



BIRDS
YAXHA



FLAAR
MESOAMÉRICA

NEOTROPIC CORMORANT

Phalacrocorax brasilianus



Yaxha, Peten, Guatemala

DR. NICHOLAS **HELLMUTH**



FLAAR
MESOAMÉRICA

FLAAR Mesoamérica

NEOTROPIC CORMORANT

November 2018

MAIN AUTHOR

Nicholas Hellmuth
FLAAR (USA)
FLAAR Mesoamérica
(Guatemala)

EDITION

Vivian Díaz

SCIENTIFIC FACTS

Marcella Sarti

COVER PHOTOGRAPH

Erick Flores

INTERNAL

PHOTOGRAPHS

Nicholas Hellmuth
Melanny Quiñonez
Erick Flores

LAYOUT

Andrea Sánchez

This report was made in cooperation with the Yaxha-Nakum-Naranja National Park to help promote the park, its natural resources and, attract future visitors.

COVER PHOTOGRAPH:

Phalacrocarax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/4, 1/640, ISO 640. Yaxha, Petén, Guatemala. Photography by: Erick Flores, FLAAR Mesoamérica.

INDEX PHOTOGRAPH:

Phalacrocarax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/6.3, 1/5000, ISO 1600. Yaxha, Petén, Guatemala. Photography by: Erick Flores, FLAAR Mesoamérica.





FLAAR Mesoamérica (**Foundation for Latin American Anthropological Research**), is a nonprofit Guatemalan institution founded under the direction and enthusiasm of Dr. Nicholas Hellmuth, Classic Mayan Art specialist, with the aim of wanting to see our country to be recognized throughout the world for its landscapes, culture and natural resources.

We believe knowledge and ancestral wisdom of natural resources can be taken to any kind of person through education. At the same time, it will awake admiration and desire in people who follow our work to preserve these resources. One of our main objectives is to create consciousness about looking after Mesoamerica natural diversity. Thus, the FLAAR team creates educational material to raise public awareness of it.

The work done in FLAAR Mesoamerica consists on the methodological compilation of facts about nature, flora, fauna, history, and culture of Mesoamerica, and to spread it up to the general public who play an important role in the conservation of ecosystems. One example is by making material that is easy to read, entertaining, reliable and visually pleasing, just like this report!

We are open to work, share and, to expand the efforts we do with other organizations, institutions or companies that share our vision.

You can find more of our work in the different digital platforms of our directory:



www.flaar-mesoamerica.org
flaar_mesoamerica@flaar.org

© Copyright 2018 FLAAR Mesoamerica



NATIONAL PARK

YAXHA NAKUM NARANJO

Yaxha Nakum Naranjo National Park is a site of great natural and cultural importance for our country. Because of the diversity of species it holds, flora and fauna likewise is listed as a RAMSAR site because it includes three types of wetlands identify by the Wetland Convention: temporal lagoons, karstic systems, and peat bogs. From these systems stand out the Lagoon Yaxha and Lagoon Sacnab, Lankaja, Champoxte and Juleque reservoirs from the Lagoon Yaxha.

In reference to the cultural importance that this protected area represents is that it contains heritage from the Prehispanic Mayan period that includes 292 recognized sites from which four are monumental archaeological sites: Yaxha, Nakum, Naranjo, and Topoxte. Other six intermediate archaeological sites include: Naranjito, El Carmen, La Pochitoca, Poza Mayor, el Bajón y el Pital, with other 282 minor archaeological sites within. (Plan Maestro PNYNN, 2006)



View of lagoon Yaxha from the temple 216, one of the wetland ecosystems declared by RAMSAR.

Nikon D5. Lente 100mm f/2, f/11.0, 1/80, ISO 125. Yaxha, Petén, Guatemala. Fotografía por: Nicholas Hellmuth, FLAAR Mesoamérica.

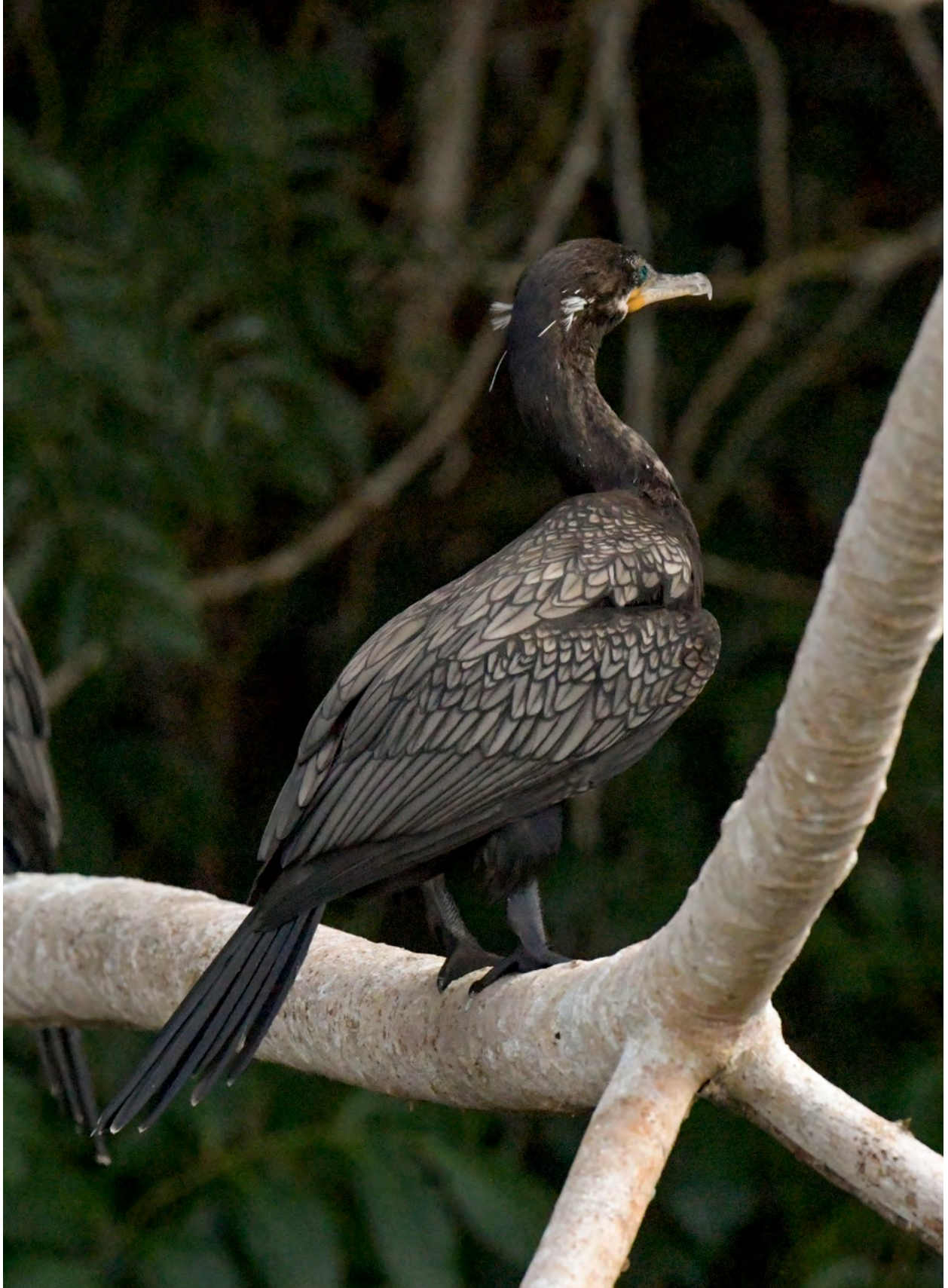
NEOTROPIC CORMORANT

During the 54 years that I have been exploring and working in Guatemala I have studied water birds in Lake Atitlan, Lake Peten itza, Lake Yaxha, Lake Izabal, Lake Petexbatun, Rio Dulce, Rio Polochic, Rio Icbolay, Rio San Pedro, Rio La Pasión, Rio Usumacinta, Arroyo Petexbatun, Arroyo Pucte and of course Canal de Chiquimulilla. I recommend that visitors , that besides visiting Yaxha, visit Tikal, Flores, Remate and the many other parts of Peten that are worth visiting. But if instead, just like me, you want to experience waterbirds then you cannot miss Lagoon Yaxha and the contiguous Lagoon Sacnab.

- DR. NICHOLAS HELLMUTH



Phalacrocorax brasilianus, perched on a guarumo branch.
Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10, 1/3200, ISO 250.
Location: Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus. View of the neotropic cormorant's plumage of the wings. Nikon D5. Lente Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/4.0, 1/1250, ISO 1600. Location: Yaxha, Petén, Guatemala. Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus taking off.

Nikon D5. lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/5, 1/640, ISO 640. Location: Yaxha, Petén, Guatemala. Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus

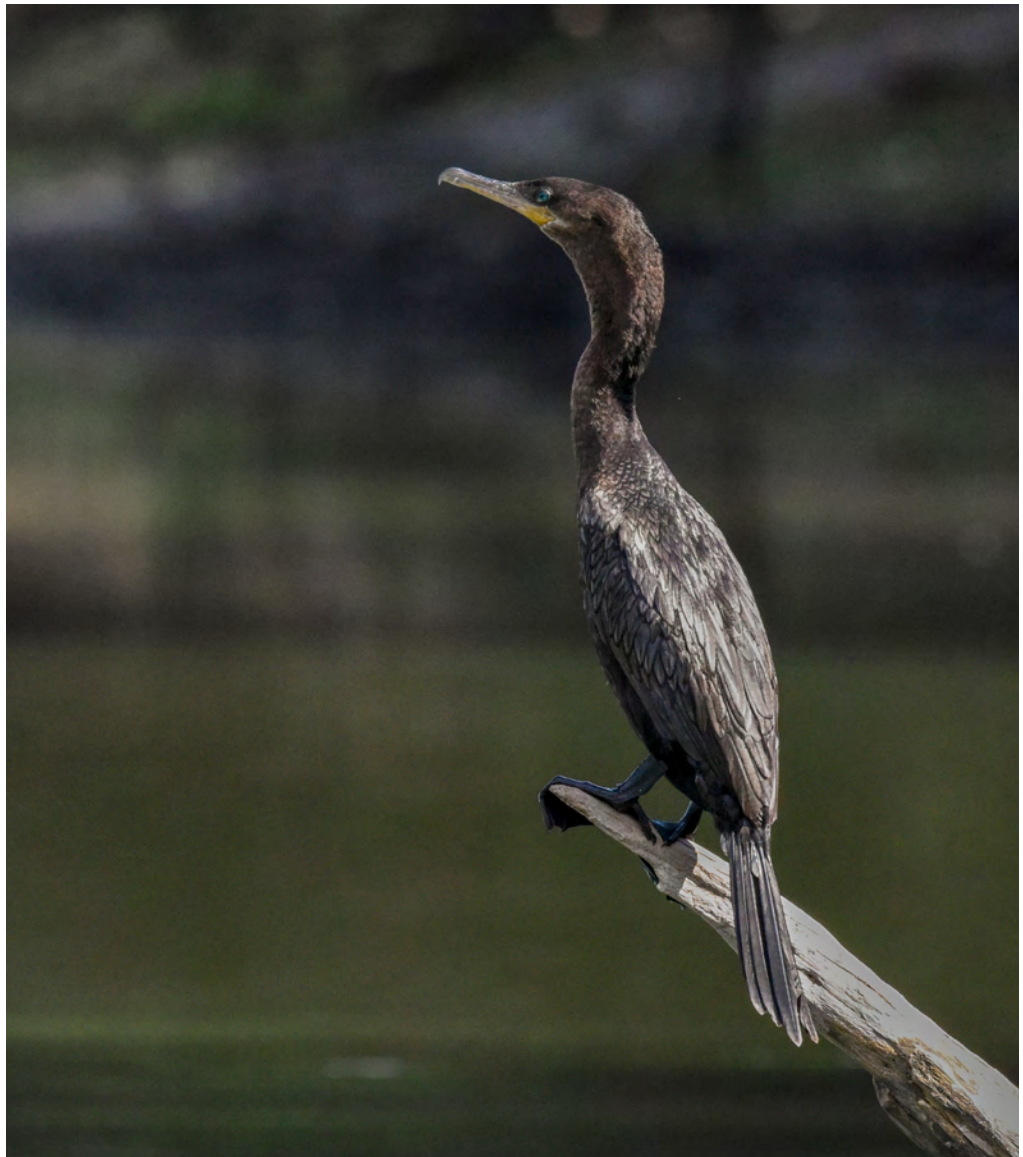
Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/4, 1/640, ISO 640. Location: Yaxha, Petén, Guatemala. Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/4, 1/640, ISO 1600. Location: Yaxha, Petén, Guatemala. Photograph by: Erick Flores, FLAAR Mesoamérica.

Nowadays there are already published different lists of water birds from the biggest reservoirs of Guatemala, but not all include high resolution photographs or bibliographic references for each bird. In Yaxha you can find dozens of water birds (Birds of the shore, with subaquatic habits, fishers and other type of birds related to the lacustrine ecosystem). Through this reports we will try to cover each bird one by one, as we find them, as some are migratory. In this occasion we are going to do our debut with the cormorant, one of the most common birds of the aquatic ecosystems of Guatemala.



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/4.0, 1/1250, ISO 1600.

Location: Yaxha, Petén, Guatemala.

Photography by:: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/6, 1/5000, ISO 1600.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10, 1/3200, ISO 800.
Location: Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10, 1/1600, ISO 800.
Location: Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



**Is the cormorant
endangered?**

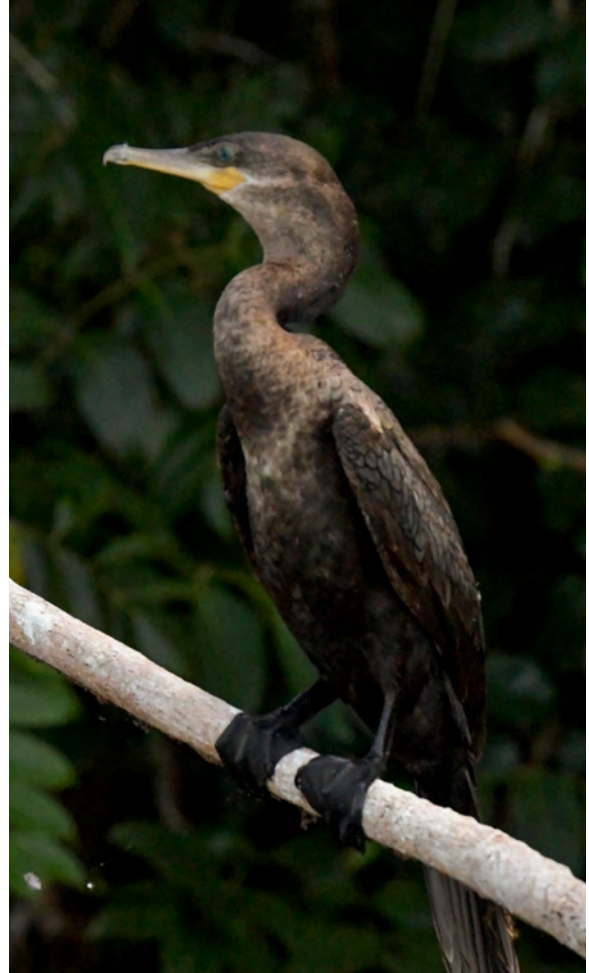
The cormorant is considered a species of low concern in its conservation state because of its wide range of distribution in America.

TWO SPECIES ONE COMMON NAME: CORMORANT

Both are black or gray (depending on age and sex). Both have an orange beak and... The males change their appearance during the mating system. In fact, if you google it, in other parts of the world the birds from the same family are not completely the same as the one you can see at Yaxha or at Canal de Chiquimulilla, or Lake Izabal-Rio Dulce-golfete. It is a real challenge to know with which species its being treated or watched.

So, let's talk about the two species of cormorant which can be found in Guatemala: ***Phalacrocorax brasilianus auritus*** y ***Phalacrocorax auritus***.

Both species belong to the Phalacrocoracidae family. When building our preliminary list of water birds of the big water bodies of Guatemala, the research assistant student, Christian Garcia, found *Phalacrocorax brasilianus*, Known as Neotropic Cormorant, listed in every aquatic systems of Guatemala. Meaning that we will easily see birds from this species at the water bodies of Yaxha. While the *Phalacrocorax auritus*, commonly known as the comoran orejudo or pato coche it is only present at the norest of the country in Lake Izabal, Golfete and Rio Polochic



Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/6.3, 1/500, ISO 1000.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica.



What do they eat?

They are carnivorous birds, they eat fish, amphibious, insects y crustaceans. Likewise, racoons y rooks are predators of their eggs.



Phalacrocorax brasilianus Walking above the water. Just at the time the boat was getting close.
Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9.0, 1/800, ISO 3200.
Location: Yaxha, Petén, Guatemala.
Photograph by: Erick Flores, FLAAR Mesoamérica.

The FLAAR Mesoamerica team has had the chance to watch both different species in the locations that have been reported. We have seen *Phalacrocorax auritus*, cormorán orejudo at Golfete and the adjacent parts of this system at the Lake Izabal-Rio Dulce. Nevertheless, it would be needed to verify closely all our photo library of these birds at Lake Izabal and Rio Polochic so not to confuse one species from the other, as one way or another it is very easy to take by mistake both species if they are registered in the same area. On the other hand, we have to be even careful to watch water birds, as we sometimes can only see half of the body while they are floating, when they take off, the way they submerge, the distance or the light reflex which can distort the color.



Phalacrocorax brasilianus. Three cormorants perched. It can be appreciated the differences in the plumage color, which can depend on how mature the cormorant is.

Nikon D810. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10.0, 1/400, ISO 400.

Location: Yaxha, Petén, Guatemala.

Photography by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9.0, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photography by: Erick Flores, FLAAR Mesoamérica.

At all time we have to be alert so we don't confuse one species with another. Sometimes the cormorant can be confused with other water bird species: Anhinga or commonly known as aninga, pato aguja, pato aguja americano or pato cuello de serpiente. And now we are going to leave you with a series of observations that we have done and that have helped us to tell apart from the two birds when we go to the field, or better said the water!



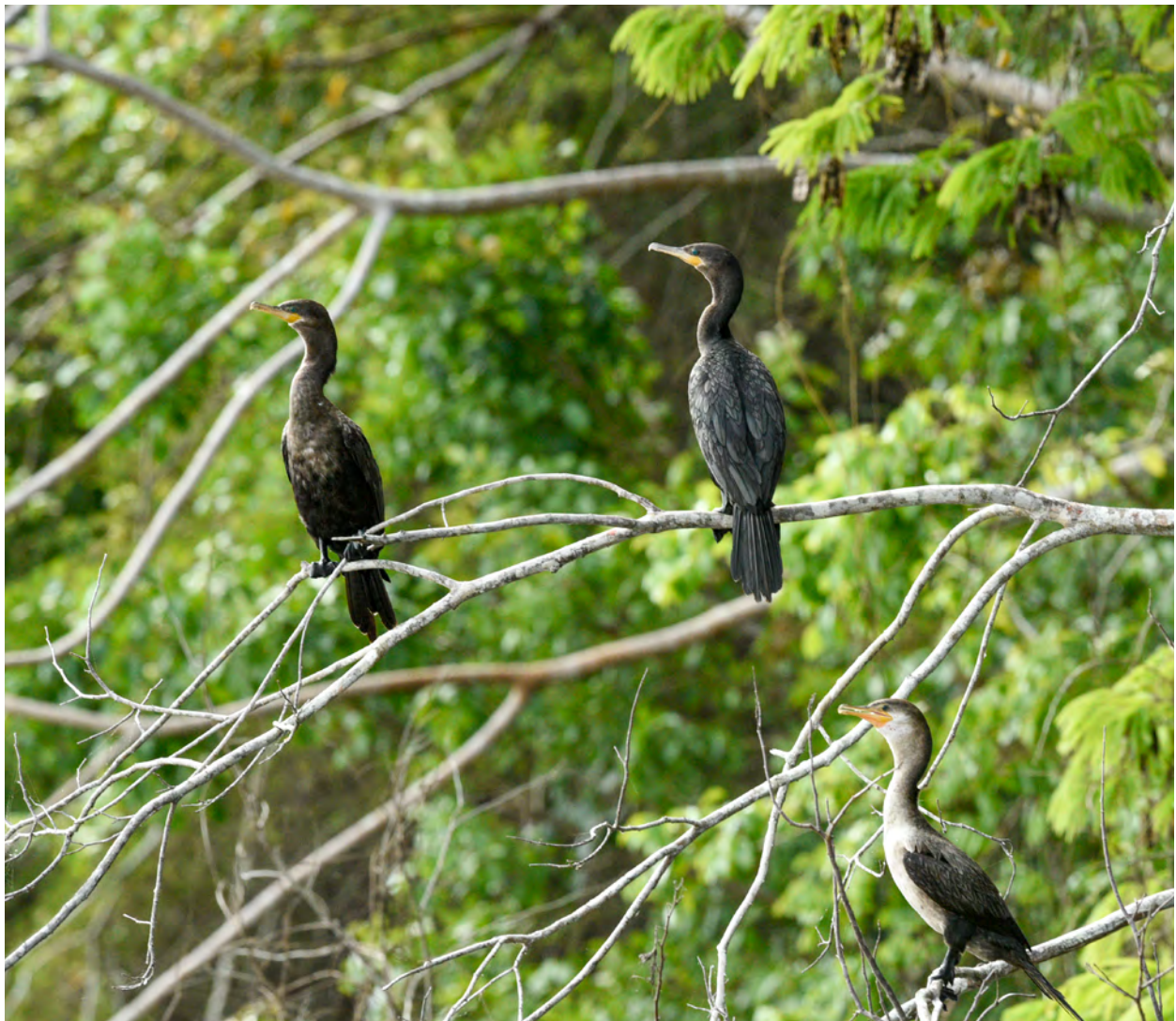
How to identify it?

It's plumage is mainly black and has a weight between 1.2 to 1.4 kg. It's length is from 63.5 to 68.5 cm with a wingspan of 102 cm. It possesses a white patch at the beak base with a "v" shape, which tells it apart from other species of its kind. The beak is an important feature which helps for its identification.



It's natural distribution

The neotropic cormorant (*Phalacrocorax brasilianus*) is a water bird that inhabits from the south of United States, Central America, the West Indies up to South America, It is found in estuary zones, close to lakes, rivers and costlines.

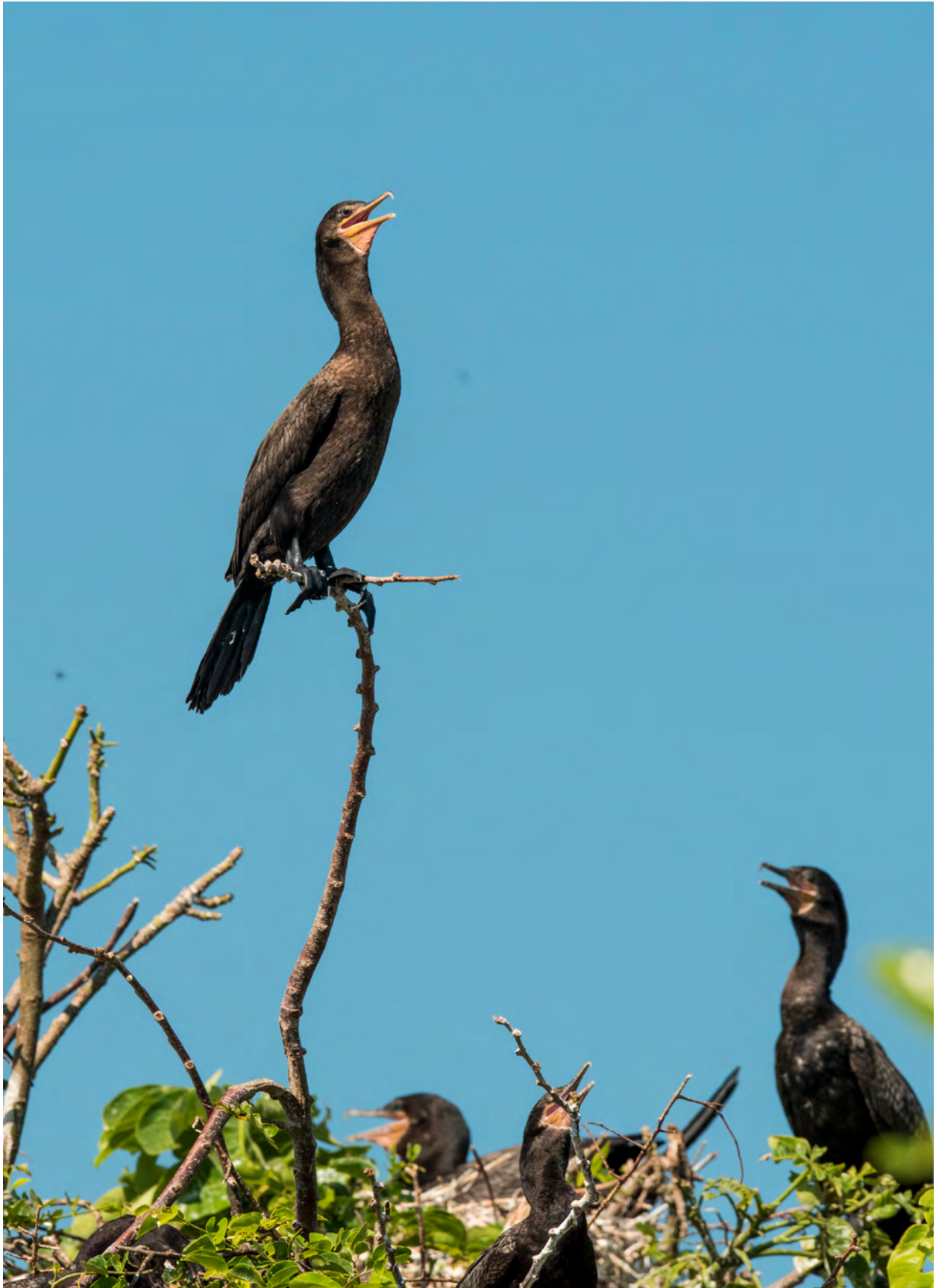


Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10.0, 1/400, ISO 400.

Location: Yaxha, Petén, Guatemala.

Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus. The cormorant's beak has a hook shape
Nikon D1810. Lens Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10.0, 1/400, ISO 400.
Location: Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



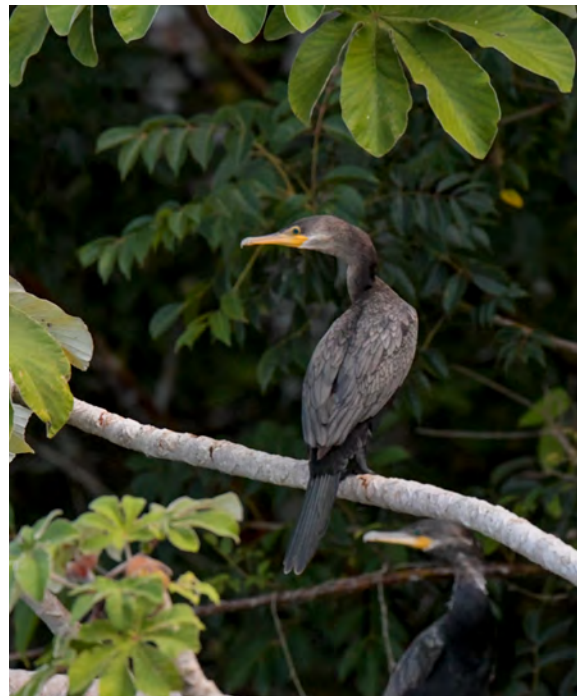
Phalacrocorax brasilianus

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10, 1/3200, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.

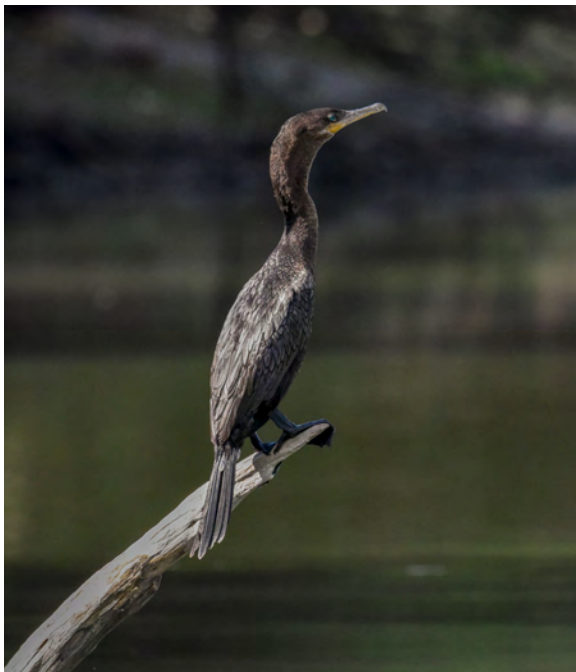


Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.

DIFFERENCES BETWEEN CORMORANT AND ANINGA

- ✓ | When watching the aninga generally it can only be seen its neck in a snake like shape swimming above the water.
- ✓ | Anhinga beak is pointed and straight as a spear. (from there its common name "pato aguja")
- ✓ | The aninga has more than one color (coffe, White, gray, black, beige)
- ✓ | The cormorat is compleatly black
- ✓ | The cormorat's neck is shorter than the aninga's
- ✓ | The aninga can soar, meanwhile the cormorat must flap its wings several times to keep flying.
- ✓ | The cormorant's beak has a kind of a hook slightly bent down.



Phalacrocorax brasilianus.

Side-view of a Neotropic Cormorant
Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2 8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Anhinga anhinga.

Side view of Aninga where it can be seen it's pointed beak and neck bent slightly as a "s".
Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2 8E FL ED VR, f/10, 1/1000, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Erick Flores, FLAAR Mesoamérica.



Aninga aninga.

Aninga spreading its wings to dry them after submerging in the lagoon.

Nikon D5. Lens: Nikon AF-S NIKKOR 600mm f/4e FL ED VR., f/6.3, 1/5000, ISO 1600.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica



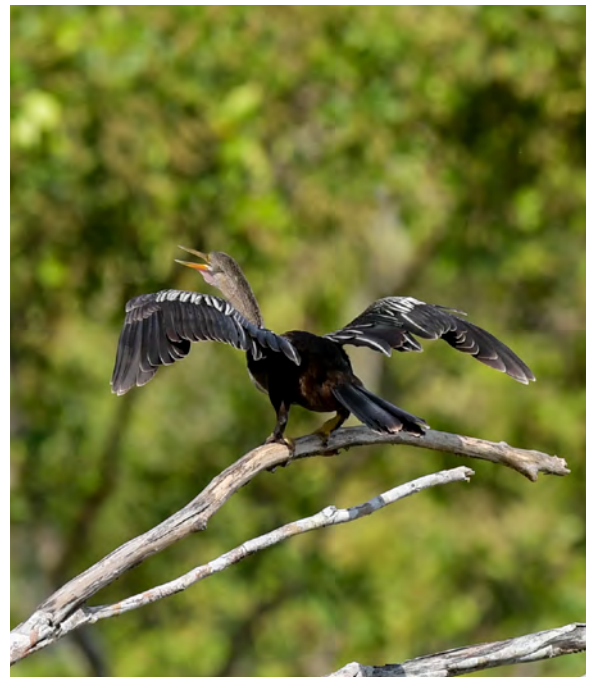
Anhinga anhinga

Anhinga with two colors on its chest, gray to white in the upper part and brown in the abdomen.
Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Erick Flores, FLAAR Mesoamérica.



Anhinga anhinga

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Erick Flores, FLAAR Mesoamérica.



Anhinga anhinga

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha, Petén, Guatemala.
Photograph by: Erick Flores, FLAAR Mesoamérica.

CORMORANTS UNITED

It is more common to see groups of cormorants gather together than solo. We've had the opportunity, while we were crossing Arroyo Petexbatun or Rio La Pasión, to see many cormorants in the same trunk or tree in groups of 4 to 9 birds. The same has been seen at Lagoon Yaxha.



How is the nest?

In the construction of the nest, the male is in charge of choosing the place and bringing the materials for its construction, while the female is in charge of building it. In average, they lay around 3 to 4 eggs from which, in average, 2 will survive after 10 days of being born. The chicks take approximately 24 days to hatch and 11 weeks to become independent.

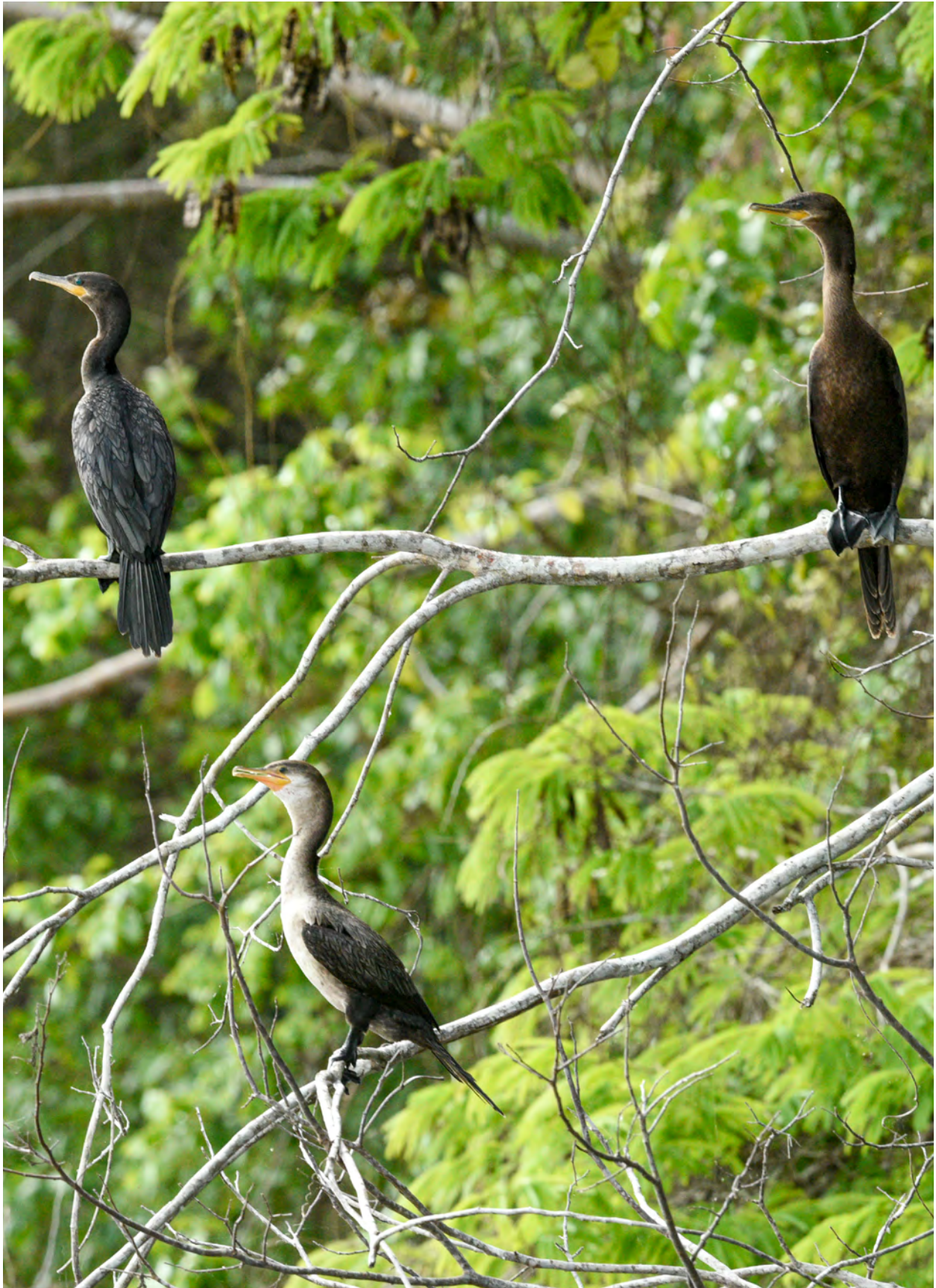


Phalacrocorax brasilianus.

A group of cormorants perched taking the sun on a branch. This is the most common way to find them. Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus.

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR. f/9.0, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.

“*RUNNING ABOVE THE WATER*” TO TAKE OFF

How is expected , in many opportunities (or all the times we wanted to get close) we have seen that the cormorants always take off when they see us approaching on the boat. If they are on a branch they slightly flop , move their legs to get up speed and start to flap to take off. if they were floating on the water resting or swallowing some fish that have just been caught, they start flapping and rushing above the water and they start to fly trying to disappear from our sight.



How does it make its flight faster?

Some animals that can fly have to find a way to free some weight to make the flight more efficient and optimize its strength and energy.



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica.



What is Guano?

Cormorant's guano (excrement) contributes to provide nutrients to the aquatic ecosystems, however, the excess of it can raise the levels of eutrophication.



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Erick Flores, FLAAR Mesoamérica.

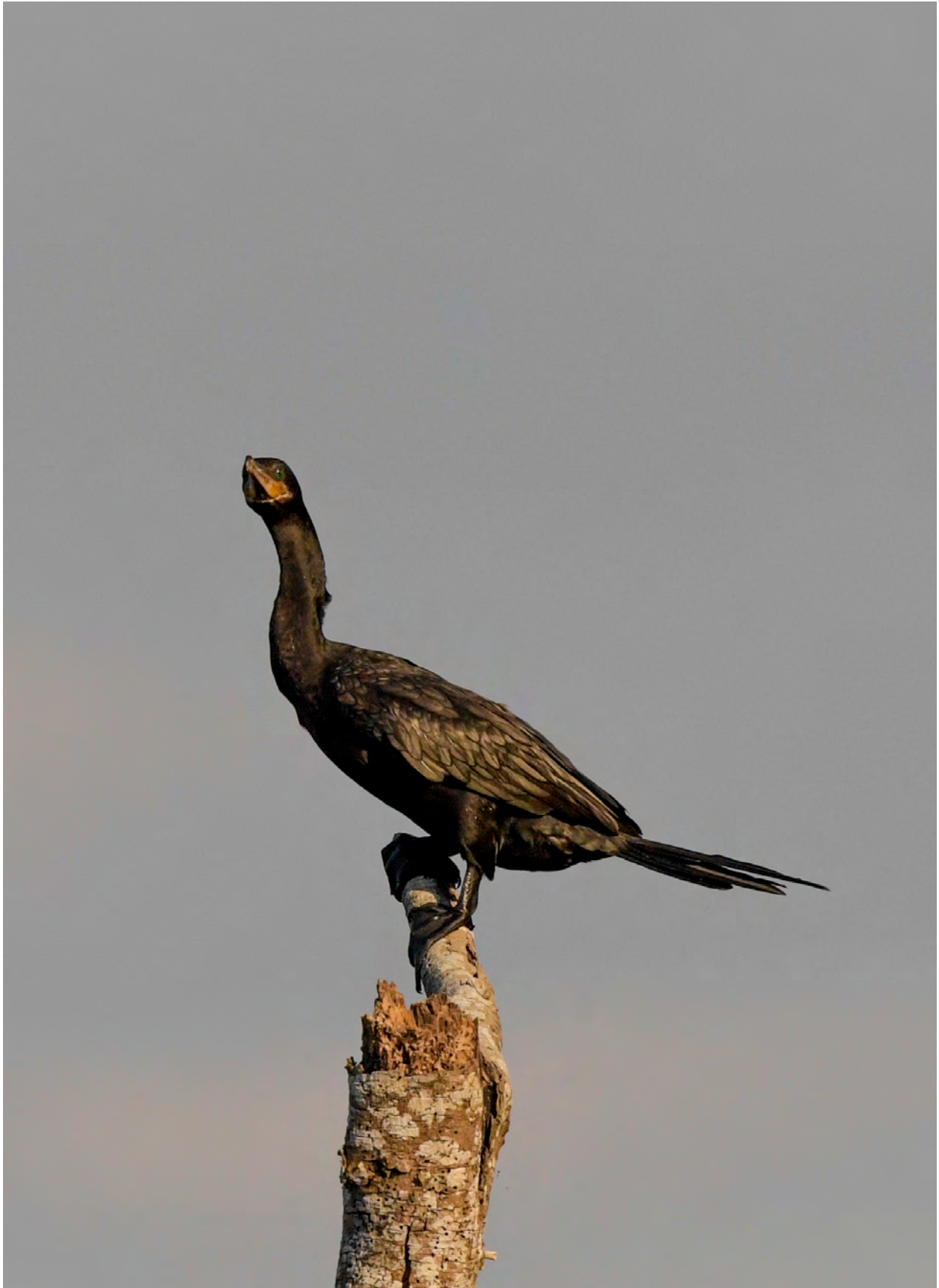


Phalacrocorax brasilianus. Cormorant just before taking off.
 Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.
 Location: Yaxha, Petén, Guatemala.
 Photograph by: Erick Flores, FLAAR Mesoamérica.



Where can I stay while I'm at Yaxha?

While enjoying the monumental architecture of Yaxha, Nakum, Naranjo you can stay at the nice hotel El sombrero Ecolodge where you can gaze at lagoon Yaxha and Sacnab from its pier.



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photography by: Erick Flores, FLAAR Mesoamérica.

WEIGHT LIMIT ALLOWED ON FLIGHT

It is unavoidable that the cormorant notice our presence and immediately wants to escape to another place while approaching, obviously with no intention of harm, but we are curious in a particular behavior that goes with every escape. This is the scene: all the birds are gathered on the trunks, they see at each other, they look around from one side to another to try to figure out the situation. Suddenly before stopping on being the center of attention... they drop their feces and immediately fly away! Either we really make them feel uncomfortable to make them defecate out of fear or there could be more biological explanations for this behavior. My deductions are the following:



Phalacrocorax brasilianus

Canon EOS 6D. Lens: Canon EF 300mm f/2.8L IS II USM f/5.6, 1/3200, ISO 1600.

Location: Rio Ixtinto Petén, Guatemala.

Photograph by: Melany Quiñonez, FLAAR Mesoamérica.

A | Either the cormorats are expressing their worry because of our presence in their territory (just like the howler monkeys urinating the tourists beneath the trees at Yaxha)

B | They want to intimidate us for intruding their territory.

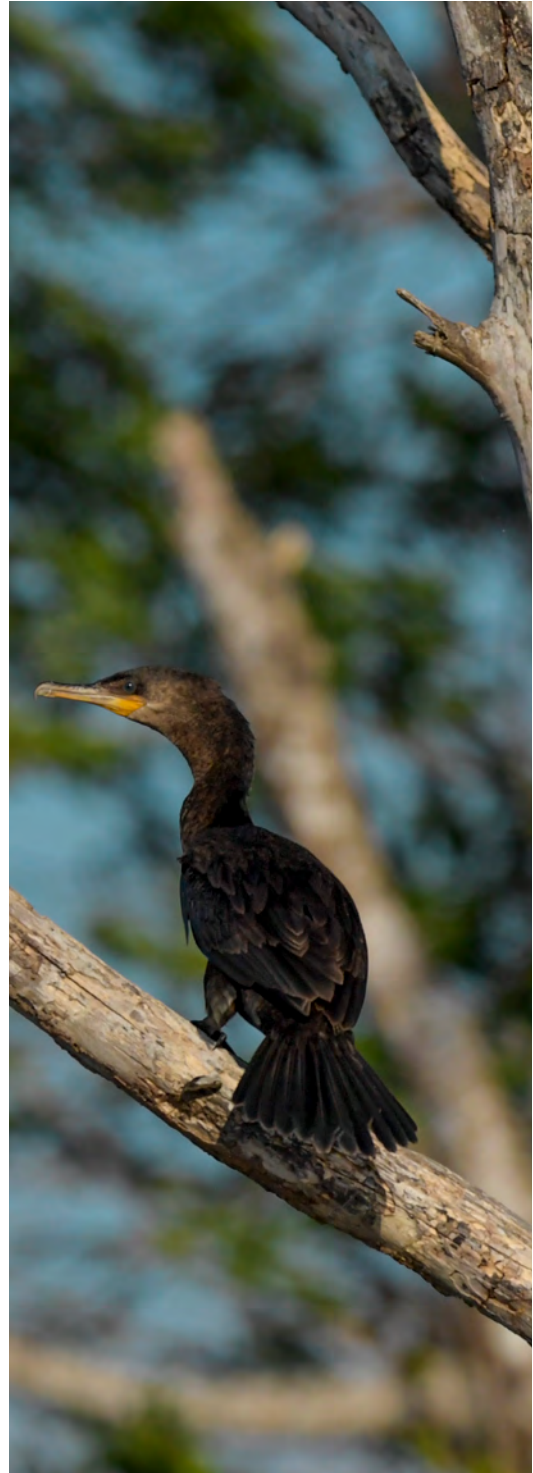
C | They prefer to defecate while they are comfortably perched on the branches before take off and not having to worry about it while they are moving.

D | To release some weight to make the flight more efficient.



Where does the neotropical cormorant inhabit?

The cormorants show preference for being close to deep waters, but also in habitats where there exist many branches from where to perch and dry their wings. They can live close to freshwater just as to saltwater.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/g, 1/800, ISO 3200. Location: Yaxha, Petén, Guatemala. Photograph by: Erick Flores, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Location: Yaxha, Petén, Guatemala. Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.

Thanks to my research team and because awakes so much curiosity on me, I know it has been documented that some animals like the bats have to urinate just after sucking up a lot of nectar, otherwise they can't fly easily. Is with this deduction that, for the moment, I will justify the cormorants attitude. Besides, I'm not totally sure whether they are just releasing excrement, pee, or both. To certainly know this a sample must be collected and take photographs with fast sequence settings so we can watch closely what is being released.

If you want to capture the bird in flight, now you have learned about the signal and the ritual that the bird does before it flies away.



Plumage color

The males *Phalacrocorax auritus* difference from the Neotropical Cormorant because its very dark plumage specially at the back and tip of the tail. It has an orange beak and crop and sometimes the same color around the eye. There are some grayish versions of the plumage but it is because the birds are younger (with the size of an adult bird).



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

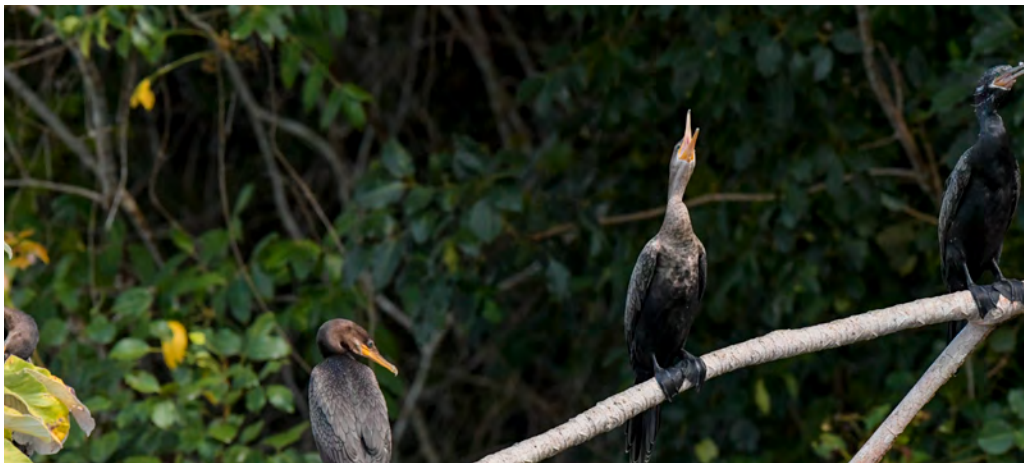
Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus. This and the next two photographs capture the movement of two cormorants on a branch,
Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.
Location: Yaxha, Petén, Guatemala. Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus
Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.
Yaxha, Petén, Guatemala. Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus
Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.
Yaxha, Petén, Guatemala. Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/9, 1/800, ISO 3200.

Location: Yaxha, Petén, Guatemala.

Photography by: Nicholas Hellmuth, FLAAR Mesoamérica.



Physical differences

The younger individuals are paler, their chest are brown instead of black and their beaks are more yellow. Between the male and the female it doesn't exist a sexual dimorphism defined.

TIPS ON PHOTOGRAPHING CORMORANTS AND OTHER BIRDS

📷 It is useful to have a camera that allows using a really high ISO without high ISO ruining the digital aspect of the image. You want a high ISO so you can put the camera on 1/2000th of a second to “stop the bird in flight”, if it is flying. If the bird is on a perch, 1/250th would be okay.

📷 If the bird is flying, bare minimum of 1/1000th of a second to 1/2000th. For some birds you may want 1/3000th or even 1/4000th. All this you can do with a Nikon D5 or a Canon EOS 1DX Mark II. These are the two cameras which we use to do this photography.

📷 If your camera is not made for high ISO, and you use a high ISO, the photo may not be ideal.

📷 I personally tend to use an aperture of f.10 or not lower than f.8. Our photographer Erick Fklores generally uses an aperture of f.5.6. Both of us use the setting for fast-shooting (where the camera takes “hundreds” of photos per second. This way you will not miss the bird’s different wing positions.





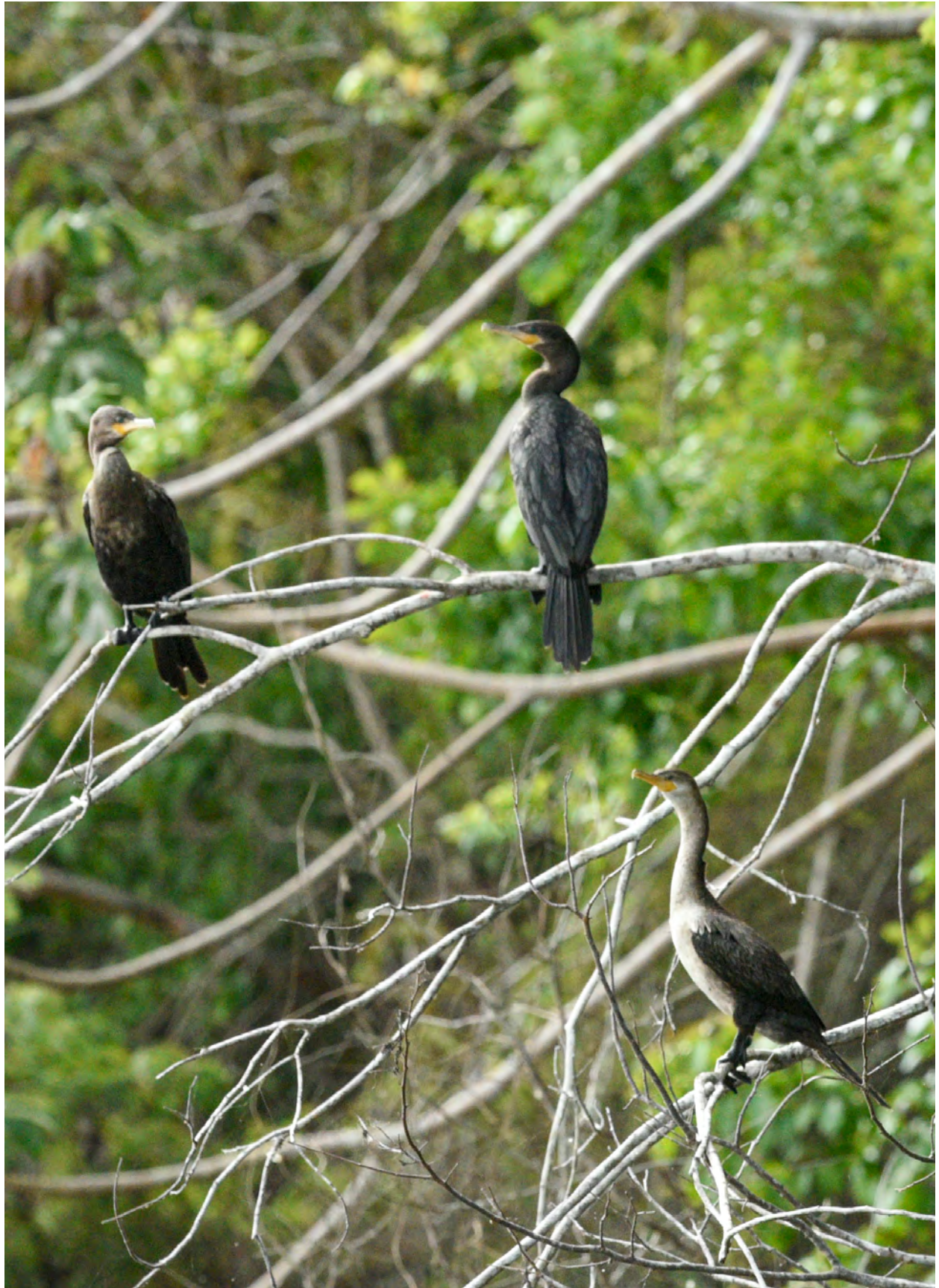
📷 | Using a tripod is best, but this is not always practical in a boat which is rocking side to side.

📷 | If you need a flash, the best is to complement it with a telephoto accessory. Then a telephoto flash attachment is useful. The most powerful flash that I use is a 30-year old Metz flash that I still use in field photography.

📷 | We use 300mm for Canon; we have 400mm and 600mm for Nikon. It would be ideal to use a 800mm Canon lens so we don't miss any shot before the bird flies away.

📷 | We only use prime lenses, We try no to use any Zoom lenses so we don't lose any quality and definitely no other brands.

We hope you like the cormorant photograph of the west side of lagoon Yaxha.



Phalacrocorax brasilianus

Nikon D810. Lens: Nikon AF-S NIKKOR 400mm f/2.8E FL ED VR, f/10.0, 1/250, ISO 2500.

Location: Yaxha, Petén, Guatemala.

Photograph by: Nicholas Hellmuth, FLAAR Mesoamérica.

SPECIAL ACKNOWLEDGEMENTS

We thank

Lic. Leonel Ziesse –Coordinador Administrativo del Parque Nacional
Yaxha-Nakum-Naranjo (DGPCyN / MICUDE)

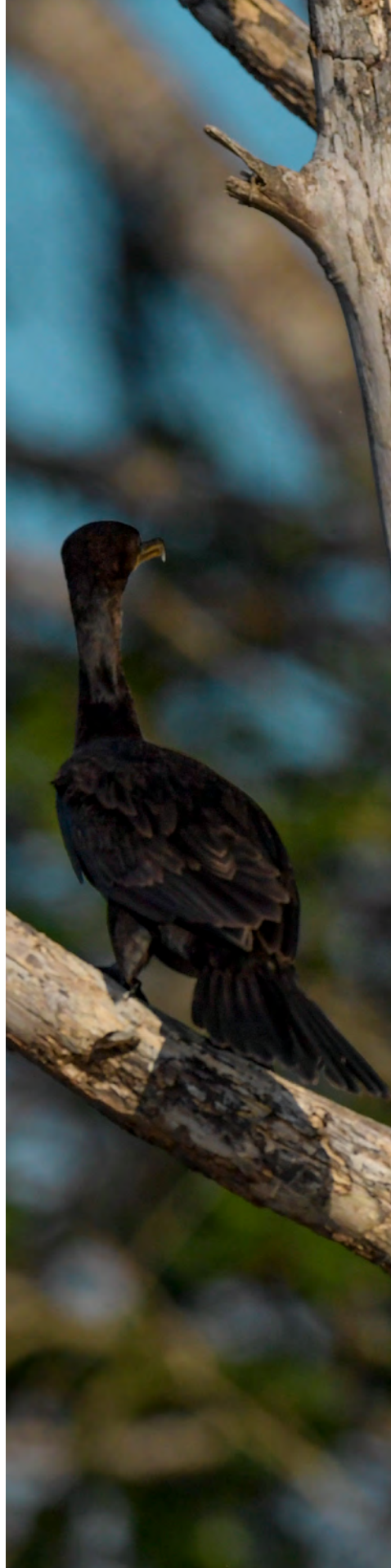
Ing. Jorge Mario Vazquez –Jefe del Parque (CONAP)

Biolg. Lorena Lobos (CONAP)

Arq. Jorge Mario Ortiz

All the helpful and knowledgeable guides of IDAEH CONAP 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.

We appreciate the 16 years of knowledge of birds and plants of “Teco” (Moises Daniel Pérez Díaz). We also appreciate the assistance of park ranger Ricardo Herrera. It is essential to have either an IDAEH and/or CONAP guardabosque or comparable when doing flora and fauna research.



Phalacrocorax brasilianus

Nikon D810. Lens Nikon AF-S NIKKOR 400mm
f/2.8E FL ED VR, f/9, 1/800, ISO 3200. Yaxha,
Petén, Guatemala. Photograph by: Erick Flores,
FLAAR Mesoamérica.




MUCH MORE THAN A PARK

The Yaxha-Nakum-Naranjo National Park raises within its objectives the protection and conservation of the natural resources of the area, as well as the conservation of the ancient Mayan cities. Thanks to its natural beauty, the aspiration is for this place to be attractive to visitors and a source of income for the communities. It also aims to be a tool for environmental education, scientific research and ecotourism, leveraging the natural potential that exists in this protected area.

That is why our organization FLAAR Mesoamerica, with the support of the authorities that manage the park, has created the material you have in your hands, to generate interest among students, researchers and tourists visiting the area. FLAAR Mesoamerica has specialized in the photographic documentation of species of flora and fauna, and in the compilation of biological, botanical, ethnobotanical and ethnozoological research to make known the variety of natural resources that exist in the region

FOR MORE INFORMATION

-  www.destinoyaxha.com
-  www.flaar-mesoamerica.org
-  @PN_YNN
-  /pnynn.guatemala
-  /FLAARM

HOW TO GET TO YAXHA?

MAP LEGEND

-  Archaeological sites
-  Airports
-  Earthworks
-  Highway



PROTECTED AREA



INDICATIONS

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 Yaxha (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 Yaxha - Nakum - Naranjo.

BIBLIOGRAPHY

MONOGRAPHS, GUIDES Y ARTICLES FOR BIRD IDENTIFICATION

Los libros sobre aves acuáticas del mundo mostrarán cormoranes y aningas. Los libros sobre “Aves de Guatemala”, “Aves de Belice” o Aves de México también tenderán a mostrar en las dos especies de cormoranes y la única especie de aninga de Mesoamérica.

Howell, S.

1995 Guide to the Birds of Mexico and Northern Central America.
Oxford: Oxford University Press.

BIBLIOGRAPHY OF PHALACROCORAX AURITUS

CASLER, Clark L.

1973 THE AIR-SAC SYSTEMS AND BUOYANCY OF THE ANHINGA AND
DOUBLE-CRESTED CORMORANT. *The Auk*: 324-340, April 1973.

HELLMUTH, Nicholas M.

2018a Double-crested Cormorant *Phalacrocorax auritus* Lake Izabal, Rio Dulce,
El Golfete, Guatemala. Waterbirds of Guatemala Series. FLAAR Reports.

HELLMUTH, Nicholas M.

2018b Double-crested Cormorant *Splashing Its Way Airborne*, Monterrico,
Guatemala. Waterbirds of Guatemala Series. FLAAR Reports.

HELLMUTH, Nicholas M.

2018c Cormorants and Anhinga of Mayan Areas of Mesoamerica, Annotated
Bibliography. Mayan Waterbird Series, Bibliography of Waterbirds Series. FLAAR.

OWRE, O. T.

1967 Adaptations for locomotion and feeding in the Anhinga and the
Double-crested. Cormorant. *Ornithol. Monogr.* No. 6.

BIBLIOGRAPHY OF PARQUE NACIONAL YAXHA-NAKUM-NARANJO

HERRERA, Rudy y Vilma FIALKO

2006 Plan Maestro 2006-2010 Parque Nacional Yaxha-Nakum-Naranjo. Consejo Nacional de Áreas Protegidas -CONAP, Ministerio de Cultura y Deportes -MICUDE, Dirección General del Patrimonio Cultural y Natural -DGPCyN, The Nature Conservancy -TNC. Petén, Guatemala. 190 páginas.


WEB PAGES ABOUT THE BIBLIOGRAPHY OF PHALACROCORAX AURITUS Y PHALACROCORAX BRASILIANUS

 | www.allaboutbirds.org/guide/Double-crested_Cormorant/id

 | www.glifos.concyt.gob.gt/digital/fodecyt/fodecyt%202009.06.pdf

WEB PAGES AND ARTICLES ABOUT THE DIFFERENCE BETWEEN CORMORANT AND ANINGA.

 | www.ces.fau.edu/files/education/resources/Anhinga_Vs_Cormorant.pdf

 | www.seabrookislandbirders.org/2016/11/06/sib-bird-of-the-week-anhinga-vs-double-crested-cormorant/

 | www.steve-white.com/the-double-crested-cormorant-and-the-anhinga/

This document must be quoted in the following way or with the following information:

HELLMUTH, Nicholas

2018 Neotropic Cormorant, Lake Yaxha, Peten, Guatemala, *Phalacrocorax brasilianus*
FLAAR Mesoamerica. Waterbirds of Parque Nacional Yaxha Nakum Naranjo Series.
Prepared for Parque Nacional Yaxha Nakum Naranjo educational programs.

BACK COVER PHOTOGRAPH:

Phalacrocorax brasilianus

Nikon D5. Lens Nikon AF-S NIKKOR 600mm f/4e FL ED VR, f/10, 1/3200, ISO 1200.

Location: Yaxha, Petén, Guatemala.

Photograph by: Nicholas Hellmuth , FLAAR Mesoamérica.



FLAAR
MESOAMÉRICA