0	0	0
Spring (Echo) Azure	23	4	5	0	0	0	0	0	0	0	32
Field Crescent	0	0	0	0	0	0	0	0	0	0	0
Mylitta Crescent	8	5	1	0	0	0	0	0	1	0	15
Mourning Cloak	0	1	1	0	0	0	1	0	0	0	3
Satyr Comma	0	0	0	0	0	0	0	0	0	0	0
Red Admiral	0	0	0	0	0	0	0	0	0	0	0
Painted Lady	0	0	0	0	0	0	0	0	0	0	0
Lorquin's Admiral	0	0	0	1	0	0	0	0	0	0	1
California Sister	0	0	0	0	1	0	4	0	2	0	7
Common Wood-Nymph	0	0	0	0	0	0	2	0	0	0	2
Ochre (Common) Ringlet	0	0	0	0	0	0	0	0	0	0	0
Common Buckeye	0	0	0	0	0	0	0	0	0	0	0
Propertius Duskywing	1	0	0	0	0	0	0	0	0	0	1
Sonoran Skipper	0	0	0	0	0	0	0	0	0	0	0
Woodland Skipper	0	0	0	0	0	0	0	3	0	0	3
<b>Indiv. totals:</b>	<b>32</b>	<b>10</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>69</b>

### Table 4. Hillside Meadow Summary

Total species no:

Day number: 1 15 28 42 57 69 82 113 141 169  
 Date: 4/18 5/3 5/16 5/30 6/14 6/26 7/9 8/9 9/6 10/4

Common Name											Ind Tot
Western Tiger Swallowtail	0	0	1	0	1	0	0	0	0	0	2
Clodius Parnasian	0	0	0	1	0	0	0	0	0	0	1
Pale Swallowtail	0	0	0	1	0	0	0	0	0	0	1
Anise Swallowtail	0	0	0	0	0	0	0	0	0	0	0
Mustard White	0	0	0	0	0	0	0	0	0	0	0
Orange Sulphur	0	0	1	0	0	0	2	0	0	1	4
Nelson's Hs.	0	0	1	0	0	0	0	0	0	0	1
Gray Hairstreak	2	0	5	1	0	0	4	2	0	0	14
Eastern Tailed-blue	0	0	1	0	0	0	2	1	0	0	4
Silvery Blue	0	0	0	0	0	0	0	0	0	0	0
Spring (Echo) Azure	3	0	7	1	0	0	0	0	0	0	11
Field Crescent	0	0	0	0	3	0	0	0	0	0	3
Myllitta Crescent	13	1	3	0	2	0	1	4	8	0	32
Mourning Cloak	0	1	0	0	0	0	0	0	0	0	1
Satyr Comma	0	0	0	0	0	0	1	0	0	0	1
Red Admiral	0	0	1	0	0	0	0	0	0	0	1
Painted Lady	0	0	0	0	0	0	0	0	0	0	0
Lorquin's Admiral	0	0	0	0	1	0	0	0	0	0	1
California Sister	0	0	0	1	0	0	0	0	4	0	5
Common Wood-Nymph	0	0	0	0	0	0	26	5	9	1	41
Ochre (Common) Ringlet	0	0	4	24	17	0	7	13	17	7	89
Common Buckeye	0	0	0	0	0	0	0	0	0	0	0
Propertius Duskywing	1	0	13	5	0	0	0	0	0	0	19
Sonoran Skipper	0	0	0	0	3	0	0	0	0	0	3
Woodland Skipper	0	0	0	0	0	0	0	18	7	0	25
<b>Indiv. totals:</b>	<b>19</b>	<b>2</b>	<b>37</b>	<b>34</b>	<b>27</b>	<b>0</b>	<b>43</b>	<b>43</b>	<b>45</b>	<b>9</b>	<b>259</b>

**Table 5. High Road and Upper Meadow Summary**

		Total species no: <input type="text" value="15"/>										
Day number:		1	15	28	42	57	69	82	113	141	169	
Date:		4/18	5/3	5/16	5/30	6/14	6/26	7/9	8/9	9/6	10/4	
Common Name												Ind Tot
Western Tiger Swallowtail		0	0	0	0	3	0	1	0	0	0	4
Clodius Parnasian		0	0	0	0	0	0	0	0	0	0	0
Pale Swallowtail		0	0	0	0	0	0	0	0	0	0	0
Anise Swallowtail		2	0	0	0	0	0	0	0	0	0	2
Mustard White		1	0	0	0	0	0	0	0	0	0	1
Orange Sulphur		0	0	0	0	0	0	0	0	0	0	0
Nelson's Hs.		0	0	0	0	0	0	0	0	0	0	0
Gray Hairstreak		0	0	0	0	0	0	0	0	0	0	0
Eastern Tailed-blue		0	0	0	0	0	0	0	0	0	0	0
Silvery Blue		0	0	0	0	0	0	0	0	0	0	0
Spring (Echo) Azure		9	0	6	0	0	0	0	0	0	0	15
Field Crescent		0	0	0	1	0	0	0	0	0	0	1
Myllta Crescent		4	0	0	0	0	0	4	1	4	0	13
Mourning Cloak		1	0	0	0	0	0	0	0	0	0	1
Satyr Comma		0	0	0	0	0	0	0	0	0	0	0
Red Admiral		0	0	0	0	0	0	0	0	0	0	0
Painted Lady		1	0	1	0	0	0	0	1	0	0	3
Lorquin's Admiral		0	0	1	3	3	0	0	0	1	0	8
California Sister		0	0	0	0	2	0	2	2	4	0	10
Common Wood-Nymph		0	0	0	0	0	0	6	0	1	0	7
Ochre (Common) Ringlet		0	0	0	3	1	0	0	1	1	0	6
Common Buckeye		0	0	0	0	0	0	0	0	3	0	3
Propertius Duskywing		1	0	7	4	0	0	0	0	0	0	12
Sonoran Skipper		0	0	0	0	0	0	0	0	0	0	0
Woodland Skipper		0	0	0	0	0	0	0	21	6	1	28
<b>Indiv. totals:</b>		<b>19</b>	<b>0</b>	<b>15</b>	<b>11</b>	<b>9</b>	<b>0</b>	<b>13</b>	<b>26</b>	<b>20</b>	<b>1</b>	<b>114</b>

**Table 6. Comparison to Earlier Surveys**

Survey	Year	Rank	BF	Count
Confl.	2014	#1	OR	96
		#2	SA	71
		#3	MC	61
		#4	WS	58
		#5	WN	50
WC	2013	#1	OR	512
		#2	WN	355
		#3	CS	239
		#4	FC	111
		#5	SB	56
CP	2012	#1	SS	731
		#2	OR	398
		#3	OS	124
		#4	FC	92
		#5	EB	89
CP	2011	#1	SS	1013
		#2	OR	299
		#3	EB	142
		#4	WN	89
		#5	DS	53
DF	2010	#1	CR	692
		#2	ET	363
		#3	OS	132
		#4	SS	81
		#5	SB	57
DF	2009	#1	OS	447
		#2	EB	408
		#3	OR	311
		#4	SS	80
		#5	WN	43

**Site Abreviations**

Confl = The Confluence  
 WC = Willow Creek  
 CP = Coyote Prairie  
 DF = Dragonfly Bend

**Butterfly Abreviations**

CS = Checkered skipper  
 DS = Dun skipper  
 EB = Eastern tailed-blue  
 FC = Field crescent  
 MC = Mylitta crescent  
 OR = Ochre ringlet  
 OS = Orange sulfur  
 SA = Spring azure  
 SB = Silvery blue  
 SS = Sachem skipper  
 WN = Wood-nymph  
 WS = Woodland skipper

**Table 7. Summary of Volunteer Times**

		Day number:	1	15	28	42	57	69	82	113	141	169	
		Date:	4/18	5/3	5/16	5/30	6/14	6/26	7/9	8/9	9/6	10/4	
Surveyor Name													Ind Tot
David Hagen	Field hrs:	2.00	2.50	2.50	2.00	2.75	0.00	2.00	2.75	2.50	2.50		21.50
	Travel & Extra Vol. hrs:	1.50	1.25	1.25	1.25	1.25	0.25	1.25	1.25	1.25	11.25		21.75
Lois Hagen	Field hrs:	2.00	0.00	2.50	2.00	2.75	0.00	2.00	2.75	2.50	2.50		19.00
	Travel & Extra Vol. hrs:	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00		8.00
Lori Humphreys	Field hrs:	2.00	2.50	2.50	2.00	2.75	0.00	0.00	2.75	2.50	2.50		19.50
	Travel & Extra Vol. hrs:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00		8.00
Donald Gudehus	Field hrs:	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	2.50		5.00
	Travel & Extra Vol. hrs:	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00		2.00
Dana Furgerson	Field hrs:	2.00	2.50	0.00	2.00	2.75	0.00	0.00	2.75	0.00	0.00		12.00
	Travel & Extra Vol. hrs:	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00		5.00
Rick Ahrens	Field hrs:	2.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	2.50		7.25
	Travel & Extra Vol. hrs:	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00		3.00
Jo von Hippel	Field hrs:	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.50
	Travel & Extra Vol. hrs:	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1.00
Dennis Deck	Field hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00	0.00		2.75
	Travel & Extra Vol. hrs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00		1.00
<b>Total field hours:</b>												<b>89.50</b>	
<b>Total volunteer hours: *</b>												<b>139.25</b>	

**Notes:**

\* Volunteer hours

Volunteer hours include hours in the field, travel time to and from the site, and preparation time. Travel time was estimated at 30 minutes each way.  
 Volunteer hours on "4/18/14" include prep, travel, and meeting times occurring before that date.  
 Volunteer hours on "10/4/14" include report preparation times occurring after that date.