

FALL MIGRATION OF COMMON PASSERINES AT BOLINAS, CALIFORNIA

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INTRODUCTION

Only McCaskie and Banks (1964) have reported continuous observations at a single station during migration in California. I report here the capture of three common summer resident and four winter resident species during fall 1969 to 1971 at Bolinas, Marin County, California. There is often no direct correlation between the number of birds on the ground and the timing of migration. However, because of the paucity of information about passerine migration in California, I offer these data because they suggest the general timing of common migrants for a three-year period at one location.

METHODS

28 mist nets were run during 90 per cent of the possible days between 16 August and 15 November 1969-1971. The dominant tree species near 85 per cent of the net sites was Coast Live Oak (*Quercus agrifolia*). The remaining net sites (15%) were in disturbed coastal scrub where the dominant plant, Coyote Bush (*Baccharis pilularis*), was interspersed with grass. Net sites remained the same during each fall. Only unbanded birds caught in nets were included in this analysis.

RESULTS

The number of Western Flycatchers (*Empidonax difficilis*), Warbling Vireos (*Vireo gilvus*), and Swainson's Thrushes (*Hylocichla ustulata*) captured per 1000 net hours are shown in Table 1. Although there is some yearly variation in capture of these species, some generalizations concerning the timing of migration is warranted. The peak five-day period for the Western Flycatcher during all three years was 1-5 September; however, substantial movement occurred during ten days before and after this time. During the three year period, the Warbling Vireo was most abundant from 6-15 September. Swainson's Thrush is apparently more variable, but peak capture for the three years fell between 6 and 15 September. Capture of these

FALL MIGRATION AT BOLINAS

Table 1. Capture of common summer residents at Point Reyes Bird Observatory 1969-1971. Squares surround the five-day period in which peak capture occurred for each species during each year.

		Western Flycatcher			Warbling Vireo			Swainson's Thrush		
		69	70	71	69	70	71	69	70	71
Aug.	16-20	6	20	9	3	4	0	1	1	7
	21-25	35	25	17	7	2	8	2	6	21
	26-31	32	20	24	9	3	6	5	13	7
Sept.	1-5	36	72	40	3	9	20	5	18	6
	6-10	21	37	39	8	44	51	11	19	10
	11-15	15	64	23	2	2	61	4	11	22
	16-20	8	12	31	4	7	19	5	0	11
	21-25	6	20	10	5	6	4	7	0	0
	26-30	4	11	25	2	2	3	5	3	7
Oct.	1-5	4	1	21	1	0	21	0	3	12
	6-10	2	6	2	0	0	3	0	1	5
	11-15	2	0	0	0	0	3	1	0	3

species in 1971 differed from the two previous years in that in 1971 there was a small second peak for the Warbling Vireo and the Swainson's Thrush during 1-5 October and for the Western Flycatcher between 26 September and 5 October.

The number of Hermit Thrushes (*Hylocichla guttata*), Ruby-crowned Kinglets (*Regulus calendula*), Puget-Sound White-crowned Sparrows (*Zonotrichia leucophrys pugetensis*), and Golden-crowned Sparrows (*Zonotrichia atricapilla*) per 1000 net hours is shown in Table 2. Peak capture of the Hermit Thrush, White-crowned Sparrow and Golden-crowned Sparrow occurred between 1-15 October, while the Ruby-crowned Kinglet peaks occurred between 16-31 October.

Comparing what is known about the timing of fall migration in Alaska for the White-crowned Sparrow and the Golden-crowned Sparrow suggests that these species begin peak migration there approximately two months before reaching central California. Gambel's White-crowned Sparrow (*Z. l. gambelii*) has been observed to peak from 6-10 August in Alaska (DeWolf, B. B. in *Bent*, 1968, p. 1330) and to be most numerous in eastern Washington from 10-30 September (King, Farner and Mewaldt, 1965, p. 493). Data is not shown for *gambelii* at Bolinas because it is not an abundant migrant

FALL MIGRATION AT BOLINAS

Table 2. Capture of common winter resident species at Point Reyes Bird Observatory 1969-1971. Squares surround the five-day period in which peak capture occurred for each species during each year.

	Hermit Thrush			Ruby-cr. Kinglet			White-cr. Sparrow			Golden-cr. Sparrow		
	69	70	71	69	70	71	69	70	71	69	70	71
Sept. 1-5	0	0	0	0	0	0	1	0	0	0	0	0
6-10	1	1	0	0	0	0	1	2	0	0	1	0
11-15	0	1	0	0	0	0	5	6	3	0	1	0
16-20	0	1	0	0	0	0	3	3	1	1	0	0
21-25	11	20	0	1	1	0	17	58	0	16	12	0
26-30	12	30	2	1	6	0	14	37	11	10	18	4
Oct. 1-5	31	<u>51</u>	27	3	6	8	22	47	<u>35</u>	14	5	<u>24</u>
6-10	24	50	<u>53</u>	4	36	15	7	<u>60</u>	23	5	<u>42</u>	14
11-15	<u>37</u>	43	45	20	16	35	<u>42</u>	9	31	<u>42</u>	5	12
16-20	21	16	28	<u>28</u>	22	<u>50</u>	7	4	21	9	6	11
21-25	14	30	37	16	34	<u>50</u>	8	0	8	7	10	21
26-31	16	42	17	9	<u>44</u>	46	4	10	8	3	12	8
Nov. 1-5	4	34	11	2	24	7	1	12	6	4	0	3
6-10	7	15	14	4	28	14	0	0	0	2	4	3
11-15	7	11	-	5	16	-	1	0	-	2	3	-

FALL MIGRATION AT BOLINAS

there, but it arrives virtually at the same time as *pugetensis*. Observations of the Golden-crowned Sparrow in Alaska suggest that they leave the vicinity of Anchorage in late July and early August (F.S.L. Williamson in *Bent*, 1968, p. 1362). In Washington the peak movement has been observed to be 10-30 September (Jewett, et. al. 1953, p. 651).

More information on the timing of migration is needed at different locations in California, in other western states, Canada and Alaska.

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