

WESTERN BIRDS



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NUMBERS OF MARINE BIRDS BREEDING IN NORTHERN CALIFORNIA

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The breeding populations of marine birds on the Farallon Islands, San Francisco County, have been documented for almost 120 years, and as a result are among the best historically documented avian populations in North America (Ainley and Lewis in press). Yet, almost surprisingly, next to nothing is known of the history of marine bird populations elsewhere on the Pacific coast of California, and only recently, from the work of Osborne and Reynolds (1971), do we have knowledge on present marine bird stocks. Our little knowledge in this matter is unfortunate because marine birds have been and hopefully will remain an important part of California's marine resources which in their turn are so important to the well-being of the state. With the fact in mind that marine birds are very susceptible to oil at sea (see Bourne 1970, Ainley and Lewis in press) and other pollutants (see Gress et al. 1971, Schreiber and Risebrough 1972, Coulter and Risebrough 1973), it is propitious that quantification of California's marine bird resources be attempted. Soon the Alaskan oil fields will be exploited and off-shore drilling in California will resume, resulting in marine transport of oil at a rate far above present or previous levels. Much of the oil will pass along the California coast bound for refineries in the San Francisco Bay Area and farther south. Periodic censuses of marine bird populations in the future should be encouraged at regular intervals.

The estimates presented here span the years 1969 to early 1972 and are, hopefully, just a beginning. Ideally, future counts should be coordinated, should occur in the same year at roughly the same time, and should be carried out using standard techniques that do not disturb the birds. In any case, only unusual conditions would cause a great difference in populations over three to four years, and to our knowledge, outside of a spectacular increase in murre numbers (Ainley and Lewis

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in press), no such event occurred in the years 1969 through 1971. The 1971 San Francisco Oil Spill did exact a heavy toll in marine bird lives but the heavily affected species or populations did not include those reported on here (Smail et al. 1972). Figures for birds in San Francisco County (entirely from the Farallones) are taken from Ainley and Lewis (in press) most of which are for 1971 with the exception of 1972 figures for Leach's and Ashy Storm-Petrels (*Oceanodroma leucorhoa* and *O. homochroa*), Common Murres (*Uria aalge*), and Rhinoceros Auklets (*Cerorhinca monocerata*). However, not reported on previously but included here are results of our censuses taken in April 1972 at the small colonies on the North Farallon Islands. The 1971 estimate of Cassin's Auklets (*Ptychoramphus aleutica*) at the Farallones is from Manuwal (1972). Figures for Marin County are mostly from 1972 and for the most part are presented here for the first time (Table 1). We compiled them as follows. Species at the Point Reyes Headland and at Bird Rock/Tomales Point were censused on 3 July at which time all species had large chicks. Counts were made with binoculars from a boat on a flat-calm day. Most figures are based on direct counts of occupied nests or parent-chick groups. Murres in the dense colony below the Point Reyes lighthouse were counted by visually blocking off groups of 100 individuals. These murre counts were increased by two-thirds to allow for the fact that at mid-day in early July usually only one murre parent stays with its chick while the other is away feeding (Point Reyes Bird Observatory unpublished data). This figure was then divided by two to determine the number of breeding pairs. Species on the rocks off Double Point (Point Reyes National Seashore) were censused on 15 April 1971 at 08:00 from the cliffs above; counts of birds on the rocks

Table 1. The number of breeding pairs of marine birds on the Pacific coast of Marin County. Most of the counts were made in 1972 except for censuses at Double Point done in 1971 and those for Bear Valley rocks done by Osborne and Reynolds (1971) in 1969. See Figure 1 for location of breeding sites.

SPECIES	NUMBERS PER BREEDING SITE (Breeding Pairs)					SPECIES TOTALS
	Tomales Point	Bird Rock	Pt. Reyes Headland	Bear Valley	Double Point	
Ashy Storm-Petrel		5				5
Brandt's Cormorant			480	15	170	665
Pelagic Cormorant	86		264	10	40	400
Black Oystercatcher		3	3		1	7
Western Gull		30	13		50	93
Common Murre			3820	200	700	4720
Pigeon Guillemot	4	12	24		1	41
BREEDING SITE TOTALS	90	50	4604	225	962	5931

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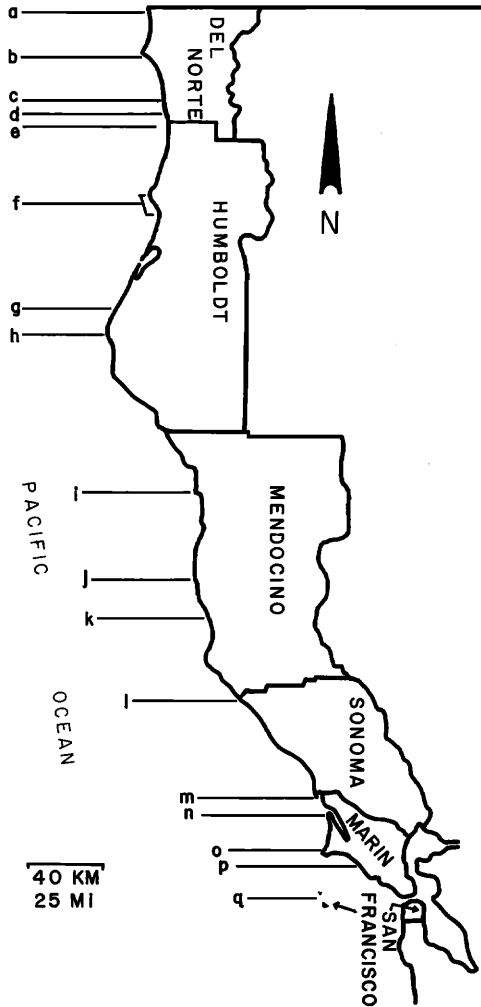


Figure 1. The major marine bird breeding sites in the six northern Pacific coast counties of California. Letters designate the breeding sites censused by us and by Osborne and Reynolds (1971) during the years 1969 to 1972. They are as follows: a. Hunter Rocks and Prince Island; b. Castle Island; c. False Klamath Rock; d. White Rock; e. Redding Rock; f. White Rock, Green Rock, Flat-iron Rock, Pilot Rock, and Little River Rock; g. False Cape Rocks; h. Sugarloaf Rock and Steamboat Rock; i. Cape Viscaino; j. Goat Island; k. Devil's Basin Rock and White Rock; l. Gualala Point Island; m. Bodega Rock; n. Tomales Point and Bird Rock; o. Point Reyes Headland; p. Bear Valley Rocks and Double Point Rocks; q. Farallon Islands.

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off Bear Valley, a few miles north of Double Point, are taken from Osborne and Reynolds (1971); and those for Ashy Storm-Petrels at Bird Rock are from Ainley and Osborne (1972). These censuses for Marin County are reviewed in greater detail in an unpublished report deposited at the National Seashore Headquarters and at the Point Reyes Bird Observatory (Ainley MS). Finally, figures for Sonoma, Mendocino, Humboldt, and Del Norte Counties are for 1969 and are taken from Osborne and Reynolds (1971). These authors also gave figures for San Francisco and Marin Counties but because of the great discrepancy between figures for 1969 and those for 1971 - 72, which can not be logically explained on the basis of natural rates of increase, we considered their 1969 counts to be questionable. For example, they quote 2,500 pairs of Brandt's Cormorants (*Phalacrocorax penicillatus*) for the Farallones in 1969, compared to 12,000 pairs quoted by Ainley and Lewis (in press) for 1971. In addition, they did not describe census dates or techniques. This information might have offered clues to reasons for the differences. On the other hand, their figures for Humboldt and Del Norte Counties were also used by Osborne (1971). He described census dates and techniques for breeding colonies in those two counties, where he apparently was involved in intensive work over a long period.

The breeding colonies included in this summary are shown in Figure 1; a summary of results from population censuses is given in Table 2. There are minor breeding rocks, in all northern California counties except San Francisco and Marin, that are not included in this summary. These rocks are listed by Osborne and Reynolds (1971) but they did not disclose information on species or numbers present on each rock. Additional scientific names of species listed in the summary are: Fork-tailed Storm-Petrel (*O. furcata*), Double-crested Cormorant (*P. auritus*), Pelagic Cormorant (*P. pelagicus*), Western Gull (*Larus occidentalis*), Black Oystercatcher (*Haematopus bachmani*), Pigeon Guillemot (*Cepphus columba*), and Tufted Puffin (*Lunda cirrbata*).

It is readily apparent from comparison of figures in Table 2 that the Farallones are extremely important as a breeding grounds for northern California's marine bird populations. Numbers of birds breeding on these islands are almost 30% greater than the total for the five other counties combined. The importance of the Farallones is further indicated by the fact that from Osborne and Reynolds (1971) we learn that relatively few breeding colonies of marine birds exist in the nine California coastal counties south of San Francisco. They did not census the Channel Islands. Just making a guess, considering colonies to the south including those of the Channel Islands, perhaps about half of the breeding marine birds in the state of California presently nest on the Farallones. This does not include Western Grebes (*Aechmophorus occidentalis*), California Gulls (*Larus californicus*), and other species that breed inland

Table 2. The number of breeding pairs of marine birds in the six northern Pacific coast counties of California. Figures for Sonoma, Mendocino, Humboldt, and Del Norte counties are for 1969 and are from Osborne and Reynolds (1971). Year and source of other counts are as follows: a. 1971 count (Ainley and Lewis in press); b. 1972 count (Ainley and Lewis in press); c. 1971 count (Manuwal 1972); d. 1972 count (Ainley and Osborne 1972); e. 1969 counts (Osborne and Reynolds 1971), and 1971 and 1972 counts (this paper, Table 1); f. 1972 count (this paper, Table 1).

SPECIES	NUMBERS PER COUNTY (Breeding Pairs)						SPECIES TOTALS
	San Francisco	Marin	Sonoma	Mendocino	Humboldt	Del Norte	
Fork-tailed Storm-Petrel					130	50	180
Leach's Storm-Petrel	700 ^b				5150	2500	8350
Ashy Storm-Petrel	2000 ^b	5 ^d					2005
Double-crested Cormorant	35 ^a				26	94	155
Brandt's Cormorant	12000 ^a	665 ^e	650	925	930	767	15937
Pelagic Cormorant	1100 ^a	400 ^e		75	252	113	1940
Black Oystercatcher	20 ^b	7 ^f	1	1	3	3	35
Western Gull	11000 ^a	93 ^f		20	229	684	12026
Common Murre	14000 ^b	4720 ^e			14200	25200	58120
Pigeon Guillemot	1000 ^a	41 ^f			129	179	1349
Cassin's Auklet	52750 ^c				25	1000	53775
Rhinoceros Auklet	3 ^b					150	153
Tufted Puffin	30 ^b				9	20	59
COUNTY TOTALS	94638	5931	651	1021	21083	30760	154084

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in California and that are marine birds only during the winter. It is surprising that, to our knowledge, a complete numerical inventory of the marine birds of the California Channel Islands has never been attempted. We urge that such a task be undertaken before too much longer and that inventories such as presented in this paper be undertaken soon for the other coastal counties of California.

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