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NESTING OF THE PEREGRINE FALCON IN THE DESERT SOUTHWEST

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The Peregrine Falcon (*Falco peregrinus*) is found almost worldwide, but few have been documented nesting in southwestern Arizona or southeastern California. Here we report on Peregrine Falcon nests discovered at two locations, both suspected in 2012 and confirmed in 2013. One is the first documented Peregrine Falcon nest on the lower Colorado River south of Parker, Arizona, and a first record for Imperial County, California (Guy McCaskie, California Bird Records Committee, pers. comm.), and the other is the first recorded for Yuma County, Arizona, at Kofa National Wildlife Refuge (NWR). The eyrie along the Colorado River was more easily accessible than the Kofa eyrie, so we observed it at a much closer range, enabling recording of more detailed information, and we were able to visit it more frequently, two to six times per month from March through September.

The eyrie along the lower Colorado River was located within a recessed ledge facing north, near Picacho State Recreation Area, bordering Imperial NWR and ~35 km north of Yuma, Arizona. It was within the top third of a near-vertical cliff, 39 m above water level, at an elevation of ~101 m.

We observed the pair of falcons beginning courtship in mid-March 2013 and confirmed successful nesting on 9 June, when three nestlings were first observed at the eyrie ledge. On the basis of plumage development as described by White et al. (2002) and the behavior of the adults throughout our observations, we estimate egg laying from 6 to 10 April and hatching on 12 or 13 May. Fledging occurred ~18 June 2013, when the young were 5 weeks old.

We continued weekly observations for approximately 6 weeks after fledging. The fledglings remained near the nest cliff, and we observed them on every visit until they reached independence at ~80 days of age. We saw only one young and one adult on our visits on 1 and 4 August. Deliveries of prey to the young were observed through 1 August. We observed only the two adults on subsequent visits on 2 and 9 September, 6 October, and 14 December.

Although this is the most southerly Peregrine Falcon nest recorded on the Colorado River, published references to suspected nesting in the area date back several decades. Rosenberg et al. (1991) reported that Peregrine Falcons nested near Parker Dam at least until 1954 and “probably” also at Imperial NWR in 1942. Monson (1944) saw Peregrines in small numbers along the lower Colorado River from Yuma north ~72 km in almost every month of the year, though he stated that evidence for breeding was lacking. Phillips et al. (1964) mentioned the Peregrine Falcon along the lower Colorado as a wintering species only. Comrack and Logsdon (2008) reported the species as rare in arid southeastern California with no nesting records south of Parker,

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Figure 1. Two Peregrine Falcon fledglings on cliff below eyrie, Imperial County, California, 16 July 2013.

Photo by Brenda J. Zaub

Arizona. No Peregrine Falcon nest or breeding behavior was detected in southwestern Arizona along the lower Colorado or in Kofa NWR during the 8-year survey period for the Arizona Breeding Bird Atlas, 1993–2000 (Burger 2005).

The Kofa eyrie was on a north-facing nearly vertical cliff face in the Castle Dome Mountains, ~60 km northeast of Yuma, at an elevation of ~662 m. We visited the site three times from 9 May to 26 June 2013 and observed from a nearby ridge. On 9 May we observed two adult Peregrine Falcons. One landed in a hole in the cliff and assumed what appeared to be an incubating position. On 7 June we observed one nestling in the eyrie when an adult landed at the nest ledge with prey. From its plumage development, we estimated the nestling was approximately 15 days old. We returned on 26 June and observed the nestling in the eyrie and two adults nearby.

Burger (2005) reported that few Peregrine Falcons nest in mountain ranges of the Sonoran and Mojave deserts away from large bodies of water. The Kofa eyrie in the Castle Dome Mountains, however, was 44 km from the nearest such feature, Martinez Lake on the lower Colorado River. The Castle Dome Mountains receive ~13.8 mm of annual rainfall, based on the past 16 years' precipitation measured at three weather stations in surrounding valleys (Gabriel Langbauer, U.S. Army Yuma Proving Ground, pers. comm.). Sonoran Desert vegetation is typical for this arid region. Bond (1946) and Enderson and Craig (1979) considered availability of a site for bathing and proximity to a perennial water source a requisite for Peregrine nesting. There are ~20 water catchments developed for wildlife and some ephemeral natural tinajas and springs within an estimated foraging distance of 11 km from the Kofa eyrie (Enderson and Kirven 1983, White et al. 2002). Arnold (1942) documented a pair of falcons hunting White-throated Swifts (*Aeronautes saxatalis*) near a water catchment in the Castle Dome Mountains, and trail cameras placed by staff at Kofa NWR photographed Peregrine Falcons at modified water sources. We think these sites are beneficial to falcons for drinking and foraging and perhaps enable them to breed

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in areas that would otherwise be too arid. The successful nestings reported here in areas not previously documented suggest continued recovery of this once-endangered species, particularly in the arid Southwest.

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LITERATURE CITED

- Arnold, L. W. 1942. The aerial capture of a White-throated Swift by a pair of falcons. *Condor* 44:280.
- Bond, R. M. 1946. The Peregrine population of western North America. *Condor* 48:101–116.
- Burger, B. 2005. Peregrine Falcon (*Falco peregrinus*), in *Arizona Breeding Bird Atlas* (T. E. Corman and C. Wise-Gervais, eds.), pp. 156–157. Univ. of New Mexico Press, Albuquerque.
- Comrack, L. A., and Logsdon, R. J. 2008. Status review of the American Peregrine Falcon (*Falco peregrinus anatum*) in California. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report 2008-06; <https://nrm.dfg.ca.gov>.
- Enderson, J. H., and Craig, G. R. 1979. Physical and biological analysis of Colorado Peregrine nesting habitat. Report to Colo. Div. of Wildlife, 1313 Sherman St., Denver, CO 80203.
- Enderson, J. H., and Kirven, M. N. 1983. Flights of nesting Peregrine Falcons recorded by telemetry. *Raptor Research* 17:33–37.
- Monson, G. 1944. Notes on birds of the Yuma region. *Condor* 46:19–22.
- Phillips, A., Marshall, J., and Monson, G. 1964. *The Birds of Arizona*. Univ. of Ariz. Press, Tucson.
- Rosenberg, K. V., Ohmart, R. D., Hunter, W. C., and Anderson, B. W. 1991. *Birds of the Lower Colorado River Valley*. Univ. of Ariz. Press, Tucson.
- White, C. M., Clum, N. J., Cade, T. J., and Hunt, W. G. 2002. Peregrine Falcon (*Falco peregrinus*), in *The Birds of North America* (A. Poole and F. Gill, eds.), no. 660. Birds N. Am., Philadelphia.

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