NOTES

FIRST RECORDS OF THE SHORT-TAILED HAWK AND GRAY HAWK FOR THE BAJA CALIFORNIA PENINSULA

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During late October and early November 2011, I visited the tip of the Baja California Peninsula, from La Paz to San Jose del Cabo, all of which lies within the biogeographic region known as the Cape District, encompassing habitats ranging from desert in the lowlands to thorn forest in foothills and pine–oak woodlands on higher slopes (Howell 2001). This portion of the Cape District, at the tip of the world's second-longest peninsula oriented north–south, is also well known for concentrating vagrant birds. On 30 October 2010, I was walking through a patch of thorn forest at Caduaño, Baja California Sur, when I heard the scold notes of a Western Tanager (*Piranga ludoviciana*). I quickly located the source of the tanager's agitation: an adult Gray Hawk (*Buteo nitidus*) perched on dead branches just below the canopy. The hawk, no farther from me than 20 m, remained for at least a minute before taking flight (Figure 1). Efforts to relocate it the next day failed. On 3 November 2010, approximately 90 minutes before sunset, I was walking along the upper lip of an arroyo near the road to San Antonio de la Sierra, Baja California Sur. This arroyo is approximately 22.5 km southwest of Mexico Highway 1, at an elevation of approximately 700 m. A small hawk came into view high above and quickly disappeared into the sun's glare. Suspecting the bird to be a Broad-winged Hawk (*B. platypterus*), rare on the peninsula, I readied my camera. When it reappeared I took more than a dozen photographs. Unfortunately, the bird quickly soared off to the north. Review of the photographs immediately thereafter (Figure 2), however, revealed that the hawk was a light-morph adult Short-tailed Hawk (*B. brachyurus*).

The range and population of the Gray Hawk in the southwestern United States have been growing over the last three decades (Williams and Krueper 2008). Historically, this species' breeding range in the United States was limited to southeastern Arizona, the lower Rio Grande valley in Texas, and west Texas in the vicinity of Big Bend National Park and the Davis Mountains (Bibles et al. 2002). During the 1980s, however, the numbers and range of the Gray Hawk started expanding in both Arizona and Texas, and breeding was first noted in southern New Mexico in 2004 (Williams and Krueper 2008). Western Arizona's first record was in spring 2007 at Alamo Lake in La Paz and Mohave counties, and a Gray Hawk was recorded at the same location in May 2008 (Stevenson and Rosenberg 2008). A similar range expansion might be taking place in northwestern Mexico (Williams and Krueper 2008). Nonetheless, this species has not yet been recorded in California (Hamilton et al. 2007), and there are no prior records from the Baja California Peninsula (Erickson and Howell 2001).

In both northwestern Mexico and Arizona the Gray Hawk favors riparian habitats dominated or surrounded by mesquite (*Prosopis* spp.), with trees 12–15 m in height preferred for nesting (Bibles et al. 2002). Notably, the habitat at Caduaño consists of a patchwork of agricultural fields, some fallow, and copses of dense acacia (*Acacia* spp.) and mesquite; a few of the trees in this area appear to be 12–15 m tall. In both Sonora and Arizona, Gray Hawks largely depart in September and October and return in March (Russell and Monson 1998, Bibles et al. 2002).

The Short-tailed Hawk has undergone a range expansion even more dramatic than that of the Gray Hawk. As of 1940, its Mexican range was not known to extend north or west of coastal southern Tamaulipas; in the United States it was known only in

Florida (Brown and Amadon 1968). In western Mexico, this species was first detected in 1941, in Michoacán (Blake and Hanson 1942). It reached Nayarit and Sinaloa by the mid-1960s and Sonora by 1982 (Williams et al. 2007). In 1985, Arizona recorded its first Short-tailed Hawk (Rosenberg et al. 2007), and by the summer of 2010 the number of accepted records there had reached 25, all from the eastern portion, north to the Pinal Mountains (Snyder et al. 2010). Additionally, the Short-tailed Hawk was first recorded in southern Texas in 1989, in western Texas in 2002, and in New Mexico in 2005 (Williams et al. 2007). Two vagrants have been found much farther astray, with an immature in coastal Alabama in October 2003 (Duncan and Duncan 2004) and an adult in northernmost Michigan in November 2005 (Svingen 2006).

In Arizona, the Short-tailed Hawk favors pine woodlands for nesting so is limited to elevations of ~2000 m or higher (Snyder et al. 2010). In Sonora, it has been found in a broader range of habitats, from tropical deciduous forest to pine–oak woodland and accordingly has been recorded there over a much greater elevational range, from 125 to 2000 m (Russell and Monson 1998). The Sierra de la Laguna, in the Cape District of Baja California Sur, reaches an elevation of 2200 m and supports pine–oak woodland above ~1300 m. In Arizona and Sonora the Short-tailed Hawk appears to be migratory, but the degree to which this migration is elevational rather than latitudinal is unclear (Russell and Monson 1998, Snyder et al. 2010).

Given that neither the Short-tailed nor the Gray Hawk had been previously recorded Baja California, one might wonder, "How did these birds reach southernmost Baja California Sur: via land (thus passing east to west north of the Gulf of California) or by flying across the gulf?"

Birds that migrate by soaring, such as hawks of the genus *Buteo*, generally avoid migrating over water and commonly take much longer routes to minimize water crossing (Berthold 2001, Newton 2008). An analogy for the birds in Baja California may be found in the wintering of Swainson's Hawks (*B. swainsoni*) in Florida. That

Figure 1. Adult Gray Hawk in thorn scrub at Caduaño, Baja California Sur, 30 October 2010. A, front view; B, rear view.

Photos by Steven G. Mlodinow

species nests in central and western North America and winters predominantly in South America, but also in small to moderate numbers in southern Florida (Stevenson and Anderson 1994). Most of the Florida birds are immatures, probably individuals that strayed east before heading south and then found themselves "trapped" at the tip of the Florida peninsula (N. R. F. Snyder pers. comm.). However, Swainson's Hawks are seen annually during fall at hawk watches in Pennsylvania and New Jersey, and they have been recorded multiple times in other eastern states and provinces (Wheeler 2003). Here the analogy falters, as neither the Short-tailed nor the Gray Hawk has been recorded west or north of Arizona. Therefore, a crossing of the Gulf of California from Sonora to Baja California should be considered.

In other parts of the world, raptors regularly migrate moderate distances over water. The "East Asian Oceanic Flyway," used by over 200,000 raptors annually, requires a 300-km flight over water from the Philippines to eastern Indonesia (Lin and Severinghaus 1998), perhaps aided by weak updrafts over the tropical waters (Newton 2008). Additionally, a small portion of the European population of the Honey Buzzard (*Pernis apivorus*), a species that migrates primarily by soaring, crosses the Mediterranean from Sicily to Tunisia (Berthold 2001, Newton 2008), a minimum distance of 160 km. Occasional wandering to islands off the North American mainland by buteos also entails substantial flights over water. For instance, there are three records of the Red-tailed Hawk (*B. jamaicensis*) and one of Rough-legged Hawk (*B. lagopus*) from Bermuda (Amos 1991, A. Dobson in litt), which is more than 1000 km from the nearest point on mainland North America. Less impressive but more frequent is the rare but annual occurrence of migrant Broad-winged Hawks in Cuba

Figure 2. Adult Short-tailed Hawk near San Antonio de la Sierra, eastern slope of the Sierra de La Laguna, elevation approximately 700 m, 3 November 2010. The banded tail identifies it as an adult.

Photo by Steven G. Mlodinow

(Garrido and Kirkconnell 2000), entailing an overwater flight of at least 150 km. The Broad-winged Hawk has also occurred once on San Clemente Island, in California's Channel Islands, requiring a 92-km water crossing (Sullivan and Kershner 2005). Although it is now extirpated there, at some point the Red-tailed Hawk colonized Isla Guadalupe, Baja California, requiring flying across at least 250 km of water (Jehl and Everett 1985). Crossing the Gulf of California halfway down the peninsula requires an overwater flight of about 120 km. However, a crossing farther north, island hopping from central coastal Sonora via Isla Tiburon, Isla San Esteban, and Isla San Lorenzo, requires overwater flights no greater than 17 km, and these arid islands should provide thermals for soaring. Even where it meets the Pacific, the Gulf of California is less than 200 km wide. Thus an overwater route for both the Gray and Short-tailed Hawk seems achievable.

It is also worth considering whether these extralimital records of the Gray and Short-tailed hawks might be related to these species' recent population changes. When a species' population exceeds an area's carrying capacity, individuals disperse in search of new locations suitable for breeding, often leading to range expansion (Newton 1998, 2003). Such dispersal tends to be nondirectional and proportional to the size of the species' breeding territory (Newton 2003). Therefore, both the Gray and Short-tailed hawks may have strayed to Baja California Sur as part of each species' population increase and subsequent range expansion. An increase in the source population can also result in an increase in vagrancy during migration (Vinicombe and Cottridge 1996, Patten and Burger 1998, Veit 2000). Therefore, the growth of the populations of the Gray and Short-tailed hawks might increase the likelihood of their reaching the Baja California Peninsula.

The age of these hawks might clarify the etiology of their occurrence in Baja California Sur. Both birds were adults, yet vagrants are most often birds in their first year of life (Vinicombe and Cottridge 1996, Berthold 2001). Thus these hawks may have arrived on the Baja California Peninsula by dispersal, then remained in suitable habitat, or they may have been migrants returning to winter grounds first located during a previous year. Either mechanism could lead to additional records from Baja California as long as population increases continue.

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