

NORTHERN GOSHAWK: FIRST NESTING RECORD FOR SANTA BARBARA COUNTY AND CURRENT BREEDING STATUS IN SOUTHERN CALIFORNIA

PETER A. GAEDE, 918 Fellowship Road, Santa Barbara, California 93109;
pgaede@earthlink.net

DAVID KISNER, URS Corporation, 2625 South Miller Street, Santa Maria, California 93455

HUGH RANSON, 1918 Robbins Street, Santa Barbara, California 93101

ABSTRACT: The Northern Goshawk (*Accipiter gentilis*) is extremely rare and apparently irregular as a breeding species in southern California. Nesting has been confirmed only 13 times, twice at Mt. Abel, Kern County (1989 and 1990), five times at Mt. Pinos, Kern/Ventura counties (1904, 1960, 1989, 1990, and 2009), once in Ventura County (1919), once in the San Bernardino Mts., San Bernardino County (2004), three times in the Cuyamaca Mts., San Diego County (1937–1938), and once at Big Pine Mt., Santa Barbara County (2009). The nest at Big Pine Mt. was notable not only in being the first for Santa Barbara Co. but in being built in an exposed situation in a dead burned tree in partially burned forest.

On 13 June 2009, we discovered an active Northern Goshawk (*Accipiter gentilis*) nest (Figure 1) in the San Rafael Range near Big Pine Mountain. This remote portion of the San Rafael Range supports an “island” of montane coniferous forest that has been the subject of a long-term study of breeding birds. The documentation of this nest, which fledged two young, is the first confirmed record of breeding of the Northern Goshawk for this mountain range and for Santa Barbara County. The Northern Goshawk is an elusive species that occurs in southern California as a casual fall and winter visitor and as an extremely rare resident and breeder in some of the higher mountain ranges. Very low population densities, combined with the habitat’s remoteness and difficulty of access, have limited our knowledge of the species’ breeding in the region.

BIG PINE MOUNTAIN

Big Pine Mountain, in the San Rafael Range, is the highest peak in Santa Barbara County (2081 m). In 1968 and 1984, two wilderness areas were designated—the San Rafael Wilderness and the Dick Smith Wilderness—and these areas, totaling 107,277 ha, comprise the majority of the San Rafael Range. In 2007, the Zaca Fire burned just over 97,000 ha in Santa Barbara’s backcountry, including portions of Big Pine Mountain. The habitat on the north slope of Big Pine Mountain can be classified as “mixed conifer series” (Sawyer and Keeler-Wolf 1995), consisting of a mature forest of white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), canyon live oak (*Quercus chrysolepis*), sugar pine (*Pinus lambertiana*), Coulter pine (*P. coulteri*), and Jeffrey pine (*P. jeffreyi*) with a broken canopy. A few small, grassy meadows and chokecherry (*Prunus virginiana*) thickets are interspersed within open areas and areas of sparse canopy cover. The south-facing slopes around Big Pine Mountain are covered with chaparral

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA

now early in succession; before the fire, they had been dominated by areas of dense manzanita (*Arctostaphylos* spp.), yucca (*Hesperoyucca whipplei*), scrub oak (*Quercus berberidifolia*), chamise (*Adenostoma fasciculatum*), and California buckwheat (*Eriogonum fasciculatum*). Although in the two years since the fire regrowth has been substantial, as of 2009 much of the intensely burned areas remained open and sparsely vegetated.

Big Pine Mountain received little ornithological coverage prior to the 1970s (Lentz 1993). Access into these mountains was facilitated when a road was built by the Civilian Conservation Corps in the early 1930s, and some of the first visits shortly thereafter involved informal surveys for the California Condor (*Gymnogyps californianus*). It was here that some of the last remaining wild condors persisted, and in 1985 Big Pine Mountain was the location of one of the last attempts by the condor to breed before the remaining wild birds were taken into captivity (Snyder and Snyder 2000).

During the summer of 1981, Joan E. Lentz initiated surveys of the breeding avifauna of Big Pine Mountain, and these surveys have continued on an almost annual basis through the present. During each survey, one to three observers cover eight sites over one to two days. From 1981 through 2010 and between 30 May and 22 July, there have been 33 surveys, including 24 visits to the location where we found the Northern Goshawk nest in 2009 (Lentz 1993 and unpubl. data). Although we cannot discount the possibility that Northern Goshawks had gone undetected prior to the 2009 survey, we believe that this nest represents a recent colonization of the area. The origin of these birds is uncertain, but there is a high likelihood that it was the mountains of southern Kern and northern Ventura counties. This region, which includes Mount Abel and Mount Pinos, is approximately 50 km to the northeast and has produced the most frequent reports and breeding records of the goshawk in southern California.

CURRENT BREEDING STATUS IN SOUTHERN CALIFORNIA

The first nesting record for southern California is based on a set of three eggs collected by Elmer Bowen on 6 May 1904 at Mount Pinos (Garrett and Dunn 1981; Western Foundation of Vertebrate Zoology 45214). Now, more than a century later, only a handful of additional Northern Goshawk nests have been found, and the species remains elusive and extremely rare throughout the region at any time of year.

There are summer sight records for the San Rafael Wilderness (Santa Barbara County), Mount Pinos (Kern and Ventura counties), Mount Abel (Kern County), Pine Mountain (Ventura County), Clark Mountain and the San Bernardino Mountains (San Bernardino County), San Jacinto Mountains (Riverside County), and Cuyamaca Mountains (San Diego County), but before 2009 nesting had been confirmed only 11 times, at Mount Pinos, Mount Abel, the San Bernardino Mountains, and the Cuyamaca Mountains.

For Ventura and southwestern Kern counties, there are two historical records and six more recent records from 1960 through 2009. In addition to the 1904 egg set mentioned above, E. J. Percy collected set of two eggs at an unknown location in Ventura County on 9 April 1919 (Keane 2008; Denver Museum of Natural History 31544). Also within Ventura County,

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA



Figure 1. Northern Goshawk nest in burned tree, Big Pine Mountain, San Rafael Mountains, Santa Barbara County, California, 13 June 2009; nestlings 14–17 days old.

Photo by Matt Victoria

there was an active nest with nestlings attended by two adults at Mount Pinos in 1960 (J. Wiley pers. comm.). In 1989 in Kern County, two nests were active simultaneously: one at Mount Abel, where a nest with two nestlings was discovered on 10 June (McCaskie 1989, Lentz 1993) and later fledged both young, and at the base of Mt. Pinos, where another pair was attending a nest (McCaskie 1989). The Mt. Abel nest was active again in 1990 and hatched two young in June, but it was later abandoned (McCaskie 1990, Lentz 1993), possibly because of predation of the nestlings. An observation of an adult and one or two fledglings 19–20 July 1990 at Mount Pinos in Kern County (McCaskie 1991, Lentz 1993) represents another successful nesting in this area, and two fledglings seen in both the Ventura and Kern portions of the mountain in 2009 represent a fourth. A sighting of an immature in the Grade Valley/Mutau Flats area, 19 km from Mt. Pinos and 16 km east of Pine Mountain, Ventura County, on 13 June 2001 (McCaskie 2001) suggests additional nesting in the area. A juvenile in Quatal Canyon, northwestern Ventura County, 9 October 2005 (D. Pereksta pers. comm.) may have been a dispersing bird that fledged nearby, as this locality is 21 km west of Mount Pinos. Northern Goshawks have probably bred around Mount Pinos more regularly, as additional observations both during and outside the breeding season in this region suggest, but the paucity of breeding records is probably a result of low observer coverage, limited survey efforts, and the likelihood that Northern Goshawks breed here, as throughout southern California, only intermittently. In contrast to the core of this species' breeding range in

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA



Figure 2. Recently fledged Northern Goshawk at Big Pine Mountain, 6 July 2009; approximately 40 days old.

Photo by Larry Sansone

California (e.g., the northern Sierra Nevada), where suitable habitat is more extensive and continuous, the southern California mountains offer smaller, disjunct patches at the extreme southwestern edge of the species' range.

In San Diego County, there are three breeding records, all from the Cuyamaca Mountains. E. E. Sechrist collected a set of three eggs on 7 May 1937 (Puget Sound Museum 13196) and noted on the back of the data card an observation of two young birds in the same area in June of the following year (Kiff and Paulson 1997). He collected another set of three eggs just two days after the first set on 9 May 1937, now preserved at the Delaware Museum of Natural History (31545). These represent the southernmost breeding records in California, and there have been no other summer observations in this county since (Unitt 2004).

There is only one record of confirmed breeding for San Bernardino County. E. A. Cardiff (pers. comm.) heard Northern Goshawks vocalizing on 10 August 2004 at a location in the San Bernardino Mountains where nesting had been suspected. He subsequently found one fledgling, and another may have been present. Although breeding at this location has only been confirmed once, there are four summer sight records from the vicinity of the 2004 nest, in June 1997, 1999, on 16 July 2008 (E. A. Cardiff pers. comm.) and 4 July 2010 (R. McKernan pers. comm.).

In Riverside County, no nesting has been confirmed, but there are multiple spring and summer reports from the San Jacinto Mountains, as near Lake Fulmor 6 May 1978 (P. E. Lehman, McCaskie 1978), at Tahquitz Meadow 7 June 1978 (D. M. Morton, McCaskie 1978), and near Lawler Lodge 30 May 1987 (C. McGaugh, McCaskie 1987), suggesting that goshawks probably breed there sporadically in very small numbers. Most recently, Larry

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA

Mauran reported one adult at Laws Camp, junction of Tahquitz and Willow creeks, on 28 July 2007, but surveys of the San Jacinto Mountains by the San Diego Natural History Museum beginning in 2008, retracing the 1908 expedition of Grinnell and Swarth (1913), have so far failed to record any Northern Goshawks (P. Unitt pers. comm.).

OCCURRENCE IN SANTA BARBARA COUNTY

In his journal for 14 July 1971 (Santa Barbara Museum of Natural History library archives), Dick Smith (after whom the Dick Smith Wilderness in Los Padres National Forest is named), described an encounter with an adult Northern Goshawk and later two birds circling together near Lonnie Davis Campground, 13 km from the 2009 nest site. Although compelling, the details confirming the identification, and photos accompanying the notes are inconclusive.

Otherwise, all of the previous occurrences of the Northern Goshawk from the mainland of Santa Barbara County involve winter visitors between November and February (Lehman 1994). Only one of these records is from the San Rafael Mountains; the other three are of one at 914 m in the more coastal Santa Ynez Mountains (La Cumbre Peak/San Marcos Pass, 31 December 1982, adult male struck a window, SBMNH 4651), and two from the lowlands, one in the interior (Paradise Campground, Santa Ynez Valley, 7 December 1972, adult male struck a window, SBMNH 2109) and one coastal (Santa Barbara, 16–23 December 1972, immature). Also, Stewart and DeLong (1984) reported an adult Northern Goshawk interacting with a Peregrine Falcon on San Miguel Island 12 November 1982, the only record for the eight California Channel Islands. One spring and one summer record published by Lehman (1994) have since been retracted by the observers.

Do these birds and others recorded at low elevations in southern California in winter originate from the few nesting in the local mountains or from much farther north? In contrast to eastern North America, where substantial movements of this species are noted every few years, in the West the Northern Goshawk is generally considered a resident or a facultative migrant that undertakes only short movements to lower elevations in winter. Even in the West, however, fluctuations in the number of prey in the northern portions of the goshawk's range can lead to sporadic invasions or irruptions in which birds migrate longer distances southward. During these irruptions, adults outnumber immatures. In the winter of 1916–1917 a large-scale invasion reached the western United States, including California (Grinnell 1917). Although the distinction between a western subspecies *A. g. striatulus* and a northern and eastern subspecies *atricapillus* is no longer recognized, Grinnell identified three California specimens collected in November 1916 (all adult males, including one in southern California from northeastern Imperial County) as the eastern subspecies. An invasion of this magnitude, which included reports of an additional 25 birds statewide, has not been paralleled since. More recent irruptions, from the 1970s through the 1990s, occurred every 10 years, in 1972, 1982, and 1992 (Wheeler 2003). The records from the lower elevations of Santa Barbara County fit this pattern and make a strong case for birds originating far to the north. Lowland records for southern California in other years are more difficult to explain.

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA

Nest in Santa Barbara County

On 13 June 2009 when we discovered the nest at Big Pine Mountain, we observed both adults; the adult male was paired with a female that appeared to be in pre-definitive plumage, with a brownish cast to the upperparts, a dull eye, and coarsely barred chest, belly, and wing coverts. These characteristics suggest that she was probably two years old. We distinguished the female by her larger size and lower-pitched calls, the difference being especially evident when both birds were vocalizing simultaneously. On each wing primary 5 was missing, so the bird was in active molt, a process that is typically suspended while adults are feeding chicks and resumed after breeding (Pyle 2005), an adaptation to concentrate available energy on providing for the young. A bird in good physical condition, however, may continue molting during this period, and good condition may also contribute to a readiness to breed as a subadult (P. Pyle pers. comm).

The nest contained two nestlings that we estimated (on the basis of the criteria of Boal 1994) to be between 14 and 17 days old. It was placed at the broken top of a dead Jeffrey pine, approximately 20 m high, at an elevation of 1597 m. The nest tree had been burned by the recent Zaca Fire and was charred, with no limbs extending out from the trunk (Figure 1). The fire apparently burned the area around the nest with varying intensity, leaving a mosaic of some patches untouched or lightly burned, others completely devastated. The nest tree measured 124 cm in diameter at breast height and was situated at the bottom of a gradual (7%) northeast-facing slope. An intermittent stream was flowing 12 m from the nest tree. Some of the trees immediately surrounding the nest tree were alive and only partially burned, but none had branches overhanging the nest tree, which left the nest and nestlings completely exposed. Nesting in a burned tree and the lack of vegetation over and immediately surrounding the nest are atypical of the Northern Goshawk, which generally places its nests under the forest canopy and in a live tree (Squires and Reynolds 1997, Keane 2008). Other aspects of the nest site, such as the slope, maturity of the forest, tree height, and distance to water were typical of goshawk nests studied elsewhere (Shuster 1980, Hayward and Escano 1989). Both nestlings fledged sometime just prior to 6 July, when Jon Dunn, Larry Sansone, and Wes Fritz found them in a nearby tree. At this time, the fledglings were capable of short flights, but their feathers were not fully grown (see Figure 2). Gaede observed both fledglings again on 27 July, 0.5 km from the nest. Both were very vocal and remained together, frequently flying short distances under the forest canopy.

In 2010, we visited Big Pine Mountain 12–14 June, and Curtis Marantz and Wes Fritz visited 6–8 July. We observed two Northern Goshawks in the same area as in 2009, but the nest was not occupied, and we found no evidence of nesting.

ACKNOWLEDGMENTS

We thank Eugene Cardiff, David Clendenen, Paul Collins, René Corado, Tom Edell, Wes Fritz, John Green, Mike Hamilton, Oscar Johnson, Dave Pereksta, Robert McKernan, Gary Shugart, Nick Todd, Jim Wiley, and Jean

NORTHERN GOSHAWK BREEDING IN SOUTHERN CALIFORNIA

Woods for information on egg, nest, and sight records for southern California and Peter Pyle for comments on the birds' age and molt. Jan Hamber provided information on the history of Big Pine Mountain. Joan Lentz, Jon Dunn, Paul Lehman, John Keane, Dan Reinking, and Philip Unitt provided useful comments on earlier drafts of the manuscript.

LITERATURE CITED

- American Ornithologists' Union. 1998. Checklist of North American Birds, 7th ed. Am. Ornithol. Union, Washington, D.C.
- Boal, C. W. 1994. A photographic and behavioral guide to aging nestling Northern Goshawks. *Studies in Avian Biology* 16:32–40.
- Garrett K., and Dunn, J. 1981. *Birds of Southern California: Status and Distribution*. Los Angeles Audubon Soc., Los Angeles.
- Grinnell, J. 1917. An invasion of California by the Eastern Goshawk. *Condor* 19:70–71.
- Grinnell, J., and Miller, A. H. 1944. The distribution of the birds of California. *Pac. Coast Avifauna* 27.
- Hayward, G. D., and Escano, R. E. 1989. Goshawk nest-site characteristics in western Montana and northern Idaho. *Condor* 91:476–479.
- Keane, J. J. 2008. Northern Goshawk (*Accipiter gentilis*), in *California Bird Species of Special Concern* (W. D. Shuford and T. Gardali, eds.), pp. 156–162. *Studies of Western Birds* 1. W. Field Ornithol., Camarillo, CA, and Calif. Dept. Fish and Game, Sacramento.
- Kiff, L. F., and Paulson, D. R. 1997. Northern Goshawk breeding records from San Diego County, California. *W. Birds* 28:113–114.
- Lehman, P. E. 1994. *The Birds of Santa Barbara County, California*. Vert. Mus., Univ. of Calif., Santa Barbara.
- Lentz, J. E. 1993. Breeding birds of four isolated mountains in southern California. *W. Birds* 24:201–234.
- McCaskie, G. 1978. Southern Pacific Coast region. *Am. Birds* 32:1206–1211.
- McCaskie, G. 1987. Southern Pacific Coast region. *Am. Birds* 41:1486–1489.
- McCaskie, G. 1989. Southern Pacific Coast region. *Am. Birds* 43:1366–1369.
- McCaskie, G. 1990. Southern Pacific Coast region. *Am. Birds* 44:1184–1188.
- McCaskie, G. 1991. Southern Pacific Coast region. *Am. Birds* 45:1160–1163.
- McCaskie, G. 2001. Southern Pacific Coast region. *N. Am. Birds* 55:481–484.
- Pyle, P., 2005. Remigial molt patterns in North American Falconiformes as related to age, sex, breeding status, and life-history strategies. *Condor* 107:823–834.
- Sawyer, J. O., and Keeler-Wolf, T. 1995. *A Manual of California Vegetation*. Calif. Native Plant Soc., Sacramento.
- Shuster, W. C. 1980. Northern Goshawk nest site requirements in the Colorado Rockies. 1989. *W. Birds* 11:89–96.
- Snyder, N., and Snyder H. 2000. *The California Condor: A Saga of Natural History and Conservation*. Academic Press, San Diego.
- Stewart, B. S., and DeLong, R. L. 1984. Black-shouldered Kite and Northern Goshawk interactions with Peregrine Falcons at San Miguel Island, California. *W. Birds* 15:187–188.
- Squires, J. R., and Reynolds, R. T. 1997. Northern Goshawk (*Accipiter gentilis*), in *The Birds of North America* (A. Poole and F. Gill, eds.), no. 298. Birds N. Am., Philadelphia.
- Unitt, P. 2004. San Diego County bird atlas. *Proc. San Diego Soc. Nat. Hist.* 39.
- Wheeler, B. K. 2003. *Raptors of Western North America*. Princeton Univ. Press, Princeton, NJ.

Accepted 23 September 2010