

Rock Wren Nesting in an Artificial Rock Wall in Folsom, Sacramento County, California

Dan Brown P.O. Box 277773, Sacramento, CA 95827 naturestoc@aol.com

Daniel A. Airola, Northwest Hydraulic Consultants, 3950 Industrial Blvd,
West Sacramento, CA 95691

The Rock Wren (*Salpinctes obsoletus*), is a rare and local breeder and uncommon winter resident in the Central Valley of California (Lowther et al. 2000), where it occupies extensive areas of rocky habitat (Beedy and Pandolfino 2013), including artificial rock revetment ("riprap") applied to protect land from erosion along rivers and lakes. Breeding season records are fewer and more localized than wintering occurrences (e.g. in ebird.org) and are widely scattered in the lower foothills surrounding the Central Valley. Few Rock Wren nests have been reported or studied in Central Valley or elsewhere throughout the species' extensive range in Western North America (Beedy and Pandolfino 2013).

We report on an active Rock Wren nest located in an artificial rock wall in a residential subdivision in the City of Folsom, Sacramento County, California in 2013. We describe late season nesting activities, the habitat in the nesting area, and the availability of similar rock wall habitat in the surrounding area.

RESULTS

Nesting and Post-Fledging Observations

Airola discovered the nest at 07:15 on 15 June 2013. He first observed a Rock Wren on the sidewalk on Caversham Way, about 30 m from the junction with Serpa Way, in the Empire Ranch subdivision, Folsom, Sacramento County, at elevation 197 m (602 ft). (The location, including the nest hole, is visible from Google Earth street view at 38°39'27.59"; 121°06'38.98".) The wren was carrying food in its bill, and entered a round hole in a large rock that was part of an extensive rock retaining wall along the lower portion of Caversham Way. After the wren entered the hole, Airola heard the distinctive sound of nestlings begging for food. He later returned to the site at about 08:00 that morning and again saw a Rock Wren enter the hole and heard begging young.

On 16 June, Susie Nishio and Steve Ball also observed and photographed an adult Rock Wren entering the same hole with food.

On 17 June, Brown observed four Rock Wren nestlings that came to the end of the entrance cavity when an adult returned to feed them. Adults were seen bringing crane flies (family Tipulidae), and unidentified moths and

beetles to the nestlings. One of the adults had a broken, worn, or deformed bill (Figure 1).



Figure 1. Rock Wren with deformed bill attending nestlings at 2013 Folsom nest site. *Photo © Dan Brown.*

Several times the young also backed up to the entrance ledge, and the adults plucked the fecal sacs as they were excreted and carried them off (Figure 2). One of the nestlings was jostled by its nest mates and fell out of the nest hole to the sidewalk below. It ran quickly in and out of the rock crevices, and the adults continued to feed it on the sidewalk and in the crevices. Eventually, it made its way up to a ledge just below the nest where the adults continued to feed it.



Figure 2. Adult Rock Wren removing fecal sac from nestling at nest hole entrance, 17 June 2013. *Photo © Dan Brown.*

In the morning on 18 June, Brown observed five fledglings being fed on a 1.3-m (51-inch) high rock ledge about 30 m (90 ft) from the nest hole (Figure 3). The adults fed the chicks at 5 to 10 minute intervals. Three of the chicks fell from the ledge at various times in the rush for delivered food, but readily scrambled back up to the ledge again. The adults also removed fecal sacs that had been deposited on the ledge by fledglings.



Figure 3. Recent fledgling Rock Wrens being fed by adults, 18 June 2013.
Photo © Dan Brown.

From 07:30 through 09:00 on 20 June, Brown observed five fledglings scrambling and flying among the rocks, in the grass above the wall, and on the street and sidewalk below. They were perched, sunning, and preening within a 10 m area of the wall. They scampered deep into the wall crevices when loud or large vehicles passed by on the adjacent road and then returned to the sunny perches after a short time. The adults very actively fed the young along the wall in the immediate vicinity and west of the nest hole. One fledgling flew down to a storm drain grate and then into the drain where it foraged. The young defecated several times, but the adults did not attempt to remove feces from the area, unlike on previous days.

On 21 July, Airola returned to the site and did not observe any Rock Wrens in a survey of the nest area and the surrounding area of wall that included the nest site. He also did not detect Rock Wrens at spot-check surveys at any of four similar rock wall sites in the surrounding area.

Nest Site Characteristics

The nest site was in a 190-m-long (580-ft) rock retaining wall constructed along the side of the Caversham Road (Figure 4). The irregularly shaped rocks that comprise the wall generally range in size from to 0.03 -0.5 cu m (i.e., cubic yd). The height of the wall varies from about 1-2 m at the ends, increasing to 3.3 m (10 ft) high at the nest site and an adjacent 150-m long segment.



Figure 4.
Location of 2013 Rock Wren nest site in artificial rock wall in Folsom.
Photo © Dan Brown

Figure 5.
2013 Rock Wren nest site in artificially drilled hole with characteristic stone "walkway".
Photo © Dan Brown



The nest was within a round hole approximately 6.5 cm (2.5 in) in diameter that was drilled into the rock (Figure 5). The hole was 67 cm (26 in) above the base of the wall. The interior of the hole entrance had a constructed "walkway" of flat 1-2.5 cm (0.5-1 in) stones (Figure 5), as is typically made by Rock Wrens (Lowther et al. 2000), that led to a nest placed about 40 cm (15 in) back from the hole entrance. No other drilled holes were evident in the adjacent portions of the wall.

Availability of Nearby Rock Wall Habitat

We quantified availability of rock wall habitat near the nest site by checking Google Earth Street View photography (earth.google.com) and then driving roads in the area of the nest site and estimating the length and height of wall segments. Rock walls similar to that on Caversham Way are common throughout the steeper portion of the Empire Ranch subdivision. We estimated about 4.5 km (2.8 mi) of rock walls along roadsides and around hillside houses within a 2 km (1.2 mi) radius of the nest site, encompassing about 2.2 ha (4.7 ac) of rock habitat. Some of this area consisted of walls shorter than the 3.3 m (10 ft) height at the nest, but walls as tall or taller than the wall height at the nest included 2.6 km (1.5 mi) encompassing 2.0 ha (4.3 ac).

DISCUSSION

Use of artificial walls as habitat by Rock Wrens has been previously reported. For example, Grinnell and Miller (1944) listed "human-built rock walls" as one of many rocky substrates occupied by the species. The general pattern of post-fledging behavior of this pair of Rock Wrens also generally conforms to that which has been previously described elsewhere (Lowther et al. 2000).

The observation of a Rock Wren nest site has some significance for several reasons. First, there is a general lack of documentation of nest sites in the Central Valley and surrounding foothills (Beedy and Pandolfino 2013), so this observation contributes limited information regarding the timing and characteristics of nesting in the region. Also, the observation suggests that the relatively abundant rock wall habitat elsewhere in the area may be suitable for breeding by the species. One caveat in characterizing such habitat as suitable, however, is that the Rock Wrens at Caversham used a drilled hole as a nest site, and these holes do not appear to be common in walls in the area. Presumably, however, suitable conditions for nesting in other rock walls may be present in the many thousands of crevices created by rock placement in the area.

Although the Rock Wren is not necessarily a species of high conservation concern, it is relatively uncommon in the Central Valley and surrounding foothills, and few nest sites have been documented. Perhaps this nesting area and others similar wall habitat available locally will provide an opportunity to acquire more natural history information on this relatively little-studied species and further clarify its status in the region.

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Figure 6. Fledgling Rock Wrens, 18 June 2013. Photo © Dan Brown.