

The Magnificent Frigatebird in Western North America

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For the purposes of this article, western North America is defined as the states and provinces of the United States and Canada (excluding Hawaii) that lie primarily west of 95 degrees longitude. Inland southern California is defined as those areas east of the Peninsular Ranges and Sierra Nevada south of Inyo County. Coastal southern California is defined as San Luis Obispo County, south. Central California, along the coast, extends from Sonoma County through Monterey County. Inland it reaches from Lake Tahoe south through Inyo County. Northern California extends from Mendocino County north on the coast and from Lake Tahoe north in the interior.

The Magnificent Frigatebird (*Fregata magnificens*) is a widespread inhabitant of New World oceans that has a fascinating pattern of occurrence in western North America. This species breeds not far from the western United States in the Mexican states of Veracruz and Baja California Sur (Howell and Webb 1995), so its regular occurrence in Texas and southern California is not a great surprise. What might not be expected, however, is that Magnificent Frigatebirds occur annually in California's interior and have wandered as far afield as the Alaska Peninsula and Colorado. To best understand the complex status and distribution of this species in western North America, we will take a regional approach. The data for this article were obtained from state, provincial, and regional status and distribution guides, state and provincial bird records committees, and *American Birds/Field Notes*.

TEXAS

Coastal Texas is the only place in western North America where the sight of a frigatebird does not automatically elicit cries of joy. This is because Magnificent Frigatebirds are uncommon (but not rare) summer visitors along the entire Texas Coast, where they are found from shore and on pelagic trips in the vicinity of oil-drilling platforms. Most of the frigatebirds in Texas are immatures, although adults are not unusual.

The first bird or two usually arrives during early April, but significant numbers do not normally appear until July. Peak occurrence is during August and early September. Thereafter, numbers dwindle, and the last individuals are often seen in early October. Occasional individuals arrive as early as mid-March and linger as late as mid-

November, but winter frigatebirds are exceptional. There are fewer than ten Texas records from this season, with the most unusual involving twenty birds at Rockport on December 17, 1940 (Oberholser 1974).

Wandering frigatebirds are also occasionally found at lakes and rivers within fifty miles of the Texas Coast, usually in fall (Oberholser 1974). Farther inland, however, records are exceedingly scarce, with about four from around San Antonio, three from near Austin, one from Falcon Lake, one from Bee County, and one from Nacogdoches County. All of these occurred between August 12 and September 23, and most (if not all) were related to hurricane or tropical storm activity. The most notable inland Texas record is of nine birds at Mitchell Lake following Hurricane *Beulah* (W. Sekula, *in litt*). Perhaps surprisingly, there are no records from the northwestern half of the state.

THE GREAT PLAINS

There are twelve frigatebird records involving thirteen individuals from the Great Plains. Eight of these are from Oklahoma, including one of a Great Frigatebird which will be discussed later. The remaining four come from Kansas, three of which are from far northern Kansas, no more than sixty miles from the Nebraska border.

Great Plains frigatebirds have occurred mostly between mid-August and mid-October with two outliers in June and one in April. Although no overall correlation with storm activity is readily apparent, the three records from 1988 seemed to have resulted from Hurricane *Gilbert*.

COLORADO

There is one Magnificent Frigatebird record from Colorado. This bird was first seen in Jefferson County on September 14, 1985, and then reappeared two days later at Green Mountain Reservoir, where it was killed after purportedly attacking a windsurfer (Webb 1985). Its occurrence was felt to be related to Hurricane *Elena* by Andrews and Righter (1992), and 1985 was a minor irruption year in Arizona and California. This sighting, more than 700 miles from the nearest saltwater (which is at the head of the Sea of Cortez), is farther inland than any other in western North America.

NEW MEXICO

New Mexico has six frigatebird records, of which five are from October and one is from February. Three of these birds occurred in the

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Immature Magnificent Frigatebirds greatly outnumber adults as post-breeding visitors in the west. Note the characteristic pure white head, black triangular breast patches, and white diamond-shaped belly patch of this juvenile Magnificent Frigatebird. Photograph/Brian E. Small



Some juvenile Magnificent Frigatebirds show only weakly developed breast patches. These birds appear more extensively white-bellied. However notice the diamond-shape of the black frame around the belly patch, and the reduced, but still noticeable, breast patches on this juvenile Magnificent Frigatebird photographed at the Dry Tortugas in Florida. Photograph/Brian E. Small

| CALIFORNIA: WINTER AND SPRING RECORDS* | | |
|---|---------------|-------------------------------|
| Location | Date | Literature Cited |
| Santa Cruz, Santa Cruz Co. | 4/28/95 | <i>Field Notes</i> 49:304 |
| Goleta, Santa Barbara Co. | 5/22/93 | <i>American Birds</i> 47:453 |
| Ano Nuevo I, Santa Cruz Co. | 5/21/93 | <i>American Birds</i> 47:450 |
| Farallon Is, San Francisco Co. | 5/20/93 | <i>American Birds</i> 47:450 |
| Monterey Co.† | 2/11–2/12/92 | <i>American Birds</i> 46:310 |
| Ano Nuevo Point, Santa Cruz Co.† | 2/13/92 | <i>American Birds</i> 46:310 |
| found dead, Eel River mouth, Humboldt Co. | February 1992 | Harris 1996 |
| National City, San Diego Co. | 1/5/92 | <i>American Birds</i> 46:314 |
| Farallon Is, San Francisco Co.† | 12/16/89 | <i>American Birds</i> 43:361 |
| Upper Newport Bay, Orange Co. | 4/20/89 | <i>American Birds</i> 42:536 |
| San Diego, San Diego Co. | 4/23/89 | <i>American Birds</i> 42:536 |
| Stovepipe Wells, Inyo Co.† | 4/8/88 | <i>American Birds</i> 42:481 |
| West Covina, Los Angeles Co. | 2/11/88 | <i>American Birds</i> 42:320 |
| Pigeon Point, San Mateo Co.† | 2/5/87 | <i>American Birds</i> 41:483 |
| San Francisco Bay and Santa Cruz Co. | 3/6–3/9/86 | <i>American Birds</i> 40:519 |
| Bolsa Chica, Orange Co. | 1/19/85 | <i>American Birds</i> 39:209 |
| Redondo Beach, Los Angeles Co. | 3/25/80 | <i>American Birds</i> 34:305 |
| Redondo Beach, Los Angeles Co. | 1/4/80 | <i>American Birds</i> 34:200 |
| Pismo Beach, San Luis Obispo Co. | 2/16/77 | <i>American Birds</i> 31:373 |
| Chino, San Bernardino Co. | 3/23/77 | <i>American Birds</i> 31:1046 |
| San Miguel Island, Santa Barbara Co. | 4/6/76 | <i>American Birds</i> 30:889 |
| north end Salton Sea, Riverside Co. | 2/20/72 | <i>American Birds</i> 26:654 |

*Records from 1971 on.
 †Records given in *American Birds/Field Notes* as frigatebird sp? Many of the remaining frigatebirds may not have been specifically identified as Magnificents.

southeastern quarter of the state during October 1988 and appear to be related to the aftermath of Hurricane *Gilbert*, which also swept frigatebirds into Oklahoma and Kansas. Thus, these frigatebirds must have travelled at least 550 miles overland from the Gulf of Mexico.

The origin of the other three New Mexico frigatebirds is not so clear. Easternmost New Mexico is about equidistant from the Gulf of

Mexico and the Sea of Cortez, whereas western New Mexico is considerably closer to the latter. The three pre-1988 records are as follows: Bitter Lake (southeastern NM), October 4–6, 1955 (Hubbard 1989); Silver City (southwestern NM), October 1, 1967 (Hubbard 1989); and Las Cruces (south-central NM), February 1, 1969 (Hubbard 1989). The two October birds occur in a timeframe more consistent with birds wandering inland from the Gulf of Mexico, while the February bird is an anomaly.

SOUTHERN CALIFORNIA

In southern California, the Magnificent Frigatebird is an annual visitor, averaging just over twenty frigatebirds per year since 1970 (*American Birds/Field Notes*, vols. 25–51). The vast majority of these were seen from early June through mid-September, with a distinct peak between late June and early August. During the remainder of the year, frigatebirds are extremely scarce. Since 1970, there have been only five reports from late September through October and thirteen from November through May. The great majority of southern California's frigatebirds are immatures, as is true for the remainder of the Pacific Coast and Arizona.

Superficially surprising is that only 60 percent of southern California's frigatebirds have been found along the coast. The remaining forty percent have been seen mostly at the Salton Sea, the large saline lake in the desert of southeastern California. The reason that the Salton Sea attracts frigatebirds is not clear, but it has a similar or greater attraction for several other species of seabirds, including Brown Pelican, Blue-footed Booby, and Yellow-footed Gull (McCaskie 1970, McCaskie 1983). Though the Salton Sea is only about 80 miles from the Pacific Ocean, the Pacific proper is probably not the source of frigatebirds and other seabirds at the Salton Sea. Instead, most of these birds likely come inland from the upper reaches of the Sea of Cortez, which lie about 150 miles to the south (McCaskie 1970, McCaskie 1983). Frigatebirds, boobies, and Yellow-



Adult female Magnificent Frigatebirds have solid black heads and throats and a relatively tapered triangular intrusion of black into the white of the belly. Both of these features are evident in the perched and flying female Magnificent Frigatebirds illustrated above. Photographs/Brian E. Small

footed Gulls are far more numerous there than they are at similar latitudes along Baja California's Pacific Coast. The record high count of frigatebirds for the Salton Sea was 22 seen together at the Sea's north end on July 29, 1979 (AB 33:896).

Inland records away from the Salton Sea come mostly from large reservoirs and the Colorado River Valley, though there is a record or two of birds crossing mountain ranges and over the open desert. Inland California sightings show a similar seasonal distribution to those from the coast, except that out-of-season records are far fewer. All southeastern California records, except two, lie between June 4 and September 23. The two outliers are one at Chino on March 23, 1977 (AB 31:1046) and one at the north end of the Salton Sea on February 20, 1972 (AB 26:654).

Coastal frigatebirds in southern California, and elsewhere along North America's Pacific Coast, are seen mostly from shore or within sight of land. Records more than a couple of miles out are scarce, probably even when one accounts for relatively low coverage in these areas.

Frigatebird numbers in coastal and inland southern California vary substantially from year to year and perhaps from decade to decade. From 1977 through 1986, the yearly average was almost 29 frigatebirds per year, but since then the average has dropped to fewer than twelve per year. The highest annual tally was 90 in 1979, when roughly 41 individuals were seen on the coast, nine were found inland west of the mountains, and about 40 were reported from the Salton Sea (AB 33:896; AB 34:200). Other major irruptions occurred in 1972 (61 birds—AB 26:904; AB 27:120) and 1980 (47 birds—AB 34:929; AB 35:225). Noteworthy incursions were also noted in 1976 (33 birds—AB 30:1002; AB 31:222); 1977 (30 birds—AB 31:1188; AB 32:257); 1985 (26 birds—AB 39:962; AB 30:157); and 1990 (24 birds—AB 44:1185; 45:150). At the other end of the spectrum, only two frigatebirds were seen in 1996 (FN 50:996), and only four were found in 1994 (AB 48:988; AB 49:100).

CALIFORNIA AND ARIZONA FRIGATEBIRDS BY YEAR*

| Year | SoCal—Coastal | SoCal—Inland | Cen/Nor Cal | Arizona |
|------|---------------|--------------|-------------|---------|
| 1996 | 2 | 0 | 0 | 1 |
| 1995 | 2 | 6 | 0 | 0 |
| 1994 | 4 | 0 | 0 | 1 |
| 1993 | 8 | 5 | 8 | 4 |
| 1992 | 6 | 3 | 2 | 5 |
| 1991 | 5 | 1 | 2 | 0 |
| 1990 | 8 | 16 | 2 | 2 |
| 1989 | 7 | 2 | 1 | 0 |
| 1988 | 21 | 2 | 2 | 1 |
| 1987 | 4 | 7 | 6 | 0 |
| 1986 | 5 | 4 | 1 | 0 |
| 1985 | 11 | 15 | 0 | 10 |
| 1984 | 3 | 19 | 0 | 2 |
| 1983 | 7 | 5 | 3 | 1 |
| 1982 | 6 | 4 | 0 | 3 |
| 1981 | 10 | 6 | 3 | 0 |
| 1980 | 40 | 7 | 3 | 3 |
| 1979 | 50 | 40 | 9 | 20 |
| 1978 | 4 | 11 | 0 | 0 |
| 1977 | 21 | 9 | 7 | 4 |
| 1976 | 22 | 11 | 1 | 5 |
| 1975 | 6 | 4 | 0 | 1 |
| 1974 | 11 | 9 | 1 | 0 |
| 1973 | 8 | 3 | 3 | 1 |
| 1972 | 51 | 10 | 7 | 0 |
| 1971 | 7 | 3 | 1 | 2 |

*Values obtained from *American Birds/Field Notes* for California and from G. Rosenberg (*in litt*) for Arizona. Readers should note that these numbers represent estimates. In part this is due to the mobility and visibility of frigatebirds, which raises the chances of an individual bird being tallied more than once. Also, the number of reports for a given season is not always directly stated in *American Birds/Field Notes*. Inland southern California is defined as being east of the Peninsular Ranges. Most such records are from the Salton Sea.



The sources of post-breeding and vagrant Magnificent Frigatebirds in the West are the Gulf of Mexico and Caribbean for Texas, Great Plains, and perhaps even southeastern New Mexican records; and the Sea of Cortez and, perhaps, the Revillagigedo Islands for West coast and southwestern interior records. These females were photographed at the lone United States breeding site in Florida. Photograph/Brian E. Small



Adult male Magnificent Frigatebirds present few easily seen field marks to distinguish them from Great Frigatebird. Note the lack of pale scalloping in the axillars of this male Magnificent. Other features that are useful in identifying male frigatebirds are the presence of a pale alar panel on the upper wing of male Greats, and foot color: dark gray in Magnificent and pink in Great. Readers should consult Howell (1994) for further information on separation of Magnificent and Great frigatebird. Photograph/Brian E. Small

The causes of these fluctuations are cryptic, but neither El Niño nor La Niña seem to be involved (S. Feldstein, pers. comm.). Furthermore, the Salton Sea and the Pacific Coast are clearly not always similarly influenced. Though both regions had a banner year in 1979, the coastal invasions of 1972 (51 birds) and 1980 (40 birds) were just above average at or near the Salton Sea (ten birds in 1972 and seven in 1980). On the other hand, the two highest counts at the Salton Sea (excepting 1979) were noted during 1984 (19 birds) and 1990 (16 birds), years that were below average along the coast (three birds in 1984 and eight in 1990).

ARIZONA

The Magnificent Frigatebird is a rare and irregular summer visitor to Arizona. Overall, this state has 44 published reports involving 76 birds, with 33 reports totalling 60 birds coming from 1977 through 1996. Virtually all records come from the southeastern quarter of the state (including the Phoenix area) or the Colorado River north to Davis Dam. The only Arizona record away from these areas comes from the Grand Canyon on October 8, 1985, but this frigatebird may not have been a Magnificent (G. Rosenberg, pers. comm.). High counts for Arizona include nine east of Phoenix on August 11, 1979 (G. Rosenberg, pers. comm.), eight at Painted Rock Reservoir on July 22, 1979 (Monson and Phillips 1981), and six at Yuma on July 10, 1985 (G. Rosenberg, pers. comm.).

Arizona frigatebird records fall between June 5 and October 13 but are concentrated between early July and early September, with a distinct peak spanning July. Thus, the timing of Arizona frigatebirds resembles that at the Salton Sea. This similarity in timing implies a Sea of Cortez rather than Gulf of Mexico origin, as one would expect considering the relative distances involved.

Arizona has had definite invasion years, and these have corresponded somewhat with irruptions into southern California. The greatest of such years was 1979, with five sightings of 20 individuals

in Arizona and 90 birds in southern California. Furthermore, 1977, 1980, 1985, 1990, and 1992 all had three or more reports from Arizona, and each of these years, except 1992, were distinctly above average in southern California.

NEVADA

Nevada has had three frigatebirds, all of which occurred in the southernmost part of the state along the Colorado River. The records were from early or mid-September. It is likely that these birds came up the Colorado River from the Sea of Cortez.

CENTRAL CALIFORNIA

The Magnificent Frigatebird is a rare and irregular summer visitor to central California, with 55 reports since 1970, mostly between late June and mid-August (*American Birds/Field Notes*, vols. 25–51). Magnificent Frigatebirds in central California occur almost exclusively along the coast. There are very few records from San Francisco Bay and only two from east of the Sierras prior to 1998: one unidentified frigatebird at Stovepipe Wells, Inyo County, on April 8, 1988 (AB 42 481), and the bleached remains of a Magnificent found at Mono Lake, Mono County, on July 28, 1985 (Gaines 1988). During 1998, there were three sightings of immature frigatebirds on 6 July: one at Mono Lake, Mono County, one at Diaz Lake, Inyo County, and one at Tinemaha Reservoir, Inyo County (T&J Heindel, pers. comm.). The total number of individuals involved is not clear, but the Mono Lake and Tinemaha Reservoir birds were seen simultaneously, and the Diaz Lake and Tinemaha birds seemed to have different tail structures. In any case, there were at least two, and possibly three birds involved. The Inyo County birds were identified as Magnificent, whereas the Mono Lake bird is probably best considered as an unidentified frigatebird at this time (T&J Heindel, pers. comm.).

Central California has a surprising percentage of records from winter and spring. Nine of the 55 (16%) central California records since 1970 occurred between December and May, compared with 12 of 531 reports (2%) from southern California. The reason for central California having proportionately more records from winter and spring is not clear, but this phenomenon persists as one heads further north along the Pacific Coast.

Frigatebirds have been reported from central California during 17 of the last 25 years. The maximum was nine in 1979 (AB 33:893; AB 34 195), which also hosted the biggest invasion ever recorded in southern California. The next largest tally, however, was eight in 1993, which was a distinctly below average year in southern California. Overall, the correlation between irruptions into southern California and central California seems surprisingly poor (see table), and, while the average annual count has dropped substantially in southern California during the last decade, it has remained stable in central California.

NORTHERN CALIFORNIA

Since 1974, there have been eleven records of Magnificent Frigatebird from northern California. Ten of these are from the coast (Harris 1996), with the remaining bird from the interior (McCaskie et al. 1988). Nine of the ten recent coastal records lie between June 5 and September 4, with seven of these during July and August (Harris 1996). The one outlying record is of a bird found dead with a few feathers still attached at the Eel River estuary in February 1992 (Harris 1996). There is also an older record from early October (Palmer 1889). The inland bird was found soaring with Turkey Vultures along the Sacramento River at Hamilton City, Butte/Glenn counties, July 27, 1979 (AB 33:893)

MAGNIFICENT FRIGATEBIRD RECORDS: WESTERN NORTH AMERICA*

| | | |
|--|----------------|-------------------------------|
| Alaska | | |
| Chiniak Bay, Kodiak Is† | 6/27/84 | T. Tobish, pers. comm. |
| Montague Strait, S. Prince William Snd† | 6/26–6/27/84 | T. Tobish, pers. comm. |
| Montague Strait† | July 1957 | Roberson 1980 |
| Fairweather Bank, N. Gulf of Alaska (2)† | 9/16/69 | Roberson 1980 |
| Belkofski Bay, Alaska Peninsula | 8/15/85 | <i>American Birds</i> 40:155 |
| British Columbia | | |
| Bamfield Marine Station, Vancouver I | January 1996 | R. Toochin, pers. comm. |
| near Tofino, Vancouver I | 8/31–9/14/96 | R. Toochin, pers. obs. |
| near Tofino, Vancouver I | 7/18/97 | R. Toochin, pers. obs. |
| Cohoe Point, Queen Charlotte Is | 8/22–8/25/85 | Campbell et al. 1990 |
| Saanich Inlet, Vancouver I† | 1/7/89 | Taylor 1994 |
| 12+ reports from Vancouver I by fisherman† | | |
| Washington | | |
| Umatilla NWR, Benton County | 7/1/75 | <i>Murrelet</i> 57:43–44 |
| one bird at multiple sites‡: | | |
| Tacoma | 10/7–10/8/88 | Tweet and Skirletz 1996 |
| Point No Point | 10/11–10/17/88 | Tweet and Skirletz 1996 |
| Copalis River mouth | 10/22/88 | Tweet and Skirletz 1996 |
| Tokeland | 10/29/88 | Tweet and Skirletz 1996 |
| Astoria Bridge | 10/31/88 | Tweet and Skirletz 1996 |
| Oregon | | |
| Cape Arago | 2/1/92 | <i>American Birds</i> 46:473 |
| Coos Bay (immature) | 3/7–3/11/87 | <i>American Birds</i> 41:478 |
| south of Yachats (adult female) | 3/4–3/5/87 | <i>American Birds</i> 41:478 |
| Cannon Beach (adult female) | 3/19/87 | <i>American Birds</i> 41:478 |
| Yaquina Bay | 8/15–8/20/87 | <i>American Birds</i> 42:122 |
| Tillamook | 2/18–2/19/35 | Roberson 1980 |
| Gold Beach | 7/24/79 | Roberson 1980 |
| Newport and Florence | 7/29/83 | Gilligan et al. 1994 |
| Portland | 6/4/87 | Gilligan et al. 1994 |
| 50 mi west of Cascade Head† | 8/2/81 | Gilligan et al. 1994 |
| Nevada | | |
| 35 mi below Boulder Dam | 9/2/46 | Baldwin 1947 |
| Davis Dam, Lake Mojave | 9/3/71 | Lawson 1973 |
| Davis Dam, Lake Mojave | 9/17/76 | Lawson 1977 |
| Colorado | | |
| Chatfield & Green Mountain Res | 9/14–9/16/85 | Webb 1985 |
| Arizona† | | |
| Tucson | 7/24/93 | <i>American Birds</i> 47:1133 |
| Picacho Reservoir | 7/4/92 | <i>American Birds</i> 46:1161 |
| Painted Rock Dam | 7/6/92 | <i>American Birds</i> 46:1161 |
| near Arivaca (3) | 7/21/92 | <i>American Birds</i> 46:1161 |
| Lake Havasu | 7/22/90 | <i>American Birds</i> 44:1165 |
| Picacho Reservoir | 8/20/90 | G. Rosenberg, pers. comm. |
| Yuma | 10/13/90 | G. Rosenberg, pers. comm. |
| Tucson | 9/21/88 | <i>American Birds</i> 43:1115 |
| Yuma | 6/5/85 | G. Rosenberg, pers. comm. |
| Madera Canyon (3) | 7/6/85 | G. Rosenberg, pers. comm. |
| Yuma (6) | 7/10/85 | G. Rosenberg, pers. comm. |

(Table continued on next page.)

*Records from California and Texas are not listed.

†These birds were not identified specifically as *Magnificent Frigatebirds*.

‡The Arizona sightings consist of all published reports, not necessarily confirmed records. Also, many of the Arizona birds were not identified specifically as Magnificent. Indeed, the October 8, 1995 bird was photographed and may not be a Magnificent (G. Rosenberg, pers. comm.). Also, Monson and Phillips (1981) felt that the 1953 and 1962 Arizona records might pertain to Greats, but others have disagreed.

§This series of records is presumed to represent one bird, though that has not been actually proven.

**MAGNIFICENT FRIGATEBIRD RECORDS:
WESTERN NORTH AMERICA***

| Arizona (continued from page 417)‡ | | |
|---|---------------|------------------------------|
| Grand Canyon | 10/8/85 | G. Rosenberg, pers. comm. |
| N. of Ehrenberg | 7/2/84 | G. Rosenberg, pers. comm. |
| W. of Tucson | 10/1/84 | G. Rosenberg, pers. comm. |
| Sierra Vista | 8/21/83 | G. Rosenberg, pers. comm. |
| Tucson (2) | 7/29/82 | G. Rosenberg, pers. comm. |
| Tucson | 10/7/82 | G. Rosenberg, pers. comm. |
| Cibola NWR | 7/18/80 | G. Rosenberg, pers. comm. |
| Cibola NWR (2) | 8/4/80 | G. Rosenberg, pers. comm. |
| Painted Rock Dam | 8/23/80 | G. Rosenberg, pers. comm. |
| W. of Phoenix | 7/8/79 | G. Rosenberg, pers. comm. |
| Painted Rock Res (8) | 7/22/79 | Monson & Phillips 1981 |
| Cibola NWR | 7/25-7/29/79 | G. Rosenberg, pers. comm. |
| Painted Rock Dam | 8/9/79 | G. Rosenberg, pers. comm. |
| E. of Phoenix (9) | 8/11/79 | G. Rosenberg, pers. comm. |
| S. of Ehrenberg | 6/30/77 | G. Rosenberg, pers. comm. |
| Imperial Dam | 7/9/77 | G. Rosenberg, pers. comm. |
| Cibola NWR | 7/10/77 | G. Rosenberg, pers. comm. |
| Lake Havasu | 8/31/77 | G. Rosenberg, pers. comm. |
| near Tacna (4) | 9/10/76 | G. Rosenberg, pers. comm. |
| Davis Dam (also NV) | 9/17/76 | Monson & Phillips 1981 |
| W. of Tacna | 6/15/75 | G. Rosenberg, pers. comm. |
| near Yuma | 7/26/73 | Monson & Phillips 1981 |
| Mittry Lake, Yuma | 7/12/71 | G. Rosenberg, pers. comm. |
| Tucson | 9/3/71 | Monson & Phillips 1981 |
| Yuma (3) | 7/20/68 | G. Rosenberg, pers. comm. |
| Picacho Reservoir | 8/29/62 | G. Rosenberg, pers. comm. |
| Lake Havasu | 9/8/55 | G. Rosenberg, pers. comm. |
| Lake Havasu | 8/13/54 | G. Rosenberg, pers. comm. |
| Tumacacori | 6/18/53 | G. Rosenberg, pers. comm. |
| New Mexico | | |
| Las Cruces | 2/1/69 | Hubbard 1989 |
| Bitter Lake | 10/4-10/6/55 | Hubbard 1989 |
| Silver City | 10/1/67 | Hubbard 1989 |
| Lake McMillan† | 10/5-10/10/88 | <i>American Birds</i> 43:149 |
| nr Portales | 10/13/88 | <i>American Birds</i> 43:149 |
| Bitter Lake | 10/23/88 | <i>American Birds</i> 43:149 |
| Oklahoma | | |
| Salt Plains NWR (2) | 9/22/88 | <i>American Birds</i> 43:125 |
| E. of Oologah † | 9/25/88 | <i>American Birds</i> 43:125 |
| NW of Alva | 8/12/33 | Baumgartner and B. 1992 |
| Anadarko | 4/18/36 | Sutton 1936 |
| Lake Murray† | 9/29/56 | B&B 1992 |
| Lake Texoma† | 6/6/65 | Sutton 1967 |
| Salt Plains NWR† | 8/30-8/31/80 | B&B 1992 |
| Kansas | | |
| Hill City, Graham County | 10/10/88 | <i>American Birds</i> 43:125 |
| Manhattan | 10/12/95 | <i>Field Notes</i> 50:74 |
| Osborne County | 8/16/1880 | KBRC files |
| Meade County | 6/16/82 | KBRC files |

*Records from California and Texas are not listed.
†These birds were not identified specifically as *Magnificent* Frigatebirds.
‡The Arizona sightings consist of all published reports, not necessarily confirmed records. Also, many of the Arizona birds were not identified specifically as *Magnificent*. Indeed, the October 8, 1995 bird was photographed and may not be a *Magnificent* (G. Rosenberg, pers. comm.). Also, Monson and Phillips (1981) felt that the 1953 and 1962 Arizona records might pertain to *Greats*, but others have disagreed.

PACIFIC NORTHWEST

The Pacific Northwest has 21 or 22 frigatebird records scattered between southern Oregon and the western tip of the Alaska Peninsula. Of these, nine or ten come from Oregon, two come from Washington, five come from British Columbia, and five come from Alaska. Pacific Northwest frigatebirds have been seen mostly between

late June and mid-September. There are, however, a surprising number of winter and early spring sightings from as far north as the Bamfield Marine Station on Vancouver Island (R. Toochin, pers. comm.), including two each from January and February and two or three from March.

Notably, there does seem to be a correlation between winter frigatebirds in the Pacific Northwest and winter sightings from California. During the last decade, four winters (including March) produced records from the Northwest. California had frigatebirds during three of those four winters. Furthermore, there was but one California winter report from the six winters that lacked Northwest records.

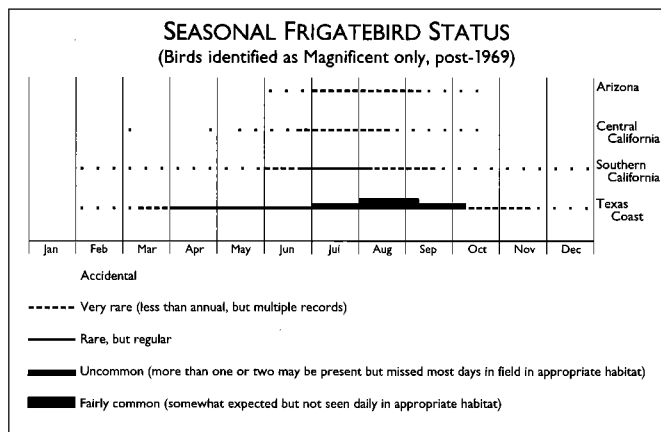
Non-winter records from the Pacific Northwest correspond rather poorly with invasions farther south. Northwest summer/fall records from 1969, 1981, 1983, 1984, 1987, 1996, and 1997 did not occur during unusual incursions into California, whereas the major irruption of 1979 led to only one Northwest record, and the minor irruptions of 1985 and 1988 brought two and one, respectively.

There are two inland records for the Pacific Northwest. The first was east of the Cascades along the Columbia River at Umatilla National Wildlife Refuge, Washington, on July 1, 1975 (Murrelet 57:43-44). The second bird was closer to the Pacific Ocean at Portland, Oregon, on June 4, 1987 (Gilligan et al. 1994).

**THE GREAT QUESTION:
ARE ALL FRIGATEBIRDS MAGNIFICENT?**

The Great Frigatebird (*Fregata minor*) is a widespread species, mostly of the tropical Indian and Pacific Oceans. Its nearest breeding colony to the contiguous United States is in the Islas Revillagigedo, Mexico (Howell 1994), which lie well south of southern Baja California and slightly more than one thousand miles from San Diego, California (and about 870 miles south of Nogales, Arizona). Throughout the preceding discussion, there was an implicit assumption that all of the frigatebirds involved were *Magnificent* and not *Great*. There are, however, three confirmed records of *Great* Frigatebird from North America: one collected at Perry, Oklahoma, November 3, 1975 (AOU 1983), an adult male photographed off Moss Landing, Monterey County, California on October 13, 1979 (San Miguel and McCaskie, in press), and an immature photographed at the Farallon Islands, California, on March 14, 1992 (AB 46:475). Also, there is a photo of a bird at the Grand Canyon, Arizona, taken on October 8, 1985, that was likely not *Magnificent* Frigatebird (G. Rosenberg, pers. comm.). Therefore, assuming that any North American frigatebird is a *Magnificent* is not without risk, particularly with any bird seen out of season or truly out of range. Surprisingly, most out-of-range frigatebirds have been identified to species by observers. Unfortunately, many frigatebirds at more mundane locations such as Texas, California, and Arizona have not. For an excellent treatise on *Magnificent*/*Great* frigatebird identification, see Howell (1994).

Last but not least, we need to consider the Lesser Frigatebird (*Fregata ariel*). This species has been found once in North America at Deer Isle, Maine, on July 3, 1960 (Snyder 1961). Astonishingly, Lesser Frigatebirds breed no closer to Maine than Trinidad and Martin Vaz Islands off the coast of Brazil more than four thousand miles away (Harrison 1983). In the Pacific the nearest colony is at the Marquesas Islands, roughly three thousand miles from the shores of southern California (Harrison 1983). Though this is quite a distance, the Maine bird suggests that the possibility of a Lesser Frigatebird can not be completely discounted in western North America.



CONCLUSION AND SUMMARY

In western North America, the Magnificent Frigatebird occurs regularly in coastal Texas and in southern California and is nearly annual in Arizona and central California. Elsewhere in the West, this species occurs widely as a vagrant, with records extending north to Alaska along the coast and as far into the interior as central Colorado.

Within western North America, two main spheres of influence seem to exist. The first is the Gulf of Mexico, which brings birds regularly to the Texas Coast from April to October. Vagrants apparently from this source have occurred at least as far west as New Mexico, with the bulk of such inland sightings occurring from mid-August into late October.

The second source is the Sea of Cortez/Pacific Ocean. Birds from these more westerly populations occur annually in small but variable numbers in coastal southern California and at the Salton Sea. During most years, a bird or two may be found in Arizona and north into coastal central California. Frigatebirds in these more westerly areas occur largely from late June through mid-September, with a distinct peak during July and early August. Year-to-year fluctuations in the far West can be dramatic and often do not affect all locations. Birds likely originating in the Pacific Ocean/Sea of Cortez have occurred as far north as Alaska and as far inland as Colorado.

The factors leading to frigatebird vagrancy and irruptions in western North America are not at all clear. Some unusual incursions and records can be clearly associated with specific hurricanes, but others cannot. Frigatebirds are known to rely heavily on soaring and gliding for traveling long distances, and such movements seem to be significantly affected by wind speed and direction (Harrington et al. 1972). Thus, future detailed analysis of wind patterns and frigatebird records may well lead to a more complete explanation. Other factors, such as water temperature, may be involved, but the most dramatic of these, El Niño and La Niña, seem to have no correlation (S. Feldstein, pers. comm.).

Magnificent Frigatebirds are aptly named birds with a penchant for wandering. Unusual records will likely continue to accrue, bringing joy to observers and adding more pieces to the status-and-distribution puzzle. Also, observers should not be satisfied with just identifying a frigatebird but should identify which frigatebird. Future records of Great, and maybe even Lesser Frigatebird, could well delight us.

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EDITOR'S NOTE

By way of coincidence, the summer of 1998 saw a notable irruption of Magnificent Frigatebirds on the West coast with 39 to 40 reported in the Southern Pacific Coast and Middle Pacific Coast regions, as well as two in southeastern Arizona by the end of July. Please see the pertinent regional reports and the Pictorial Highlights.

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