Spizaetus

Neotropical Raptor Network Newsletter

Issue 30

December 2020

An improved definition of what makes a raptor a raptor

Pulsatrix melanota & *Megascops ingens* in Colombia

Leptodon cayanensis in Brazil

Asio flammeus in Mexico

Pandion haliaetus in El Salvador

Spizaetus ornatus in Argentina

Spizaetus isidori in Colombia

Special 30th Edition

Spizaetus
NRN Newsletter

Issue 30 © December 2020
English Edition, ISSN 2157-8958

Cover Photo
Red-legged Seriema (*Cariama cristata)* photographed in Parque Nacional Serra da Canastra, Minas Gerais, Brazil © Luis Florit
http://luis.impa.br/photo, luis@impa.br

Editors/Translators
Laura Andréa Lindenmeyer de Sousa, Angel Muela, José de Jesús Vargas, Amy Seidenstrang Erin Katzner, and Marta Curti

Graphic Design
Marta Curti

www.neotropicalraptors.org

THE PEREGRINE FUND

@neotropicalraptors.org

neotropicalraptor

Red de Rapaces Neotropicales

Dear NRN Members,

Foto © Angel Muela

The idea for the Neotropical Raptor Network was born during the 2002 Neotropical Raptor Conference and Harpy Eagle Symposium in Panama. Attendees of the conference believed that raptor conservation and research in the Neotropics could benefit significantly from better communication and collaboration among the diverse community of biologists, ornithologists, falconers, raptor enthusiasts, and other conservationists working in this region.

In 2003, The Peregrine Fund developed the Neotropical Raptor Network. In 2004 the Listserve was created with a little over 150 members. Today we are 455 members strong and counting. Over the years, we have helped each other identify raptors, recover transmitters, disseminate publications and findings. We have freely shared our expertise, collaborated on projects, made friends, and celebrated each other's successes.

The NRN Newsletter was first published in 2005, in English and Spanish. It was edited by then NRN Coordinator Cameron Ellis and, later by Magaly Linares. In 2009, we started publishing the newsletter in Portuguese, making it perhaps the only tri-lingual journal focused on Neotropical raptors. This, the 30th edition of *Spizaetus*, represents the 15th year highlighting raptor conservation in the Neotropics. We have published stories – your stories – from 17 countries in North, Central and South America, and the Caribbean.

This newsletter and the NRN wouldn't exist without your support and the support of our Advisory Board members. Thank you for being part of the family.

Sincerely,
Marta Curti

Table of Contents

The NRN is a membership-based organization. Its goal is to aid the research and conservation of Neotropical raptors by promoting communication and collaboration among biologists, raptor enthusiasts, and other conservationists working in the Neotropics. To join please e-mail the NRN coordinator, Marta Curti, at mcurti@peregrinefund.org, stating your interest in Neotropical raptor research and conservation.

An improved definition of what makes a raptor a raptor results in welcoming a new species to the flock

By **Erin Katzner**[1]

[1]Director of Global Engagement.
The Peregrine Fund. 5668 West Flying Hawk Lane. Boise, Idaho, 83709
email: ekatzner@peregrinefund.org

Sometimes old concepts require fresh scrutiny, especially when such concepts may have important implications for preventing extinction. Recently, a team of scientists from The Peregrine Fund, University of North Texas, Ornithologi, EDM International, Hawk Mountain Sanctuary, and HawkWatch International revisited the concept of what exactly defines the group of birds referred to as 'raptors' or 'birds of prey'. In the process, they realized that two South American species, the seriemas, probably deserve membership as raptors.

When Dr. Chris McClure, Director of Global Conservation Science at The Peregrine Fund, and his colleagues set out to provide a more formal definition of raptors, they were not looking to identify new raptors, but they found some anyway. McClure recalls, "Our primary goal with this study was to better define what a raptor is using science-based methods. No standard definition for the terms 'raptor' or 'bird of prey' existed, and we wanted to establish a common definition to help improve consistency across studies as well as lessen the ambiguity of research and management recommendations." Typically, more traditional groups including falcons, hawks, and eagles are universally agreed upon to be birds of prey by researchers, but groups like owls and vultures are not always included as raptors depending on the person.

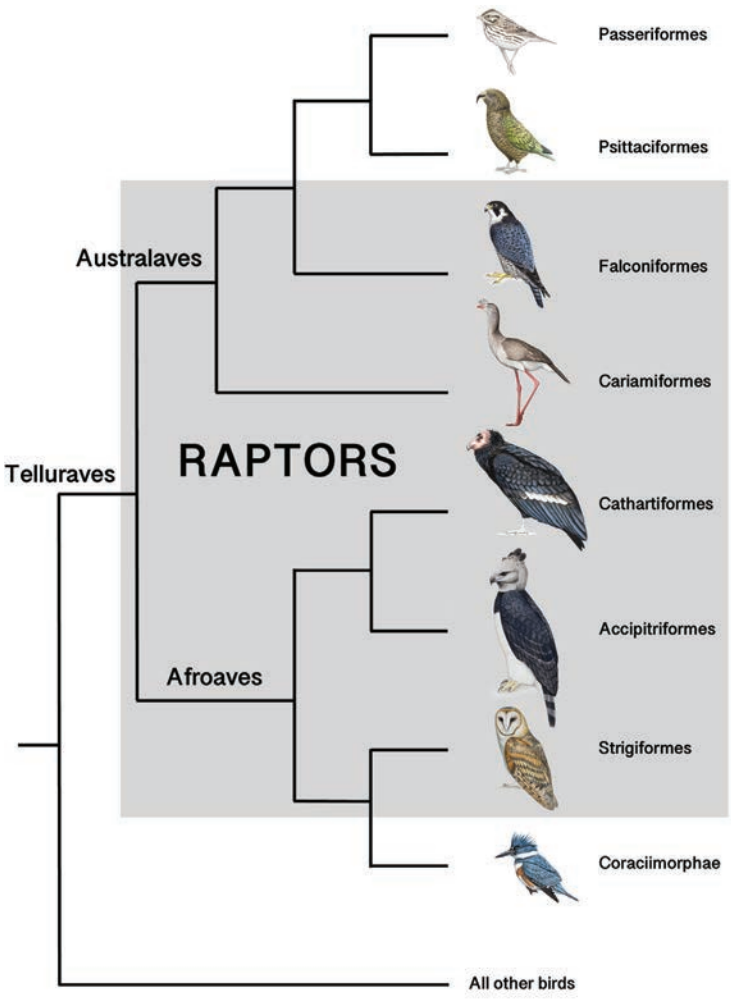
When scientists make these determinations, they typically look at physical characteristics such as sharp talons or ecological traits such as capturing prey with their feet, we often assume that those species also share important features that tell us about their evolution and help prioritize our conservation efforts. That may not always be the case because traits, particularly those with strong associations with survival, can evolve independently among groups limiting our ability to inform conservation effectively.

Figure 1. **Red-legged Seriema** ***(Cariama cristata).*** **Photo © Steve Martin, Natural Encounters, Inc.**

This study narrowed the criteria to focus on evolutionary history to demonstrate that birds such as hawks, eagles, falcons, owls, and vultures all shared a common ancestry and evolved from "raptorial land birds," or birds that live on land and feed on vertebrate animals. Additionally, the majority of the species within the identified groups that share common ancestry with raptorial land birds are more likely to have maintained raptorial lifestyles. In short, raptors are land birds in the groups that evolved from vertebrate-eaters in which most species of the group maintained that vertebrate-eating lifestyle.

It may sound a bit complex, but Dr. Jeff Johnson, a professor at the University of North Texas, assures us, "It actually clarifies a lot of the issues previous definitions have had for the term raptor. By eliminating the uncertainty that results from relying on qualitative descriptions such as a 'hooked' beak or 'sharp' talons, and instead emphasizing our current understanding of bird evolution based on less ambiguous traits such as those generated from molecular methods, we can provide a more precise definition."

Figure 2. **Phylogeny of land birds modified from Mindell et al. (2018) by McClure et al. (2019).**



McClure adds, "This new definition will help to influence research priorities, funding decisions, and conservation actions. If we were not already challenging older ideas that vultures were not traditional raptors, The Peregrine Fund would not have been able to, under the organization's mission, help save vultures in Asia from likely extinction in the early 2000's. Based on our new definition that focuses on ancestry, vultures and owls most definitely qualify as birds of prey."

So what's the deal with seriemas?

Based on the criteria used by McClure and colleagues, another group of birds should also be identified as a raptor group. The Order Cariamiformes includes two unique species found commonly throughout South America. The Red-legged (*Cariama cristata*) and Black-legged Seriema (*Chunga burmeisteri*) are very similar species found in grasslands and scrublands respectively. Bryce Robinson of Ornithologi points out, "These species could be considered as raptors because they kill vertebrate prey and are the only remaining ancestor of the extinct, giant "terror birds" that wandered South America during the Cenozoic era 62 to 1.8 million years ago. They aren't as terrifying now, but with their penchant for capturing and killing rodents, lizards, and even venomous coral snakes, they do fit in well with the other raptors."

To learn more, read the full scientific paper https://doi.org/10.3356/0892-1016-53.4.419

Distribution and new locations for two species of owl in eastern Colombia: Band-bellied Owl (*Pulsatrix melanota*) and Rufescent Screech Owl (*Megascops ingens*)

By **Elvis Felipe Quintero Quintero**[1], **Nathalia Otero**[1], **Edilson Torres**[1], **Fabián Álvarez López**[2] and **Sergio Chaparro-Herrera**[3,4]

[1]Fundación Camaná Conservación y Territorio, Restrepo, Meta, Colombia.
[2]Proyecto Educativo Alas de Saber, Centro Educativo Rural de Restrepo, Meta, Colombia.
[3]Grupo de Especialistas en Búhos Neotropicales.
[4]Laboratorio de Ecología Evolutiva y Urbana, Universidad del Norte. Barranquilla, Colombia.
E-mail: sergioupn@gmail.com

The Band-bellied Owl (*Pulsatrix melanota*) is a little-known species. Throughout its range, two subspecies are found. *P. m. melanota* is distributed in southwestern Colombia, eastern Ecuador, and northern to southeastern Peru. *P. m. philoscia* is distributed on the eastern slope in western central Bolivia (Holt et al. 2020). *P.m. Melanota* was known in Colombia only by an adult specimen of undetermined sex, location and date (E.R. Blake in Hilty and Brown 1986).

However, the presence of this subspecies was confirmed in 1998 during an expedition to the Serranía de los Churumbelos in the department of Cauca (Salaman et al. 1999). It was subsequently documented in Putumayo and eastern Cauca (Piedmont surroundings and Santa Rosa) (Salaman et al. 2002, Ayerbe-Quiñones et al. 2008, eBird 2020), and recently, it was documented in the municipality of Santa María (Boyacá). This sighting extends its known distribution to the north of the country along the eastern slope of the Andes by about 500 km (Rodríguez-Villamil 2017) (Fig. 1).

New records: On 11 June 2020 at 1845 hrs., in the El Retiro village of the Guamal Municipality, Meta Department (3 ° 56'47.76 "N, 73 ° 50'0.60" W, 986 m.a.s.l.) the authors (EFQQ, NO and ET) auditorily recorded an individual at the edge of a premontane forest hillside (Figure 1). On 12 June (one day later) the authors returned to the location and from the same spot heard the owl vocalizing from a tree (*Melastomataceae*) approximately six meters high. They photographed an individual (Fig. 2) and heard an-

other one in close proximity. In addition to the photographs, the authors made audio recordings and videos. On 8 August 2020 at 0800 hrs. in Salinas Village, Retrepo Municipality, Meta Department (4 ° 14'06.4 "N, 73 ° 34'39.4" W, 440 m.a.s.l.) a pair was observed (FAL) on the banks of the Quebrada Blanca on the edge of a relic of low premontane humid forest with contiguous grasslands (Figs. 1 and 2).

The Rufescent Screech-Owl (*Megascops ingens)* is distributed from northern Colombia and northwestern Venezuela to the center of Bolivia (Chaparro-Herrera et al. 2017). There are three subspecies throughout its distribution. *M. i. venezuelanus* is found in northern Colombia and northwestern Venezuela. *M. i. ingens* is found in the Andes from southwestern Colombia through the south on the eastern slope to central Bolivia. *M. i. colombianus* is found in western Colombia and northwest Ecuador (König et al. 2008, Marín-Gómez et al. 2020).

In Colombia all three subspecies are found. *M. i. venezuelanus* is found along the eastern mountain range on the western slope of the Serranía de Perijá in Santander, Boyacá (Pajarito), with new records in Cundinamarca (Bojacá) and Medina, and in the eastern base of the Andes in Putumayo (San Francisco) (Chaparro-Herrera et al. 2020).

Figure 1. **Distribution of *Pulsatrix melanota* (left) and *Megascops ingens* (right) in Colombia. Green polygon taken from Chaparro-Herrera et al. 2020 and red dots correspond to new locations (this note).**

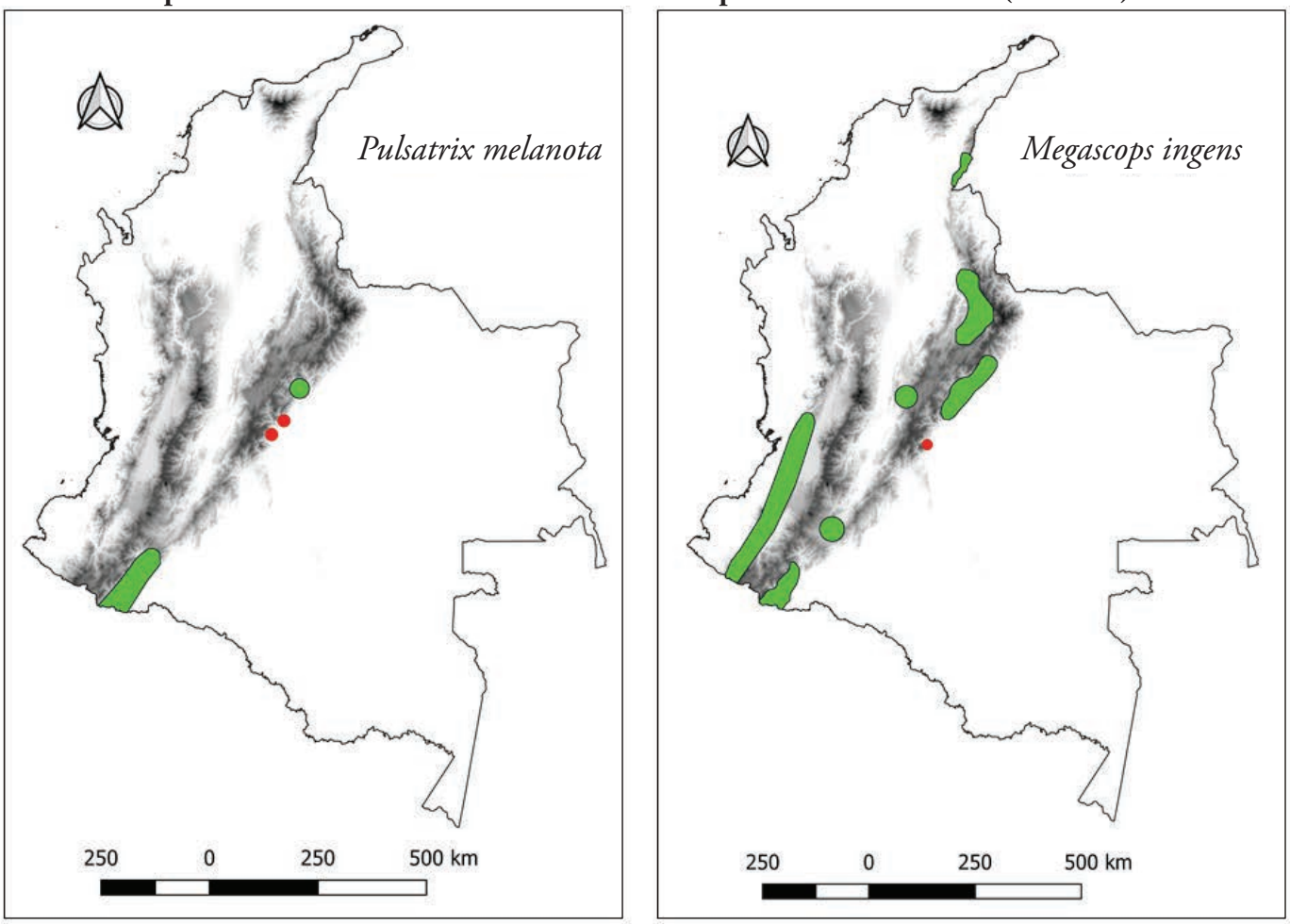


***Figure 2. Pulsatrix melanota*. Above: new records in the Guamal Municipality, Meta Department. Photos © Elvis Felipe Quintero. Below: new records in the municipality of Restrepo, Meta Department. Photos © Fabián Álvarez López.**

M i. ingens has been recorded in the Western Cordillera in Valle del Cauca, Cauca, Huila and Nariño (Chaparro-Herrera et al. 2017, eBird 2020). *M. i. colombianus* is distributed on the western and eastern slopes of the Western Cordillera in Chocó, Valle del Cauca, Cauca, Nariño, Antioquia, and the western slope of the Central Cordillera in Quindío, Risaralda and Caldas (Hilty and Brown 1986, Chaparro-Herrera et al. 2017) (Fig. 1).

New records: On 27 October 2017, in the village of La Libertad Alta, municipality of San Luis de Cubarral, Meta Department (3 ° 45'59.8 "N, 73 ° 54'35.5" W, 1670 m.a.s.l.) at 0200 hrs., an individual was auditorily recorded (EFQQ, SC-H) from within an extensive hillside premontane forest. In this same municipality, in 2019, the species was documented (EFQQ, NO) approximately 7 linear km from the previous record (opposite end of the Ariari river), in the Las Palmeras

***Figura 3*. Individual of *Megascops ingens*, registered in the municipality of San Luis de Cubarral, Meta Department. Photo © Elvis Felipe Quintero**

Reserve (3° 50'20.1 "N, 73 ° 54'35.1" W), (see eBird 2020). Photographs, videos and vocal recordings were made confirming the records in La Libertad Alta (Fig. 3).

During the observation period, EFQQ used playback vocalizations of Buff-fronted Owl to locate an individual already known to be in the area. It responded actively and immediately. In turn, an individual Rufescent Screech Owl began to vocalize. Both species vocalized at a distance for a few minutes. Then the Rufescent Screech Owl approached and attacked the Buff-fronted Owl. Later, only the screech owl could be heard vocalizing. During future visits, the Buff-fronted Owl was not heard or longer found in the same area. However, it was located approximately 300 meters from where the two species were documented together.

The records presented here contribute to our knowledge of these two little-known owl species in Colombia (Chaparro-Herrera et al. 2017) and extend their known distribution. In the case of

P. melanota, its distribution is extended 82 linear km south of Santa María (Boyacá), and 382 linear km to the south. In the case of *M. ingens*, its distribution is extended 70 linear km south of the records north of the eastern flank of the Eastern Cordillera and 270 linear km south of its distribution on this same flank (Fig. 1). Finally, these records contribute to the hypothesis that these two species can be found distributed along the eastern flank of the Eastern Cordillera (from Arauca to Putumayo) (Chaparro-Herrera et al. 2020), so it is necessary to continue exploring these areas that have high species richness (Olivares 1971, Bohórquez 2002, Salaman et al. 2002, Acevedo-Charry 2015, Gómez-Bernal et al. 2016, Laverde-R and Gómez 2016, Chaparro-Herrera et al. 2020).

References

Acevedo-Charry, O. 2015. Birds of Río Tame of the Andes-Orinoco transitional region: species check-list, biogeographic relationship and conservation. Ornitología Colombiana 16: eA03-4.

Ayerbe-Quiñones F., J. P. López-Ordóñez., M. F. González-Rojas., F. A. Estela., M. B. Ramírez Burbano., J. V. Sandoval-Sierra and L. G. Gómez-Bernal. 2008. Aves del departamento del Cauca-Colombia. Biota Colombiana 9: 77-132.

Bohórquez, C. I. 2002. La avifauna de la vertiente oriental de los Andes de Colombia. Tres evaluaciones en elevación subtropical. Rev. Acad. Colombiana Cienc. Ex. Fís. Nat. 26: 419-442.

Chaparro-Herrera, S., S. Córdoba-Córdoba, J. P. López-Ordoñez, J. S. Restrepo Cardona and O. Cortes-Herrera. 2017. The Owls of Colombia. En: P. Enríquez (ed.). Neotropical Owls Diversity and Conservation. Springer. 317-371 pp.

Chaparro-Herrera, S., P. L. Enríquez and A. Lopera-Salazar. 2020. Búhos de Colombia. Guía ilustrada y sonora. Grupo de Especialistas en Búhos Neotropicales. Bogotá, Colombia.

Chaparro-Herrera, S., N. Espejo, A. Lopera-Salazar, J. F. León León, S. D. Santos Díaz and N. Páez Rodríguez. 2020. Aves de Mámbita: lista de especies y nuevos registros en la vertiente oriental de la Cordillera Oriental, Cundinamarca, Colombia. Cotinga 42: 82-100.

eBird. 2020. eBird: una base de datos en línea para la abundancia y distribución de las aves. Ithaca, NY: Cornell Lab of Ornithology. www.ebird.org (accedido agosto de 2020).

Hilty, S. L. and W. L. Brown. 1986. A guide to the birds of Colombia. Princeton, NJ: Princeton University Press.

Holt, D. W., R. Berkley, C. Deppe, P. L. Enríquez, J. L. Petersen, J. L. Rangel Salazar, K. P. Segars, K. L. Wood, E. de Juana and J. S. Marks. 2020. Band-bellied Owl (*Pulsatrix melanota*), version 1.0. En: J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie y E. de Juana (Editores). Birds of the World. Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.babowl1.01

König, C y F. Weick. 2008. Owls of the world. Christopher Helm, Londres, Reino Unido.

Laverde-R., O. and F. Gómez. 2016. Las aves de Santa María. Bogotá: Instituto de Ciencias Naturales, Universidad Nacional de Colombia.

Marín-Gómez, O. H., D. W. Holt, R. Berkley, C. Deppe, P. L. Enríquez, J. L. Petersen, J. L. Rangel Salazar, K. P. Segars, K. L. Wood and J. S. Marks. 2020. Rufescent Screech-Owl (*Megascops ingens*), version 1.0. En: S. M. Billerman, B. K. Keeney, P. G. Rodewald and T. S. Schulenberg (Editores). Birds of the World. Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.rufsco1.01

Olivares, A. 1971. Aves de la ladera oriental de los Andes Orientales, alto río Cusiana, Boyacá, Colombia. Caldasia 11: 203–226.

Rodríguez-Villamil. D. R. 2018. Extensión de la distribución de *Pulsatrix melanota* (Strigidae) en el piedemonte llanero colombiano. Ornitología Colombiana 16:eNB08.

Salaman, P. G. W., T. M. Donegan and A. Cuervo. 1999. Ornithological surveys in Serranía de los Churumbelos, southern Colombia. Cotinga 12:29-39.

Salaman, P. G. W., F. G. Stiles, C. I. Bohórquez, M. Álvarez-R., A. M. Umaña, T. M. Donegan and A. M. Cuervo. 2002. New and noteworthy bird records from the east slope of the Andes of Colombia. Caldasia 24: 157–189.

* * *

Notes on the natural history of Strigiformes from the city of Mérida, Venezuela

By **Luis A. Saavedra[1], María E. Escalona-Cruz[1], Mauricio Ramirez[1]** and **Carla I. Aranguren[2]**

[1]Departamento de Biología, Facultad de Ciencias, Universidad de Los Andes (ULA), Mérida, Venezuela
[2]Laboratorio de Ecología Animal, Departamento de Biología, Facultad de Ciencias, Universidad de Los Andes (ULA), estado Mérida, Venezuela
E-mail: luisaavedra.95@gmail.com

The colonization of birds to urban areas represents a great challenge for most species. However, certain species are highly adaptable to survive and successfully establish in cities (Mckinney 2002, Marzluff 2005, Evans et al. 2011). Around the world, owls have taken advantage of the resources offered by urban and suburban areas, which provide nesting sites (Klein et al. 2007) and food sources such as rodents and other synanthropic birds (Dravecky and Obuch 2009, Mori and Bertolino 2015). This has had a positive impact on some Strigiformes species that show higher population densities and a higher reproductive performance in urban settings compared to what is observed in natural areas (Vrezec 2001, Rebolo-Ifrán et al. 2017).

The existence of wooded parks and patches of vegetation within a city increases suitable habitats for owls. Heterogeneous landscapes promote greater richness (Oliver et al. 2011, Fröhlich and Ciach 2019). However, coexisting closely with humans can carry great dangers including a reduction in the ability to hunt and communicate effectively due to noise pollution (Scobie et al. 2014, Fröhlich and Ciach 2019), attacks by dogs and other domestic animals (Cavalli et al. al. 2016), rodenticide exposure (Hindmarch et al. 2017) and collisions with vehicles, windows, or power lines (Hager 2009). For this reason, the study of the ecology of owls in cities may be essential to develop management plans that favor these birds and society.

In Venezuela, knowledge about the biology and ecology of the Strigiformes reported for the country is scarce and studies focused on urban ecology are almost non-existent, which limits the conservation strategies that can be applied for these species (Naveda-Rodríguez and Torres, 2015). For this reason, we present some notes on the natural history of the Strigiformes species that inhabit

the city of Mérida, Venezuela, with the aim of contributing to the knowledge of the ecology of owls in the country.

The city of Mérida is located in the Libertador Municipality, Mérida State, Venezuela. It has a population of 215,542 inhabitants (INE 2014) and an area of approximately 60 km^2, of which 25 km^2 are occupied by intensely urbanized areas, while the rest have lower degrees of urbanization (Luján et al. 2011). This city is located on an alluvial terrace, within the Chama River Valley (Fig. 1). This, in turn, is formed by the convergence of the Sierra Nevada and the Sierra de La Culata, both of which are part of the Cordillera de Mérida (Silva 1999, Segnini and Chacón 2017), which allows for the existence of a wide diversity of ecosystems that border the city.

Two different ecological units can be found in the urban area of Mérida: the Montana Semi-deciduous Forest and the Montana Baja Cloud Forest (Ataroff and Sarmiento 2004). The first is located between 800 and 1,700 m.a.s.l. and is characterized by an irregular canopy between 20 and 35 m, with emergent individuals of up to 40 m, where various species of trees lose their leaves during the dry season in the first months of the year. The

***Figure 1*. Southward view of the city of Mérida, Venezuela. Photo © Mauricio Ramírez**

second is found between 1,700 and 2,200 m.a.s.l. and is characterized by high cloud cover and high relative humidity throughout the year, with vegetation that has three or more strata, dominated by tall canopy trees with large diversity and abundance of epiphytes.

The city has more than 30 wooded areas that include promenades, squares, and parks, which are used by avifauna in general. However, the most important of these is the Albarregas Metropolitan Park, which corresponds to the middle and lower basin of the river that bears the same name, and which runs through the city of Mérida in a southwesterly direction. It has an area of 612 ha and a length of about 18 km (Jugo, 2007), showing characteristics of secondary forests, where the most important species in terms of their abundance, frequency and dominance are *Ficus insipida*, *Erythrina poeppigiana*, *Musa x paradisiaca*, *Montanoa quadrangularis* and *Urera baccifera* (Gutiérrez and Gaviria 2009).

To determine the species of owls present in the city of Mérida, we carried out a detailed review of bibliographic sources, specimens deposited in the Vertebrate Collection of the University of the Andes (CVULA), digital sound collections such as Xenocanto (www.xeno-canto. org), the iNaturalist database (www.inaturalist.org) and eBird (www.ebird.org), as well as personal data. The taxonomy follows Remsen et al. (2020) and the common names follow Vera et al. (2015). In total we only found 5 of the twelve species reported for the state of Mérida, representing 40% of its richness. These are:

Barn Owl (*Tyto alba).* Observations of this species in Mérida have been rare. However, since April 2020 we have been monitoring an individual who has established its roost in a tree that adjoins a parking lot and a busy avenue. The branches of the tree are profusely covered with Spanish Moss (*Tillandsia usneioides*), which provides the owl with cover during the day (Fig. 2). We have recorded vocalizations at different times of the night in the vicinity, which makes us presume that it is the same individual. Because this individual is displaying great fidelity to this roosting site, it has allowed us to collect pellets which contain a large amount of rat remains (*Rattus spp*.) and exoskeletons of coleopterans. Studies in a rural area 10 km from the city of Mérida have determined that *T. alba* can consume a great variety of prey that includes rodents, bats, shrews, marsupials, birds, reptiles and coleopterans, with its main prey being the common mouse (*Mus musculus*) (Araujo and Molinari 2000).

Tropical Screech Owl (*Megascops choliba*). This species is usually heard in most plazas and wooded parks and buildings that adjoin green areas. It has been observed in pairs or in small family groups actively defending their territory, responding and even approaching within meters of anyone who imitates or reproduces their call. We have docu-

mented the presence of juveniles with the adults in a plaza during the months of August and September. It is possible that the Tropical Screech Owl is the species best adapted to the demands of this city, which has allowed it to be the most abundant and common.

Spectacled Owl (*Pulsatrix perspicillata*). It is a very rare species to observe in Venezuela as well as in the Cordillera de Mérida, so much so that it is not reported in some basic references (Rengifo et al. 2005, Naveda-Rodríguez and Torres, 2015, Ascanio et al. 2017). Despite this, there are eBird records in Mérida state. One of them is from 2013 from the metropolitan area of Mérida (no photo). There is also an observation with photographic evidence from 2019 on the iNaturalist platform that proves its presence in the city. However, since it is a rare species for Mérida, we do not know how it uses this city's spaces for feeding, roosting, or reproduction.

Figure 2. **Barn Owl (*Tyto alba)* on its roost in a tree located on a city street in Mérida, Venezuela. Photo © Luis A. Saavedra**

Rufous-banded Owl (*Ciccaba albitarsis*). This bird is commonly heard in the cloud forests that surround the city of Mérida from 2000 to 3000 m.a.s.l. (Ascanio et al 2017). For the metropolitan area of Mérida there are some records of this species on the eBird platform. We documented this species through vocalizations in mid-2019 in a rural area at 2,400 m.a.s.l. in the Monterrey sector, 12 km northeast of the city. However, it is most likely that the Rufous-banded Owl is not a common resident of urban areas, although it is a frequent species in peri-urban and rural areas.

Striped Owl (*Asio clamator*). Ramoni-Perazzi et al. (2014) considers this species to be the second most common owl in the Metropolitan area of Mérida after the Tropical Screech Owl, and mentions several records from different places in the city. Consequently, we have registered their characteristic vocalizations at different times of the year (during 2019) and in different sectors of the city near wooded areas.

Stygian Owl (*Asio stygius*). This species of owl has a discontinuous distribution in Venezuela (Hilty 2003), but there are several reports in and around the city of Mérida. From stomach samples of specimens taken from the city and deposited in the Vertebrate Collection of the University of

***Figure 3*. Tropical Screech Owl (*Megascops choliba)* that collided into a window of the Science Building of the University of Los Andes, Mérida, Venezuela. Photo © Alejandro Bonive.**

***Figure 4*. Stygian Owl (*Asio Stygius)*, la Mucuy Alta, Mérida, Venezuela. Photo © Carla I. Aranguren.**

Los Andes (CVULA) it is known that this species feeds on Coleoptera, Chiroptera of the Vespertilionidae family and birds of the Fringillidae family (Ramoni-Perazzi et al. 2014). Our most recent observation was on 12 September 2020 at 1600 hrs. in a tree-lined plaza next to a busy avenue. The individual was completely camouflaged and we only detected its presence because of the warning calls of a group of Green Jays (*Cyanocorax yncas*) and Yellow-headed Caracaras (*Milvago chimachima*) that harassed it insistently.

The large number of records in CVULA of *A. stygius* shows that this species is not as rare as was once thought. Perhaps its color and cryptic behavior made it hard to detect. While many of the specimens are donations without exact data on the collection location, the nature of the state in which they arrived (having been run over or collided with windows) indicates that they could have come from urban areas.

Conservation: challenges and threats for species in the city of Mérida

Concrete structures, night lights, billboards, windows, and cars, among others, are recurring dangers for birds that inhabit cities, including owls. We have detected similar threats in the city of Mérida. Records exist of *A. clamator*, *A. stygius* and *M. choliba* colliding with windows and being run over (Fig. 3). Additionally, people often find nestlings or juveniles of species such as *M. choliba* in parks and gardens and often take them as pets causing their death due to lack of knowledge

***Figure 5*. Tropical Screech Owl (*Megascops choliba*), La Mucuy Alta, Mérida Venezuela. Photo © Franklin Marquina.**

about their biological needs. It is also very possible that the consumption of poisoned rodents has an impact on the owl populations of the city. Although the ecology of nocturnal raptors in Venezuela has been little studied (Nevada-Rodríguez and Torres 2015), their role as biological controllers makes them essential for ecosystems (Fuentes et al. 2012, Vásquez-Avila et al. 2018, Muñoz-Praderos 2019). We further emphasize their importance for cities, places where the overpopulation of pests such as rats and mice, potentially disease-transmitting species, represent an important public health problem. It is here where it is necessary to maintain green spaces, such as patches and wooded parks, for the establishment and development of healthy populations of owls that contribute anonymously to the well-being of the health of all the people who share urban spaces with them. The application of initiatives such as environmental education programs for citizens and the preservation of nesting places are actions that will ensure that these magnificent birds remain coexisting with us in the urban environment for a long time.

Acknowledgements

We wish to express our gratitude to Luis Ángel Niño Barreat for sharing his personal experiences with owls in the city of Mérida. We also thank Alejandro Bonive and Franklin Marquina for sharing their photos.

References

Araujo, R. A and J. Molinari. 2000. Presas de *Tyto alba* (Aves, Strigiformes) en una selva nublada venezolana. Pp. 217-222 en J. Pefaur (Ed.) Ecología Latinoamericana. Actas del III Congreso Latinoamericano de Ecología. Universidad de Los Andes, Mérida, Venezuela.

Ascanio D, G Rodriguez and R Restall. 2017. Birds of Venezuela. Christopher Helm, London, UK.

Ataroff, M and L. Sarmiento. 2004. Las unidades ecológicas de los Andes de Venezuela. Pp. 9–26 en E La Marca y P Soriano (eds). Reptiles de Los Andes de Venezuela. Fundación Polar, Codepre-ULA, Fundacite-Mérida, Biogeos, Mérida.

Cavalli, M., A.V. Baladrón, and J.P. Isacch. 2016. Differential risk perception of rural and urban burrowing owls exposed to humans and dogs. Behavioural Processes. 124:60–65.

Dravecký, M., J. Obuch. 2009. Contribution to the knowledge on the synanthropization and dietary specialization of the Ural Owl (*Strix uralensis*) in urban environment of Košice city (East Slovakia). Slovak Raptor Journal. 3:51–60.

Evans, k. L., D. E. Chamberlain, B. J. Hatchwell, R. D Gregory and K. J. Gaston. 2011. What makes an urban bird? Global Change Biology. 17:32-44.

Fröhlich, A., and M. Ciach. 2019. Nocturnal noise and habitat homogeneity limit species richness of owls in an urban environment. Environmental Science and Pollution Research. 26 (17): 17284-17291.

Fuentes, L., C. Poleo, and L. Díaz. 2012. Potencial depredación de la lechuza de campanario (*Tyto alba* Scopoli, 1769) sobre roedores en la Estación Experimental del INIA-Calabozo, Guárico, Venezuela. Memoria de la Fundación La Salle de Ciencias Naturales 173-174.

Gutiérrez, N., and J. C. Gaviria. 2009. Análisis de la vegetación del Parque Metropolitano Albarregas, Mérida, Venezuela. Revista Forestal Latinoamericana. 24: 9–29

Hager, S. B. 2009. Human-Related Threats to Urban Raptors. Journal of Raptor Research. 43 (3): 210–226.

Hilty, S. L. 2003. Birds of Venezuela. Princeton University Press, Princeton, USA.

Hindmarch, S., J. E. Elliott, S. Mccann, and P. Levesque. 2017. Habitat use by barn owls across a rural to urban gradient and an assessment of stressors including, habitat loss, rodenticide exposure and road mortality. Landscape and Urban Planning. 164:132 143.

Instituto Nacional de Estadística. 2014. XIV Censo Nacional de Población and Vivienda. Resultados por Entidad Federal y Municipio del Estado Mérida. Gerencia General de Estadísticas Demográficas Gerencia de Censo De Población y Vivienda, Venezuela. Documento en línea. URL: http://www.ine.gov.ve/documentos/Demografia/CensodePoblacionyVivienda/pdf/merida.pdf. Visitado: septiembre 2020.

Jugo, L. 2006. Ríos y Municipios como proyectos socio-ambientales. Mérida. Ciudad Educativa. Ciudad Parque. El caso de la ciudad y el río Albarregas por el desarrollo sostenible local. 2da

edición. Facultad de Arquitectura y Arte. Universidad de Los Andes. Mérida-Venezuela. 258 p.

Klein, Á., T. Nagy, T. Csörgő and R. Mátics. 2007. Exterior nest-boxes may negatively affect barn owl Tyto alba survival: an ecological trap. Bird Conservation International. 17:263–271.

Luján, M., N. Gutiérrez, J. Gaviria and A. Aranguren. 2011. Estudio florístico preliminar en la ciudad de Mérida, Estado Mérida, Venezuela. Pittieria. 35: 35–61.

Marzluff, J. M. 2005. Island biogeography for an urbanizing world: how extinction and colonization may determine biological diversity in human-dominated landscapes. Urban Ecosystems. 8: 157–177.

Mckinney, M. L. 2002. Urbanization, biodiversity, and conservation. BioScience 52:883–890.

Muñoz-Praderos, A. 2019. Aves rapaces y control biológico de plagas en Muñoz-Praderos, A., J. Rau y J. Yáñez (eds) Aves Rapaces de Chile. CEA Ediciones, Valdivia.

Mori, E., and S. Bertolino. 2015. Feeding ecology of Long-eared Owls in winter: an urban perspective. Bird Study. 62 (2): 257-261.

Naveda, A. and D. A. Torres. 2015. Los Búhos de Venezuela. Pp. 605-630 en Enríquez, P. Los búhos neotropicales: diversidad y conservación. El Colegio de la Frontera Sur, San Cristóbal de Las Casas, Chiapas. Primera edición. México.

Oliver, A. J., C. Hong-Wa, J. Devonshire, K. R. Olea, G. F. Rivas, and M. K. Gahl. 2011. Avifauna richness enhanced in large, isolated urban parks. Landscape and Urban Planning. 102 (4): 215–225.

Ramoni-Perazzi, P., I. A Soto-Werschitz, G. Bianchi-Pérez, J. Jones, A. Ruíz-Ramoni, M. Molina, M. Muñoz-Romo and I. Correa. 2014. Noteworthy records for the avifauna of the Cordillera de Mérida, Venezuela. Cotinga. 36: 1–10.

Rebolo-Ifrán, N., J. L. Tella, and M. Carrete.2017. Urban conservation hotspots: predation release allows the grassland-specialist burrowing owl to perform better in the city. Scientific Reports. 7:3527.

Remsen, J. V. Jr., J. I. Areta, E. Bonaccorso, S. Claramunt, A. Jaramillo, J. F. Pacheco, M. B. Robbins, F. G. Stiles, D. F. Stotz and K. J. Zimmer. 2020. A Classification of the Bird Species of South America. American Ornithologists' Union, Washigton DC, USA. Documento en línea. URL: http://www.museum.lsu.edu/~Remsen/SACCBaseline.htm. Visitado: octubre 2020.

Rengifo, C., M. Zambrano and A. Nava. 2005. Lista de aves de La Azulita, Municipio Andrés Bello, Mérida-Venezuela. Editorial Venezolana, Mérida, Venezuela.

Scobie, C., E. Bayne, and T. Wellicome. 2014. Influence of anthropogenic features and traffic disturbance on burrowing owl diurnal roosting

behavior. Endangered Species Res. 24:73–83.

Segnini, S., and M. M. Chacón. 2017. Capítulo 2: El Chama: un río andino en riesgo. Pp. 29–58 en D Rodríguez-Olarte (ed). Ríos en Riesgo de Venezuela. Volumen 1. Colección Recursos hidrobiológicos de Venezuela. Universidad Centroccidental Lisandro Alvarado (UCLA). Barquisimeto, Lara. Venezuela.

Silva, G. A. 1999. Análisis hidrográfico e hipsométrico de la cuenca alta y media del río Chama, estado Mérida, Venezuela. Revista Geográfica Venezolana. 40: 9–41.

Vásquez-Avila, B. E., C. Nivelo-Villavicencio, P. R. Picon, M. K. Armijos, C. B. Vasquez and P. X. Astudillo. 2018. La Lechuza Campanaria *Tyto alba* (Strigiformes: Tytonidae) como regulador de plagas en un ecosistema urbano altoandino en el sur del Ecuador. ACI Avances en Ciencias e Ingenierías.

Verea, C., G. A. Rodríguez, D. Ascanio, A. Solórzano, C. Sainz-Borgo, D. Alcocer and L. G. González-Bruzual. 2015. Los Nombres comunes de las Aves de Venezuela. 3ra edición. Comité de Nomenclatura Común de las Aves de Venezuela. Unión Venezolana de Ornitólogos (UVO), Caracas, Venezuela.

Vrezec, A. l. 2001. The breeding density of Eurasian Scops Owl *Otus scops* in urbanareas of Pelješac Peninsula in southern Dalmatia. Acrocephalus. 22 (108): 149 – 154.

* * *

New sites of occurrence of short-eared owl (*Asio flammeus*) in Central Mexico

By **Jesús Oswaldo Gómez-Garduño[1], Rogelio Bautista-Trejo[1], José Clemente Vázquez Sánchez[1]** and **Jorge E. Ramírez-Albores[2]**

[1]Instituto de Ingeniería, Universidad Nacional Autónoma de México. Circuito Escolar, ciudad Universitaria., Coyoacán, Ciudad de México. C.P. 04510. México.

[2] Instituto de Ciencias Agropecuarias y Rurales, Universidad Autónoma del Estado de México. El Cerrillo-Piedras Blancas, Toluca de Lerdo, Estado de México. C.P. 50200. México.
E-mail: jorgeramirez22@hotmail.com

The Short-eared Owl (*Asio flammeus* [Pontoppidan 1763]) is a large species, measuring 32 to 42 cm long. It inhabits open areas with little vegetation, grasslands, wetlands, savannas, herbaceous steppes and agricultural areas ranging from 0-4300 m.a.s.l. (Howell and Webb 1995, Marks et al. 1999, Wiggins et al. 2020). It is the most widely distributed owl species in the world, both in latitude and elevation, and is found in Eurasia, North America, the West Indies, and South America (Holt and Leasure 1993). In Mexico, its geographic distribution ranges from Baja California to central Mexico (Howell and Webb 1995). It is active during the day and night, but principally during crepuscular hours, and shows greater activity on cloudy days (König et al. 2008).

This species' global conservation status is of Least Concern according to the IUCN Red List (BirdLife International 2016), while in Mexico it is listed under special protection in NOM-059-SEMARNAT-2010 (SEMARNAT 2010). In central Mexico there are few records for this species, and more records exist from the northern part of the country (eBird 2020). This owl has been reported in areas of Guanajuato, State of Mexico, Veracruz and in Mexico City and its peri-urban surroundings (Naturalista-CONABIO 2020, Wiggins et al. 2020). Here we present a scientific note referring to new sites of occurrence that broaden the known distribution of *Asio flammeus* in central Mexico.

New sites of occurrence in central Mexico

Sightings of *A. flammeus* were made in February 2019 and between March and June 2020 between 0700 and 16:00 hrs., with the support of binoculars (Konus Supreme 8 x 32 mm, Carl Zeiss Tierra ED 10x42 mm, Eagle Optics 10x50 mm) and still cameras (Nikon D3200, Nikon Coolpix

P900 83x, Nikon Coolpix P520). These sightings are mentioned below.

On 10 and 11 February 2019, an individual Short-eared Owl was registered at the Bordo Poniente Landfill (19 ° 27'13.45 "N, 99 ° 00'56.38" W) at 2239 m.a.s.l. in the municipality of Texcoco, State of Mexico. The land use of the site corresponds to induced grassland. On both days the owl was observed perched on the ground at around 1600 hrs. As we watched, the owl flew approximately 50 m from where it had been. When we approached the site where it had landed, it again flew away.

On 26 March 2020, an individual was sighted in an area of induced grassland west of the town of Tecámac (19 ° 42'38.75 "N, 99 ° 02'27.58" W at 2241 m.a.s.l.) and northwest of the Sierra Hermosa Ecological State Park (19 ° 43'00.88 "N, 99 ° 00'33.84" W at 2248 m.a.s.l.) in the State of Mexico.

An individual was also recorded in cultivation areas southeast of the town of Xaltocan in the municipality of Nextlalpan, State of Mexico (19 ° 42'15.90 "N, 99 ° 02'23.60" W) at 2241 m.a.s.l. At these sites the owl perched on the ground and later flew low (<5 m) to other areas. This sighting is located at an approximate distance of 30.5 linear km north of the Bordo Poniente Landfill record, which is the closest record to our sighting (eBird 2020, J.O. Gómez-Garduño Obser. Pers.)

On 22 April 2020 an individual was sighted in areas of abandoned crops associated with induced grassland with cactus (*Opuntia sp.*) and scattered trees (*Eucalyptus sp.* and *Schinus molle*) southwest of the town of Temascalapa in the State of Mexico (19 48'53.23 "N, 98 ° 55'08.81" W) at 2398

Figure 1. **Photographic record of *Asio flammeus* in the Relleno Sanitario Bordo Poniente located in the Texcoco Municipality, México State, México. Photos © J.O. Gómez Garduño.**

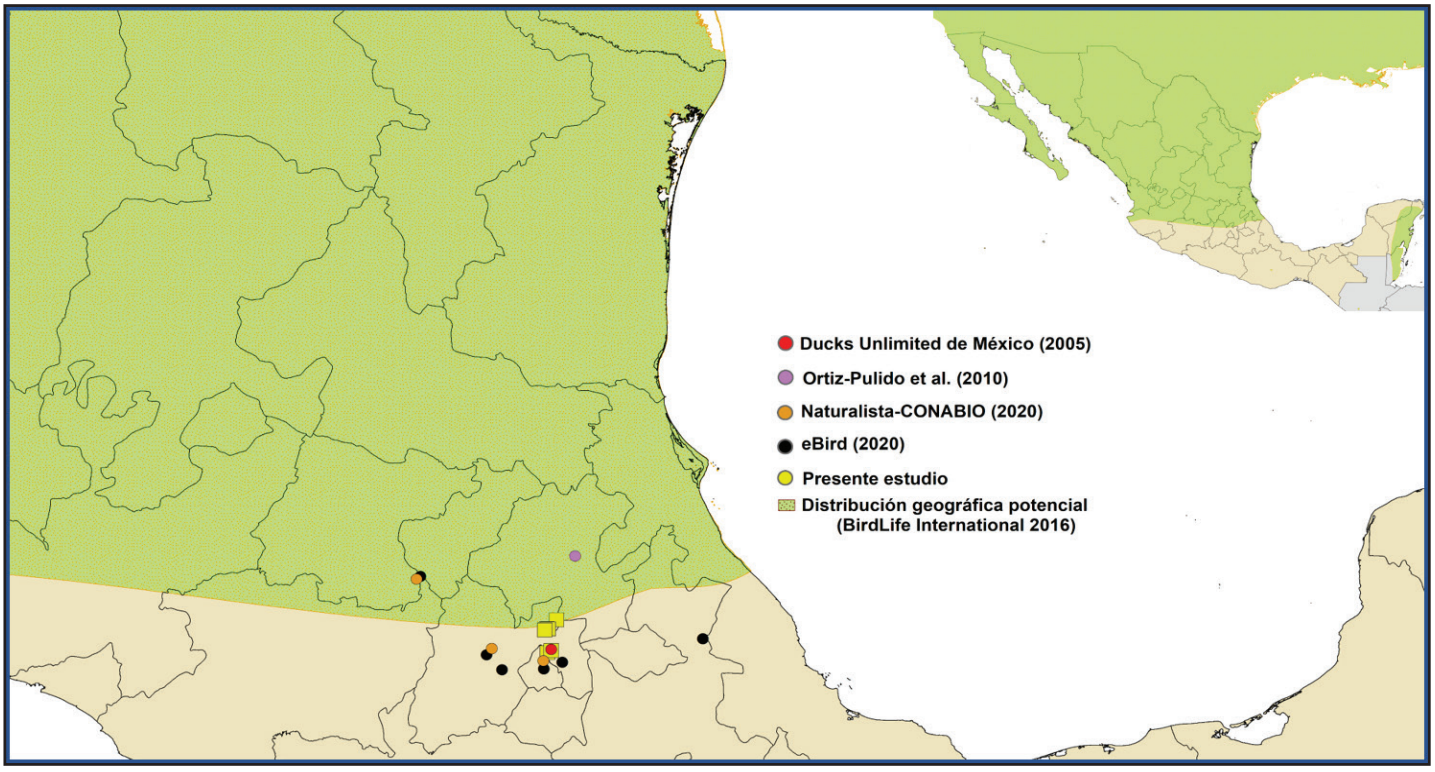


***Figure 2*. Map of *Asio flammeus* records in Central Mexico by J.E. Ramírez-Albores, and modified by BirdLife International (2016).**

m.a.s.l. The owl was perched on the ground. Upon noticing the observer, it flew into a grassland area adjacent to the site. This sighting is located at an approximate distance of 40.0 linear km north of the Bordo Poniente Landfill registry.

On 26 June 2020 an individual was sighted in induced grassland areas (19 ° 28'35.81 "N, 98 ° 58'24.43" W at 2239 m.a.s.l.) and reforestation areas (19 ° 28'44.93 "N, 98 ° 58'11.47 "W at 2,239 m.a.s.l.) near Lake Nabor Carrillo located southwest of Texcoco in the State of Mexico. In these areas there are scattered trees of *Eucalyptus sp.* and *Schinus molle*. The owl perched on the ground and first flew to the grassland area and then to the reforestation areas. This record is located at an approximate distance of 4.7 linear km northeast of the Bordo Poniente Landfill record.

The Short-eared Owl record prior to ours (26 June 2020) occurred in an area of the Federal Zone of Lake Texcoco in 2005, but the exact location of the sighting is not specified (Ducks Unlimited de México 2005). Since then no individuals had been documented in the area. Additionally, the sightings of *A. flammeus* at these sites are mainly due to the fact that there is a high abundance of Southern Pocket-gopher (*Thomomys umbrinus*), Mexican Cottontail (*Sylvilagus cunicularis*) and Mexican Vole (*Microtus mexicanus*) as well as other rodent species that are potential prey and part of the diet of this owl (Hogan et al. 1996, Williford et al. 2011).

Discussion

Knowing the distribution of birds, their habitat preferences, or the dates in which they are present in our latitudes are crucial aspects for their conservation. However, even though the Short-eared Owl's global conservation status is of Least Concern (LC) (BirdLife International 2016) and it is under special protection in Mexico (SEMARNAT 2010), this species has experienced an evident population decline in recent years in various areas of its geographical distribution (eg, Freile et al. 2012), which has motivated the development of different strategies for its conservation (Onrubia et al. 2004, Environment Canada 2016). Anthropogenic activities such as the advance of the agricultural and livestock frontier, the destruction of natural habitat, and the use of pesticides against owls are considered a threat to their populations.

The present records of the presence of *A. flammeus* for central Mexico are relevant, adding to the few records of the species in Mexico and the importance of these sites as feeding and refuge areas for this species. Furthermore, they not only allow us to characterize distribution or expansion patterns, but also to understand life histories and design better planned conservation strategies.

Acknowledgements

We thank SEDENA since the results found and expressed in this manuscript are derived from the study requested by SEDENA from the Engineering Institute of UNAM as part of the decision issued by SEMARNAT in the resolution corresponding to the project in question. To CONAGUA and the surveillance personnel of Lake Nabor Carrillo for the logistical support and facilities provided. To Max Valencia for his support in the field.

References

BirdLife International. 2016. *Asio flammeus*. The IUCN Red List of Threatened Species 2016: e.T22689531A93234548. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22689531A93234548.en. Downloaded on 31 July 2020.

Duck Unlimited de México. 2005. Programa de conservación y manejo para las aves playeras en el lago de Texcoco, Estado de México. Ducks Unlimited. México.

e-Bird 2020. Short-eared Owl (*Asio flammeus*). https://ebird.org/maps. Acceso 31 de julio de 2020.

Environment Canada. 2016. Management Plan for the Short-eared Owl (*Asio flammeus*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment Canada, Ottawa.

Freile, J.F., D.F. Castro and S. Varela. 2012. Estado del conocimiento, distribución y conservación de aves rapaces nocturnas en Ecuador. Ornitología Neotropical. 23:235-244.

Hogan, K. M., M.L. Hogan, J. Gable and M. Bray. 1996. Notes on the diet of Short-eared Owls (*Asio flammeus*) in Texas. Journal of Raptor Research. 30(2): 102–104.

Holt, D.W. and S.M. Leasure. 1993. Short-eared Owl (*Asio flammeus*). En: Poole A. y Gill F. (eds.). The birds of North America, No. 62. Philadelphia: The Academy of Natural Sciences.

Howell, S.N.G. and S. Webb. 1995. A guide to the birds of Mexico and northern Central America. New York, NY: Oxford University Press.

König, C., F. Weick y J. Becking. 2008. Owls of the World. Christopher Helm, London.

Marks, J.S., R.J. Cannings and H. Mikkola. 1999. Family Strigidae (Typical Owls). Pp. 76–242. En: del Hoyo J., Elliott A. and Sargatal J. (eds.). Handbook of the Birds of the World. Volume 5: Barn Owls to Hummingbirds. Lynx Ed. Barcelona

Naturalista-CONABIO. 2020. Búho sabanero (*Asio flammeus)*. Disponible en https://www.naturalista.mx/observations?taxon_id=20315. Acceso 31 de julio de 2020.

Onrubia, A., F. Jubete and J. Román. 2004. Búho campestre. *Asio flammeus*. Pp. 289-290. En: Madroño A., González C. and Atienza J.C. (eds.). Libro Rojo de las Aves de España. Dirección General para la Biodiversidad-SEO/BirdLife. Madrid.

Ortiz-Pulido, R., J. Bravo-Cadena, V. Martínez-García, D. Reyes, M.E. Mendiola-Gonzáles, G. Sánchez and M. Sánchez. 2010. Avifauna de la Reserva de la Biosfera Barranca de Meztitlán, Hidalgo, México. Revista Mexicana de Biodiversidad. 81:373-391.

SEMARNAT. 2010. Norma Oficial Mexicana NOM-059-SEMARNAT-2010, Protección ambiental– Especies nativas de México de flora y fauna silvestres– Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio– Lista de especies en riesgo. Diario Oficial de la Federación 30 diciembre, 2010.

Wiggins, D. A., D. W. Holt and S. M. Leasure. 2020. Short-eared Owl (*Asio flammeus*), version 1.0. In Birds of the World (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.sheowl.01

Williford, D., M.C. Woodin and M.K Skoruppa. 2011. The winter diet of Short-eared Owls in subtropical Texas: do southern diets provide evidence of opportunism? Journal of Raptor Research. 45(1): 63–70.

* * *

Predatory behavior by Gray-headed Kite (*Leptodon cayanensis*) in wasp nests of the Polistini tribe in the Pantanal wetland, Brazil

By **Breno Dias Vitorino[1]*, Angélica Vilas Boas da Frota[1]** and **Josué Ribeiro da Silva Nunes[1]**

[1]Programa de Pós-graduação em Ciências Ambientais. Universidade do Estado de Mato Grosso (PPGCA/UNEMAT). Centro de Pesquisa em Limnologia, Etnobiologia e Biodiversidade do Pantanal (CELBE). Av. Santos Dumont, Cidade Universitária, Bloco II. Cáceres, Mato Grosso, Brasil. CEP: 78200-000.
* E-mail: brenovitorino@gmail.com

The natural history of various Neotropical raptors is still poorly understood. In part, this can be explained by the seemingly low population density of the group. Therefore, occasional observations in the field become an important step towards understanding the ecological, adaptive and evolutionary processes of these species (Olmos 2016).

Leptodon cayanensis (Latham 1790) is a bird of prey of the Accipitridae family popularly known as Gray-headed Kite. The species is identified by its gray head, black back, white underside, lower tail, and barred wings (Sick 1997). In the Neotropics, the species can be observed from southern Mexico to Argentina, occurring in practically the entire Brazilian territory, absent only in the extreme south and in some regions of the northeast (Santos 2014, Bierregaard and Kirwan 2020).

In the northeastern region of Brazil, *L. cayanensis* is apparently replaced by its sister species *L. forbesis* (Bierregaard and Kirwan 2020). Although the taxonomic determination of the latter is still a matter of discussion (Mallet-Rodrigues, 2006, Piacentini et al. 2015) it can be considered a variation of *L. cayanensis* (Sick 1997).

Leptodon cayanensis is generally associated with rainforest areas with altitudes up to 2200 m.a.s.l., but especially in areas below 1000 m.a.s.l. near waterways such as rivers and swamps (Ferguson-Lees and Christie 2001). It can be found in gallery forests, forest edges, fragmented habitats, and disturbed areas (Bierregaard and Kirwan 2020). Worldwide, the conservation status of the species is currently Least Concern (BirdLife International 2016).

It feeds on small mammals, birds, reptiles, amphibians, mollusks, and insects such as ants, termites, beetles, grasshoppers, cicadas, bees and wasps, as well as their honeycombs (Robinson 1994, Ferrari 1990, Ferguson-Lees and Christie 2001, Thorstrom et al. 2012). However, the details about the predatory behavior of the species,

Figure 1. **Predatory behavior of *Leptodon cayanensis* in wasp nests of the Polistini tribe in the Pantanal wetland, Brazil. Photo © Angélica Vilas Boas da Frota.**

especially in relation to the consumption of certain invertebrates as well as the identification of these prey, are scarce or non-existent. Thus, in the present work we describe the feeding behavior of *L. cayanensis* during the predation of a wasp nest in the Pantanal, Brazil.

Study Area and Observation

The Pantanal wetland is an ecosystem characterized by periodic floods (Junk et al. 1989), located in the center of the Hydrographic Region of Paraguay in South America (Brazil 2020). One of the main tributaries of this alluvial plain is the Paraguay River, formed by different functional sectors and aquatic habitats (Wantzen et al. 2005) that are an important ecological corridor for biodiversity. The region's climate is hot and humid, with an annual rainfall of 1500 mm and an average annual temperature of 32º C (Kottek et al. 2006).

The predatory behavior of *Leptodon cayanensis* was recorded in the municipality of Cáceres, southeast of the state of Mato Grosso, Brazil. The observers (BDV and AVBF) were in a boat in the main channel of the Paraguay River and made the observations with the help of binoculars and a camera. The record was obtained during a field expedition of the Paraguay River Ecological, Economic and Cultural Corridor Project, the objective of which is to inventory and carry out an ecological evaluations of the bird community in this wetland.

Results and Discussion

On 21 September 2018, around 17:00 hrs., we identified a kite partially hidden in the shrubby vegetation on the right bank of the Paraguay River (16 ° 42'48.52 "S, 57 ° 45'43.06" W) (Datum WGS 84). Upon our approach, we immediately identified the individual as *L. cayanensis*, according to Gwynne et al. (2010). The predator searched for food with its head in the bushes and its wings spread, with its back towards the observer. We noticed that the bird used its beak to attack, while its head was still in the bush. For a moment, the bird brought its head out of the bushes and looked around (Fig. 1), then resumed feeding. Approximately five minutes after detection, the individual took flight and landed in a nearby tree before subsequently leaving the area. At that time, we identified that *L. cayanensis* was feeding on a hive of wasps later identified at the tribe level (Polistinae: Polistini).

Other similar records corroborate the position of this species of kite during the search for food in wasp nests, as observed in two photographic records available in the Brazilian virtual database wikiaves.com.br (Ferraz 2011, Fernandes 2016). In these, one can observe *L. cayanensis* with outstretched wings during predation.

Some issues related to the consumption of wasps (and wasp larvae) by *L. cayanensis*, as well as their behavior, remain intriguing. It is known that *L. cayensis* can present complex feeding tactics by following primates of the genus *Callithrix* to capture cicadas seasonally, as presented in Ferrari 1990. So, was the consumption of wasps by *L. cayanensis* a seasonal or opportunistic event or does the species regularly feed on wasps even with the availability of other food resources? Why does the bird hold its wings open during the search for food? Is it a way to help it catch insects?

In addition, a predator does not affect its prey just by reducing its population, there may also be indirect effects, such as evolutionary phenotypic changes arising from this ecological interaction, both for prey and predator, which need to be considered (Werner e Peacor 2003). Therefore, a study aimed at understanding the coevolutionary processes between these two species would be interesting, since the kite needs to deal with wasp stings and the wasps need to minimize / prevent the impacts of this predator.

Although consumption of invertebrates is not considered atypical for *L. cayanensis* (Robinson 1994, Ferguson-Lees and Christie 2001, Thorstrom et al. 2012), the behavioral tactic presented in this note is noteworthy. The current literature still lacks information related to basic raptor biology (Olmos et al. 2006), thus a report detailing the foraging behavior of this kite becomes important, particularly for a portion of the Paraguay River in which the species can be considered rare (Frota et al. 2020). The behavioral tactics such

as feeding strategies presented here can help to understand the feeding ecology of *L. cayanensis* while adding a voracious hunter to the list of predators for wasps of the Polistini tribe.

Acknowledgements

We are grateful to the Ecological, Economic and Cultural Corridor Project of the Paraguay River in the context of climate change (CORE); the Coordination for the Improvement of Higher Education Personnel (CAPES) and the Mato Grosso State Research Support Foundation (FAPEMAT), for the scholarships awarded to the authors BDV and AVBF; to Sara Miranda and Jaqueline Pinheiro, for the identification of wasps and their nest; to Marcus Canuto for the comments during the preparation of the manuscript and to the reviewer Laura Lindenmeyer-Sousa for the valuable contribution.

References

Bierregaard, R.O. and G. M. Kirwan. 2020. Gray-headed Kite (*Leptodon cayanensis*), version 1.0. In Birds of the World (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.grhkit1.01

BirdLife International. (2016). *Leptodon cayanensis*. The IUCN Red List of Threatened Species. Disponível em: https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22694967A93481804.en. Acesso em: 16 jul. 2020.

Brasil. (2020) Agência Nacional das Águas. Disponível em: https://www.ana.gov.br/. Acesso em: 16 jul. 2020.

Ferguson-Lees, J. and D. A. Christie. Raptors of the world. New Jersey: Princeton University Press, 2001. 320p.

Fernandes, E. *Leptodon cayanensis* (Latham, 1790) (WA2230038). Wiki Aves - A Enciclopédia das Aves do Brasil, 2016. Disponível em: http://www.wikiaves.com/2230038. Acesso em: 16 jul. 2020.

Ferrari, S.F. (1990). A foraging association between two kite species (*Ictinea plumbea* and *Leptodon cayanensis*) and buffy-headed marmosets (*Callithrix flaviceps*) in southeastern Brazil. The Condor, 92(3), 781-783.

Ferraz, S. *Leptodon cayanensis* (Latham, 1790) (WA365115). WikiAves - A Enciclopédia das Aves do Brasil, 2011. Disponível em: http://www.wikiaves.com/365115. Acesso em: 16 jul. 2020.

Frota A.V.B., B.D. Vitorino, C.J. da Silva, S.K. Ikeda-Castrillon, and J.R.S.Nunes. (2020) Birds of the Ramsar site Estação Ecológica de Taiamã and buffer zone, Pantanal wetlands, Brazil. Check List, 16(2): 401-422. https://doi.org/10.15560/16.2.401

Gwynne, J. A., R. S. Ridgely, M. Argel, and G. Tudor. (2010). Guia Aves do Brasil: Pantanal e Cerrado. São Paulo: Wildlife Conservation Society, Ed. Horizonte. 322 p.

Junk W.J., P.B.Bayley, and R. E. Sparks. (1989) The flood pulse concept in river–floodplain systems. Canadian Special Publication of Fisheries and Aquatic Sciences, 106: 110–127.

Kottek M., J. Grieser, C. Beck, B. Rudolf, and F. Rubel. (2006) World map of the Köppen–Geiger climate classification updated. Meteorol¬ogische Zeitschrift, 15 (3): 259–263. https://doi.org/10.1127/0941-2948/2006/0130

Mallet-Rodriguez, F. (2006). Táxons de aves de validade questionável com ocorrência no Brasil. II–Accipitridae e Laridae. Revista Brasileira de Ornitologia, 14 (2): 176-178.

Olmos, F., J. F. Pacheco, and L. F. Silveira. (2006) Notas sobre aves de rapina (Cathartidae, Acciptridae e Falconidae) brasileiras. Revista Brasileira de Ornitologia, 14 (4): 401-404.

Piacentini, V.Q. et al. (2015). Annotated checklist of the birds of Brazil by the Brazilian Ornithological Records Committee/Lista comentada das aves do Brasil pelo Comitê Brasileiro de Registros Ornitológicos. Ornithology Research, 23(2), 91-298.

Robinson S. K. (1994) Habitat selection and foraging ecology of raptors in Amazonian Peru. Biotropica, 26 (4): 443-458. https://doi.org/10.2307/2389239

Santos, K.K. (2014). Aves da RPPN Alto-Montana. Serra da Mantiqueira - Itamonte – MG. 261 p.

Sick, H. (1997) Ornitologia Brasileira. Rio de Janeiro: Nova Fronteira. 862 p.

Thorstrom, R., D. F. Whitacre, J. Lópes, and G. Lópes. (2012) Gray-headed Kite, p. 39 –47. In: Whitacre, D. F. (ed.) Neotropical birds of prey: biology and ecology of a forest raptor community. Ithaca: Cornell University Press.

Wantzen K.M., E. Drago, and C. J. da Silva. (2005) Aquatic habitats of the Upper Paraguay river-floodplain-system and parts of the Pantanal (Brazil). Ecohydrology and Hydrobiology, 5(2): 107–126.

Werner, E.E., and S. D. Peacor.(2003). A review of trait-mediated indirect interactions in ecological communities. Ecology, 84(5), 1083-1100.https://doi.org/10.1890/0012-9658(2003)084[1083:AROTII]2.0.CO;2

* * *

Overwintering Osprey (*Pandion haliaetus*) in El Salvador

By **Mario Roberto Trejo Alemán[1], José Manuel Flores Gámez[2], Gerson Rodríguez[3]** and **Néstor Herrera[4]**

[1]El Salvador desde mi lente E-mail: ddmles@gmail.es

[2]Salinera Handal, Puerto Parada, Usulután E-mail: jmanuelflores34@gmail.com

[3]Wildlife El Salvador, San Marcos, San Salvador, El Salvador, C.A. E-mail: gerson.r79@gmail.com

[4] Paso PacíficoResidencial Altos de la Cima, Calle #2, Casa #21, Antiguo Cuscatlán, La Libertad
E-mail: nestor@pasopacifico.org

The Osprey (*Pandion haliaetus*) inhabits areas close to shallow, fresh, brackish, and marine waters. It is a specialist that feeds almost exclusively on fish and is found wherever they are available near the surface of the water, both in natural environments, such as rivers, lakes, and swamps, as well as in reservoirs and fish ponds (Poole 1994).

The Osprey lives in tropical and subtropical environments. It is migratory almost everywhere, not globally threatened, frequent, and even abundant depending on the environment. Two subspecies are recognized in the Neotropics. *P. h. carolinensis* nests in the eastern part of the Labrador Peninsula, Canada and as far north as Alaska, as well as in southern Florida and Arizona, in the United States of America. It winters in Central America, and as far south as southern Peru and southern Brazil. *P. h. ridgwayi* occurs in the Caribbean, including in the Bahamas, Cuba, and Belize (Poole 1994).

In Central America, the species is a winter visitor from October to April, and is present on both coasts (Fagan and Komar 2016). Most young spend about 18 months on their wintering grounds, returning to their breeding sites only in their third spring (Poole 1994). Because of this, Ospreys are found in all months of the year on their wintering grounds (Mestre and Bierregaard 2009). In El Salvador it is a regular migratory species (Komar and Domínguez 2001) rare near rivers, lakes, reservoirs, and mangroves (Thurber et al. 1987).

This species experienced a dramatic decline in the post-World War II era. Environmental contamination and residual pesticides affected its ability to reproduce. As a result, various conservation organizations, including the Audubon Society, carried out different programs to restore this species' populations. An example of this was the actions implemented in the Chesapeake Bay, which led to a high number of studies, counts, and trials to

***Figure 1 (Left.)*. Sighting of banded Osprey (*Pandion haliaetus carolinensis*), 8 November 2019, Salinera Handal, El Salvador. Photo © Mario Trejo**

***Figure 2 (Right)*. Sighting on 06 December 2019, at 8:33 hrs., in Salinera Handal, Puerto Parada, Usulután. Photo © Gerson Rodríguez**

successfully recover the species (Watts and Paxton 2007). Additionally, *Pandion haliaetus carolinensis* has been included in the bird banding program of the Geological Survey of the United States of America for almost 100 years. Obtaining data on the recovery of the bands is key and has allowed, over time, estimation of survival, distribution, migration routes, and geographical displacement during winter (Worth 1936, Melquist et al. 1978, Johnson and Melquist 1991).

Record

On 8 November 2019, an adult Osprey was identified and photographed by M. Trejo. The photo shows the individual has a blue band on the right leg and another metal band on the left leg (Fig. 1). On 6 December 2019, at 8:33 hrs., G. Rodríguez observed and photographed an Osprey with the same band characteristics in the Puerto Parada area, specifically in Salinera Handal (Fig. 2). Finally, on 23 April 2020, J. M. Flores Gámez took a photograph of an Osprey in which the band is easily distinguished, as Blue 5K (Fig. 3). Since then, this individual has been seen every month, from May to September 2020.

This individual was often observed perched on a branch of Red Mangrove (*Rhizophora mangle*), located on the edges of the ponds in the Handal Salt Mine, Puerto Parada canton, San Dionisio Municipality, Usulután Department. The Handal Salt Mine is located in the Bay of Jiquilisco, an important 31,600 ha estuary made up of mangroves on the dry Pacific coast (Jiménez et al.

***Figure 3*. Sighting of Osprey (*Pandion haliaetus carolinensis*) banded with a blue band, 5K, 23 April 2020, Salinera Handal, El Salvador. Photo © José Manuel Flores Gámez**

2004). It produces sea salt through the collection of brackish water, covers 250 ha, and includes ponds for supplying water from natural channels. Fish enter these channels and become easy targets for fishing Osprey.

These Osprey sightings and photographs (Fig. 1) were shared with the Bird Banding Laboratory of the Patuxent Wildlife Research Center of the United States Geological Survey, USGS, and included in the eBird platform (Rodríguez 2019, Trejo 2019, Flores-Gámez 2020). According to Tony Brake, Point Richmond, Calif. (Pers. Comm.), the Osprey in question was banded in Wisconsin (Midwest), in 2007, making it 13 years old.

Discussion

Populations of *P. h. Carolinensis* have been grouped and classified according to the areas of

North America where they nest. These groups have been designated the West, Midwest, Northeast, and Mid-Atlantic (Poole and Agler 1987).

The recovery of breeding bird bands from the western and midwestern United States and Canada indicates that these individuals overwinter in Mexico and Central America (Melquist et al. 1978, Poole and Agler 1987, Johnson and Melquist 1991). This has also been demonstrated with the use of satellite telemetry (Martell et al. 2001).

Banded Ospreys in northern Idaho and eastern Washington (west coast of the United States) are known to winter on the Pacific coast of El Salvador, including Jucuarán, in the department of Usulután (Melquist et al. 1978). This behavior has also been demonstrated by satellite telemetry. One individual remained in the Olomega Lagoon, Department of San Miguel, for at least one year before returning to its nesting site on the west coast of the United States (Martell et al. 2001).

It is interesting to note that the migration of male Ospreys is shorter than that of the females. Females travel earlier and also go further south, such as Bolivia or Brazil (Martell et al. 2001). The individual banded as Blue 5K was a male from the Midwest population, which further supports the idea of geographical segregation by sex.

Our observations support the idea that Osprey populations from the states of Washington, Indiana and Wisconsin have a preference for wintering in Central America and that there is overlap in El Salvador as a wintering area for the populations from the West and Midwest groups. The banded bird data also provide information on longevity. The Canadian Wildlife Service reported a 35-year-old Osprey (DesGranges et al. 1993 cited by Mestre and Bierregaard 2009). Individual Blue 5K would be the oldest specimen registered as wintering in El Salvador.

Regular observations and the use of digital cameras, along with citizen science, are effective tools for the conservation, knowledge and research of birds that migrate in the Neotropics.

Acknowledgements

We thank Rocío Juárez for the style review and Alexandra Elbakyan for support.

References

Fagan, J. and O. Komar. 2016. Field guide to Birds of Northern Central America. Belize, El Salvador, Guatemala y Honduras. Peterson Field Guide. New York. 438 p.

Flores Gámez, J. M. 2020. Checklist S69463890. Salinera Handal, Usulután, El Salvador. Audubon and Cornell Lab of Ornithology, Ithaca, USA. Documento en línea (eBird). URL: http://ebird.org/ebird/view/checklist (access on 13 September 2020).

Jiménez, I., L. Sánchez-Mármol and N. Herrera. 2004. Inventario nacional y diagnóstico de los humedales de El Salvador. MARN/AECI. San Salvador.

Johnson, D. R., and W. E. Melquist. 1991. Wintering distribution and dispersal of northern Idaho and eastern Washington Ospreys. Journal of Field Ornithology 62:517–520.

Komar, O. and J. P. Domínguez. 2001. Lista de aves de El Salvador. Fundación Ecológica de El Salvador SALVANATURA, Serie Biodiversidad No. 1:1–68.

Martell, M. S., C. J. Henny, P. E. Nye and M. J. Solensky. 2001. Fall migration routes, timing, and wintering sites of North American Ospreys as determined by satellite telemetry. Condor 103: 715–724.

Melquist, W. E., D. R. Johnson and W. D. Carrier. 1978. Migration patterns of northern Idaho and eastern Washington Ospreys. Bird-Banding 49: 234–236.

Mestre, L. A. M. and R. O Bierregaard Jr. 2009. 'The role of Amazonian rivers for wintering ospreys (*Pandion haliaetus*): clues from North American band recoveries in Brazil between 1937 and 2006. Studies on Neotropical Fauna and Environment, 44: 3, 141–147.

Poole, A. F. 1994. Family Accipitridae (hawks and eagles). Pp. 42–51 En: Handbook of the birds of the World, vol. 2 (J. del Hoyo, A. Elliott, J. Sargatal, Eds.). Barcelona, Lynx Edic.

Poole, A. F., and B. Agler. 1987. Recoveries of Ospreys banded in the United States, 1914–84. Journal of Wildlife Management 51:148–155.

Rodríguez, G. 2019. Checklist S62103165. Salinera Handal, Usulután, El Salvador. Audubon and Cornell Lab of Ornithology, Ithaca, USA. Documento en línea (eBird). URL: http://ebird.org/ebird/view/checklist (access on 14 September 2020).

Trejo, M. 2019. Checklist S61279212. Salinera Handal, Usulután, El Salvador. Audubon and Cornell Lab of Ornithology, Ithaca, USA. Documento en línea (eBird). URL: http://ebird.org/ebird/view/checklist (access on 13 September 2020).

Thurber, W. A., J. F. Serrano, A. Sermeño and M. Benítez. 1987. Status of uncommon and previously unreported birds of El Salvador. Proceeding of the Western Foundation of Vertebrate Zoology. Los Angeles, California. Vol. 3. No. 3: 109–293.

Watts, B. D. and B. J. Paxton. 2007. Ospreys of the Chesapeake Bay: population recovery, ecological requirements, and current threats. Waterbirds 30 (1): 39–49.

Worth, C. B. 1936. Summary and analysis of some records of banded Ospreys. Bird banding 7: 156–160.

* * *

Predation of Roadside Hawk (*Rupornis magnirostris*) by Ornate Hawk-Eagle (*Spizaetus ornatus*) in the Puerto Península Natural Military Reserve, Iguazú Department, Provincia de Misiones, República Argentina

By **Nicolás Lodeiro Ocampo[1], Norberto Angel Nigro[1], Natalia Daiana Peralta[1], Marcelo Javier Wioneczak[2],** and **Luis Seko Pradier[3]**

[1]Fundación Red Yaguareté, www.RedYaguarete.org.ar. Cuenca 1539 Planta Baja "4", C.A.B.A., Argentina.
E-mail: info@redyaguarete.org.ar
[2]Urquiza 3709, Posadas (3300), Misiones, Argentina.
[3]Misiones aves. Calle 109 No 2757, Posadas (3300), Misiones, Argentina

The Ornate Hawk-Eagle (*Spizaetus ornatus*) belongs to the Accipitridae Family and has a strictly neotropical distribution. Their populations have been recorded continuously from the Gulf of Mexico slope, in Guatemala, in the south of Panama, Venezuela, Colombia, reaching the west and south of Peru, Bolivia and northern Argentina. In Argentina, it is present in the Province of Misiones, where it is occasionally recorded (Chebez et al. 2008, Aranda et al. 2009, Bodrati et al. 2010, Anonymous 2018, Escobar and Moya 2019), and in Formosa, Salta, Corrientes, and Jujuy (Doering 1874, Contreras 1987, Chebez 1992, Di Giacomo et al. 2007).

This species inhabits primary forests in a good state of conservation and remnants of the Paranaense and Yungas forests (Chebez et al. 2008) where it needs, like other large eagles, vast territories to hunt and breed. Therefore, the massive clearing of its habitat (mainly for logging and agricultural purposes) constitutes a great threat, and has led to its being categorized as Endangered in Argentina (MAyDS and AA 2017).

When hunting, after flying high to survey the terrain, it makes short flights from inside tree canopies or forest edges, but generally does not go more than 50 meters from them, capturing its prey in branches or on the ground. Its diet is basically made up of birds and small and medium-sized mammals, such as guans (*Penelope sp.*), macaws, parrots, toucans, pigeons, tinamous (*Cryturellus spp.* and *Tinamus solitarius*) and quail (*Odontoph-*

***Figure 1*. In the lower left corner of the photo you can see an Ornate Hawk-Eagle (*Spizaetus ornatus*) feeding on its prey. In addition, the internal part of the wing characteristic of the Roadside Hawk (*Rupornis magnirostris*) can be seen. © Red Yaguareté Camera Trap**

***Figure 2*. Ornate Hawk-eagle feeding on its prey. © Red Yaguareté Camera Trap**

orus capueira), opossums (Didelphis sp.), small monkeys (*Cebus sp*.), porcupines (*Sphiggurus sp*.), Kinkajou (*Potus flavus*), agoutis (*Dasyprocta sp*.), squirrels, bats, and mice (Chebez et al. 2008). It also consumes, although less frequently, lizards and snakes. However, published reports are limited and there are few studies with detailed data on its diet.

Both in Guatemala and in Brazil, according to the data collected from observations made in their nests, a higher percentage of birds is found, followed by mammals and to a much lesser extent reptiles (Teixeira et al. 2019, Naveda-Rodríguez 2004).

The Roadside Hawk (*Rupornis magnirostris*) is a raptor of the Accipitridae family. It measures about 35 cm. long and weighs approximately 295 g. It can inhabit jungles, open forests, gallery forests, patches of forests, savannas, plantations, parks and gardens, even in cities (Mata et al. 2006). It usually perches calmly, visible for a long time, displaying its characteristic caudal wag.

Even though Ornate Hawk-Eagles consume a higher percentage of birds than the other Classes, they have not been documented feeding on Roadside Hawks. In this note, we present a new food item for the known diet of the Ornate Hawk-Eagle. In this case, it appears that an individual Roadside Hawk perched on the ground, where it had already been recorded by the cameras on different occasions in the clearing of the road, was captured by an Ornate Hawk-Eagle.

Study Area

The study area is located in the ecoregion of the Paranaense Forest or Inland Atlantic Forest, in the Province of Misiones, Argentina. It is located

Figure 3 (Left). **Ornage Hawk-Eagle dragging its prey. © Red Yaguareté Camera Trap**
Figure 4 (Right). **Ornage Hawk-Eagle holding on to its prey and looking around © Red Yaguareté Camera Trap**

within the Puerto Península Military Natural Reserve, a natural area under military control next to the city of Puerto Iguazú, from which it is separated by the Mbocay stream (25 ° 42'12.3 "S; 54 ° 36'01.9" W). There, two independent sites were sampled and in May 2019, images of an Ornate Hawk-Eagle feeding on a Roadside Hawk were captured.

Our observation took place within the framework of the "Population Monitoring Program of Yaguaretés in Argentina" of the Red Yaguareté Foundation through which, between 2016 and 2019, several sites in the province of Misiones were monitored with camera traps, in search of jaguars (*Panthera onca*).

Materials & Methods

The images obtained from the predation were recorded between 14:35 hrs. and 15:57 hrs. (82 minutes in total) on 2 May 2019, autumn in this hemisphere, with a temperature ranging from 23ºC to 27 ° C. In the photos obtained by the camera trap, the Ornate Hawk-Eaglee was seen after having caught its prey.

In these images the eagle is seen using its powerful talons and beak to grab its prey and to feed. One can also note its alert attitude due to its vulnerability when on the ground, in a clearly unfavorable position in the face of possible predators, such as jaguar, cougar (*Puma concolor)*, ocelot (*Leopardus pardalis)* or even domestic dogs (*Canis lupus familiaris)*, all frequently documented in this area (Figure 3).

Observation

Based on the images obtained by the camera trap, we have been able to determine what prey was captured by the Ornate Hawk-Eagle. Even

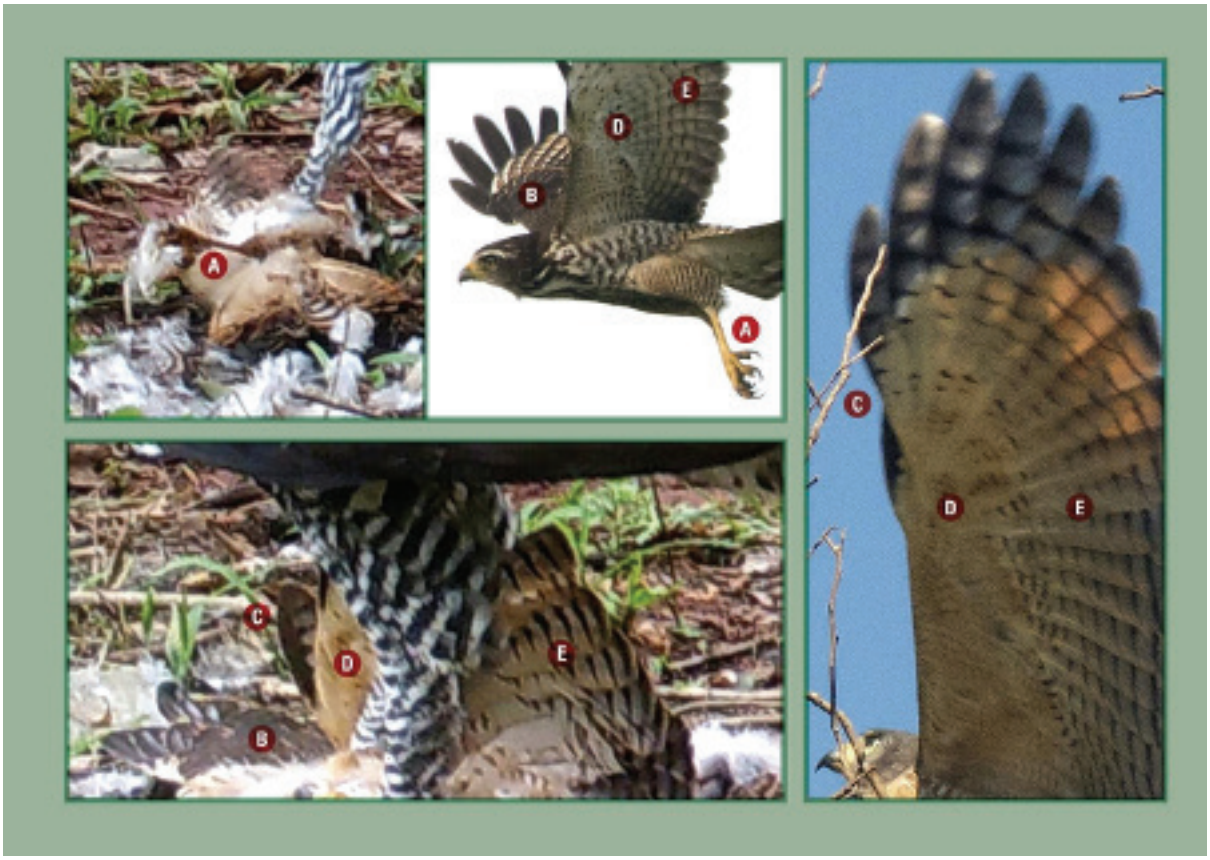


***Figure 5*. Comparison of the prey with Roadside Hawk (*Rupornis magnirostris*): A) Similar tarsus and toes; B) scapular and dark wing coverts; C) alulas with the same pattern; D) covered with small spots; E) secondaries with the same design and color. Photos: Red Yaguareté Camera Trap and M. J. Wioneczak**

though our first impression reminded us of the Roadside Hawk, a bird frequently recorded at that site, a first external consultation suggested the Red-winged Tinamou (*Rhynchotus rufescens*) as possible prey. This tinamiform, although not characteristic of the environment where the observation was made, has been documented on two previous occasions by the same camera that captured the eagle.

Next, we began a meticulous comparison of photos of both species (Red-winged Tinamou and Roadside Hawk), from which the following emerges: a) in no photo are the rufous primary feathers characteristic of the tinamou observed, nor are they seen loose on the floor where the attack ocurred, and b) the tarsus and toes with curved talons are characteristic of a raptor and not of a tinamiform. Looking to identify the predated species, we found the following typical characteristics of *Rupornis magnirostris*: a) scapular and dark wing coverts, b) alulas with the same pattern, c) covered with small spots, and d) secondaries with the same design and color (Fig. 5).

Conclusion

The foregoing leads us to conclude that the predated species was a Roadside Hawk, a taxon that was not mentioned in the Ornate Hawk-Eagle's diet according to the studies consulted. As a

complementary data, we can contribute that, although Chebez et al. (2008) indicate that the Ornate Hawk-Eagle hunts in the early hours of the morning or at twilight, in this case we have captured it hunting in the middle of the afternoon.

Acknowledgements

To Eduardo Musto, who was the key in the inauguration of this sampling site. To Guillermo Martínez and Luis Faifer, who have kept it active for so many years and to Daniel Gonzalo Gnatiuk, Marcos Brites and Maximiliano Lacaze, who participated in various samplings. To Colonel Javier Paiva, Colonel Raúl Gustavo Campos, Major Guillermo Broll, Sergeants Lucas Arake, Gabriel Gauna and Francisco Sotelo and all the anonymous but very courageous soldiers who collaborated with our monitoring in the area. To María del Rosario "Rochi" Vignoles, for editing Figure 4. To Sergio Moya, for contacting Luis Seko Pradier and Marcelo Javier Wioneczak, which made it possible to confirm the prey species with an excellent level of precision. To Francisco Lucero, for graciously answering our questions. Finally, our thanks to all the volunteers and partners of the Red Yaguareté Foundation, who allow us to maintain these activities over time, permanently encouraging us to continue.

References

Anónimo. 2018. Águila crestuda en el cielo misionero. El Paranaense. Disponible en: https://elparanaense.com.ar/aguila-crestuda-en-el-cielo-misionero. Acceso en: 22 de septiembre de 2020.

Aranda, M., A. Burton, E. Iñigo-Elías and P. Escalante. 2009. Registro del Águila elegante (*Spizaetus ornatus*) en la Reserva de la Biosfera sierra de Manantlán, Jalisco-Colima, México. Revista Mexicana de Biodiversidad Vol. 80. pp265 - 268. Disponible en: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1870-34532009000100030. Acceso en: 22 septiembre 2020.

Bodrati, A., K. Cockle, J. M. Segovia, I. Roesler, J. I. Areta and E. Jordán. 2010. La avifauna del Parque Provincial Cruce Caballero, Provincia de Misiones, Argentina. Cotinga 32: 41-64.

Chebez, J. C. 1992. Notas sobre algunas aves poco conocidas o amenazadas de Misiones (Argentina) Aprona, 21: 12-30.

Chebez, J. C., Baigorria, J. and Anfuso, J. 2008. Águila crestuda real, vol. 2, p. 211 – 215. In: Chebez, J. C. Los que se van. Fauna argentina amenazada. Buenos Aires, Albatros.

Contreras, J. R. 1987. Lista preliminar de la avifauna de la provincia de Formosa, República Argentina. Historia Natural VII (4): 33-52.

Di Giacomo, A. S., M.V. De Francesco, and E. G. Coconier. 2007 (eds.) Áreas importantes para

la conservación de las aves en Argentina. Sitios Prioritarios para la conservación de la biodiversidad. Temas de Naturaleza y Conservación, 5: 1 – 514. Buenos Aires: Asociación Ornitológica del Plata.

Doering, A. 1874. Noticias ornitológicas sobre las regiones ribereñas del río Guayquiraró. Periód. Zool. Arg. 1: 237-258. Córdoba.

Escobar, J. and S. Moya (Recop.) 2019. Listado de Aves del Refugio Privado de vida silvestre Yacutinga. Aves Argentinas / FVSA. 19 pp

Mata, J. R., Erize, F. and M. Rumboll, M. Guía de Campo Collins: Aves de Sudamérica.Buenos Aires: Harper Collins, 2006. 384 p.

MAyDS y AA (Ministerio de Ambiente y Desarrollo Sustentable y Aves Argentina) (2017). Categorización de las Aves de la Argentina (2015). Informe del Ministerio de Ambiente y Desarrollo Sustentable de la Nación y de Aves Argentinas, edición electrónica. C. A. Buenos Aires, Argentina. 148 pp.

Naveda Rodríguez, A. 2004. Contribution to the natural history or Ornate Hawk-Eagle *Spizaetus ornatus* (Daudin, 1801) and Great Black-Hawk *Buteogallus urubitinga* (Gmelin, 1788) - Revista Ecología Latinoamericana Vol. 11 N°2 Art. 4. Venezuela [Páginas 23-26]

Texeira Fagner, D., E. Paraíso Mesquita, M. Alves Ferreira and F. de Carvalho Araújo. 2019. Diet of Ornate Hawk-Eagle (*Spizaetus ornatus*). Revista Brasileira de Ornitologia [Páginas 31-39].

* * *

My experience in monitoring the Black-and-Chestnut Eagle (*Spizaetus isidori*) in western Antioquia, Colombia

By **Juan Diego Quiróz Quiróz**[1]
[1]Gestor Red de custodios de águilas, Organización Techo de Agua
E-mail: jdquiroz683@misena.edu.co

As a bird watcher, I've always wanted to see the great eagles that were depicted in birding guides, especially the Black-and-Chestnut Eagle (*Spizaetus isidori*.) However, in the area where I live in western Antioquia (Colombia), there were no confirmed records for this species. Despite this, I had three reasons to consider that it could be found in the area. First, ancient *campesino* stories refer to a large black bird that steals chickens. Second, the area is within the range of the species' distribution. Finally, despite the deforestation to which the forests have been subjected in this latitude of the country, there are still some remnants that meet the necessary habitat conditions for the species. These three clues motivated me to search for *S. isidori* for two long years, after which my search was successful.

I made my first sighting on 25 August 2017. At that time I took around ten photographs, some of a bird in flight and others of it on a perch, of an unknown bird that was flying over a canyon. As I did not have a camera with a good range, I took a video of the flight, to be able to make comparisons with the flight of other birds in the region and try to make the identification. Later, when reviewing the material and consulting several guides, I realized that I had witnessed the flight of a juvenile *S. isidori*, but the photographic evidence was insufficient for any expert to accept my identification.

On 30 August 2017 I returned to the mountain. This time I had the opportunity to photograph the individual a few meters from me (Figure 1). Its large size suggested that it was a female, whose still very light color and inexperience in flight made me think that she was probably not far from her nest. So I decided to follow her and try to find the nest. To do this, I started a monitoring strategy that consisted of making fixed sighting points for four hours, once a week, in different places in the area where I had found the juvenile. These sighting points were located in areas that

Figure 1. **First juvenile *Spizaetus isidori* found during species monitoring in West Antioquia, 30 August 2017. Photo © Juan Diego Quiróz**

allowed me to observe the canyons that emerged from the main mountain ranges. I was certain that the juvenile was moving in a single canyon, so I also designed a monitoring strategy for this juvenile, in order to find the nest. The strategy consisted of combining the establishment of fixed observation points in the morning during times when it was most likely to be in flight, with surveys during the afternoon in the main canyon, in order to identify perches.

After ten months of monitoring, I found an emergent tree, of the genus *Ficus*, located on the edge of the mountain and with broad branches. Such characteristics led me to think that this could be the nest tree. However, it took me two more months of work to confirm this, as the weather conditions and the dense forest cover, as well as the fact that I did not have binoculars, made it difficult for me to carry out the verification from a distance.

***Figure 2*. Adult *Spizaetus isidori* in West Antioquia, Colombia. Photo © Juan Diego Quiróz**

With the discovery of an active nest, I then had to design a new monitoring method, which consisted of establishing remote observation points. So I established several points from which, once a week, from 7:00 hrs. to 16:00 hrs., I recorded data such as date, weather, number of visits by adults, among other information. At this stage in the process, the guidance of Alex Ospina, Director of the Águilas de los Andes Foundation (FADA), was fundamental in helping conduct the best possible follow-up.

During the last three years I carried out continuous monitoring, and registered three juveniles become independent. However, monitoring this area has not been easy, both due to the geographical and climatic characteristics, as well as the social and cultural conditions, which establish limits for access and mobility within forested areas. It has also been difficult not to have adequate equipment, such as a camera with a good range, a gps, binoculars, lanyard equipment, etc.

Despite the difficulties, studying this nest and being able to monitor it has always been exciting. Witnessing the courtship between adults and monitoring the chicks from the time they were born until they achieved independence, has been a privilege.

***Figure 3*. Juan Diego Quiróz Quiróz has monitored *Spizaetus isidori* nests in West Antioquia, Colombia for 3 years. Photo © Carlos Bran-castrillon**

Unfortunately, the happiness of monitoring this nest year after year is overshadowed by the uncertainty caused by not knowing what happens to these juveniles once they disperse, what is the survival rate, and their possibility of reproductive success.

In the area, threats to this species include loss of habitat and hunting, and the disruption of their life dynamics as a result of infrastructure and mining works. The above, combined with the institutional fragility of the environmental authorities in Colombia, to monitor and protect high mountain ecosystems, casts a shadow over the survival of the species.

Against this background, increasing efforts for this eagle's conservation and advancing environmental education programs in rural communities is increasingly necessary. For this reason, with the help of the Techo de Agua Organization, I have been developing the Network of Eagle Custodians in western Antioquia, to bring together rural inhabitants who have learned to value the presence of the eagle in the mountains of the West Antioquia.

Acknowledgements

To Alex Ospina, the FADA and Techo de Agua team for their constant support in monitoring the species. To Mayra Parra for her dedication to making this article possible. To Edwin Campell for the revision of the text within the framework of the FADA-GAIA Agreement.

* * *

Where tundra meets desert: a journey with Peregrine Falcons wintering on the coast of Peru

By **Oscar Beingolea,** as told to **Nico Arcilla**[1]

[1]International Bird Conservation Partnership, Storövägen 13, S-14142 Huddinge, Sweden
E-mail: nico.arcilla@aya.yale.edu

I got my start in falconry as a teenager in Lima, Peru, in the mid-1970's. As so many falconers are, I was soon captivated by the enigmatic Peregrine Falcon, our classic species in the art. When the falconer holds a peregrine on his fist, the sense of its power and perfection can be felt in the blink of an eye. Whatever part of the peregrine we see, we have to ask ourselves how a bird could have arrived at such a state of perfection. We can consider the selective pressures that have acted on it throughout its evolution, down to the tip of each feather. Still, the forces that have created such a magnificent creature largely defy our comprehension. To try to imagine these, we must leave the falcon on its perch and get out to the field, looking for more.

The first wild peregrine I ever saw was an adult male chasing a plover. The falcon kept nearly pulling the plover out of the sky as both birds kept rising higher into the heavens, till both birds disappeared over the horizon. I doubt the plover got to see the end of day. Through all the years since, I have never seen anything like it, nor ever forgotten it. The thrill of witnessing this spectacle, and the birds' astonishing speed and beauty, triggered a lifelong fascination – some might say obsession – with peregrines. In particular, mysterious migrants from the far-off northern tundra commanded my attention. Every summer they appeared on the beaches where I grew up, having travelled tens of thousands of kilometers to spend the northern winter on the long strip of desert where our land meets the Pacific. I simply had to learn more about them.

Peregrine populations had crashed to an all-time low in the 1970s due to DDT, and the difficulty in finding wild birds only whetted my appetite for discovery. In those years of my youth, my energy abounded and fuelled my pursuit of them up and down the sandy hills and flats on the central coast of Peru. Friends and I succeeded in finding a few good places frequented by migrants where

***Figure* 1 (left). Diving Peregrine Falcon in Peru. Photo © Miguel Moran**
***Figure* 2 (right). North American Peregrine Falcon wintering in Peru. Photo © Miguel Moran**

we searched for perched falcons or just waited for them to come hunting. When we started trapping and banding them, our greatest excitement was just seeing them up close. Like friends that go fishing together, we went out in search of peregrines. Although the shared joy in this pursuit was its own reward, I still feel indebted and overwhelmingly grateful to every one of them.

As peregrine populations recovered, my search for individuals to band was increasingly rewarded. More observations in the field put more questions in my mind, and I started reading papers about them. Despite the fact that the peregrine is one of the best studied species in the world, I kept running into the fact that little was known about peregrines on their wintering grounds, particularly regarding tundra males. This lack of information was frustrating on the one hand, but on the other, it was my good fortune to find myself in what seemed to be a favorite wintering area, especially for males. The sexes of banded birds recovered in South America were unreported in most of the papers I found, suggesting that little consideration had been given to any sex-based differences of peregrines' migratory and wintering areas here. Notably, however, these differences were the first thing I noticed when I started banding peregrines in Peru.

By the end of my first banding season, the data showed that nearly three out of four wintering peregrines we captured were male. Over the next two banding seasons, I observed that although we regularly found adult and immature male migrants, and had identified locations where we

***Figure* 3. Tundra male Peregrine Falcon wintering in Lima, Peru. Photo © Miguel Moran**

could find rare immature females, locating adult females remained unpredictable. While many of the juveniles we found were on migration, many of the adult peregrines stayed in the same territories, suggesting they had arrived at their final wintering destinations. I wondered what explained these differences, and why females, especially adults females, seemed so rare.

Fellow peregrine enthusiast Bud Anderson and I visited man-made ponds with huge flocks of plovers in Salinas, Ecuador, where immature females were more abundant. What was beginning to become clear was that each sex seemed to exhibit different prey preferences, and that habitat partitioning on their wintering grounds might reduce competition between them for food. I wondered if such processes might lead to the pattern of sex-based spatial segregation that was so striking to us in the field.

I also wondered if male tundra peregrines might increase their chances of survival during their critical first year of life by wintering farther south than females. Male peregrines are typically a third smaller than females and may have lower survival probabilities. Female peregrines wintered at much higher densities further north, in and around Central America, together with other highly opportunistic, powerful raptor species. By traveling further south, to Peru and its neighbors on the South American coast, might males avoid

competition with females and find more suitable prey? Only time would tell, I decided, and set out to gather more data.

Although I had never imagined that as time turned its pages I would find myself involved in expanding the scientific knowledge of the species, the first of several papers based on our studies of wintering peregrines has now come out (Beingolea and Arcilla 2020) and more are in the works. No matter how much research we do on peregrines, they remain magnificent enigmas. But like that first peregrine I saw in the field, I will never give up the chase!

References

Beingolea, O. and N. Arcilla. 2020. Linking Peregrine Falcons' Wintering Areas in Peru with Their North American Natal and Breeding Grounds. Journal of Raptor Research, 54 (3):222-232.

Conversations from the Field: interview with Melissa Murillo and Hana Weaver, biologists on the Puerto Rican Sharp-Shinned Hawk (*Accipiter striatus venator*) Conservation Project

By **Markus Jais**
E-mail: markusjais@googlemail.com

Figures 1& 2. **Melissa Murillo (left) and Hana Weaver (right), directors of the Puerto Rican Sharp-shinned Hawk Project. Photos © Mike Morel and Michaela Gustafson**

Markus Jais: *How is the Puerto Rico subspecies different from other subspecies?*

Hana Weaver: They are currently listed as an endemic subspecies, but in fact, appear to differ greatly from other Sharp-shins in the Americas. The Puerto Rican form is physically smaller than the Sharpy we commonly see in North America, with male Puerto Rican Sharpies weighing just 85 grams and females weighing about 160 grams. Their plumage is more vibrant than other subspecies; adult Puerto Rican forms have striking orange/rufus cheeks and sides with underparts that are more deeply colored and thighs more rufescent than their mainland counterpart. They

are also nonmigratory and remain residents of the island year-round.

Markus Jais: *How many Sharp-shinned Hawks are there currently in Puerto Rico?*

Melissa Murillo: Despite a delayed start by the earthquakes and then being cancelled by COVID-19 in March, our team was able to confirm 10 pairs, 7 individuals, and heard 2 vocalizations during our early season surveys. We also had extraordinary local volunteers locate and monitor a few nesting pairs, and they reported the nest success of only one pair for the season. If this had been a normal year, we would have had more time to count more than just the 29 hawks and a higher nest success under our recovery management program. This endangered island endemic needs assistance to reach a more sustainable population level after the devastating impact of Hurricane Maria.

MJ: *What is the main food of the Sharp-shinned Hawk on Puerto Rico?*

HW: These hawks are incredibly nimble in the forest, they can turn on a dime and dart through dense vegetation at unbelievable speeds, their long and slender toes paired with needle sharp talons allow them to effortlessly snatch up prey on the wing. They truly are the perfect small bird specialist, with a main diet in Puerto Rico consisting of bananaquits, tanagers and finches.

MJ: *How do hurricanes affect the birds?*

MM: Studies have shown that the greatest effect of hurricanes to avian populations occurs after the passage rather than during its impact. The destruction of vegetation and change of habitat can bring long term consequences to avian communities. These powerful clearings alter the forest and open up the canopy, which the research conducted by Wiley and Wunderle (1993) showed the aftermath leading to species depletions, increasing nest predation, and parasitism. The Puerto Rican Sharp-shinned Hawk is restricted to the high montane forests on the island, which contain tall, old growth trees that have slow recovery rates after the passage of a strong hurricane. The small population size of this endemic subspecies, along with its limited range, and concerns of prey availability, were reasons The Peregrine Fund jumped into action with recovery efforts to prevent the extinction of this unique raptor.

MJ: *What other threats are the hawks facing?*

HW: One major threat facing this species is nestling parasitism by botflies, *Philornis spp*. Some parasite loads are very normal for birds, but sadly we are seeing so many botflies in nestling hawks that they are in fact causing the nestlings to die. It's a pretty grim death, but thankfully Peregrine Fund biologists working to save the critically endangered Ridgway's Hawk (*Buteo ridgwayi*) in the Dominican Republic found an incredibly effective way to prevent nests from being infested by

***Figure* 3. Adult *A. striatus venator* in Maricao forest, Puerto Rico. Photo © Mike Morel**

botflies. In 2019, we began implementing those management techniques to the Sharpy population in Puerto Rico with amazing success.

Other widespread threats we see in the population are predation of eggs and newly hatched nestlings by Pearly-eyed Thrasher (*Margarops fuscatus*) and predation of nestlings and occasionally adult Sharpies by Red-tailed Hawks (*Buteo jamaicensis*), the largest and most common resident raptor in Puerto Rico. As with most species, habitat loss and fragmentation has also put the species at risk.

MJ: *What is known about the genetic diversity of the remaining birds?*

MM: The blood samples that we collected indicate that there was no significance within each forest population (Toro Negro, Guilarte, Maricao), meaning there is some genetic flow between forest reserves. This was demonstrated by one of the recovery project's first banded females, Blue 2/Z. This female was pulled as an egg from a pair in the Maricao Forest, hacked out in the Guilarte forest in 2018, resighted in Maricao in 2019, and was later seen back in Guilarte at the hack site during the same season. This year, she was seen building a nest with an unbanded male in the Guilarte forest. Further research needs to be conducted, and we hope to learn more about the

movements between forest reserves by tracking hawks with telemetry and resighting more of our banded hawks.

MJ: *What is your conservation project all about?*
HW: Saving a species! Our efforts are dedicated to bolstering the population of Sharp-shins as quickly and effectively as possible to prevent extinction. By increasing hawk productivity in the wild, we are helping build a robust population that will be more resilient to the numerous threats facing this species.

Our team is incredibly dedicated to each bird in the population and has spent hundreds of hours observing them in the wild. On top of our management techniques, this intensive monitoring approach has helped us gain valuable insights into population trends, threats, and behaviors; all aiding in our ability to effectively work with the species.

Along the way, we have partnered with local individuals, businesses, and organizations who have provided vital support to our project in too many ways to list here. Together, they truly are the lifeblood of this project, ensuring that we are able to carry out our management goals for the species and providing us with the necessary resources to successfully recover this feisty hawk.

MJ: *What other species benefit from the conservation project?*
MM: The Puerto Rican Sharp-shinned Hawk is an apex predator in montane forests, and plays an important role in maintaining the ecological balance within an ecosystem. Their presence can indicate the overall health of the forest ecosystem

***Figure* 4. Juvenile *A. striatus venator* in Maricao forest, Puerto Rico. Photo © Mike Morel**

***Figure* 5. Puerto Rican Sharp-shinned Hawk eggs in an incubator awaiting hatching. © Hana Weaver**

by suggesting that there are plentiful prey (small birds, lizards, and insects) in the area to support the hawk population. Our project also helps in trapping efforts to remove Shiny Cowbirds (*Molothrus bonariensis*), which are an invasive species on the island. These invasives are used as a food supply for the captivate-raised hawks, and the removal of the Shiny Cowbird from the environment gives other endemic species, like the Yellow-shouldered Blackbird (*Agelaius xanthomus*), a better chance to thrive in their natural habitat.

MJ: *What needs to be done to secure the future of the species in Puerto Rico?*

HW: We are still working to fully understand and address major threats facing this species. As we have witnessed, The Puerto Rican Sharp-shinned Hawk is incredibly resilient, but it will also need healthy and structurally diverse forest habitat to be secure.

MJ: *What other endemic raptor species or sub-species are there in the Caribbean and how is their status?*

MM: Conservation efforts and management by

The Peregrine Fund and locals in the Dominican Republic have helped increase the Ridgway's Hawk (*Buteo ridgwayi*) critically endangered population. In Cuba, there have been no confirmed sightings reported of the critically endangered Cuban Kite (*Chondrahierax wilsonii*) in over a decade, which could mean that its unknown population is low or possibly extinct. The Gundlach's Hawk (*Accipiter gundlanchi*) population is classified as endangered, and also presumably low due to human persecution, habitat loss, and fragmentation. When it comes to subspecies, the Puerto Rican Broad-winged Hawk is another endemic subspecies that is listed as endangered. In a recent paper, Gallardo and Thorstrom (2019) looked at the status of raptors in the West Indies and concluded that many of these apex predators in this region are poorly understood, and that there is a need to learn more about their populations statuses and conservation needs to help reduce risk of future declines and/or extinctions.

MJ: *What do you like most about working with the species and what is the most challenging part?*

HW: Each and every aspect of the season is full of beautiful and intense moments; from calm morning sunrises watching the hawks dance across the skyline in courtship displays, to the exhilaration of a new nestling hawk, hatching perfectly in our care. It is truly hard to choose just one part of the work I love most, however, watching our hand-raised hawks zip effortlessly through the forest, flying free and healthy in the wild provides an exceptional moment of joy.For me, the most challenging part of the work is locating the hawks in their nesting territories. The landscape is exceptionally vast when you're exploring on foot through dense forests that are void of paths and covered in remnants of deadfall from past hurricanes and landslides. From this decaying deadfall, vegetation has exploded with the new exposure to sunlight; patches of razor-grass, spiny ferns and bamboo grass all make taking a single step difficult. Combined with steep and slippery topography, it is indeed a very challenging search.

MJ: *What was your most amazing experience with raptors?*

MM: My favorite experience in Puerto Rico happened in 2018 in the mountains of the Toro Negro forest. After Hurricane Maria, the hawks were a little delayed in their nest building, but one male we were monitoring was exceptionally slower than the others. This little male was taking his sweet time breaking twigs and dropping them off at a poorly constructed nest platform. The female would fly into the territory vocalizing and begging for food. She would fly over to check on the status of the nest, and by her behavior, it seemed that she was frustrated and disappointed in the subpar construction process. She would food beg again, and then fly off in frustration when the little male would just yawn, and start preening. This behavior continued for many days. One day,

I arrived at the site to check on the pair, and both the male and the female were delivering twigs to the nest platform. They both took a break, but then the female went back to nest building, and would stop occasionally to beg for food. Finally, the male stopped preening and flew up, but this triggered the female to fly up and chase him. I watched her chase him above the canopy and she began diving and trying to grab him with her talons. They locked talons, and tumbled down into a nearby tree, and crash landed on a branch. The male had landed on his back and was being pinned down by the vocalizing female. I audibly gasped because I thought I was going to witness the death of this male. (Every hawk is crucial in an extremely small breeding population!) Luckily, the female released the male, and the pair parted ways. I returned a few days later, and to my delight, the pair had been working on the much better looking platform, and the male flew in delivering a prey item to the female. Motivation comes in many forms, and in this case, it was in the form of a powerful, hungry female!

* * *

Global Raptor Information Network: a new tool for raptor researchers

By **Matthew Danihel**[1]

[1]The Peregrine Fund, 5668 W Flying Hawk Lane, Boise, ID USA 83709
E-mail: danihel.matthew@peregrinefund.org

The Peregrine Fund's Global Raptor Information Network (GRIN) originally provided information on diurnal raptors and facilitated communication between raptor researchers and conservationists. But with over half of the world's raptor species in decline and nearly 20% threatened with extinction, there was a need to do more. To that end, The Peregrine Fund has expanded the existing African Raptor DataBank globally and merged it with GRIN to form the new Global Raptor IMPACT Network. The goal is to meet the research and conservation challenges of the future by developing the new GRIN into a system that improves and guides the science of raptor ecology and conservation by collecting, storing, and distributing everything known about raptors, including for the first time, owls.

One of the biggest additions to GRIN is the brand-new "Global Raptor Impact Network" smartphone app. Based on the successful African Raptor Observations app, this free tool allows both professional and community scientists to collect raptor data on their mobile device. Unlike other smartphone data collection apps that require users to create their own data collection modules, the GRIN app allows users to conduct a wide variety of raptor surveys, from roadside surveys to stationary hawkwatching to even museum work, with just a single tap of a screen. One more tap is all that's needed to upload observation data via cellular or wifi connection for secure storage in the GRIN DataBank, eliminating the need for tedious data entry once out of the field. Download now for iPhone or Android and try this revolutionary new tool today.

The Peregrine Fund is in the process of overhauling and modernizing other features of GRIN as well. The GRIN website (www.globalraptors.org) will feature enhanced species accounts and bibliographies. Real-time analyses of ranges, population size, and demography will also soon be available, along with other interactive and customized maps and graphs. A drag-and-drop pro forma spreadsheet will allow the bulk upload of existing

data into the GRIN DataBank, and new collaboration tools are planned that will allow researchers to coordinate projects and maximize research efforts more easily than ever.

Users of the old GRIN website, or those who want to go back and access data from it, no need to worry! While the old website is no longer being updated, it's still available at http://globalraptors.org/grin/indexAlt-ORIGINAL.asp.

If you're already a member of GRIN, The Peregrine Fund is looking forward to bringing you a slate of exciting new tools to enhance your GRIN experience. If you're new to GRIN, there's never been a better time to get on board and see how GRIN can take your research to the next level. Questions? Suggestions for something you'd like to see in the new GRIN? E-mail The Peregrine Fund's GRIN team at: grin@peregrinefund.org and let them know.

* * *

PEREGRINE

Global Raptor Impact Network

Of Interest...

Grants

Global Raptor Research and Conservation Grant

https://hawkwatch.org/blog/item/1205-conservation-grant

HawkWatch International (HWI) is very excited to announce the Global Raptor Research and Conservation Grant, a new funding opportunity that will invest in projects addressing global raptor research and conservation priorities. HWI will invest in projects led by citizens of developing countries, with the aim of increasing diversity and inclusivity, all while building local capacity for conservation. In this strange new world, as we grapple with the COVID-19 pandemic, it seems ever more pressing to invest directly in projects and people from local communities to achieve conservation outcomes.

Grant Deadline: 31 December 2020.
Contact for more information: conservación.grant@hawkwatch.org

Mohamed bin Zayed Species Conservation Fund

https://www.speciesconservation.org/grants/

Through innovative micro-financing, the MBZ Fund empowers conservationists to fight the extinction crisis instead of bureaucracy and red-tape. To date the Fund has awarded over 2000 grants to a diverse range of species across the world.The MBZ Species Conservation Fund will temporarily change the primary focus of its small grants for the next two rounds of grant giving. Grants will now be awarded to support the core operational costs of local, grassroots, species conservation organisations, which are struggling financially due to the COVID-19 pandemic, and as a result face personnel or financial constraints in conducting species conservation work in 2021. The grant size will remain a maximum of $25,000, but the minimum grant size will be $15,000 for this period.

Grant Deadline: February 2021.

National Geographic - COVID-19 Remote Learning Emergency Fund for Educators

https://www.nationalgeographic.org

The fund will distribute support ranging from $ 1,000 to $ 8,000 to individual educators to design educational resources that help educators teach effectively in remote or hybrid learning environments.