

LOOKING BACKWARD Dec. 31—Jan.1, 2018

It was a terrible—perhaps even catastrophic-- butterfly year at all elevations and no, we don't know why.

In the wake of the very wet 2016-17 year, last year saw drops in lowland butterflies and little or no recovery from drought-year declines in the mountains. The snow pack was so-so, with long dry stretches in winter, and a consistently very hot summer with, however, a dearth of actual heat records. By late summer and autumn the vegetation was drought-stressed – on the Valley floor, more so than in the drought years. The Sierran monsoon was weak and the vegetation began senescing early. It was not an early spring anywhere, but it was an early autumn especially at higher elevations where things began shutting down in August. The number of site visits held nearly constant:

Site:	2016	2017	2018
Suisun Marsh	31	32	31
Gates Canyon	31	31	32
West Sacramento	33	32	31
North Sacramento	33	33	30
Rancho Cordova	34	35	30
Washington	21	20	17
Lang Crossing	17	15	17
Donner Pass	15	16	20
Castle Peak	5	5	8
Sierra Valley	19	19	19
Totals:	239	238	235

There was no flooding in the Bypass. *Brephidium exile* overwintered successfully, raised one brood and disappeared, never to recover. It had a terrible year everywhere. *Lycaena helloides* hung on through the season at low density. *Polites sabuleti*, which was not seen in 2017, reappeared in west Sac in low numbers at mid-season. *Pieris rapae* was low in numbers everywhere all season. There was a spot outbreak of *Colias eurytheme* near Isleton but otherwise it was very scarce all season. *Plebejus acmon* had a poor year; *Everes comyntas* was very briefly locally common but overall below average. *Phyciodes campestris* and *Euchloe ausonides* remain regionally extinct.

Phenologically, of the indicator species in the Valley, 11 were earlier than in 2017 (range 1 to 36 days; mean 13.4 days) and 7 were later (range 6 to 45 days; mean 18.4 days); I did not count *L. helloides*, which was 98 days earlier this year than in 2017, but it had been extirpated by flooding in the 2016-17 winter and had had to recolonize from elsewhere. Phenologically, then, it was a very mixed bag.

MIGRATORS: There were several singletons of *Phoebis sennae* recorded in 2018, but no other desert migrants.

*Nymphalis californica* started the year strong with abundant hibernators and spring breeding, but no summer breeding was observed anywhere along the transect and no mass summer movements were encountered, even on Castle Peak. Day-positives in the Sierra were up noticeably from last year, though:

Site	2017	2018
Lang Crossing	5	6
Donner Pass	5	11
Washington	7	10
Sierra Valley	1	2
Castle Peak	5	8
Totals:	23	37

The usual handful of downslope migrators was noted in September-October.

The Painted Lady, *Vanessa cardui*, had probably its poorest year on record. The northward migration in spring was very sparse and scattered, and the southward migration in fall was effectively absent. There was some successful overwinter breeding at Suisun, with a fresh adult as early as ii.5, but as with the Pygmy Blue in West Sac this did not translate into a jump-start for summer breeding. For each site the first number is the total counted before viii.1 and the second, after.

Site	2017	2018
Rancho Cordova	72,10	3,0
Gates Canyon	63,67	2,1
West Sacramento	72,26	4,1
North Sacramento	86,26	3,0
Suisun Marsh	22,68	13,0
Totals:	315,197	25, 2

Numbers were equally poor in the Sierra. Numbers of *V. annabella* and *V. atalanta* were also low, while *V. virginiensis* continued last year's trend to be commoner than usual.

Numbers of the Buckeye, *Junonia coenia*, also collapsed. There was no apparent overwintering in the Sierra and only very sporadic sightings there. At low elevation:

Site	2017	2018
Rancho Cordova	193	55
Gates Canyon	184	58
West Sacramento	857	106
North Sacramento	941	109

Suisun Marsh	175	51
Totals:	2350	379

And then there's the Monarch, *Danaus plexippus*.

It was the worst Monarch year in my 47 here in California.

Site	2017	2018
Rancho Cordova	9	4
Gates Canyon	16	4
West Sacramento	14	3
North Sacramento	3	2
Suisun Marsh	27	12
Totals:	69	25

And in the mountains:

Site	2017	2018
Washington	1	3
Lang Crossing	2	0
Donner Pass	0	5
Castle Peak	1	1
Sierra Valley	2	2
Totals:	6	11
Totals (all 10 sites):	75	36

Combine that with my not having seen even one egg or wild larva in 2018—the first such year since I became butterfly-aware at maybe age 7 or 8.

The Fiery Skipper, *Hylephila phyleus*, very much a creature of “civilization,” has been doing very well in recent years. Here's its performance:

Site	2017	2018
Rancho Cordova	181	127
Gates Canyon	23	7
West Sacramento	309	273
North Sacramento	517	369

Suisun Marsh	283	288
Totals:	1313	1064

Things in trouble regionally:

*Satyrium sylvinus:* West Sac 2017: 11 2018:2  
North Sac 2017: 107 2018: 22  
Gates Canyon 2017: 16 2018:3

*Satyrium californica:* Gates Canyon 2017:88 2018:7  
Rancho Cordova 2017:27 2018:6

*Satyrium tetra:* Gates Canyon 2017:2 2018: 0

*Satyrium auretorum:* Gates Canyon 2017:15 2018:1

*Satyrium saepium:* Gates Canyon 2017:5 2018: 4

In the Sierra all the *Satyrium* were as bad or worse than last year. Neither *S. fuliginosum* nor *S. behrii* was seen at Sierra Valley at all!

*Ochlodes yuma* remained stable at Suisun at very low numbers.

*Lycaena xanthoides:* North Sac 2017: 11 2018:3  
Suisun 2017:2 2018:4

*Glaucopteryx lygdamus:* North Sac 2017:5 2018: 33 (!)  
Rancho Cordova 2017:40 2018: 18

*Pyrgus scriptura:* West Sac 2017: 48 2018:31  
Suisun 2017:21 2018:6

*Pholisora catullus:* West Sac 2017: 39 2018:12  
North Sac 2017: 1 2018:3

Here are the skippers recently on the upswing:

*Erynnis tristis* Rancho Cordova 2017: 45 2018:46  
Suisun 2017: 18 2018:9  
West Sac 2017: 97 2018:50  
North Sac 2017: 76 2018: 104  
Gates Canyon 2017: 44 2018:38  
Totals: 2017: 280 2018: 247

*Ochlodes sylvanoides* Gates Canyon 2017: 224 2018: 163

West Sac 2017: 0 2018:1

North Sac 2017: 18 2018:11

Rancho Cordova 2017: 77 2018:84

Suisun Marsh 2017: 13 2018:11

Totals: 2017: 332 2018: 269

*Poanes melane* Gates Canyon 2017: 12 2018:39

West Sac 2017: 3 2018:3

North Sac 2017: 12 2018:36

Rancho Cordova 2017: 9 2018:15

Suisun Marsh 2017: 8 2018: 4

Totals: 2017: 44 2018: 58

*Limenitis lorquini* Rancho Cordova 2017: 2 2018:10

Gates Canyon 2017: 17 2018:29

West Sac 2017: 15 2018:26

North Sac 2017: 14 2018:4

Totals: 2017: 48 2018: 69

*Euphydryas chalcedona* Gates Canyon 2017:6 2018:21

*Nymphalis antiopa* Rancho Cordova 2017: 0 2018:4

Suisun Marsh 2017:0 2018:7

West Sac 2017: 2 2018:7

North Sac 2017: 3 2018:9

Gates Canyon 2017: 71 2018:58

Totals: 2017: 75 2018:85

*Papilio rutulus* Suisun Marsh 2017: 12 2018:6

Gates Canyon 2017: 79 2018:73

West Sac 2017: 40 2018:28

North Sac 2017: 57 2018:24

Rancho Cordova 2017:47 2018:60

Totals: 2017: 235 2018: 190

*Papilio eurymedon* Gates Canyon 2017: 30 2018:15

*Papilio zelicaon* Rancho Cordova 2017: 7 2018:2

Suisun Marsh 2017: 20 2018:22

West Sac 2017: 3 2018:2

North Sac 2017: 36 2018:9

Gates Canyon 2017:2 2018:3

Totals: 2017: 68 2018:38

*Agraulis vanillae* Rancho Cordova 2017: 10 2018:5

West Sac 2017: 7 2018:3

North Sac 2017; 18 2018:11

Suisun Marsh 2017: 18 2018:8

Totals: 2017: 53 2018:27

Willow Slough (vii.4 as always) fell catastrophically from 21 species,571 animals last year to 13 species and an all-time low of only 127 animals this year. This loss of diversity is reflected, albeit not so dramatically, in the peak-diversity days by site. Here are the largest species numbers for the year, with dates, compared to last year and to 1999, the last time there were such catastrophic drops (14 to 19 species dropped, depending on definition of dropping):

Site	2017 max	2018 max	1999 max
Suisun Marsh	20, ix.13	19, v.27	20, ix.28
Gates Canyon	26, vi.15	25, v.1	35, v.25
West Sac	19, ix.11	18, vii.3	20,vii.23
North Sac	21,vi.25	19,vii.20	18, vi.30
Rancho Cordova	18, x.4	15, v.8	21, v.29
Sierra Valley	22, vii.13	18,ix.9	28,vii.8
Washington	25,vii.2	26, vi.15	36,vi.27
Lang Crossing	29,vi.3	30,vii.14	38,vi.20
Donner Pass	32,vii.19	36,vi.29	50,vii.1
Castle Peak	24,viii.1	30,vii.9	34,vii.22

It is unclear whether the apparent losses are due to scarcity or actual extirpation; time will tell. There is a very slight hint of recovery from last year's terrible numbers in the Sierra—but only a very slight hint.

Several Sierran species were not seen AT ALL in 2018. *Neophasia menapia* has never been entirely unrecorded before. *Cercyonis oetus* at Castle Peak has only been unrecorded in years when I didn't go up late enough, and *Satyrium behrii* has often been missed on Castle Peak because of its late flight, but never before at Sierra Valley. This is the third successive year that *Oeneis ivallda* was not seen on Castle Peak, meaning both the odd- and even-year populations are now among the putatively missing. *Euphilotes enoptes*, normally common to abundant, was extremely rare this year.