

THE CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO AND ADJACENT AREAS

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ABSTRACT: Historical accounts indicate that the Gray Hawk (*Buteo nitidus*) was decidedly rare and irregular in New Mexico, with no certain nesting, through the 1980s. The species began to increase in numbers and distribution in southwestern New Mexico in the 1990s, and was documented nesting there in 2004. It arrived in southeastern New Mexico in the lower Pecos River valley in 2005, first nesting there in 2007. Several reports from the Rio Grande valley in south-central New Mexico in 2006 suggest possible expansion into that area as well. The spread in New Mexico coincides with increased numbers and an expanded range in adjacent Arizona and Texas, suggesting the Gray Hawk has been expanding generally northward and higher in elevation for several decades; recent records from the northern Mexican Plateau indicate interior northern Mexico is also included in this expansion. While improved habitat conditions may have aided this increase in local areas, the scale of the range expansion suggests other factors, possibly including increasingly warmer temperatures, may be facilitating this southern raptor to expand northward.

The Gray Hawk (*Buteo nitidus*), a neotropical raptor found from the extreme southwestern United States south to Argentina, has a long history of occurrence in Arizona and Texas but has had a checkered—and occasionally contentious—history in New Mexico. Originally attributed to the state on the basis of two egg sets collected by Frank Stephens at Fort Bayard, Grant County, 23 April 1876, New Mexico was for years included within the range of the species (e.g., Bendire 1892, Bailey 1928, A.O.U. 1931). Some 75 years passed, however, before the species was again reported, when two birds were seen in the Gila River valley near Cliff, Grant County, in July 1953 (Ligon 1961). Noting the similarity of the collected eggs (only one of which was extant) to those of Cooper's Hawk (*Accipiter cooperii*) plus the apparent oddity of the habitat where collected (foothill oak woodland) and Stephens' inexperience at the time, Hubbard (1974) suggested the eggs may in fact have been those of Cooper's Hawk and, in the absence of any unquestioned occurrence, concluded that Gray Hawk should be considered unverified in New Mexico. Zimmerman (1976) countered that argument with new information, citing a feather collected near Mangas Springs, Grant County, 13 October 1974 and a photograph of an adult in the Mimbres River valley, Grant County, 8 May 1975 to confirm the species' presence in the state. He also reported sightings of an adult at the same location in the Mimbres Valley 16 May 1973 and an apparently territorial pair there on various dates 2 May–6 August 1975. In addition, he reported credible observations by others of single birds seen at San Simon Cienega, Hidalgo County, 10 April 1961 and in the Gila Valley near Redrock, Grant County, 23 August 1973. By the late 1970s, consensus was achieved that the Gray Hawk was at best decidedly rare and apparently irregular in occurrence in southwestern New Mexico, with no satisfactory proof of nesting (e.g., Hubbard 1978).

CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

RECENT OCCURRENCES IN NEW MEXICO

Following the 1975 observations, no additional credible reports were forthcoming from southwestern New Mexico for almost two decades. There were, however, a handful of reports from farther east in the state during that period: one seen soaring high over Las Cruces, Doña Ana County, 31 March 1979 (Am. Birds 33:796); one seen flying from a grove of trees on the plains east of Roswell, Chaves County, 22 April 1979 (Am. Birds 33:796); one briefly seen at Rattlesnake Springs, Eddy County, 17 September 1988 (Am. Birds 43:149); and one seen soaring near Socorro, Socorro County, 22 September 1989 (Am. Birds 44:138). All were reported by competent observers, but apparently none had prior experience with the Gray Hawk. We reviewed the original documentation for each of these reports and concluded that, although suggestive, none was entirely satisfactory for the species. While one or more of these may have represented the Gray Hawk, the timing and location of the reports together with distant, brief, and/or incomplete views suggest that the Broad-winged Hawk (*Buteo platypterus*), now understood as a regular spring and fall transient through New Mexico from the Rio Grande valley eastward (including at the above four locales), or some other species may have been involved in all instances. Noteworthy during that period was a report of an immature near Artesia, Eddy County, 24 September–1 October 1980 that was captured, measured, and photographed, and was initially announced as the “second unquestioned [New Mexico] record and the first from the southeast” (Am. Birds 35:212). Close analysis of the photographs, however, showed the bird to be an immature Broad-winged Hawk, not a Gray Hawk (Am. Birds 35:852).

This somewhat muddled picture of the status of the Gray Hawk in New Mexico began to change in the early 1990s, when raptor biologist R. W. Skaggs (in litt.) observed one or two adults along the Gila River near Cliff on several dates 20 April–3 May 1992; from the behavior, he suspected they were a nesting pair, although no nest was seen. Subsequently, an adult was seen and extensively detailed in the southern Animas Valley at Clanton Cienega, Hidalgo County, 22 July 1994 (Field Notes 48:974). That was followed by two (an adult and an immature) in the middle Animas Valley along Animas Creek 5 July 1996, with the immature (photographed by J. R. Oldenettel) remaining through 10 August 1996 (Field Notes 50:980; 51:99). Next was a detailed report of an immature near Cliff 9 July 1998 (S. H. Stoleson in litt.).

By 2000, reports of Gray Hawks in New Mexico began to accelerate; in fact, the species has been found in the state annually since then, typically at multiple locales each year, and including at sites with no previous history of the species. Perhaps no place illustrates this expansion better than Guadalupe Canyon, on the Mexico border in Hidalgo County, New Mexico, and adjacent Cochise County, Arizona. One of the most visited and studied bird locales in the Southwest over the past 50 years, the canyon became famous for harboring Mexican species at the northern edge of their ranges and was regularly searched for novelties from the 1950s into the 1990s without, apparently, any record of the Gray Hawk. That changed when A. Moorhouse reported one in the Arizona portion of the canyon 5 June 1998

CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

(T. E. Corman in litt.). Nesting was first documented in the Arizona portion in 2000, and a single adult was seen in the New Mexico portion 25 July 2000 (N. Am. Birds 54:409). The species subsequently was found nesting in the Arizona portion each year thereafter, but it was slower to colonize the upper canyon, with no New Mexico reports in 2001, only a single individual seen in 2002, and none again in 2003. In 2004, a pair established a territory in the upper canyon April–June, and an adult was tending a large nestling there 25 July, providing the first certain nesting for New Mexico (N. Am. Birds 58:576). A pair reoccupied the same territory April–July 2005, and the adults were seen feeding two juveniles there 9 August (N. Am. Birds 60:113). In 2006, the territory in the upper canyon was again occupied, and a new territory was established down-canyon closer to the state line, and both territories were successful by late July–early August. A raptor survey of the canyon 8 May 2007 revealed two Gray Hawk nests in New Mexico in the same general locales as the 2006 territories, as well as two additional nests and a third occupied territory in the Arizona portion (N. Moore-Craig in litt.).

Concurrent with the Guadalupe Canyon colonization were additional records of the Gray Hawk from the nearby west side of the Peloncillo Mountains in Hidalgo County and immediately adjacent Arizona. These included single individuals in Arizona at the mouth of Skeleton Canyon 1 July 2001, 27 July 2002, and 28 June 2004 (J. E. Parmeter, J. R. Oldenettel, Williams pers. obs.), and at or near Rodeo, Hidalgo County, 24 April and 6 October 2004 and 16 July–1 October 2006 (R. E. Webster). In addition, records have continued from the Animas Valley, located just east of Guadalupe Canyon and the Peloncillo Mountains, where one was seen in the middle portion along Animas Creek 15 September 2005 (D. J. Beatty in litt.) and single birds were photographed at three locales in the middle and southern valley 21 July–23 September 2006, including Animas Creek and the vicinity of Clanton Cienega (N. Am. Birds 60:558, 61:115); an apparent adult pair was at the latter site 12 May 2007 (N. Moore-Craig in litt.). Meanwhile, there have been additional records from the Gila Valley, with an adult along the Gila River near the Arizona line at Virden, Hidalgo County, 19 April 2002 (N. Am. Birds 56:341) and another adult on the Gila River downstream from Redrock at the mouth of Nichols Canyon, Grant County, 29 May 2006 (N. Am. Birds 60:413).

Across the state in the lower Pecos River valley, an adult was seen and convincingly described at Rattlesnake Springs 26–27 April 2005 (R. A. Meyer in litt.), providing the first credible report for Eddy County and southeastern New Mexico. The following year, at least one adult was there on various dates 24 April–28 May 2006 (N. Am. Birds 60:413), but there were no summer reports that year. In 2007, however, an adult pair was present by late April and was documented and photographed by many through May; it was actively nesting in June (Williams pers. obs., photograph of nest by R. H. Doster), but the effort is believed to have failed, perhaps owing to human disturbance. Meanwhile, the lower Rio Grande valley in south-central New Mexico witnessed an unprecedented flurry of Gray Hawk reports in 2006, although none were confirmed by photograph. These were single birds at Mesilla, Doña Ana County, 13 April 2006, along Las Animas Creek west

CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

of Caballo Lake, Sierra County, 22 April 2006, and along the river south of San Marcial, Socorro County, 13 May 2006 (*N. Am. Birds* 60:413).

SPREAD IN ARIZONA

The increased observations in New Mexico in recent years mirror similar increases reported in adjacent Arizona and Texas. In Arizona, where the Gray Hawk has been known as a summer resident since territorial days, Phillips et al. (1964) reported the center of its abundance was the Santa Cruz River valley near Tucson; they noted the species had become scarce there by the 1940s, apparently owing to habitat destruction. In recent decades, however, the species has repopulated the Santa Cruz Valley. It has increased in numbers and expanded in range west to the Baboquivari Mountains, northwest to the vicinity of Phoenix, north to the vicinity of Roosevelt Lake in the Salt River drainage, northeast to the vicinity of San Carlos Lake in the Gila River drainage, and eastward through Cochise County to near the New Mexico line (Glinski 1998, Bibles et al. 2002, Wheeler 2003, Bibles and Mannan 2004, Corman and Wise-Gervais 2005). Although recorded from the San Pedro River valley in early years (Swarth 1914), the Gray Hawk went unreported there for many decades, until it was discovered nesting there in the early 1960s (Phillips et al. 1964, Bibles et al. 2002). It has substantially increased there since the late 1980s, e.g., within the San Pedro Riparian National Conservation Area the population increased from 11 pairs in 1986 to 25 pairs by 1995 (Krueper 1999); the San Pedro River may now host nearly half of Arizona's breeding population. Farther east in Cochise County, the species had been detected at least once in the San Bernardino Valley in the late 1940s (Phillips et al. 1964), but it was not until the 1980s that a pair was found nesting (Glinski 1998), and it was only in the 1990s that the species increased substantially as a summer resident there, with a minimum of four nesting pairs annually by the early 2000s (W. R. Radke in litt.). Meanwhile, the Gray Hawk has continued to expand east along the Gila River during the 2000s, recently approaching New Mexico in the Gila Box National Conservation Area east of Safford (Krueper pers. obs.). While some increases in numbers in Arizona can be linked to improved habitat in historic strongholds (e.g., Bibles et al. 2002), the species has nevertheless spread far west, north, and east of historic range (e.g., Corman and Wise-Gervais 2005), expanding from its historical core range along the Santa Cruz River north to Tucson (ca. 1000 m, latitude 31° 34' N) to sites approaching 1760 m in the Huachuca Mountains (Krueper, W. H. Howe pers. comm.) and to latitude 33° 36' N in central Arizona (Glinski 1988, Corman and Wise-Gervais 2005).

SPREAD IN TEXAS

In Texas, the Gray Hawk was historically known only from the lower Rio Grande valley in the southernmost portion of the state, with breeding documented in Webb County in 1892 and 1913 (Oberholser 1974). It largely disappeared from there, perhaps owing to habitat destruction, as the 20th century progressed, with few reports and no nesting documented for many

CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

decades (Oberholser 1974, Brush 2005). In the early 1970s, however, the Gray Hawk began a comeback in the lower valley, where in subsequent years it continued to spread to new locales, and it is now well established in Cameron, Hidalgo, and Starr counties upstream at least to Falcon Dam (Brush 2005, Petrikeev 2007). Farther west, the species apparently arrived in trans-Pecos Texas in Big Bend National Park around the 1970s (Wauer 1973), where reports increased in frequency during the 1980s and nesting was first documented in 1988 (Wauer 1996). To the north of the Big Bend region, single Gray Hawks were sporadically reported in the Davis Mountains by the mid-1970s, but the species did not become regular there until the late 1990s, with the first evidence of nesting in 2000 (Bryan and Karges 2001); by 2006, at least three pairs were nesting there (J. P. Karges pers. comm.). Within Texas, the Gray Hawk has expanded from near sea level up to ca. 1600 m in the Davis Mountains and in latitude from 26° 10' N to 30° 38' N.

DISCUSSION

Taken together, the steady increase in numbers and expansion of range, first noted in Arizona by the 1960s and 1970s, subsequently in Texas by the 1970s and 1980s, and eventually in New Mexico by the 1990s, suggest the Gray Hawk has been progressively expanding generally northward and higher in elevation across a broad front for several decades. Historically unreported from the northern Mexican Plateau (e.g., Howell and Webb 1995, Bibles et al. 2002), recent documentation of the species in the states of Durango, Coahuila, and Chihuahua from 2003 through 2007 (N. Am. Birds 57:408, 61:337, 61:519) suggests this expansion is occurring in interior northern Mexico as well. In the United States, some increases can be attributed to locally improved habitat conditions, including establishment of tall trees in riparian areas for nesting and brush encroachment in adjacent uplands for foraging; however, to rely entirely on that supposition would imply that riparian habitat conditions have improved generally across the region, a view at odds with most recent assessments of riparian conditions in the southwestern United States. While we agree that habitat conditions favorable to Gray Hawk have indeed improved in some local areas, we suggest that riparian habitat recovery *per se* may not entirely explain this broad range expansion and that other factors may be involved. One such factor may be increasing temperatures, both globally and regionally, in recent decades (Crick 2004, Inkley et al. 2004), which may be playing a role in allowing this primarily tropical species to expand northward. In particular, expansion and maturation of upland brush (e.g., mesquite, *Prosopis* spp.) may be a key feature, with increasing temperature possibly facilitating increased range and numbers of principal prey species (e.g., *Cnemidophorus* lizards). In effect, warming temperatures may benefit the Gray Hawk by increasing foraging habitat via prey abundance (Bibles et al. 2002, B. D. Bibles in litt.).

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CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

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CHANGING STATUS OF THE GRAY HAWK IN NEW MEXICO

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Gray Hawk

Sketch by Dale Zimmerman