YAXHA PARK HAS LOTS MORE LAGOONS

than just Yaxha and Sacnab





Let's Rescue the Forgotten Wetlands ofParque Nacional Yaxha, Nakum and Naranjo (PNYNN)
Reserva de la Biosfera Maya, Petén, Guatemala *Nicholas Hellmuth, Septiembre 2021*

APPRECIATION

FOR COOPERATION, HOSPITALITY, AND ASSISTANCE AT PARQUE NACIONAL YAXHA, NAKUM AND NARANJO PROJECT (August 2018 through July 2019)

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FOR COOPERATION, HOSPITALITY, AND ASSISTANCE AT PARQUE NACIONAL YAXHA, WE THANK

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 appreciate the hospitable and helpful military team at the main entrance to the park. They came along with us on both our long hikes to the Laguneta of 3 Conjoined Cenotes.

ASSISTANCE FOR KNOWLEDGE OF PLANTS AND ANIMALS OF PNYNN

 Teco, Moisés Daniel Pérez Díaz, park ranger, PNYNN

We also appreciate the assistance of park ranger Ricardo Herrera and every park ranger that accompanied us on other field trips. Once I showed the guardarecursos where the lost and forgotten triple-pool lagoon was on aerial photographs, they found a trail in advance of our first field trip there.

Front cover photograph:

At the far left bottom is the Southwest Cenote. Above that is an inlet of Lake Yaxha that is often full of water (so much water that you can take a boat all the way into the cenote area). But the aerial photograph here is in a semi-dry month, so the inlet is only half full of water. Source: <u>Satellites.pro.</u>

Local people call this area Laguneta Julequito. I prefer to call it an inlet.

Putting all the lakes of Parque Nacional Yaxha, Nakum and Naranjo "On the map"

Parque Nacional Yaxha, Nakum and Naranjo (PNYNN) has five lakes or lagoons in a row, east to west. The name of one of these lagoons is missing from 90% of international maps and most websites (lagos, lagunas and lagunetas of Guatemala).

Another missing lagoon, a kilometer northwest, is missing from 99% of Guatemalan and international maps and 99% of websites (FLAAR put these three circular connected ponds back on the map during our 2018-2019 project with IDAEH+CONAP co-administrators of PNYNN). These past field trips will be reported on in separate upcoming reports that includes information from our September 9 and 10, 2021 hikes to study the same areas.

- The present introductory report is to help ecologists, geographers, archaeologists, botanists, andzoologists learn where lots of remarkablescientific biological discoveries can be made in the future.
- The present set of maps and aerial photographs is to rescue lost and forgotten lagoons of PNYNN and RBM.

In addition to the row of five lakes/lagoons and the additional one higher north, there is an inlet with a narrow entrance west of Isla Cante. The entrance opens up into an oval-shaped inlet but local people often name this area Laguneta Julequito (or potentially Laguneta El Julequito). The front cover shows this inlet and the cenote (at far bottom left). This cenote is at the far southwest end of the inlet. During 2021 the water levels were so high that you could easily get a lancha all the way to and into the cenote. But in dry years the entire "Laguneta Julequito" is a dry marsh (but the mouth of the Southwest Cenote has water all year even in a dry period).

• This post is also to link to a separate report-in-preparation that one lagoon may be remains of three conjoined cenotes



The smallest lagoon is more visible on the website <u>Satellites.pro.</u>



Instituto Geográfico Nacional de Guatemala, IGN. Orthophotos that where used: 23673_10_ ORT_RG; 23673_11_ORT_RGB; 23673_12_ORT_RGB; 23673_17_ORT_RGB; 23673_16_ORT_RGB. Edited by David Arrivillaga and Byron Pacay, FLAAR Mesoamerica, 2021.



CONRED Map Amenazas por Deslizamientos e Inundaciones

CONRED uses helpful blue colors for lakes and lagoons, but lacks name for the smallest of the lakes.

Laguneta Perdida (Laguneta of 3 Conjoined Cenotes) is north of Laguneta Lancaja but is not pictured on the CONRED map but of course is clearly visible on any satellite view.

The park rangers told us they were so surprised and so elated to see these "never before documented" wetlands that they were breaking out in tears. I have cried twice when hiking (sliding down the steep karst fault line area to see the sizeable Savanna East of Nakum).

Even Google Maps does not have correct names for all these lagoons

A third lagoon, Laguneta Perdida, is not presented as a named lagoon in 99% of maps of Peten. As a result, we are working to document the uniqueness and importance of this lagoon. We discuss this in our separate work-in-progress on cenotes in Parque Nacional Yaxhá, Nakum and Naranjo. I have renamed this Laguneta of 3 Conjoined Cenotes because its shape looks precisely like three cenotes, but conjoined. Geologists can prove or disprove whether it is the remains of three conjoined cenotes, but this name will hopefully attract fresh new scientific field work by geologists.

Google Maps does not give you the names of the lakes and in one of their maps the small lagoon west of Yaxhá is not even shown (because in the satellite view its water did not reflect white from clouds?). And the lake at the far west is called Laguna El Ramonal and is named an ecological park. The official government name is Laguneta Champoxte but the local name for the same lagoon is Laguna Ramonal because of all the ramon trees around the area. I am not aware of any ecological park in the Laguna El Ramonal area since officially it's supposed to be part of PNYNN.

CONRED has the best maps of anyone: they name the far west as Laguneta Champoxte, the middle one as Laguneta Lancaja; yet no name for the tiny one but at least it is shown. The Laguneta of 3 Conjoined Cenote Shapes is pictured but not named.

A much larger Laguneta Perdida is in the Municipio de La Libertad. It is common for lakes and rivers to have same name in many areas.

My text for a recent ZOOM by FLAAR Mesoamerica presentation lists:

De este a oeste:

- · Laguna Sacnab
- · Laguna Yaxha

(este es nuestro enfoque principal, especialmente el lado sur, el extremo suroeste y la esquina noroeste (área con "forma de cenote").

· Laguneta Julequito

(frecuentemente seca; al sur de Laguna Yaxha, rumbo el Cenote de Suroeste) (también llamada por El Juleque y también llamada La Guitarra)

- Laguneta Lankaja (Lancajá).
 Unclear whether it should be spelled Lacanha.
- Laguneta Perdida (3 piscinas grandes en forma de cenote unidas en sus bordes)
- Laguna Champoxté (está ocupada por el lado sur, raras veces nombrado Laguna Ramonal, entonces nuestro foco son las otras lagunas).

At that time I did not yet know that Laguna Champoxté was better known as Laguna Ramonal. And now I realice that laguna is not the correct word in Spanish for small water areas; they are Laguneta. Sacnab and Yaxha are both Laguna.

But the others are all Laguneta:

- Laguneta Julequito (frequentemente seca; al sur de Laguna Yaxha, rumbo el Cenote de Suroeste)
- Laguneta El Juleque (también llamada La Guitarra)
- Laguneta Lankaja (Lancajá). Unclear whether it should be spelled Lancaha.
- Laguneta Perdida (3 piscinas grandes en forma de tres cenotes unidas en sus bordes)
- Laguna Champoxté, (raras veces nombrada Laguna Ramonal, está ocupada por el lado sur; entonces nuestro foco son las otras lagunas).

The smaller Lagoons that are ignored, forgotten, often not even on maps

Almost none of the names of the small lagoons show up in Google: a totally different La Laguna de la Guitarra is what you get (nowhere near Petén!).

When you Google Julequito you get "El Julequito, Caserío El Quetzal" on Facebook.

Laguneta Lankaja (Lancajá). Unclear whether it should be spelled Lacanja. But actually Lacanja is incorrect. Fortunately www.deguate.com has at least two of the small lagoons correctly named.

La Laguneta Lancajá, también corresponde a la clasificación de Laguna y su localización se encuentra específicamente en el caserío La Bendición, municipio de Flores, Departamento de Petén, Guatemala. "Esta hermosa laguneta colinda al Este con la laguneta Champoxté y al Oeste de la laguna Yaxjá. Se encuentra a una Latitud Norte de 17°04'09.4" y una Longitud Oeste de 89°27'48.8". Cuya elevación es de 180 metros sobre el nivel del mar.

El cuerpo de esta laguna posee una superficie de 0.7 kilómetros cuadrados."

www.deguate.com/geografia/lagos/ laguneta-lancaja-peten.shtml

Laguneta Juleque, Petén

"Pequeña masa de agua que se encuentra localizada al Oeste de la Laguna Yaxjá y al Norte de la Laguneta Lacanjá, específicamente en el caserío El Quetzal, municipio Dolores, Departamento de Petén, Guatemala

El embalse natural tiene una superficie de agua de 0.12 kilómetros cuadrados. Se encuentra a una Latitud Norte de 16°38'39" y una Longitud Oeste de 89°37'10", a una elevación de 301 msnm."

www.deguate.com/geografia/lagos/laguneta-juleque-peten.shtml

I do not understand how this lagoon can be in the Municipio de Dolores and the adjacent lake a few meters away is in the Municipio de Flores. Is Lake Yaxha also in the Municipio de Dolores?



West end Lake Yaxha, Laguneta La Guitarra, Juleque Lancaja. Source: SatellitesPro

On the website SatellitesPro you can see the lakes clearly. At the right is the far west end of Lake Yaxha. You have to climb up a very steep hill and then slide down the other side to see Laguneta La Guitarra (Juleque). Laguneta Lancaja is at the left; Ramonal is further west (we show that in other photos).

Laguneta El Juleque is another way to write the name; under this name it appears (barely; the Laguneta of 3 Conjoined Cenote Shapes is not pictured nor named)

https://mapcarta.com/es/35094280

This lagoon is not in the list of wetlands of Guatemala (Dix and Fernandez (editors) 2001), Inventario Nacional de los Humedales de Guatemala. That monograph also is not aware of Laguneta Lankaja. Laguneta Champoxté or Ramonal all are totally missing as well (this lagoon is larger than Laguneta Lankaja and Juleque put together).

We also need to check the level above the sea; it is unlikely that Laguneta Juleque is 70 meters above Lancaja. And we really need the altitude of the plateau on which is the Savanna of 3 Fern Species and the nearby Laguneta of 3 Conjoined Cenote Shapes.

Laguneta of 3 Conjoined Cenotes	Laguneta Champoxté o Ramonal	Laguneta Lankaja o Lancajá	Laguneta El Juleque o Laguneta la Guitarra	Laguna Yaxhá	Laguna Sacnab
Unknown, needs to be measured	190 meters	180 meters	301m (not acceptable without documentation)	180 meters	180 meters
No info	deguate.com	deguate.com	deguate.com	deguate.com	deguate.com

Laguna Perdida or Laguneta Perdida should be renamed Laguneta of 3 Conjoined Cenotes

Laguneta Perdida is a hopeless name since there is a larger Laguna Perdida elsewhere in Petén (west of Lake Petén Itzá). So when you Google this name (Laguneta Perdida) you get the other lake 99% of the time. You only get the triple-cenote-shaped lagoon when one of my web pages turns up (copied, pasted, and used without any permission whatsoever by dozens of other sites). So I seriously suggest the unique name Laguna de Tres Cenotes Unidos.



Laguneta 3 Cenotes and Savanna 3 Fern species. Source: <u>SatellitesPro</u>

This is what I saw on Satellites. Pro website in 2018. We told park rangers about this and they went to find a trail. Once they knew how to get there easily, we planned a joint trip (went twice).

To my knowledge this lagoon and the bog/savanna below is not listed, documented, or known to most biologists, geographers, geologists, botanists, or zoologists (curious if crocodiles are here, since this is quite high above the level of the east-west series of lagoons below).

Archaeological architect Raul Noriega is one of the people that we have spoken with who was aware of the conjoined cenote-like lagoon (from aerial photographs and/or satellite photos).

The wetland below (the oval one) is a bog, seasonally inundated wetland that I have named "Savanna of 3 Fern Species." There is a rectangular savanna adjacent to the east that we have not yet explored to its eastern end.



Satellite view of "Savanna of 3 Fern Species" and "Rectangular Savanna" to the right side of the ring of water. Source: satellites.pro

Cenotes in Yaxha and Lake Yaxha areas of PNYNN

We are working on a webpage and a FLAAR report to show the location of all the other probably cenotes around Lake Yaxha. There is one also probable collapsed cenote inland about 80 meters, that I noticed when living and mapping Yaxha starting about 1970. Park Ranger Teco (Moisés Daniel Pérez Díaz) told me (July 2021) there was a second dry cenote on land. We will link to those pages and .PDFs as soon as they are ready.

Lots more lakes in a row east to west from PNYNN past Lake Petén Itzá

- Laguneta Macanche
- Laguneta El Tintal
- Laguneta Botanal

all three of these above are close to each other. Then you get:

Laguneta Salpeten, with (salada) in parentheses, maybe because the water is very different composition than the lakes on either side.

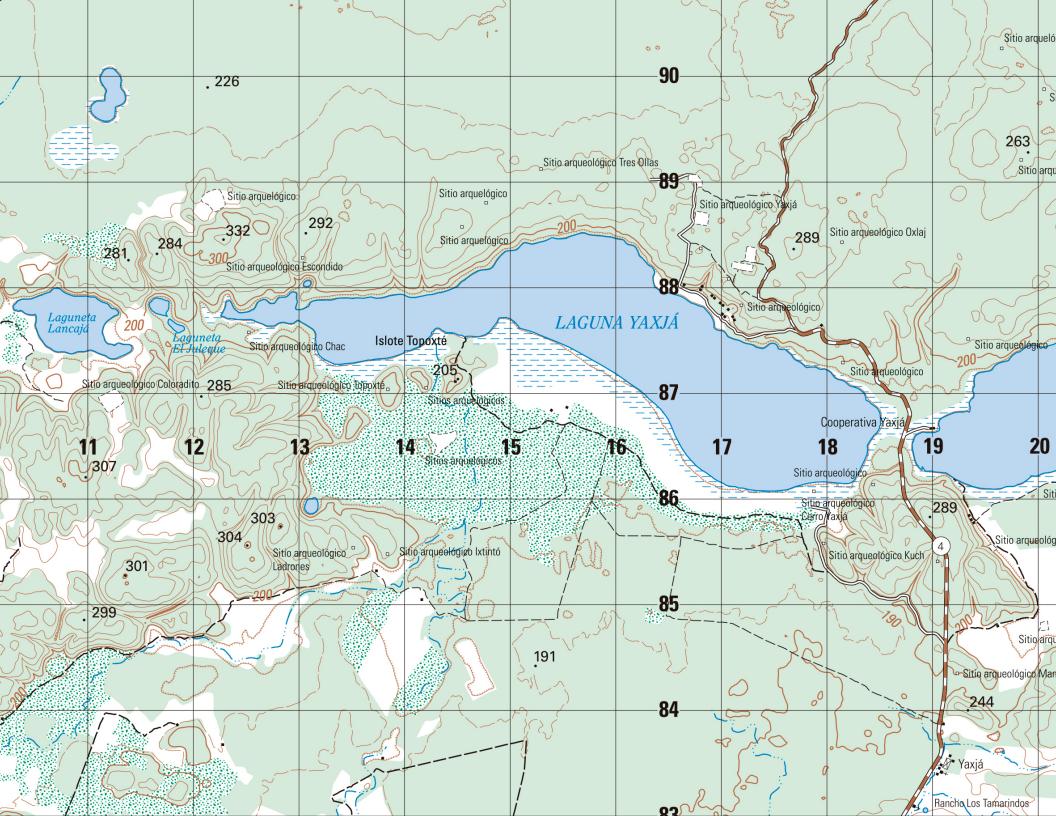
Then you get:

- · Lake Petén Itzá,
- Laguneta Picu
- Laguneta Yalgobach
- Laguneta Yalmojan
- Laguna Sacpuy (I dislike naming a water space of this size as a Laguneta)

Considerable Potential for PNYNN to become "the biggest botanical nature reserve" that will result in significant improvement in protection of the ecosystems

The printed maps of ING (Instituto Geográfico Nacional, Guatemala, www.IGN.gob.gt) have the most complete names: all the

lagoons east to west are named. The three conjoined "cenote" laguneta is pictured with water logo color but is not named.



All the lagoons that are in an east-west row are named correctly by Instituto Geográfico Nacional, Guatemala, www.ign.gob.gt, IGN, YAXJA-2367-III. Since the three conjoined "cenote" laguneta had not been visited or studied by ecologists or geographers (to our knowledge), it has no name on 99% of maps. This helpful IGN map is based on aerial photos of year 2006 when the inlet in front of the Southwest Cenote was dry. So there is no "Laguneta Julequito" shown or named.

It would be helpful if all future maps of this area of the Reserva de la Biosfera Natural had names for as many wetlands as possible.

To attract tourists to visit Yaxha helps preserve the endangered ecosystems. Visitors provide local jobs. 90% of the favorable comments on the Internet about why Yaxha is definitely worth visiting is because of most of the area around the ruins has not been chopped down: there is rain forest everywhere. But there is even more rain forest around at least El Juleque and parts of Lankaha.

What if the nearby aldeas and communities had jobs resulting from these areas being a "natural national botanical garden" with nature trails that would result in protecting the trees from being cut down and burned for slash-and-burn milpa agriculture.





View of Laguna Yaxha from temple 216, one of the wetland systems declared by RAMSAR.

Photography by: Nicholas Hellmuth, FLAAR Mesoamerica, Jan 22, 2019, 5:38 p.m. Yaxha, Petén, Guatemala.

Camera: Nikon D5, Lens: 100 mm. Settings: 1/80 secs; f/110; ISO 125

References Cited and List of additional Suggested Reading

Starting list of reports and websites that at least mention (or should mention)

"the missing lagoons" of PNYNN

I thank Gabriella Moretti for telling me the common names of the string of lagoons west of Lake Yaxha.

We are searching for more references but here are some to start with.

The only place I have found these lagoons mentioned is in two nice Plan Maestro reports by CONAP et al.

CONAP, MICUDE, DGPCyN, TNC, edited by Rudy Herrera and Vilma Fialko

Plan Maestro 2006-2010 Parque Nacional Yaxha-Nakum-Naranjo, Reserva de la Biósfera Maya, Petén, Guatemala. Consejo Nacional de Áreas Protegidas, Ministerio Cultura Y Deportes, Dirección General De Patrimonio Cultural Y Natural, The Nature Conservancy. 168 pages.

CONAP, DGPCN, MICUDE, CATIE, GITEC

Plan Maestro Del Parque Nacional Yaxha, Nakum, Naranjo. Consejo Nacional de Áreas Protegidas (CONAP), Dirección General de Patrimonio Cultural y Natural (DGPCN)/Ministerio de Cultura y Deportes (MICUDE), Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) GITEC Consult GmbH. 343 pages.

Mapa 5, page 36, shows a humedal precisely where the Savanna of 3 Fern Species and the adjacent eastward Rectangular Savanna are located. Notable that this map recognizes the eastern rectangular area as a wetland. CONAP et al. cite CEMEC/CONAP 2014. That is most likely the team that did the map as there is no publication for CEMAC in the bibliography.

DIX, Margareth and Juan F. FERNANDEZ (editors)

2001 Inventario Nacional de los Humedales de Guatemala. UICN-Mesoamerica, CONAP: USAC. 176 pages.

Many capable geographers, ecologists, botanists, and other scientists worked on preparing this monograph. But it would be helpful to have it updated and improved.

HELLMUTH, Nicholas and FLAAR photographers

Ecosistemas de Guatemala. Zoom presentation 24 de abril 2021. Ecosistemas de Guatemala-PPT-Nicholas-Hellmuth-24-abril-2021-Curso2-JG-edit-VG (6).pptx

www.deguate.com/geografia/lagos/laguneta-juleque-peten.shtml

www.deguate.com/geografia/lagos/laguneta-lancaja-peten.shtml

We can't find any report by dequate.com on the "overlooked, forgotten, unknown" Laguna de Tres Cenotes Unidos

https://mapcarta.com/es/35094280

shows a pin for Laguneta El Juleque but shows no blue water symbol, nor for the lagoon to the immediate left (only for the larger one further west).

http://biblioteca.usac.edu.gt/tesis/02/02_1748.pdf

Each different page or map spells the names of the lakes differently (p 53 map compared with page 54 map).



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 González 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 Gutiérrez 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 Hernández 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).

Norma Estefany Cho Cu helps with preparing the camera equipment for each field trip and helps in the office (and on field trips) as cook.

Byran Pacay handles GPS mapping of where we hike or go in the lancha (boat) each field trip day. He also lists where we stop to take photos and what each one of us is photographing and then has that tabulation ready each night.

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 Avilés 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 Garifuna schools in the municipality of Livingston, Izabal.

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

Rosa Sequén 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 sheis 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.

Sergio Jeréz started with the bibliography team for each plant, animal or ecosystem to find and download pertinent research material for our e-library on flora and fauna. Now he helps us create GPS maps to show precisely where we were every minute on each field trip day. Plus he helps identify flora and fauna.

OTHER PUBLICATIONS FROM NATIONAL PARK YAXHA, NAKUM AND NARANJO, GUATEMALA

OTHER PUBLICATIONS OF THE FLORA OF GUATEMALA

OTHER PUBLICATIONS OF THE FAUNA OF GUATEMALA

HOW TO GET TO YAXHA







NAKUM PARQUE NACIONAL YAXHA NAKUM NARANJO **YAXHA TOPOXTE** SACNAB



NARANJO

PROTECTED AREA

EL CAOBA LAKE PETEN ITZA PEL REMATE

CA13

PARQUE NACIONAL YAXHA NAKUM NARANJO

MELCHOR DE MENCOS

KM521 LA MÁQUINA PARQUE NACIONAL YAXHA-NAKUM-NARANJO



ATHA SACNAB ECOLODGE EL SOMBRERO

CA13

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LA MÁQUINA



RETURN TO GUATEMALA **CA13**

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POPTÚN

ISLA FLORES ()
SAN BENITO () ()

SANTA ELENA

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.



