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LITERATURE CITED

- AINLEY, D. G. 1973. The Brown Pelican in north-central coastal California. *Calif. Birds* 3:59-64.
- AINLEY, D. G. 1976. The occurrence of seabirds in the coastal region of California. *Western Birds* 7:33-68.
- AINLEY, D. G., AND T. J. LEWIS. 1974. The history of Farallon Island marine bird populations, 1854-1972. *Condor* 76:432-446.
- AINLEY, D. G., S. MORRELL, AND T. J. LEWIS. 1974. Patterns in the life histories of storm-petrels on the Farallon Islands. *Living Bird* 13:295-312.
- AINLEY, D. G., T. J. LEWIS, AND S. MORRELL. 1976. Molt in Leach's and Ashy Storm-Petrels. *Wilson Bull.* 87:76-95.
- AINLEY, D. G., AND G. A. SANGER. 1979. Seabird trophic relations in the northeastern Pacific Ocean and Bering Sea. Pp. 95-122 in J. C. Bartonek and D. N. Nettleship (eds.), *The conservation of seabirds in northern North America*. U.S. Fish Wildl. Serv., Wildl. Res. Rept. 11.
- AINLEY, D. G., AND M. C. WHITT. 1973. Numbers of marine birds breeding in Northern California. *Western Birds* 4:65-70.
- ALBERTSON, E. A. 1960. April trip to Farallon Islands. *Gull* 42:35.
- ALLEN, A. 1922. The seasons, Aug. 15-Oct. 15: San Francisco region. *Bird-Lore* 24:356-357.
- ANDERSON, P. K. 1960. Ecology and evolution in island populations of salamanders in the San Francisco Bay region. *Ecol. Monogr.* 30:359-385.
- AMERICAN ORNITHOLOGISTS' UNION. 1957. Check-list of North American birds. Fifth ed. Baltimore.
- AMERICAN ORNITHOLOGISTS' UNION. 1973. Thirty-second supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 90:411-419.
- AMERICAN ORNITHOLOGISTS' UNION. 1973. Corrections and additions to the "Thirty-second supplement to the check-list of North American birds." *Auk* 90:887.
- AMERICAN ORNITHOLOGISTS' UNION. 1976. Thirty-third supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 93:875-879.
- BAIRD, J., AND I. C. T. NISBET. 1960. Northward fall migration on the Atlantic Coast and its relation to offshore drift. *Auk* 77:119-149.
- BARLOW, C. 1897. The story of the Farallones. H. R. Taylor, Alameda, Calif.
- BLANKINSHIP, J. W., AND C. G. KEELER. 1892. On the natural history of the Farallon Islands. *Zoo* 3(2):144-186.
- BOWMAN, R. I. 1961. Late spring observations on the birds of South Farallon Island, California. *Condor* 63:410-416.
- BRYANT, W. E. 1888. Birds and eggs from the Farallon Islands. *Proc. Calif. Acad. Sci.*, Ser. 2, 1: 25-50.
- COGSWELL, H. L. 1955. Farallon Island trip yields unexpected species. *Gull* 37:1-2.
- COOPER, J. G. 1865. On a new cormorant from the Farallone Islands, California. *Proc. Acad. Nat. Sci. Phila.* 17:5-6.
- COOPER, J. G. 1873. Some recent additions to the fauna of California. *Proc. Calif. Acad. Sci.* 4: 3-13.

- COUES, E. 1864. A critical review of the family Procellaridea: Part I, embracing the Procellarieae, or stormy petrels. Proc. Acad. Nat. Sci. Phila. 16:76–78.
- COUTTER, M. 1972. A flora of the Farallon Islands, California. Madroño 21:131–137.
- CRAIG, A. M., AND H. L. COGSWELL. 1956. October boat trip explores ocean beyond Farallons. Gull 38:48–49.
- CRAIG, J. T. 1972. Two fall Yellow-throated Warblers in California. Calif. Birds 3:17–18.
- DAWSON, W. L. 1911a. Two species new to California. Condor 13:167–168.
- DAWSON, W. L. 1911b. Another fortnight on the Farallones. Condor 13:171–183.
- DAWSON, W. L. 1923. The birds of California. South Moulton Co., San Francisco. . .
- DEBENEDICTUS, P. 1971. Wood warblers and vireos in California: the nature of the accidental. Calif. Birds 2:111–128.
- DESANTE, D. F. 1973. An analysis of the fall occurrences and nocturnal orientations of vagrant wood warblers (Parulidae) in California. Unpubl. PhD. Diss., Stanford Univ., Palo Alto.
- DEVILLERS, P. 1977. The skuas of the North American Pacific coast. Auk 94:417–429.
- DIAMOND, J. M. 1969. Avifaunal equilibria and species turnover rates on the Channel Islands of California. Proc. Natl. Acad. Sci. 64:57–63.
- DIAMOND, J. M. 1971. Comparison of faunal equilibrium turnover rates on a tropical island and a temperate island. Proc. Natl. Acad. Sci. 68:2742–2745.
- DICKEY, D. R., AND A. J. VAN ROSSEM. 1923. Additional notes from the coastal islands of southern California. Condor 25:126–129.
- DOUGHTY, R. W. 1971. San Francisco's nineteenth century egg basket: the Farallons. Geogr. Rev. 61:554–572.
- EMERSON, W. O. 1888. Map. Proc. Calif. Acad. Sci., Ser. 2, 1:Pl.1.
- EMERSON, W. O. 1904. The Farallone Islands revisited, 1887–1903. Condor 6:61–68.
- FINSCH, O. 1880. Ornithological letters from the Pacific, No. 1. Ibis, Ser. 4, 4:75–81.
- GRINNELL, J. 1926. The evidence as to the former breeding of the Rhinoceros Auklet in California. Condor 28:37–40.
- GRINNELL, J., AND A. H. MILLER. 1944. The distribution of the birds of California. Pacific Coast Avif. No. 27.
- GRUBER, F. 1884. Die Seevögel der Farallone-Inseln. Zeit. für die gesammte Ornithol. 1:167–172.
- HANNA, G. D. 1951. Geology of the Farallon Islands. Guidebook of the San Francisco Bay counties. Division of Mines, State of Calif., Bull. 154:301–310.
- HEERMANN, A. L. 1859. Report upon the birds collected on survey. U.S. Pacific Railroad Survey, 10 (IV), No. 2:29–80.
- HENDERSON, R. P. 1979. A Dotterel on Southeast Farallon Island, California. Western Birds 10: 92–94.
- HUBER, H. R., AND T. J. LEWIS. In press. First records of the Red-footed Booby in western North America. Western Birds.
- JEHL, J. R., JR. 1979. The autumnal migration of Baird's Sandpiper. Pp. 55–68 in F. A. Pitelka (ed.), Shorebirds in marine environments. Studies in Avian Biology No. 2.
- JOHNSON, N. K. 1972. Origin and differentiation of the avifauna of the Channel Islands, California. Condor 74:295–315.
- JONES, H. L., AND J. M. DIAMOND. 1976. Short-time-base studies of turnover in breeding populations on the California Channel Islands. Condor 78:526–549.
- KAEDING, H. B. 1903. Bird life on the Farallone Islands. Condor 5:121–127.
- LEWIS, T. J., D. G. AINLEY, R. GREENBERG, AND D. GREENBERG. 1974. A Golden-cheeked Warbler on the Farallon Islands. Auk 91:411–412.
- LOOMIS, L. M. 1896. California water birds. No. III. Proc. Calif. Acad. Sci., Ser. 2, 6:353–366.
- LYNCH, J. F., AND N. K. JOHNSON. 1974. Turnover and equilibria in insular avifaunas, with special reference to the California Channel Islands. Condor 76:370–384.
- MACARTHUR, R. H., AND E. O. WILSON. 1967. The theory of island biogeography. Princeton Univ. Press, Princeton.
- MANUWAL, D. A. 1974. The natural history of Cassin's Auklet (*Ptychorampus aleuticus*). Condor 76:421–431.
- MANUWAL, D. A., AND T. J. LEWIS. 1972. A Wheatear on Southeast Farallon Island, California. Auk 89:895.
- MCCASKIE, G. 1975. LeConte's Sparrow in California and the western United States. Western Birds 6:65–66.

- MCCASKIE, G., P. DEBENEDICTUS, R. ERICKSON, AND J. MORLAN. 1979. Birds of northern California, an annotated field list. Second ed. Golden Gate Audubon Soc., Berkeley.
- MCCASKIE, R. G., AND R. STALLCUP. 1959. April boat trip to the Farallones. Gull 41:30.
- OLSON, S. L. 1977. Additional notes on subfossil bird remains from Ascension Island. Ibis 119: 37-43.
- ORNDUFF, R. 1961. The Farallon flora. Leaflets Western Botany 9:139-142.
- OSGOOD, W. H. 1894. The Rock Wren. Nidiologist 2:52-53.
- PAXTON, R. O. 1963. Recent field trips. Gull 45:22.
- PETERSON, C. 1971. Farallon light (film). Altair Productions, San Francisco.
- PETERSON, H. G. 1957. Early April boat trip catches some spring migrants. Gull 39:31-32.
- PINNEY, T. C. 1965. The biology of the Farallon rabbit. Unpubl. PhD. Diss., Stanford Univ., Palo Alto.
- PITELKA, F. A. 1951. Speciation and ecologic distribution in American jays of the genus *Aphelocoma*. Univ. Calif. Publ. Zool. 50:195-464.
- POWER, D. M. 1972. Numbers of bird species on the California islands. Evolution 26:451-463.
- POWER, D. M. 1976. Avifauna richness on the California Channel Islands. Condor 78:394-398.
- RALPH, C. J. 1971. An age differential of migrants in coastal California. Condor 73:243-246.
- RAY, M. S. 1904. A fortnight on the Farallones. Auk 21:425-442.
- RIDGWAY, R. 1884. Descriptions of some new North American birds. Proc. Biol. Soc. Wash. 2:94.
- RIDGWAY, R. 1890. Observations on the Farallon Rail (*Porzana jamaicensis coturniculus* Baird). Proc. U.S. Natl. Mus. 13:309.
- ROBERT, H. 1971a. First record of Field Sparrow in California. Calif. Birds 2:72.
- ROBERT, H. 1971b. First record of White-eyed Vireo in California. Calif. Birds 2:94.
- SANGER, G. A. 1973. Pelagic records of Glaucous-winged and Herring Gulls in the North Pacific Ocean. Auk 90:384-393.
- SERVENTY, D. L., A. SERVENTY, AND J. WARHAM. 1971. Handbook of Australian seabirds. A. H. and A. W. Read, Sydney.
- SMAIL, J., D. G. AINLEY, AND H. STRONG. 1972. Notes on birds killed in the 1971 San Francisco oil spill. Calif. Birds 3:25-32.
- SMITH, C. F. 1934. Bird notes from the Farallon Islands. Condor 36:170-172.
- SOKAL, R. P., AND F. J. ROHLF. 1969. Biometry. W. H. Freeman and Co., San Francisco.
- STEWART, R. M., L. R. MEWALDT, AND S. KAISER. 1974. Age ratios of coastal and inland fall migrant passerines in central California. Bird-Banding 45:46-57.
- STORER, R. W. 1971. Classification of birds. Pp. 1-18 in D. S. Farner and J. R. King (eds.), Avian biology. Vol. I. Academic Press, New York.
- SWARTH, H. S. 1922. Unpubl. field notes, 584-587. Museum of Vertebrate Zoology, Berkeley.
- SWARTH, H. S. 1926. James Hepburn, a little known California ornithologist. Condor 28:249-253.
- TAYLOR, H. R. 1887. A trip to the Faralone Islands. Ornithol. Ool. 12:41-43.
- TENAZA, R. R. 1967. Recent records of land birds from South Farallon Island, California. Condor 69:579-585.
- THORESEN, A. C. 1960. Notes on winter and early spring bird activity on the Farallon Islands. Condor 62:408.
- TOWNSEND, C. H. 1885. The occurrence of the Catbird (*Mimus carolinensis*) on the Farallone Islands, Pacific Ocean. Auk 2:215-216.
- WAHL, T. R. 1975. Seabirds in Washington's offshore zone. Western Birds 6:117-134.
- WINTER, J., AND D. ERICKSON. 1977. Middle Pacific coast region: the fall migration. American Birds 31:216-221.
- WOODS, R. S. 1968. House Finch. Pp. 290-322 in O. L. Austin (ed.), Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows and allies. U.S. Natl. Mus. Bull. 237, Pt 1.