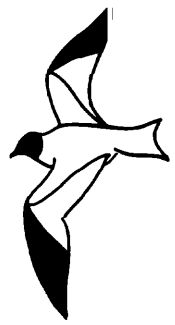


# WESTERN BIRDS



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## **THE BIRDS OF SOUTHEAST FARALLON ISLAND: OCCURRENCE AND SEASONAL DISTRIBUTION OF MIGRATORY SPECIES**

PETER PYLE and R. PHILIP HENDERSON, Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, California 94970

The small size and open terrain of Southeast Farallon Island, located 42 km west of San Francisco, provide ideal conditions for monitoring bird migration (DeSante and Ainley 1980, DeSante 1983). Recognizing this, ornithologists from the Point Reyes Bird Observatory (PRBO) have conducted standardized censuses of all migrant bird species daily since 3 April 1968. DeSante and Ainley (1980) summarized the occurrence patterns of the 331 species recorded on the island from 1854 to 2 April 1976 and noted an additional 15 species observed through 2 October 1979. Here we update DeSante and Ainley, noting a total of 375 species recorded on Southeast Farallon Island through 31 December 1989, and summarizing the occurrence patterns of 359 migratory species, 20 intraspecific forms, and four interspecific hybrids recorded from 3 April 1968 through 31 December 1989. For each migratory species we provide seasonal arrival data for both spring and fall, which should reflect movement patterns along the adjacent California coast. This "22-year" data set will provide the basis for future analyses on the climatic factors that influence migrants' arrival at the island and trends in the occurrence of species and biogeographical groups.

### **STUDY AREA AND CENSUSING METHODS**

The location, topographical features, and vegetation structure of Southeast Farallon Island (Figure 1) and methods of censusing migratory birds there were described by DeSante and Ainley (1980) and DeSante (1983). Each day PRBO personnel censused all migrant individuals; for landbirds this was facilitated by most individuals' congregating at four or five vegetated or prominent areas on the island. An attempt was made either to band or, if possible, to determine the age and sex of landbirds in the field so

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that turnover rates could be assessed. Shorebird roosts and freshwater seepages were censused daily at high tide in all months except from April through July, when coastal access was restricted to prevent disturbance to breeding seabirds. Visibility permitting, five-minute counts of migrating seabirds were conducted each morning, which were used to help determine daily arrivals. Roosting Brown Pelicans (*Pelecanus occidentalis*) were also counted each morning, visibility permitting.

The environmental conditions and censusing procedures varied little during the 22-year period of data collection. The two 8-m-high Monterey Cypress (*Cupressus macrocarpa*) adjacent to the southeastern living quarters (see map in Coulter 1972), which had been one of the primary focal points of migratory landbirds (DeSante and Ainley 1980), blew over in a storm on 13 November 1981. These were replaced by two saplings of the same species in 1982, at which time a third sapling cypress was planted adjacent to the northwestern living quarters. These three cypresses grew in height from about 3 to 5 m between their planting and December 1989. The bush mallow *Lavatera arborea*, a flowering biennial that grows to a height of 2.5 m, increased in abundance from a few plants in 1975 to three cultivated patches of approximately 100 m<sup>2</sup> each from 1980 through 1989. Two of these patches surrounded the Monterey Cypress adjacent to each living quarters, and the third patch was located about 200 m southeast of the living quarters, in an area previously occupied only by annuals less than 0.5 m tall. The overall vegetation structure otherwise remained virtually unchanged from that described by DeSante and Ainley (1980). An increase in the annual totals of hummingbirds detected on the island since the late 1970s is probably related to the expansion of bush mallow, which has induced hummingbirds to stay longer (PRBO, unpublished data). Otherwise, because habitat considerations are inconsequential in determining the abundance of migrant landbirds on the island (DeSante and Ainley, 1980, p. 71), we assume that changes in the status of the Monterey Cypress and the bush mallow have altered neither the number of landbirds attracted to the island nor their detectability on daily censuses.

## TERMINOLOGY AND METHODS OF ANALYSIS

Table 1 lists and summarizes the seasonal occurrence patterns of the 359 migratory species recorded on the island from 3 April 1968 through 31 December 1989. Five hypothetical species and three escaped cagebirds recorded during the 22-year period are listed separately, following the table. The notes, also following the table, describe anomalous occurrence patterns, unusual individual records, all breeding activity by landbirds, and other observations of interest.

Sixteen of the 375 species recorded on the island are not included in the table. Twelve of these are breeding seabirds, which were not censused daily: Leach's Storm-Petrel (*Oceanodroma leucorhoa*), Ashy Storm-Petrel (*O. homochroa*), Double-crested Cormorant (*Phalacrocorax auritus*), Brandt's Cormorant (*P. pencillatus*), Pelagic Cormorant (*P. pelagicus*), American Black Oystercatcher (*Haematopus bachmani*), Western Gull (*Larus occidentalis*), Common Murre (*Uria aalge*), Pigeon Guillemot (*Cephus*

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*columba*), Cassin's Auklet (*Ptychoramphus aleuticus*), Rhinoceros Auklet (*Cerorhinca monocerata*), and Tufted Puffin (*Fratercula cirrhata*). Ainley and Boekelheide (1990) and Carter et al. (1990) have provided detailed information on occurrence patterns and population status of these species on the island. The remaining four species, Short-tailed Albatross (*Diomedea albatrus*), White-faced Ibis (*Plegadis chihi*), Black Rail (*Laterallus jamaicensis*), and Clapper Rail (*Rallus longirostris*), were recorded on the island prior to 1968 but not during the period on which we report. DeSante and Ainley (1980) provided details on these species and others reported from the island prior to 1968. Table 1 includes the following categories:

*Species.* All migratory species identified with confidence on or within 2 km of the island during the 22-year census period are listed. For rare and vagrant species we follow the evaluations of the California Bird Records Committee (CBRC), which has reviewed or is in the process of reviewing records of all species included in Table 1 that meet their criteria for assessment (see Bevier 1990). Records of species not accepted by the CBRC are, at best, considered hypothetical by us. Also included in Table 1 are additional subentries for 17 subspecific taxa, three intergrades of subspecies, four interspecific hybrids, and two species pairs, grebes of the genus *Aechmophorus* and hummingbirds of the genus *Selasphorus*, in which a substantial portion of the individuals were identified to the pair but not to species.



Figure 1. Southeast Farallon Island.

Photo by Peter Pyle

*Total.* The total number of arrivals of each species recorded during the 22-year period is presented here. For landbirds, we used the same algorithm employed by DeSante and Ainley (1980, pp. 6–7) to calculate the minimal number of arrivals when similar unbanded individuals of a species occurred on successive days: arrivals = total minus total from the day before. By incorporating information on banded birds and distinctive plumage characteristics, well over 95% of arriving landbirds were recorded by means of this algorithm (DeSante and Ainley 1980).

Arrivals of waterbirds were carefully estimated with variations of the above algorithm, depending on our ability to census each species accurately. Our criteria for waterbirds are those employed by DeSante and Ainley (1980, p. 7) with the exception that, in our analysis, higher turnover during the late fall and winter was assumed for 11 species frequenting inaccessible portions of the island during this period and higher turnover throughout the year was assumed for Brown Pelicans. These assumptions were based on a reassessment of the data from the full 22-year period and on careful censuses we made of these species during the winters of 1988 through 1990. Totals for these species during the period covered by DeSante and Ainley were recalculated and differences can be found in the notes following the table. We have also reassessed in light of additional information the identification or arrival status of six individuals of five other species reported by DeSante and Ainley.

Not included in the totals are individuals not confidently identified to species or species-pair and rare or unseasonal species that were not adequately described by the observer. This latter group includes eight records of seven CBRC-review species that were either not accepted by the CBRC or have not yet been submitted to the committee owing to lack of a description. Dates of these records are listed in the notes following the table.

*Spring, Fall, and Winter Totals.* The total numbers of arrivals for each season are presented here. Seasonal definition follows DeSante and Ainley (1980) for the most part; for all species except shorebirds we define the three seasons of occurrence as follows: spring, 1 March–14 July; fall, 15 July–19 December; winter, 20 December–28 (or 29) February. For shorebirds (suborder Charadrii) we define spring as 1 March–20 June and fall as 21 June–19 December. The data presented in Table 1 rigorously follow these seasonal definitions, with the exception of 33 records of 16 species of landbirds that we reclassified after a careful examination of occurrence patterns (see DeSante and Ainley 1980, p. 6). The notes following the table specify these records and present additional data for 17 waterbird species whose arrival patterns appear to overlap two or more seasons significantly. We have included 18 known immature dispersants of four landbird species in the spring totals, along with other adults and birds of unknown age recorded in the same time period; records of these are also listed in the notes following the table. In addition, we have not distinguished fall visitants from winter residents that arrived in the fall, as did DeSante and Ainley, and our fall-to-winter cutoff date is 11 days earlier than that of DeSante and Ainley (as based on a reevaluation of landbird occurrence patterns over 22

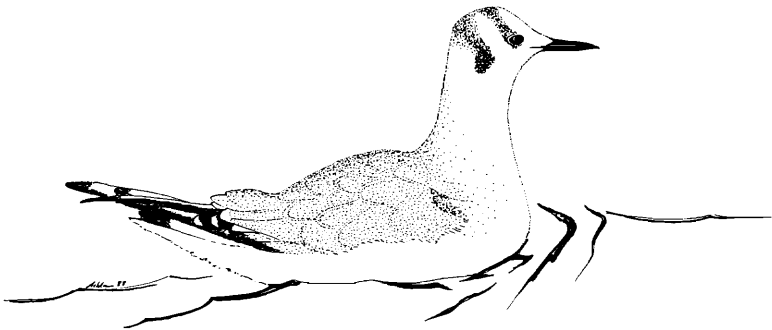
years). Those wishing to compare the results of the two analyses, therefore, should sum fall and winter arrival totals.

*Date Ranges.* Ranges of arrival dates within the spring and fall seasons, as defined above, are listed under this category. Anomalously late or early arrivals within seasons, along with the closest seasonal records during the 22-year period, are pointed out in notes following the table.

*Mean Dates and Standard Deviations.* The mean dates of arrival and the standard deviations (in days) around the means are presented for both spring and fall. The standard deviation indicates how extended or concentrated the peaks of occurrence are within each season; 68% of the arrivals fall within one standard deviation and 95% of the arrivals fall within two standard deviations of the mean. Generally, deviations of <10 days indicate a concentrated peak, those of 10–20 days indicate a moderately concentrated peak, and those of >20 days indicate extended arrival.

*High Counts and Dates.* The 22-year high count and date on which the high count was established are given for each species for both spring and fall. The high count refers to the total present on the island regardless of when the individuals arrived; note that in many cases this total includes birds that had arrived on previous dates and occasionally in previous seasons. If the high count was recorded on more than one date, the most recent chronological date is given. If the high count for the island fell during the winter it is listed in the notes following the table.

*Winter Residents.* We follow DeSante and Ainley (1980) in defining winter residents as individuals that remained on the island for  $\geq 21$  days, at least part of which was within the winter season. For each species the total number of residents occurring during the 21 winters of the data set is given.



Bonaparte's Gull

Sketch by Sven Achtermann

**Table 1** Occurrence and Seasonal Distribution of the Birds of Southeast Farallon Island

Species	Total	Spring				Fall				Winter		
		Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents	
Red-throated Loon	92	27	10 Mar–11 Jul	20 Apr $\pm$ 36	4	30 Mar 69	54	1 Aug–19 Dec	2 Nov $\pm$ 28	6	11	0
<i>Gavia stellata</i>										1 Nov 75		
Pacific Loon	31,576 <sup>a</sup>	8046	1 Mar–14 Jul	25 Apr $\pm$ 14	1853	24 Apr 81	23,248	17 Jul–18 Dec	11 Nov $\pm$ 9	4000	282	44
<i>G. pacifica</i>										15 Nov 83		
Common Loon	932	159	10 Mar–8 Jun	7 May $\pm$ 19	100	8 May 84	760	18 Jul–19 Dec <sup>b</sup>	2 Nov $\pm$ 16	200	13	2
<i>G. immer</i>										5 Nov 84		
Pied-billed Grebe	13	1	14 Jul	14 Jul	1	14 Jul 86	12	26 Aug–28 Oct	27 Sep $\pm$ 21	2	0	0
<i>Podilymbus podiceps</i>										29 Aug 89 <sup>c</sup>		
Horned Grebe	62	10	1 Mar–24 Apr	17 Mar $\pm$ 16	4	5 Mar 77 <sup>c</sup>	34	16 Sep–16 Dec	1 Nov $\pm$ 20	5	18	4
<i>Podiceps auritus</i>										29 Oct 88		
Red-necked Grebe	125 <sup>a</sup>	30 <sup>d</sup>	1 Mar–29 May	27 Mar $\pm$ 24	3	10 Mar 85 <sup>c</sup>	50 <sup>d</sup>	12 Sep–19 Dec	24 Nov $\pm$ 23	6	45 <sup>d</sup>	12
<i>P. grisegena</i>										19 Dec 87		
Eared Grebe	10,435 <sup>a</sup>	2060 <sup>d</sup>	1 Mar–23 Jun	25 Mar $\pm$ 18	1100	10 Apr 77	4320 <sup>d</sup>	31 Aug–19 Dec	23 Nov $\pm$ 21	350	4055 <sup>d</sup>	6079
<i>P. nigricollis</i>										19 Dec 76		
Western Grebe	151	4	13 Apr–30 Jun	8 May $\pm$ 37	2	17 Apr 89	137	28 Aug–8 Dec	17 Oct $\pm$ 17	73	10	1
<i>Aechmophorus occidentalis</i>										27 Oct 88		
Clark's Grebe	15	8	28 Mar–27 Jun	7 Jun $\pm$ 29	3	15 Jun 77	7	29 Jul–27 Nov	19 Oct $\pm$ 40	1	0	0
<i>A. clarkii</i>										2 Nov 89 <sup>c</sup>		
Total W./Clark's Grebe	519	60	1 Mar–10 Jul	5 May $\pm$ 40	8	24 Mar 74	426	17 Jul–19 Dec	23 Oct $\pm$ 24	74	33	12
<i>A. occidentalis/clarkii</i>										27 Oct 88		
Black-footed Albatross	142	119 <sup>d</sup>	12 Mar–5 Jul	14 May $\pm$ 23	10	18 May 77	20 <sup>d</sup>	19 Jul–4 Dec	5 Sep $\pm$ 49	3	3 <sup>d</sup>	0
<i>D. nigripes</i>										21 Jul 80		
Laysan Albatross	2	1	21 Mar	21 Mar	1	21 Mar 88	1	7 Dec	7 Dec	1	0	0
<i>D. immutabilis</i>										7 Dec 83		

Northern Fulmar	3408	254 <sup>d</sup>	1 Mar– 28 Jun	13 Mar ±20	40	1728 <sup>d</sup>	28 Jul– 19 Dec	24 Nov ±23	310 1 Dec 77	0
<i>Fulmarus glacialis</i>										1426 <sup>d</sup>
Pink-footed Shearwater	7301	867	24 Mar– 14 Jul	29 May ±24	40 30 May 89 <sup>c</sup>	6434	19 Jul– 18 Dec	14 Sep ±21	800 15 Sep 77	0
<i>Puffinus creatopus</i>										
Flesh-footed Shearwater	3	0	—	—	0	3	19 Sep– 19 Oct	9 Oct ±17	2 19 Oct 85	0
<i>P. carneipes</i>										
Buller's Shearwater	25,456	0	—	—	0	25,456	5 Aug– 1 Dec	6 Oct ±15	1570 3 Oct 86	0
<i>P. bulleri</i>										
Sooty Shearwater	4,125,802	2,172,363 <sup>d</sup>	1 Mar– 14 Jul	30 May ±21	400,000 18 Jun 74 <sup>c</sup>	1,953,157 <sup>d</sup>	15 Jul– 19 Dec	28 Aug ±17	220,000 28 Aug 84	0
<i>P. griseus</i>										282 <sup>d</sup>
Short-tailed Shearwater	101	0	—	—	0	101	13 Oct– 6 Dec	17 Nov ±15	20 26 Nov 88	0
<i>P. tenuirostris</i>										
Black-vented Shearwater	241	0	—	—	0	241	22 Sep– 16 Nov	23 Oct ±10	24 30 Oct 84	0
<i>P. opisthomelas</i>										
Fork-tailed Storm-Petrel	1006 <sup>e</sup>	1001	18 Mar– 5 May	18 Mar ±2	1000 18 Mar 77	5	27 Jul– 28 Sep	25 Aug ±22	3 24 Aug 83	0
<i>Oceanodroma furcata</i>										
Black Storm-Petrel <sup>e</sup>	40	0	—	—	0	40	22 Aug– 7 Oct	25 Aug ±7	27 24 Aug 83	0
<i>O. melanota</i>										
Red-tailed Tropicbird <sup>f</sup>	1	1	3 Jul	3 Jul	1	0	—	—	0	0
<i>Phaethon rubricauda</i>										
Brown Booby <sup>f</sup>	2	1	1 Jul	1 Jul	1	1	24 Sep	24 Sep	1	0
<i>Sula leucogaster</i>										
Red-footed Booby <sup>f</sup>	2	0	—	—	0	2	26 Aug– 12 Oct	19 Sep ±33	1 12 Oct 75 <sup>c</sup>	0
<i>S. sula</i>										
Brown Pelican	268,069 <sup>a</sup>	17,340 <sup>d</sup>	1 Mar– 14 Jul	13 Jun ±25	1430 8 Jun 80	246,992 <sup>d</sup>	15 Jul– 19 Dec	25 Sep ±32	5670 9 Sep 84	0
<i>Pelecanus occidentalis</i>										3737 <sup>d</sup>
Magnificent Frigatebird <sup>e</sup>	4	1	2 Jul	2 Jul	1	3	16 Jul– 16 Dec	6 Sep ±87	1 16 Dec 88 <sup>c</sup>	0
<i>Fregata magnificens</i>										
American Bittern	4	0	—	—	0	4	5 Oct– 26 Oct	16 Oct ±9	1 20 Oct 87 <sup>c</sup>	0
<i>Botaurus lentiginosus</i>										

(Continued)





Green-winged Teal	180	0	—	—	0	179	14 Aug- 17 Dec	6 Oct ±24	39 13 Oct 87	1	0
<i>Anas crecca</i>											
Mallard	55	6	31 Mar- 26 Apr ±10	10 Apr ±10	2	49	13 Aug- 22 Nov	24 Oct ±28	9 15 Nov 78	0	0
<i>Anas platyrhynchos</i>											
Northern Pintail	2575	5	12 Mar- 20 Mar ±3	15 Mar ±3	3	2567	27 Jul- 8 Dec	21 Sep ±25	175 19 Oct 78	3	0
<i>A. acuta</i>											
Blue-winged Teal	4	0	—	—	0	4	22 Sep- 13 Oct	28 Sep ±10	2 22 Sep 78	0	0
<i>A. discors</i>											
Cinnamon Teal	74	10 <sup>d</sup>	1 Mar- 2 Mar ±0	2 Mar	7	55	7 Sep- 23 Oct	26 Sep ±11	11 24 Sep 83	9 <sup>d</sup>	0
<i>A. cyanoptera</i>											
Northern Shoveler	30	1	27 Jun	27 Jun	1	29	14 Aug- 2 Nov	6 Oct ±26	10 2 Nov 86	0	0
<i>A. clypeata</i>											
Gadwall	4	0	—	—	0	4	14 Aug- 18 Dec	20 Sep ±60	1 14 Aug 88 <sup>c</sup>	0	0
<i>A. strepera</i>											
American Wigeon	40	0	—	—	0	40	11 Sep- 31 Oct	8 Oct ±11	9 14 Oct 87	0	0
<i>A. americana</i>											
Canvasback	2	0	—	—	0	2	24 Oct- 28 Nov	11 Nov ±25	1 24 Oct 88 <sup>c</sup>	0	0
<i>Aythya valisineria</i>											
Ring-necked Duck	1	0	—	—	0	1	7 Oct	7 Oct	1 8 Oct 87 <sup>c</sup>	0	0
<i>A. collaris</i>											
Greater Scaup	59	0	—	—	0	58	4 Oct- 11 Dec	24 Oct ±11	18 27 Oct 88	1	0
<i>A. marila</i>											
Lesser Scaup	13	0	—	—	0	13	29 Sep- 8 Nov	25 Oct ±14	6 30 Oct 89	0	0
<i>A. affinis</i>											
Harlequin Duck	23	3	25 Mar- 20 May ±28	22 Apr ±28	2	11	23 Jul- 19 Dec	6 Oct ±52	2 2 Dec 78	9	5
<i>Histrionicus histrionicus</i>											
Oldsquaw	26	5 <sup>d</sup>	2 Mar- 10 Mar ±3	8 Mar ±3	2	12 <sup>d</sup>	16 Oct- 11 Dec	19 Nov ±18	3 20 Nov 80 <sup>c</sup>	9 <sup>d</sup>	0
<i>Clangula hyemalis</i>											
Black Scoter	22	0	—	—	0	12	9 Oct- 9 Dec	3 Nov ±27	5 9 Oct 85	10	0
<i>Melanitta nigra</i>											

(Continued)



Cooper's Hawk	26	0	—	—	0	26	12 Sep- 19 Oct	1 Oct ±7	3	29 Sep 74	0	0
<i>A. cooperii</i>												
Red-tailed Hawk	10	3	6 Apr- 22 May	24 Apr ±24	1	5	26 Oct- 12 Dec	10 Nov ±19	2	12 Dec 82 <sup>c</sup>	2	3
<i>Buteo jamaicensis</i>												
Rough-legged Hawk	47	0	—	—	0	45	28 Sep- 11 Dec	10 Nov ±17	2	27 Oct 73	2	4
<i>B. lagopus</i>												
Golden Eagle	1	0	—	—	0	1	28 Oct	28 Oct	0	28 Oct 71	0	0
<i>Aquila chrysaetos</i>												
American Kestrel	321	3	14 Jun- 26 Jun	20 Jun ±6	2	311	24 Jul- 15 Dec	6 Oct ±27	7	30 Nov 78	7	26
<i>Falco sparverius</i>												
Merlin	95	0	—	—	0	95	7 Sep- 15 Nov	8 Oct ±15	0	25 Oct 88 <sup>c</sup>	0	0
<i>F. columbarius</i>												
Peregrine Falcon	294 <sup>a,e</sup>	44	1 Mar- 29 Jun	19 Apr +20	4	228	26 Jul- 16 Dec	15 Oct ±24	22	30 Oct 88 <sup>c</sup>	22	70
<i>F. peregrinus</i>												
Prairie Falcon	1	0	—	—	0	1	23 Sep	23 Sep	1	23 Sep 80	0	0
<i>F. mexicanus</i>												
Virginia Rail	6	0	—	—	0	6	11 Aug- 21 Sep	31 Aug ±14	0	26 Aug 87	0	0
<i>R. limicola</i>												
Sora	16	2	26 May- 30 Jun	13 Jun ±25	1	14	21 Jul- 15 Oct	10 Sep ±25	0	15 Oct 82	0	0
<i>Porzana carolina</i>												
Common Moorhen	2	2	13 May- 6 Jun	25 May ±17	1	0	—	—	0	—	0	0
<i>Gallinula chloropus</i>												
American Coot	15	2	11 May- 12 May	12 May ±1	1	13	12 Sep- 27 Oct	4 Oct ±12	2	7 Oct 80	2	0
<i>Fulica americana</i>												
Black-bellied Plover	896	54	1 Mar- 11 May	29 Mar ±17	11	815	17 Jul- 22 Dec	28 Sep ±34	27	26 Oct 81	27	253
<i>Pluvialis squatarola</i>												
Lesser Golden-Plover	130	3	28 Apr- 28 May	8 May ±17	1	126	22 Aug- 9 Dec	10 Oct ±24	1	17 Oct 89	1	1
<i>P. dominica</i>												
American Golden-Plover	19	0	—	—	0	19	25 Aug- 19 Oct	13 Sep ±16	3	18 Sep 89 <sup>c</sup>	0	0
<i>P. d. dominica</i>												

(Continued)

**Table 1 (Cont.)**

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents
Pacific Golden-Plover	52	0	—	—	0	52	14 Sep–9 Dec	24 Oct $\pm$ 18	14	0	1
<i>P. d. fulva</i>									17 Oct 89		
Snowy Plover	3	0	—	—	0	3	27 Aug–5 Oct	15 Sep $\pm$ 20	1	0	0
<i>Charadrius alexandrinus</i>									15 Sep 89 <sup>c</sup>		
Semipalmated Plover	180 <sup>e</sup>	0	—	—	0	180	27 Jul–6 Oct	30 Aug $\pm$ 13	29	0	0
<i>C. semipalmatus</i>									27 Aug 88		
Killdeer <sup>e</sup>	443	18	16 Mar–16 Jun	14 May $\pm$ 26	2	365	12 Jul–19 Dec	17 Oct $\pm$ 30	27	60	21
<i>C. vociferus</i>									26 Oct 88		
Eurasian Dotterel <sup>f</sup>	2	0	—	—	0	2	12 Sep–15 Sep	14 Sep $\pm$ 2	1	0	0
<i>C. morinellus</i>									15 Sep 89 <sup>c</sup>		
American Avocet	3	0	—	—	0	2	28 Jul–31 Aug	14 Aug $\pm$ 24	1	1	0
<i>Recurvirostra americana</i>									11 Aug 73 <sup>c</sup>		
Greater Yellowlegs	46	1	29 Apr	29 Apr	1	45	27 Jul–2 Dec	23 Sep $\pm$ 24	2	0	0
<i>Tringa melanoleuca</i>									11 Oct 89 <sup>c</sup>		
Lesser Yellowlegs	47	1	3 May	3 May	1	46	10 Jul–27 Sep	19 Aug $\pm$ 18	6	0	0
<i>T. flaviipes</i>									16 Aug 87		
Solitary Sandpiper	1	0	—	—	0	1	7 Sep	7 Sep	1	0	0
<i>T. solitaria</i>									7 Sep 89		
Willet	753	30	5 Apr–20 Jun	11 May $\pm$ 24	22	717	21 Jun–15 Dec	6 Sep $\pm$ 38	26	6	379
<i>Catoptrophorus semipalmatus</i>									16 Dec 87		
Wandering Tattler	1276 <sup>e</sup>	262	7 Mar–16 Jun	4 May $\pm$ 18	21	999	23 Jun–10 Dec	5 Sep $\pm$ 35	56	15	292
<i>Heteroscelus incanus</i>									17 Aug 89		
Spotted Sandpiper	114	10	20 Apr–24 May	11 May $\pm$ 11	1	104	23 Jul–15 Nov	8 Sep $\pm$ 21	4	0	0
<i>Actitis macularia</i>									4 Sep 89 <sup>c</sup>		
Upland Sandpiper <sup>f</sup>	2 <sup>g</sup>	0 <sup>g</sup>	—	—	0	2	22 Aug–27 Aug	25 Aug $\pm$ 4	1	0	0
<i>Bartramia longicauda</i>									27 Aug 89 <sup>c</sup>		

Whimbrel	850	162	7 Mar- 19 Jun	10 May ±17	49 10 May 79	682	25 Jun- 13 Dec	2 Sep ±31	131 27 Aug 83	6	161
<i>Numenius phaeopus</i>	4 <sup>g</sup>	0	—	—	0	4 <sup>g</sup>	28 Jun- 30 Aug	27 Jul ±26	1 28 Jun 77 <sup>c</sup>	0	0
Long-billed Curlew	394	5	16 Mar- 31 May	30 Apr ±29	2 27 Apr 71	389	28 Jun- 27 Nov	2 Sep ±22	27 14 Aug 75	0	0
<i>N. americanus</i>	395 <sup>e</sup>	47	17 Mar- 5 Jun	4 May ±19	12 6 Mar 87	333	2 Jul- 19 Dec	14 Sep ±36	25 16 Dec 87	15	84
Marbled Godwit	2848 <sup>e</sup>	121	1 Mar- 10 Jun	19 Apr ±30	71 5 Mar 85	2474	26 Jun- 15 Dec	20 Sep ±35	106 25 Sep 75	253	1282
<i>Limosa fedoa</i>	197	15	3 Mar- 29 Apr	18 Apr ±10	5 19 Apr 83	170	6 Aug- 19 Dec	6 Sep ±33	19 8 Aug 68	12	18
Ruddy Turnstone	5	0	—	—	0	5	9 Sep- 3 Oct	19 Sep ±10	1 18 Sep 88 <sup>c</sup>	0	0
<i>Arenaria interpres</i>	162	0	—	—	0	160	6 Jul- 14 Dec	12 Sep ±33	14 17 Sep 75	2	0
Black Turnstone	9	0	—	—	0	9	3 Aug- 5 Sep	17 Aug ±11	2 20 Aug 77	0	0
<i>A. melanocephala</i>	668	0	—	—	0	662	5 Jul- 24 Oct	31 Aug ±18	96 17 Aug 89	6	0
Surf-bird	348	3	6 Mar- 10 May	30 Mar ±35	1 6 Mar 89 <sup>c</sup>	344	10 Jul- 16 Nov	31 Aug ±20	18 11 Aug 88	1	6
Red Knot	244	1	11 May	11 May	1	243	10 Jul- 11 Oct	26 Aug ±14	16 16 Aug 87	0	0
<i>Aphriza virgata</i>	219	1	4 May	4 May	1	218	11 Aug- 23 Oct	20 Sep ±14	16 27 Sep 76 <sup>c</sup>	0	0
<i>Calidris canutus</i>	4	0	—	—	0	4	2 Sep- 7 Nov	25 Sep ±30	1 3 Sep 89 <sup>c</sup>	0	0
Sanderling	18	0	—	—	2	16	19 Oct- 5 Dec	10 Nov ±14	2 18 Dec 79 <sup>c</sup>	2	12
<i>C. alba</i>					3 Apr 80 <sup>c</sup>						
Semipalmated Sandpiper											
<i>C. pusilla</i>											
Western Sandpiper											
<i>C. mauri</i>											
Least Sandpiper											
<i>C. minutilla</i>											
Baird's Sandpiper											
<i>C. bairdii</i>											
Pectoral Sandpiper											
<i>C. melanotos</i>											
Sharp-tailed Sandpiper											
<i>C. acuminata</i>											
Rock Sandpiper											
<i>C. pillocnemis</i>											

(Continued)

**Table 1 (Cont.)**

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents
Dunlin	152 <sup>a</sup>	1	20 May	20 May	1	150 <sup>s</sup>	14 Sep-9 Dec	14 Oct $\pm$ 9	70	1	2
<i>C. alpina</i>					20 May 71				14 Oct 87		
Buff-breasted Sandpiper/ <i>Tryngites subruficollis</i>	5	0	—	—	0	5	29 Aug-8 Sep	2 Sep $\pm$ 5	2	0	0
Short-billed Dowitcher	756	1	14 Apr	14 Apr	1	755	2 Jul-19 Oct	26 Aug $\pm$ 18	150	0	0
<i>Limnodromus griseus</i>					14 Apr 89				4 Sep 85		
Long-billed Dowitcher	270	0	—	—	0	269	18 Jul-10 Dec	29 Sep $\pm$ 25	41	1	1
<i>L. scolopaceus</i>									22 Sep 86		
Common Snipe	106	6	3 Apr-28 May	6 May $\pm$ 19	1	99	18 Jul-12 Dec	10 Oct $\pm$ 28	4	1	0
<i>Gallinago gallinago</i>					9 May 89 <sup>c</sup>				27 Oct 88		
Wilson's Phalarope	3	0	—	—	0	3	20 Jul-17 Aug	1 Aug $\pm$ 14	1	0	0
<i>Phalaropus tricolor</i>									17 Aug 88 <sup>c</sup>		
Red-necked Phalarope	107,728	24,977	12 Apr-29 May	5 May $\pm$ 10	4100	82,751	23 Jul-28 Nov	3 Sep $\pm$ 22	19,500	0	0
<i>P. lobatus</i>					30 Apr 82				22 Aug 68		
Red Phalarope	147,282	8714	15 Apr-3 Jun	13 May $\pm$ 9	2000	138,251	14 Jul-19 Dec	22 Sep $\pm$ 37	20,000	317	0
<i>P. fulvicaria</i>					3 May 82				22 Aug 71		
Pomarine Jaeger	206	2	23 Apr-24 Apr	24 Apr $\pm$ 1	1	202	10 Aug-18 Nov	5 Oct $\pm$ 18	11	2	0
<i>Stercorarius pomarinus</i>					24 Apr 89 <sup>c</sup>				15 Sep 87		
Parasitic Jaeger	70	0	—	—	0	69	20 Aug-21 Nov	9 Oct $\pm$ 22	5	1	0
<i>S. parasiticus</i>									14 Nov 80		
Long-tailed Jaeger	1	1	29 Apr	29 Apr	1	0	—	—	0	0	0
<i>S. longicaudus</i>					29 Apr 71						
South Polar Skua	11	0	—	—	0	11	20 Sep-29 Oct	7 Oct $\pm$ 14	1	0	0
<i>Catharacta maccornicki</i>									20 Oct 89 <sup>c</sup>		
Laughing Gull	2	1	2 Jun	2 Jun	1	1	3 Aug	3 Aug	1	0	0
<i>Larus atricilla</i>					3 Jun 88 <sup>c</sup>				3 Aug 77		

Franklin's Gull	1	0	—	—	0	1	4 Sep	4 Sep	1	0	0
<i>L. pipixcan</i>									4 Sep 83		
Bonaparte's Gull	38,873	37,220	1 Mar– 28 May	24 Apr ±6	30,000 26 Apr 70	1627	28 Sep– 19 Dec	7 Nov ±8	340	26	0
<i>L. philadelphia</i>									10 Nov 87		
Heermann's Gull	8473	120	5 Mar– 14 Jul	1 Jun ±48	16 5 Mar 80	8163	15 Jul– 19 Dec	23 Sep ±34	820	190	42
<i>L. heermanni</i>									9 Aug 83		
Mew Gull	569	38	3 Mar– 9 May	18 Mar ±14	3 24 Mar 85 <sup>c</sup>	406	12 Sep– 19 Dec	7 Nov ±19	50	125	18
<i>L. canus</i>									14 Oct 70		
Ring-billed Gull	98	7	3 Mar– 14 Jul	28 Apr ±60	1 3 Jun 88 <sup>c</sup>	85	30 Jul– 15 Dec	19 Oct ±33	6	6	0
<i>L. delawarensis</i>									5 Oct 68 <sup>c</sup>		
California Gull	22,848	413	1 Mar– 14 Jul	10 Apr ±33	20 5 Mar 78	21,789	16 Jul– 19 Dec	27 Oct ±26	1370	646	2
<i>L. californicus</i>									15 Oct 83		
Herring Gull <sup>a</sup>	5804 <sup>a</sup>	1604 <sup>d</sup>	2 Mar– 12 Jul <sup>b</sup>	22 Mar ±15	125 4 Mar 77	1260 <sup>d</sup>	19 Aug– 19 Dec	20 Nov ±23	59	2940 <sup>d</sup>	510
<i>L. argentatus</i>									11 Dec 76		
Thayer's Gull <sup>e</sup>	248	51 <sup>d</sup>	1 Mar– 30 May <sup>b</sup>	24 Mar ±18	5 27 Mar 88 <sup>c</sup>	89 <sup>d</sup>	7 Oct– 19 Dec	17 Nov ±22	8	108 <sup>d</sup>	2
<i>L. thayeri</i>									31 Oct 85		
Glaucous-winged Gull	9563 <sup>a</sup>	1744 <sup>d</sup>	3 Mar– 20 Jun	20 Mar ±15	332 21 Mar 82	2602 <sup>d</sup>	13 Aug– 19 Dec <sup>b</sup>	4 Dec ±18	440	5217 <sup>d</sup>	1704
<i>L. glaucescens</i>									18 Dec 79		
Glaucous Gull <sup>e</sup>	30	8 <sup>d</sup>	4 Mar– 16 May	31 Mar ±21	1 27 Mar 87 <sup>c</sup>	5 <sup>d</sup>	24 Oct– 9 Dec	15 Nov ±18	1	17 <sup>d</sup>	3
<i>L. hyperboreus</i>									18 Nov 89 <sup>c</sup>		
Black-legged Kittiwake	22,411	18,827	1 Mar– 27 May	16 Mar ±11	4000 4 Mar 76	1089	16 Aug– 19 Dec	11 Nov ±11	450	2495	0
<i>Rissa tridactyla</i>									19 Nov 70		
Sabine's Gull	84	16	26 Mar– 16 Jun <sup>b</sup>	14 May ±18	10 18 May 77	68	20 Aug– 11 Nov	23 Sep ±16	25	0	0
<i>Xema sabini</i>									17 Sep 83		
Caspian Tern	29	7	26 May– 9 Jul	14 Jun ±17	2 13 Jun 89 <sup>c</sup>	22	15 Jul– 10 Oct	26 Aug ±27	3	0	0
<i>Sterna caspia</i>									17 Jul 83 <sup>c</sup>		
Elegant Tern	421	0	—	—	0	421	2 Aug– 14 Nov	13 Sep ±15	120	0	0
<i>S. elegans</i>									15 Sep 84		
Common Tern	6	0	—	—	0	6	31 Aug– 14 Sep	8 Sep ±5	3	0	0
<i>S. hirundo</i>									9 Sep 69 <sup>c</sup>		

(Continued)

BIRDS OF SOUTHEAST FARALLON ISLAND



Figure 2. American Kestrel, Southeast Farallon Island, November 1985.

*Photo by Peter Pyle*



Figure 3. Lesser Golden Plover (*Pluvialis d. dominica*), Southeast Farallon Island, 27 September 1990.

*Photo by Peter Pyle*



BIRDS OF SOUTHEAST FARALLON ISLAND



Figure 4. Laughing Gull, Southeast Farallon Island, 2 June 1988.

*Photo by Peter Pyle*



Figure 5. Black-throated Gray Warbler, Southeast Farallon Island, 20 September 1984.

*Photo by Peter Pyle*

**Table 1 (Cont.)**

Species	Spring					Fall					Winter	
	Total	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents	
												Total
Arctic Tern	2905	0	—	—	0	2905	31 Aug–9 Oct	17 Sep $\pm$ 7	600	0	0	
<i>S. paradisaea</i>									15 Sep 82			
Forsier's Tern	1	0	—	—	0	1	28 Oct	28 Oct	1	0	0	
<i>S. forsteri</i>									28 Oct 86			
Thick-billed Murre <sup>f</sup>	1	0	—	—	0	1	29 Oct	29 Oct	1	0	0	
<i>U. lomvia</i>									29 Oct 88			
Marbled Murrelet	1	0	—	—	0	1	11 Oct	11 Oct	1	0	0	
<i>Brachyramphus marmoratus</i>									11 Oct 89			
Xantus' Murrelet	8 <sup>e</sup>	1	26 Mar	26 Mar	1	6	17 Jul–19 Oct	14 Aug $\pm$ 33	2	1	0	
<i>Synthliboramphus hypoleucus</i>					26 Mar 80				4 Aug 89			
Craveri's Murrelet	1	0	—	—	0	1	15 Nov	15 Nov	1	0	0	
<i>S. craveri</i>									15 Nov 83			
Ancient Murrelet	324	19 <sup>d</sup>	2 Mar–10 Jun	31 Mar $\pm$ 35	2	137 <sup>d</sup>	23 Jul–19 Dec	24 Nov $\pm$ 24	30	168 <sup>d</sup>	13	
<i>S. antiquus</i>					10 Jun 83 <sup>c</sup>				11 Dec 75			
Horned Puffin	12	4	2 Jun–17 Jun	11 Jun $\pm$ 8	1	7	26 Sep–22 Nov	19 Oct $\pm$ 19	2	1	0	
<i>F. corniculata</i>					6 Jun 89 <sup>c</sup>				25 Oct 75			
Rock Dove	144	70	2 Mar–14 Jul	4 May $\pm$ 29	3	67	15 Jul–16 Dec	27 Sep $\pm$ 31	12	7	0	
<i>Columba livia</i>					15 May 77 <sup>c</sup>				14 Sep 75			
Band-tailed Pigeon	341	151	24 Mar–14 Jul	27 May $\pm$ 29	6	189	15 Jul–11 Dec	14 Sep $\pm$ 37	4	1	0	
<i>C. fasciata</i>					7 Jul 70 <sup>c</sup>				21 Oct 72			
White-winged Dove	12	0	—	—	0	12	26 Aug–24 Nov	30 Sep $\pm$ 26	1	0	0	
<i>Zenaidra asiatica</i>									14 Sep 89 <sup>c</sup>			
Mourning Dove	746	172	29 Mar–13 Jul	17 May $\pm$ 20	14	572	17 Jul–8 Dec	16 Sep $\pm$ 24	20	2	0	
<i>Z. macroura</i>					29 Apr 68				3 Sep 72			
Black-billed Cuckoo <sup>f</sup>	2	0	—	—	0	2	26 Aug–18 Oct	22 Sep $\pm$ 38	1	0	0	
<i>Coccyzus erythrophthalmus</i>									26 Aug 87 <sup>c</sup>			

Yellow-billed Cuckoo	15	7	14 Jun- 4 Jul	23 Jun ± 9	1 Jul 89 <sup>c</sup>	8	21 Jul- 7 Nov	3 Sep ±36	1	0	0
<i>C. americanus</i>									21 Jul 88 <sup>c</sup>		
Common Barn-Owl	6	1	13 Jul	13 Jul	1	5	31 Aug- 19 Oct	25 Sep ±20	1	0	0
<i>Tyto alba</i>					13 Jul 73				5 Nov 87 <sup>c</sup>		
Great Horned Owl <sup>g</sup>	1	0	—	—	0	1	21 Nov	21 Nov	1	0	0
<i>Bubo virginianus</i>									21 Nov 70		
Burrowing Owl	216 <sup>g</sup>	28	2 Mar- 20 May	4 Apr ±20	5	183 <sup>g</sup>	8 Sep- 5 Dec	9 Oct ±20	10	5	40
<i>Athene cucularia</i>					1 Mar 80				12 Oct 89 <sup>c</sup>		
Long-eared Owl	40	4	21 May- 14 Jul	22 Jun ±24	1	36	17 Jul- 26 Nov	15 Sep ±36	3	0	0
<i>Asio otus</i>					17 Jun 88 <sup>c</sup>				5 Aug 74 <sup>c</sup>		
Short-eared Owl	198	4	16 Apr- 5 Jul	3 Jun ±35	1	187	16 Jul- 7 Dec	14 Oct ±18	17	7	4
<i>A. flammeus</i>					16 Apr 88 <sup>c</sup>				27 Oct 88		
Northern Saw-whet Owl	15	0	—	—	0	14	20 Sep- 18 Nov	25 Oct ±16	2	1	0
<i>Aegolius acadicus</i>									19 Nov 87 <sup>c</sup>		
Lesser Nighthawk	44	38	18 May- 14 Jul	15 Jun ±16	2	6	21 Jul- 9 Sep	17 Aug ±18	1	0	0
<i>Chordeiles acutipennis</i>					30 Jun 80 <sup>c</sup>				10 Aug 89 <sup>c</sup>		
Common Nighthawk	3	1	16 Jun	16 Jun	1	2	8 Sep	8 Sep	1	0	0
<i>C. minor</i>					16 Jun 77				8 Sep 87 <sup>c</sup>		
Common Poorwill	7	0	—	—	0	7	9 Sep- 31 Oct	9 Oct ±18	1	0	0
<i>Phalaenoptilus nuttallii</i>									12 Oct 89 <sup>c</sup>		
Black Swift	15	5	9 Jun- 11 Jun	10 Jun ±1	3	10	1 Aug- 9 Oct	4 Sep ±22	2	0	0
<i>Cypseloides niger</i>					11 Jun 75				9 Aug 89 <sup>c</sup>		
Chimney Swift	17	10	26 May- 15 Jun	7 Jun ±6	4	7	11 Sep- 2 Oct	25 Sep ±7	2	0	0
<i>Chaetura pelagica</i>					11 Jun 75				27 Sep 85		
Vaux's Swift	813	10	4 May- 31 May	18 May ±8	3	803	4 Sep- 17 Oct	29 Sep ±8	102	0	0
<i>C. vauxi</i>					22 May 83 <sup>c</sup>				23 Sep 85		
White-throated Swift	7	4	6 Apr- 27 Apr	16 Apr ±12	2	3	17 Oct- 25 Oct	20 Oct ±5	2	0	0
<i>Aeronautes saxatalis</i>					6 Apr 83 <sup>c</sup>				17 Oct 69		
Ruby-throated Hummingbird/ <i>Archilochus colubris</i>	1 <sup>g</sup>	0	—	—	0	1 <sup>g</sup>	21 Aug	21 Aug	1	0	0

(Continued)



Yellow-shafted Flicker	60	57	23 Mar- 22 May ±20	13 Apr ±20	3	52	28 Sep- 27 Nov ±15	16 Oct ±15	5	1	1
<i>C. auratus luteus</i>	45	5	26 Mar- 23 Apr ±12	7 Apr ±12	84	40	26 Sep- 5 Dec ±15	18 Oct ±15	3	0	2
Yellow- x Red-shafted Flicker	319	7	8 Mar- 6 Jun ±17	7 Apr ±17	26 Mar 82	254	17 Sep- 18 Dec ±19	18 Oct ±19	14	8	28
Red-shafted Flicker	169	100	22 Apr- 27 Jun ±13	22 May ±13	4 Apr 73	69	16 Jul- 27 Oct ±17	6 Sep ±17	8	0	0
<i>C. a. cafer</i> subspecies group	1463	1044	20 Apr- 12 Jul ±12	29 May ±12	27 May 70 <sup>c</sup>	419	15 Jul- 19 Nov ±14	10 Sep ±14	60	0	0
<i>Contopus borealis</i>	1	1	15 Jun	15 Jun	28 May 83	0	—	—	6 Sep 85	0	0
Western Wood-Pewee	4	0	—	—	15 Jun 75	4	3 Sep- 27 Sep ±10	14 Sep ±10	1	0	0
<i>C. sordidulus</i>	308 <sup>e</sup>	115	3 May- 12 Jul ±13	3 Jun ±13	20	193	20 Jul- 20 Oct ±14	10 Sep ±14	6	0	0
Eastern Wood-Pewee <sup>f</sup>	84	7	17 May- 8 Jul ±16	5 Jun ±16	5 Jun 69	77	17 Aug- 22 Nov ±18	24 Sep ±18	4	0	0
<i>C. virens</i>	142	111	30 Mar- 17 Jun ±15	8 May ±15	17 May 85 <sup>c</sup>	31	1 Aug- 28 Oct ±18	26 Sep ±18	3	0	0
Yellow-bellied Flycatcher/ <i>Empidonax flaviventris</i>	94	76	14 Apr- 10 Jun ±14	8 May ±14	9 May 77	18	1 Aug- 21 Oct ±17	15 Sep ±17	1	0	0
<i>E. traillii</i>	93	79	18 Apr- 26 May ±10	4 May ±10	9 May 69	14	24 Aug- 14 Oct ±15	13 Sep ±15	3	0	0
Least Flycatcher	861	223	30 Mar- 14 Jul ±20	26 May ±20	21 Apr 77	638	18 Jul- 14 Nov ±14	11 Sep ±14	6 Sep 85	0	0
<i>E. minimus</i>	247	9	4 Mar- 8 May ±24	4 Apr ±24	5 Jun 69 <sup>c</sup>	221	21 Jul- 18 Dec ±23	10 Oct ±23	10	17	40
Hammond's Flycatcher	16	3	18 May- 6 Jun ±10	27 May ±10	2 Mar 87 <sup>c</sup>	13	24 Sep- 21 Nov ±17	5 Nov ±17	2	0	0
<i>E. hammondi</i>					27 May 82 <sup>c</sup>				6 Nov 72		
Dusky Flycatcher											
<i>E. oberholseri</i>											
Gray Flycatcher											
<i>E. wrighthii</i>											
Western Flycatcher											
<i>E. difficilis/occidentalis</i>											
Black Phoebe											
<i>Sayornis nigricans</i>											
Eastern Phoebe											
<i>S. phoebe</i>											

(Continued)



N. Rough-winged Swallow	228	26	9 Mar- 19 Jun <sup>b</sup>	23 May ±23	4	12 Jun 74	202	2 Aug- 4 Oct	31 Aug ±14	15	0
<i>Stelgidopteryx serripennis</i>										8 Sep 72	0
Bank Swallow	26	14	3 May- 15 Jun	20 May ±12	2	17 May 84 <sup>c</sup>	12	17 Aug- 27 Oct	11 Sep ±25	5	0
<i>Riparia riparia</i>										17 Aug 85	0
Cliff Swallow	109	21	14 Apr- 22 Jun	19 May ±20	3	9 May 76 <sup>c</sup>	88	17 Jul- 8 Nov	16 Sep ±22	6	0
<i>Hirundo pyrrhonota</i>										25 Oct 69	0
Barn Swallow	535	184	5 Apr- 8 Jul	18 May ±20	5	8 May 74	351	21 Jul- 11 Nov	20 Sep ±19	21	0
<i>H. rustica</i>										12 Aug 88	0
Clark's Nutcracker	4	0	—	—	0	—	4	28 Sep- 27 Oct	10 Oct ±12	1	0
<i>Nucifraga columbiana</i>										12 Oct 86 <sup>c</sup>	0
Common Raven	1	1	18 Apr	18 Apr	1	18 Apr 72	0	—	—	0	0
<i>Corvus corax</i>											
Red-breasted Nuthatch	875	25	12 Apr- 8 Jul	23 May ±21	3	7 May 78	850	24 Jul- 6 Dec	26 Sep ±20	75	0
<i>Sitta canadensis</i>										15 Sep 69	0
White-breasted Nuthatch	2	1	15 May	15 May	1	15 May 79	1	10 Oct	10 Oct	1	0
<i>S. carolinensis</i>										11 Oct 69 <sup>c</sup>	0
Pygmy Nuthatch	1	0	—	—	0	—	1	6 Aug	6 Aug	1	0
<i>S. pygmaea</i>										6 Aug 69	0
Brown Creeper	120	2	14 Apr- 13 Jun	14 May ±42	1	18 Apr 78 <sup>c</sup>	118	27 Sep- 19 Nov	26 Oct ±9	8	0
<i>Certhia americana</i>										19 Oct 86 <sup>c</sup>	0
Rock Wren <sup>f</sup>	191	20	4 Mar- 26 Jun	26 Apr ±31	9 <sup>e</sup>	13 Jun 71	170	19 Aug- 22 Nov	1 Oct ±18	12	1
<i>Salpinctes obsoletus</i>										11 Nov 72 <sup>c</sup>	1
Bewick's Wren	3	0	—	—	1	31 Mar 82 <sup>c</sup>	3	2 Oct- 2 Nov	16 Oct ±16	1	0
<i>Thryomanes bewickii</i>										19 Dec 81 <sup>c</sup>	1
House Wren	138	34 <sup>e</sup>	11 Mar- 12 Jul	4 May ±34	2	23 Apr 87 <sup>c</sup>	104	18 Jul- 30 Oct	14 Sep ±22	4	0
<i>Troglodytes aedon</i>										18 Oct 72	0
Winter Wren	130	17	14 Mar- 20 Jun	15 Apr ±29	1	7 Apr 86 <sup>c</sup>	109	6 Aug- 25 Nov	25 Sep ±23	3	4
<i>T. troglodytes</i>										21 Oct 72	1
Marsh Wren	21	2	1 Apr- 8 Jun	5 May ±48	1	1 Apr 87 <sup>c</sup>	19	15 Aug- 4 Nov	24 Sep ±21	2	0
<i>Cistothorus palustris</i>										16 Aug 87 <sup>c</sup>	0

(Continued)

**Table 1 (Cont.)**

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents
Dusky Warbler <sup>e,f</sup>	2	0	—	—	0	2	27 Sep–14 Oct	6 Oct $\pm$ 10	1	0	0
<i>Phylloscopus fuscatus</i>									14 Oct 87 <sup>c</sup>		
Golden-crowned Kinglet	752	79	7 Mar–27 Jun <sup>b</sup>	1 Apr $\pm$ 19	18	673	17 Sep–8 Dec	17 Oct $\pm$ 12	40	0	0
<i>Regulus satrapa</i>									23 Oct 84		
Ruby-crowned Kinglet	3152	1212	8 Mar–30 Jun	15 Apr $\pm$ 16	225	1931	4 Sep–19 Dec	11 Oct $\pm$ 13	200	9	4
<i>R. calendula</i>									2 Oct 84		
Blue-gray Gnatcatcher	16	4	14 Apr–2 May	23 Apr $\pm$ 9	1	12	13 Aug–4 Oct	10 Sep $\pm$ 16	2	0	0
<i>Poliophtila caerulea</i>									8 Sep 72		
Red-flanked Bluetail <sup>f</sup>	1	0	—	—	0	1	1 Nov	1 Nov	1	0	0
<i>Tarsiger cyanurus</i>									1 Nov 89		
Northern Wheatear <sup>f</sup>	2	1	11 Jun	11 Jun	1	1	6 Nov	—	1	0	0
<i>Oenanthe oenanthe</i>									10 Nov 88 <sup>c</sup>		
Western Bluebird	2	1	1 Apr	1 Apr	1	1	14 Oct	14 Oct	1	0	0
<i>Sialia mexicana</i>									15 Oct 87 <sup>c</sup>		
Mountain Bluebird	13	4	3 Apr–16 Jun	30 Apr $\pm$ 33	1	9	12 Oct–26 Nov	3 Nov $\pm$ 15	3	0	0
<i>S. currucoides</i>									15 Nov 86		
Townsend's Solitaire <sup>e</sup>	23	3	12 Apr–5 Jun	5 May $\pm$ 28	1	15	11 Sep–3 Nov	12 Oct $\pm$ 15	2	5	0
<i>Mjodestes townsendi</i>									4 Oct 86		
Veery <sup>f</sup>	3	1	28 May	28 May	1	2	26 Sep–20 Oct	8 Oct $\pm$ 17	1	0	0
<i>Catherus fuscescens</i>									29 Sep 85 <sup>c</sup>		
Gray-cheeked Thrush <sup>f</sup>	10	2	28 May–11 Jun	4 Jun $\pm$ 10	1	8	12 Sep–17 Oct	29 Sep $\pm$ 11	2	0	0
<i>C. minimus</i>									3 Oct 70		
Swainson's Thrush	1162	168	17 Apr–12 Jul	26 May $\pm$ 13	35	994	27 Aug–24 Nov	25 Sep $\pm$ 12	60	0	0
<i>C. ustulatus</i>									22 Sep 71		
Hermite Thrush	2065	374	1 Mar–2 Jul	25 Apr $\pm$ 20	25	1641	1 Sep–18 Dec	10 Oct $\pm$ 15	350	50	11
<i>C. guttatus</i>									2 Oct 72		



American Robin	1130	216	4 Mar- 27 Jun	2 Apr ±23	40	585	21 Jul- 19 Dec <sup>b</sup>	15 Nov <sup>b</sup> ±25	50	329	10
<i>Turdus migratorius</i>					4 Apr 73			3 Nov	16 Dec 83		
Varied Thrush	443	123	1 Mar- 15 Jun	7 Apr ±23	22	289	19 Dec- 27 Sep	±20	30	31	0
<i>Ictoreus naevius</i>					4 Apr 73			±20	20 Oct 72		
Gray Catbird <sup>d</sup>	4	2	29 May- 24 Jun	11 Jun ±18	1	2	15 Oct	±0	1	0	0
<i>Dumetella carolinensis</i>					24 Jun 85 <sup>c</sup>				15 Oct 82 <sup>c</sup>		
Northern Mockingbird	180	52	3 Apr- 9 Jul	1 Jun ±27	2	127	15 Jul- 23 Nov	8 Sep ±31	4	1	0
<i>Mimus polyglottos</i>					21 Jun 82 <sup>c</sup>			1 Oct	10 Aug 74		
Sege Thrasher	48	9	19 Apr- 18 Jun	22 May ±19	1	38	12 Aug- 10 Nov	1 Oct ±18	3	1	0
<i>Oreoscoptes montanus</i>					24 May 80 <sup>c</sup>			12 Oct	3 Oct 84		
Brown Thrasher	16	7	1 May- 2 Jul	5 Jun ±21	1	9	22 Sep- 30 Oct	±13	2	0	1
<i>Toxostoma rufum</i>					4 May 89 <sup>c</sup>			27 Aug	9 Oct 74		
Bendire's Thrasher	5	3	17 Apr- 14 Jul	27 May ±45	1	2	21 Aug- 2 Sep	±8	1	0	0
<i>T. bendirei</i>					19 May 84 <sup>c</sup>			10 Oct	22 Aug 76 <sup>c</sup>		
White/Black-backed Wagtail <sup>e/</sup>	1	0	—	—	0	1	10 Oct	—	10 Oct 74	0	0
<i>Motacilla alba/lugens</i>											
Red-throated Pipit <sup>f</sup>	6 <sup>g</sup>	0	—	—	0	6 <sup>g</sup>	24 Sep- 3 Nov	12 Oct ±16	1	0	0
<i>Anthus cervinus</i>								20 Oct	14 Oct 89 <sup>c</sup>		
American Pipit	2584	23	5 Mar- 3 Jul <sup>b</sup>	28 Apr <sup>b</sup> ±20	2	2558	6 Sep- 19 Dec	±16	110	3	0
<i>A. rubescens</i>					25 Apr 89 <sup>c</sup>			9 Oct	27 Oct 88		
Sprague's Pipit <sup>f</sup>	3	0	—	—	0	3	1 Oct- 16 Oct	±8	1	0	0
<i>A. spragueii</i>								28 Nov	16 Oct 87 <sup>c</sup>		
Bohemian Waxwing	1	0	—	—	0	1	28 Nov	—	28 Nov 68	0	0
<i>Bombycilla garrulus</i>								9 Oct	75	11	0
Cedar Waxwing	859	88	4 May- 20 Jun	29 May ±9	10	760	16 Jul- 19 Dec	±22	88		
<i>B. cedrorum</i>					30 May 82			12 Sep	24 Oct 88		
Phainopepla	3	0	—	—	0	3	1 Sep- 26 Sep	±13	26 Sep 84 <sup>c</sup>	0	0
<i>Phainopepla nitens</i>								20 Sep	22 Sep 84 <sup>c</sup>		
Brown Shrike <sup>f</sup>	1	0	—	—	0	1	20 Sep	—		0	0
<i>Lanius cristatus</i>											

(Continued)

**Table 1 (Cont.)**

Species	Spring					Fall					Winter	
	Total	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents	
Northern Shrike	1	0	—	—	0	1	29 Oct	29 Oct	1	0	0	
<i>L. excubitor</i>									29 Oct 71			
Loggerhead Shrike	11	5	3 Apr- 24 May	27 Apr $\pm$ 19	1	6	13 Aug- 11 Sep	21 Aug $\pm$ 16	1	0	1	
<i>L. ludovicianus</i>									2 Sep 85 <sup>c</sup>			
European Starling <sup>a</sup>	32,659	128	5 Mar- 14 Jul	24 Apr $\pm$ 43	140	30,141	16 Jul- 19 Dec	3 Nov $\pm$ 18	2540 5 Nov 82	2390	2513	
<i>Sturnus vulgaris</i>												
White-eyed Vireo <sup>f</sup>	1	1	4 Jun	4 Jun	1	0	—	—	0	0	0	
<i>Vireo griseus</i>												
Solitary Vireo	167	48	22 Mar- 5 Jul	25 Apr $\pm$ 18	5	119	4 Aug- 2 Nov	12 Sep $\pm$ 20	7	0	0	
<i>V. solitarius</i>									22 Aug 70			
Eastern Solitary Vireo	21	0	—	—	0	21	25 Aug- 2 Nov	28 Sep $\pm$ 16	2	0	0	
<i>V. s. solitarius</i>									13 Sep 87 <sup>c</sup>			
Cassin's Solitary Vireo	119	44	22 Mar- 21 May	22 Apr $\pm$ 13	5	75	4 Aug- 25 Oct	5 Sep $\pm$ 19	7	0	0	
<i>V. s. cassinii</i>									22 Aug 70			
Yellow-throated Vireo <sup>f</sup>	1	1	12 Jun	12 Jun	1	0	—	—	0	0	0	
<i>V. flavifrons</i>												
Hutton's Vireo	45	12 <sup>b</sup>	23 Feb- 20 May	21 Apr <sup>b</sup> $\pm$ 24	2	33	18 Jul- 8 Nov	20 Sep $\pm$ 29	2	0	0	
<i>V. huttoni</i>									8 Nov 81			
Warbling Vireo	552	125	11 Mar- 24 Jun	10 May $\pm$ 16	12	427	21 Jul- 20 Nov	12 Sep $\pm$ 14	25	0	0	
<i>V. gilvus</i>									11 Sep 77 <sup>c</sup>			
Philadelphia Vireo <sup>f</sup>	10 <sup>g</sup>	2	6 Jun- 12 Jun	9 Jun $\pm$ 4	1	8 <sup>g</sup>	12 Sep- 25 Oct	26 Sep $\pm$ 15	1	0	0	
<i>V. philadelphicus</i>									25 Oct 89 <sup>c</sup>			
Red-eyed Vireo	62	41	22 May- 2 Jul	10 Jun $\pm$ 9	2	21	28 Aug- 6 Oct	15 Sep $\pm$ 12	2	0	0	
<i>V. olivaceus</i>									6 Sep 85 <sup>c</sup>			
Yellow-green Vireo <sup>f</sup>	3	0	—	—	0	3	19 Oct- 30 Oct	25 Oct $\pm$ 6	1	0	0	
<i>V. flavoviridis</i>									25 Oct 88 <sup>c</sup>			

Golden-winged Warbler <sup>f</sup>	4	2	18 Jun– 5 Jul	27 Jun ±12	1	2	2 Sep– 14 Sep	8 Sep ±8	1	0	0
<i>Vermivora chrysoptera</i>					22 Jun 80 <sup>c</sup>				2 Sep 80 <sup>c</sup>		
Tennessee Warbler	289	137 <sup>b</sup>	22 Apr– 17 Jul	2 Jun ±15	10	152 <sup>b</sup>	18 Aug– 16 Dec	1 Oct ±23	7	0	0
<i>V. peregrina</i>					26 May 82				12 Sep 77		
Orange-crowned Warbler	1526	1033 <sup>b</sup>	19 Feb– 3 Jul	30 Apr ±16	175	493 <sup>b</sup>	16 Jul– 23 Dec	20 Sep ±24	18	0 <sup>b</sup>	1
<i>V. celata</i>					30 Apr 71				2 Oct 84		
Nashville Warbler	245	53	9 Apr– 20 Jun	9 May ±17	3	192	31 Jul– 11 Dec	7 Oct ±27	4	0	0
<i>V. ruficapilla</i>					28 Apr 68				25 Oct 88		
Virginia's Warbler	29	4	13 May– 28 May	20 May ±8	2	25	16 Aug– 2 Nov	23 Sep ±18	3	0	0
<i>V. virginiae</i>					13 May 75				1 Oct 68		
Lucy's Warbler	5	0	—	—	0	5	5 Sep– 17 Nov	17 Oct ±30	1	0	0
<i>V. luciae</i>									1 Nov 88 <sup>c</sup>		
Northern Parula	37	30	29 Apr– 6 Jul	2 Jun ±16	3	7	9 Sep– 6 Oct	22 Sep ±12	1	0	0
<i>Parula americana</i>					12 Jun 85 <sup>c</sup>				10 Sep 88 <sup>c</sup>		
Yellow Warbler	1531	327	14 Apr– 27 Jun	20 May ±11	60	1204	17 Jul– 9 Nov	10 Sep ±15	43	0	0
<i>Dendroica petechia</i>					17 May 85				9 Sep 88		
Chestnut-sided Warbler	140	29	1 May– 3 Jul <sup>b</sup>	9 Jun ±12	3	111	2 Sep– 3 Nov	22 Sep ±12	7	0	0
<i>D. pensilvanica</i>					1 Jun 74				24 Sep 76		
Magnolia Warbler	215	100	12 May– 4 Jul	9 Jun ±8	8	115	22 Aug– 5 Nov	26 Sep ±16	4	0	0
<i>D. magna</i>					12 Jun 75 <sup>c</sup>				7 Sep 86		
Cape May Warbler	52	29	26 May– 30 Jun	12 Jun ±9	3	23	9 Sep– 31 Oct	30 Sep ±14	2	0	0
<i>D. tigrina</i>					19 Jun 77 <sup>c</sup>				22 Sep 79 <sup>c</sup>		
Black-throated Blue Warbler	69	0	—	—	0	69	17 Sep– 3 Nov	10 Oct ±10	3	0	0
<i>D. caerulescens</i>									14 Oct 87 <sup>c</sup>		
Yellow-rumped Warbler	5327	1529 <sup>b</sup>	1 Mar– 15 Jul	18 Apr ±19	295	3501 <sup>b</sup>	16 Jul– 19 Dec	19 Oct <sup>b</sup> ±19	155	297	55
<i>D. coronata</i>					30 Apr 71				25 Oct 88		
Myrtle Warbler	1802	197 <sup>b</sup>	1 Mar– 15 Jul	30 Apr ±23	45	1509 <sup>b</sup>	13 Sep– 19 Dec	23 Oct ±15	130	96	34
<i>D. c. coronata</i> subspecies group					30 Apr 71				24 Oct 88		
Audubon's x Myrtle Warbler	69	11	25 Mar– 8 May	11 Apr ±16	4	56	22 Sep– 3 Dec	14 Oct ±14	3	2	1
					26 Mar 69				24 Oct 88		

(Continued)



Western Palm Warbler	810	25	3 May- 3 Jul	8 Jun ±18	4 1 Jul 80	785	31 Aug- 11 Dec	17 Oct ±16	20 14 Oct 87	0	3
<i>D. p. palmarum</i>											
Yellow Palm Warbler	4	4	14 Apr- 26 Jun	18 May ±30	1 20 May 87 <sup>c</sup>	0	—	—	0	0	0
<i>D. p. hypochrysea</i>											
Bay-breasted Warbler	51	28	28 May- 29 Jun	12 Jun ±10	2 21 Jun 82 <sup>c</sup>	23	10 Sep- 24 Oct	28 Sep ±11	2 27 Sep 74 <sup>c</sup>	0	0
<i>D. castanea</i>											
Blackpoll Warbler	531	41	6 May- 12 Jul	12 Jun ±16	2 28 Jun 77 <sup>c</sup>	490	22 Jul- 16 Nov <sup>b</sup>	22 Sep <sup>b</sup> ±12	23 27 Sep 74	0	0
<i>D. striata</i>											
Cerulean Warbler <sup>f</sup>	1	0	—	—	0	1	23 Oct	23 Oct	1	0	0
<i>D. cerulea</i>											
Black-and-white Warbler	95	48	18 Apr- 7 Jul	31 May ±17	5 6 Jun 75	47	11 Aug- 11 Nov	19 Sep ±18	2 8 Sep 89 <sup>c</sup>	0	0
<i>Mniotilta varia</i>											
American Redstart	379	69	21 May- 7 Jul	13 Jun ±9	3 15 Jun 77 <sup>c</sup>	310	16 Aug- 8 Nov	19 Sep ±15	15 15 Sep 75	0	0
<i>Setophaga ruticilla</i>											
Prothonotary Warbler <sup>f</sup>	2	0	—	—	0	2	12 Sep- 23 Oct	3 Oct ±29	1 23 Oct 89 <sup>c</sup>	0	0
<i>Protonotaria citrea</i>											
Worm-eating Warbler <sup>f</sup>	8	6	28 May- 20 Jun	6 Jun ±9	2 5 Jun 73	2	12 Oct- 16 Oct	14 Oct ±3	1 16 Oct 87 <sup>c</sup>	0	0
<i>Helminthos vermivorus</i>											
Ovenbird	262	161 <sup>b</sup>	16 May- 21 Jul	12 Jun ±12	6 16 Jun 88	101 <sup>b</sup>	19 Aug- 8 Nov	22 Sep ±15	4 13 Sep 81	0	0
<i>Seturus aurocapillus</i>											
Northern Waterthrush	66	5	20 May- 27 Jun	8 Jun ±14	1 27 Jun 89 <sup>c</sup>	61	10 Aug- 27 Oct	12 Sep ±18	2 17 Aug 89 <sup>c</sup>	0	0
<i>S. noveboracensis</i>											
Kentucky Warbler <sup>f</sup>	11 <sup>g</sup>	10 <sup>g</sup>	9 May- 14 Jul	9 Jun <sup>b</sup> ±22	1 17 Jun 88 <sup>c</sup>	1	9 Sep	9 Sep	1	0	0
<i>Oporornis formosus</i>											
Connecticut Warbler <sup>f</sup>	29	2	18 Jun- 19 Jun	19 Jun ±1	1 19 Jun 76 <sup>c</sup>	27	1 Sep- 12 Oct	23 Sep ±12	3 23 Sep 74	0	0
<i>O. agilis</i>											
Mourning Warbler <sup>f</sup>	35 <sup>g</sup>	5	3 Jun- 27 Jun	14 Jun ±10	1 15 Jun 88 <sup>c</sup>	30 <sup>g</sup>	27 Aug- 20 Oct	17 Sep ±13	4 8 Sep 89	0	0
<i>O. philadelphia</i>											
MacGillivray's Warbler	340	78	6 Apr- 23 Jun	16 May ±16	10 9 May 69 <sup>c</sup>	262	1 Aug- 20 Oct	4 Sep ±17	6 8 Sep 72	0	0
<i>O. tolmiei</i>											
Common Yellowthroat	851	383	11 Mar- 14 Jul	21 May ±28	10 21 Apr 87	468	15 Jul- 3 Nov	22 Sep ±16	16 2 Oct 84	0	0
<i>Geothlypis trichas</i>											

(Continued)

**Table 1 (Cont.)**

Species	Spring					Fall					Winter	
	Total	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents	
Hooded Warbler	23	18	18 May-1 Jul	5 Jun $\pm$ 12	5 Jun 89 <sup>c</sup>	5	1 Sep-11 Oct	27 Sep $\pm$ 15	1	0	0	
<i>Wilsonia citrina</i>									11 Oct 89 <sup>c</sup>			
Wilson's Warbler	3700	2818 <sup>b</sup>	18 Mar-27 Jun	13 May $\pm$ 11	500	882 <sup>b</sup>	13 Jul-5 Nov	2 Sep $\pm$ 17	20	0	0	
<i>W. pusilla</i>									14 Sep 75 <sup>c</sup>			
Canada Warbler	37	9	5 Jun-26 Jun	12 Jun $\pm$ 6	1	28	8 Aug-26 Oct	16 Sep $\pm$ 19	2	0	0	
<i>W. canadensis</i>									8 Sep 89 <sup>c</sup>			
Yellow-breasted Chat	76	30	14 Apr-22 Jun	12 May $\pm$ 15	2	46	12 Aug-20 Oct	11 Sep $\pm$ 15	3	0	0	
<i>Icteria virens</i>									26 Aug 87 <sup>c</sup>			
Hepatic Tanager	2	1	22 May	22 May	1	1	11 Nov	11 Nov	1	0	0	
<i>Piranga flava</i>									11 Nov 79			
Summer Tanager	16	10	15 May-24 Jun	2 Jun $\pm$ 13	1	6	12 Oct-29 Oct	23 Oct $\pm$ 7	1	0	0	
<i>P. rubra</i>									13 Oct 89 <sup>c</sup>			
Scarlet Tanager <sup>f</sup>	5	1	18 Jun	18 Jun	1	4	29 Sep-26 Nov	29 Oct $\pm$ 24	1	0	0	
<i>P. olivacea</i>									26 Nov 87 <sup>c</sup>			
Western Tanager	537	169	15 Apr-22 Jun	18 May $\pm$ 13	30	368	18 Jul-25 Nov <sup>b</sup>	10 Sep $\pm$ 17	12	0	0	
<i>P. ludoviciana</i>									8 Sep 72			
Rose-breasted Grosbeak	216	136	13 May-11 Jul	9 Jun $\pm$ 10	6	80	17 Jul-9 Nov	20 Sep $\pm$ 22	3	0	0	
<i>Pheucticus ludovicianus</i>									2 Oct 75 <sup>c</sup>			
Rose-br. x Black-hd. Grosbeak <sup>e</sup>	4	1	8 Jun	8 Jun	1	3	18 Sep-21 Oct	2 Oct $\pm$ 17	1	0	0	
Black-headed Grosbeak	255	120	2 Apr-14 Jul	12 May $\pm$ 18	10	135	23 Jul-20 Nov <sup>b</sup>	4 Sep $\pm$ 20	4	0	0	
<i>P. melanocephalus</i>									9 Sep 80			
Blue Grosbeak	53	9	9 May-18 Jun	26 May $\pm$ 14	1	44	16 Aug-6 Oct	5 Sep $\pm$ 11	2	0	0	
<i>Guiraca caerulea</i>									15 Sep 89 <sup>c</sup>			
Lazuli Bunting	294	62	6 Apr-1 Jul	15 May $\pm$ 19	4	232	31 Jul-8 Nov	7 Sep $\pm$ 15	20	0	0	
<i>Passerina amoena</i>									18 Sep 71			

Indigo Bunting	110	77	7 May- 14 Jul	8 Jun ±14	6 20 Jun 82	33	18 Jul- 13 Dec	14 Sep ±44	2 3 Sep 86	0 0
<i>P. cyanea</i>	5	0	—	—	0	5	10 Sep- 28 Sep	20 Sep ± 8	1 23 Sep 86 <sup>c</sup>	0 0
Painted Bunting <sup>f</sup>										
<i>P. citris</i>										
Dickcissel	25	13	13 May- 24 Jun	1 Jun ±13	1 30 May 87 <sup>c</sup>	12	24 Aug- 14 Oct	16 Sep ±18	2 3 Sep 88 <sup>c</sup>	0 0
<i>Spiza americana</i>	26	7	3 May- 26 Jun	24 May ±20	1 29 Jun 77 <sup>c</sup>	19	24 Aug- 11 Nov	18 Sep ±19	1 18 Sep 88 <sup>c</sup>	0 0 <sup>b</sup>
Green-tailed Towhee	470	30 <sup>b</sup>	23 Feb- 1 Jun <sup>b</sup>	13 Apr <sup>b</sup> ±19	4 4 Apr 73	440	29 Aug- 17 Dec	6 Oct ±11	125 4 Oct 72 <sup>c</sup>	0
<i>Pipilo chlorurus</i>										
Rufous-sided Towhee <sup>e</sup>										
<i>P. erythrophthalmus</i>										
<i>P. erythrophthalmus</i>	10	4	2 Jun- 11 Jul	18 Jun ±17	1 6 Jul 82 <sup>c</sup>	6	13 Sep- 1 Oct	22 Sep ± 7	2 30 Sep 85 <sup>c</sup>	0 0
Cassin's Sparrow <sup>f</sup>										
<i>Aimophila cassinii</i>	61	16	28 Mar- 28 Jun	22 May ±26	2 24 May 77	44	3 Oct- 22 Nov	24 Oct ±14	3 21 Oct 83 <sup>c</sup>	1 0
American Tree Sparrow	1526	255	16 Mar- 13 Jul	10 May ±19	55 30 Apr 71	1271	21 Jul- 30 Nov	17 Sep ±21	50 2 Oct 72	0 0
<i>Spizella arborea</i>										
Chipping Sparrow										
<i>S. passerina</i>	1	0	—	—	0	1	26 Oct	26 Oct	1 28 Oct 88 <sup>c</sup>	0 0
Chipping × Brewer's Sparrow										
Clay-colored Sparrow	312	36	4 May- 22 Jun	28 May ±13	3 31 May 75	276	22 Aug- 5 Dec	29 Sep ±20	10 28 Sep 89	0 0
<i>S. pallida</i>										
Brewer's Sparrow	125	30	21 Apr- 27 Jun	24 May ±15	2 21 May 78	95	2 Aug- 15 Nov	18 Sep ±18	8 29 Sep 74 <sup>c</sup>	0 0
<i>S. breweri</i>										
Field Sparrow <sup>f</sup>	1	1	17 Jun	17 Jun	1	0	—	—	0	0
<i>S. pusilla</i>										
Black-chinned Sparrow	1	0	—	—	0	1	30 Aug	30 Aug	1 5 Sep 72 <sup>c</sup>	0 0
<i>S. atrogularis</i>										
Vesper Sparrow	234	20	4 Apr- 23 Jun	20 May ±20	1 7 Jun 89 <sup>c</sup>	214	21 Jul- 18 Nov	28 Sep ±16	7 6 Oct 72	0 0
<i>Pooecetes gramineus</i>										
Lark Sparrow	257	26	9 Mar- 28 Jun	26 Apr ±26	2 9 Apr 82 <sup>c</sup>	230	29 Jul- 13 Dec	14 Sep ±21	8 1 Oct 74	1 0
<i>Chondestes grammacus</i>										
Black-throated Sparrow	23	7	17 Apr- 18 Jun	21 May ±20	2 22 May 77	16	18 Aug- 10 Oct	14 Sep ±13	2 8 Sep 84	0 0
<i>Amphispiza bilineata</i>										

(Continued)





Golden- x White-cr. Sparrow	2	0	—	—	—	0	2	2 Oct- 13 Oct	8 Oct ± 8	1	0	0
White-crowned Sparrow	7237	808	8 Mar- 1 Jul	19 Apr ±13	—	75	6413	27 Aug- 19 Dec	6 Oct ±10	3000	16	17
<i>Z. leucophrys</i>												
Gambel's White-cr. Sparrow	933	179	8 Mar- 12 May	21 Apr ±10	—	60	753	9 Sep- 18 Dec	10 Oct ±14	28	1	2
<i>Z. l. gambelii</i>												
Black-lored White-cr. Sparrow	11	3	31 May- 1 Jul	18 Jun ±16	—	1	8	24 Sep- 1 Dec	19 Oct ±22	1	0	0
<i>Z. l. leucophrys/oriantha</i>												
Puget Sound White-cr. Sparrow	905	169	8 Mar- 25 Jun	13 Apr ±14	—	25	736	10 Sep- 4 Dec	6 Oct ±11	30	0	5
<i>Z. l. pugetensis</i>												
Harris' Sparrow	19	2	2 May- 16 May	9 May ±10	—	1	17	17 Oct- 4 Dec	6 Nov ±14	2	0	0
<i>Z. querula</i>												
Dark-eyed Junco	4030	1124	5 Mar- 7 Jul	6 Apr ±15	—	420	2886	4 Dec- 25 Jul	13 Oct ±14	700	20	3
<i>Junco hyemalis</i>												
Slate-colored Junco	84	26	22 Mar- 12 Jun	1 May ±24	—	1	58	8 Sep- 18 Dec	25 Oct ±19	3	0	0
<i>J. h. hyemalis</i> subspecies group												
<i>J. h. oregonus</i>	3946	1098 <sup>e</sup>	5 Mar- 7 Jul	5 Apr ±14	—	420	2828	25 Jul- 19 Dec	13 Oct ±14	700	20	3
<i>J. h. oregonus</i> subspecies group												
Lapland Longspur	164	5	4 May- 24 Jun	31 May ±22	—	1	159	3 Sep- 9 Dec	14 Oct ±18	10	0	0
<i>Calcarius lapponicus</i>												
Chestnut-collared Longspur	46	3 <sup>b</sup>	18 May- 16 Jul	20 Jun ±30	—	1	43 <sup>b</sup>	20 Sep- 3 Dec	16 Oct ±13	7	0	0
<i>C. ornatus</i>												
Snow Bunting <sup>f</sup>	11 <sup>g</sup>	0	—	—	—	0	11 <sup>g</sup>	22 Oct- 17 Nov	3 Nov <sup>h</sup> ± 9	3	0	0
<i>Plectrophenax nivalis</i>												
Bobolink	141	10	24 May- 4 Jul	8 Jun ±13	—	1	131	26 Aug- 23 Oct	22 Sep ±13	6	0	0
<i>Dolichonyx oryzivorus</i>												
Red-winged Blackbird	560	30	4 Mar- 11 Jun	25 Apr ±24	—	3	529	20 Jul- 18 Dec	4 Oct ±19	65	1	0
<i>Agelaius phoeniceus</i>												
Tricolored Blackbird	22	5	8 Mar- 14 Jul	12 May ±58	—	2	16	21 Sep- 30 Oct	7 Oct ±10	5	1	0
<i>A. tricolor</i>												
Western Meadowlark	1871 <sup>g</sup>	41	9 Mar- 5 Jul	30 Apr ±31	—	45	1813 <sup>g</sup>	23 Jul- 16 Dec	14 Oct ±17	125	17	145
<i>S. neglecta</i>												

(Continued)

**Table 1 (Cont.)**

Species	Total	Spring				Fall				Winter		
		Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Seasonal Total	Date Range	Mean $\pm$ S.D.	High Count and Date	Total	Residents	
Yellow-headed Blackbird	78	22	27 Apr-12 Jun	12 May $\pm$ 9	3	13 May 75 <sup>c</sup>	56	27 Jul-21 Oct	11 Sep $\pm$ 21	2	0	0
<i>Xanthocephalus xanthocephalus</i>										27 Aug 87 <sup>c</sup>		
Rusty Blackbird	8	3	15 Apr-22 Apr	20 Apr $\pm$ 4	1	15 Apr 85 <sup>c</sup>	5	20 Oct-19 Nov	31 Oct $\pm$ 12	1	0	0
<i>Euphagus carolinus</i>										6 Nov 89 <sup>c</sup>		
Brewer's Blackbird	773	139	16 Mar-30 Jun	26 Apr $\pm$ 18	20	27 Apr 71	633	17 Jul-18 Dec	10 Oct $\pm$ 14	50	1	1
<i>E. cyanocephalus</i>										3 Oct 72 <sup>c</sup>		
Brown-headed Cowbird	2160	439	26 Mar-14 Jul	5 May $\pm$ 14	20	7 May 78	1721	15 Jul-1 Dec	28 Aug $\pm$ 20	53	0	0
<i>Molothrus ater</i>										26 Aug 87 <sup>c</sup>		
Orchard Oriole	38	2	11 Jun-9 Jul	25 Jun $\pm$ 20	1	11 Jun 88 <sup>c</sup>	36	14 Aug-25 Oct	19 Sep $\pm$ 16	3	0	0
<i>Icterus spurius</i>										16 Sep 72 <sup>c</sup>		
Hooded Oriole	14	0	—	—	0	—	14	20 Jul-19 Nov <sup>b</sup>	1 Sep $\pm$ 31	3	0	0
<i>I. cucullatus</i>										21 Aug 87 <sup>c</sup>		
Northern Oriole	601	113 <sup>b</sup>	26 Mar-20 Jun	3 May $\pm$ 17	7	21 Apr 87	488 <sup>b</sup>	3 Jul-30 Nov <sup>b</sup>	22 Aug $\pm$ 23	15	0	0
<i>I. galbula</i>										9 Aug 73		
Baltimore Oriole	32	10	26 May-11 Jun	3 Jun $\pm$ 6	2	26 May 70	22	5 Sep-30 Nov <sup>b</sup>	4 Oct $\pm$ 22	2	0	0
<i>I. g. galbula</i>										7 Sep 89 <sup>c</sup>		
Baltimore x Bullock's Oriole	4	1	4 Jun	4 Jun	1	4 Jun 70	3	20 Sep-28 Sep	23 Sep $\pm$ 4	1	0	0
Bullock's Oriole	565	102 <sup>b</sup>	26 Mar-20 Jun	30 Apr $\pm$ 15	7	21 Apr 87	463 <sup>b</sup>	3 Jul-27 Nov	19 Aug $\pm$ 21	15	0	0
<i>I. bullockii</i> subspecies group										9 Aug 73		
Scott's Oriole	1	0	—	—	0	—	1	12 Sep	12 Sep	1	0	0
<i>I. parisorum</i>										12 Sep 77		
Purple Finch	797	90	9 Mar-28 May	18 Apr $\pm$ 16	7	12 Apr 88	703	18 Aug-14 Dec	12 Oct $\pm$ 13	250	4	1
<i>Corpodacus purpureus</i>										4 Oct 72		

Cassin's Finch	7	3	12 Apr- 14 Jun	6 May ±34	1 21 Apr 87 <sup>c</sup>	4	5 Oct- 11 Dec	1 11 Dec 89 <sup>c</sup>	0	0
<i>C. cassinii</i>										
House Finch	586	325	9 Mar- 1 Jul	21 Apr ±24	23 26 Apr 83	251	19 Jul- 15 Dec	12 26 Oct 72 <sup>c</sup>	10	0
<i>C. mexicanus</i>										
Red Crossbill	19	0	—	—	0	18	9 Aug- 5 Nov <sup>b</sup>	12 4 Nov 87	1	0
<i>Loxia curvirostra</i>										
Pine Siskin	1562	44	7 Mar- 14 Jul	23 Apr ±36	8 17 Apr 74	1482	16 Jul- 19 Dec	400 3 Oct 72	36	1
<i>Carduelis pinus</i>										
Lesser Goldfinch	881	45 <sup>b</sup>	28 Feb- 11 Jul	27 Apr ±37	6 9 Mar 79	836	15 Jul- 19 Dec	50 22 Sep 79	0 <sup>b</sup>	0
<i>C. psaltria</i>										
Lawrence's Goldfinch	16	3	8 Apr- 26 May	4 May ±24	1 8 Apr 77	13	29 Sep- 31 Oct	6 1 Oct 74	0	0
<i>C. lawrencei</i>										
American Goldfinch	164	30	16 Apr- 13 Jun	18 May ±15	5 15 May 75 <sup>c</sup>	134	21 Aug- 5 Nov	17 3 Oct 86 <sup>c</sup>	0	0
<i>C. tristis</i>										
Evening Grosbeak	4	1	27 May	27 May	1	3	20 Sep- 3 Oct	1 22 Sep 79 <sup>c</sup>	0	0
<i>Coccothraustes vespertinus</i>										
House Sparrow <sup>e</sup>	177	170	14 Mar- 21 Jun	22 Apr ±17	9 10 Apr 88	6	16 Jul- 10 Dec	7 24 Aug 89 <sup>c</sup>	1	0
<i>Passer domesticus</i>										
Total	4,998,469	2,320,004				2,651,593			26,872	14,688

<sup>a</sup>Turnover rates of these species, most of which are wintering waterbirds, have been reassessed and totals for the period covered by DeSante and Ainley (1980) have been recalculated (see text). Differences between totals included here and those of DeSante and Ainley are presented in the notes following the table.

<sup>b</sup>Small numbers of individuals were reclassified to season using our definitions, are anomalously late or early within a season, or are known immature dispersants included in the spring totals. See the annotations for specification of these records and, in some cases, reinterpretations of seasonal data.

<sup>c</sup>Seasonal high count duplicated on more than one date; the date given is the most recent, chronologically.

<sup>d</sup>Patterns of arrival appear to overlap two or more seasons. See the notes for reinterpretations of seasonal data.

<sup>e</sup>See notes following the table for information on race, unusual patterns of occurrence, or individual records of interest.

<sup>f</sup>Species formerly or currently reviewed by the CBRC. All records included have either been accepted by the Committee or are in the process of being reviewed. It is possible that some records presently under review will not be accepted.

<sup>g</sup>One or more reported individuals are not included in the table because of inadequate documentation or a reinterpretation of arrival data. See notes following the table.

## BIRDS OF SOUTHEAST FARALLON ISLAND

### NOTES

*Pacific Loon*—A reinterpretation of arrival data for the period 3 April 1968 through 2 April 1976 results in a total of 386 arrivals vs. 351 reported for the same period by DeSante and Ainley (1980).

*Common Loon*—An arrival on 18 July 1984 was extremely early, the next earliest fall individual arriving on 22 August.

*Red-necked Grebe*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 32 individuals vs. 21 reported for the same period by DeSante and Ainley (1980). The arrival pattern of this species is perhaps more accurately represented by a single over-winter peak (mean arrival 14 January  $\pm$  53 days).

*Eared Grebe*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 3914 individuals vs. 3276 reported for the same period by DeSante and Ainley (1980). A single broad over-winter peak (mean arrival 9 January  $\pm$  50 days) may best define the arrival pattern of this species.

*Black-footed Albatross*—The summer occurrence of this species is best defined by the arrival of 130 individuals from 28 February through 12 August (mean arrival 20 May  $\pm$  30 days). The remaining 12 records were widely scattered between 3 September and 31 January.

*Northern Fulmar*—The arrival pattern is perhaps better defined as follows: fall, 27 September–31 December (mean arrival 1 December  $\pm$  21 days;  $n = 2088$ ); spring, 3 January–23 March (mean arrival 4 February  $\pm$  17 days;  $n = 1277$ ). The remaining 43 individuals were summering birds recorded from 16 April to 16 August.

*Sooty Shearwater*—The summer occurrence of this species is probably best defined by 4,124,086 individuals that were observed between 6 March and 24 November (mean arrival 12 July  $\pm$  49 days). Arrivals of the remaining 1716 individuals were scattered over the winter.

*Fork-tailed Storm-Petrel*—The totals do not include a long-dead specimen found on 22 August 1971.

*Black Storm-Petrel*—This species was recorded only during El Niño of 1983.

*Brown Pelican*—The occurrence of this species is perhaps best defined by a single long peak of 264,801 individuals arriving between 11 May and 31 December (mean arrival 20 September  $\pm$  40 days). The remaining 3265 arrivals were widely scattered through the winter and early spring. Numbers of arrivals were calculated by means of an algorithm similar to that used for landbirds, but with 10 days rather than one day as the unit of measure. This resulted in numbers higher than were calculated by DeSante and Ainley (1980), who assumed that the high count of each season was the total. We have virtually no data on daily turnover rates of this species, but our calculations are based on the assumption that roost sites are used by both summer residents and migrants dispersing farther north.

*Magnificent Frigatebird*—We assume that an adult male recorded on 16 December 1988 was of this species although the possibility that it was a Great Frigatebird (*Fregata minor*) cannot be ruled out, especially because Magnificent Frigatebirds are not typically found in California at this time of year. The other three recent records were of females identified as Magnificent Frigatebirds by their plumage.

*Great Blue Heron*—The occurrence of this species is perhaps better defined by 126 individuals that arrived between 17 June and 2 November (mean arrival 30

## BIRDS OF SOUTHEAST FARALLON ISLAND

August  $\pm$  30 days). The remaining five arrivals were in December (3) and March (2). The three winter residents all refer to one individual that was present between 26 August 1985 and 18 January 1988, departing the island for 2–3 months each summer.

*Cinnamon Teal*—This species' early spring occurrence is best defined by the 19 individuals arriving from 30 January to 2 March (mean arrival 19 February  $\pm$  14 days).

*Oldsquaw*—The mean winter date of all records was 31 December  $\pm$  47 days.

*Surf Scoter*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 1631 individuals vs. 1264 reported for the same period by DeSante and Ainley (1980). Three arrivals between 16 and 23 July 1978 were anomalously early; the next fall record was 5 September. Arrivals or migrants of this species were recorded throughout the winter, thus its seasonal occurrence is perhaps best defined by two peaks: fall, 5 September–31 December (mean arrival 16 November  $\pm$  21 days;  $n = 2020$ ), and spring, 5 January–18 June (mean arrival 23 March  $\pm$  32 days;  $n = 2291$ ).

*White-winged Scoter*—As with the Surf Scoter, the arrival pattern is perhaps best defined by two peaks spanning the winter: fall, 14 September–29 December (mean arrival 9 November  $\pm$  21 days;  $n = 192$ ), and spring, 2 January–6 July (mean arrival 19 March  $\pm$  34 days;  $n = 254$ ).

*Common Goldeneye*—Four on 4 February 1988 was the high count.

*Barrow's Goldeneye*—The only record for the island was for 1 January 1977.

*Red-breasted Merganser*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 78 individuals vs. 54 reported for the same period by DeSante and Ainley (1980). A single over-winter peak (mean arrival 2 January  $\pm$  46 days) may best define this species' arrival pattern.

*Peregrine Falcon*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 52 individuals vs. 39 reported for the same period by DeSante and Ainley (1980). The determination of arrivals, especially in winter, is difficult because winter residents are known to commute regularly between the island and the adjacent coast. Most late fall and winter arrivals were immatures that were distinguished from the residents by distinctive plumage features and were recorded on one day only.

*Semipalmated Plover*—A bird present on the island 13–15 September 1985 was submitted to the CBRC as possibly a Common Ringed-Plover (*Charadrius hiaticula*). The CBRC thought it more probably a Semipalmated Plover (Bevier 1990), and it is included as such in the table.

*Killdeer*—The high count for the island is of 28 birds recorded on 31 December 1978.

*Wandering Tattler*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 559 individuals vs. 529 reported for the same period by DeSante and Ainley (1980).

*Upland Sandpiper*—A bird reported on 23 May 1969 has not been reviewed by the CBRC and is not included in Table 1.

*Long-billed Curlew*—DeSante and Ainley (1980) listed five records of this species, including individuals present 8 August to 26 November 1970 and 7–11 September 1972. Because of this species' subsequent rarity on the island, we now believe these to have been the same individuals recorded 18–20 July 1970 and 30 August 1972, respectively, having been missed because of observer rotations.

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*Ruddy Turnstone*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 72 individuals vs. 56 reported for the same period by DeSante and Ainley (1980).

*Black Turnstone*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 1281 individuals vs. 994 reported for the same period by DeSante and Ainley (1980).

*Dunlin*—A bird reported on 29 August 1975 was not described. Because it is unseasonal we excluded the record from Table 1.

*Herring Gull*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 1134 individuals vs. 814 reported for the same period by DeSante and Ainley (1980). One present on 12 July 1977 was an anomalous summer arrival; the next latest spring record was for 31 May. The occurrence of this species is perhaps best represented by a single winter peak with a mean arrival date of 25 January  $\pm$  47 days, and a high count of 200 birds on 28 February 1977.

*Thayer's Gull*—One on 30 May 1978 was late, the next latest spring record being for 29 April. A single winter peak (mean arrival 11 January  $\pm$  52 days; high count 12 birds on 8 February 1980) may better represent the occurrence of this species.

*Glaucous-winged Gull*—A reinterpretation of arrival data for the period from 3 April 1968 through 2 April 1976 results in a total of 3117 individuals vs. 1912 reported for the same period by DeSante and Ainley (1980). One on 13 August 1982 was an anomalous summer arrival; the next earliest fall record was for 12 September. A single winter peak (mean arrival 28 January  $\pm$  40 days) may best represent the occurrence of this species.

*Glaucous Gull*—The single winter arrival mean for this species was 27 January  $\pm$  50 days, and the high count was of two birds on 3 and 4 February 1979.

*Sabine's Gull*—One on 26 March 1980 was early, the next earliest spring record being for 22 April.

*Xantus' Murrelet*—The totals do not include a long-dead specimen found on 19 May 1971.

*Ancient Murrelet*—The occurrence of this species is perhaps best defined by a single winter peak (mean arrival 27 December  $\pm$  39 days; high count 45 birds on 28 January 1987), although this pattern varies from year to year.

*Great Horned Owl*—The lack of records since 1970 may have resulted from the eradication of rabbits from the island in 1973 and 1974. It is likely that this shortened visits by arrivals, decreasing their detectability.

*Burrowing Owl*—An owl heard on the night of 31 August 1968, which was thought possibly to be of this species, has been excluded from the table as it would represent an extremely early fall migrant.

*Ruby-throated Hummingbird*—Not included in the table is an immature female hummingbird captured and identified as this species on 12 September 1986. Although the plumage and most measurements indicated a Ruby-throated Hummingbird, the tail measurement fell outside of the known range for this species. The CBRC is currently evaluating the record.

*Selasphorus Hummingbirds*—Six arrivals, Allen's Hummingbirds on 5 February 1984 and 26 February 1980, Rufous Hummingbirds on 15 February 1977, 23 February 1976, and 25 February 1988, and an unidentified individual of this species pair on 3 February 1976, were considered early spring arrivals rather than winter

## BIRDS OF SOUTHEAST FARALLON ISLAND

visitants. The next earliest spring arrivals were 2 March for Rufous Hummingbird and 9 March for Allen's Hummingbird.

*Lewis' Woodpecker*—Because of the extreme rarity of this species on the island and its habit there of foraging on inaccessible rocky slopes, the bird seen on 2 May 1968, listed as an arrival by DeSante and Ainley (1980), is here considered to be one of two birds present on 29 and 30 April 1968.

*Willow Flycatcher*—The totals for this species include all birds of the Willow Flycatcher/Alder Flycatcher (*Empidonax alnorum*) complex, including captured individuals thought from detailed examination possibly to be Alder Flycatchers. See comments under Alder Flycatcher in the hypothetical species section.

*Say's Phoebe*—An individual on 22 February 1984 was reclassified as an early spring migrant rather than a winter visitant. The next earliest spring migrant arrived on 1 March. A bird present 22–24 July 1988 was an anomalous summer arrival, the next earliest fall individual arriving on 1 September. Excluding the July record results in a mean fall arrival date of 24 September  $\pm$  12 days.

*Tropical Kingbird*—DeSante and Ainley (1980) reported two birds of this species in August 1973, one on the 7th and one from the 18th to 25th, which was collected on the latter date. Because this is an unprecedented time of year for this species to be in California and because two of the similar Western Kingbird were recorded between 8 and 17 August 1973, we here consider the two records of Tropical Kingbird to represent the same individual that was missed or confused with the Western Kingbirds. This anomalous August record excluded, the fall mean arrival date for the species was 21 October  $\pm$  16 days. The next earliest fall individual arrived on 1 October.

*Tree Swallow*—Two individuals each on 24 February 1978 and 24 February 1985 were reclassified as early spring migrants rather than winter visitants. The next earliest spring migrant arrived on 2 March.

*Violet-green Swallow*—A bird observed on 3 February 1976 was reclassified as an early spring migrant rather than a winter visitant; the next earliest spring record was for 1 March. The spring total includes at least two immature dispersants, which arrived on 24 June 1975 and 2 June 1989.

*Northern Rough-winged Swallow*—An individual on 9 March 1979 was exceptionally early, the next earliest spring arrival being on 28 April.

*Rock Wren*—DeSante and Ainley (1980) summarized the breeding status of this species on the island through 1975. From 1976 through 1989 it bred only twice, in 1979 and 1987, producing five and four fledglings, respectively. In both years all juveniles and the adults disappeared within three weeks of the young's fledging; we suspect that the young birds, at least, were caught and eaten by Western Gulls. One pair each also spent the summers of 1983 and 1988 on the island but did not attempt nesting. The arrival totals do not include fledglings although the spring high count of nine birds on 13 June 1971 does include five fledglings.

*House Wren*—The spring total includes at least two dispersing immatures, captured and banded on 20 June 1985 and 12 July 1972.

*Dusky Warbler*—See Pyle et al. (1983) for more information on the first of the two occurrences, on 27 September 1980.

*Golden-crowned Kinglet*—An arrival on 27 June 1978 was very late, the next latest spring record being for 27 May.

*Townsend's Solitaire*—The high count was of three birds on 27 January 1984.

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*American Robin*—Individuals occurring on 21 July 1980, 25 July 1973, and 31 July 1980 were anomalous summer arrivals, the next earliest fall arrival being 19 September. Excluding the July birds, the fall mean arrival date was 15 November  $\pm$  23 days.

*White/Black-backed Wagtail*—Morlan (1981) evaluated a photograph of the one arrival, an immature bird, and concluded that it could not be identified as either a White or a Black-backed wagtail.

*Red-throated Pipit*—A pipit possibly of this species, recorded on 21 October 1979, is excluded from the table as it was not accepted by the CBRC (D. Roberson pers. comm.).

*American Pipit*—An individual recorded on 3 July 1974 represents an anomalous summer arrival; the next latest spring occurrence was on 12 May. Excluding the July arrival, the spring mean arrival date was 25 April  $\pm$  14 days.

*European Starling*—DeSante and Ainley (1980) summarized the breeding status of this species on the island through 1975. Starlings continued to nest each year through 1982 but did not nest again through 1989. Twelve pairs produced approximately 28 fledglings from 1976 through 1982, with a peak of 8–10 fledglings produced by two or three pairs in 1980. Pairs often nested twice during a season, fledging most young in May and July. The arrival totals do not include the fledglings.

*Hutton's Vireo*—We chose to reclassify an arrival on 23 February 1985 as an early spring migrant rather than a winter visitor, although the next earliest spring migrant did not occur until 29 March. If it is considered a winter bird, the spring mean arrival date was 26 April  $\pm$  17 days.

*Philadelphia Vireo*—A record for 21 September 1978 was not accepted by the CBRC and is excluded from Table 1.

*Tennessee Warbler*—Birds arriving on 15 July 1980 and 17 July 1976 were considered late spring migrants rather than fall arrivals. The next latest spring individual arrived on 7 July.

*Orange-crowned Warbler*—Five arrivals between 19 and 26 February, and a sixth on 23 December 1977, we reclassified from winter visitants to early spring and late fall migrants, respectively. The next earliest spring migrant arrived on 9 March and the next latest fall migrant arrived on 13 December. The spring totals include at least six dispersing immatures, recorded between 6 June and 3 July.

*Chestnut-sided Warbler*—An early spring migrant arrived on 1 May 1975. The next earliest individual arrived on 26 May.

*Yellow-rumped Warbler*—A Myrtle Warbler present on the island from 15 July to 10 August 1971 has been reclassified as a late spring migrant; the next latest spring arrival was 13 July. Audubon's Warblers arriving 15 July 1973, 16 July 1973 (2 birds), 28 July 1988, and 13 August 1987 were anomalous summer visitants; excluding these the mean fall arrival date was 20 October  $\pm$  18 days for Yellow-rumped Warbler and 15 October  $\pm$  18 days for Audubon's Warbler. The next earliest fall Audubon's Warbler arrived 6 September.

*Hermit Warbler*—A late fall individual arrived on 20 November 1968; the next latest record was for 24 October.

*Yellow-throated Warbler*—All five birds were of the white-lored race, *Dendroica dominica albilora*.

*Blackpoll Warbler*—Molting adults present 22–25 July 1982, 1–16 August 1969, and 8–12 August 1973 were anomalous summer arrivals; excluding these the



## BIRDS OF SOUTHEAST FARALLON ISLAND

mean fall arrival date was 23 September  $\pm$  12 days. The next earliest fall record was 28 August.

*Ovenbird*—Three arrivals from 15 to 21 July have been reclassified as late spring rather than early fall migrants. The next latest spring bird arrived on 11 July.

*Kentucky Warbler*—Birds recorded on 2 June 1969 and 18 June 1976 have not been submitted to the CBRC and are thus excluded from the table. If these are included the mean spring arrival date was 10 June  $\pm$  21 days.

*Mourning Warbler*—An immature bird on 8 September 1984 showed characteristics of both this species and MacGillivray's Warbler (see Pyle and Henderson 1990). Although the bird was possibly a Mourning Warbler, the CBRC did not accept the record as such (D. Roberson pers. comm.) and it is not included in the table.

*Wilson's Warbler*—An immature banded on 13 July 1986 has been classified as an early fall rather than a late spring migrant. The next earliest fall migrant arrived on 21 July.

*Western Tanager*—An arrival on 25 November 1982 was late, the next latest fall individual occurring on 2 November.

*Rose-breasted*  $\times$  *Black-headed Grosbeak*—All four records were of males; an equal number of females might be expected, and may have gone undetected owing to the difficulty in distinguishing these from females of either parental species.

*Black-headed Grosbeak*—The spring totals include at least one immature dispersant, captured on 4 July 1968. A late migrant arrived on 20 November 1978; the next latest fall arrival date was 26 October.

*Rufous-sided Towhee*—All birds have been of the western *P. e. maculatus* subspecies group, the Spotted Towhee. An individual recorded on 23 February 1985 has been reclassified as an early spring migrant rather than a winter visitor, although the next earliest spring migrant did not arrive until 21 March. If it is included as a winter bird, the mean spring arrival date was 15 April  $\pm$  16 days. An arrival on 1 June 1980 was late, the next latest being on 7 May.

*Savannah Sparrow*—An arrival on 23 December 1976 has been reclassified as a late fall migrant rather than a winter arrival; the next latest fall migrant arrived on 17 December.

*Song Sparrow*—An individual recorded on 28 February 1987 is considered an early spring migrant rather than a winter visitant, although the next earliest spring individual did not occur until 26 March. If this individual is considered a winter arrival the spring mean arrival date was 28 April  $\pm$  24 days. An arrival on 26 June 1981 was late, the next latest being on 18 May.

*Lincoln's Sparrow*—Individuals arriving on 28 February 1984 and 28 February 1985 have been classified as early spring migrants rather than winter visitors; the next earliest spring birds occurred on 1 March.

*Oregon Junco*—The Pink-sided Junco (*Junco hyemalis mearnsi*) occurs uncommonly (up to five records per year) during the fall. Because this race is often difficult to distinguish in the field from other Oregon Juncos we have combined these forms in Table 1. The spring total includes at least eight immature dispersants observed between 9 June and 6 July.

*Chestnut-collared Longspur*—A male in breeding plumage that occurred on 16 July 1984 has been reclassified as an anomalous spring arrival rather than a fall migrant; the next latest spring bird arrived on 26 June.

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*Snow Bunting*—An individual recorded on 24 October 1981 has not been submitted to the CBRC and is thus not incorporated into Table 1. If the record is added to the analysis, mean arrival date was 2 November  $\pm$  10 days.

*Western Meadowlark*—The totals include all meadowlarks recorded with the exception of one present on the island 27-30 October 1985, which was possibly an Eastern Meadowlark (*Sturnella magna*). The record is currently being evaluated by the CBRC; here we consider it an unidentified individual.

*Hooded Oriole*—A late individual arrived on 19 November 1981, the next latest fall record being for 13 October.

*Northern Oriole*—An immature Bullock's Oriole captured on 3 July 1972 has been reclassified from a spring dispersant to an early fall migrant; the next earliest fall record was for 15 July. A late Baltimore Oriole occurred on 30 November 1969; the next latest fall arrival was on 27 October.

*Red Crossbill*—An anomalously early fall individual arrived on 9 August 1977; the next earliest fall record was for 20 October. Excluding the August record, the fall mean arrival date was 2 November  $\pm$  5 days.

*Lesser Goldfinch*—A bird on 28 February 1987 has been classified as an early spring migrant rather than a winter visitant; the next earliest spring migrant arrived on 9 March.

*House Sparrow*—DeSante and Ainley (1980) summarized the breeding status of this species on the island through 1975. No additional breeding was attempted through 1987; prospecting birds arriving from March to June departed the island, apparently owing to the lack of suitable nesting sites. In the fall of 1987 the roofs of the living quarters were replaced, creating cavities that were used by nesting House Sparrows in 1988 and 1989. In each of these years, two males and a female raised two broods of three young each, which fledged in May and August. In both years the adults and young, which were all banded, departed the island during the fall; the adults in 1989 were different individuals from those in 1988. The arrival totals do not include the fledged young although the fall high count of seven birds in August 1989 includes five fledglings.

## HYPOTHETICAL SPECIES AND CAGEBIRDS

*Cook's Petrel* (*Pterodroma cookii*)—A bird observed from the island on 21 September 1970 and reported as this species was not accepted by the CBRC (Winter 1973) and is here considered hypothetical. Unidentified, light-bodied *Pterodroma* petrels were also seen from the island on 13 January 1980 and 20 May 1988.

*Wood Sandpiper* (*Tringa glareola*)—A bird identified as this species was seen well, but in flight only, on 20 August 1985. Because it was seen briefly and would represent a first California record, it was not accepted by the CBRC (Dunn 1988).

*Rufous-necked Stint* (*Calidris ruficollis*)—A juvenile sandpiper well seen and photographed on 15 and 16 August 1987 was likely this species. It is currently being evaluated by the CBRC; we consider the record hypothetical at this time.

*Ringed Turtle-Dove* (*Streptopelia risoria*)—An individual arrived on 15 October 1983, was captured and banded, and remained until the next day. We consider it to have been an escaped cagebird.

*Black-headed Parakeet* or *Nanday Conure* (*Nandayus nenday*)—One arrived on 29 September 1980.

*Alder Flycatcher* (*Empidonax alnorum*)—Four birds of the Willow/Alder flycatcher complex observed on the island were identified as possible Alder Flycatchers; their dates of occurrence were 4 September 1985, 2 September 1987 (specimen to

## BIRDS OF SOUTHEAST FARALLON ISLAND

California Academy of Sciences, accession 4037), and 27 August 1988 (2 birds). All four birds were caught and carefully measured, they differed from other individuals of this complex captured on the island in having greener upperparts and wing formulae suggesting the Alder Flycatcher (Stein 1963). Unfortunately, none of these individuals was heard vocalizing while on the island. The bird of 4 September 1985 was considered unidentifiable by the CBRC (Langham, in press), while documentation of the latter three has not been submitted. All four are included in the table under Willow Flycatcher; see notes on that species.

Thick-billed Kingbird (*Tyrannus crassirostris*)—A bird seen on 14 September 1975, and reported by DeSante and Ainley (1980) as an unidentified kingbird, may have been this species. It was not accepted as such by the CBRC (D. Roberson pers. comm.), however, and is here regarded as hypothetical.

Cutthroat Weaver (*Amadina fasciata*)—One arriving on 25 September 1988 was captured and photographed.

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### LITERATURE CITED

- Ainley, D. G., and Boekelheide, R. J., eds. 1990. Seabirds of the Farallon Islands: Ecology, Dynamics, and Structure of an Upwelling-System Community. Stanford Univ. Press, Stanford, CA.
- Bevier, L. R. 1990. Eleventh report of the California Bird Records Committee. *W. Birds* 21:145-176.
- Carter, H. R., Jaques, D. L., McChesney, G. J., Strong, C. S., Parker, M. W., and Takekawa, J. E. 1990. Breeding Populations of Seabirds on the Northern and Central California Coasts in 1989 and 1990. U.S. Fish and Wildlife Service, Northern Prairie Wildlife Research Center, Dixon, CA.
- Coulter, M. 1972. A flora of the Farallon Islands, California. *Madroño* 21:131-137.
- DeSante, D. F. 1983. Annual variability in the abundance of migrant landbirds on Southeast Farallon Island, California. *Auk* 100:826-852.
- DeSante, D. F., and Ainley, D. G. 1980. The avifauna of the South Farallon Islands, California. *Studies Avian Biol.* 4.
- Dunn, J. L. 1988. Tenth report of the California Bird Records Committee. *W. Birds* 19:129-163.
- Langham, J. M. In press. Twelfth report of the California Bird Records Committee. *W. Birds*.
- Morlan, J. 1981. Status and identification of forms of the White Wagtail in western North America. *Continental Birdlife* 2:37-50.
- Pyle, P., DeSante, D. F., Boekelheide, R. J., and Henderson, R. P. 1983. A Dusky Warbler (*Phylloscopus fuscatus*) on Southeast Farallon Island, California. *Auk* 100:995-996.
- Pyle, P., and Henderson, P. 1990. On the separation of female and immature *Oporornis* warblers in the fall. *Birding* 22:222-229.
- Stein, R. C. 1963. Isolating mechanisms between populations of Traill's Flycatchers. *Proc. Am. Philos. Soc.* 107:21-50.
- Winter, J. 1973. The California Field Ornithologists Records Committee report 1970-1972. *W. Birds* 4:101-106.

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