

Brown Pelican in Sacramento County in 2004, including a discussion of previous Central Valley records

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At approximately 0900 on Monday, 19 July 2004, I spotted a first-year Brown Pelican (*Pelecanus occidentalis*) swimming in the shallows of the SP (Southern Pacific) Cut, a borrow ditch for the abandoned railroad levee that borders the Stone Lakes National Wildlife Refuge (NWR) on the west. The SP Cut, which ranges from approximately 20 to 200 m wide, begins just south of the town of Freeport, Sacramento County, and ultimately joins the Delta at Snodgrass Slough over 10 km to the south. Raymond Garcia and I, traveling by boat, moved to within 10 m of the pelican. It swam along the shoreline, casting its head into the water several times, but did not appear to be successful at capturing prey. Assuming that the bird was sick or injured, we moved to within 3 m, at which point it took flight easily and landed on a log 150 m away. This log would prove to be one of the bird's regular perches over the next three months.

Several attempts to refind the bird were unsuccessful until Shawn Petrash reported it on the SP Cut approximately one km to the north on 26 July. We returned in a boat on 27 July at 0900 and found the bird swimming in Lower Beach Lake, a former oxbow of the Sacramento River connected to the northeastern end of the SP Cut. The pelican was foraging in the same manner as before, but somewhat more skillfully. What had at first appeared to be frantic casts of the head into the water were more controlled, and more successful. The bird approached the boat to within 6 m and continued to actively forage. It did not appear to be begging, but did not appear to be disturbed by our presence either. It would swim away slowly to maintain the 6 m buffer if we moved the boat toward it. I returned to Lower Beach Lake with John Trochet at 1545 and we found the bird preening on a log in the southeastern corner of the lake.

Until the last observation of the bird on 14 October 2004, it was seen on 23 different days by at least 21 observers. By 29 July, the bird's daily routine was consistent enough to risk inviting other birders to look for it, and most attempts were successful. At 1045 on 30 July, the pelican was seen flying over the trees from the west 35 m above the water. It was then that the possibility of the bird roosting in the Sacramento River or in Yolo County, less than one km to the west, was considered. On the afternoon of 2 August, Jon King sought to find the bird in Yolo County as I attempted to observe it leave for its night roost. Unfortunately, it swam out of sight and was not seen again that evening. By 22 August, I determined that the bird was roosting for the night on one of at least four different perches in Lower Beach Lake and the SP Cut. It typically stayed on its night roost until after 0800, alternated foraging and roosting until dusk, and then returned

to one of its night roosts.

The bird's foraging style was analogous to a floating heron. It swam close to the shoreline with its neck coiled and its bill held above the water. When prey was detected visually, the bill was plunged forward to capture it below the surface of the water. On a successful strike, water was slowly drained from the gular pouch and the head was thrown back to swallow. At one point, the bird shook its head and clacked its bill. This was apparently an attempt to dislodge debris from the gular pouch, not a sign of aggression or begging as I had originally thought (Daniel Anderson, pers. comm.). On occasion, the bird would fly forward 1-4 m and dive from less than a meter above the water. Brown Pelicans forage while swimming when murky or shallow water impedes plunge diving (Shields 2002). This method is often erroneously likened to the principal foraging method of the American White Pelican (*Pelecanus erythrorhynchos*), which, by contrast, typically forages with its bill partially submerged, senses prey by touch as well as sight, and often forages cooperatively (Knopf 2004).

I observed the pelican while it foraged in the late afternoon in Lower Beach Lake and tallied the number of strikes and successful strikes over seven five-minute periods on 3 August and 12 August. On 3 August, I observed the bird through a spotting scope as it foraged from 1620 to 1745. On 12 August, I observed the bird at close range from a kayak as it foraged continuously from 1705 to 2022. Success was recorded if the pelican threw back its head and swallowed, though often the prey was too small to be observed in the pouch. The results (success/number of strikes) of these timed observations as the bird actively foraged were 0/0, 0/1, 1/1, 1/7, 6/9, 7/9, and 11/15 (total=26/42, or 62% success). These numbers match my general impression that the bird was surprisingly efficient at capturing prey by this method. On a few occasions, the outline of a large fish was seen in the pouch as the bird swallowed. The suspected prey items are non-native fish (bass, bluegill, crappie, catfish, mosquito fish, and shad), bullfrogs, bullfrog tadpoles, and crayfish—all of which regularly occur in these waters.

Gradually, the pelican began transitioning to plunge diving from the air. The first attempt was noted on 23 September, when it circled from 15 m above the water and dove. While surface foraging occurred primarily within five m of the shoreline, plunge diving occurred in the middle of the water body where it is presumably deeper. The pelican was seen actively plunge diving on 12 October and 14 October. Of approximately 15 dives, only one was successful. At the same time, it was flying much higher than previously observed and circling over land, well away from the water. Although American White Pelicans and Double-crested Cormorants (*Phalacrocorax auritus*) were regularly seen nearby, the Brown Pelican was never seen associating or interacting in any way with other birds. Despite numerous attempts to find the bird through 4 January 2005, the bird was not seen after 14 October.

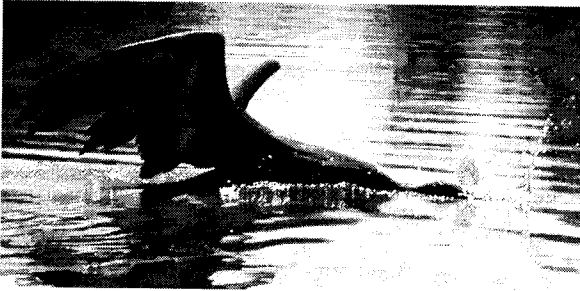


Figure 1 (at left)
Brown Pelican
(*Pelecanus
occidentalis*) foraging
in Lower Beach Lake,
Sacramento County,
on 27 July 2004.

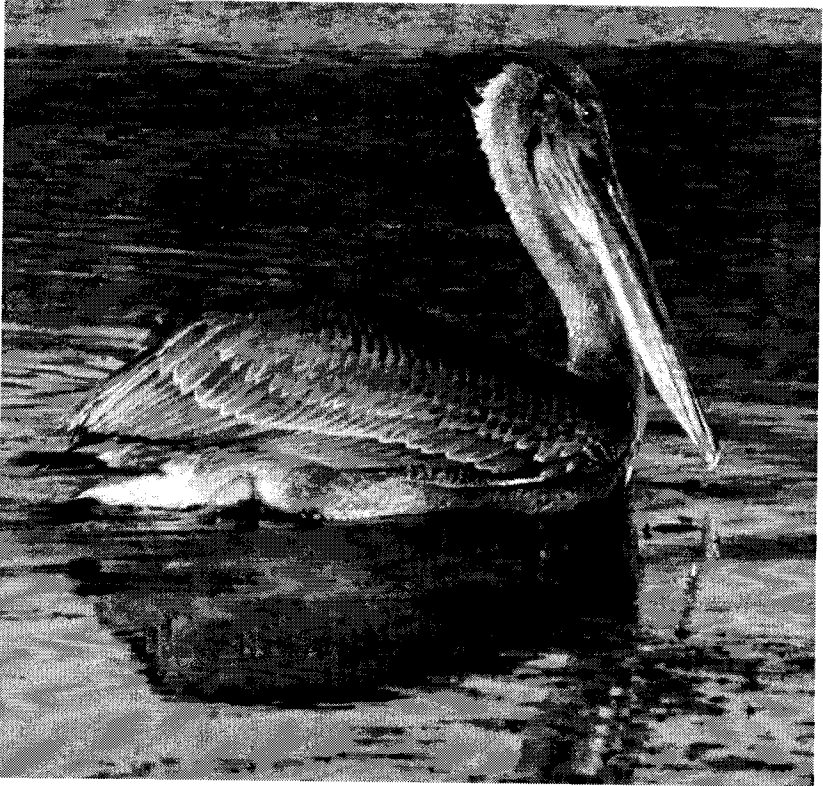


Figure 2 (above) Brown
Pelican (*Pelecanus
occidentalis*) swimming;
and Figure 3 (at right)
swallowing prey, at
Lower Beach Lake,
Sacramento County, on
12 August 2004.



photos by Chris Conard

OTHER CENTRAL VALLEY RECORDS

This is the second confirmed record of Brown Pelican in Sacramento County and one of approximately 13 for the Central Valley as a whole. Records with sufficient documentation are listed in Table 1.

Table 1. Brown Pelican records for the Central Valley.

DATE	DETAILS	SOURCE
1913, 19 Sept.	Three birds at Rancho Dos Rios, Stanislaus County, near the confluence of the Tuolumne and San Joaquin Rivers	Mailliard 1913
1976, 3 - 10 Nov.	Cal Expo, Sacramento, Sacramento County	Winter and Erickson 1977
1983, 5 Aug. - 12 Oct.	El Rico Ranch, etc., Kings County	LeValley et al. 1984
1986, 30 Sept. - 9 Oct.	Lake Kaweah, Tulare County	Bailey et al. 1987
1987, 14 - 22 Oct.	W of Thornton, New Hope Landing, San Joaquin County	Campbell et al. 1988
1994, 28 Sept. - 12 Oct.	Clifton Court Forebay, Contra Costa County	Yee et. al. 1995
1995, 10 Nov.	San Luis Reservoir Dam spillway, Merced County	Mike Rogers, pers. comm.
1998, 14 Nov. - 1999, 30 Mar.	South Wilbur Flood Area and Homeland Canal, Kings County	Roberson, et al. 1999a and 1999b; Terrill et al. 1999
2001, 18 Jul. - 31 Jul. and 15 Dec.	Eight Mile Rd. N. of Stockton, San Joaquin County	Cheri Pillsbury and David Yee, pers. comm.
2001, 4 Sept.	Iron House Sanitary Plant nr. Oakley, Contra Costa County	Steve Glover, pers. comm.
2001, 15 Oct.	Buena Vista Lake, Kern County (found dead)	John Wilson, pers. comm.
2002, 21 Dec.	Clifton Court Forebay, Contra Costa County	Kathy Robertson, pers. comm.
2004, 19 Jul. - 14 Oct.	Stone Lakes NWR, Sacramento County	See text and photos

There is a gap of 62 years between the first sighting in 1913 and the second in 1976. The subsequent 11 records all occurred since 1983. While it is unlikely that more than one bird was involved, the 1983 sighting has

been published as 1–3 (McCaskie et al. 1988), presumably because dates and locations were not continuous. Also of note was the 1998–1999 record—the only bird to remain through the winter. The bird found along Eight Mile Rd. on 18 July 2001 was seen by multiple observers through 31 July. Presumably the same bird was found at the same location on 15 December on the Stockton Christmas Bird Count, but it was not found thereafter despite attempts to relocate it. A second-hand report of a Brown Pelican on 2 September 2001 from Discovery Bay, Contra Costa County, likely involved the same bird as the 4 September 2001 record (Steve Glover, pers. comm.).

Unfortunately, many reports occurring after 1990 were not documented and are not published in *North American Birds*. These include reports without complete details, or of birds seen only from a moving vehicle. Six or seven Brown Pelicans were reported on 28 August 1991 flying north over Hwy 12, west of the Terminous Bridge, in San Joaquin County (Andy Engilis, pers. comm.). A Brown Pelican was reported flying over Los Baños in the mid to late 1990s (John Fulton, pers. comm.). A single bird was reported flying near the San Joaquin River toward Millerton Lake, Fresno County, on 2 October 2000 (Beverley Brock, pers. comm.). Cheri Pillsbury received an intriguing report from a non-birder of a Brown Pelican flying over Interstate 5 near Stockton on 26 April 2004. The date falls well outside the range of all previous Central Valley reports. Except for the 1998–1999 record, all documented occurrences have been between 18 July and 21 December. Most recently, a Brown Pelican was reported from the San Luis NWR, Merced County, on 20 July 2004 (Paul Pickering, pers. comm.).

Also intriguing is a September 1912 or 1913 childhood recollection from Knights Landing, Sutter and Yolo Counties, attributed to Muriel Kaminsky in the Sacramento Audubon Society bird observation files maintained by Elizabeth Kimball and archived at the Museum of Wildlife and Fish Biology, University of California, Davis (Tim Manolis, pers. comm.):

“Boys shouting pelicans; her mother drove boys off, showed birds to Muriel and her brother.”

Kaminsky was an active birder in the 1940s–1960s, and the similarity of the date to the Mailliard record is difficult to ignore. Unfortunately, details are lacking, such as the number of birds and a clear declaration that the birds were Brown Pelicans, though Kimball recorded the sighting on a page with other Brown Pelican reports.

DISCUSSION

The Brown Pelican is almost solely a bird of the coast and marine environments. The hows and whys of Brown Pelicans wandering to the Central Valley are largely conjecture, but some background is worth con-

sidering. Of six recognized subspecies, all restricted to the Americas, Central Valley records are almost certainly of California Brown Pelicans (*P. o. californicus*) that breed from the Channel Islands off of the southern California coast, along the Pacific coast of Baja California, throughout the Gulf of California, and off the coast of Mexico as far south as Islas Tres Marias (Shields 2002). Extralimital breeding has occurred near Point Lobos, Monterey County (Briggs et al. 1983, Terrill et al. 2000), and there were breeding attempts at the Salton Sea in the late 1990s (Patten et al. 2003).

There is a dramatic post-breeding dispersal, with birds moving along the coast regularly as far as northern Washington (Briggs et al. 1983), and rarely to Vancouver Island, British Columbia (Campbell et al. 1990). A post-breeding dispersal more recent in origin occurs from the Gulf of California into the Southwest. As recently as the early 1960s, Brown Pelicans were considered "accidentals" anywhere inland (McCaskie 1990). In the 1970s, the few occurrences of nearly 100 birds were considered remarkable, but by the mid-1990s up to 3,000 were found during the summer at the Salton Sea (Anderson et al. 1977, McCaskie 1994, Patten et al. 2003). While there were isolated records in Arizona as early as 1914 or 1915 (Vorhies and Phillips 1937), and an increase of reports in the late 1960s and 1970s (Anderson et al. 1977), by 1990 Brown Pelicans were arriving in southern Arizona and New Mexico in unprecedented numbers (Stejskal and Rosenberg 1990). By the mid-1990s, this was a more or less expected phenomenon (Stejskal et al. 1994, Williams 1998). This vast increase of inland records has occurred since the Brown Pelican population largely recovered from the pesticide-induced lows of the late 1950s through the 1970s, with current numbers exceeding historic levels (Shields 2002).

Whether Brown Pelicans are flying into the Central Valley from the Pacific coast by way of the Sacramento/San Joaquin Delta, over the Coast Range, or overland from the Gulf of California, at this point it is impossible to determine. Past occurrences may have followed any one of these routes. All records for the Central Valley are of immature birds, except for the few cases where age was not determined. This would be expected, since immatures are more nomadic than adults, and experience 50-70% first-year mortality while learning how to fend for themselves (Anderson et al. 1977, Daniel Anderson and Frank Gress, pers. comm.).

There are indications that a portion of the Central Valley records may be related to overland dispersal from the Gulf of California. While this appears unlikely due to the great distance involved, several factors support this hypothesis. In 1976, the year of the first Brown Pelican records for northern California since 1913, Hurricane Kathleen hit northern Baja California, slackened to a tropical depression, and continued over the Salton Sea and into Nevada (Kaufman 1977). As an indication of the impact on ocean-going birds, on 10 September, hundreds of Least Storm-Petrels (*Oceanodroma microsoma*) were over the Salton Sea, and there were inland records of several Magnificent Frigatebirds (*Fregata magnificens*) and a

Red-billed Tropicbird (*Phaethon aethereus*) in southern California (McCaskie 1977). Nearly 100 Brown Pelicans, considered a large number at the time, were found at the Salton Sea and in southern Arizona (Anderson, et al. 1977). The first of the 1976 northern California Brown Pelican records came just prior to the hurricane on 29–30 August, from Lake Siskiyou, Siskiyou County (Winter and Erickson 1977), followed by the Sacramento County record from 3–10 November. Also worth noting was northern California's second Blue-footed Booby (*Sula nebouxii*) at New Hogan Reservoir, Calaveras County, from 15 September to 18 October (Winter and Erickson 1977). Records of Brown Pelican over the past three decades from just outside the Central Valley in Kern County and in the Mojave Desert (McCaskie 1982, John Wilson, pers. comm.) add weight to considerations of an overland approach from the Gulf.

Other attempts to draw correlations between weather phenomena and large dispersals of pelicans into the Southwest with Central Valley records prove less satisfying. For example, there is no corresponding record in the Central Valley when “unprecedented numbers” arrived in Arizona during the summer of 1990 (Stejskal et al. 1990). However, there is no question that since the mid-1990s, the number of Brown Pelican reports in the Central Valley has increased at the same time as they were becoming more numerous in the Southwest. Increases in the number of observers and observer effort, while likely factors, do not account for the dramatic rise of pelican records. Eight of the 13 documented records for the Central Valley have occurred since 1994, with five since 2000.

The likelihood that Brown Pelicans would fly in from the San Francisco Bay, through the Delta, and up the Sacramento and San Joaquin River systems seems plausible (Frank Gress, pers. comm.). Nearer to their breeding grounds, they are known to follow rivers and irrigation canals on occasion (Daniel Anderson, pers. comm.). The records from locations adjacent to the Delta may be related to this behavior, but there is nothing to go on other than proximity. One wonders why this would not be more common. Dispersals of large numbers of first-year Brown Pelicans into the Southwest are often concurrent with periods of strong south winds out of the Gulf of California. Pelicans along the northern California coast rarely soar to great heights, as they do on the abundant thermals of the Sonoran Desert, so they are not as likely to become disoriented and wind-carried inland (Anderson et al. 1977).

Passive dispersal related to weather events, as shown above, is a likely factor in some of the inland records, though a shortage of food may also lead to Brown Pelican occurrences in the Central Valley. In both 1983 and 1987, years of Central Valley records, Brown Pelicans were struggling to feed themselves along the coast (LeValley et al. 1984, Campbell et al. 1988). Weather patterns may have been a secondary cause by reducing available prey and causing the birds to wander. These were El Niño years—severe in 1983, more moderate in 1987 (Wilson 1991). During an El Niño, nutrient-

rich upwelling off the Pacific Coast is suppressed, resulting in a collapse of the fish populations upon which Brown Pelicans and other seabirds depend (Feldstein 2003). While there is no consistent correlation between El Niño events and Central Valley Brown Pelican records, such events may serve as contributing factors.

The situation in 2004 was different from any year on record. Likely due to an early abundance of anchovies, breeding was initiated at unprecedented early dates, in unprecedented numbers, and expanded locations (Anderson et al. 1982, Daniel Anderson and Frank Gress, pers. comm.). It was also a year that saw large numbers of first-year birds showing up in the Southwest, a single bird in the Owens Valley, malnourished pelicans along the California coast, and widespread begging (Frank Gress, pers. comm., Rodgers 2004). Perhaps a combination of early abundance, followed by anchovy schools running deeper than normal (noted by fishermen and biologists), made it especially difficult for inexperienced birds to feed themselves (Rodgers 2004, Daniel Anderson and Frank Gress, pers. comm.). The greater numbers of first-year birds resulting from unprecedented breeding success, the tendency of immature birds to wander, and potential food shortages may have increased the chances that Brown Pelicans would show up in unlikely places—such as the Central Valley. Future observations with careful notes submitted to the appropriate *North American Birds* editors can help fill in the pieces of this puzzle.

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