

BROWN PELICANS IN NORTH-CENTRAL COASTAL CALIFORNIA

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INTRODUCTION

Brown Pelicans (*Pelecanus occidentalis*) have recently been the subject of much concern among biologists, particularly over their disappearance from the Gulf Coast and breeding failures on the West Coast of North America (see reviews in Keith, Woods and Hunt, 1970; Schreiber and Risebrough, 1972). These reports deal primarily with breeding status, but it is important to analyze their status elsewhere during the winter. McCaskie (1970) described the status of this species in the southwestern United States. This paper presents the results of censuses of Brown Pelicans for several years and for several locations on the northern California coast. Interesting parallels become apparent between inland occurrences of pelicans in the southwest and coastal occurrences farther north.

Censuses of wintering pelicans were made almost daily for four years on the Farallon Islands, San Francisco County (37°4'N, 123°W). Censuses of Limantour Estero, on the Point Reyes National Seashore, Marin County (38°N, 123°W) for seven years and those on Bolinas Lagoon (37°4'N, 122°W) 25 km to the south for four of five years were made three to four times each month. Aerial censuses of four estuaries (Abbott's Lagoon, Drake's Estero, Limantour Estero, and Tomales Bay) were made once each month for two years. Except for aerial counts, censuses were done with spotting scopes and binoculars.

RESULTS AND DISCUSSION

Brown Pelicans are winter residents along the northern California coast. In the census years they were present in the Point Reyes-Farallones area mostly from July through December (Tables 1-4). Their arrival and departure in this part of California was one month later than in the Salton Sea area 800 km south based on comparison with McCaskie's (1970) data. Closer proximity to their major breeding colonies in Mexico must account for the different timing of movement in the south. Their arrival in the fall at the Farallon Islands (Table 1) is about a month later than at Point Reyes (Tables 2-4).

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This perhaps indicates that the birds move up the coast to the Point and then out to the islands, Point Reyes being the closest land to the Farallones at 32 km. Pelicans leave the Farallones and Point Reyes simultaneously to move south in January.

The Farallon Islands (Table 1) were used much more heavily by wintering Brown Pelicans than were the mainland areas. They roosted primarily on the West End and on Sugarloaf Rock of the Farallones. Although figures presented here are for Southeast Farallon and associated rocks, Pelicans also roosted on the North Farallones 16 km northwest. These rocks, however, are smaller and few pelicans can roost there. On 30 October 1971, for instance, I counted from a boat 375 pelicans covering most of one of the larger rocks. The other two large rocks were occupied mostly by Common Murres (*Uria aalge*) and Pelagic Cormorants (*Phalacrocorax pelagicus*). Bowman (1961) counted 75 Brown Pelicans at Southeast Farallon in June 1958, but such a large number that early in the year has not since been observed. Although movement probably occurs between Southeast Farallon and the North Farallones, my impression is similar to McCaskie's (1970) for the Salton Sea that the same individuals remained at the islands for long periods.

Brown Pelicans used Bolinas Lagoon (Table 2) more than the other mainland estuaries censused. Limantour Estero was the most heavily used of the estuaries censused on the Point Reyes National Seashore. As the comparison in Table 4 indicates, the pelicans seemed to favor larger or deeper bodies of water. The extent of their movement from estuary to estuary is not known.

Comparison of all census figures shows a decline in numbers over the past several years, although the trend was not absolute. There was a slight revival in numbers during 1971-72 for Limantour Estero and Bolinas Lagoon but there was a decline in the Farallon numbers.

Table 1. Monthly averages of Brown Pelicans at Southeast Farallon Island.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1968-69	0	0	4	4	140	540	1425	105	139	66	0
1969-70	0	2	*	*	*	430	180	94	47	7	4
1970-71	2	2	3	2	272	436	904	307	304	20	1
1971-72	0	1	2	2	159	456	586	265	258	0	0

* No count made

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Table 2. Monthly averages of Brown Pelicans at Bolinas Lagoon.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
1967-68	0	320	1100	100	*	9	8	0
1968-69	0	0	347	97	84	3	12	3
1969-70	0	0	0	0	0	21	1	1
1970-71	*	*	*	*	*	*	*	*
1971-72	0	150	240	45	107	26	0	0

* No count made

Table 3. Monthly averages of Brown Pelicans at Limantour Estero.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
1965-66	0	20	114	182	206	138	4	19
1966-67	0	7	86	6	33	5	4	0
1967-68	0	0	22	18	8	5	1	0
1968-69	0	8	10	1	18	4	0	0
1969-70	0	3	2	6	2	6	0	0
1970-71	3	26	3	*	*	34	23	0
1971-72	0	16	109	*	*	1	0	0

* No count made

Table 4. Numbers of Brown Pelicans counted once each month from an airplane for four tidal bodies of water on the Point Reyes National Seashore: A = Abbott's Lagoon, D = Drake's Estero, L = Limantour Estero, T = Tomales Bay.

		Aug	Sep	Oct	Nov	Dec	Jan	Feb
1968-69	A	0	0	42	50	5	0	0
	D	0	2	150	94	38	0	0
	L	35	0	1	1	0	0	0
	T	125	174	78	94	20	0	0
1969-70	A	0	0	0	0	3	0	0
	D	0	4	5	15	0	0	0
	L	0	35	0	0	0	0	0
	T	36	115	86	80	14	0	44

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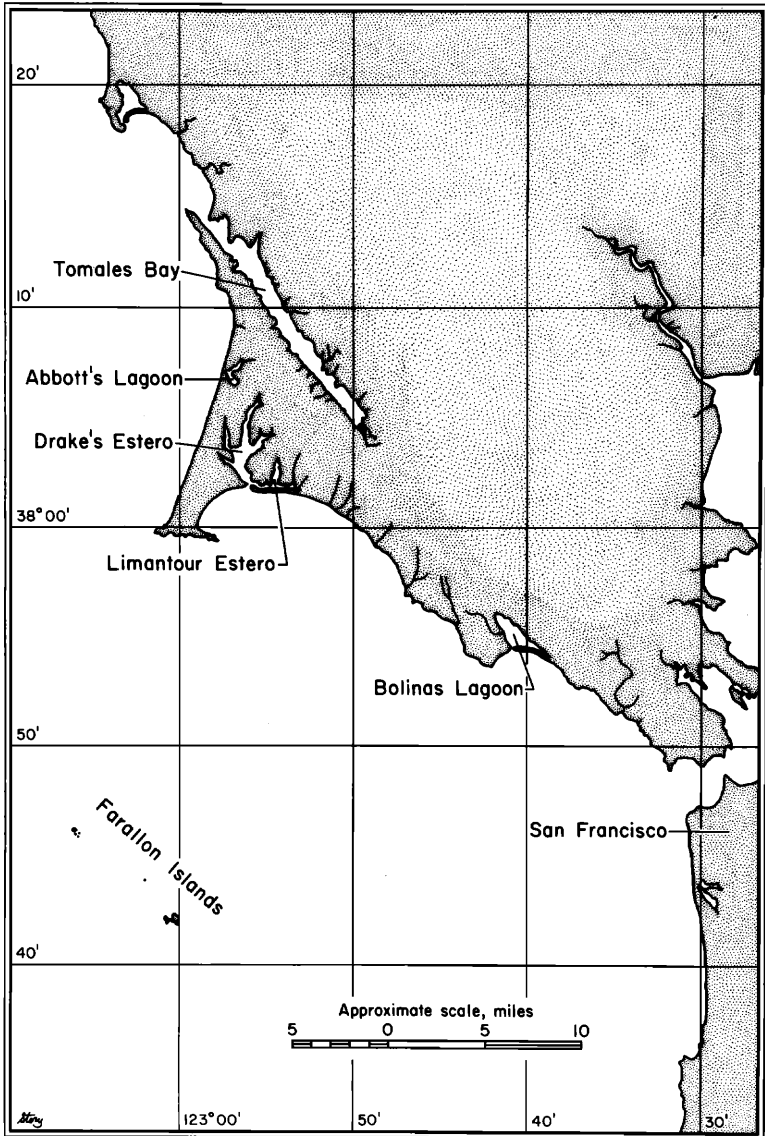


FIGURE 1. The locations on the northern coast of California and the Farallon Islands where censuses of Brown Pelicans were made.

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More birds apparently chose to remain near the mainland that year. Reproductive failures at the breeding colonies for the past several years (Schreiber and DeLong, 1969; Schreiber and Risebrough, 1972) probably contributed greatly to the declining numbers reported here for the north coast wintering grounds. The large number of pelicans observed on the Farallones in June 1958 by Bowman (1961) may also indicate greater abundance of the species in earlier years.

The lowest numbers of Brown Pelicans recorded in any of the census years occurred at all locations in the 1969-70 fall-winter. Interestingly, that same fall there occurred the largest influx to that date of pelicans to inland waters in the southwestern United States (McCaskie, 1970). The two events were probably related; pelicans apparently remained in the south during the fall-winter and moved inland rather than northward. In addition, McCaskie wrote of "flight years" when larger than usual numbers of Brown Pelicans and boobies (*Sula leucogaster*) and (*S. nebouxii*) move northward to occur in the Southwest. In 1971, the year of a slight revival in numbers of Brown Pelicans along the northern coast of California (Tables 1-3), pelicans and boobies were very abundant in the Southwest (McCaskie, 1972), and boobies occurred as far north as Pacific Grove, Monterey County — much farther north than they usually move in the winter (DeSante, LeValley and Stallcup, 1972). McCaskie (1970) suggested that fluctuations in food supply were at least partially responsible for year to year differences in winter dispersal patterns. This seems a logical explanation, but there are few reliable data; and other factors such as weather and breeding productivity probably complicate matters.

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