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HARPAGUS BEDENTATUS IN ECUADOR

STRIX FULVESCENS IN EL SALVADOR

FALCO RUFIGULARIS IN EL SALVADOR

"Águila Escuda" Project in Argente

OWLS OF **COLOMBIA**



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OF INTEREST

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.

FEEDING RECORD OF DOUBLE-TOOTHED KITE (HARPAGUS BIDENTATUS) IN EASTERN ECUADOR

By Salomón M. Ramírez-Jaramillo¹,*, Nancy B. Jácome-Chiriboga², N. Alexandra Allan-Miranda¹ & César Garzón S.¹

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Harpagus bidentatus with prey. Photo © Nancy Jácome.

he Double-toothed Kite (*Harpagus bidentatus*) is a diurnal raptor measuring between 29 and 38 cm in size and weighing between 161 and 229 g (Bierregaard et al., 2017, McMullan and Navarrete 2017). It is distributed from southern Mexico to Bolivia and southern Brazil up to 2,100 masl (BirdLife 2016, Bierregaard et al.,

2017). In Ecuador, it is present in tropical lands on the coast, in the Amazon up to 1,800 masl, and in the interandean foothills. It is more numerous in the northwest (Ridgely and Greenfield 2006, McMullan and Navarrete 2017). Usually it perches silently at intermediate or sub-canopy strata heights, near forest edges. It is solitary and



Figure 1: Geographic location of the two areas where we documented feeding records of *Harpagus bidentatus*

apparently sedentary (Ferguson-Lees and Christie 2001, Ridgely and Greenfield 2006, McMullan and Navarrete 2017).

Harpagus bidentatus is a predator at the top of forest trophic chains and therefore regulates populations of some prey animals present in its habitat. Shrum (2009) reported the presence of mercury (Hg) at 0.48 mg / kg in an individual in the Peruvian Amazon that had been captured after being baited with a black rat (*Rattus rattus*). The Double-toothed Kite is associated with arboreal animals. It has been reported following troops of monkeys (*Ateles* sp., *Alouatta* sp., *Cebus* sp., Lagothrix, *Saguinus* sp., *Saimiri* sp.) that forage during the day. As the primates move through the trees they often flush up arthropods (Coleoptera, Hymenoptera, Homoptera, Lepidoptera, Orthoptera), lizards (*Anolis* spp., *Corytophanes* spp., Gekkonidae, Iguanidae, Scincidae), and bats (*Artibeus watsoni*) which make up some of this kite's diet (Boinsqui and Timm 1985, Boinsqui and



Above (Cara del Indio): Double-toothed Kite with prey in its right talon. Bottom left: Double-toothed Kite right before feeding on its prey. Bottom right (Kawymeno): Double-toothed Kite tearing its prey. Photos © Nancy Jácome.

Scott 1988, Egler 1991, Robinson 1994, Heymann 1992, Marsh 2004, Defler 2010, Schulze et al., 2012, CONABIO 2016).

De Vries (2007) observed several prey species being caught by Double-toothed Kite, such as Berthold's Bush Anole, (*Polychrus gutturosus*) and Rosenberg's Gladiator Treefrog (*Boana rosenbergi*); birds such as Purple Honeycreeper (*Cyanerpes cae*-

ruleus), Slaty Spinytail (*Synallaxis brachyura*), and Rufous-tailed Hummingbird (*Amazilia tzacatl*); and an arboreal marsupial, possibly Tschudi's Slender Opossum (*Marmosops impavidus*).

He also reported a nest location for *Harpagus bidentatus* near a Shimbillo tree (*Inga* spp) which, when in flower, provides the adult birds with butterflies (Sphingidae), moths (Castnia), planthoppers (Fulgoridae), and grasshoppers (Acrididae).

Observations of Predation

The second author documented the following in two locations within the Ecuadorian Amazon:

1) Orellana Provence, Cantón Aguarico, Parroquia Nuevo Rocafuerte, Kawymeno sector (00°56'15"N, 75°30'10"W, a 213m.s.n.m.), in the lowland evergreen forest of Aguarico Caquetá (MAE 2013). On 3 June 2016, for approximately two minutes, she observed a male Doubletoothed Kite fly with an adult frog (*Boana boans*) in its talons. After perching in a tree, it began to tear at its prey with its beak and fed for about a minute. As soon as it noticed a human present, it flew to another location. We did not observe it finishing its food, but there at least was evidence that the viscera were consumed.

2) Zamora-Chinchipe Province, Cantón El Pangui, Parroquia Tundayme, La Cara del Indio sector (03°35'04"N, 78°26'27"W, a 1606m.s.n.m.), Evergreen Piedmont forest ecosystem on sandstone plateaus of the Condor-Kutukú Cordilleras (MAE 2013). On January 23, 2017, we observed a male Double-toothed Kite for about one minute, as it ingested a large insect (Acrididae).

Discussion

Both records presented here document littleknown behavior, though observed prey does fall within the species' prey preferences (de Vries 2007, Schulze et al. 2012). The observation of

H. bidentatus feeding on B. boans is only the second report of anuran in its diet (de Vries 2007). B. boans is a tree frog that perches up to 5m high (Duellman 1997) and frequents edges of rivers or streams especially in the dry season. Adults reach between 84-118mm (Rodriguez and Duellman 1994). Through our observations, we were also able to corraborate that this raptor feeds on large insects, possibly caught in flight or taken directly from foliage (Ferguson-Lees and Christie 2001). Grasshopper (Acrididae) prey have measured up to 80mm (Bugguide 2017). Robinson (1994) reported orthopteran wings measuring 4-5cm in its diet. Schulze et al. (2012) found that 3% of prey consumed (n = 463) by *H. bidentatus* are orthopterans, 40% are lizards and 59.2% are insects of 4 \pm 1 cm in length with mass between 1-3g.

Acknowledgments

We thank those who helped finance the biological monitoring projects, including PetroAmazonas EP in the Francisco de Orellana Province and EcuaCorriente S.A. in Zamora Chinchipe.

Referencias

Bierregaard, R.O., J.S. Marks, Jr, and G.M. Kirwan. 2017. Double-toothed Kite (*Harpagus bidentatus*). In: del Hoyo, J., A. Elliott, J. Sargatal, D.A. Christie, and E. de Juana (eds.). 2017. Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. Online: http://www.hbw.com/ node/52973 BirdLife International. 2016. *Harpagus bidentatus*. In: IUCN 2016. IUCN Red List of Threatened Species. Online: www.iucnredlist.org. http:// dx.doi.org/10.2305/IUCN.UK.20163.RLTS. T22695060A93487717.

Boinsqui, S. and R.M. Timm. 1985. Predation by squirrel monkeys and double-toothed kites on tent-making bats. American Journal Primatology. 9: 121-128.

Boinsqui, S.M. and P.E. Scott. 1988. Association of Birds with Monkeys in Costa Rica. Biotrópica. 20 (2): 136-143.

Bugguide. 2017. Family Acriidae. Iowa State University, Departament of Entomology. Online: www.bugguide.net

Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO). 2016. Enciclo-Vida. México. Online: http://www.enciclovida. mx.

Defler, T.R. 2010. Historia Natural de los Primates Colombianos. Universidad Nacional de Colombia. Facultad de Ciencias. Departamento de Biología, 612 p.

Duellman, W.E. 1997. Amphibians of La Escalera region, Southeastern Venezuela: Taxonomy, Ecology, and Biogeography. Scientific papers of the Natural History Museum of the University of Kansas. 2:1-52.

Egler, S.G. 1991. Double-toothed Kites following tamarins. The Wilson Bulletin. 103 (3): 510-512.

Ferguson-Lees, J. and D.F. Christie. 2001. Raptors of the World. Houghton Mifflin Company, New York.

Heymann, E.W. 1992. Associations of Tamarins (*Saguinus mystax* and *Saguinus fuscicolis*) and Double-Toothed Kites (*Harpagus bidentatus*) in Peruvian Amania. Folia Primatologica. 59: 51-55.

Marsh, L.K. 2004. Primate species at the Tiputini Biodiversity Station, Ecuador. Neotropical Primates 12 (2): 75-78.

McMullan, M. and L. Navarrete. 2017. Fieldbook of the Birds of Ecuador including the Galápagos Islands and common mammals. 2ed. Ratty Ediciones, Quito.

Ministerio del Ambiente del Ecuador (MAE). 2013. Sistema de Clasificación de los Ecosistemas del Ecuador Continental. Subsecretaría de Patrimonio Natural. Quito. 235 pp.

Ridgely, R.S. and P.J. Greenfield. 2006. Aves del Ecuador. Fundación Jocotoco y Academia de Ciencias de Philadelphia, Quito.

Robinson, S.K. 1994. Habitat Selection and Foraging Ecology of Raptors in Amazonian Peru. Biotropica 26 (4): 443-458.

Rodríguez, L.O. and W.E. Duellman. 1994. Guide to the frogs of the Iquitos Region, Amazonian Perú. Asociación de Ecología y Conservación, Amazon Center for Environmental Education and Research and Natural History Museum, The University of Kansas. Special Publications. 22:1-

80.

Schulze, M.D., J.L. Córdova, N.E. Seavy, and D.F. Whitacre. 2012. Double-toothed Kite. En: Whitacre D.F. (eds). Neotropical Birds of Prey. Cornell University Press.

Shrum, P. 2009. Analysis of mercury and lead in birds of prey from gold-mining areas of the Peruvian Amazon. Thesis - Masters of Science Wildlife and Fisheries Biology. All Theses. Paper 753. Clemson University, South Carolina, USA. de Vries, T. 2007. La historia natural del Elanio Bidentado. Revista Nuestra Ciencia. 9: 59-60. Quito, Ecuador.

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"BEYOND THE PAPER" **30 YEARS OF THE ÁGUILA ESCUDA PROJECT:** AN OVERVIEW OF THE HISTORICAL AND HUMAN SIDE OF A PIONEER STUDY ON THE BIRDS OF PREY OF ARGENTINA

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> http://www.globalraptors.org/grin/ResearcherResults.asp?lresID=510 http://cempaorg.wordpress.com/

ment in the country. At the same time, with the on raptors, basically nest searching and behav-Wildlife Foundation and the Ornithological As- conservation and biology of birds of prey desociation of El Plata (now Aves Argentinas) led signed for naturalists, biologists, birdwatchers ginning of 1985, when we began to venture into the biology of the more than 80 species of diurboth societies, becoming members of Grupo Ra- nal and nocturnal raptors present in Argentina,

rgentina - the mid-'80s. Bird watching paces. The mission of this working group was to and ornithology, led by Tito Narosky and oth- promote the study, knowledge and conservation er outstanding ornithologists of his generation, of Argentine raptors. It was in this environment began an unprecedented new stage of develop- where we carried out our first research activities advent of a recently recovered democracy in the ioral observations. Shortly afterwards, with other country, there was also a fervent and passionate members of the group and colleagues, for the first group of young ornithologists taking their first time in Argentina, and possibly in Latin America, steps. These were the days when the Argentine we offered the first of a long list of courses on conservation work in the country and housed this and students. Encouraged by our passion for the new generation. It was in this context, at the be- subject, but also by the limited knowledge about



Figure 1 The authors, soon after arriving at El Cuadro, September 1987 (author photograph) *Figure 2* Miguel Saggese climbing to a Black-chested Buzzard Eagle nest, November 1987. Photo © Guillermo Gil

these courses not only allowed for the education of those interested in these birds, they were also the key that would open the door to our own selftaught training.

In those first years of activity, we couldn't wait to finish reading a book on raptors before sharing that newly acquired knowledge with other members of the group and with those attending the courses we were teaching. Of the books we read and studied with devotion, were the works written by internationally recognized ornitholo-

gists such as Leslie Brown, Dean Amadon, Ian Newton, Tom Cade, the brothers Frank & John Craighead, Hartmut Walter, and Felix Rodriguez de la Fuente.

We also reviewed the indexes, one by one, from numerous scientific journals such as The Auk, Condor, Ibis, Wilson Bulletin, Emu, Ostrich, Gerfaut, and Ardea. Within those pages we discovered scientific articles on the ecology and behavior of raptors written by William Mader, Robert Simmons, Thomas Balgooyen, Penny

and Jerry Olsen, John Mendelsohn, Alexander Skutch, Lloyd Kiff, David Ellis, Michael Collopy, Keith Bildstein, William Schipper, Valerie Gargett, Rob Bierregaard, and Neil Rettig, among many others. These articles not only taught us about methodology of research and biology of birds of prey, they also inspired and induced us to repeat these studies in the pampas, jungles and Patagonian steppes of Argentina. At the same time, our knowledge of general ornithology also grew out of the research done by the great Argentine ornithologists Tito Narosky, Rosendo "Chendo" Fraga, and Martin De la Peña, and the famous Swedish ornithologist residing in Argentina, Claes Olrog, among others. Contributions to national ornithology by these and many other researchers of their generation were and continue to be unparalleled. However, by that time, Argentina had not given enough attention to birds of prey. The information available on birds of prey up to the mid '80s was limited to basic aspects of their biology in classical books on Neotropical ornithology. Among these were the works of the famous Argentine naturalists and ornithologists William Hudson, William Partridge, and Andrés Giai; the Brazilians Heltmut Sick and William Belton, and the Chileans Claudio Gay and Roberto Housse. This contrasted dramatically with the wealth of scientific knowledge that in the last two decades was being generated in North America and Europe. Even Chile, through the investigations that Fabian Jaksic and Jaime Jiménez began

to publish, surpassed Argentina in the knowledge of the raptors of the southern cone.

With this in mind, we set out to unravel the secrets of the biology and natural history of Argentine birds of prey or at least try to do it for some of them! However, we felt like orphans, academically speaking, given that during that time in Argentina we had no mentors in a specific field of ornithology – such as the study of birds of prey. Our learning was self-taught, with successes and errors during those first steps in scientific research. It is worth mentioning that we were students of Veterinary Sciences, a career that had little or nothing to do with birds in general and much less to do with birds of prey. This would change with the passage of the years, but that is another story for another time.

It was toward the beginning of 1986 when we met a young bird watcher and photographer named Jeronimo Zancaner, a member of Aves Argentina. Through him, we learned about the ranch known as "El Cuadro" located in south Patagonia, more precisely in the province of Santa Cruz, which bordered the Petrified Forest Natural Monument. The ranch had recently been acquired by his family who had a friendly policy toward the conservation of the resident flora and fauna. This was in sharp contrast with the traditional negative attitudes towards wildlife held by other ranchers in Patagonia. Jeronimo had spent the past summer there and we were surprised by the quality of his photographs of Black-chested Buzzard-Eagle (*Geranoetus melanoelucus*), Cinereous Harrier (*Circus cinereus*) and other birds, which he had taken in the immediate vicinity of the ranch. Our imagination soared immediately to those Patagonian valleys and plateaus and the possibility of studying raptors there. To be isolated in Patagonia, 2,000 km from our homes in Buenos Aires, and 200 km from the nearest city, carrying out a research project on the breeding and feeding biology of the raptors of Patagonia, which would last for several months, was going to satisfy our thirst for adventure.

It would also allow us to unravel some of the secrets hidden in the lives of these birds. This is what we had been looking for: a minimally ex-

Figure 3: American Kestrel (Falco sparverius). Photo © Guillermo Gil

Figure 4: Young along with prey remains of a European Hare (Lepus europaeus) in a Black-chested Buzzard Eagle nest. Photo © Guillermo Gil

Figure 5: Adult Black-chested Buzzard Eagle carrying prey to the nest. Photo © Guillermo Gil



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plored area of Patagonia where we could carry out our research. We decided to call our research project "Águila Escudada" – one of the common names of the Black-chested Buzzard-Eagle in Argentina. Until then, no one in the country had tried to carry out this type of research study. We just had to put it into practice!

Once the research proposal was approved by the Fundación Vida Silvestre Argentina – the headquarters of Grupo Rapaces – the "Águila Escudada" project was launched under the auspices of Aves Argentinas and the Bernardino Rivadavia Natural Sciences Museum. We relied on the good nature of the Zancaner family who allowed us to work on their property and lodged us during the duration of the study. In the months prior



to our trip to this remote part of the country, we learned climbing and abseiling techniques in order to be able to access the eagles' nests, which were located on basalt cliffs. Many colleagues and friends and several private scientific organizations, both provincial and national, assisted us in moving this study forward. We will be forever grateful to them.

Upon our arrival to El Cuadro, what we saw did not disappoint and we knew that the real adventure had just begun. Between September 1987 and January 1988 we were able to monitor six pairs of Black-chested Buzzard Eagle; a colony with 10 Cinereous Harrier (Circus cinereus) nests; and six American Kestrel (Falco sparverius) broods. All of the studies began from before egg-laying and continued up until the nestlings fledged or were close to fledging. During those months, from the interminable walks among valleys and plateaus to reach the nest sites, to the hundreds of hours of observations and data collecting, to the risky ascents and descents on basalt cliffs to access nests we were able to achieve, for the first time in Argentina, a comprehensive and detailed study on these raptors.

For the three species that were the subject of our study, we obtained information, in many cases unpublished, about their behavior, aerial displays, nesting sites, territories and nesting density, incubation, postures, reproductive success, nestling development, prey, mean number of young per

pair, the number of nestlings raised successfully, and many other aspects of their reproductive biology. (Figs 4 and 5). Nothing could compare to the joy we felt upon discovering in these birds the same phenomena described in the literature for other species of raptors. It was impossible to hide our feelings when we witnessed the presence of fratricide and cooperative hunting in Black-chested Buzzard Eagles; or colonial nesting, collective defense and polygamy in Cinereous Harriers; or when we studied for the first time the reproductive biology, including the use of basaltic cliffs for nesting and the first case of bigamy, of American Kestrels. Without a doubt, the enthusiasm and passion we felt in those moments persists in the studies we carry out to this day.

Sadly, during those months we were also witnesses to the complete ignorance among the community members of this region of Patagonia, about the importance of these birds within natural ecosystems. The animosity some of the people from the neighboring ranches showed toward raptors, particularly eagles, was atrocious. Over the months, we documented raptor mortality due to the use of strychnine, firearms, burning of nests, and fox traps. Sadly, these problems persist in many areas of Patagonia today.

The scientific results and productivity of this project were more than positive. Never in Argentina had a study of this kind, magnitude or duration been conducted on birds of prey and much less performed by Argentines. A total of 10 scientific articles and several notes were published as a result of that expedition. In addition, we reported an exhaustive listing of the avifauna present in a rarely surveyed area of the central Patagonia steppe. Two new species of birds, the Rusty-backed Monjita (*Neoxolmis rubetra*) and the Galapagos Martin (*Progne modesta*) were incorporated into the list of species found in the province of Santa Cruz.

One of the most unexpected results, particulary because it happened many years later, was the incorporation of the El Cuadro Ranch, and other neighboring ranches, into the Petrified Forest National Park. This was carried out successfully by Francisco Erize - a prominent Argentinian photographer, naturalist and conservationist – during his position as advisor to the Presidency of the National Parks Administration. In 1987, Francisco, who at that time was the Executive Director of Fundación Vida Silvestre Argentina, put his trust in us and provided us with many resources necessary to carry out the Águila Escudada Project.

We didn't know that years later this would take on an even greater meaning. In his own words, Francisco Erize tells us: "the detailed studies on birds of prey that Eduardo De Lucca and Miguel Saggese carried out in El Cuadro Ranch, which borders the Petrified Forest Natural Monument, convinced me of the particular ecological value that this property could possess. Years later, when I learned the settlement would be for sale - I advocated before the Presidency of the National Parks Administration (to which I then advised) for the purchase of this land to expand the mentioned natural monument into a true national park - representative of the central steppe. Today it is a dream come true." No doubt this was an important indirect result of that expedition. We are glad to know that, to some extent, our work contributed to the decision to incorporate this area into the system of Argentine national parks, bringing effective and permanent protection to the birds of prey and other animal and plant species found in the Patagonian steppe.

With the field work completed, and the satisfaction of a job well done, returning to Buenos Aires meant renewing Grupo Rapaces, which had expanded and transformed into Grupo de Trabajo Rapaces Argentinas (Argentine Raptor Working Group), now exclusively affiliated with Aves Argentinas. We continued developing research and conservation projects on other species for many years, together with other friends and colleagues who shared our ideals. Upon our return, we also revamped the courses we taught on raptors, now incorporating the knowledge and experience we had acquired in Patagonia.

September 2017 marks 30 years since the launch of the Águila Escudada Project. Beyond the science, this field project was, without a doubt, a once-in-a-lifetime experience for us, and highly rewarding at all levels. In the years that followed that Águila Escudada Project, the authors continued their professional development and maintained their commitment to the conservation and study of raptors, which continues to this day. At the same time, this project cemented a friendship that had begun a few years before and, 30 years later, still persists.

This is the short version of the history behind this pioneer project in which we discovered some of the secrets of these Patagonian raptors. Simultaneously, as well as years after, some of these species that we studied in Patagonia, Argentina were also studied by other colleagues and friends, not only from our country but also from Chile, Bolivia, Peru, Ecuador, and Colombia, expanding the scientific knowledge about them and contributing to their conservation. This certainly demonstrates that there were, and there still are, stories behind raptor research in Argentina and other Neotropical countries that are waiting to be told. Today we wanted to remember ours and motivate others to tell their own stories "beyond the paper" in future editions of this newsletter.

Acknowledgments

We thank Guillermo Gil for the pictures he took during the two weeks he visited us in 1987, some of them illustrate this article. We also thank everyone who supported and contributed in some way to this project. Finally, we give our most sincere and warmest thanks to Francisco Erize, Juan Carlos Chebez, Jerónimo and Eduardo Zancaner, Paula Magnelli ,and our families for all the support they have given us.

* * *

To learn more about this project:

ERIZE F. 2014. Bosque petrificado de Jaramillo-El Parque de la Estepa. Naturaleza y Conservación 37:24-29

DE LUCCA E.R. & M.D. SAGGESE. 2012. Parental care and time-activity budget of a breeding pair of Black-chested Buzzard-eagles Geranoaetus melanoleucus in southern Patagonia, Argentina. Ornitología Colombiana 12:17-24

DE LUCCA E.R. 2011. Ataques del Halconcito Colorado Falco sparverius al Águila Mora Geranoaetus melanoleucus durante la temporada reproductiva. Nótulas Faunísticas (Segunda Serie) 80:1-6

SAGGESE M.D. & E.R. DE LUCCA. 2004. Live mammal prey Zaedyus pichiy in a nest of the Black-chested Buzzard-Eagle Geranoaetus melanoleucus. Journal of Raptor Research 38:101-102

SAGGESE M.D. & E.R. DE LUCCA. 2001. Breeding biology of Black-chested Buzzard-eagle Geranoaetus melanoleucus in southern Patagonia, Argentina. Hornero 16:77-84

SAGGESE M.D. & E.R. DE LUCCA. 1995. Nesting of the Cinereous Harrier Circus cinereus in Argentine Patagonia. Hornero 14:21-26

DE LUCCA E.R. & M.D. SAGGESE. 1995. Fratricide in the Black-chested Buzzard-eagle Geranoaetus melanoleucus. Hornero 14:38-39

DE LUCCA ER. 1993. A case of polygyny in the American Kestrel Falco sparverius. Hornero 13:299-302

DE LUCCA E.R. & M.D. SAGGESE. 1993. Nesting of American kestrel Falco sparverius in Patagonia. Hornero 13:302-305

DE LUCCA E.R. & M.D. SAGGESE. 1992. Birds of Departamento Deseado, Santa Cruz. Hornero 13:259-260

DE LUCCA E.R. & M.D. SAGGESE. 1992. Birds of Departamento Deseado, Santa Cruz. Hornero 13:259-260

DE LUCCA E.R. & MD SAGGESE. 1989. Factors affecting patagonian raptors. Nuestras Aves 17: 33

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PHOTOGRAPHIC DOCUMENTATION OF FULVOUS OWL (STRIX FULVESCENS) [SCLATER AND SALVIN, 1868], IN MONTECRISTO NATIONAL PARK, EL SALVADOR

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international importance, wherein 17 endemic gorized as an endangered species (Ibarra-Portillo bird species from the North Pacific slope of 2013, MARN 2015). Because of this species' se-Central America are found (Stattersfield et al. cretive habits, most documented records of this 1998, Komar and Ibarra-Portillo 2009, Ibarra owl have been based on vocalizations or casual Portillo 2013, and BirdLife International 2014). observations, with few photographic records. These species have restricted distributions in The following is a record of the available infortropical deciduous habitat and humid sub-peren- mation on the Fulvous Owl as well as the most nifolia forest. Of these, 14 species are restricted recent record for the country. to the highlands of northern Central America and southern Mexico. In El Salvador, they are mainly found along mountain ranges along the border with Honduras and, to a lesser extent, on the slopes of the highest peaks of the coastal volcanic chain. Among these species is the Fulvous Owl (Strix fulvescens).

In El Salvador, S. fulvescens was considered a common species in dense forests (Dickey and van Rossem 1938); however, due to the effects of fragmentation and habitat loss, it is currently re-

I Salvador has two geographic areas of stricted in some areas of the country and is cate-

S. fulvescens inhabits moist evergreen forests and cloud forests in the mountains, and areas of pineoak at heights of 1200 to 3000 m above sea level. Its distribution extends from southern Mexico to Guatemala, Honduras and El Salvador. Some authors consider it to be a subspecies of the Barred Owl (Strix varia) (Dickey and Van Rossem 1938, Rand and Traylor 1954, Howell and Webb 1995, Peterson and Chalif 2000, Behrstock 2010). The adult Fulvous Owl measures 40-42 cm, lacks head tufts, and is reddish brown and irregularly striped with intense yellow. Its wing and tail feathers are brown with whitish/pale beige colored barring. Its face is whitish with brown stripes that look like hairs. It is strongly marginalized laterally with dark brown below.

The neck is coffee-colored and its yellowish throat is striped with brown. The remainder of its lower regions are pale yellow, with many stripes on the chest and brown stripes on the belly. It has a fully feathered brown tarsus with irregular brown bars. Its talons and beak are opaque yellow and they have dark brown eyes (Dickey and van Rossem 1938, Rand and Traylor 1954, Howell and Webb 1995, Peterson and Chalif 2000, Behrstock 2010, and AOU 2016).

In El Salvador, the records for the species include: 1) a specimen collected in 1927 (Dickey and van Rossem 1938) from the northwestern part of the country at Cerro el Pital (Los Esesmiles), department of Chalatenango, by A. J. van Rossem; 2) another collected in Montecristo National Park, Santa Ana Department by W. Thurber et al. Iden-

Figure 1. Photographic record of Strix fulvescens in Montecristo National Park. Photo © Jorge González



tification was made through vocalization in 1973 (Thurber et al., 1987) and a recording 1974; 3) observations by N. and O. Komar in 1991; 4) O. Komar's identification by vocalization in 1999; 5) R. Juárez' observation in 2007 and photograph in 2009 (eBird 2016); 6) N. Herrera who described an individual in 2000 (Herrera and Rivera 2000) in the Cerro Cacahuatique, department of Morazán; and 7) the most recent record obtained during fauna inventories for AAP - FIEAS Cerro El Águila Natural Protected Area, Department of Sonsonate, by S. Vásquez with identification made through vocalization in 2013 (AAP -FIEAS 2013).

Photographic Documentation

On 11 December 2012, during a sampling excursion for the project "Volunteering for the monitoring of wildlife in the Montecristo National Park," an adult Fulvous Owl was photographed (Figure 1) in an area known as the Huaca, located in the cloud forest, at coordinates 14 ° 24 '24.94.444 "N and 89 ° 24' 12.35" W, at 1989 masl (Figure 2). The bird was observed at 1600 hours, approximately 10 m away. It was perched in the branch of a tree, where we observed it for 30 minutes before it flew towards the forest. The owl was approximately 40 cm in length, robust in appearance, and had feathered ear tufts. Its face was light colored and resembled an apple cut in half (facial disc). It had a yellow bill, dark eyes, feathers around the neck that look like several collars,

thick striations on the chest, and its back and side feathers were a yellowish-brown. Coffee-colored feathers covered the breast which was marked with darker stripes. It had intense yellow talons and a short tail with black and white bars.

Status distribution and conservation of the species

Worldwide, *S. fulvescens* is classified as a species of Least Concern (LC), though its population is in decline (IUCN 2016). In El Salvador, it is classified as Endangered (MARN 2015). Due to its distribution status, Ibarra-Portillo (2013) classified the species as "resident" for the country.

Pérez et al. (2015) states that in El Salvador no information is available regarding the reproductive status, feeding or relative abundance of *S*. *fulvescens*. Because of the aforementioned, it is important to generate information on this and other species of Strigiformes for northern Central America.

Conclusions

The present photographic record represents upto-date information on the presence of *Strix fulvescens* in Montecristo National Park, El Salvador, which came about as a result of wildlife monitoring in the park. Given the limited information available on this species for the country, it is important to generate knowledge and constant scientific monitoring of this and other species for the region.



Figure 2. Map of photographic record of *Strix fulvescens* in Montecristo National Park. Created by Eliseo Martínez, Ministerio de Medio Ambiente y Recursos Naturales

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Referencias

AAP-FIAES. 2013. Evaluación Ecológica Rápida de la flora y fauna vertebrada de la zona núcleo Área Natural Protegida Cerro El Águila en la Reserva de la Biosfera Apaneca-Ilamatepec, Sonsonate, El Salvador, Centro América, 150 pp.

American Ornithologists' Union (AOU). 2016. Check-list of North American Birds. 57th Supplement. vol. 133:544-560. Washington.

Behrstock, B. 2010. Fulvous Owl (Strix fulvescens), Neotropical Birds Online (T. S. Schulenberg, Editor). Ithaca: Cornell Lab of Ornithology; retrieved from Neotropical Birds Online: http:// neotropical.birds.cornell.edu/portal/species/ overview?p_p_spp=214136

BirdLife International (2014) Endemic Bird Area factsheet: North Central American Pacific slope. Downloaded from http://www.birdlife.org on 12/02/2014

Dickey, D. and A.J. van Rossem. 1938. The Birds of El Salvador. Zoological Series. Field Museum of Natural History. Chicago. (23) 406-409 pp.

eBird. 2016. Registros de fulvous owl (*Strix fulvescens*) en El Salvador. http://ebird. org/ebird/map/fulowl1?neg=true&env. min X = 90.78125197734374&env. min Y = 13.027790361853505&env. maxX=87.02942092265624&env.maxY=14.57 7421391450459&zh=true&gp=false&ev=Z& mr=1-12&bmo=1&emo=12&yr=all&byr=1900 &eyr=201612&bmo=1&emo=12&yr=all&byr=1

Herrera, N. and R. Rivera. 2000. Informe del estudio fauna vertebrada del Complejo Cacahuatique, Morazán. Asociación Coordinadora de Comunidades para el Desarrollo del Cacahuatique (CO-DECA). 33 pp.

Howell, S.N.G. and S. Webb. 1995. A Guide to The Birds of Mexico and Northern Central America, Oxford University Press Inc. New York. 851 pp. IUCN. 2016. The IUCN Red List of Threatened Species. Version 2016-2. <www.iucnredlist.org>. Downloaded on 19 November 2016.

Ibarra-Portillo, R. 2013. Aves de El Salvador: Estado actual del conocimiento e iniciativas de conservación. Bioma. Nº: 09. Año: 2. Págs. 12-91.

Komar, O. and R. Ibarra-Portillo. (2009) Las IBAS de El Salvador: Áreas de Importancia para la Conservación de las Aves. SalvaNATURA, San Salvador, El Salvador. 22 pp

Ministerio de Medio Ambiente y Recursos Naturales (MARN). 2015. Listado oficial de especies de vida silvestre amenazada o en peligro de extinción en El Salvador. Diario Oficial Tomo No. 409, Número 181. Acuerdo No. 74, 5 de octubre de 2015. Págs. 45-65.

Peterson, R.T. and E.L. Chalif. (2000) Aves de México: Guía de Campo. Boston: World Wildlife Fund. Cuarta impresión. Editorial Diana, México, D.F. 474 pp.

Pérez León, R., I. Vega and N. Herrera. 2015. Los Búhos de El Salvador. En Los Búhos Neotropicales: Diversidad y Conservación. Primera edición. El Colegio de la Frontera Sur, San Cristóbal de las casas, Chiapas, México, Editora: Henríquez P. L. Págs. 357 -377

Rand, A.L. and M. A. Traylor. 1954. Manual de las Aves de El Salvador. Editorial Universitaria, San Salvador. 308 p. Stattersfield A. J., M. J. Crosby, A. J. Long, and D. C. Wege. 1998. Endemic bird areas of the world: Priorities for biodiversity conservation. BirdLife Conservation Series No. 7. Cambridge: BirdLife International.

Thurber, W. A., J. F. Serrano, A. Sermeño and M. Benitez.1987. Status of uncommon and previously unreported birds of El Salvador. Proc. West. Found. Vert. Zool. 3: 109-293.

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OWLS OF THE SANTA MARÍA MUNICIPALITY (BOYACÁ: COLOMBIA)

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Band-bellied Owl (Pulsatrix melanota) on the La Cristalina Trail, Santa María Municipality (Boyacá: Colombia). 16 May 2017. Photo © David Ricardo Rodríguez-Villamil.

he municipality of Santa Maria is loca- This municipality has a total extension of 326.44 ted on the eastern slope of the eastern Andes of km², distributed between 400 and 2,200 masl. Colombia, forming part of the Valley of Tenza, Its urban zone is located at the coordinates 4 ° located southeast of the department of Boyacá. 51 '48"N and 73 ° 16'04"O, at 850 masl. It bor-Due to its distribution along altitudinal ranges, it ders the municipalities of Macanal and Campopresents a wide variety of climates and high bio- hermoso to the north, the department of Cundiversity (Betancur et al., 2007, Torres and Agu- dinamarca (municipality of Ubalá) to the south, irre 2007, Giraldo and Betancur 2011).

the municipality of San Luis de Gaceno to the east and the municipality of Chivor to the west.



Ferruginous Pygmy Owl (*Glaucidium brasilianum*). Roosting in the main park of the Santa María Municipality. 14 December 2016. Photo © David Ricardo Rodríguez-Villamil.

Annual precipitation is approximately 4,282 mm with an average temperature of 28 °C - which fluctuates between 16 and 36 °C. It encompasses two physiographic units: the first corresponding to the mountainous relief, where the Guaneque, Caño Negro and Calichana peaks occur; the second one of low relief, is part of the piedmont llanero belt (IGAC 1996, Torres and Aguirre 2007, Fernández 2009, Municipal Office of Santa María 2012, Laverde and Gómez 2016). Of the 1,921 bird species registered in Colombia (SiB Colombia 2016), about 400 have been documented in the municipality of Santa María (Peñuela et al 2016, Laverde and Gómez 2016, Rodríguez 2016). Of these, 27 species are Strigiformes (Chaparro et al., 2015). However, due to the lack of recent taxonomy and systematic review of most Strigiformes species found in Colombia, Córdoba (2016) estimates that this number could range between 27 and 29 species including *Glaucidium ridgwayi* and *Glaucidium grisceiceps*, which have been confused with *Glaucidium brasilianum* on the Colombian Caribbean Coast (Córdoba 2016). In addition, there is a new record of *Glaucidium parkerii* in the Amazon piedmont (Sibundoy municipality, Putumayo department) (Acevedo et al. 2016).

Among the owls reported for Colombia, two species, *Megascops colombianus* and *Glaucidium nubicola*, are in the categories of Nearly Threatened (NT) and Vulnerable (VU), respectively (BirdLife International 2012, Renjifo et al. 2014). However, Chaparro et al. (2015) suggest that the Buhito de Santa Marta (*Megascops* sp. nov.) could be considered a threatened species due to its restricted distribution to the Sierra Nevada of Santa Marta and the destruction of its habitat.

In order to establish the diversity of owls present in the municipality of Santa Maria, we carried out a bibliographical review and conducted personal observations in the field (*Ad libitum*) in four localities: La Cristalina Trail, the urban center, Caño Negro Trail (area peripheral to the La Cristalina Trail) and the Cachipay sector of the San Rafael Trail. At each of the points, visual and auditory records were documented (the latter being very important due to the difficulty of observing the owls during the night). The sampling effort for this study was 349.5 hours carried out between April 2016 and May 2017 between 05:00 and 06:30 h. and between 15:30 and 21:30 h. The scientific names and taxonomy used in this research used the classification criteria of Remsen et al. (2017). A total of 18 species of Strigiformes were recorded for the Santa Maria Municipality, representing two families (Tytonidae and Strigidae) and eight genera (*Tyto, Megascops, Pulsatrix, Bubo, Ciccaba, Glaucidium, Athene* and *Asio*). Ten of these species are confirmed and eight species may potentially occur in the area, as shown in Table 1.

According to the bird distribution maps of Colombia by Hilty and Brown (1986), Restall et al. (2006) and McMullan & Donegan (2014), there could be 16 owl species in the Santa Maria Municipality. Other research done in this municipality registered six species of owls (Peñuela et al., 2016, Laverde and Gómez 2016), and my observations confirmed the presence of four more species for the area.

According to Remsen (2017), Megascops guatemalae (Laverde and Gómez 2016), which had been recorded as Napo Screech-owl (*M. napensis*), is part of the Vermiculated Screech-owl (*M. guatemalae*) complex. This is important, since this finding broadens the distribution range for *M. guatemalae* in Colombia, whose known distribution was in the geographic valley of the Magdalena River, the biogeographic area of Chocó and the piedmont of the inter-Andean valleys of the Eastern and Central Cordillera (Chaparro et al., 2015). The

Family	Species	Distribution Maps	Publications in Santa Maria	Personal Observations
Tytonidae	Tyto alba	X	X	X
Strigidae	Megascops choliba	X	X	X
	Megascops guatemalae		Х	
	Megascops watsonii	X		
	Megascops albogularis	X		
	Pulsatrix perspicillata	X		X
	Pulsatrix melanota			X
	Bubo virginianus	X		
	Ciccaba virgata	X	X	X
	Ciccaba nigrolineata	X		X
	Ciccaba huhula	X		X
	Ciccaba albitarsis	X		
	Glaucidium jardinii	X		
	Glaucidium brasilianum	X	Х	X
	Athene cunicularia	X		
	Asio clamator	X		
	Asio stygius	X	X	X
	Asio flammeus	X		

Table 1. Owls present and potentially present in the municipality of Santa Maria (Boyacá, Colombia). The reference source is indicated by an X from three categories: distribution maps taken from Hilty & Brown (1986), Restall et al. (2006) and McMullan & Donegan (2014); records of other publications in the study area taken from Peñuela et al. (2016) and Laverde and Gómez (2016); and finally the author's personal observations. known distribution of the Band-bellied Owl (Pulsatrix melanota), which was documented mainly to the south of the Andes in the departments of Cauca and Putumayo (Rodríguez in press), has also been expanded with a recent record. Additionally, the Buff-fronted Owl (Aegolius harrisii) has been recorded in the municipality of Cubarral in the department of Meta (Coordinates: 3 ° 51 '7.92' 'N-73 ° 53' 37.679 " O. Altitude: 1500 m.), by Zuleta (2017) and Quintero (2017). Because this municipality is about 135.71 km from Santa Maria in a straight line, along the same eastern slope, it is probable that the Buff-fronted Owl is also in the Santa Maria Municipality - given its proximity and similarity in geography with the Municipality of Cubarral. However, this argument requires confirmation, which, if proven, would increase the known diversity of Strigiformes in this part of the country.

The piedmont of the eastern mountain range has high biological diversity, due in part to its history and its proximity to the Orinoquia savannas and to the Amazon rainforest (Laverde and Gómez 2016). It has been recognized as an important area for the conservation of avifauna, which invites us to continue studying this part of the country that is so rich in biodiversity.

The municipality of Santa Maria is a strategic place for the study and conservation of birds in Colombia, especially as a site of interest in owl research, since it houses 37.03% of owls registered in Colombia and can potentially house 66.6% of the country's owl diversity within only 326.44 km². It is important to consider the Santa Maria Municipality as a priority site with opportunities for the study of Neotropical owls, allowing us to fill in several of the gaps that exist in our knowledge about this group of birds, such as ecology, reproductive biology, natural history, behavior, diet and longevity, among other aspects. Information on these birds of prey is limited, scarce and insufficient in regards to developing management and conservation plans (Chaparro et al. 2015, Córdoba 2016, Rodríguez in press). This makes the municipality of Santa Maria important, since it is here that several of the littleknown owls (e.g. Pulsatrix melanota, Megascops guatemale, Asio stygius) can be found.

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References

Acevedo-Charry O. A., A. Cárdenas, B. Coral-Jaramillo, W. Daza, J. Jaramillo, and F. Freile. 2015. First record of Subtropical Pygmy Owl *Glaucidium parkeri* in the Colombian Andes. Bull Br Ornithol Club. 135(1):77-79. Alcaldía Municipal de Santa María. 2012. Sitio oficial de Santa María, Boyacá. En línea: http:// santamaria-boyaca.gov.co/index.shtml

Betancur, J., L. Clavijo, C. Zaleth, and A. Zuluaga.
2007. Santa María pintada de flores. Serie de guías de campo del Instituto de Ciencias Naturales No.
Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá D. C., Colombia.

BirdLife International. 2012. IUCN Lista Roja de Aves. En línea http://www.birdlife.org.

Chaparro, S., S. Córdoba, J. López,, J. Restrepo, and O. Cortés. 2015. Los Búhos de Colombia. En: Enríquez, P. Edt. 2015. Los Búhos Neotropicales. Diversidad y Conservación.

Córdoba, S. 2016. Distribución, conocimiento y vacíos de información de búhos en Colombia. Neotropical Raptor Conference. La Fortuna, Costa Rica.

Fernández-Alonso, J.l. (2009). Flora de Santa María (Boyacá). Guía de campo de los géneros de angiospermas. Serie de guías de campo del Instituto de ciencias naturales. Instituto de ciencias naturales, Universidad nacional de Colombia, Bogotá, D.C., Colombia.

Giraldo, G. and J. Betancur. (2011). Guía de campo de las orquídeas de Santa María (Boyacá, Colombia). Serie Guías de Campo del Instituto de Ciencias Naturales, Universidad Nacional de Colombia. Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá. Hilty, S. L. and W. L. Brown. 1986. A guide to the birds of Colombia. Princeton University Press, Princeton.

IGAC. 1996. Diccionario Geográfico de Colombia. Tomo IV. Tercera edición. Bogotá.

Laverde, O. and F. Gómez. 2016. Las aves de Santa María. Serie de Guías de Campo del Instituto de Ciencias Naturales Nº 16. Bogotá, D. C.: Instituto de Ciencias Naturales de la Universidad Nacional de Colombia.

Mcmullan, M. and T. Donegan. 2014. Field Guide to the Birds of Colombia. Second edition. Pro-Aves.

Peñuela-Diaz, G., B. Calonge-Camargo, and G.H. Aristizabal. 2016. Aves y mamíferos presentes en el distrito regional de manejo integrado Cuchillas Negra y Guanaque. Ecopetrol. Corporación Autónoma Regional de Chivor. E-qual servicios ambientales.

Quintero, E.F. Mochuelo Canela (Aegolius harrisii). XC379373. En línea: www.xeno-canto. org/379373.

Remsen, J. V., Jr., J. I. Areta, C.D. Cadena, A. Jaramillo, M. Nores, J.F. Pacheco, J. Pérez-Emán, M. B. Robbins, F.G. Stiles, D.F. Stotz and K.J. Zimmer. 2017. A classification of the bird species of South America. American Ornithologists' Union. http://www.museum.lsu.edu/~Remsen/SAC-CBaseline.html. Renjifo, L.M., M.F. Gómez, J. Velásquez-Tibatá, A.M. Amaya Villarreal, G.H. Kattan, J.D. Amaya-Espinel, and J. Burbano Girón. 2014. Libro rojo de aves de Colombia, Volumen I: Bosques Húmedos de los Andes y la Costa Pacífica. Editorial Pontificia Universidad Javeriana e Instituto Alexander von Humboldt. Bogotá D.C., Colombia.

Restall, R., C. Rodner, and M. Lentino. 2006. Birds of Northern South America: an identification guide. Volume 1: Species accounts. Yale Univ. Press, New Haven, Connecticut, USA.

Rodríguez, D. R. 2016. Aves y paisaje en el Sendero la Cristalina, municipio de Santa María (Boyacá: Colombia). Trabajo de grado. Universidad Pedagógica Nacional. Rodríguez, D.R. Nueva localidad para el Búho Ventribandeado (*Pulsatrix melanota*) en los Andes de Colombia. Ornitología Colombiana. En prensa.

SiB Colombia. 2016. Biodiversidad en cifras ¿Cuántas especies tiene Colombia? Sistema de Información sobre Biodiversidad de Colombia. En línea: http://www.sibcolombia.net/biodiversidad-en-cifras/

Torres, K. and J. Aguirre. 2007. Los musgos (Bryophyta) de la región de Santa María-Boyacá (Colombia). Caldasia. 29(1):59-71. 2007.

Zuleta, J.A. 2017. Mochuelo Canela (*Aegolius harrisii*). XC379147. En línea: www.xeno-canto. org/379147.

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EXTENSION OF THE GEOGRAPHICAL DISTRIBUTION OF BAT FALCON (*FALCO RUFIGULARIS*) IN EL SALVADOR

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The Bat Falcon (*Falco rufigularis*) is distributed from Northern Mexico to western Ecuador, Bolivia, northern Argentina and southeastern Brazil. In El Salvador, records are from the less arid tropical zone, occasionally up to 1,400 meters (Rand and Traylor 1961; Howell and Webb 1995; Stiles and Skutch 2007; Fagan and Komar 2016). It is a rare and local resident in low and intermediate elevations, up to 1,675 masl in some areas along both slopes, mainly in moist environments. It is rare in the Pacific Northwest. Evidently, its populations have declined significantly in recent years. Here we present the most recent record of a pair of Bat Falcons for El Salvador and this species' geographical expansion in the northeastern part of the country.

The Bat Falcon is found at the edges of semi-deciduous forests, mangroves and rainforest, as well



Fig. 1. Pair of Bat Falcons in the Rio Sapo Natural Area. © José Guadalupe Argueta



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Figure 2. Map showing location of the most recent Bat Falcon record in Rio Sapo Natural Area

as in secondary forests and plantations. It perches at medium and high heights, and is usually easily visible, on perches and artificial towers. It is seen alone or in pairs. It is crepuscular and hunts bats, small birds and large insects. It has a rapid flight with strong and shallow flapping, similar to conures. In flight, it often resembles the White-collared Swift *Streptoprocne zonaris* because of its fast and direct flight (Howell and Webb 1995; Stiles and Skutch 2007).

It measures between 23 and 30 cm, and weighs between 140 and 200 g. The sexes are similar with

pointed wings, square-tipped tails, and strong constitutions. Adults have slate-black heads and upper backs that are tinged with a bluish hue. The tail is black with light-grey narrow bands. The throat, sides of the neck are whitish, while the chest is rufous. The posterior region of the abdomen, thighs and coverts are rufous brown. They have dark brown eyes; and the cere, eyering and legs are yellow.

Immatures have a brownish tinge in the chest with a paler rufous. The juvenile is similar to the Orange-breasted Falcon (*Falco deiroleucus*) juve-



Fig. 3. Bat Falcon photographed in Rio Sapo Natural Area. Photos © Luis Pineda and Christian Aguirre Alas

nile, but much smaller in size with light reddish brown on the breast and sides of neck (Rand and Traylor 1961; Howell and Webb 1995; Stiles and Skutch 2007; Fagan and Komar 2016).

This species inhabits areas along forest edges and clearings or open areas, and avoids closed forests (Thurber et al. 1987). In El Salvador, records of *F. rufigularis* originate from Lake Olomega (one specimen), Río Grande de San Miguel (two specimens), Laguna Chanmico (three specimens) and Hacienda Chilata (one specimen). Each of the specimens are housed at the Museum of Natural History in the United States. The species has also been observed in Barra de Santiago, Ciudad Barrios and the volcano of San Salvador. It was considered a common local resident, normally found close to water in the lower tropical arid zone, although occasionally at an altitude of 4,500 feet.

It often perches on dead trees which it uses as lookouts from which to search for prey, and as a take-off point to pursue prey, which it chases with fast and aggressive flights (Dickey and van Rossem 1938). Analysis of stomach contents have shown the presence of insect remains, however, the main diet for this species is bats (Dickey and van Rossem 1938). There is an unpublished report, from between 1979 and 1980, of an individual perched in the El Imposible National Park.

Recently, an individual was reported during an inventory of bird species in the San Marcelino Complex, located between the Sonsonate and Santa Ana Departments (Pineda and Vasquez 2014).

Information on nesting includes the observation of pairs in marshy grasslands of the Rio Grande San Miguel during the month of February (Dickey and van Rossem 1938; Rand and Traylor 1961). In one particular case, a female had been shot and an egg with a shell forming was found in her oviduct. In addition, molting juveniles had also been observed.

Location of sighting

The Rio Sapo Natural Area is located in the Arambala Municipality, Morazan Department. It is the main conservation unit of the Nahuaterique Conservation Area. Its buffer zone encompasses all of the high micro-basin of the Guaco and Talchiga Rivers. Currently the area has an extension of 219 blocks of private land. The owners have struggled more than nine years to protect the area, with the support of Perquin Association for the Development of Tourism (PRO-DETUR). The main focus of conservation and management is the Rio Sapo and the entire water system that generates it, especially the pine forests, oak, and dry interior forests (Pineda et al 2016). On 2 October 2016 J. G. Argueta used a cellphone camera to photograph a pair (male and female) of Bat Falcons perched on a bare pine tree, in the Rio Guaco (north of Rio Sapo).

On October 14, during a sampling excursion for the "Baseline of biodiversity at sites in Northern Chalatenango, Cabañas and Morazán Project" L. Pineda, and C. Aguirre Alas obtained photo documentation of a Bat Falcon perched on the same bare pine tree where it had been observed by G. Argueta. It was located at coordinates 13 ° 57' 513 ' N and 88 ° 7' 435 "W at 978 meters above sea level (Figure 3). We observed the bird at 15:45 hours. To try to attract its mate, we used playbacks from a cell phone. We did get a response on the part of the bird, which began vocalizing alarm calls and moving in flight from one perch of a tree to another. After 15 min we left the area. The individual remained at the site.

At the regional level, *F. rufigularis* is classified as a species of Least Concern (LC), with a decreasing population trend (IUCN 2016). In El Salvador, it is categorized as Endangered according to the official list of threatened or endangered wildlife species (MARN 2015). Ibarra-Portillo (2013) classifies it as "Resident" for the country.

Conclusions

The documented sighting of *Falco rufigularis* in this note represents a new record for the Rio

Sapo Natural Area and for the Morazán Department. The registration of this species in Rio Sapo contributes to the knowledge of the avifauna present in El Salvador. The most recent record of a pair of Bat Falcons for the country was also documented. Further efforts and studies of this species' nesting sites and territories will continue to support our knowledge of the current situation of the species in El Salvador.

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References

Dickey, D. and A. J. van Rossem. 1938. The Birds of El Salvador. Zoological Series. Field Museum of Natural History. Chicago. (23) 406. 609 pp. Fagan, J. and O. Komar. 2016. Peterson Field Guide to Birds of Northern Central America. Roger Tory Peterson Institute and the National Wildlife Federation. Houghton Mifflin Harcourt Publishing Company. 438 pp.

Howell, S. N. G. and S. Webb. 1995. A guide to the birds of Mexico and Central América. Oxford Univ. Press, New York. 851 pp.

Ibarra Portillo, R. 2013. Aves de El Salvador: Estado actual del conocimiento e iniciativas de conservación. Bioma. Nº: 09. Año: 2. Págs. 12-91.

IUCN. 2016. The IUCN Red List of Threatened Species. Version 2016-3. <www.iucnredlist.org>. Downloaded on 25 January 2017.

Ministerio de Medio Ambiente y Recursos Naturales (MARN). 2015. Listado oficial de especies de vida silvestre amenazada o en peligro de extinción en El Salvador. Diario Oficial Tomo No. 409, Número 181. Acuerdo No. 74, 5 de octubre de 2015. Págs. 45-65.

Pineda, L. and S. Vásquez. 2014. Aves del Complejo San Marcelino, en la Reserva de Biosfera Apaneca-Ilamatepec, El Salvador. Zeledonia, 18:1. Pág. 79-93.

Pineda, L., E. Martínez de Navas, M. López – Martínez, J. Segura, R. Pineda, K. Zeledón, E. Fajardo, A. Paz, E. Aguilera and J. Sermeño. 2016. Línea base de biodiversidad en sitios de interés (Norte de Chalatenango, Cabañas y Morazán). Ministerio de Medio Ambiente y Recursos Naturales. San Salvador, El Salvador. 259 pp + anexos. Rand, A. L. and M. A. Traylor. 1954. Manual de las Aves de El Salvador. Editorial Universitaria, San Salvador. 308 pp.

Stiles, F. G. and A. F. Skutch. 2007. Guía de Aves e Costa Rica. Cuarta ed. Santo Domingo de Heredia, Costa Rica: Instituto Nacional de Biodiversidad, INBio. 680 pp. Thurber, W. A., J. F. Serrano, A. Sermeño and M. Benítez.1987. Status of uncommon and previously unreported birds of El Salvador. Proc. West. Found. Vert. Zool. 3: 109-293.

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Of Interest...

Grants -

World Wildlife Fund

https://www.worldwildlife.org/initiatives/professional-development-grants

Subsidies for Professional Development provide support to mid-career conservationists who seek short-term training to improve their knowledge and skills through short courses, workshops, symposia, conferences and professional exchanges.

The grant supports all costs related to the training, including the costs of registration and tuition, meals and accommodation, books and materials, international travel and local transport. The training can take place in any part of the world and applicants can apply for up to \$6,500.

Idea Wild

http://www.ideawild.org/apply.html

Idea Wild offers up to \$1,500 worth of equipment (i.e. binoculars, GPS, etc.) for conservation projects. You need a U.S. address to receive equipment.

Young Explorers Grant

http://www.nationalgeographic.com/explorers/grants-programs/young-explorers/

Las becas para jóvenes exploradores ofrecen opotunidades a los individuos de 18 a 25 años de edad para que realicen proyectos de investigación, conservación y exploración compatibles con los programas de becas existentes de National Geographic \$2,000 - \$5,000.

Western Bird Banding Association

http://www.westernbirdbanding.org/grants. html

WBBA offers two grants of \$ 1,000 each year, one for research and the other for monitoring. for individuals or organizations involved in projects in the New World using tagged birds. The research grant should test a hypothesis, while the monitoring grant should serve to help individuals or institutions understand changes in bird populations.



Neotropical Raptor Network www.neotropicalraptors.org



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