Masses of Yellow Flowers, Genus *Combretum*, along road between Yaxha and Nakum, PNYNN

Volume 3 for Series:

Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN

Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Text and Photographs: Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)

October 2025

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FLAAR MESOAMÉRICA

CONTENTS

Introduction to Masses of Yellow Flowers of Genus *Combretum*

Along the road from Yaxha to Nakum, PNYNN, RBM, Peten

We were requested to accomplish a 12-month project of field work and library research on the flora, fauna, and biodiverse ecosystems of PNYNN by the IDAEH co-administrator of PNYNN for 2018-2019. In the 1970's Hellmuth and FLAAR initiated the development of the Lake Yaxha, Laguna Sacnab, Topoxte Island, Yaxha and Nakum archaeological sites to be protected by a national park. Other conservationists added Naranjo to this proposal. FLAAR was initiated in 1969 to map Yaxha during 1970-1974, so we appreciate the IDAEH project proposal to study plants, animals and remote biodiverse ecosystems of this national park.

After the success of the field work, library research, and publications by FLAAR and FLAAR Mesoamerica, we suggested to continue with further research, so CONAP prepared a concept to expand our field work to more of the Reserva de la Biosfera Maya, for a 5-year project. We will now be requesting a 3-year extension to focus on improving botanical lists of which palms grow in the PNYNN and PANAT areas of the RBM and other topics. But our series of a dozen FLAAR Reports on *Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN* is based on the 2018-2019 field work. Obviously in coming year(s) we will prepare and publish results of the subsequent years of field work for late 2025 and 2026 onward.

One goal is to find all wild plants that are edible or medicinal. Plus it helps to provide jobs for the hard-working local people of Peten if more people visit Yaxha, Nakum and Naranjo-Sa'al areas, so we wish to encourage eco-tourism—for visitors to explore the PNYNN and surrounding areas to learn about the flowers, monkeys, and all the other creatures that co-exist in these seasonal rain forests.

Chapter 1

Photos of *Combretum* Flowers along the road through the Bajo La Justa between Yaxha and Nakum

Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.

The team of FLAAR (USA) and FLAAR Mesoamerica (Guatemala) are the first to document *Combretum* in PNYNN and near Poptun. **Portal de Biodiversidad de Guatemala** lists lots of species and lots of locations:

- *Combretum cacoucia* for Izabal and elsewhere. (FLAAR Mesoamerica has found and photographed a lot of this species in Izabal)
- *Combretum decandrum*, Chiquimula
- *Combretum farinosum* for Baja Verapaz, Chimaltenango but not for Peten. That said, Lundell lists this for Peten.
- *Combretun formosum* for Retalhuleu, far from Peten.

For Peten (and often elsewhere):

Combretum argenteum, Tikal, PANAT, Cuxu, 13 km from Santa Elena, Escuintla and Santa Rosa. Yellow-green flowers (WorldFloraOnline.org). No orange. Need to document whether the flowers along the road between Yaxha and Nakum are this *argenteum* species of *C. fruticosum*.

Combretum fruticosum, Alta Verapaz, El Progreso, Guatemala, Huehuetenango, Izabal, Jutiapa, Peten Peten (Tikal, Uaxactun and elsewhere), Santa Rosa, Zzacapa. Not just yellow—this species has more deep orange color.

Combretum laxum for many areas of Guatemala, including Peten, including PANAT. Also, Izabal. But the flowers we photographed are more spectacular.

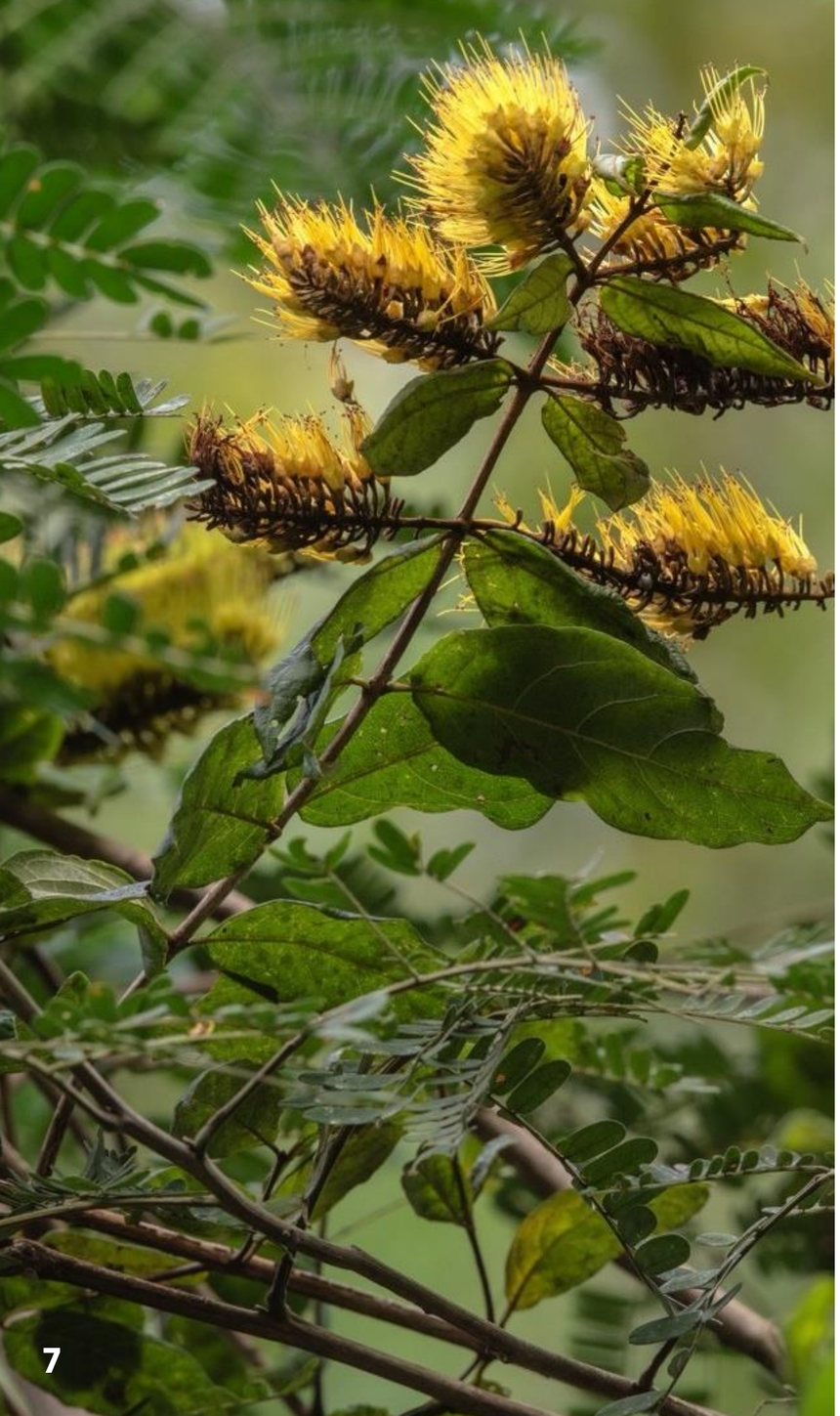
Combretum rovirosae for Rio San Pedro, Peten. Not enough photos on-line to make comments, but probably not either the ones from Yaxha or near Poptun.

Combretum is a genus of plant in the family Combretaceae.

Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.

Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.

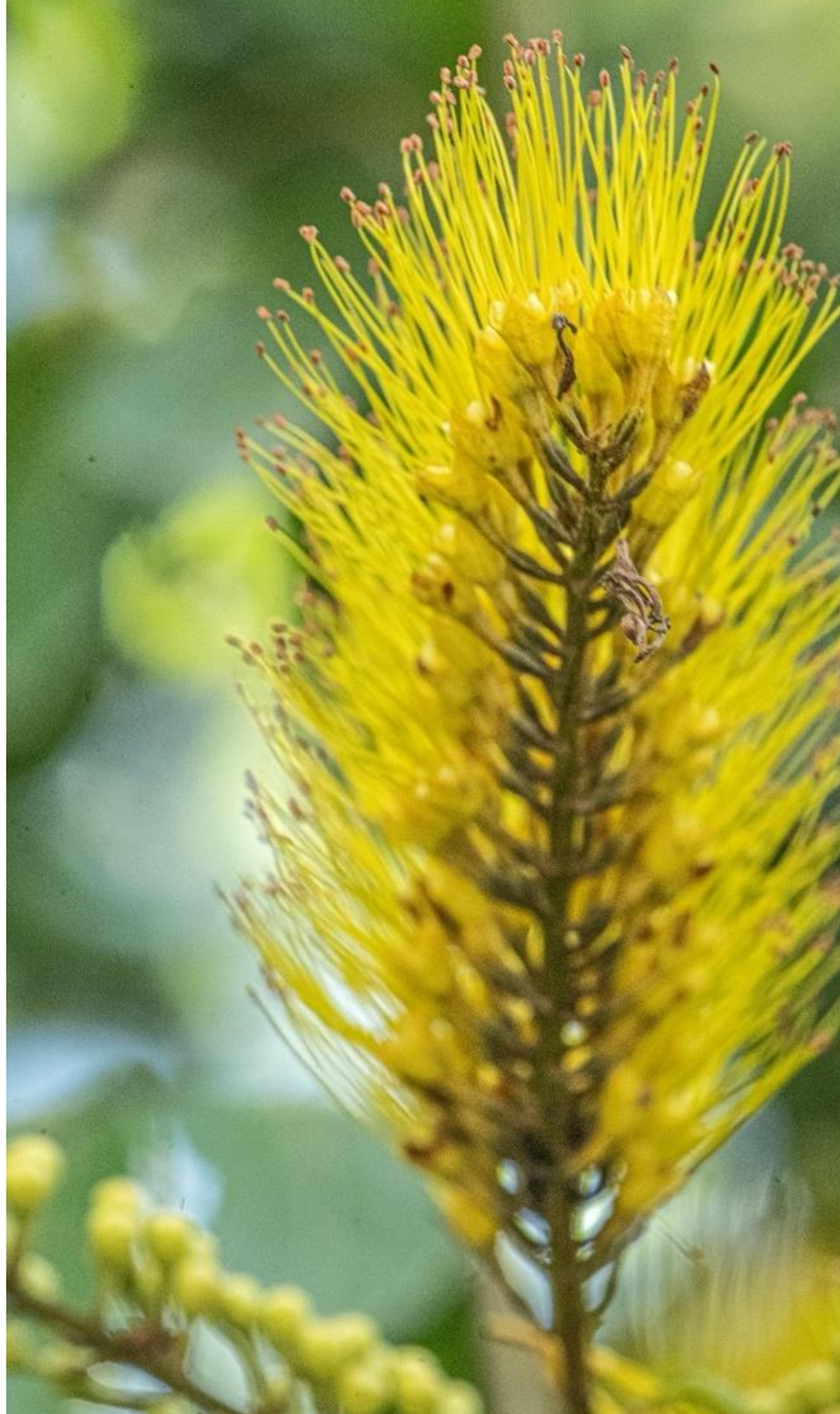
Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.



Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.

Nikon D5, 800mm Nikkor prime super telephoto lens (because these vines climb up nearby vegetation so are not always at eye level).

Photos from the bottom help to show the inflorescence.



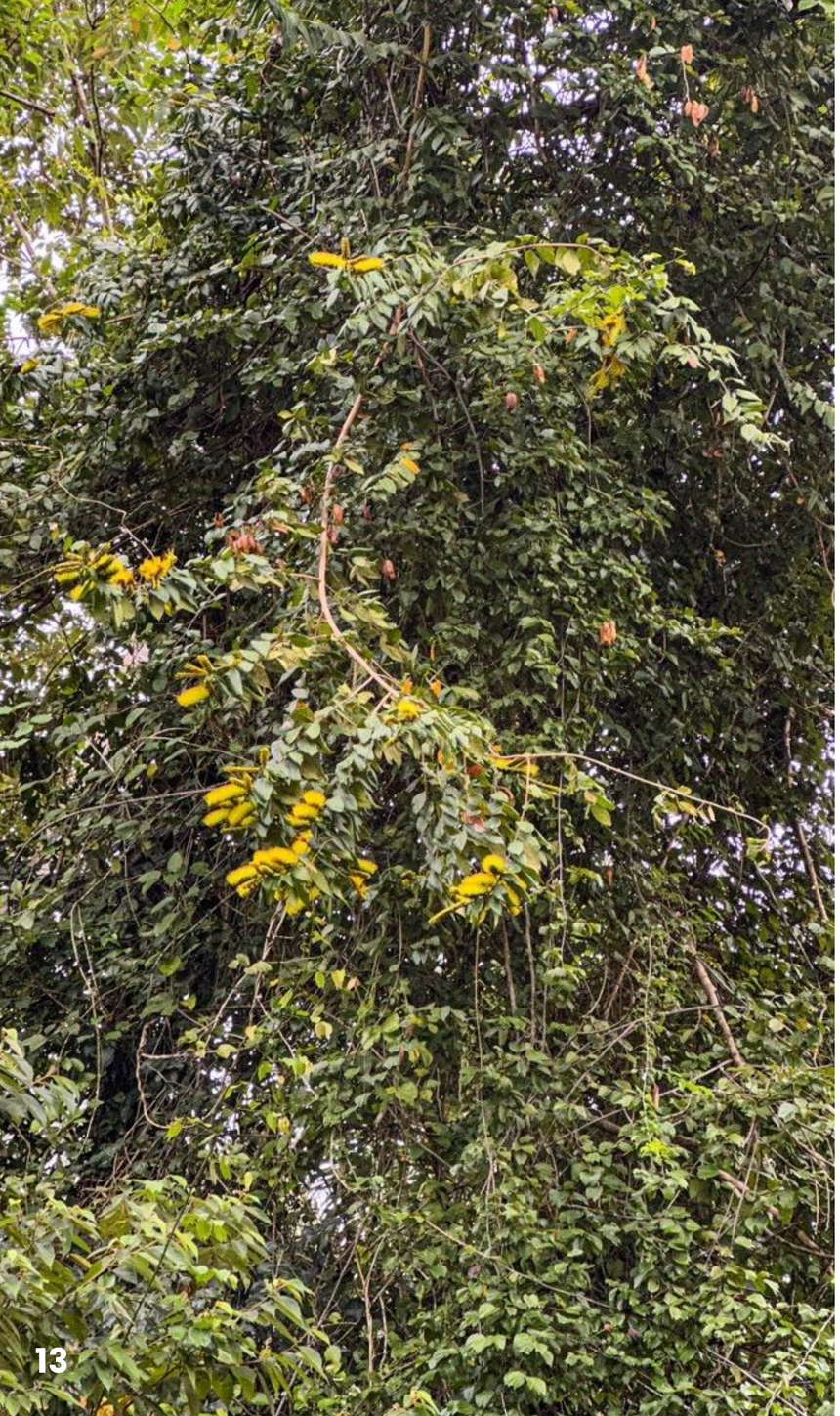
Along the road from Yaxha to Nakum, PNYNN, Jan 21, 2019.

Imagine walking through this area of the bajo forest between Yaxha and Nakum and seeing the entire side of the forest covered with thousands of these masses of tiny flowers.

PNYNN is clearly worth visiting, and definitely adding a day to take the road from Yaxha to Nakum (to see the ruins there), then to return to Yaxha to overnight in hotel El Sombrero Ecolodge—and the next day heading to Tikal or Flores or Belize.

Every month different vines, different bushes, different trees flower profusely. This was in January 22, 2019. Just realize that you need a vehicle with large tires and often 4x4 to get to Nakum if it has rained recently.

Sebastian de la Hoz can provide a raised 4x4 with a driver to take you back-and-forth to Nakum.



Campo Alegre, El Chal, Peten, genus *Combretum*, species probably *fruticosum*, potential food for macaws.

Most of the hairbrush-size and shape parts of the plant stick out sideways. And the flowers rise upwards, or downwards, depending on the angle of the hairbrush.

This flower is named a bush, but we prefer the concept hair brush due to length and width and the flowers sticking up like what you see on a (worn out) hair brush.

It helps to show all aspects of the flowering,
from unopened buds to opened flowers.

Areas of orange suggest this is possibly *Combretum fruticosum*.

Yellow has orange tint, but not the red-orange of *Combretum fruticosum*. Of course, these flowers may turn orange-red as they mature.

This photo was 9:44 am, so in the morning, Jan. 29, 2023.

All these photos are by Nicholas Hellmuth, I Phone 14 Pro Max.

Chapter 2

Photos of *Combretum* Flowers by Park Ranger Teco, Moises Daniel Perez Diaz

Nice photo of Combretum flowers buds by PNYNN Park Ranger Teco, Moises Daniel Perez Diaz, with Huawei P20, Jan. 30, 2021.

Photo of *Combretum* flowers by PNYNN Park Ranger Teco, Moises Daniel Perez Diaz, with Huawei P20, Feb. 11, 2021.

So, if you wish to study these flowers, photograph these flowers, or experience them as a remarkable view of the seasonal rain forest of the Reserva de la Biosfera Maya, welcome to Parque Nacional Yaxha, Nakum and Naranjo, PNYNN, in January and February.

Chapter 3

Discussion of Botanical and Ethnobotanical Observations by Scholars on genus *Combretum*

Diverse Colors: Red for some flowers; yellow for others Are they two different species?
Standley and Williams say that *Combretum fruticosum* has red inflorescence and *Combretum argenteum* is "yellowish green to bright yellow…" (1962: 272). So according to these experienced botanists (albeit with very little experience in Peten area…) there are two species: one yellow inflorescence (*Combretum argenteum*) and one flame red inflorescence (*Combretum fruticosum*). Yet the New York Botanical Garden web site has two photos labeled *Combretum fruticosum*; both are greenish yellow (and not red). Assumed from Belize and not from the botanical garden
…. www.nybg.org/bsci/belize/Combretum_fruticosum.html

Same with a Czech Republic botanical web site. Even though the flower is yellow and not red, he still calls it *Combretum fructicosum*. www.biolib.cz/en/image/id47945/ Gorgeous photo, full-page size (which is helpful). Flowers are greenish to greenish-yellow. Photographed in Las Pacayas, Peten, February 2007.

And again for Ceibal (spelled in English as Seibal, near Sayaxche), the web site www.biolib.cz/en/image/id45374/ shows awesome close-up of group of about six clusters: flowers are greenish to greenish-yellow. Again, even though it is yellow and not red, he still calls it *Combretum fructicosum*. Photographed in Ceibal (Seibal), Peten, February 2008. Sharp, clear, photo, at helpful LARGE size.

So clearly there is a botanical mishmash here: Standley and Williams claim two different species. But no one nowadays uses the botanical name *Combretum argenteum*. And no web site says *Combretum argenteum* is synonym for *Combretum fructicosum*.

I have assumed that there may be a red type and a yellow type. Or the yellow ones may turn red when they mature? Or the yellow ones are in different eco-systems than the red ones?

I hope botanists can sort this out and help me understand, as so far, all photos of *Combretum fructicosum* in botanical web pages are yellow (what's on the Internet from people's home gardens is typical copy-and-paste from the Internet; what counts is the name provided by botanists).

Lundell discusses only the names *Combretum farinosum* and *Combretum mexicanum*. His work in the 1930's was primarily around La Libertad, savanna country, far west of the hills of Yaxha. So work from the 1930's into 1960's is not reliable for the names or color issues.

I tentatively accept *Combretum fructicosum* as yellow based on two photos of pure yellow inflorescences labeled as *Combretum fruticosum* by capable botanist Michael J. Balick (his co-author Rosita Arvigo says they are “used to make wine, known as “chew stick wine” (2015: 259). Balick et al. 2000 have zero photos but the common names feature the word yellow: sepillo Amarillo, yellow brush (in other words, they are not called red flame in Belize!).

Thus I tentatively conclude that the species in Yaxha is *Combretum fructicosum* and not *Combretum argenteum*. Information on *Combretum argenteum* on the Internet varies from nothing to never explaining its similarities or difference from other species. Yet *Combretum argenteum* is never listed as a synonym. Surely a major botanical garden can issue a peer-reviewed journal article on these issues and resolve the inconsistent naming. Plus, why has no botanist mentioned the yellow vs red discrepancies in the literature?

Practical Uses of *Combretum fructicosum*

It is said that the cut stem yields a considerable amount of sap that may be drunk when water is lacking ((Standley and Williams 1962: 275). In Mexico the branches are used for weaving coarse baskets, and generally they are employed as a substitute for rope, for tying firewood and other temporary uses.

Practical Uses of other species of Combretum in nearby areas

Some species of Combretum can produce tannin (for tanning animal hides). Just Google Combretum tannin. Then add Belize, Guatemala, Mexico (one by one).

Family Combretaceae documented in Mexico, summarized by Villaseñor (2016: 699).
Combretum argenteum Bertol. CAM, CHIS, GRO, MEX, OAX, VER
Combretum decandrum Jacq. CHIS, GRO, JAL, MICH, NAY, OAX, TAB, VER
Combretum formosum G. Don. CAM, CHIS, OAX, QROO
Combretum fruticosum (Loefl.) Stuntz CAM, CHIS, CHIH, COL, DGO, GRO, HGO, JAL, MEX, MICH, MOR, NAY, OAX, PUE, QROO, SLP, SIN, TAB, TAMS, VER, YUC **Combretum igneiflorum* Rendón & R. Delgad. COL, JAL, NAY, OAX
Combretum laxum Jacq. CAM, CHIS, COL, GRO, JAL, MEX, MICH, MOR, NAY, OAX, QROO, TAB, VER
**Combretum rovirosae* Exell CAM, CHIS, OAX, TAB, VER

I could not find any species of genus *Combretum* mentioned for the Peten Itza or the Chiapas Lacandon. Fortunately Balick, Nee and Atha (2000) list three species for Belize:
Combretum cacoucia Exell -Reg Use: POIS.-Habit: Liana.
Combretum fruticosum (Loefl.) Stuntz. -Loc Use: MED. -Reg Use: MED, P RD. -Nv: chupa miel, curassow comb, monkey brush, monkey brush tie, monkey brush, tietie, sepillo, sepillo amarillo, tietie, tie male, yellow brush.-Habit: Liana.
Combretum laxum Jacq. -Syn: *Combretum mexicanum* Humb. & Bonpl. -Habit: Vine, woody.

But they do not include *Combretum argenteum*. Yet Yaxha is only a few kilometers west of the Peten-Belize border.

Whether yellow, or red, or both. These flowers are so unique in shape and features that visitors will be very happy to learn where to see them. The amount of nectar in these flowers makes them a paradise for pollinators (and for biologists studying pollinators).

Chapter 4

There are *Combretum* Flowers of other species and *Combretum* Flowers in many other areas of Guatemala

As we documented at the start of this report, there are many different species of genus *Combrotum* throughout Guatemala.

The species here is neither yellow nor orange nor red, so is potentially a completely different species. Or it could be the same species as in Peten, but simply in a different phase of development. Most of the Combrotum plants that we found and photographed in Izabal look very similar to those of Peten.

This plant was photographed on the far edge of a seasonally inundated area parallel to Rio Calix, Municipio de Livingston, Departamento de Izabal, Guatemala, during our 18-month research project on flora, fauna and biodiverse ecosystems in areas not previously studied or even visited by biologists or ecologists.

Nikon D5 with 105 mm macro lens by Nicholas Hellmuth. We photograph simultaneously in RAW mode (NEF with a Nikon) and highest quality JPG. 1:12pm, Jan. 26, 2021.

Combretum flowers and buds, Rio Caliz, El Golfete, Municipio de Livingston, Departamento de Livingston, Guatemala.

The teams of biologists and ecologists of FLAAR Mesoamerica were requested by the alcalde of Livingston to initiate and accomplish 18 months of field work and library research on the flora and fauna of remote areas of this Caribbean part of Guatemala.

COVID closed airports and many parts of the world but we accomplished field work throughout Izabal, and also simultaneously in the Reserva de la Biosfera Maya, RBM, of Peten.

Nice photo by Maria Alejandra Gutierrez.

Photo of *Combretum* flowers by David Arrivillaga, Rio Caliz, El Golfete area of Municipio de Livingston, Izabal, Guatemala.

Jan. 26, 2021, part of our 18-month research project in botany, zoology, and ecology in the Caribbean area of Guatemala.

Photo by David Arrivillaga, Rio Caliz, El Golfete are of Municipio de Livingston, Izabal, Guatemala.

Appendix A,

FLAAR Photo Folder Names for photos of Combretum in PNYNN 2019

The species in the folder names is only an initial estimate. These may be *Combretum argenteum*

Yaxha-to-Nakum-road-Combretum-fruticosum-yellow-hair-brush-flower-Jan-20-2019-NH

Yaxha-to-Nakum-Combretum-fruticosum-bushwillow-vine-yellow-flower-Jan-22-2019-NH

Yaxha-to-Nakum-road-Combretum-fructicosum-yellow-hairbrush-flowers-Jan-21-2019-NH

Yaxha-to-Nakum-road-Combretum-fruit-cosum-bushwillow-yellow-hairbrush-flowers-Jan-21-2019-NH

Yaxha-to-Nakum-road-Combretum-fruticosum-bushwillow-yellow-hairbrush-flowers-Jan-21-2019-NH

Yaxha-to-Nakum-road-Combretum-fruticosum-bushwillow-vine-Jan-22-2019-NH

Yaxha-6km-before-park-along-road-Combretum-fruticosum-bushwillow-yellow-flower-Jan-19-2019-NH

Appendix B

Suggestions for Photo Equipment for Botanists, Zoologists, Ecologists and Archaeologists

For more than half a century we utilized the cameras with best lenses for all our photography: Leica starting in 1961, then Hasselblad in 1967. In the digital era we switched to Nikon since they adapted much better to digital than Leica or Kodak (Hellmuth won a Kodak world prize 2004—the prize was airfare, hotel, meals and tickets for everything at the 2004 Olympics in Greece—for TWO people). In recent years we added Canon (they caught up with Nikon) and then Sony. Today in the era of mirror-less digital cameras, Sony is far ahead, Canon is catching up gradually, Nikon still has a lot to catch up.

So, if you are a botanist, zoologist, ecologist, or archaeologist we recommend a Sony mirror-less camera.

That said, in recent years Hellmuth accomplishes 90% of his photography of flowers and ecosystems with an iPhone Pro Max. Model 12 was great, iPhone 13 Pro Max was improved, 15 Pro Max was better—we skipped iPhone 16 Pro Max since we already had the model 15, but we will be acquiring an iPhone 17 Pro Max when they are available in a week or so.

We provide Google Pixel XL phones to the assistant-photographers. It helps to have more than one photographer on each field trip. We will be testing the Google Pixel 10 XL phone camera on our next field trip to PNYNN later in 2025 and onward.

The advantage of an iPhone Pro Max or Google Pixel XL is that their cameras are as good as the normal Nikon, Canon, or Sony, PLUS these phone cameras process every photo automatically. That said, I usually open them in RAW mode for improving the sharpness. The other significant advantage is that the telephone cameras take awesome PANORAMA photos which helps show the biodiversity of the ecosystems surrounding the plants we are studying. We now use horizontal format for most of our FLAAR Reports to make it easier to publish panoramas, plus normal photos in large size so you can see the details.

References Cited and additional Suggested Reading

Obviously you can find dozens of monographs and articles that include discussion of species of genus *Combretum* simply by Googling the name of the tree. So we show below just the standard traditional references that we use for all the plants that we find in the Reserva de la Biosfera Maya, RBM, Peten, Guatemala.

BALICK, M. J., NEE, M. H. and D. E. ATHA
2000 Checklist of the Vascular Plants of Belize with Common Names and Uses: i-x, 1-246. New York Botanic Garden Press.

BALICK, Michael J. and Rosita ARVIGO
2015 Messages from the Gods: A guide to the useful plants of Belize. Oxford University Press. 560 pages.

Sold online: www.amazon.com/Messages-Gods-Useful-Plants-Belize/dp/0199965765

HELLMUTH, Nicholas
2022. Yellow Brush Flower, Which species of *Combretum* Vine? FLAAR and FLAAR Mesoamerica. 58 pages in the downloadable PDF.

I named this a “brush” flower because the inflorescence and flowers look like a yellow hair brush. The plant is more a vine but bush-like.

LUNDELL, Cyrus Longworth
1937 The Vegetation of Peten. *Carnegie Institution Washington Publication* No. 478. 244 pages.

STANDLEY, Paul C. and Louis O. WILLIAMS
1970 Flora of Guatemala. Vol. 24, Part IX, Numbers 1 and 2. Field Museum of Natural History. 236 pages.

VILLASEÑOR, José Luis
2016 Checklist of the native vascular plants of Mexico. *Revista mexicana de biodiversidad*, Vol. 87, pages 559-902.

Acknowledgements and Appreciation for Cooperation and Coordination for Field Work Research at PNYNN, RBM, Peten

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Ing. Jorge Mario Vásquez Kilkán (CONAP, Santa Elena, Peten)
Arq. Jose Leonel Ziesse Altán (IDAEH, Santa Elena, Peten)
Biolg. Ana Lorena Lobos Morales (CONAP)

INITIATION AND COORDINATION OF THE PROJECT OF COOPERATION FOR 2021-2026

Licda. Merle Fernandez, CONAP
Marla Mercedes Bolvito Jerónimo, Unidad de Cooperación Nacional e Internacional de la Secretaría Ejecutiva de CONAP
Licda. Ana Luisa De León N., Directora de Educación para el Desarrollo Sostenible, CONAP
Ing. Sergio Alejandro Rolando Balan, Director Regional, CONAP, Peten
Ing. Jorge Mario Vásquez Kilkán (CONAP, Santa Elena, Peten)
Lic. Lester Ely García González, Coordinador Administrativo de Yaxhá para el Ministerio de Cultura y Deportes
Lic. Apolinario Córdova, CONAP Petén (in initial years)

FOR COOPERATION, HOSPITALITY, AND ASSISTANCE AT PNYNN 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. Plus we appreciate the assistance of the military at the Yaxha park entrance to help us on field trips to find and document the far-away Savanna of 3 Fern Species at the west end of PNYNN.

ASSISTANCE FOR KNOWLEDGE OF PLANTS AND ANIMALS OF PNYNN

Teco, Moises Daniel Perez Diaz, park ranger, PNYNN.

TARPS TO COVER AND PROTECT EQUIPMENT IN THE BACK OF OUR PICKUP TRUCK—AND TARPS TO COVER OUR TENT CAMPING AREA WHILE CAMPING IN REMOTE AREAS

We sincerely thank Mr. Segovia of Lonas Segovia for donating several giant tarps that are essential for our field trips to remote areas.

TENTS AND COOKING EQUIPMENT AT NAKUM CAMP, PNYNN

Manola Margot Lima Diaz owner of Restaurante El Portal de Yaxha, La Maquina

FLAAR was formed in 1969 to map Yaxha (and nearby Topoxte Island and Nakum) during 1970-1974 and we worked with the president of Guatemala and the head of FYDEP to initiate protection of this area as a national park. Other conservationists added the Naranjo segment. Recently we were asked to return for flora, fauna, and biosphere field work from August 2018 to July 2019. This project was successful and as a result we were asked by CONAP to return for five years, 2021-2025 of coordination and cooperation with them, both in the Yaxha, Nakum and Naranjo national park plus all the rest of the Reserva de la Biosfera Maya.

Base Camp Assistance at Naranjo-Sa'al

We thank Arqueologa Vilma Fialko and Arquitecto. Raul Noriega for hospitality and place to stay and kitchen while doing field work in flora, fauna and wetlands ecosystems in the Naranjo-Sa'al area of PNYNN. We thank Horacio Palacios who assisted as a guide for how to reach the amazing Savanna West of Naranjo-Sa'al.

Base Camp Assistance at Yaxha

We thank Biologist Ana Lorena Lobos Morales and both co-administrators of PNYNN (Arq. Jose Leonel Ziesse (IDAEH) and Lic. Jorge Mario Vazquez (CONAP) for providing a place to stay for the photographers, biologists, and assistants of the FLAAR Mesoamerica team of flora and fauna during the 1-week-a-month field trips August 2018 through July 2019.

In turn FLAAR purchased and donated a cooking stove when the original one no longer functioned, plus we have photographed and documented many tree and insect species that we found around this camp.

The design of this FLAAR Reports is horizontal for several reasons: so horizontal photos can be shown at larger size so you can see the detail; and so we can put two vertical photos on the same page. A horizontal format is easier to look at on a computer monitor. Plus this PDF can be presented in a classroom at this helpful horizontal format. This original design is by Nicholas Hellmuth, additional design concepts are by Valeria Aviles Diaz (FLAAR Mesoamerica) completed by Fernanda Ramos .

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 Naranjo. We also appreciate the hospitality of her sons Sebastian 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 and Naranjo.

Equally crucial is having a place to charge the batteries of the computers, or 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.

In order to post photographs on botanical and zoological websites, you can't do this if there is either no Internet or weak Internet. Thus it is very helpful that when we are provided rooms and meals, that Internet is also provided by the Ecolodge El Sombrero.

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

www.elsombreroecolodge.com/en-us

We appreciate a donation during November 2021 to help cover the costs of FLAAR research projects specifically to assist and support the current FLAAR project of flora and fauna in the Reserva de la Biosfera Maya (RBM). This donation also assisted the FLAAR (USA) and FLAAR Mesoamerica (Guatemala) research project in the Municipio de Livingston area of the departamento of Izabal, Guatemala.

In a subsequent year we received an additional helpful donation from this family to help fund the field work and research and publications on flora, fauna and biodiverse ecosystems of PNYNN and surrounding RBM of Peten, Guatemala.

These donations are from a family in Chicago in honor and memory of botanist Dr John D. Dwyer, who worked in many areas of Mesoamerica, including in the Yaxha area in the 1970's while the site was being mapped by FLAAR.

These donations are also in recognition of the urgency and need for conservation of both wildlife and rare plants in the bio-diverse ecosystems of the Reserva de la Biosfera Maya (RBM) of Guatemala. Parque Nacional Yaxha, Nakum and Naranjo (PNYNN) is one part of the over 5 million acres of the RBM.

FLAAR is a non-profit research institute, tax exempt in USA.

Maps to show you how to get to Yaxha and Nakum

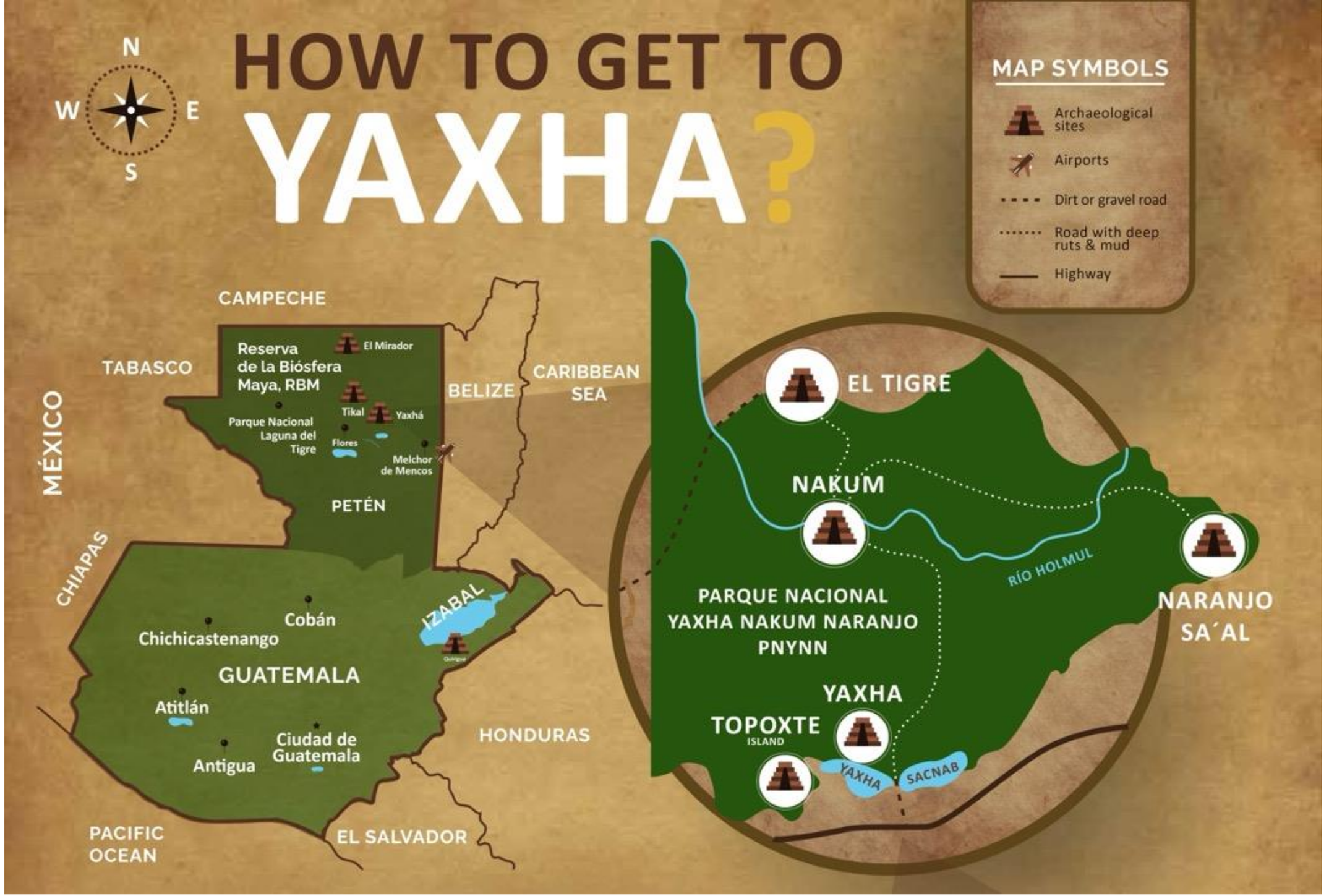
When driving from Guatemala City to Peten there are two routes: via Alta Verapaz (Coban) or via Izabal (Rio Dulce). If you opt for Rio Dulce (the route of buses and shuttles) you cross through the Bosque Seco which has cactus (including tree cactus) but in a literally forest—so not just cacti standing alone).

You also can see lots of gorgeous flowers on both sides of the highways on any and every highway in Guatemala.

After the Bosque Seco of El Progreso and Zacapa turns into the rainy area of Izabal, on Highway CA-9, at Km. 95 you will turn north to cross Rio Dulce in the Departamento de Izabal.. We have stopped in this area as we drive during our 18-month project in the Caribbean area of Guatemala plus occasionally when driving to Peten (we usually drive through Alta Verapaz since lots of our staff are Q'eqchi' and Pokomchi-speaking residents of Alta Verapaz).

So every part of Guatemala has different native plants out in the wild for you to experience. We at FLAAR, accomplish field trips both in the deserts studying remarkable cacti, in the rain forests, wading deep into swamps, and hiking many kilometers to reach areas never before studied by any botanist, zoologist, ecologist or archaeologist.

www.maya-ethnobotany.org
www.maya-ethnozoology.org
www.maya-archaeology.org
www.FLAAR.org
www.FLAAR-Mesoamerica.org
Plus social media


HOW TO GET TO
YAXHA?
N
W
E
S
MAP SYMBOLS
Archaeological sites
Airports
Dirt or gravel road
Road with deep ruts & mud
Highway
CAMPECHE
TABASCO
MÉXICO
Reserva de la Biósfera Maya, RBM
El Mirador
Tikal
Yaxhá
Parque Nacional Laguna del Tigre
Flores
Melchor de Mencos
PETÉN
BELIZE
CARIBBEAN SEA
CHIAPAS
Cobán
Chichicastenango
IZABAL
GUATEMALA
Atitlán
Ciudad de Guatemala
Antigua
HONDURAS
PACIFIC OCEAN
EL SALVADOR
EL TIGRE
NAKUM
RÍO HOLMUL
PARQUE NACIONAL YAXHA NAKUM NARANJO PNYNN
NARANJO
SA´AL
YAXHA
TOPOXTE
ISLAND
YAXHA
SACNAB

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.

The following four pages Show the Front Covers of the first fifteen FLAAR Reports on Flowers of PNYNN worth Seeing and Learning About

The front covers are not yet hot links because we are still finishing these reports. But by end of October 2025, all thirteen will be on-line on www.Maya-ethnobotany.org and on other of our web sites.

We are also preparing:

FLAAR Reports on orchids and bromeliads of PNYNN.

FLAAR Reports on ”How to Recognize which Tree Genus and Species by the Pattern, Color, or other Features of the Bark on their Trunk”

FLAAR Reports on edible insects of PNYNN. There are over 500 edible insects across Mexico, so we are looking for samples at PNYNN.

FLAAR Reports on waterbirds of PNYNN, published as part of a project of coordination and cooperation with FUNDAECO.

Bright Orange Flowers of *Cordia dodecandra,* Nakum Area of PNYNN, Peten, Guatemala

Volume 1 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)
October 2025

4-Petalled Flowers of River Banks, Lake Shores, and Seasonally inundated Savannas

Ludwigia octovalvis

Volume 2 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Masses of Yellow Flowers, Genus *Combretum*, along road between Yaxha and Nakum, PNYNN

Volume 3 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Text and Photographs: Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)
October 2025

Flowers and bizarre Bracts of *Calathea lutea*, relative of *Heliconia* and of Banana Naranjo-Sa'al and Savanna of 3 Fern Species areas of Parque Nacional Yaxha, Nakum and Naranjo (PNYNN)

Fresh Green Leaves of *Calathea lutea*
are a great Alternative to Plastic

Volume 4 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA)
and FLAAR Mesoamerica (Guatemala),
October 2025

Costus pictus, Medicinal Flowers,
Yaxha and Naranjo-Sa'al Areas of PNYNN

Volume 5 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports,
FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Piscidia piscipula, Jabin, Dogwood, with Hummingbird Pollinator
Yaxha and Nakum areas of Parque Nacional Yaxha, Nakum and Naranjo

Volume 6 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

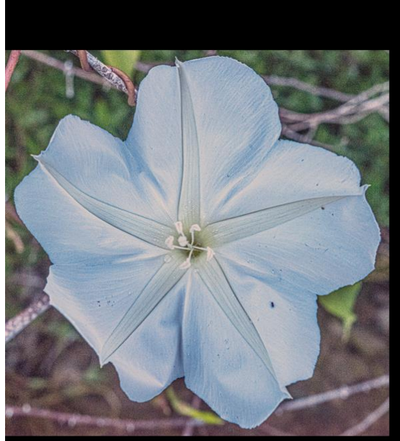
Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

A beautiful Red Flower, a Hibiscus Relative, but the Petals and Sepals never open
Malvaviscus arboreus, Sleeping Hibiscus

Volume 7 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Photogenic wild Morning Glory Flowers of Nakum and Yaxha areas of PNYNN

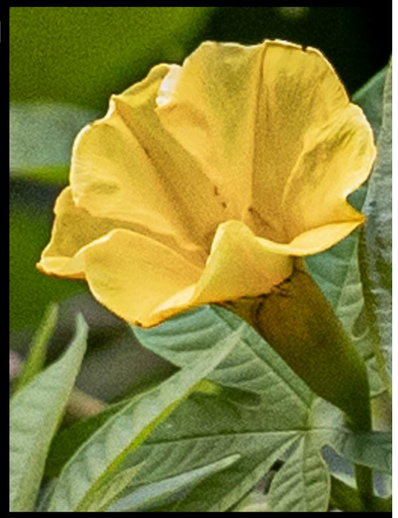


Volume 8 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Photogenic Bright Yellow Morning Glory Flowers of Genus *Merremia*

Nakum and Yaxha areas of PNYNN



Volume 9 for Series:

Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Yellow Flower Paradise, Yellow Flowers Covering the Tree Canopy

Nakum, East of Savanna Bajo, PNYNN

Volume 10 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Yellow Flowers & Fruits of Wild Undomesticated Squash Vines,

Cucurbita lundelliana

Along the Shores of Lakes and Rivers in Parque Nacional Yaxha, Nakum and Naranjo

Volume 11 for Series:

Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)
October 2025

Orange Masses of Flowers of Parasitic Vine (but does not kill the host)

Genus Psittacanthus, Yaxha, Blom Sacbe and adjacent Grupo Maler

Volume 12 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Text and Photographs: Nicholas Hellmuth
FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala)
October 2025

Yellow-Orange Flowers of Trees of the *Caesalpinia* species, Fabaceae family
Bajo La Justa, between Yaxha and Nakum, PNYNN

Volume 13 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth, FLAAR Reports, FLAAR (USA) and FLAAR Mesoamerica (Guatemala), October 2025

Gorgeous Yellow Masses of Flowers of *Haematoxylum campechianum* at Parque Nacional Yaxha, Nakum and Naranjo

Volume 14 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo, PNYNN
Reserva de la Biosfera Maya, RBM, Peten, Guatemala

Nicholas Hellmuth

FLAAR Reports,
FLAAR (USA) and FLAAR Mesoamerica (Guatemala)

October 2025

Flowers of Orchids on Trees
surrounding the Maya Ruins of Yaxha, PNYNN

Vol 15 for Series:
Flowers worth experiencing at Parque Nacional Yaxha, Nakum and Naranjo (PNYNN)

Reserva de la Biosfera Maya
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Peten, Guatemala

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October 2025

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