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Photo: Thomas Hayes

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Cover Page: Adult female Ridgway's Hawk (*Buteo ridgwayi*) on Petite Cayemite, 29 January 2020. Photograph by Thomas Hayes.

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Abstract

The Ridgway's Hawk (*Buteo ridgwayi*) is a Critically Endangered, diurnal bird of prey endemic to the Caribbean island of Hispaniola and some satellite islands. This hawk was once distributed in lowland habitats across the island, which includes the countries of Haiti and the Dominican Republic. However, its population has declined over the past century and it was believed to have been extirpated from Haiti nearly 60 yr ago. Here we report the first documented sighting of Ridgway's Hawk on Les Cayemites, Haiti in over 100 yr and the first sighting in Haiti since 1962. This short note describes our initial rediscovery of the hawk in 2019 and our subsequent field surveys in 2020 and 2021. Given the importance of Les Cayemites to the Ridgway's Hawk population in Haiti in the past and the results of our recent surveys, we propose that this region be considered an Important Bird Area under Criterion A1. We also recommend that any conservation program for Ridgway's Hawk in Haiti include community development with the goal to decrease human pressure on native wildlife.

Keywords

Buteo ridgwayi, conservation, endemic, extinct species, extirpated, Hispaniola, islands, raptor

Resumen

Redescubrimiento de *Buteo ridgwayi*, en peligro crítico de extinción en Haïti • *Buteo ridgwayi* es una rapaz diurna en peligro crítico de extinción, endémica de la isla caribeña de La Española y algunas islas satélite. Antaño, este gavilán estuvo distribuido en hábitats de tierras bajas por toda la isla, que incluye los países de Haïti y República Dominicana; sin embargo, su población ha disminuido durante el pasado siglo y se creía que había sido extirpado de Haïti hace casi 60 años. Aquí informamos el primer avistamiento documentado de esta especie en Les Cayemites, Haïti, en más de 100 años, y el primer avistamiento en Haïti desde 1962. Esta nota corta describe nuestro redescubrimiento inicial del gavilán en 2019 y nuestros muestreos de campo posteriores en 2020 y 2021. Dada la importancia de Les Cayemites para la población *B. ridgwayi* en Haïti en el pasado, y los resultados de nuestros recientes muestreos, proponemos que esta región se considere un Área Importante para las Conservación de las Aves según el Criterio A1. También recomendamos que cualquier programa de conservación para esta rapaz en Haïti incluya el desarrollo comunitario con el objetivo de reducir la presión humana sobre la vida silvestre nativa.

Palabras clave

Buteo ridgwayi, conservación, endémica, especie extinta, extirpada, islas, La Española, rapaz

Résumé

Redécouverte de la Buse de Ridgway (*Buteo ridgwayi*), espèce en danger critique d'extinction, en Haïti • La Buse de Ridgway (*Buteo ridgwayi*) est un rapace diurne en danger critique d'extinction, endémique à l'île caribéenne d'Hispaniola et à certaines îles satellites. Cette buse était autrefois présente dans les habitats de plaine de toute l'île, qui comprend Haïti et la République dominicaine; toutefois, sa population a diminué au cours du siècle dernier et elle semble avoir disparu d'Haïti il y a près de 60 ans. Nous rapportons ici la première observation documentée de la Buse de Ridgway sur les Cayemites, en Haïti, depuis plus de 100 ans, et en Haïti depuis 1962. Cette note

décrit notre redécouverte initiale de ce rapace en 2019 et nos prospections de terrain ultérieures en 2020 et 2021. Étant donné l'importance des Cayemites pour la population de Buse de Ridgway en Haïti dans le passé et les résultats de nos récentes prospections, nous proposons que cette région soit considérée comme une Zone Importante pour la Conservation des Oiseaux selon le critère A1. Nous recommandons également que tout programme de conservation de cette Buse en Haïti porte notamment sur le développement communautaire dans le but de réduire la pression humaine sur la faune indigène.

Mots clés

Buteo ridgwayi, conservation, endémique, espèce éteinte, extinction, Hispaniola, îles, rapace

The Ridgway's Hawk (*Buteo ridgwayi*) is endemic to the island of Hispaniola. With a current estimated population of 300–400 individuals, it is the only member of its genus among the 17 Critically Endangered birds of prey in the world, 7 of which are island endemics (BirdLife International 2020). Historically, Ridgway's Hawk was found across Hispaniola, comprising Haiti, the Dominican Republic, and the satellite islands Beata, Gonâve, Île-à-Vache, and Les Cayemites (Wiley 1986, Thorstrom *et al.* 2007), but in recent years it has been restricted to the Dominican Republic. This species was formerly documented inhabiting most vegetation classes throughout its range from sea level to 2,000 m above sea level (asl), including diverse forest types (tropical and subtropical forest, pine forest, limestone karst forest, secondary forest, wooded landscapes) and open associations (open country, lowland scrub, and human-modified landscapes such as pastoral and agricultural areas) (Wiley and Wiley 1981, Keith *et al.* 2003, Thorstrom *et al.* 2007, Woolaver 2011). A burgeoning Ridgway's Hawk population in Punta Cana, Dominican Republic, which was founded through an assisted dispersal program carried out by The Peregrine Fund, has demonstrated this hawk is also adaptable to living in more suburban areas, including developed neighborhoods and golf courses (McClure *et al.* 2017, Anderson *et al.* 2021).

Once considered locally common throughout Hispaniola, the species declined markedly across the island beginning in the early 1900s (Wetmore 1932, Woolaver 2011). By the early 2000s, only a small population of 200–300 individuals remained in Los Haitises National Park, Dominican Republic (Keith *et al.* 2003, Thorstrom *et al.* 2005). Though many factors may have contributed to the decline of the Ridgway's Hawk, including human persecution and habitat fragmentation and loss (Thorstrom *et al.* 2005), recent research suggests that parasitism of nestlings by nest flies (*Philornis* spp.) is another contributing factor in the species' near extinction (Hayes *et al.* 2019). Treatment to prevent parasitism of nestlings as well as an intensive education campaign have reversed the decline of the Ridgway's Hawk population in Los Haitises National Park, while successful reintroduction campaigns in Punta Cana and Aniana Vargas National Park have led to two other small populations within the Dominican Republic (Anderson *et al.* 2021).

In Haiti, Abbott found Ridgway's Hawk to be "common and tame in the scrub on the Cayemite Islands in January 1918" (Wetmore and Swales 1931:114–115). That same year, Abbott collected 12 specimens on Grande Cayemite, one on Petite Cayemite (deposited in the Smithsonian Museum of Natural History, Washington, DC, USA), and observed two other birds on Petite Cayemite (Wetmore and Swales 1931). This is the last

known record of this hawk on Les Cayemites. Less than 50 yr later, the species was considered extirpated from all of Haiti, with the last known record dating from 1962, when four males and two females were collected as museum specimens on the island of Île-à-Vache (Museum of Natural Science, Louisiana State University, LA, USA; Schwartz and Klinikowski 1965, Wiley and Wiley 1981, Keith *et al.* 2003, Woolaver 2011).

We completed surveys of Les Cayemite islands in Haiti in 2020 and in 2021 to establish the current status of Ridgway's Hawk in that region and update their current known distribution (Fig. 1). These surveys were done in conjunction with Jeunes En Action pour la Sauvegarde de l'Écologie en Haïti, as part of an ongoing effort by The Peregrine Fund to conserve and restore this endemic hawk on Hispaniola. Les Cayemites comprise Grande Cayemite and Petite Cayemite, two satellite islands separated by < 600 m and totaling 51.29 km². They are located just off the northern coast of the Tiburon Peninsula of southwestern Haiti, just southwest of the island of Gonâve. Grande Cayemite ranges between 0–225 m asl and is an area with more concentrated agroforestry. The largest human communities on Les Cayemites are situated on the coasts of Grande Cayemite, with a patchwork of inland agricultural plots and smaller communities of 20–30 dwellings. Grande Cayemite has an estimated human population of 5,231 individuals (Direction des statistiques démographiques et sociales 2015) and is characterized by thorn scrub to mid-elevation dry forest and an agroforestry system over limestone karst topography (Wetmore 1932, AJ, TH, and EF pers. obs.). Petite Cayemite ranges between 0–60 m asl and is much smaller (~1.65 km²) with maturing secondary forest, very limited agriculture, and low human presence and activity. Before and during the early 20th century, the Cayemite Islands were a major source of wood for export, including the Caribbean native tree *Lignum vitae* (Record and Mell 1924). Now, fishing is a primary occupation as is subsistence farming, and trees on both islands are still heavily harvested for charcoal production. Some of the coastlines are densely protected by mangroves (primarily red mangrove, *Rhizophora mangle*).

Observations

On 23 August 2019, during a rapid ornithological assessment of Les Cayemites, AJ and MF saw two birds resembling Ridgway's Hawks on Petite Cayemite, one of which was later confirmed to be a juvenile Ridgway's Hawk. Upon landing on the south shore of Petite Cayemite (18°36'29.31"N, 73°48'42.48"W) at 0832, AJ and MF observed two medium-sized raptors vocalizing and soaring. One individual continued to soar for about 15 min before flying off. The other individual landed and perched ~5 m

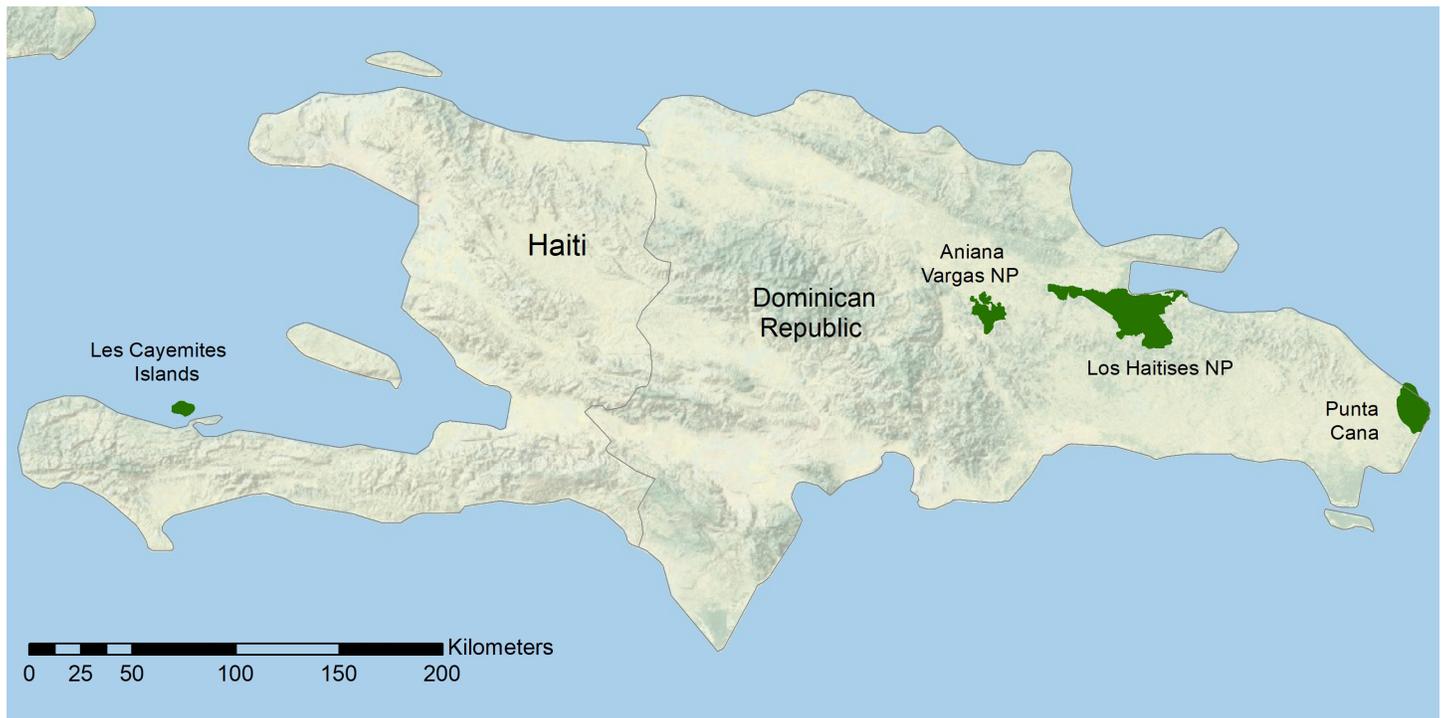


Fig. 1. Map showing current known Ridgway's Hawk distribution on Hispaniola. Map created by Leah Dunn, The Peregrine Fund.

high in a gumbo limbo (*Bursera simaruba*) tree. The perched bird had brown wings and back and a cream-colored breast marked with dark streaking. Both juvenile Ridgway's Hawk and the more locally common, juvenile Broad-winged Hawk (*Buteo platypterus*) share these plumage characteristics, thus they are similar in appearance and can sometimes be difficult to distinguish. During 15 min of observation, AJ and MF documented the hawks with photographs and videos (Supplementary Online Resource Videos 1 and 2), which included audio of the perched bird vocalizing. After viewing the photographs and video, TH later confirmed the identification of the perched bird as a juvenile Ridgway's Hawk based on the bird's appearance (Fig. 2) and call; the images of the soaring birds were not useful for identification.

During 28–31 January 2020, AJ, TH, and EF conducted additional surveys on Petite and Grande Cayemite islands and along the coastline of the Tiburon Peninsula west of Les Basse (Baraderes Peninsula). During these transect surveys, at about every 100 m, we broadcast 1 min of recorded playbacks of Ridgway's Hawk vocalizations—including territorial calls, food begging, and copulation. Our observations were as follows:

28 January 2020.—AJ, TH, and EF surveyed Grande Cayemite between 1530–1800, making a loop from northeast Anse à Macou, traveling northward, west, then southward to finish on the northwest side of town, walking a total distance of ~6.5 km. No hawks were observed.

29 January 2020.—AJ, TH, and EF conducted a survey starting on the south shore of Petite Cayemite at 1015, and hiked northward about 0.4 km. At 18°36'37.27"N, 73°48'38.39"W, two Ridgway's Hawks were observed soaring in a territorial flight with some aggression toward at least three Turkey Vultures (*Cathartes aura*), before flying north-northwest out of view. Based on plumage characteristics, one hawk was identified as an adult and the other was of undetermined age. The surveyors contin-

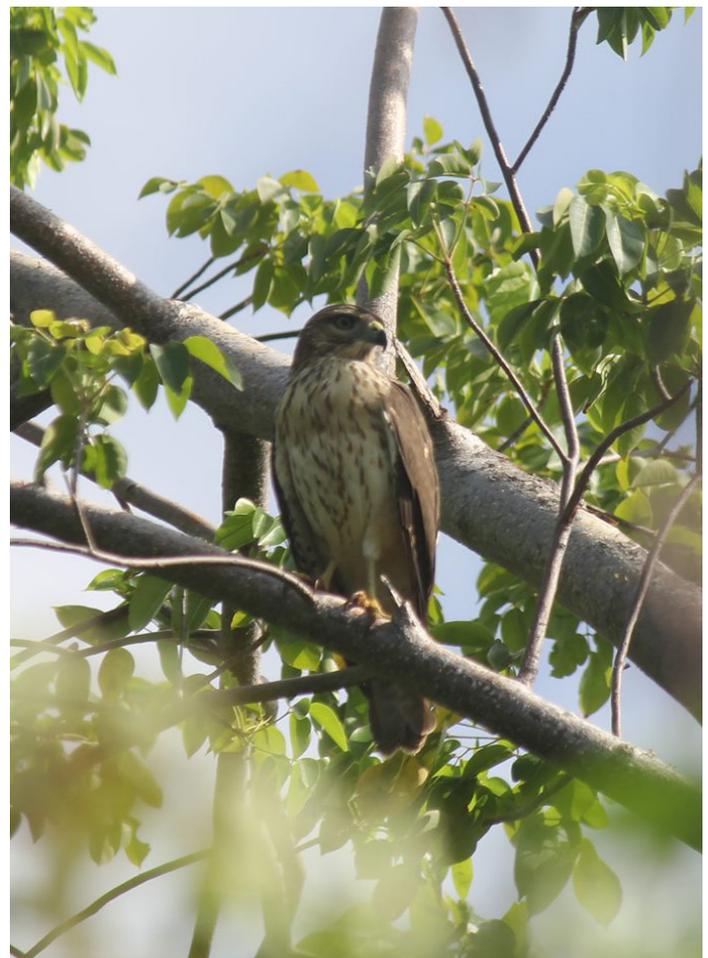


Fig. 2. Juvenile Ridgway's Hawk on Petite Cayemite, 23 August 2019. Photograph by Anderson Jean.

ued north another 0.6 km to the beach on the north shore. TH then went back to the location where the two hawks had been observed earlier in the day. He hiked a loop through the southwest portion of the island and southward along the western coast. Afterward he hiked east through the center of the island gaining elevation towards the highest point on the island. At ~1600, he detected a Ridgway's Hawk soaring and acting aggressively toward a Turkey Vulture. The hawk landed in a gumbo limbo tree at 18°03'34.95"N, 73°04'21.95"W (about 490 m east of where the group had first spotted the pair) and TH observed the bird until dark (~1730). He was able to obtain photographs (Fig. 3) and videos and confirm that it was an adult female Ridgway's Hawk, based on the brown wash on gray feathers as well as the shape of the head and "heavier" beak, possibly one of the same birds that had been observed soaring earlier that same day.

30 January 2020.—AJ and TH began at 0730 and surveyed through the center of Grande Cayemite, heading northeast on foot from Pointe Sable ~3 km to the inland community of Gro Mòn. From there the surveyors turned east-southeast for ~3 km, through Mare Citron to Nan Palmis, and ~3 km south to Au Bord de l'Etang, following the coastline northeast ~2 km to Anse à Macon, and ending their survey at 1600. No hawks were observed.

31 January 2020.—AJ and TH conducted a survey by boat starting at Les Basse at 0700, surveying west ~9 km along the northern coast of the Tiburon Peninsula to the community of Pestel. Much of the shoreline was composed of steep cliffs or rocky outcroppings. Playbacks were used occasionally when the boat was near vegetation on the coastline that appeared adequate for potential Ridgway's Hawk habitat. From Pestel, the surveyors headed north across the Baie des Cayemites through the channel between Petite Cayemite and Grande Cayemite. At Pointe Sable they began surveying from the boat northward, along the western coast of Grande Cayemite. At 0930, an adult female Ridgway's Hawk was observed perched on a snag ~75 m from the shore (18°36'55.22"N, 73°47'45.64"W). The surveyors dismounted the boat, hiked inland, and spent ~3 hr observing the



Fig. 3. Front (left) and back (right) views of the adult female Ridgway's Hawk on Petite Cayemite, 29 January 2020. Photographs by Thomas Hayes.

bird in hopes of seeing other hawks nearby. The female hawk moved from perch to perch for some time, within 100 m of the observers, then dove from a perch, catching and eating a green vine snake (*Uromacer* sp.; Fig. 4). The surveyors resumed their survey by boat at 1300, continuing northward until they were ~6 km from Pointe Sable, before turning around and drifting back south, surveying the same coastline again to finish at Pointe Sable at 1700. The single adult female was the only individual observed.



Fig. 4. Adult female Ridgway's Hawk with a green vine snake (*Uromacer* sp.) on Petite Cayemite, 31 January 2020. Photograph by Thomas Hayes.

In May 2021, AJ and MF conducted 2 days of surveys on Petite Cayemite and 4 days on Grande Cayemite, both by foot. Two individual hawks were located on Petite Cayemite and an estimated 17 on Grand Cayemite, based on distances between observations and timing. On Grand Cayemite, one Ridgway's Hawk nest with a healthy offspring was found in a gumbo limbo tree with an adult nearby (Fig. 5). A second nest, with a dead nestling, was found in a mango tree (*Mangifera indica*). After speaking with community members, it was determined that an additional nest in a gumbo limbo tree, with two nestlings, had recently been destroyed by a local farmer. Additionally, two old nests were found, one in a gumbo limbo tree and one in a *Ficus* sp.

Discussion

In 2019, we observed one confirmed juvenile Ridgway's Hawk and another suspected adult. Our survey effort in 2020 totaled ~28 hours over 4 days and comprised > 19 km traveled by foot and > 21 km by boat. The survey effort in 2021 totaled 6 days and comprised 6 transects covering > 36 km. During these surveys, we observed at least 2 and possibly as many as 4 Ridgway's Hawks in 2020, and as many as 19 individuals in 2021. These findings included the observation of a territorial pair with a juvenile, as well as at least two nests in 2021, demonstrating that there were Ridgway's Hawks nesting in Les Cayemites that year and suggesting the possibility of a persisting population. Further



Fig. 5. Ridgway's Hawk nest in a gumbo limbo tree with a (left) juvenile hawk and (right) adult hawk perched above, May 2021. Photographs by Anderson Jean.

studies are needed to understand breeding success in this small population.

The Ridgway's Hawk is a Critically Endangered raptor that has been considered extirpated from Haiti for ~60 yr (Keith *et al.* 2003). An intensive conservation effort is underway to protect this species in the Dominican Republic and the rediscovery of Ridgway's Hawk in Haiti represents a major opportunity for the conservation of this raptor throughout Hispaniola. Although Petite Cayemite consists primarily of scrub forest and represents a viable habitat for Ridgway's Hawk, we believe that the islet, at only ~1.65 km², is likely too small to sustain more than a few pairs, based on Ridgway's Hawk territory size of about 0.33 km² (Woolaver 2011). Grande Cayemite is a larger island (~49.64 km²) and could support a Ridgway's Hawk population, with connectivity to Petite Cayemite. On both islands, there was a notable absence of royal palms (*Roystonea borinquena*), which are a preferred nesting tree of Ridgway's Hawk in the Dominican Republic (Woolaver *et al.* 2014). However, gumbo limbo, mango, and *Ficus* sp. trees would be likely species to check during future nest surveys. In 2012, Timyan and Hedges (AJ unpubl. data) conducted a biological survey of Les Cayemites and noted greater abundance of reptiles on the satellite islands compared to the mainland, which they attributed to the absence of mongoose (*Herpestes* sp.) that was introduced to Hispaniola during the late 19th century (Barber 1897, Allen 1911). Reptiles are important prey for Ridgway's Hawk (Woolaver *et al.* 2013) and may be one reason the species has endured on Les Cayemites, while having disappeared elsewhere in Haiti.

Petite Cayemite and Grande Cayemite are < 600 m apart, and Grande Cayemite is just over 2 km from the Baradères Peninsula of western Haiti, the closest point on the mainland. Ridgway's Hawks may travel between the two islands and the mainland via this route; however, we do not think that movement between the islands and the mainland is a common occurrence, as there is no evidence of this species regularly traveling longer distances over open water. Nonetheless, these areas should be included in any future surveys to determine the actual status of the hawk in Haiti, to understand what factors have led to its decline, and to ascertain the measures necessary to conserve this newly redis-

covered population.

Though Les Cayemites were not included in BirdLife International's (2008) Important Bird Areas of the Caribbean, the publication specifically mentioned Ridgway's Hawk as a species of unknown status in Haiti and stressed the importance of additional surveys to aid in the identification of additional important bird areas in the future. Given the importance of these islands to the Ridgway's Hawk population in Haiti in the past (Wetmore and Swales 1931, Wetmore 1932) and the results of our recent surveys, we propose that Les Cayemites be considered an Important Bird Area under Criterion A1, which is defined as a site that "is known or thought regularly to hold significant numbers of a globally threatened species" (BirdLife International 2008:195). We also recommend that any conservation program for Ridgway's Hawk on Les Cayemites or elsewhere in Haiti include community development with the goal to decrease human pressure on native vegetation and prevent human persecution (i.e., shooting out of fear, curiosity, or to eat hawks). One action to consider would be to limit outside human activity on Petite Cayemite and create a refuge capable of supporting a few pairs of Ridgway's Hawk and other wildlife.

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Supplementary files

Online Resource Video 1: [Macaulay Library ML540336731](#)

Online Resource Video 2: [Macaulay Library ML540647471](#)