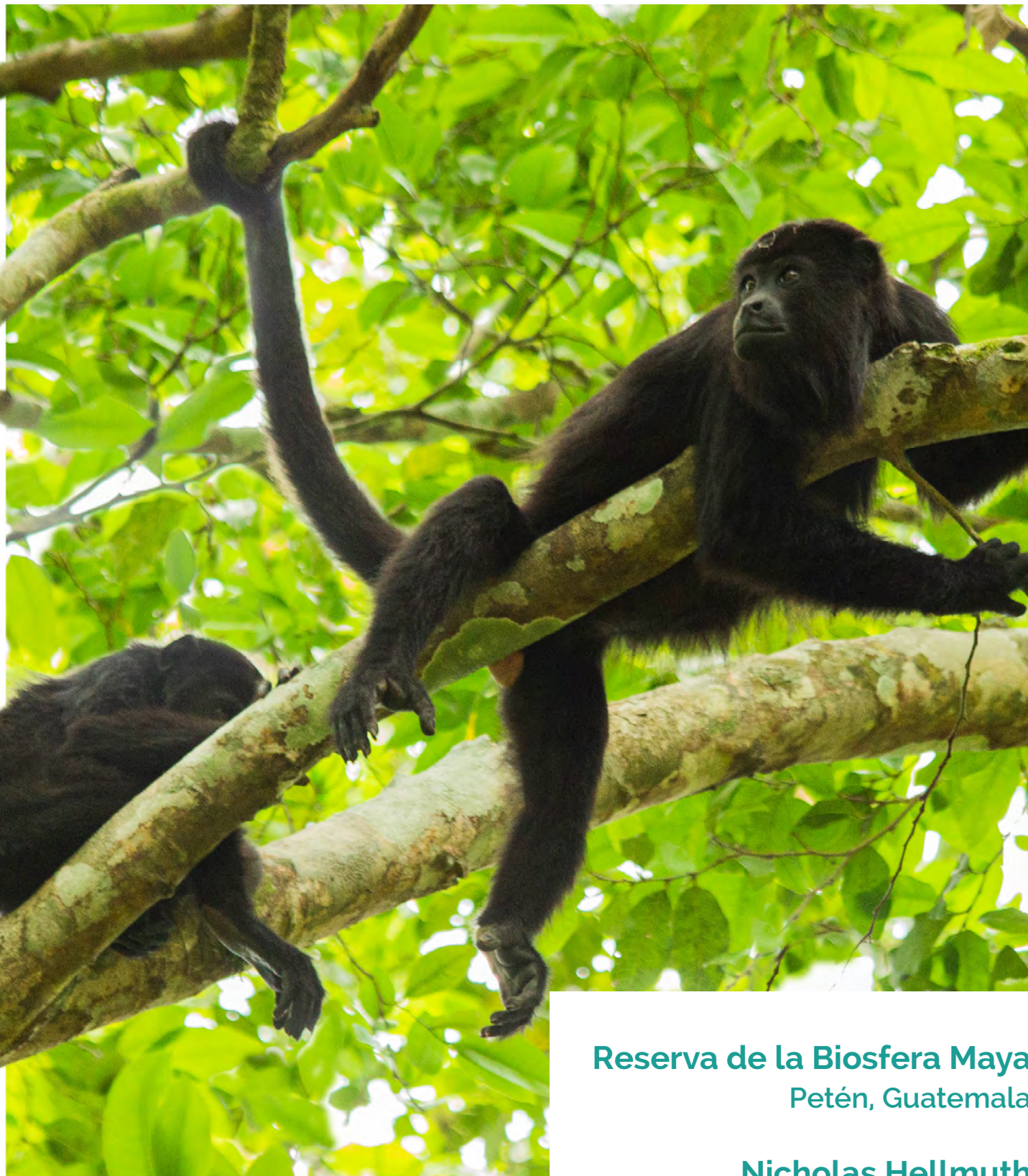


# Happy Howler Monkeys



*Alouatta pigra*

Parque Nacional Yaxha, Nakum y Naranjo



Reserva de la Biosfera Maya  
Petén, Guatemala

Nicholas Hellmuth

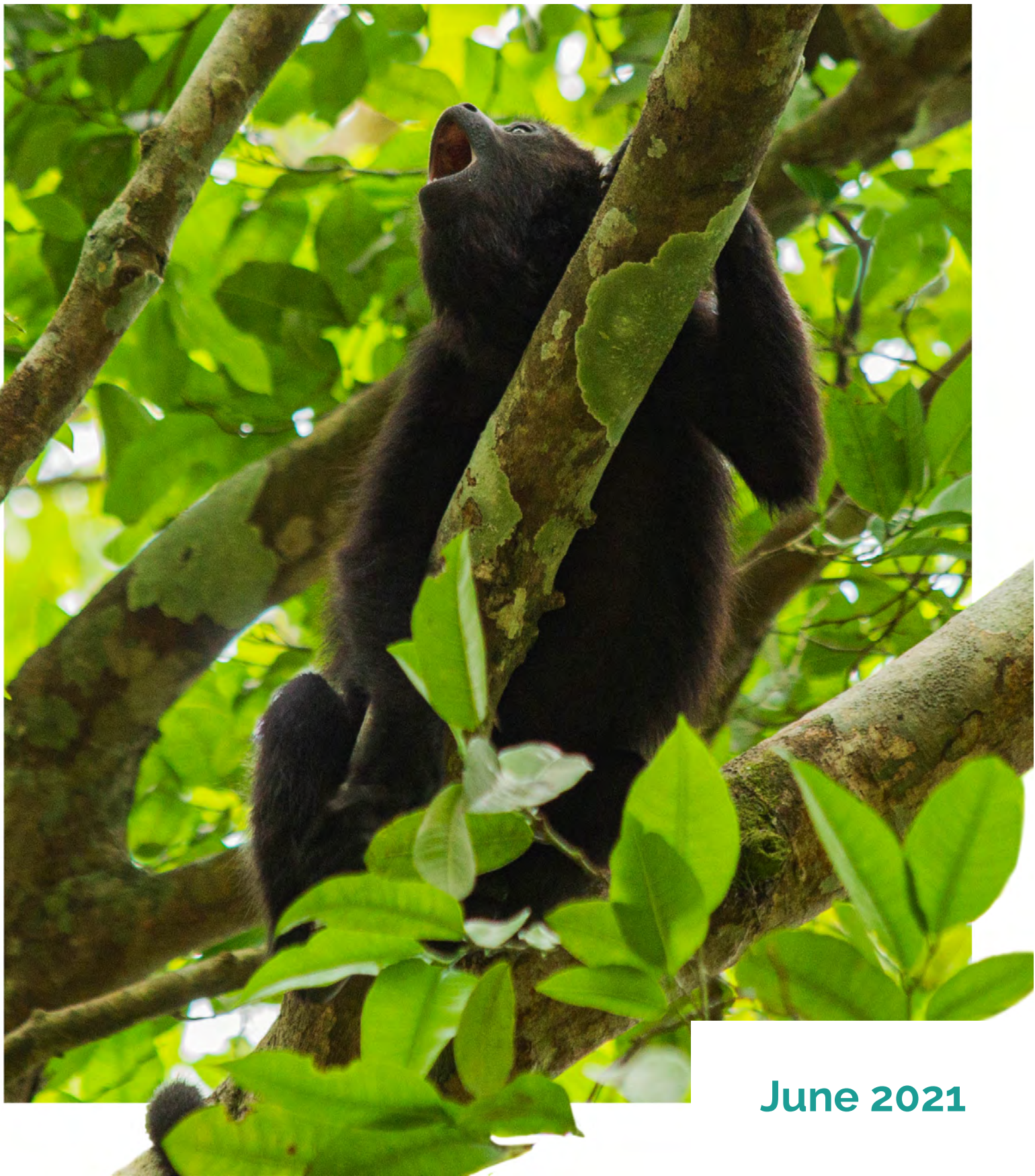


# Happy Howler Monkeys



*Alouatta pigra*

Parque Nacional Yaxha, Nakum y Naranjo



June 2021

# Credits

The helpful individuals listed below are all part of the FLAAR Mesoamerica research and field work team. The office research team, webmaster, and web designers are additional individuals in the main office in Guatemala City. Since each report is a different plant or animal, the individuals who assist in preparing the bibliography, species identification and botanical information category are not the same for each report.

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## ASSISTANCE FOR KNOWLEDGE OF PLANTS AND ANIMALS OF PNYNN

Teco, Moisés Daniel Pérez Díaz, park ranger, PNYNN, and all the helpful and knowledgeable guides of IDAEH, CONAP at PNYNN who accompanied us each day. It is essential to have either an IDAEH and/or CONAP guardabosque or comparable when doing flora and fauna research in a national park. We also appreciate the assistance of park ranger Ricardo Herrera and every park ranger that accompanied us on other field trips.

## COVER PHOTOGRAPH:

Photo by: David Arrivillaga, FLAAR Mesoamerica, Jun. 22, 2019. Yaxha behind South Acropolis, Petén, Guatemala.

Camera: Canon T3i. Lens: Canon EF 300mm IS II USM.  
Settings: 1/125 sec; f/6.3; ISO 400.

## TITLE PAGE PHOTOGRAPH:

Photo by: David Arrivillaga, FLAAR Mesoamerica, Jun. 22, 2019. Yaxha behind South Acropolis, Petén.

Camera: Canon T3i. Lens: Canon EF 300mm IS II USM.  
Settings: 1/125 sec; f/6.3; ISO 400.

# Contents

◆ Introduction to Howler Monkeys of Guatemala and PNYNN	1
◆ Local names for Howler Monkeys	5
◆ Mayan names for Howler Monkeys	5
◆ In what Ecosystem(s) can you find native Howler Monkeys?	5
◆ What other Trees or Plants are often found in the same Habitat?	5
◆ Where has Howler Monkeys been found in the PNYNN?	7
◆ Are Howler Monkeys registered for Parque Nacional Tikal?	10
◆ Howler Monkeys in Cerro Cahuí	11
◆ Close relative(s) of Howler Monkeys; how many other species of Howler Monkeys are in Petén?	11
◆ Do Howler Monkeys feed in trees near people's houses?	12
◆ What can we learn from the photographs taken so far?	14
◆ Howler Monkeys use their Tail as their "Additional Arm"	24
◆ Challenges of photographing something that is solid black on a tree limb that is light colored	25
◆ Concluding Discussion and Summary on Howler Monkeys	29
◆ References Cited and Suggested Reading on Howler Monkeys	32
◆ Web pages specifically on Howler Monkeys	34
◆ Video specifically on Howler Monkeys	34





Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 17, 2018. Parque Yaxha, Nakum y Naranjo, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/400 sec; f/3.5; ISO 2,500.



# Introduction to Howler Monkeys of Guatemala and PNYNN

We are beginning a 5-year project of cooperation and coordination with CONAP to study, photograph, and publish the flora, fauna, eco-systems and discuss the importance of preservation of fragile bio-diverse areas and protection of endangered species. For Howler Monkeys, in addition to protecting them, it is essential to not cut down the trees that these monkeys need for food and

shelter and the trees they use as corridors to get from one seasonal tree species area to another. Our focus, August 2018-July 2019 field work was flora and fauna of Parque Nacional Yaxha, Nakum and Naranjo (PNYNN). Our research area for May 2021 onward continues in this national park but also includes the surrounding areas of the Reserva de la Biosfera Maya.

The team of FLAAR Mesoamerica has prepared for you:

- ◆ A separate report on howler monkeys of Guatemala other than PNYNN
- ◆ A bibliography on howler monkeys so long that it's a separate report
- ◆ A complete study report on what trees you should protect to provide food for howlers in Petén (howler monkeys eat tree leaves, flowers, and fruits)



Photo by: Erick Flores, FLAAR Mesoamerica, Sep. 6, 2018. Parque Yaxha, Petén, Guatemala.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/125 sec; f/3.5; ISO 200.

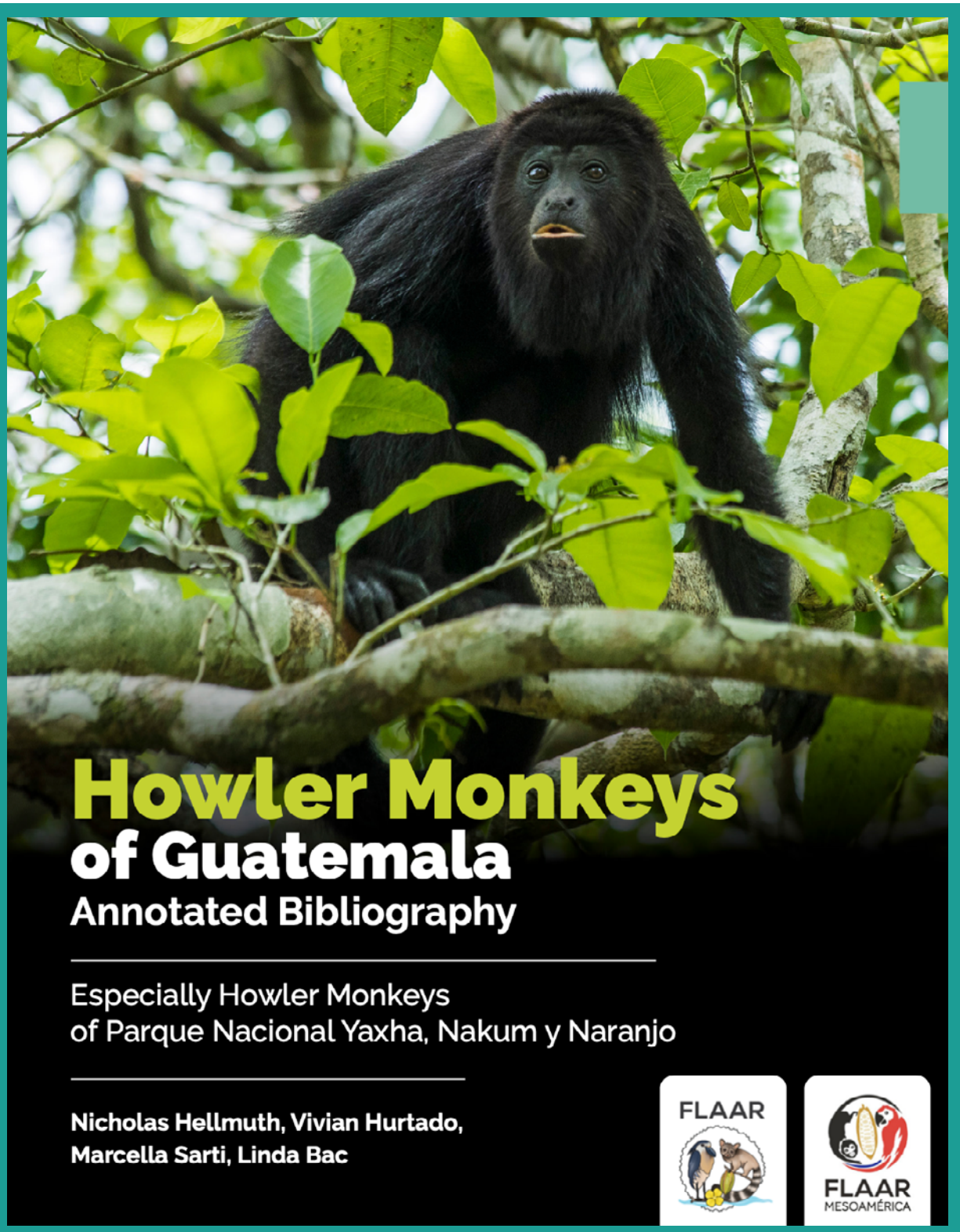


# Protect the trees to protect Howler Monkeys



For howler monkeys, in addition to protecting them, it is essential to not cut down the trees that these monkeys need for food and shelter and the trees they use as corridors to get from one seasonal tree species area to another. So, we have prepared a separate FLAAR report on which species of trees the howler monkeys need to survive.

Howler monkeys feed primarily on leaves, fruit, and occasionally flowers. But to get the entire diet, we have the separate FLAAR report.



Having been a visiting research professor in Japan, Malta, Guatemala (about five years), and in USA (many years), I like to prepare bibliographies to assist people to learn about the subject I am writing about.

My bibliographies are more than references cited; the FLAAR bibliographies are focused on lots of helpful reading on the subject, but especially in Guatemala and surrounding countries.





June 2021

# Howler Monkeys



**Present in  
Alta Verapaz,  
Izabal and Petén**

**NICHOLAS HELLMUTH**  
**FLAAR (USA) AND FLAAR MESOAMERICA (GUATEMALA)**

This photo album is a presentation of howler monkeys that we have stopped to photograph in areas of Guatemala other than PNYNN.

If you are a student wanting to do a thesis or dissertation, or a professor wanting to initiate a major project on howler monkeys in Guatemala, it will help you to learn where else they can be seen and studied and photographed.

Obviously Tikal and PNYNN are the two most comfortable locations but both have similar vegetation. If you also go to northern Alta Verapaz or far western Petén (Río San Pedro) you will find other species of trees used by local howler monkeys.

My Personal Experience with Howler Monkeys in recent years is covered in a separate FLAAR report. The first howler monkey I heard was in the rain forest a kilometer outside Teapa, Tabasco, in 1961. Then in the Lacandón area of Chiapas in 1962; at Tikal year after year after that. Then Yaxha in the 1970's during many months-per-year mapping this site plus several visits to map Nakum. But the digital photos of howler monkeys did not become available until about 2013.

During our 2018-2019 field work in PNYNN almost all our photographs of howler monkeys were taken in the Yaxha sector.

## Local names for Howler Monkeys

Mono aullador, Saraguatè

## Mayan names for Howler Monkeys

There are 21 or 22 Mayan languages in Guatemala alone. But the most common name for howler monkey is Batz (various spellings, with and without accent).

The howler monkey deity in Classic Maya art and in the Popol Vuh is discussed by Braakhuis (1987).

## In what Ecosystem(s) can you find native Howler Monkeys?

Howler Monkeys can be found in most areas throughout Petén if there is rain forest vegetation. I would not expect monkeys in the pine tree savannas of Petén (but check whether howlers are in pine tree forests and savannas of Belize?).

So far, in 9 months of field work (one week per month hiking into the rain forests or in a lancha going upstream through thickly forested swamps) I have not had one single view of a single howler or spider monkey in the river and coastal area of the Municipio de Livingston. But several hotels inland advertise themselves as places you can see howlers. We have heard at most two or three howlers in the entire 9 months. Yet outside Chisec, a bit north of Cobán, Alta Verapaz, we hear howler monkeys near our hotel. And in Petén, howler monkeys are physically overhead and in trees around each bungalow.

## What other Trees or Plants are often found in the same Habitat?

We have a separate FLAAR report that lists the most important scientific field work on all the trees and vines that howler monkeys prefer.



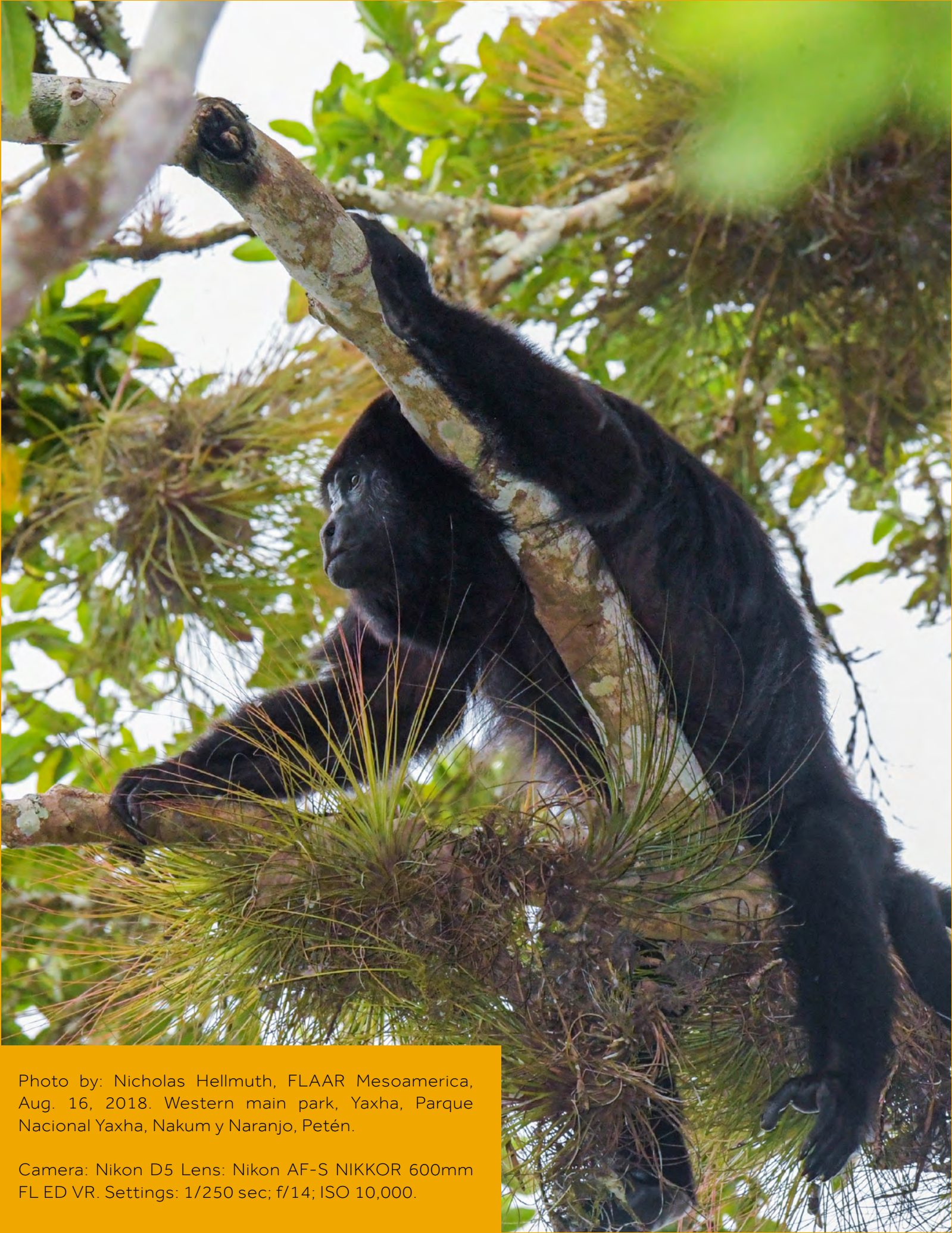


Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Aug. 16, 2018. Western main park, Yaxha, Parque Nacional Yaxha, Nakum y Naranjo, Petén.

Camera: Nikon D5 Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/250 sec; f/14; ISO 10,000.



# Where have Howler Monkeys been found in the PNYNN?

Almost all photos of howler monkeys in PNYNN are in the Yaxha area by tourists who post their snapshots on the Internet (since biologists tend to head to Tikal). But the benefits of doing flora and fauna research in PNYNN is that there are fewer tourists (especially in the Nakum and Naranjo areas and along the road from Yaxha to both these other areas).

Tikal National Park is obviously a good place to undertake flora and fauna research and you can hike away from the site center to where there are no tourists.

The place we hear the most howler monkeys are in the trees over the hotel **Ecolodge El Sombrero**, a few meters before the entrance to the Yaxha park area. But you can also experience howler monkeys inside the park. Each month the howlers may be focused on different tree species, so each month they may be concentrated in different areas.

I am not yet familiar with any howler monkey research in the Nakum and Naranjo areas of the park. It's easier to see and hear them in the Yaxha sector.

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 17, 2018. Parque Yaxha, Nakum y Naranjo, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/400 sec; f/3.5; ISO 2,500.





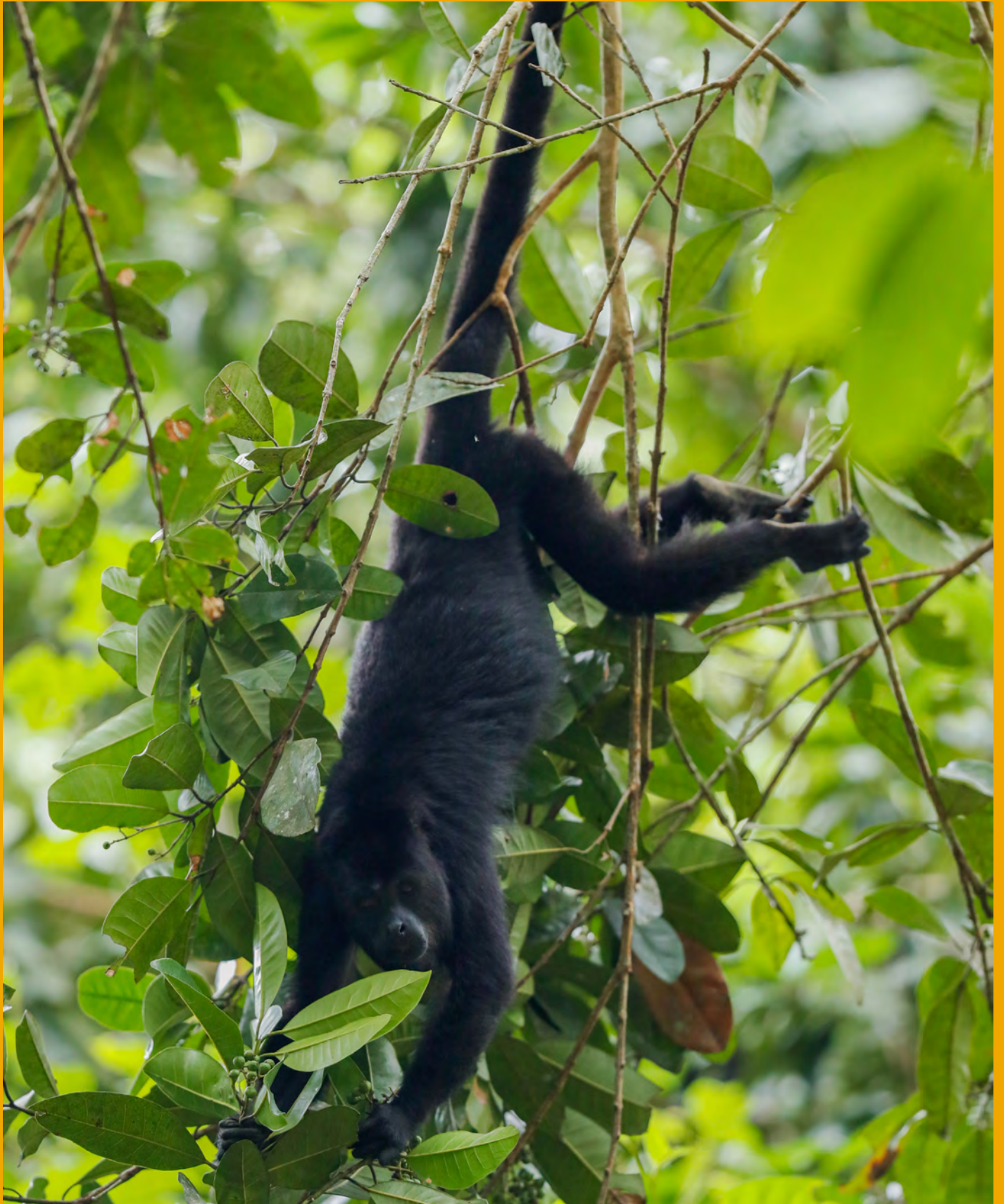


Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 17, 2018. Parque Yaxha, Nakum y Naranjo, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/400 sec; f/3.5; ISO 2,500.



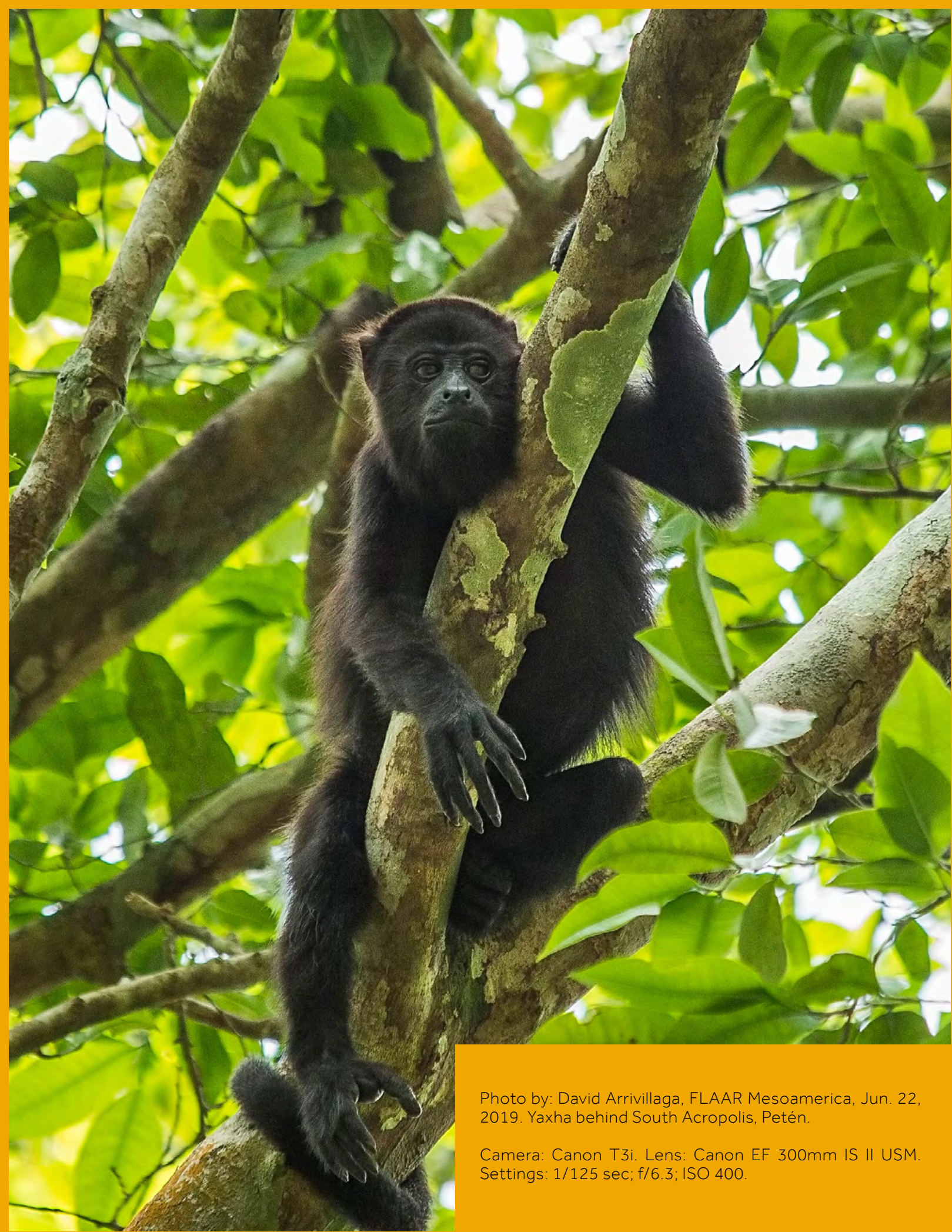


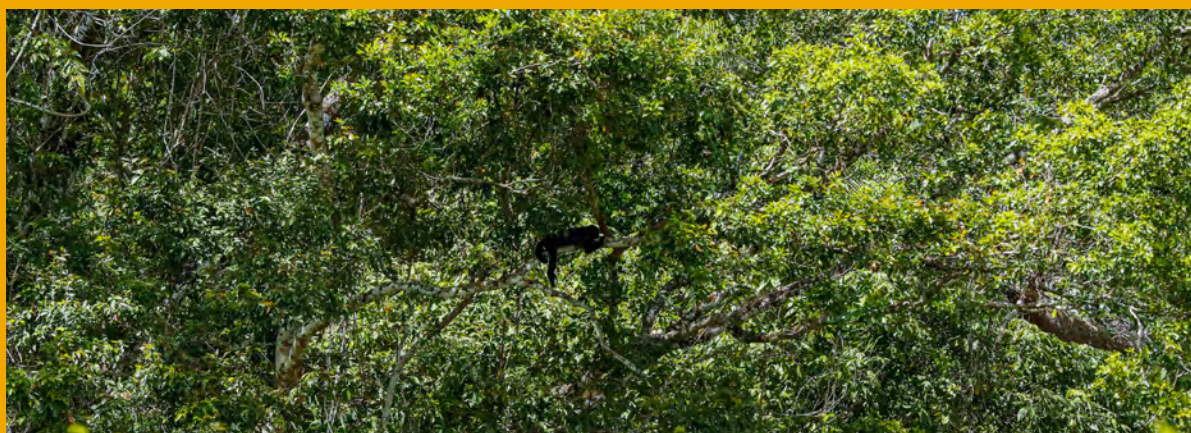
Photo by: David Arrivillaga, FLAAR Mesoamerica, Jun. 22, 2019. Yaxha behind South Acropolis, Petén.

Camera: Canon T3i. Lens: Canon EF 300mm IS II USM. Settings: 1/125 sec; f/6.3; ISO 400.



# Are **Howler Monkeys** registered for Parque Nacional Tikal?

Howler monkeys are well known at Tikal (Coelho, Coelho, Bramblett, Bramblett and Quick 1976; Schlichte 1978). Since this is a popular location, lots of zoologists think of this part as a good area to study. So, howler monkeys have been studied by zoologist at Parque Nacional Tikal in past decades. Plus, there are dozens of nice photos and videos by visitors; I list a short sample here.



**Discover the beauty of Howler Monkeys at Tikal National Park, Guatemala**

[www.youtube.com/watch?v=fxCqPCUhGFo](https://www.youtube.com/watch?v=fxCqPCUhGFo)

Howler Monkeys Tikal National Park Guatemala



**Experience the sounds of Howler Monkeys at Tikal National Park, Guatemala**

[www.youtube.com/watch?v=MmGujekhpRU](https://www.youtube.com/watch?v=MmGujekhpRU)

Howler Monkeys at dawn, Tikal National Park Guatemala



# Howler Monkeys in Cerro Cahuí

Yes, howler monkeys are here. We will be visiting this area and accomplishing field work in Cerro Cahuí (near El Remate area) in coming months. Since the Tikal Park is multiple times larger, and has more biodiversity, most botanists, ecologists, and zoologists head for Tikal. But we will also be studying arboreal mammals in Cerro Cahuí, and of course in PNYNN.

## Close relative(s) of Howler Monkeys; how many other species of Howler Monkeys are in Petén?

How many monkeys are in Petén today? (one spider monkey and one howler) is a different question than "how many monkey species were in the Maya Lowlands 2000 years ago? The Classic Maya (and the Olmecs before) had trade routes down to Costa Rica so bringing up pet capuchin monkeys is not impossible. Plus, there is definitely the second species of howler monkey in Guatemala, the mantled howler. Its area was potentially wider 2000 years ago than it is in the current decades. But for Petén today, there is only one species of howler, *Alouatta pigra*, and one species of spider monkey, *Ateles geoffroyi*.

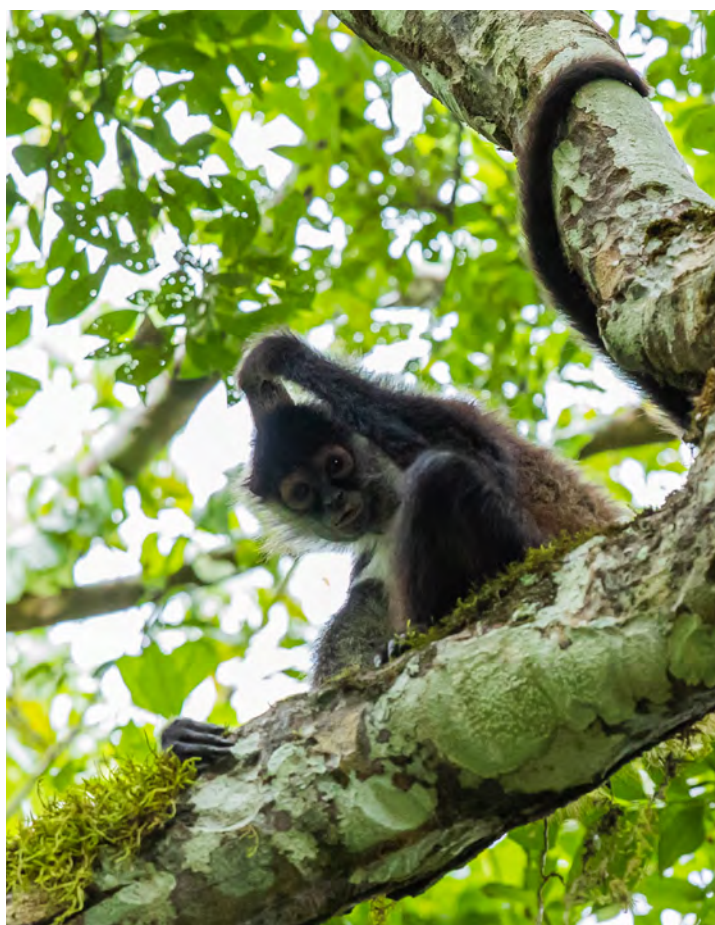


Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 17, 2018. Yaxha Park, Poza Maya, Petén, Guatemala.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/400 sec; 4.5; ISO 2,000.

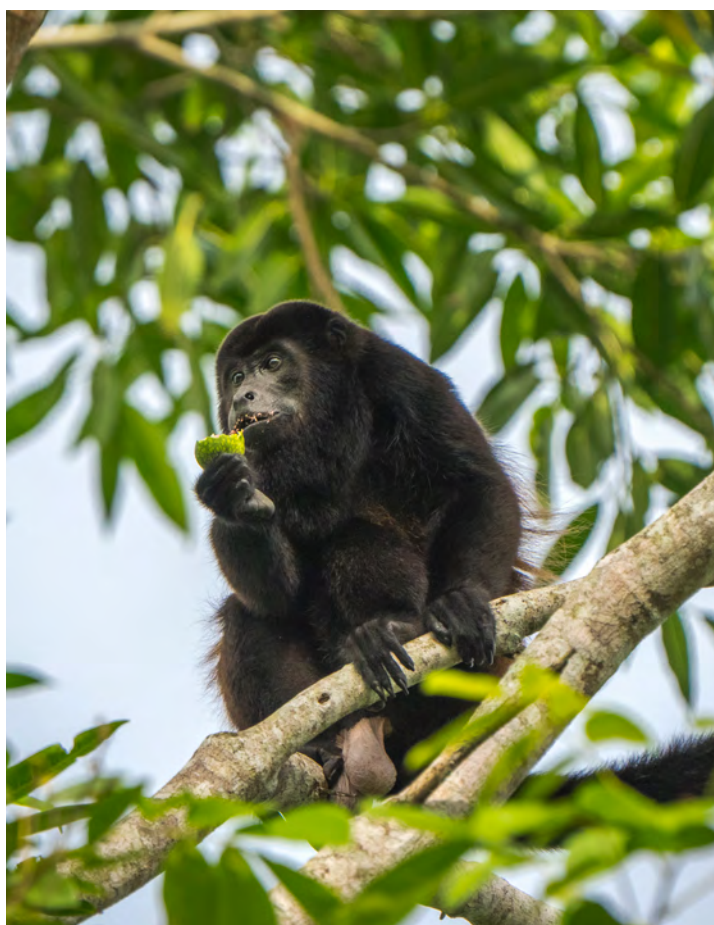


Photo by: David Arrivillaga, FLAAR Mesoamerica, Jun. 19, 2021. Río Juan Vicente.

Camera: Sony Alpha A7C. Lens: Sony FE 200-600mm G OSS. Settings: 1/1,250 sec; f/8; ISO 2,500.



## Do Howler Monkeys feed in trees near people's houses?

Howler monkeys feed any tree that has the fresh leaves or other tree parts that they find delicious. In the Chisec area of Alta Verapaz the howler monkeys trumpet their noise from the karst hilltops (since these are the areas too steep for milpas, so the trees on top of karst rock hilltops are not chopped down). But, to our knowledge no one or at most very few zoologists have studied howler monkeys anywhere around Chisec. Schlichte studied them near Cobán, Alta Verapaz, half a century ago, but gave up because the karst rock was too hard to hike around and the hills were too steep. He went to Tikal to complete his study.

In the lowland Rio Ixbolay area (where the river is crossed by the highway) I saw and heard howler monkeys within a few meters of houses that were along the edge of the highway. So, howler monkeys will come to eat their favorite leaves even near people's houses (as long as no one bothers or attacks them).

In a hotel on the shore of Lake Izabal, on the outskirts of El Estor, howler monkeys ate leaves from trees within a few meters of the different bungalows and the restaurant area of the hotel.

Comparable at hotel Ecolodge El Sombrero, a few meters outside the entrance to the Yaxha portion of Parque Nacional Yaxha, Nakum y Naranjo. Howler monkeys wander through the tree canopies day and night (depending on which trees are producing the leaves they want in that month). Howler monkeys ignore people because they know that no one in the hotel will bother them.

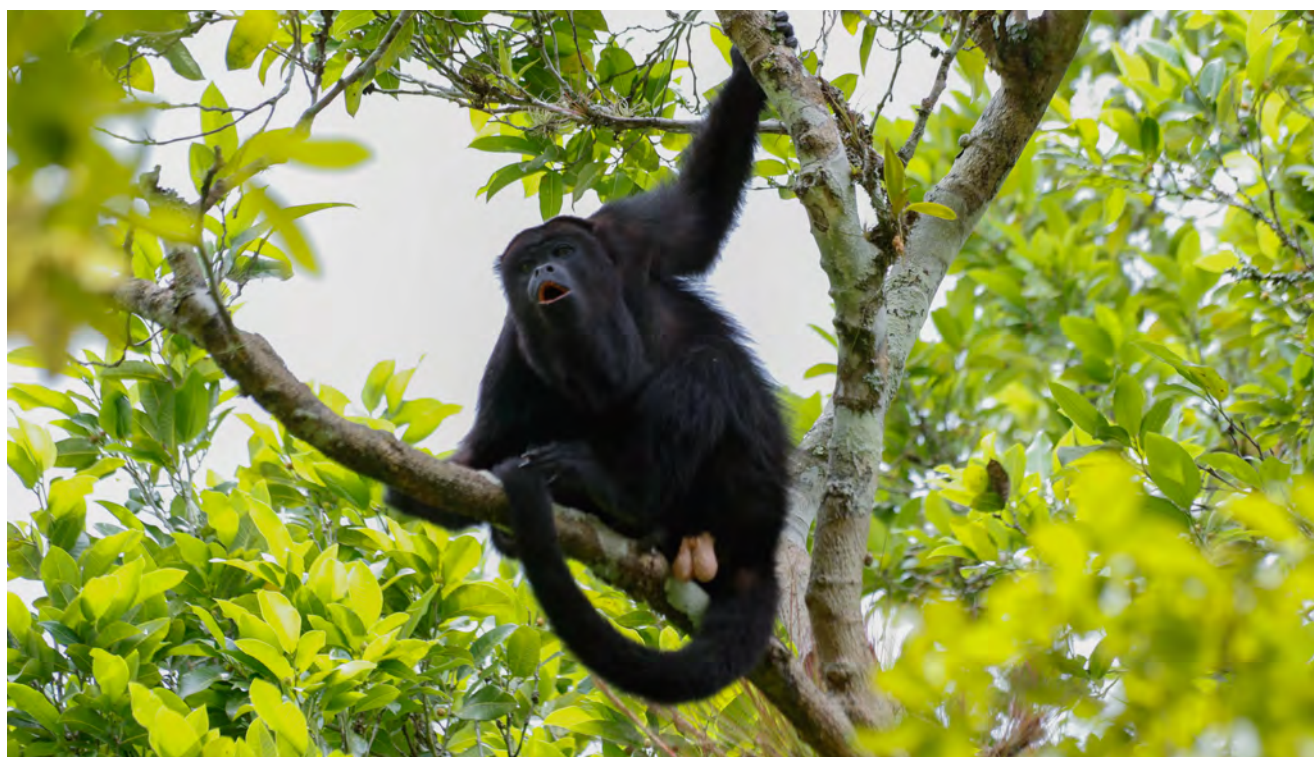


Photo by: Boris Llamas, FLAAR Mesoamerica, Jun. 22, 2019. Yaxha Park, Petén, Guatemala.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/160 sec; f/9; ISO 800.





Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 15, 2018.  
Topoxté, Laguna Yaxha, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II  
USM. Settings: 1/640 sec; f/3.5; ISO 2,000.



# What can we learn from the **photographs** taken so far?

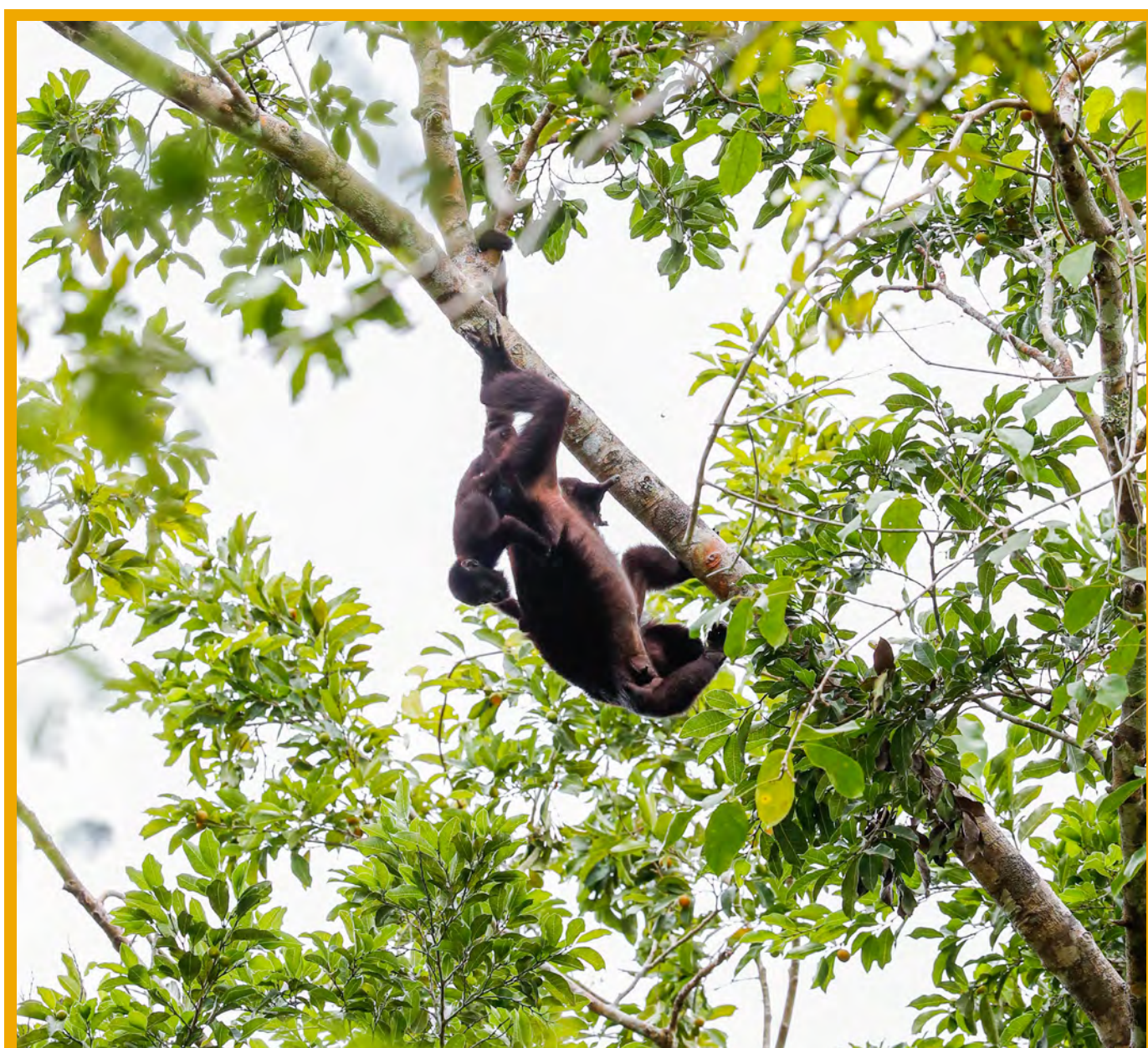
Most photographs show either:

- ◆ Howler laying down on a branch, back legs hanging free
- ◆ Howler hanging from one branch eating leaves from another branch
- ◆ Howler trumpeting his myth that he is the alpha male of the jungle

## **CAPTION FOR PHOTOS TAKEN FROM PAGE 13 TO 16:**

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018. El Caoba to Yaxha, Naranjo y Nakum.

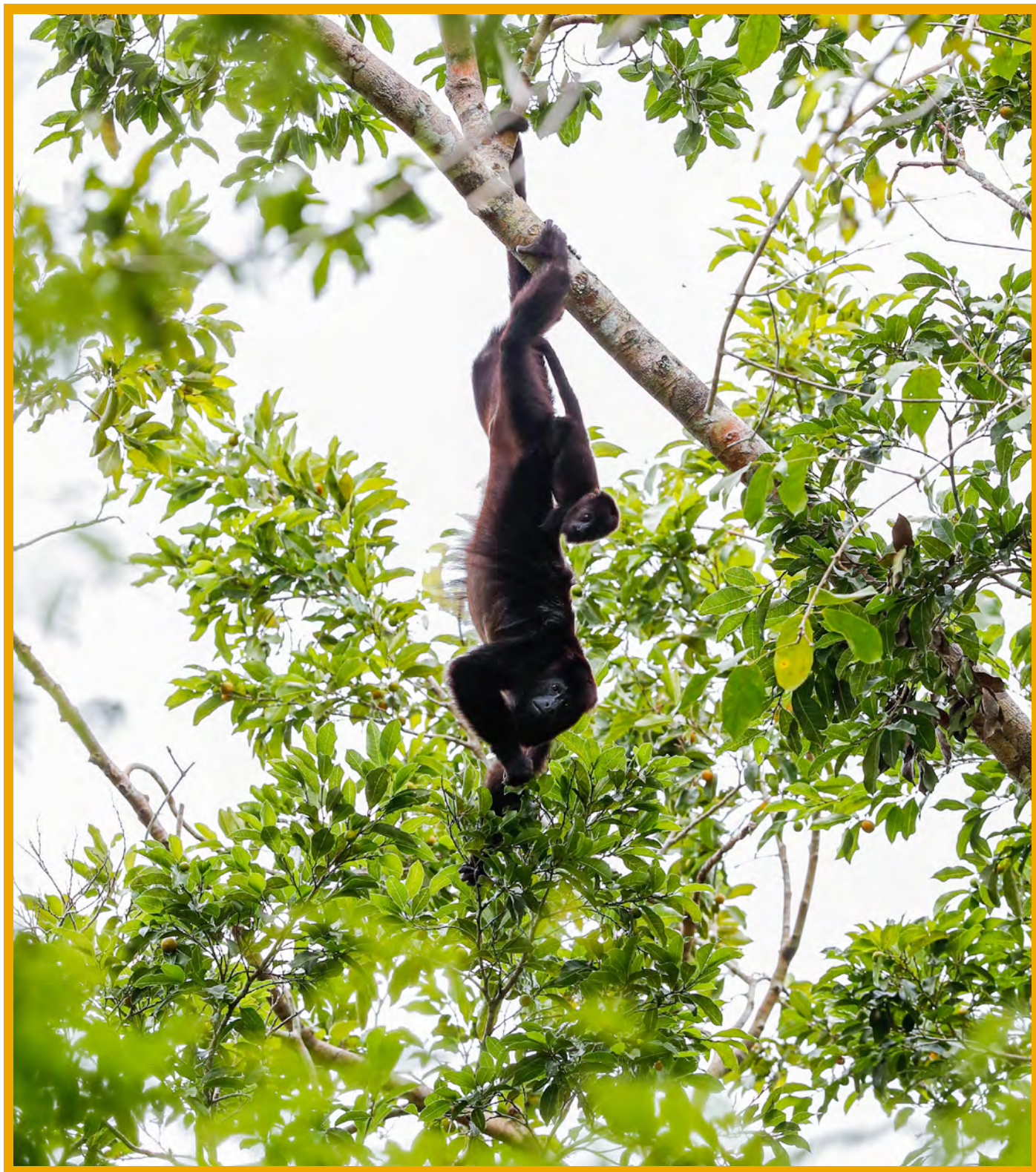
Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/1,000 sec; f/5.6; ISO 640.



**Relaxed** (but still keeping its eye on the surroundings). The monkey is on a palo de jiote tree.

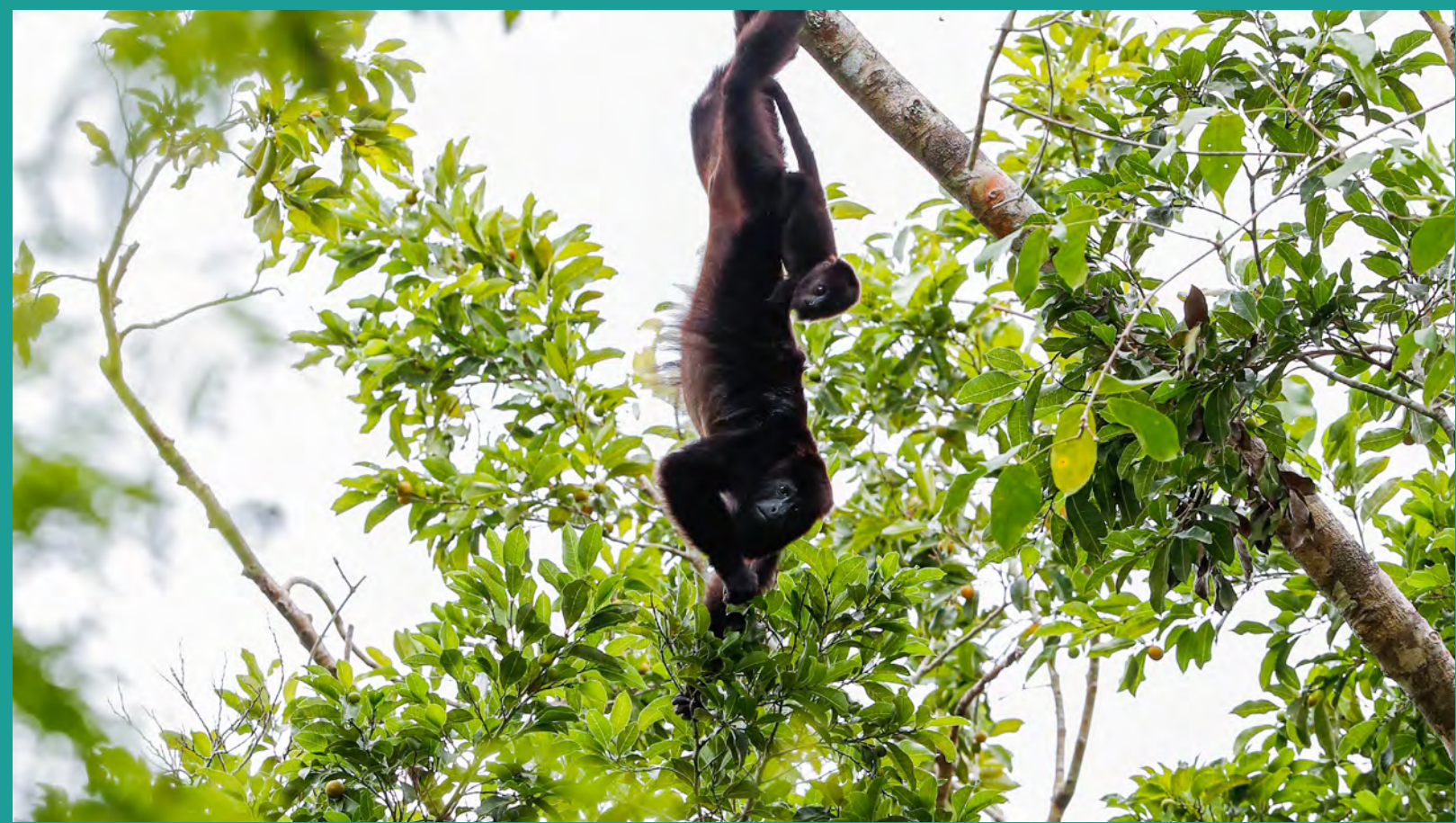


Many scientists have spent days, weeks, months, or a lifetime studying what howler monkeys do. They even time them. In our bibliography you can read for weeks about howler monkey behavior.

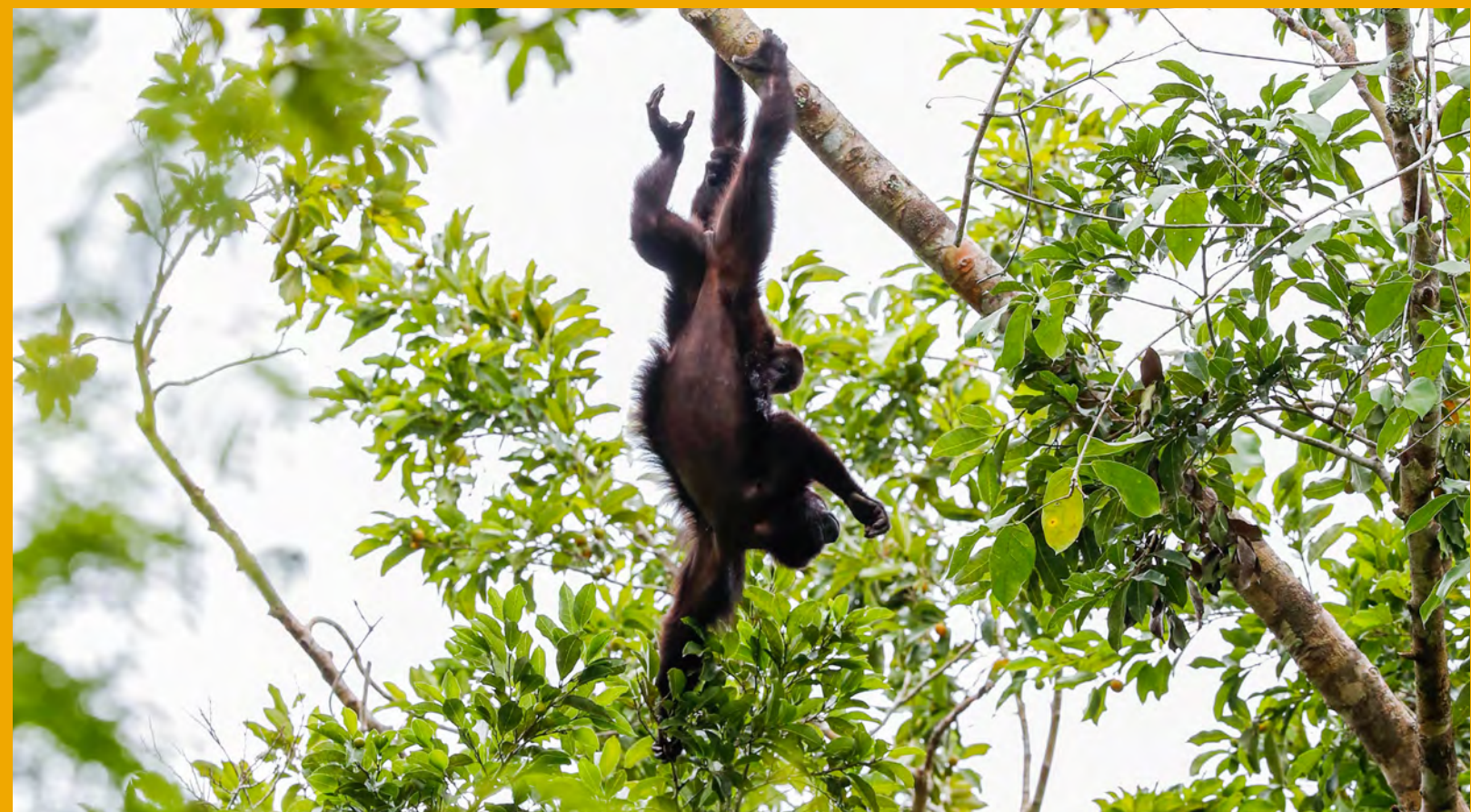


**The mother** howler is using her tail to hold not only her entire weight but also the weight of her young offspring (which crawls around on the top part as the mother is picking and eating leaves below).





**The mother** howler now putting on a leg on the branch above (in addition to her tail). This is because she is about to try to pull herself up.



**Now**, another leg is going back up to pull herself up (as she is either finished eating, or patience with offspring crawling around her back).







# Baby Howler Monkeys are super cute

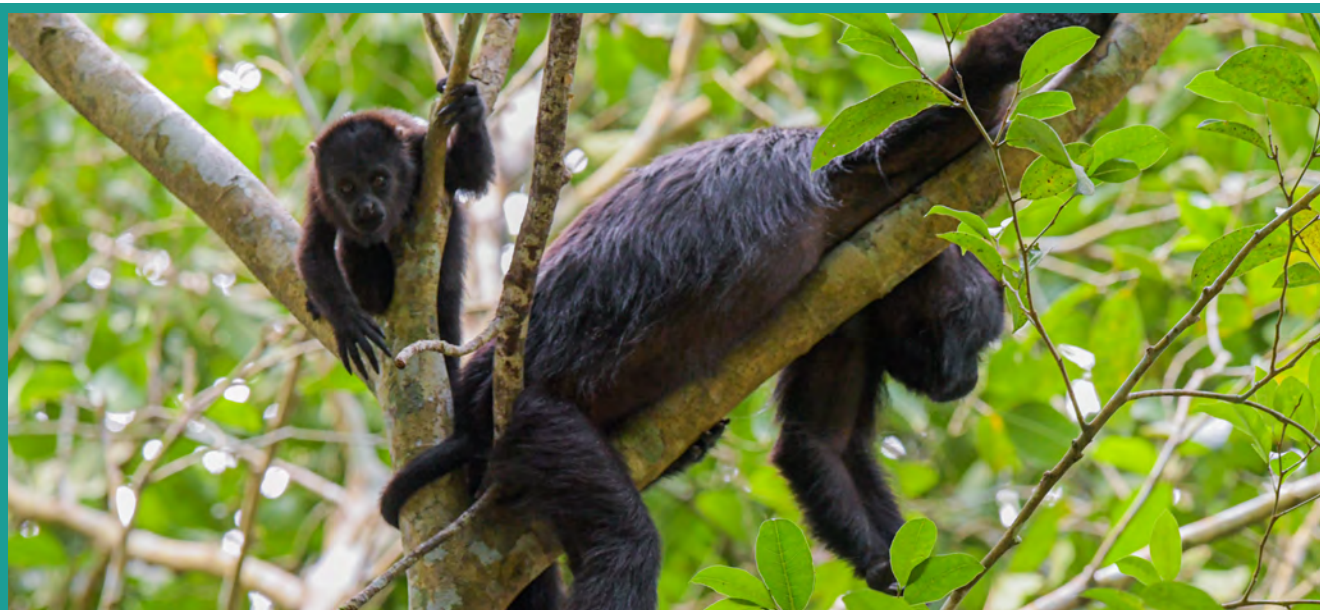
Baby howlers are cute due to all their furry coverage. But to photograph them requires telescopic flash system or else they appear with no detail.



Here is a young howler with no Photoshop rescue work. And no telephoto flash.

Photo by: Erick Flores, FLAAR Mesoamerica, Sep. 6, 2018. Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/30 sec; f/11; ISO 5,120.



Here is the baby rescued via Photoshop or Lightroom. Capture One is actually a significantly better software, especially for RAW files such as NEF. But Capture One is expensive and students learn only Photoshop and occasionally also Lightroom.

Photo by: Nicholas Hellmtuth, FLAAR Mesoamerica, Sep. 6, 2018. Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/30 sec; f/11; ISO 5,120.





**Why** is this howler walking upside down? Is it due to the weight of the baby that is clinging to its back? If you see the entire sequence of photos, you learn that the monkey parent is feeding on leaves below it.

And if you see all the photos taken in the same several minutes, you will notice that the male howler is seated howling (while mother howler is eating so she can nurse the young howler).

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018. El Caoba to Yaxha, Naranjo y Nakum.  
Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/1,000 sec; f/5.6; ISO 640.

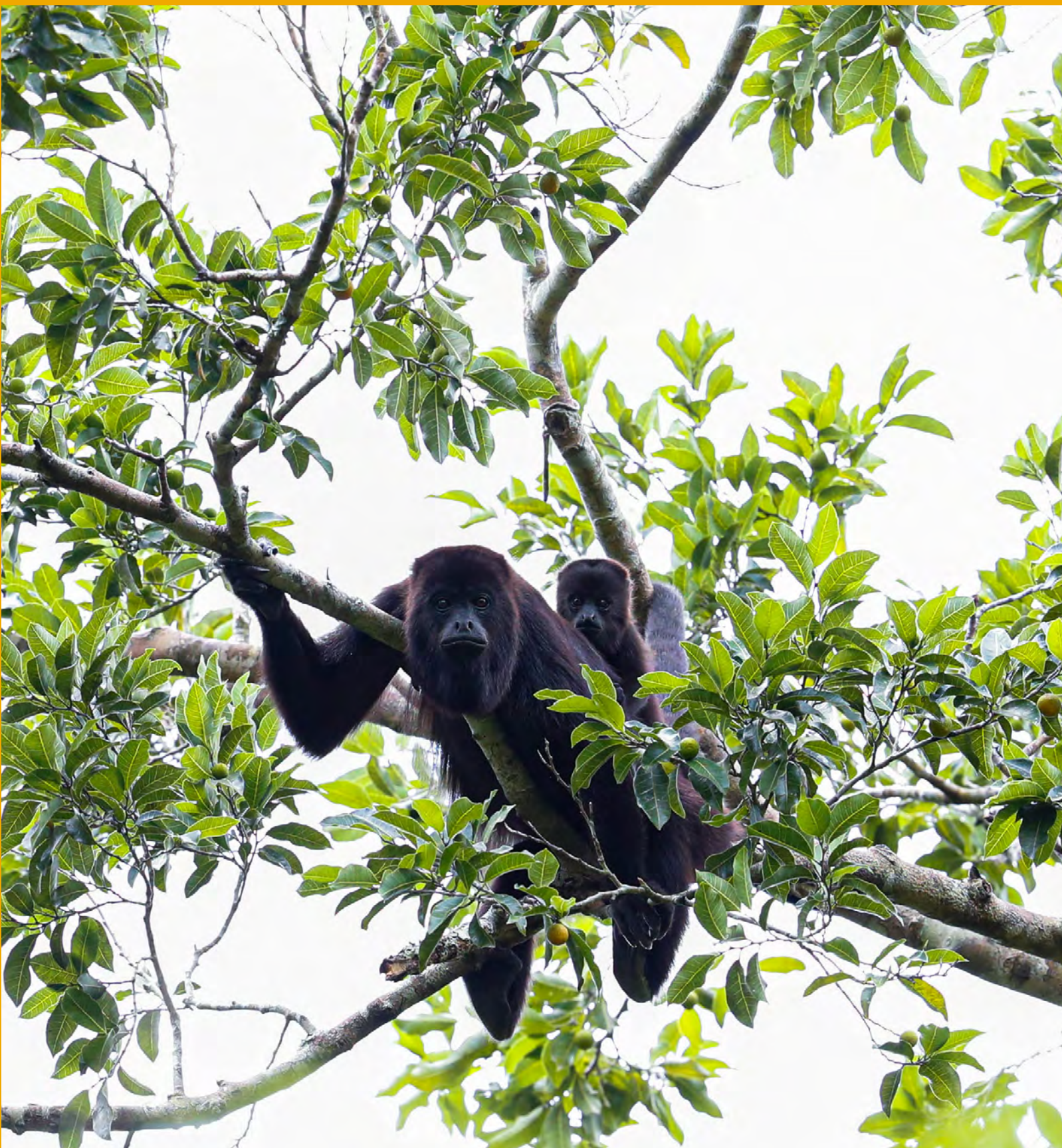




**Here** is the alpha male plus mother plus young howler.

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018. El Caoba to Yaxha, Naranjo y Nakum.  
Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/1,000 sec; f/4.5; ISO 1,250.



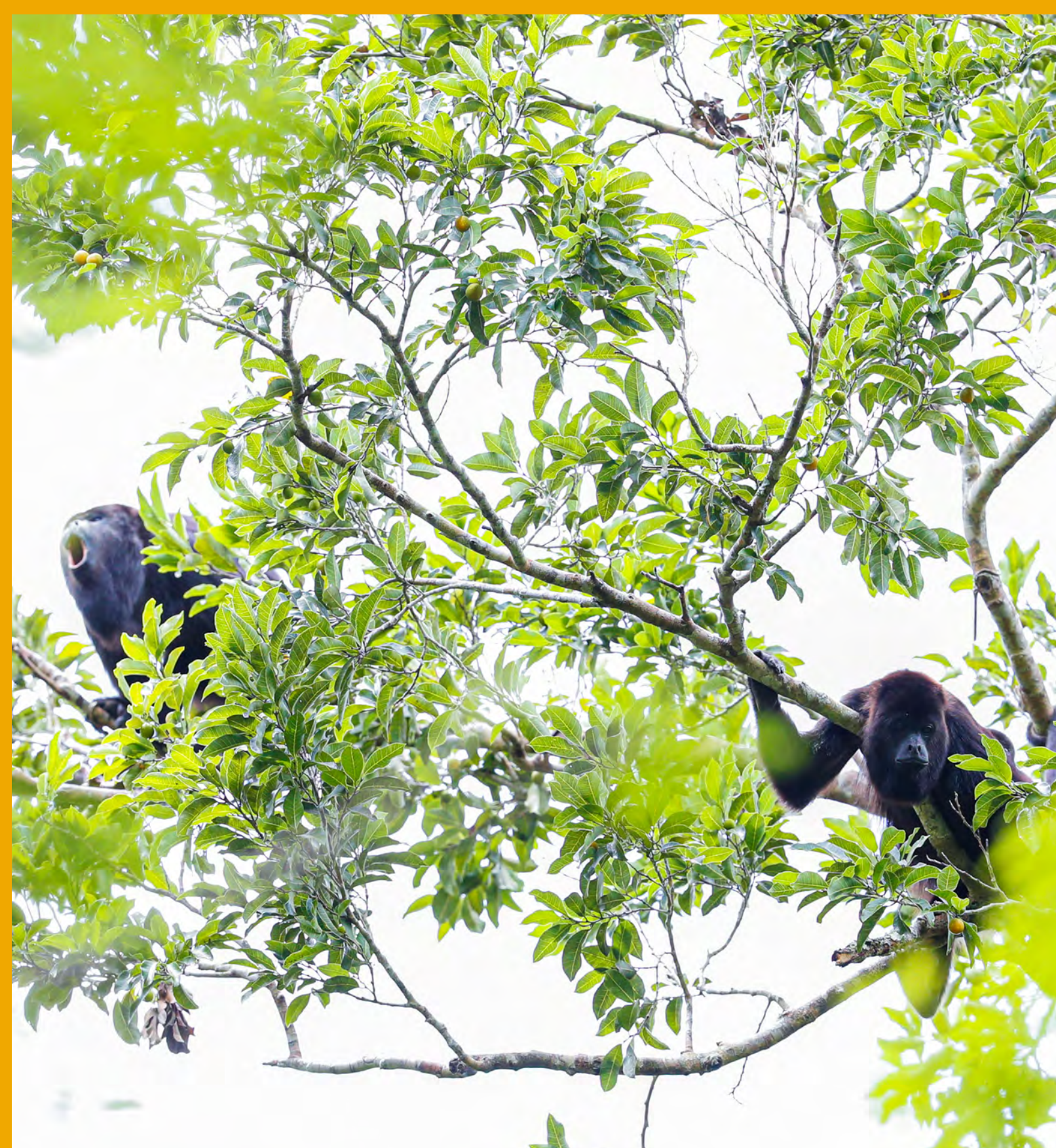


**A few** minutes previously, the male left so it could begin to howl. So mother and child are watching us down below (they notice that we are present below).

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018.  
El Caoba to Yaxha, Naranjo y Nakum.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II  
USM. Settings: 1/1,000 sec; f/4.5; ISO 1,250.





**Now** the male begins to brag and warn other howlers to stay away.

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018.  
El Caoba to Yaxha, Naranjo y Nakum.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II  
USM. Settings: 1/1,000 sec; f/4.5; ISO 1,000.





Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 18, 2018.  
El Caoba to Yaxha, Naranjo y Nakum, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II  
USM. Settings: 1/1,000 sec; f/5.6; ISO 1,000.



# Howler Monkeys use their Tail as their “Additional Arm”

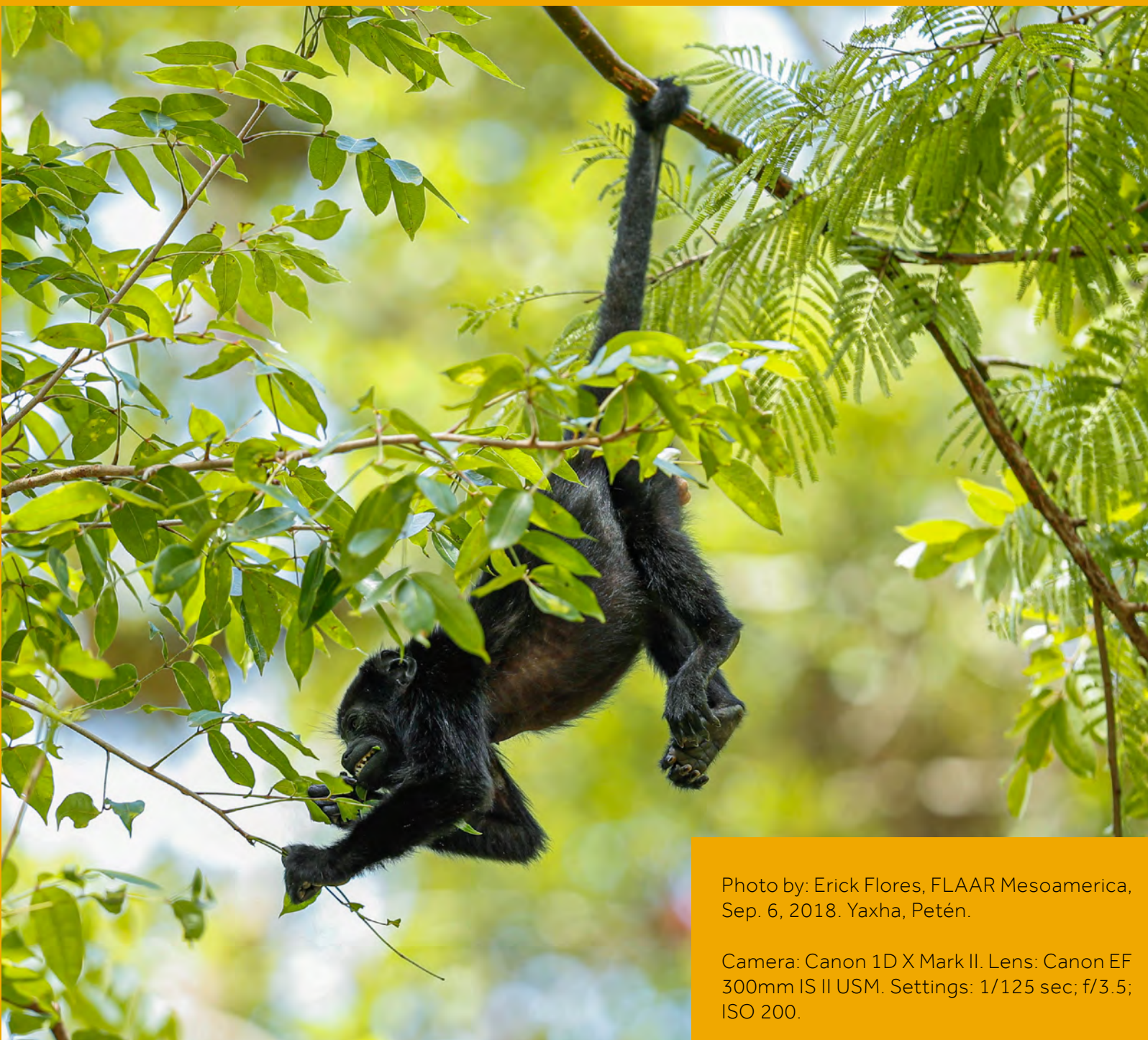


Photo by: Erick Flores, FLAAR Mesoamerica, Sep. 6, 2018. Yaxha, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/125 sec; f/3.5; ISO 200.

The tail is wrapped around the branch so tightly that it supports the entire weight of the healthy sized howler monkey. The tail appears longer than either of the hind legs. Both hind legs are hanging down.

The monkey is eating leaves; this is what they eat most of the day. There are endless number of studies that list everything they eat by percent (even what tree species).



# Challenges of **photographing** something that is solid black on a tree limb that is light colored

You can accomplish award winning photos of monkeys:

- ◆ If you are high up on a Mayan temple pyramid or up on an observation tower, and you are looking down, the howler may be illuminated by the sun.
- ◆ Or, if the howler is in a tree that is not covered by limbs of other trees, so the howler is illuminated.

But if you are down on the ground and the howler is surrounded by leaves that block the sun, it's a challenge to obtain a usable photo since if your ISO is too high the image will be fuzzy. So, you need a special telescopic attachment for your flash. A Broncolor (Made in Switzerland we hope) is over two THOUSAND dollars. And it is so fragile, literally, that you can hardly move it anywhere. It lasted only a few weeks on our field trips (and had to be sent for repair; I doubt it will last much longer out in the field). But when it functions it provides awesome lighting.

So not many biologists have telescopic flash equipment with them. On our upcoming field trips, we will be experimenting with several different brands, so we can learn which ones function best for solid black howler monkeys high up in a tree:

- ◆ Better Beamer Flash Extender, used this in past years
- ◆ MagMod MagBeam Kit, new for us; but a bit quirky
- ◆ Plus, a third brand, new for us, and did not function as advertised
- ◆ Broncolor Siros system; powerful but fragile

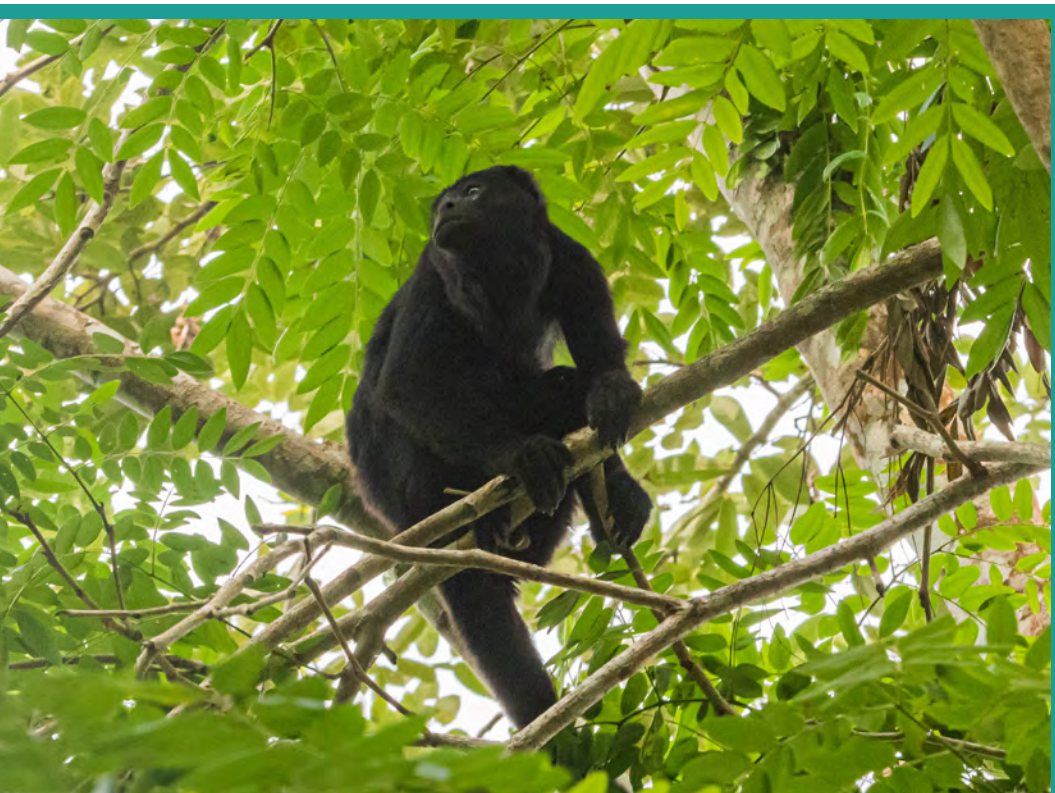


Photo by: Nicholas Hellmuth, FLAAR  
Mesoamerica, Aug. 22, 2018.  
Ecolodge El Sombrero, Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-Micro-NIKKOR 200mm IF-ED Macro.  
Settings: 1/250 sec; f/14; ISO 8,000.



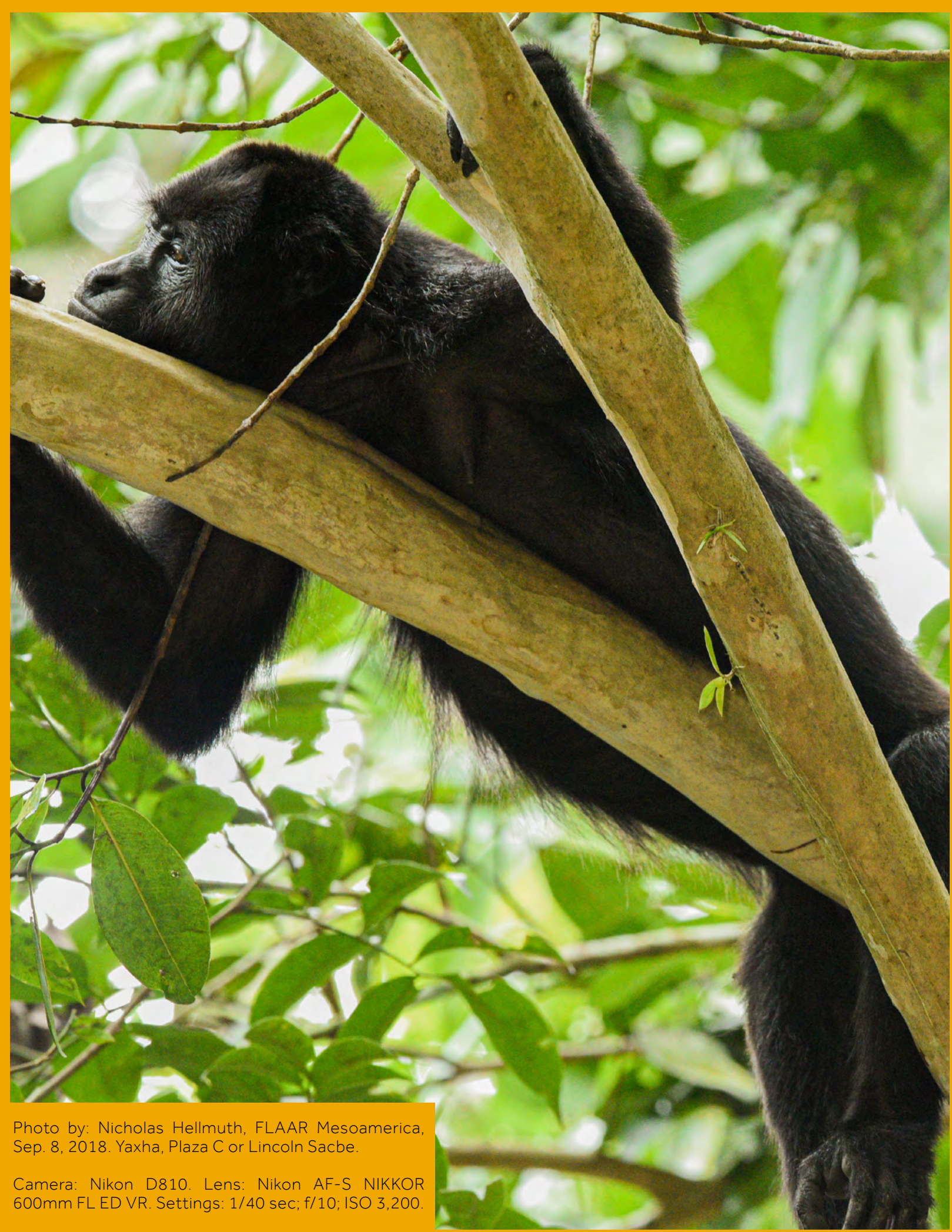


Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Sep. 8, 2018. Yaxha, Plaza C or Lincoln Sacbe.

Camera: Nikon D810. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/40 sec; f/10; ISO 3,200.





With flash (either telescopic flash accessory on normal flash unit on the camera or possibly with our special telescopic flash unit).

Downside is that the tree is overexposed. With no flash. And with no Photoshop work whatsoever.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Sep. 6, 2018. Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/80 sec; f/11; ISO 10,000.





With no flash. And with no Photoshop work whatsoever.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Sep. 6, 2018. Yaxha, Petén.  
Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/80 sec; f/11; ISO 10,000.



# Concluding Discussion and Summary on Howler Monkeys

In rain forest areas you definitely notice howler monkeys everywhere (since they are sedentary much of the day). The spider monkeys you see in the same nature reserves and national parks were swinging through the branches or trying to get you to move out of their territory (spider monkeys urinate down on you and if that does not drive you away, they break off branches and throw the pieces at you). We have seen two spider monkeys trying for over 5 minutes to break off a large branch to throw down on us (in PNYNN). But the monkeys had selected a branch that was too large and not dead-and-dried enough, so they could not break it off.

I estimate that 98% of the monkeys pictured on Early Classic and Late Classic lowland Maya ceramics are spider monkeys. Yet the Classic Maya very much knew about howler monkeys (and surely ate them also). Although in decades of studying iconography of the Classic Maya I have not found many renditions of howler monkeys, after weeks of research on howler monkeys, I stumbled across a chapter by Newman, Houston, Garrison and Román (2015) that showed more potential howler monkeys in one single burial than I have seen in the previous half century in museums and monographs around the world. I would want to dedicate significant time to study in detail photographs of actual howlers and compare these images with spider monkeys to determine, zoologically, how many renditions in the El Diablo (El Zotz) tomb were intended to be specific howler monkeys and whether any are transitional (part howler, part spider monkey).

There is also a book on spider monkeys in Maya art. The woman who wrote kindly gave me a copy at an archaeology symposium (Sala and Philips 2016). Karl Taube is also working on the theme of spider monkeys.

**Since I am writing my bibliography in my St Louis office, I don't have my kilometers of shelves of books that are in my Guatemala office. But the two items each dated 2015 below in the bibliography are enough to keep you reading for hours and then cogitating for even longer "if almost no howler monkeys exist in 50 years of studying mammals in Classic Maya art, what can explain an Early Classic Maya tomb filled with multiple monkey head-and-face images of which some indeed may be howler monkeys."**

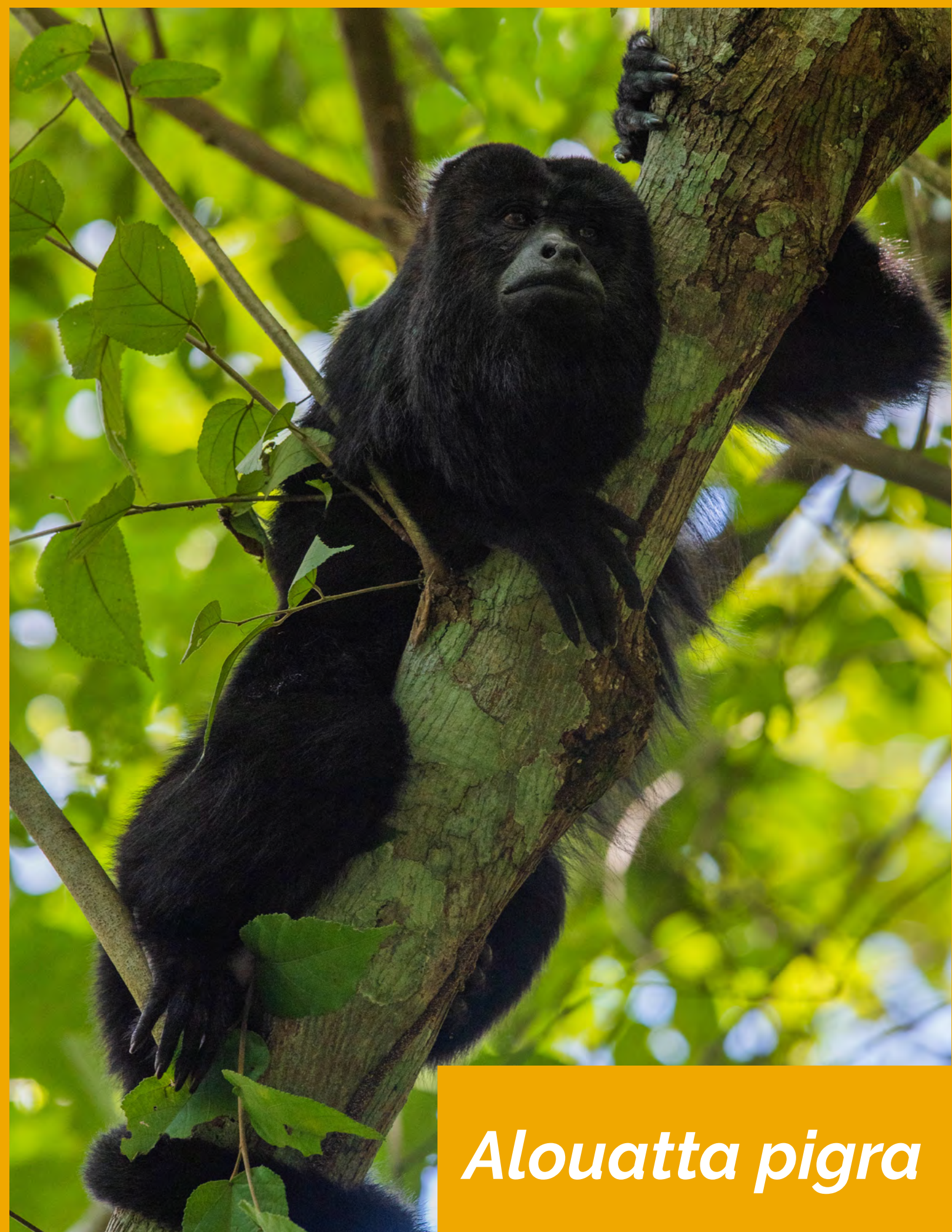
However our current research is on the actual howler monkeys harvesting leaves up in the tree tops and the males trying to pretend they are the best available male for local females (and trying to protect their territory by scaring off other howlers).

## **CAPTION FOR PHOTO ON NEXT PAGE:**

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Aug. 22, 2018. Ecolodge El Sombrero, Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/125 sec; f/9; ISO 3,200.





*Alouatta pigra*





Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Aug. 22, 2018. Ecolodge El Sombrero, Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/125 sec; f/9; ISO 3,200.





Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Aug. 22, 2018. Ecolodge El Sombrero, Yaxha, Petén.

Camera: Nikon D5. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/250 sec; f/8; ISO 8,000.



# References Cited and Suggested Reading on **Howler Monkeys**

## **Most helpful monographs on this mammal:**

There is no monograph on Howler Monkeys that we have yet found. These monkeys certainly deserve more attention in Guatemala and adjacent countries.

## **Most helpful chapter or article on this animal:**

For the iconography of monkeys, the best I have found so far is by Newman, Houston, Garrison, and Roman, 2015, the first significant mention of howler monkeys in Maya art.

## **Most helpful web pages on this monkey:**

Most web pages that show howler monkeys are tourist snapshots. Our short list of such web pages is in our main bibliography which is a separate independent .pdf.

**Note: since the present edition is a work-in-progress  
this bibliography also is a work-in-progress**

## **BRAAKHUIS, H.**

1987 Artificers of the days: Functions of the howler monkey gods among the Mayas. *Bijdragen tot de Taal-, Land en Volkenkunde* 143 (1987), no: 1, Leiden, 25-53.

Can be downloaded from various websites. Skip JSTOR (they gouge you; you can find the identical article with a more easy (free) download where you don't need to provide all your personal information.

## **COOK, Suzanne**

2016 The forest of the Lacandon Maya: an ethnobotanical guide. Springer. 334 pages.

Sold online: [www.springer.com/la/book/9781461491101](http://www.springer.com/la/book/9781461491101)

## **NEWMAN, Sarah, HOUSTON, Stephen, GARRISON, Thomas and Edwin ROMÁN**

2015 Outfitting a King. Chapter 3, in *Temple of the night sun: a royal tomb at El Diablo, Guatemala*. Precolumbian Mesoweb Press.

I estimate this chapter is pages 84-179 not counting references cited, but with the PDF version on line it's mathematics to estimate start of the chapter.

Chapters 1, 2, 3, and 5 are easy downloads. I could not find Chapter 4 or 6 yet, nor front cover or introduction. But the chapters themselves are much appreciated. It is so much better to have all this art from burial context, site context, documented context than the sadly looted, stolen art in museums and private collections.

## **RICE, Prudence M. and Katherine E. SOUTH**

2015 Revisiting Monkeys on Pots: A Contextual Consideration of Primate Imagery on Classic Lowland Maya Pottery. *Ancient Mesoamerica* 26: 275-294.

Whereas the Newman et al. article is 99% provenanced ceramics and early classic, the art in Revisiting Monkeys on Pots is primarily Late Classic ceramics in museums and private collections. Interesting that the two best articles on monkeys in Classic Maya art came out the same year.



## Videos on Howler Monkeys

We try to find videos on Howler Monkeys of Guatemala or at least in adjacent countries in Mesoamérica (Central México down to northwestern Costa Rica; Mesoamérica is the area of the Americas either occupied by the Mayans (México, Guatemala, Belize, western Honduras, western El Salvador) or influenced through long distance trade (down to northwestern Costa Rica) by the Olmecs, Teotihuacanos, Mayans, Toltecs, and then Aztecs.

## Base Camp Assistance in Parque Nacional Tikal

While doing field work Tikal National park about a decade ago, we appreciate the house provided to us by the park administration. We also thank the Solis family, owners of the Jaguar Inn, for providing a place to stay when the park facilities had other occupants. We also thank the Solis family for food in their Jaguar Inn restaurant.

## Base Camp Assistance in PNYNN

We thank Biologist Lorena Lobos and both co-administrators of PNYNN Arq. José Leonel Ziesse (IDAEH) and Ing. Jorge Mario Vázquez (CONAP)) for providing a place to stay for the photographers, biologists, and assistants of the FLAAR Mesoamerica team of flora and fauna.

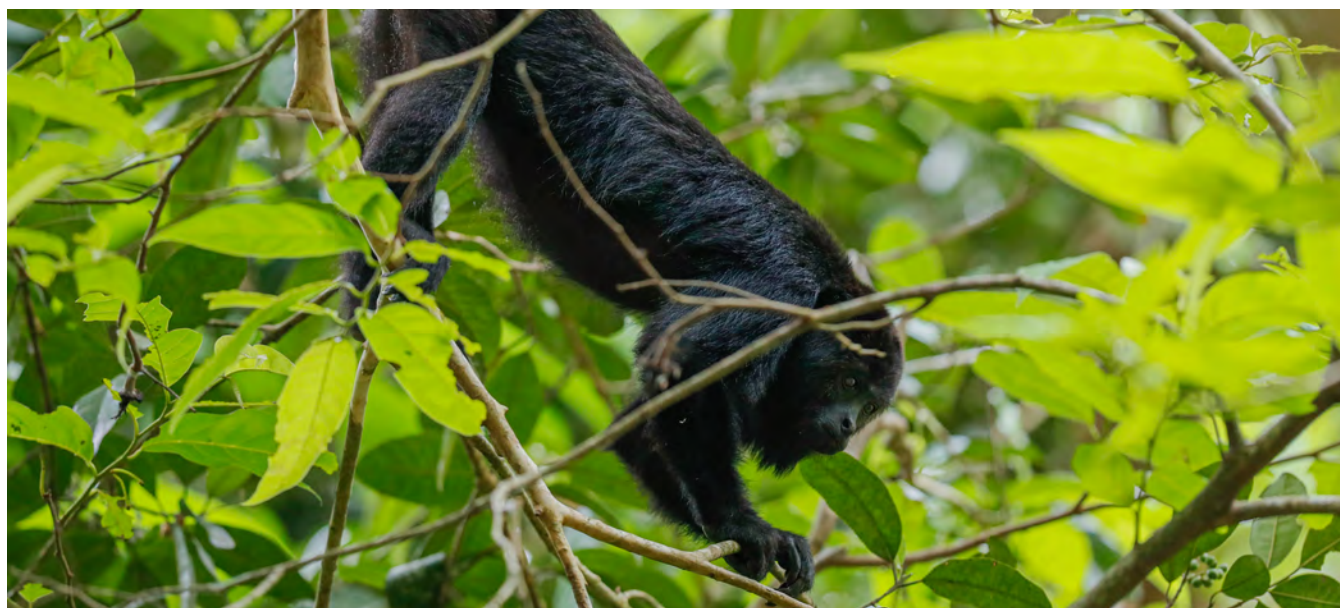
In turn FLAAR purchased and donated a cooking stove when the original one no longer functioned.



### CAPTION FOR PHOTO:

Photo by: Erick Flores, FLAAR Mesoamerica, Aug. 17, 2018. Yaxha Park, Petén.

Camera: Canon 1D X Mark II. Lens: Canon EF 300mm IS II USM. Settings: 1/400 sec; f/3.5; ISO 2,500.





## Ecolodge El Sombrero

I thank Gabriella Moretti, owner of Ecolodge El Sombrero, for providing hotel room and meals while we have been doing field work at Parque Nacional Yaxha, Nakum y Naranjo. We also appreciate the hospitality of her sons, Sebastián de la Hoz and Juan Carlo de la Hoz. Every workday is exhausting because we are carrying and then using very heavy cameras, super-telephoto lenses, sturdy tripods, large gimbals or ball tripod heads. Thus, it is crucial for my health to be able to rest and totally recuperate every night in order to be ready for the following day of botanical and zoological adventures in Parque Nacional Yaxha, Nakum y Naranjo.

Equally crucial is having a place to charge the batteries of the computers, of all the cameras, and of the cell phones. Solar power is great, but it lasts only an hour, or less, if you plug in multiple computers and cameras and flash batteries to charge. So a place with enough electricity to charge the entire mass of essential field work equipment is essential and thus very much appreciated.

Contact Info: +502 5460 2934, VentasElSombrero@gmail.com or WhatsApp.

<http://elsombreroecolodge.com/>

This report can be cited in your preferred style. Here is the basic information:

**HELLMUTH, Nicholas**

2021 Happy Howler Monkeys, *Alouatta pigra*, Parque Nacional Yaxha, Nakum y Naranjo. FLAAR (USA) and FLAAR Mesoamerica (Guatemala).

**BACK COVER PHOTOGRAPH:**

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Sep. 8, 2018. Yaxha, Plaza C or Lincoln Sacbe.

Camera: Nikon D810. Lens: Nikon AF-S NIKKOR 600mm FL ED VR. Settings: 1/40 sec; f/10; ISO 3,200.



# Permissions

Any school, college, university, botanical garden, zoological garden, botanical or zoological association (or club) may post this report on their web sites, (at no cost) as long as they link back to one of our web sites: either [www.maya-ethnobotany.org](http://www.maya-ethnobotany.org) or [www.maya-ethnozoology.org](http://www.maya-ethnozoology.org) or [www.maya-archaeology.org](http://www.maya-archaeology.org) or [www.digital-photography.org](http://www.digital-photography.org) or [www.FLAAR-Mesoamerica.org](http://www.FLAAR-Mesoamerica.org).

FLAAR (in USA) and FLAAR Mesoamerica (in Guatemala) are both non-profit research and educational institutes, so there is no fee. And you do not need to write and ask permission; but we do appreciate when you include a link back to one of our sites.

Any school, college, university, botanical garden, etc. can post this PDF on their school or university or institute web site for their students to download at no cost. And you do not need to write and ask permission; but we do appreciate when you include a link back to one of our web sites.

Any web site in or related to the Municipio of Livingston, is also welcome to post this PDF on their web site (no fee). This permission includes travel agencies, hotels, guide services, etc. And you do not need to write and ask permission; but we do appreciate when you include a link back to one of our web sites.

CECON, CONAP, FUNDAECO, INGUAT, ARCAS, IDAEH, Municipio de Livingston, etc. are welcome to publish our reports, at no cost.

All national parks, nature reserves, and comparable are welcome to have and use our reports at no cost.

USAC, UVG, URL, and other Guatemalan universities and high schools, and schools, are welcome to post our reports, at no cost.

## If You Wish Our Flora and/or Fauna **Material** as a Powerpoint Presentation

Dr Nicholas (Hellmuth) is flown all around the world to lecture. He has spoken in Holland, Belgium, Germany, Austria, Greece, Italy, Serbia, Croatia, Bosnia, Russia, UK, Dubai, Abu Dhabi, Thailand, Korea, China, Japan, Canada, USA, Mexico, Panama, Guatemala, etc. He can lecture in Spanish, German, or English (or simultaneously translated to your language). He has lectured at Harvard, Yale, Princeton, UCLA, Berkeley and dozens of other universities, colleges, museums, alumni clubs, etc.

He also writes cartoon books on plants and animals of Guatemala so gives presentations to primary school, high schools, etc. [www.MayanToons.org](http://www.MayanToons.org) shows our educational material for children.

In today's COVID era, we present via ZOOM, Google Meet or comparable platforms. This way there are no costs for airfare, airport shuttle, hotel, or meals. But it is appreciated when a donation can be provided before the lecture presentation to assist our decades of research.





## Acknowledgements to FLAAR Mesoamérica

---

**Flor de María Setina** is the office manager, overseeing all the diverse projects around the world (including FLAAR-REPORTS research on advanced wide-format digital inkjet printers, a worldwide project for over 20 years). We also utilize the inkjet prints to produce educational banners to donate to schools.

**Vivian Díaz** environmental engineer, is project manager for flora, fauna projects (field work and resulting reports at a level helpful for botanists, zoologists and ecologists, and for university students). Also coordinates activities at MayanToons, division where educational material for kids is prepared.

**Victor Mendoza** identifies plants, mushrooms, lichen, insects, and arachnids. When his university schedule allows, he also likes to participate in field trips on flora and fauna research.

**Vivian Hurtado** prepares the bibliography for each subject and downloads pertinent research material for our e-library on flora and fauna. All of us use both these downloads plus our in-house library on flora and fauna of Mesoamerica (Mexico through Guatemala into Costa Rica).

**Andrea de la Paz** is a designer who helps prepare the master-plan for aspects of our publications. She is our editorial art director

**Senaida Ba** is photography assistant for many years. She knows the Canon, Nikon and is learning the two new Sony mirrorless cameras. She prepares, packs, sets-up, and helps the photographers before, during, and after each day's field trip.

**Jaqueline Gonzalez** is a designer who puts together the text and photographs to create the actual report (we have several designers at work since we have multiple reports to produce).

**Roxana Leal** is Social Media Manager for flora and fauna research and publications, and MayanToons educational book projects

**Maria Alejandra Gutierrez** is an experienced photographer, especially with the Canon EOS 1D X Mark II camera and 5x macro lens for photographing tiny insects, tiny flowers, and tiny mushrooms. Work during and after a field trip also includes sorting, naming, and processing. And then preparing reports in PDF format.

**David Arrivillaga** is an experienced photographer and is able to handle both Nikon and the newest Sony digital cameras. Work during and after a field trip also includes sorting, naming, and processing. And then preparing reports in PDF format.

**Juan Carlos Hernandez** takes the material that we write and places it into the pertinent modern Internet software to produce our web pages (total network is read by over half a million people around the world).

**Paulo Nuñez** is a webmaster, overlooking the multitude of web sites. Internet SEO changes every year, so we work together to evolve the format of our web sites.

**Valeria Aviles** is an illustrator for MayanToons, the division in charge of educational materials for schools, especially the Q'eqchi' Mayan schools in Alta Verapaz, Q'eqchi' and Petén Itzá Maya in Petén, and the Q'eqchi' Mayan and Garífuna schools in the municipality of Livingston, Izabal.

**Josefina Sequen** is illustrator for MayanToons and also helps prepare illustrations for Social Media posts and for animated videos.

**Rosa Sequen** is also an illustrator for MayanToons and also helps prepare illustrations for Social Media posts and for animated videos.

**Laura Morales** is preparing animated videos in MayanToons style since animated videos are the best way to help school children how to protect the fragile ecosystems and endangered species

**Heidy Alejandra Galindo Setina** joined our design team in August 2020. She likes photography, drawing, painting, and design.

**Maria José Rabanales** she is part of the team for editing photographic reports and educational material of Flora and Fauna since September 2020. She works together with others of the team to prepare the finished pdf editions of the material of the Yaxha, Nakum and Naranjo Project.

**Alejandra Valenzuela**, biology student is now part of Flora y Fauna's photographic report and educational material editing team since September 2020.

**Cristina Ríos** designer student who join the editorial team on December 2020. She will combine the text, pictures and maps into the FLAAR Mesoamerica editorial criteria.

**Alexander Gudiel**: designer who join the editorial design team on December 2020. He will combine the text, pictures and maps into the FLAAR Mesoamerica editorial criteria.

**Carlos Marroquín** is a USAC graphic design student who volunteered to do his professional practice with the Editorial Design team. We are very grateful to people like him who join our team and bring his knowledge and work.



## If Your Club, Association, Institute, Botanical Garden, Zoo, Park, University, etc Wishes **High-Resolution Photos** for an Exhibit in your Facility Anywhere in the World

The Missouri Botanical Garden (MOBOT) has had two exhibits of the FLAAR Mesoamerica photos on Neotropical flowering plants of Guatemala. Photos by the FLAAR team have also been exhibited at Photokina in Germany and in Austria, Guatemala, and elsewhere. For use of these photos in a book or exhibit, naturally we need to discuss how to share the costs. We have material for entire exhibits on:

- ◆ Orchids of Guatemala (including aquatic orchids),
- ◆ Dye colorants from Mushrooms and Lichens of Guatemala,
- ◆ Bromeliads of Guatemala,
- ◆ Trees of Guatemala,
- ◆ Treetop Ecosystems of Guatemala (includes arboreal flowering cacti, bromeliads, and orchids),
- ◆ Cacao Cocoa Chocolate and their Maya and Aztec Flavorings.

We naturally appreciate a contribution to help cover the costs our office expenses for all the cataloging, processing, and organization of the photos and the field trip data.

## TO PUBLISH PHOTOGRAPHS

Hellmuth's photographs have been published by National Geographic, by Hasselblad Magazine, and used as front covers on books on Mayan topics around the world. His photos of cacao (cocoa) are in books on chocolate of the Maya and Aztec both by Dr Michael Coe (all three of editions) and another book on chocolate by Japanese specialist in Mayan languages and culture, Dr Yasugi. We naturally appreciate a contribution to help cover the costs our office expenses for all the cataloging, processing, and organization of the photos and the field trip data.

## FOR YOUR SOCIAL MEDIA

You can post any of the FLAAR Mesoamerica PDFs about the Municipio of Livingston on your Social Media sites; you can send any of these PDFs to your friends and colleagues and family: no cost, no permission needed.

**We hope to attract the attention of professors, botanical garden clubs, orchid and bromeliad societies, students, tourists, experts, explorers, photographers and nature lovers who want to get closer, to marvel at the species of flowering plants, mushrooms and lichen that FLAAR Mesoamerica finds during each field trip each month.**

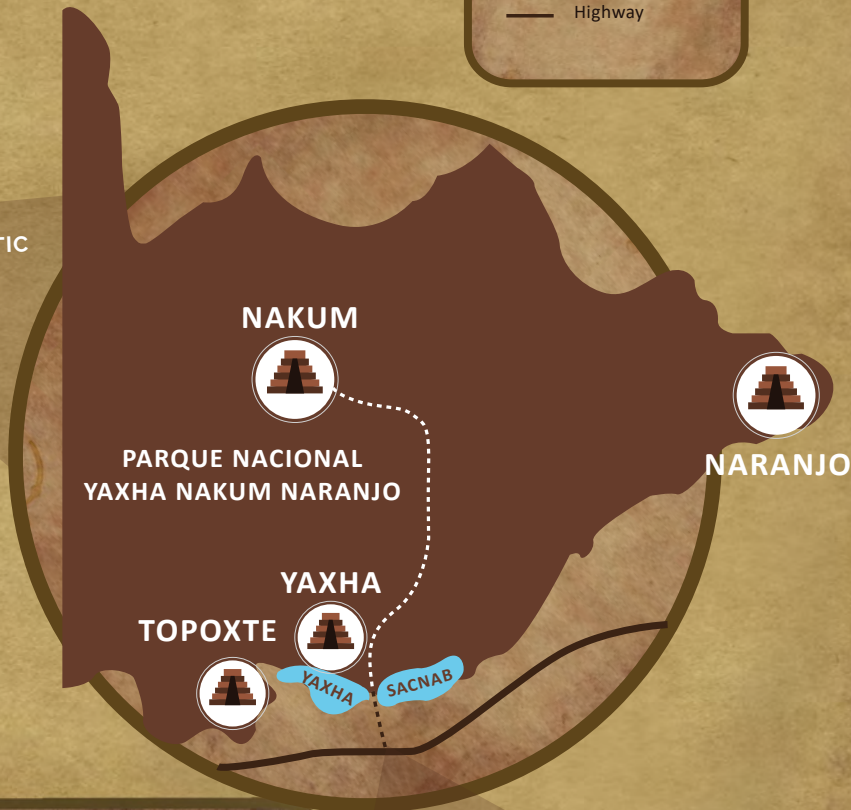




# HOW TO GET TO YAXHA?

## MAP LEGEND

- Archaeological sites
- Airports
- Earthworks
- Highway



## PROTECTED AREA

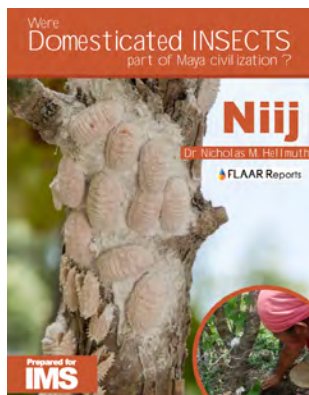


**FLAAR**  
MESOAMÉRICA

Go to the Mundo Maya airport in Santa Elena and then you will find a services of tourist vehicles to go to the archaeological site. If you want to go by car from Guatemala City, take the following route: Río Dulce - Poptún-Flores. At the junction further on you will find on the left the route to Tikal. Go straight on to the right towards Yaxhá (towards Melchor de Mencos). In km. 521 at the village La Maquina, turn left to the site. Ecolodge El Sombrero is 50 meters before the entrance to National Park Yaxhá - Nakum - Naranjo.



## Other Publications of the **Fauna** of Guatemala



**Were domesticated insects  
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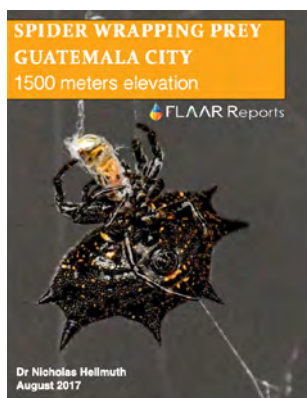
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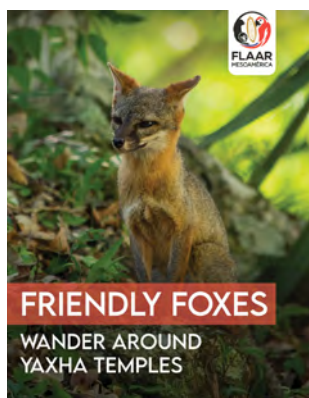
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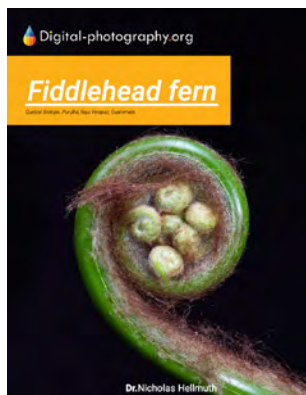
If you wish more FLAAR reports on fauna of Guatemala, visit our website:  
[www.maya-ethnozoology.org](http://www.maya-ethnozoology.org).



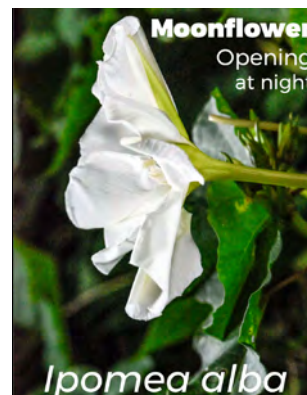
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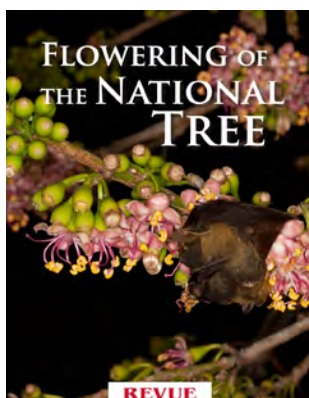
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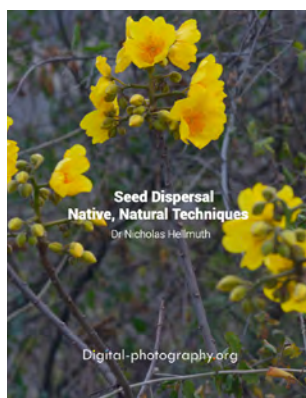
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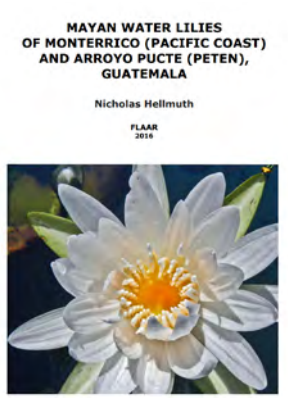
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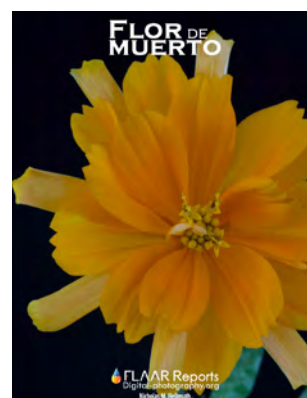
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## Other Publications from National Park Yaxha, Nakum and Naranjo, Guatemala



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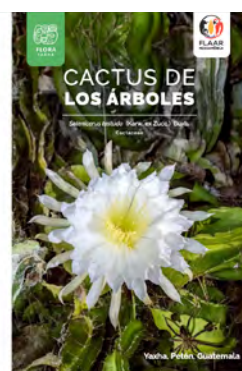
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