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

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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

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 Cypresses (*Cupressus macrocarpa*) adjacent to the southeastern living quarters (see map in Coulter 1972), which had been one of the primary focal points of migratory lanbirds (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^2 each from 1980 through 1989. Two of these patches surrounded the Monterey Cypresses 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 (*Cepphus*

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.

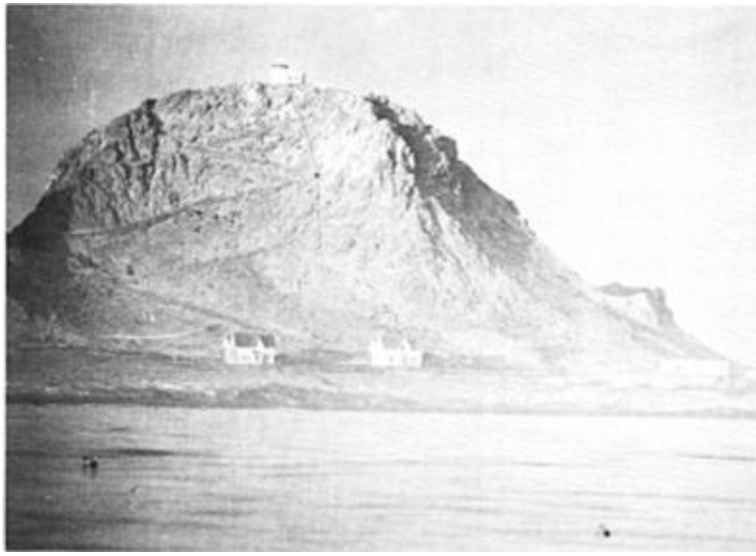


Figure 1. Southeast Farallon Island.

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 algorithim 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 algorithim (DeSante and Ainley 1980).

Arrivals of waterbirds were carefully estimated with variations of the above algorithim, 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

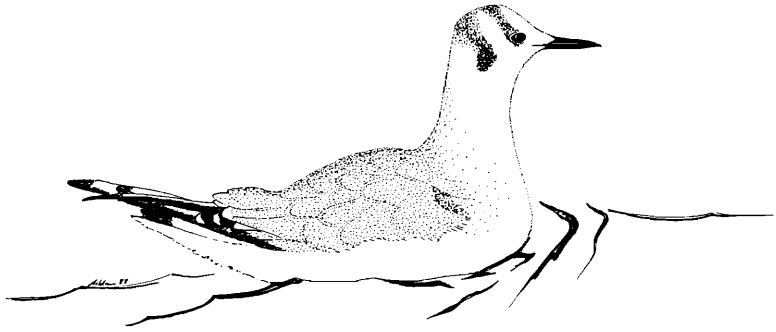
years). Those wishing to compare the results of the two analyses, therefore, should sum fall and winter arrival totals.

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

Northern Fulmar	3408	254[d]	1 Mar–	13 Mar	40	1728[d]	28 Jul–	24 Nov	310	1426[d]	0
Fulmarus glacialis			28 Jun	±20	17 Mar 82		19 Dec	±23	1 Dec 77		
Pink-footed Shearwater	7301	867	24 Mar–	29 May	40	6434	19 Jul–	14 Sep	800	0	0
Puffinus creatopus			14 Jul	±24	30 May 89[c]		18 Dec	±21	15 Sep 77		
Flesh-footed Shearwater	3	0	—	—	0	3	19 Sep–	9 Oct	2	0	0
P. carneipes							19 Oct	±17	19 Oct 85		
Buller's Shearwater	25,456	0	—	—	0	25,456	5 Aug–	6 Oct	1570	0	0
P. bulleri							1 Dec	±15	3 Oct 86		
Sooty Shearwater	4,125,802	2,172,363[d]	1 Mar–	30 May	400,000	1,953,157[d]	15 Jul–	28 Aug	220,000	282[d]	0
P. griseus			14 Jul	±21	18 Jun 74[c]		19 Dec	±17	28 Aug 84		
Short-tailed Shearwater	101	0	—	—	0	101	13 Oct–	17 Nov	20	0	0
P. tenuirostris							6 Dec	±15	26 Nov 88		
Black-vented Shearwater	241	0	—	—	0	241	22 Sep–	23 Oct	24	0	0
P. opisthomelas							16 Nov	±10	30 Oct 84		
Fork-tailed Storm-Petrel	1006[e]	1001	18 Mar–	18 Mar	1000	5	27 Jul–	25 Aug	3	0	0
Oceanodroma furcata			5 May	± 2	18 Mar 77		28 Sep	±22	24 Aug 83		
Black Storm-Petrel[e]	40	0	—	—	0	40	22 Aug–	25 Aug	27	0	0
O. melania							7 Oct	± 7	24 Aug 83		
Red-tailed Tropicbird[f]	1	1	3 Jul	3 Jul	1	0	—	—	0	0	0
Phaethon rubricauda				—	3 Jul 79						
Brown Booby[f]	2	1	1 Jul	1 Jul	1	1	24 Sep	24 Sep	1	0	0
Sula leucogaster				—	1 Jul 84			—	28 Sep 83[c]		
Red-footed Booby[f]	2	0	—	—	0	2	26 Aug–	19 Sep	1	0	0
S. sula							12 Oct	±33	12 Oct 75[c]		
Brown Pelican	268,069[a]	17,340[d]	1 Mar–	13 Jun	1430	246,992[d]	15 Jul–	25 Sep	5670	3737[d]	0
Pelecanus occidentalis			14 Jul	±25	8 Jun 80		19 Dec	±32	9 Sep 84		
Magnificent Frigatebird[e]	4	1	2 Jul	2 Jul	1	3	16 Jul–	6 Sep	1	0	0
Fregata magnificens				—	2 Jul 87		16 Dec	±87	16 Dec 88[c]		
American Bittern	4	0	—	—	0	4	5 Oct–	16 Oct	1	0	0
Botaurus lentiginosus							26 Oct	± 9	20 Oct 87[c]		

(Continued)

Table 1 *(Cont.)*

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Great Blue Heron *Ardea herodias*	130	11[d]	8 Mar–6 Jul	8 Jun ±45	2 6 Jul 88[c]	117[d]	16 Jul–6 Dec	5 Sep ±25	3 8 Sep 89[c]	2[d]	3[e]
Great Egret *Casmerodius albus*	34	2	13 Jun–14 Jun	14 Jun ± 1	1 13 Jun 75[c]	31	24 Jul–19 Nov	20 Sep ±34	3 10 Aug 87	1	0
Snowy Egret *Egretta thula*	36	7	27 Apr–13 Jul	16 Jun ±31	1 11 May 89[c]	29	18 Jul–19 Dec	18 Sep ±40	7 8 Oct 88	0	0
Cattle Egret *Bubulcus ibis*	78	0	—	—	0	73	16 Sep–19 Dec	22 Nov ±17	21 23 Nov 84	5	5
Green-backed Heron *Butorides striatus*	13	5	29 Apr–13 Jul	16 Jun ±30	1 14 Jun 87[c]	8	1 Aug–14 Oct	10 Sep ±23	1 14 Oct 88[c]	0	0
Black-crowned Night-Heron *Nycticorax nycticorax*	7	0	—	—	0	6	18 Aug–12 Nov	19 Sep ±35	1 12 Sep 88[c]	1	0
Tundra Swan *Cygnus columbianus*	10	0	—	—	0	10	11 Nov	11 Nov ± 0	10 11 Nov 78	0	0
Greater White-fronted Goose *Anser albifrons*	7	3	10 Mar–3 May	28 Mar ±31	2 10 Mar 80	4	25 Sep–12 Oct	3 Oct ± 8	1 25 Sep 86[c]	0	0
Snow Goose *Chen caerulescens*	2	0	—	—	0	2	15 Oct–1 Dec	8 Nov ±33	1 16 Oct 89[c]	0	1
Ross' Goose *C. rossii*	1	0	—	—	0	1	11 Dec	11 Dec —	1 11 Dec 86	0	0
Brant *Branta bernicla*	10,473	1333	18 Mar–22 May	11 Apr ±23	440 22 Mar 79	9139	25 Oct–18 Dec	6 Nov ± 5	7200 4 Nov 83	1	0
Canada Goose *B. canadensis*	555	2	15 Mar–30 Apr	7 Apr ±33	1 30 Apr 80[c]	547	7 Oct–18 Dec	7 Nov ±10	401 4 Nov 78	6	2

Green-winged Teal	180	0	—	—	0	179	14 Aug–	6 Oct	39	1	0
Anas crecca							17 Dec	±24	13 Oct 87		
Mallard	55	6	31 Mar–	10 Apr	2	49	13 Aug–	24 Oct	9	0	0
Anas platyrhynchos			26 Apr	±10	10 Apr 88[c]		22 Nov	±28	15 Nov 78		
Northern Pintail	2575	5	12 Mar–	15 Mar	3	2567	27 Jul–	21 Sep	175	3	0
A. acuta			20 Mar	± 3	15 Mar 77		8 Dec	±25	19 Oct 78		
Blue-winged Teal	4	0	—	—	0	4	22 Sep–	28 Sep	2	0	0
A. discors							13 Oct	±10	22 Sep 78		
Cinnamon Teal	74	10[d]	1 Mar–	2 Mar	7	55	7 Sep–	26 Sep	11	9[d]	0
A. cyanoptera			2 Mar	± 0	2 Mar 79		23 Oct	±11	24 Sep 83		
Northern Shoveler	30	1	27 Jun	27 Jun	1	29	14 Aug–	6 Oct	10	0	0
A. clypeata				—	27 Jun 89		2 Nov	±26	2 Nov 86		
Gadwall	4	0	—	—	0	4	14 Aug–	20 Sep	1	0	0
A. strepera							18 Dec	±60	14 Aug 88[c]		
American Wigeon	40	0	—	—	0	40	11 Sep–	8 Oct	9	0	0
A. americana							31 Oct	±11	14 Oct 87		
Canvasback	2	0	—	—	0	2	24 Oct–	11 Nov	1	0	0
Aythya valisineria							28 Nov	±25	24 Oct 88[c]		
Ring-necked Duck	1	0	—	—	0	1	7 Oct	7 Oct	1	0	0
A. collaris								—	8 Oct 87[c]		
Greater Scaup	59	0	—	—	0	58	4 Oct–	24 Oct	18	1	0
A. marila							11 Dec	±11	27 Oct 88		
Lesser Scaup	13	0	—	—	0	13	29 Sep–	25 Oct	6	0	0
A. affinis							8 Nov	±14	30 Oct 89		
Harlequin Duck	23	3	25 Mar–	22 Apr	2	11	23 Jul–	6 Oct	2	9	5
Histrionicus histrionicus			20 May	±28	24 Apr 81[c]		19 Dec	±52	2 Dec 78		
Oldsquaw	26	5[d]	2 Mar–	8 Mar	2	12[d]	16 Oct–	19 Nov	3	9[d]	0
Clangula hyemalis			10 Mar	± 3	8 Mar 81		11 Dec	±18	20 Nov 80[c]		
Black Scoter	22	0	—	—	0	12	9 Oct–	3 Nov	5	10	0
Melanitta nigra							9 Dec	±27	9 Oct 85		

(Continued)

Table 1 *(Cont.)*

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Surf Scoter	4314[a]	1761[d]	2 Mar–	5 Apr	200	1885[d]	16 Jul–	13 Nov	233	668[d]	427
M. perspicillata			18 Jun	±22	21 Apr 82[c]		19 Dec[b]	±19	13 Nov 89		
White-winged Scoter	446	184[d]	1 Mar–	6 Apr	33	182[d]	14 Sep–	6 Nov	35	80[d]	23
M. fusca			6 Jul	±20	9 Apr 85		19 Dec	±19	30 Oct 71		
Common Goldeneye[e]	19	5	12 Apr–	7 May	2	2	7 Dec–	12 Dec	2	12	2
Bucephala clangula			6 Jun	±22	15 May 70		17 Dec	± 7	17 Dec 78		
Barrow's Goldeneye[e]	1	0	—	—	0	0	—	—	0	1	0
B. islandica											
Bufflehead	8	6	2 Apr–	6 Apr	5	2	13 Nov–	30 Nov	1	0	0
B. albeola			7 Apr	± 2	7 Apr 82		17 Dec	±24	13 Nov 89[c]		
Red-breasted Merganser	300[a]	44[d]	4 Mar–	31 Mar	6	144[d]	16 Oct–	26 Nov	10	112[d]	90
Mergus serrator			17 May	±20	18 Mar 86[c]		19 Dec	±13	23 Nov 73		
Ruddy Duck	27	0	—	—	0	25	27 Sep–	24 Oct	15	2	0
Oxyura jamaicensis							7 Dec	±18	25 Oct 70		
Turkey Vulture	2	2	22 May	22 May	2	0	—	—	0	0	0
Cathartes aura				± 0	22 May 79						
Osprey	31	5	29 Mar–	11 May	1	26	23 Jul–	21 Sep	2	0	0
Pandion haliaetus			31 May	±25	22 May 88[c]		20 Nov	±23	24 Sep 89		
Black-shouldered Kite	10	0	—	—	0	10	11 Sep–	6 Oct	2	0	0
Elanus caeruleus							5 Nov	±18	11 Sep 84[c]		
Bald Eagle	6	0	—	—	0	4	1 Oct–	4 Nov	1	2	0
Haliaeetus leucocephalus							22 Nov	±24	19 Nov 85[c]		
Northern Harrier	102	1	6 Apr	6 Apr	1	101	27 Jul–	15 Oct	4	0	0
Circus cyaneus				—	6 Apr 82		13 Dec	±29	8 Oct 88		
Sharp-shinned Hawk	208	0	—	—	0	208	11 Sep–	4 Oct	13	0	0
Accipiter striatus							24 Nov	±16	18 Sep 88		

Cooper's Hawk	26	0	—	—	0	26	12 Sep–	1 Oct	3	0	0
A. cooperii							19 Oct	± 7	29 Sep 74		
Red-tailed Hawk	10	3	6 Apr–	24 Apr	1	5	26 Oct–	10 Nov	1	2	3
Buteo jamaicensis			22 May	±24	6 Apr 83[c]		12 Dec	±19	12 Dec 82[c]		
Rough-legged Hawk	47	0	—	—	0	45	28 Sep–	10 Nov	12	2	4
B. lagopus							11 Dec	±17	27 Oct 73		
Golden Eagle	1	0	—	—	0	1	28 Oct	28 Oct	1	0	0
Aquila chrysaetos								—	28 Oct 71		
American Kestrel	321	3	14 Jun–	20 Jun	2	311	24 Jul–	6 Oct	5	7	26
Falco sparverius			26 Jun	± 6	14 Mar 89[c]		15 Dec	±27	30 Nov 78		
Merlin	95	0	—	—	0	95	7 Sep–	8 Oct	3	0	0
F. columbarius							15 Nov	±15	25 Oct 88[c]		
Peregrine Falcon	294[a,e]	44	1 Mar–	19 Apr	4	228	26 Jul–	15 Oct	5	22	70
F. peregrinus			29 Jun	±20	22 Mar 89[c]		16 Dec	±24	30 Oct 88[c]		
Prairie Falcon	1	0	—	—	0	1	23 Sep	23 Sep	1	0	0
F. mexicanus									23 Sep 80		
Virginia Rail	6	0	—	—	0	6	11 Aug–	31 Aug	2	0	0
R. limicola							21 Sep	±14	26 Aug 87		
Sora	16	2	26 May–	13 Jun	1	14	21 Jul–	10 Sep	2	0	0
Porzana carolina			30 Jun	±25	30 Jun 81[c]		15 Oct	±25	15 Oct 82		
Common Moorhen	2	2	13 May–	25 May	1	0	—	—	0	0	0
Gallinula chloropus			6 Jun	±17	22 May 89[c]						
American Coot	15	2	11 May–	12 May	1	13	12 Sep–	4 Oct	2	0	0
Fulica americana			12 May	± 1	12 May 81[c]		27 Oct	±12	7 Oct 80		
Black-bellied Plover	896	54	1 Mar–	29 Mar	11	815	17 Jul–	28 Sep	42	27	253
Pluvialis squatarola			11 May	±17	14 Mar 80[c]		15 Dec	±34	26 Oct 81		
Lesser Golden-Plover	130	3	28 Apr–	8 May	1	126	22 Aug–	10 Oct	14	1	1
P. dominica			28 May	±17	28 May 80[c]		9 Dec	±24	17 Oct 89		
American Golden-Plover	19	0	—	—	0	19	25 Aug–	13 Sep	3	0	0
P. d. dominica							19 Oct	±16	18 Sep 89[c]		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Pacific Golden-Plover *P. d. fulva*	52	0	—	—	0	52	14 Sep–9 Dec	24 Oct ±18	14 17 Oct 89	0	1
Snowy Plover *Charadrius alexandrinus*	3	0	—	—	0	3	27 Aug–5 Oct	15 Sep ±20	1 15 Sep 89[c]	0	0
Semipalmated Plover *C. semipalmatus*	180[e]	0	—	—	0	180	27 Jul–6 Oct	30 Aug ±13	29 27 Aug 88	0	0
Killdeer[e] *C. vociferus*	443	18	16 Mar–16 Jun	14 May ±26	2 4 May 80[c]	365	12 Jul–19 Dec	17 Oct ±30	27 26 Oct 88	60	21
Eurasian Dotterel[f] *C. morinellus*	2	0	—	—	0	2	12 Sep–15 Sep	14 Sep ± 2	1 15 Sep 89[c]	0	0
American Avocet *Recurvirostra americana*	3	0	—	—	0	2	28 Jul–31 Aug	14 Aug ±24	1 11 Aug 73[c]	1	0
Greater Yellowlegs *Tringa melanoleuca*	46	1	29 Apr	29 Apr —	1 29 Apr 68	45	27 Jul–2 Dec	23 Sep ±24	2 11 Oct 89[c]	0	0
Lesser Yellowlegs *T. flavipes*	47	1	3 May	3 May —	1 3 May 71	46	10 Jul–27 Sep	19 Aug ±18	6 16 Aug 87	0	0
Solitary Sandpiper *T. solitaria*	1	0	—	—	0	1	7 Sep	7 Sep —	1 7 Sep 89	0	0
Willet *Catoptrophorus semipalmatus*	753	30	5 Apr–20 Jun	11 May ±24	22 11 Mar 82	717	21 Jun–15 Dec	6 Sep ±38	26 16 Dec 87	6 [c]	379
Wandering Tattler *Heteroscelus incanus*	1276[a]	262	7 Mar–16 Jun	4 May ±18	21 19 May 76[c]	999	23 Jun–10 Dec	5 Sep ±35	56 17 Aug 89	15	292
Spotted Sandpiper *Actitis macularia*	114	10	20 Apr–24 May	11 May ±11	1 22 May 83[c]	104	23 Jul–15 Nov	8 Sep ±21	4 4 Sep 89[c]	0	0
Upland Sandpiper[f] *Bartramia longicauda*	2[g]	0[g]	—	—	0	2	22 Aug–27 Aug	25 Aug ± 4	1 27 Aug 89[c]	0	0

Whimbrel	850	162	7 Mar–	10 May	49	682	25 Jun–	2 Sep	131	6	161
Numenius phaeopus			19 Jun	±17	10 May 79		13 Dec	±31	27 Aug 83		
Long-billed Curlew	4[g]	0	—	—	0	4[g]	28 Jun–	27 Jul	1	0	0
N. americanus							30 Aug	±26	28 Jun 77[c]		
Marbled Godwit	394	5	16 Mar–	30 Apr	2	389	28 Jun–	2 Sep	27	0	0
Limosa fedoa			31 May	±29	27 Apr 71		27 Nov	±22	14 Aug 75		
Ruddy Turnstone	395[a]	47	17 Mar–	4 May	12	333	2 Jul–	14 Sep	25	15	84
Arenaria interpres			5 Jun	±19	6 Mar 87		19 Dec	±36	16 Dec 87		
Black Turnstone	2848[a]	121	1 Mar–	19 Apr	71	2474	26 Jun–	20 Sep	106	253	1282
A. melanocephala			10 Jun	±30	5 Mar 85		15 Dec	±35	25 Sep 75		
Surfbird	197	15	3 Mar–	18 Apr	5	170	6 Aug–	6 Sep	19	12	18
Aphriza virgata			29 Apr	±10	19 Apr 83		19 Dec	±33	8 Aug 68		
Red Knot	5	0	—	—	0	5	9 Sep–	19 Sep	1	0	0
Calidris canutus							3 Oct	±10	18 Sep 88[c]		
Sanderling	162	0	—	—	0	160	6 Jul–	12 Sep	14	2	0
C. alba							14 Dec	±33	17 Sep 75		
Semipalmated Sandpiper	9	0	—	—	0	9	3 Aug–	17 Aug	2	0	0
C. pusilla							5 Sep	±11	20 Aug 77		
Western Sandpiper	668	0	—	—	0	662	5 Jul–	31 Aug	96	6	0
C. mauri							24 Oct	±18	17 Aug 89		
Least Sandpiper	348	3	6 Mar–	30 Mar	1	344	10 Jul–	31 Aug	18	1	6
C. minutilla			10 May	±35	6 Mar 89[c]		16 Nov	±20	11 Aug 88		
Baird's Sandpiper	244	1	11 May	11 May	1	243	10 Jul–	26 Aug	16	0	0
C. bairdii				—	11 May 69		11 Oct	±14	16 Aug 87		
Pectoral Sandpiper	219	1	4 May	4 May	1	218	11 Aug–	20 Sep	16	0	0
C. melanotos				—	4 May 68		23 Oct	±14	27 Sep 76[c]		
Sharp-tailed Sandpiper	4	0	—	—	0	4	2 Sep–	25 Sep	1	0	0
C. acuminata							7 Nov	±30	3 Sep 89[c]		
Rock Sandpiper	18	0	—	—	2	16	19 Oct–	10 Nov	2	2	12
C. ptilocnemis					3 Apr 80[c]		5 Dec	±14	18 Dec 79[c]		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Dunlin	152[g]	1	20 May	20 May	1	150[g]	14 Sep–	14 Oct	70	1	2
C. alpina				—	20 May 71		9 Dec	± 9	14 Oct 87		
Buff-breasted Sandpiper[f]	5	0	—	—	0	5	29 Aug–	2 Sep	2	0	0
Tryngites subruficollis							8 Sep	± 5	29 Aug 78		
Short-billed Dowitcher	756	1	14 Apr	14 Apr	1	755	2 Jul–	26 Aug	150	0	0
Limnodromus griseus				—	14 Apr 89		19 Oct	±18	4 Sep 85		
Long-billed Dowitcher	270	0	—	—	0	269	18 Jul–	29 Sep	41	1	1
L. scolopaceus							10 Dec	±25	22 Sep 86		
Common Snipe	106	6	3 Apr–	6 May	1	99	18 Jul–	10 Oct	4	1	0
Gallinago gallinago			28 May	±19	9 May 89[c]		12 Dec	±28	27 Oct 88		
Wilson's Phalarope	3	0	—	—	0	3	20 Jul–	1 Aug	1	0	0
Phalaropus tricolor							17 Aug	±14	17 Aug 88[c]		
Red-necked Phalarope	107,728	24,977	12 Apr–	5 May	4100	82,751	23 Jul–	3 Sep	19,500	0	0
P. lobatus			29 May	±10	30 Apr 82		28 Nov	±22	22 Aug 68		
Red Phalarope	147,282	8714	15 Apr–	13 May	2000	138,251	14 Jul–	22 Sep	20,000	317	0
P. fulicaria			3 Jun	± 9	3 May 82		19 Dec	±37	22 Aug 71		
Pomarine Jaeger	206	2	23 Apr–	24 Apr	1	202	10 Aug–	5 Oct	11	2	0
Stercorarius pomarinus			24 Apr	± 1	24 Apr 89[c]		18 Nov	±18	15 Sep 87		
Parasitic Jaeger	70	0	—	—	0	69	20 Aug–	9 Oct	5	1	0
S. parasiticus							21 Nov	±22	14 Nov 80		
Long-tailed Jaeger	1	1	29 Apr	29 Apr	1	0	—	—	0	0	0
S. longicaudus					29 Apr 71						
South Polar Skua	11	0	—	—	0	11	20 Sep–	7 Oct	1	0	0
Catharacta maccormicki							29 Oct	±14	20 Oct 89[c]		
Laughing Gull	2	1	2 Jun	2 Jun	1	1	3 Aug	3 Aug	1	0	0
Larus atricilla				—	3 Jun 88[c]			—	3 Aug 77		

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

(Continued)

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

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

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

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Black-chinned Hummingbird *A. alexandri*	3	0	—	—	0	3	28 Aug–15 Sep	5 Sep ± 9	1 28 Aug 87[c]	0	0
Anna's Hummingbird *Calypte anna*	255	36	17 Mar–14 Jun	1 May ±27	2 24 Mar 74[c]	214	21 Jul–10 Dec	9 Oct ±23	7 9 Oct 89	5	0
Costa's Hummingbird *C. costae*	16	13	17 Apr–13 Jul	15 May ±25	2 28 May 85	3	14 Aug–11 Oct	21 Sep ±33	1 9 Oct 87[c]	0	0
Calliope Hummingbird *Stellula calliope*	9	8	5 Apr–8 May	23 Apr ±14	1 13 Apr 88[c]	1	5 Oct	5 Oct —	1 9 Oct 86[c]	0	0
Rufous Hummingbird *Selasphorus rufus*	398	241[b]	15 Feb–4 Jun	13 Apr ±14	50 13 Apr 78[c]	156	19 Jul–10 Oct	24 Aug ±16	10 26 Aug 87	0[b]	0
Allen's Hummingbird *S. sasin*	68	57[b]	5 Feb–7 Jul	3 May ±38	3 10 Mar 79	11	29 Jul–12 Sep	9 Aug ±13	3 3 Aug 78	0[b]	0
Total Rufous/Allen's Hummingbird *S. rufus/sasin*	549	325[b]	3 Feb–13 Jul	18 Apr ±24	51 13 Apr 78[c]	224	19 Jul–10 Oct	22 Aug ±15	10 26 Aug 87	0[b]	0
Belted Kingfisher *Ceryle alcyon*	122	21	2 Mar–11 Jul	4 May ±36	2 14 Apr 77	97	17 Jul–1 Dec	9 Sep ±30	4 15 Sep 74	4	21
Lewis' Woodpecker *Melanerpes lewis*	7[g]	4[g]	29 Apr–8 May	3 May ± 5	2 8 May 77[c]	3	20 Sep–27 Sep	24 Sep ± 4	1 20 Sep 83[c]	0	0
Acorn Woodpecker *M. formicivorus*	9	0	—	—	0	8	11 Sep–25 Nov	6 Oct ±28	2 12 Sep 89[c]	1	0
Red-naped Sapsucker *Sphyrapicus nuchalis*	4	1	18 Jun	18 Jun —	1 20 Jun 74[c]	3	28 Sep–13 Oct	4 Oct ± 8	1 28 Sep 83[c]	0	0
Red-breasted Sapsucker *S. ruber*	21	2	25 Mar–19 Apr	7 Apr ±18	1 19 Apr 81[c]	19	27 Sep–2 Nov	8 Oct ± 9	4 2 Oct 68[c]	0	0
Northern Flicker *Colaptes auratus*	489	77	1 Mar–6 Jun	6 Apr ±17	8 4 Apr 73	401	17 Sep–18 Dec	18 Oct ±18	18 3 Oct 86	11	31

Yellow-shafted Flicker	60	57	23 Mar–	13 Apr	3	52	28 Sep–	16 Oct	5	1	1
C. auratus luteus			22 May	±20	5 Apr 84		27 Nov	±15	8 Oct 72		
Yellow- × Red-shafted Flicker	45	5	26 Mar–	7 Apr	2	40	26 Sep–	18 Oct	3	0	2
			23 Apr	±12	26 Mar 82		5 Dec	±15	8 Oct 86[c]		
Red-shafted Flicker	319	7	8 Mar–	7 Apr	7	254	17 Sep–	18 Oct	14	8	28
C. a. cafer subspecies group			6 Jun	±17	4 Apr 73		18 Dec	±19	5 Oct 72		
Olive-sided Flycatcher	169	100	22 Apr–	22 May	10	69	16 Jul–	6 Sep	8	0	0
Contopus borealis			27 Jun	±13	27 May 70[c]		27 Oct	±17	6 Sep 85		
Western Wood-Pewee	1463	1044	20 Apr–	29 May	80	419	15 Jul–	10 Sep	60	0	0
C. sordidulus			12 Jul	±12	28 May 83		19 Nov	±14	6 Sep 85		
Eastern Wood-Pewee[f]	1	1	15 Jun	15 Jun	1	0	—	—	0	0	0
C. virens					15 Jun 75						
Yellow-bellied Flycatcher[f]	4	0	—	—	0	4	3 Sep–	14 Sep	1	0	0
Empidonax flaviventris							27 Sep	±10	9 Sep 89[c]		
Willow Flycatcher	308[e]	115	3 May–	3 Jun	20	193	20 Jul–	10 Sep	6	0	0
E. traillii			12 Jul	±13	5 Jun 69		20 Oct	±14	25 Aug 87[c]		
Least Flycatcher	84	7	17 May–	5 Jun	1	77	17 Aug–	24 Sep	4	0	0
E. minimus			8 Jul	±16	17 May 85[c]		22 Nov	±18	29 Sep 76		
Hammond's Flycatcher	142	111	30 Mar–	8 May	12	31	1 Aug–	26 Sep	3	0	0
E. hammondii			17 Jun	±15	9 May 77		28 Oct	±18	4 Oct 86[c]		
Dusky Flycatcher	94	76	14 Apr–	8 May	8	18	1 Aug–	15 Sep	1	0	0
E. oberholseri			10 Jun	±14	9 May 69		21 Oct	±17	27 Sep 89[c]		
Gray Flycatcher	93	79	18 Apr–	4 May	7	14	24 Aug–	13 Sep	3	0	0
E. wrightii			26 May	±10	21 Apr 77		14 Oct	±15	6 Sep 85		
Western Flycatcher	861	223	30 Mar–	26 May	50	638	18 Jul–	11 Sep	50	0	0
E. difficilis/occidentalis			14 Jul	±20	5 Jun 69[c]		14 Nov	±14	18 Sep 71		
Black Phoebe	247	9	4 Mar–	4 Apr	7	221	21 Jul–	10 Oct	10	17	40
Sayornis nigricans			8 May	±24	2 Mar 87[c]		18 Dec	±23	4 Oct 68		
Eastern Phoebe	16	3	18 May–	27 May	1	13	24 Sep–	5 Nov	2	0	0
S. phoebe			6 Jun	±10	27 May 82[c]		21 Nov	±17	6 Nov 72		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Say's Phoebe	184	8[b]	22 Feb–14 May	6 Apr ±32	1 4 Mar 84[c]	176	22 Jul–3 Nov[b]	24 Sep[b] ±13	10 29 Sep 68	0[b]	3
S. saya											
Ash-throated Flycatcher	189	67	16 Apr–10 Jul	1 Jun ±17	6 12 Jun 75	121	16 Jul–20 Nov	29 Aug ±23	7 16 Aug 87	1	0
Myiarchus cinerascens											
Great Crested Flycatcher[f]	9	0	—	—	0	9	5 Sep–13 Oct	29 Sep ±12	1 27 Sep 89[c]	0	0
M. crinitus											
Brown-crested Flycatcher	1	0	—	—	0	1	17 Sep	17 Sep —	1 18 Sep 83[c]	0	0
M. tyrannulus											
Tropical Kingbird	8[g]	0	—	—	0	8[g]	7 Aug–18 Nov[b]	11 Oct[b] ±32	1 19 Oct 87[c]	0	0
Tyrannus melancholicus											
Cassin's Kingbird	1	0	—	—	0	1	25 Aug	25 Aug —	1 25 Aug 83	0	0
T. vociferans											
Western Kingbird	150	57	29 Mar–7 Jul	5 May ±27	11 29 Mar 86	93	18 Jul–20 Oct	6 Sep ±22	5 19 Oct 69	0	0
T. verticalis											
Eastern Kingbird	30	8	12 May–26 Jun	6 Jun ±16	2 19 Jun 82[c]	22	3 Aug–28 Sep	4 Sep ±13	2 3 Sep 89	0	0
T. tyrannus											
Scissor-tailed Flycatcher[f]	2	1	18 May	18 May —	1 19 May 73[c]	1	30 Sep	30 Sep —	1 30 Sep 85	0	0
T. forficatus											
Horned Lark	98	9	1 Mar–21 Jun	26 Apr ±45	2 6 Mar 78[c]	89	13 Sep–19 Dec	22 Oct ±15	16 16 Oct 81	0	0
Eremophila alpestris											
Purple Martin	20	6	28 May–17 Jun	10 Jun ± 8	1 10 Jun 77[c]	14	11 Aug–4 Oct	3 Sep ±13	2 26 Aug 89[c]	0	0
Progne subis											
Tree Swallow	113	78[b]	24 Feb–10 Jun	5 Apr ±24	11 27 Mar 82[c]	35	20 Jul–8 Dec	25 Sep ±33	2 30 Oct 88[c]	0[b]	0
Tachycineta bicolor											
Violet-green Swallow	676	43[b,e]	3 Feb–11 Jul	12 Apr ±32	9 29 Mar 86	633	20 Jul–18 Dec	7 Oct ±15	100 4 Oct 81	0[b]	0
T. thalassina											

N. Rough-winged Swallow	228	26	9 Mar–	23 May	4	202	2 Aug–	31 Aug	15	0	0
Stelgidopteryx serripennis			19 Jun[b]	±23	12 Jun 74		4 Oct	±14	8 Sep 72		
Bank Swallow	26	14	3 May–	20 May	2	12	17 Aug–	11 Sep	5	0	0
Riparia riparia			15 Jun	±12	17 May 84[c]		27 Oct	±25	17 Aug 85		
Cliff Swallow	109	21	14 Apr–	19 May	3	88	17 Jul–	16 Sep	6	0	0
Hirundo pyrrhonota			22 Jun	±20	9 May 76[c]		8 Nov	±22	25 Oct 69		
Barn Swallow	535	184	5 Apr–	18 May	5	351	21 Jul–	20 Sep	21	0	0
H. rustica			8 Jul	±20	8 May 74		11 Nov	±19	12 Aug 88		
Clark's Nutcracker	4	0	—	—	0	4	28 Sep–	10 Oct	1	0	0
Nucifraga columbiana							27 Oct	±12	12 Oct 86[c]		
Common Raven	1	1	18 Apr	18 Apr	1	0	—	—	0	0	0
Corvus corax				—	18 Apr 72						
Red-breasted Nuthatch	875	25	12 Apr–	23 May	3	850	24 Jul–	26 Sep	75	0	0
Sitta canadensis			8 Jul	±21	7 May 78		6 Dec	±20	15 Sep 69		
White-breasted Nuthatch	2	1	15 May	15 May	1	1	10 Oct	10 Oct	1	0	0
S. carolinensis				—	15 May 79			—	11 Oct 69[c]		
Pygmy Nuthatch	1	0	—	—	0	1	6 Aug	6 Aug	1	0	0
S. pygmaea								—	6 Aug 69		
Brown Creeper	120	2	14 Apr–	14 May	1	118	27 Sep–	26 Oct	8	0	0
Certhia americana			13 Jun	±42	18 Apr 78[c]		19 Nov	± 9	19 Oct 86[c]		
Rock Wren[e]	191	20	4 Mar–	26 Apr	9[e]	170	19 Aug–	1 Oct	12	1	55
Salpinctes obsoletus			26 Jun	±31	13 Jun 71		22 Nov	±18	11 Nov 72[c]		
Bewick's Wren	3	0	—	—	1	3	2 Oct–	16 Oct	1	0	1
Thryomanes bewickii					31 Mar 82[c]		2 Nov	±16	19 Dec 81[c]		
House Wren	138	34[e]	11 Mar–	4 May	2	104	18 Jul–	14 Sep	4	0	1
Troglodytes aedon			12 Jul	±34	23 Apr 87[c]		30 Oct	±22	18 Oct 72		
Winter Wren	130	17	14 Mar–	15 Apr	1	109	6 Aug–	25 Sep	3	4	1
T. troglodytes			20 Jun	±29	7 Apr 86[c]		25 Nov	±23	21 Oct 72		
Marsh Wren	21	2	1 Apr–	5 May	1	19	15 Aug–	24 Sep	2	0	0
Cistothorus palustris			8 Jun	±48	1 Apr 87[c]		4 Nov	±21	16 Aug 87[c]		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Dusky Warbler[e,f] *Phylloscopus fuscatus*	2	0	—	—	0	2	27 Sep–14 Oct	6 Oct ±10	1 14 Oct 87[c]	0	0
Golden-crowned Kinglet *Regulus satrapa*	752	79	7 Mar–27 Jun[b]	1 Apr ±19	18 16 Mar 74	673	17 Sep–8 Dec	17 Oct ±12	40 23 Oct 84	0	0
Ruby-crowned Kinglet *R. calendula*	3152	1212	8 Mar–30 Jun	15 Apr ±16	225 16 Apr 83	1931	4 Sep–19 Dec	11 Oct ±13	200 2 Oct 84	9	4
Blue-gray Gnatcatcher *Polioptila caerulea*	16	4	14 Apr–2 May	23 Apr ± 9	1 17 Apr 89[c]	12	13 Aug–4 Oct	10 Sep ±16	2 8 Sep 72	0	0
Red-flanked Bluetail[f] *Tarsiger cyanurus*	1	0	—	—	0	1	1 Nov	1 Nov —	1 1 Nov 89	0	0
Northern Wheatear[f] *Oenanthe oenanthe*	2	1	11 Jun	11 Jun —	1 11 Jun 71	1	6 Nov	6 Nov —	1 10 Nov 88[c]	0	0
Western Bluebird *Sialia mexicana*	2	1	1 Apr	1 Apr —	1 2 Apr 88[c]	1	14 Oct	14 Oct —	1 15 Oct 87[c]	0	0
Mountain Bluebird *S. currucoides*	13	4	3 Apr–16 Jun	30 Apr ±33	1 13 Apr 75[c]	9	12 Oct–26 Nov	3 Nov ±15	3 15 Nov 86	0	0
Townsend's Solitaire[e] *Myadestes townsendi*	23	3	12 Apr–5 Jun	5 May ±28	1 5 Jun 89[c]	15	11 Sep–3 Nov	12 Oct ±15	2 4 Oct 86	5	0
Veery[f] *Catharus fuscescens*	3	1	28 May	28 May	1 28 May 81	2	26 Sep–20 Oct	8 Oct ±17	1 29 Sep 85[c]	0	0
Gray-cheeked Thrush[f] *C. minimus*	10	2	28 May–11 Jun	4 Jun ±10	1 11 Jun 75[c]	8	12 Sep–17 Oct	29 Sep ±11	2 3 Oct 70	0	0
Swainson's Thrush *C. ustulatus*	1162	168	17 Apr–12 Jul	26 May ±13	35 28 May 71	994	27 Aug–24 Nov	25 Sep ±12	60 22 Sep 71	0	0
Hermit Thrush *C. guttatus*	2065	374	1 Mar–2 Jul	25 Apr ±20	25 11 May 71[c]	1641	1 Sep–18 Dec	10 Oct ±15	350 2 Oct 72	50	11

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

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Northern Shrike	1	0	—	—	0	1	29 Oct	29 Oct	1	0	0
L. excubitor								—	29 Oct 71		
Loggerhead Shrike	11	5	3 Apr–24 May	27 Apr ±19	1 20 Apr 83[c]	6	13 Aug–11 Sep	21 Aug ±16	1 2 Sep 85[c]	0	1
L. ludovicianus											
European Starling[e]	32,659	128	5 Mar–14 Jul	24 Apr ±43	140 8 Mar 76	30,141	16 Jul–19 Dec	3 Nov ±18	2540 5 Nov 82	2390	2513
Sturnus vulgaris											
White-eyed Vireo[f]	1	1	4 Jun	4 Jun —	1 5 Jun 69[c]	0	—	—	0	0	0
Vireo griseus											
Solitary Vireo	167	48	22 Mar–5 Jul	25 Apr ±18	5 21 Apr 87	119	4 Aug–2 Nov	12 Sep ±20	7 22 Aug 70	0	0
V. solitarius											
Eastern Solitary Vireo	21	0	—	—	0	21	25 Aug–2 Nov	28 Sep ±16	2 13 Sep 87[c]	0	0
V. s. solitarius											
Cassin's Solitary Vireo	119	44	22 Mar–21 May	22 Apr ±13	5 21 Apr 87	75	4 Aug–25 Oct	5 Sep ±19	7 22 Aug 70	0	0
V. s. cassinii											
Yellow-throated Vireo[f]	1	1	12 Jun	12 Jun —	1 13 Jun 69[c]	0	—	—	0	0	0
V. flavifrons											
Hutton's Vireo	45	12[b]	23 Feb–20 May	21 Apr[b] ±24	2 16 Apr 83	33	18 Jul–8 Nov	20 Sep ±29	2 8 Nov 81	0	0
V. huttoni											
Warbling Vireo	552	125	11 Mar–24 Jun	10 May ±16	12 25 May 70	427	21 Jul–20 Nov	12 Sep ±14	25 11 Sep 77[c]	0	0
V. gilvus											
Philadelphia Vireo[f]	10[g]	2	6 Jun–12 Jun	9 Jun ± 4	1 6 Jun 89[c]	8[g]	12 Sep–25 Oct	26 Sep ±15	1 25 Oct 89[c]	0	0
V. philadelphicus											
Red-eyed Vireo	62	41	22 May–2 Jul	10 Jun ± 9	2 8 Jun 89[c]	21	28 Aug–6 Oct	15 Sep ±12	2 6 Sep 85[c]	0	0
V. olivaceus											
Yellow-green Vireo[f]	3	0	—	—	0	3	19 Oct–30 Oct	25 Oct ± 6	1 25 Oct 88[c]	0	0
V. flavoviridis											

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

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Audubon's Warbler	3152	1260	5 Mar–13 Jul	16 Apr ±16	250 30 Apr 71	1807[b]	16 Jul–19 Dec	15 Oct[b] ±19	68 3 Oct 68	85	14
D. c. auduboni subspecies group											
Black-throated Gray Warbler	317	49	22 Mar–3 Jun	23 Apr ±15	6 21 Apr 82	268	26 Jul–29 Nov	18 Sep ±21	8 17 Sep 74	0	0
D. nigrescens											
Townsend's Warbler	1548	783	4 Apr–8 Jun	11 May ±10	75 8 May 69	765	3 Aug–17 Dec	16 Sep ±22	24 5 Sep 69	0	0
D. townsendi											
Townsend's × Hermit Warbler	2	1	17 Apr	17 Apr	1 17 Apr 74	1	24 Sep	24 Sep —	1 24 Sep 79	0	0
Hermit Warbler	262	61	15 Apr–27 May	8 May ± 9	4 30 Apr 89[c]	201	22 Jul–20 Nov[b]	30 Aug ±19	8 9 Aug 73[c]	0	0
D. occidentalis											
Black-throated Green Warbler	32	15	9 May–18 Jun	3 Jun ±11	3 24 May 83	17	8 Sep–23 Nov	16 Oct ±22	1 8 Sep 89[c]	0	0
D. virens											
Golden-cheeked Warbler[f]	1	0	—	—	0	1	9 Sep	9 Sep —	1 9 Sep 71	0	0
D. chrysoparia											
Blackburnian Warbler	52	6	31 May–9 Jul	13 Jun ±14	1 12 Jun 89[c]	46	2 Sep–30 Oct	30 Sep ±17	3 25 Sep 76	0	0
D. fusca											
Yellow-throated Warbler[e,f]	5	3	2 May–8 Jul	4 Jun ±34	1 7 May 80[c]	2	16 Sep–21 Oct	4 Oct ±25	1 21 Oct 86[c]	0	0
D. dominica											
Pine Warbler[f]	4	0	—	—	0	4	21 Sep–18 Nov	19 Oct ±24	1 19 Nov 87[c]	0	0
D. pinus											
Prairie Warbler	28	0	—	—	0	28	13 Aug–22 Nov	26 Sep ±27	2 11 Oct 84[c]	0	0
D. discolor											
Palm Warbler	814	29	14 Apr–3 Jul	5 Jun ±21	4 1 Jul 80	785	31 Aug–11 Dec	17 Oct ±16	20 14 Oct 87	0	3
D. palmarum											

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

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Hooded Warbler	23	18	18 May–	5 Jun	1	5	1 Sep–	27 Sep	1	0	0
Wilsonia citrina			1 Jul	±12	5 Jun 89[c]		11 Oct	±15	11 Oct 89[c]		
Wilson's Warbler	3700	2818[b]	18 Mar–	13 May	500	882[b]	13 Jul–	2 Sep	20	0	0
W. pusilla			27 Jun	±11	8 May 69		5 Nov	±17	14 Sep 75[c]		
Canada Warbler	37	9	5 Jun–	12 Jun	1	28	8 Aug–	16 Sep	2	0	0
W. canadensis			26 Jun	± 6	26 Jun 89[c]		26 Oct	±19	8 Sep 89[c]		
Yellow-breasted Chat	76	30	14 Apr–	12 May	2	46	12 Aug–	11 Sep	3	0	0
Icteria virens			22 Jun	±15	20 May 76[c]		20 Oct	±15	26 Aug 87[c]		
Hepatic Tanager	2	1	22 May	22 May	1	1	11 Nov	11 Nov	1	0	0
Piranga flava					22 May 77			—	11 Nov 79		
Summer Tanager	16	10	15 May–	2 Jun	1	6	12 Oct–	23 Oct	1	0	0
P. rubra			24 Jun	±13	5 Jun 89[c]		29 Oct	± 7	13 Oct 89[c]		
Scarlet Tanager[f]	5	1	18 Jun	18 Jun	1	4	29 Sep–	29 Oct	1	0	0
P. olivacea				—	19 Jun 80[c]		26 Nov	±24	26 Nov 87[c]		
Western Tanager	537	169	15 Apr–	18 May	30	368	18 Jul–	10 Sep	12	0	0
P. ludoviciana			22 Jun	±13	8 May 69		25 Nov[b]	±17	8 Sep 72		
Rose-breasted Grosbeak	216	136	13 May–	9 Jun	6	80	17 Jul–	20 Sep	3	0	0
Pheucticus ludovicianus			11 Jul	±10	9 Jun 77[c]		9 Nov	±22	2 Oct 75[c]		
Rose-br. × Black-hd. Grosbeak[e]	4	1	8 Jun	8 Jun	1	3	18 Sep–	2 Oct	1	0	0
				—	8 Jun 70		21 Oct	±17	21 Oct 88	[c]	
Black-headed Grosbeak	255	120	2 Apr–	12 May	10	135	23 Jul–	4 Sep	4	0	0
P. melanocephalus			14 Jul	±18	9 May 69[c]		20 Nov[b]	±20	9 Sep 80		
Blue Grosbeak	53	9	9 May–	26 May	1	44	16 Aug–	5 Sep	2	0	0
Guiraca caerulea			18 Jun	±14	20 May 88[c]		6 Oct	±11	15 Sep 89[c]		
Lazuli Bunting	294	62	6 Apr–	15 May	4	232	31 Jul–	7 Sep	20	0	0
Passerina amoena			1 Jul	±19	11 May 69[c]		8 Nov	±15	18 Sep 71		

Indigo Bunting	110	77	7 May–	8 Jun	6	33	18 Jul–	14 Sep	2	0	0
P. cyanea			14 Jul	±14	20 Jun 82		13 Dec	±44	3 Sep 86		
Painted Bunting[f]	5	0	—	—	0	5	10 Sep–	20 Sep	1	0	0
P. ciris							28 Sep	± 8	23 Sep 86[c]		
Dickcissel	25	13	13 May–	1 Jun	1	12	24 Aug–	16 Sep	2	0	0
Spiza americana			24 Jun	±13	30 May 87[c]		14 Oct	±18	3 Sep 88[c]		
Green-tailed Towhee	26	7	3 May–	24 May	1	19	24 Aug–	18 Sep	1	0	0
Pipilo chlorurus			26 Jun	±20	29 Jun 77[c]		11 Nov	±19	18 Sep 88[c]		
Rufous-sided Towhee[e]	470	30[b]	23 Feb–	13 Apr[b]	4	440	29 Aug–	6 Oct	125	0[b]	0
P. erythrophthalmus			1 Jun[b]	±19	4 Apr 73		17 Dec	±11	4 Oct 72[c]		
Cassin's Sparrow[f]	10	4	2 Jun–	18 Jun	1	6	13 Sep–	22 Sep	2	0	0
Aimophila cassinii			11 Jul	±17	6 Jul 82[c]		1 Oct	± 7	30 Sep 85[c]		
American Tree Sparrow	61	16	28 Mar–	22 May	2	44	3 Oct–	24 Oct	3	1	0
Spizella arborea			28 Jun	±26	24 May 77		22 Nov	±14	21 Oct 83[c]		
Chipping Sparrow	1526	255	16 Mar–	10 May	55	1271	21 Jul–	17 Sep	50	0	0
S. passerina			13 Jul	±19	30 Apr 71		30 Nov	±21	2 Oct 72		
Chipping × Brewer's Sparrow	1	0	—	—	0	1	26 Oct	26 Oct	1	0	0
								—	28 Oct 88[c]		
Clay-colored Sparrow	312	36	4 May–	28 May	3	276	22 Aug–	29 Sep	10	0	0
S. pallida			22 Jun	±13	31 May 75		5 Dec	±20	28 Sep 89		
Brewer's Sparrow	125	30	21 Apr–	24 May	2	95	2 Aug–	18 Sep	8	0	0
S. breweri			27 Jun	±15	21 May 78		15 Nov	±18	29 Sep 74[c]		
Field Sparrow[f]	1	1	17 Jun	17 Jun	1	0	—	—	0	0	0
S. pusilla				—	9 Jul 69[c]						
Black-chinned Sparrow	1	0	—	—	0	1	30 Aug	30 Aug	1	0	0
S. atrogularis								—	5 Sep 72[c]		
Vesper Sparrow	234	20	4 Apr–	20 May	1	214	21 Jul–	28 Sep	7	0	0
Pooecetes gramineus			23 Jun	±20	7 Jun 89[c]		18 Nov	±16	6 Oct 72		
Lark Sparrow	257	26	9 Mar–	26 Apr	2	230	29 Jul–	14 Sep	8	1	0
Chondestes grammacus			28 Jun	±26	9 Apr 82[c]		13 Dec	±21	1 Oct 74		
Black-throated Sparrow	23	7	17 Apr–	21 May	2	16	18 Aug–	14 Sep	2	0	0
Amphispiza bilineata			18 Jun	±20	22 May 77		10 Oct	±13	8 Sep 84		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Sage Sparrow *A. belli*	8	5	24 Mar–22 Apr	9 Apr ±11	1 22 Apr 82[c]	3	18 Aug–25 Oct	24 Sep ±34	1 1 Oct 81[c]	0	0
Lark Bunting *Calamospiza melanocorys*	50	1	24 May	24 May —	1 24 May 77	49	17 Aug–20 Oct	14 Sep ±13	3 4 Sep 88[c]	0	0
Savannah Sparrow *Passerculus sandwichensis*	6732	184	4 Mar–19 Jun	25 Apr ±24	15 4 Apr 73	6548[b]	16 Jul–23 Dec	29 Sep ±14	1500 29 Sep 68	0[b]	1
Baird's Sparrow[f] *Ammodramus bairdii*	1	0	—	—	0	1	28 Sep	28 Sep —	1 28 Sep 69	0	0
Grasshopper Sparrow *A. savannarum*	93	23	28 Apr–2 Jul	30 May ±18	1 11 Jun 89[c]	70	20 Jul–29 Nov	8 Oct ±26	4 28 Sep 89[c]	0	0
Le Conte's Sparrow[f] *A. leconteii*	6	0	—	—	0	6	11 Sep–13 Oct	28 Sep ±14	1 7 Oct 89[c]	0	0
Sharp-tailed Sparrow *A. caudacutus*	1	0	—	—	0	1	27 Oct	27 Oct —	1 27 Oct 89	0	0
Fox Sparrow *Passerella iliaca*	1816	79	18 Mar–26 May	22 Apr ±15	6 4 Apr 73	1723	2 Sep–17 Dec	7 Oct ±17	200 3 Oct 72	14	30
Song Sparrow *Melospiza melodia*	57	12[b]	28 Feb–26 Jun[b]	23 Apr[b] ±29	1 29 Apr 87[c]	45	7 Sep–13 Dec	11 Oct ±20	5 2 Oct 84	0[b]	3
Lincoln's Sparrow *M. lincolnii*	1734	448[b]	28 Feb–16 Jun	20 Apr ±14	40 21 Apr 87	1286	2 Sep–4 Dec	30 Sep ±11	450 3 Oct 72	0[b]	0
Swamp Sparrow *M. georgiana*	53	6	21 Apr–25 Jun	22 May ±29	1 2 Jun 86[c]	47	28 Sep–16 Nov	18 Oct ±11	5 15 Oct 87	0	0
White-throated Sparrow *Zonotrichia albicollis*	180	8	22 Apr–7 Jul	22 May ±24	1 20 May 82[c]	172	8 Sep–17 Dec	21 Oct ±15	7 15 Oct 87	0	0
Golden-crowned Sparrow *Z. atricapilla*	9051	382	7 Mar–12 Jun	28 Apr ±12	65 1 May 71	8653	11 Sep–17 Dec	7 Oct ±10	3500 2 Oct 72	16	71

Golden- x White-cr. Sparrow	2	0	—	—	0	2	2 Oct–13 Oct	8 Oct ± 8	1 16 Oct 87[c]	0	0
White-crowned Sparrow	7237	808	8 Mar–	19 Apr	75	6413	27 Aug–	6 Oct	3000	16	17
Z. leucophrys			1 Jul	±13	18 Apr 88		19 Dec	±10	3 Oct 72		
Gambel's White-cr. Sparrow	933	179	8 Mar–	21 Apr	60	753	9 Sep–	10 Oct	28	1	2
Z. l. gambelii			12 May	±10	18 Apr 88		18 Dec	±14	9 Oct 85		
Black-lored White-cr. Sparrow	11	3	31 May–	18 Jun	1	8	24 Sep–	19 Oct	1	0	0
Z. l. leucophrys/oriantha			1 Jul	±16	24 Jun 85[c]		1 Dec	±22	15 Oct 89[c]		
Puget Sound White-cr. Sparrow	905	169	8 Mar–	13 Apr	25	736	10 Sep–	6 Oct	30	0	5
Z. l. pugetensis			25 Jun	±14	5 Apr 86		4 Dec	±11	8 Oct 88		
Harris' Sparrow	19	2	2 May–	9 May	1	17	17 Oct–	6 Nov	2	0	0
Z. querula			16 May	±10	2 May 73[c]		4 Dec	±14	25 Oct 77[c]		
Dark-eyed Junco	4030	1124	5 Mar–	6 Apr	420	2886	25 Jul–	13 Oct	700	20	3
Junco hyemalis			7 Jul	±15	4 Apr 73		19 Dec	±14	3 Oct 72[c]		
Slate-colored Junco	84	26	22 Mar–	1 May	1	58	8 Sep–	25 Oct	3	0	0
J. h. hyemalis subspecies group			12 Jun	±24	3 Jun 89[c]		18 Dec	±19	15 Oct 87[c]		
Oregon Junco[e]	3946	1098[e]	5 Mar–	5 Apr	420	2828	25 Jul–	13 Oct	700	20	3
J. h. oreganus subspecies group			7 Jul	±14	4 Apr 73		19 Dec	±14	3 Oct 72[c]		
Lapland Longspur	164	5	4 May–	31 May	1	159	3 Sep–	14 Oct	10	0	0
Calcarius lapponicus			24 Jun	±22	5 May 87[c]		9 Dec	±18	5 Nov 87		
Chestnut-collared Longspur	46	3[b]	18 May–	20 Jun	1	43[b]	20 Sep–	16 Oct	7	0	0
C. ornatus			16 Jul	±30	18 May 80[c]		3 Dec	±13	14 Oct 87		
Snow Bunting[f]	11[g]	0	—	—	0	11[g]	22 Oct–	3 Nov[b]	3	0	0
Plectophenax nivalis							17 Nov	± 9	29 Oct 74		
Bobolink	141	10	24 May–	8 Jun	1	131	26 Aug–	22 Sep	6	0	0
Dolichonyx oryzivorus			4 Jul	±13	25 Jun 83[c]		23 Oct	±13	24 Sep 74[c]		
Red-winged Blackbird	560	30	4 Mar–	25 Apr	3	529	20 Jul–	4 Oct	65	1	0
Agelaius phoeniceus			11 Jun	±24	8 May 71		18 Dec	±19	30 Sep 68		
Tricolored Blackbird	22	5	8 Mar–	12 May	2	16	21 Sep–	7 Oct	5	1	0
A. tricolor			14 Jul	±58	12 Jun 75[c]		30 Oct	±10	4 Oct 86		
Western Meadowlark	1871[g]	41	9 Mar–	30 Apr	45	1813[g]	23 Jul–	14 Oct	125	17	145
S. neglecta			5 Jul	±31	10 Mar 87		16 Dec	±17	4 Oct 72[c]		

(Continued)

Table 1 (*Cont.*)

Species	Total	Spring				Fall				Winter	
		Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Seasonal Total	Date Range	Mean ±S.D.	High Count and Date	Total	Residents
Yellow-headed Blackbird	78	22	27 Apr–12 Jun	12 May ± 9	3 13 May 75[c]	56	27 Jul–21 Oct	11 Sep ±21	2 27 Aug 87[c]	0	0
Xanthocephalus xanthocephalus											
Rusty Blackbird	8	3	15 Apr–22 Apr	20 Apr ± 4	1 15 Apr 85[c]	5	20 Oct–19 Nov	31 Oct ±12	1 6 Nov 89[c]	0	0
Euphagus carolinus											
Brewer's Blackbird	773	139	16 Mar–30 Jun	26 Apr ±18	20 27 Apr 71	633	17 Jul–18 Dec	10 Oct ±14	50 3 Oct 72[c]	1	1
E. cyanocephalus											
Brown-headed Cowbird	2160	439	26 Mar–14 Jul	5 May ±14	20 7 May 78	1721	15 Jul–1 Dec	28 Aug ±20	53 26 Aug 87[c]	0	0
Molothrus ater											
Orchard Oriole	38	2	11 Jun–9 Jul	25 Jun ±20	1 11 Jun 88[c]	36	14 Aug–25 Oct	19 Sep ±16	3 16 Sep 72[c]	0	0
Icterus spurius											
Hooded Oriole	14	0	—	—	0	14	20 Jul–19 Nov[b]	1 Sep ±31	3 21 Aug 87[c]	0	0
I. cucullatus											
Northern Oriole	601	113[b]	26 Mar–20 Jun	3 May ±17	7 21 Apr 87	488[b]	3 Jul–30 Nov[b]	22 Aug ±23	15 9 Aug 73	0	0
I. galbula											
Baltimore Oriole	32	10	26 May–11 Jun	3 Jun ± 6	2 26 May 70	22	5 Sep–30 Nov[b]	4 Oct ±22	2 7 Sep 89[c]	0	0
I. g. galbula											
Baltimore × Bullock's Oriole	4	1	4 Jun	4 Jun —	1 4 Jun 70	3	20 Sep–28 Sep	23 Sep ± 4	1 29 Sep 79[c]	0	0
Bullock's Oriole	565	102[b]	26 Mar–20 Jun	30 Apr ±15	7 21 Apr 87	463[b]	3 Jul–27 Nov	19 Aug ±21	15 9 Aug 73	0	0
I. bullockii subspecies group											
Scott's Oriole	1	0	—	—	0	1	12 Sep	12 Sep —	1 12 Sep 77	0	0
I. parisorum											
Purple Finch	797	90	9 Mar–28 May	18 Apr ±16	7 12 Apr 88	703	18 Aug–14 Dec	12 Oct ±13	250 4 Oct 72	4	1
Carpodacus purpureus											

Cassin's Finch	7	3	12 Apr–	6 May	1	4	5 Oct–	1 Nov	1	0	0
C. cassinii			14 Jun	±34	21 Apr 87[c]		11 Dec	±29	11 Dec 89[c]		
House Finch	586	325	9 Mar–	21 Apr	23	251	19 Jul–	15 Oct	12	10	0
C. mexicanus			1 Jul	±24	26 Apr 83		15 Dec	±23	26 Oct 72[c]		
Red Crossbill	19	0	—	—	0	18	9 Aug–	29 Oct[b]	12	1	0
Loxia curvirostra							5 Nov[b]	±21	4 Nov 87		
Pine Siskin	1562	44	7 Mar–	23 Apr	8	1482	16 Jul–	12 Oct	400	36	1
Carduelis pinus			14 Jul	±36	17 Apr 74		19 Dec	±16	3 Oct 72		
Lesser Goldfinch	881	45[b]	28 Feb–	27 Apr	6	836	15 Jul–	29 Sep	50	0[b]	0
C. psaltria			11 Jul	±37	9 Mar 79		19 Dec	±23	22 Sep 79		
Lawrence's Goldfinch	16	3	8 Apr–	4 May	1	13	29 Sep–	9 Oct	6	0	0
C. lawrencei			26 May	±24	8 Apr 77		31 Oct	±10	1 Oct 74		
American Goldfinch	164	30	16 Apr–	18 May	5	134	21 Aug–	4 Oct	17	0	0
C. tristis			13 Jun	±15	15 May 75[c]		5 Nov	±14	3 Oct 86[c]		
Evening Grosbeak	4	1	27 May	27 May	1	3	20 Sep–	30 Sep	1	0	0
Coccothraustes vespertinus				—	27 May 74		3 Oct	± 9	22 Sep 79[c]		
House Sparrow[e]	177	170	14 Mar–	22 Apr	9	6	16 Jul–	25 Sep	7	1	0
Passer domesticus			21 Jun	±17	10 Apr 88		10 Dec	±48	24 Aug 89[c]		
Total	4,998,469	2,320,004				2,651,593				26,872	14,688

[a]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.

[b]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.

[c]Seasonal high count duplicated on more than one date; the date given is the most recent, chronologically.

[d]Patterns of arrival appear to overlap two or more seasons. See the notes for reinterpretations of seasonal data.

[e]See notes following the table for information on race, unusual patterns of occurrence, or individual records of interest.

[f]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.

[g]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.

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 ± 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 ± 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 ± 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 ± 21 days; n = 2088); spring, 3 January–23 March (mean arrival 4 February ± 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 ± 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 ± 40 days). The remaining 3265 arrivals were widely scattered through the winter and early spring. Numbers of arrivals were calculated by means of an algorithim 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

August ± 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 ± 14 days).

Oldsquaw—The mean winter date of all records was 31 December ± 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 ± 21 days; n = 2020), and spring, 5 January–18 June (mean arrival 23 March ± 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 ± 21 days; n = 192), and spring, 2 January–6 July (mean arrival 19 March ± 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 ± 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.

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 ± 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 ± 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 ± 40 days) may best represent the occurrence of this species.

Glaucous Gull—The single winter arrival mean for this species was 27 January ± 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 ± 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

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 ± 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 ± 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.

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 ± 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 ± 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 ± 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 ± 18 days for Yellow-rumped Warbler and 15 October ± 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

mean fall arrival date was 23 September ± 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 ± 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 × *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 ± 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 ± 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.

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 ± 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 ± 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

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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