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

Malvaviscus arboreus, Sleeping Hibiscus

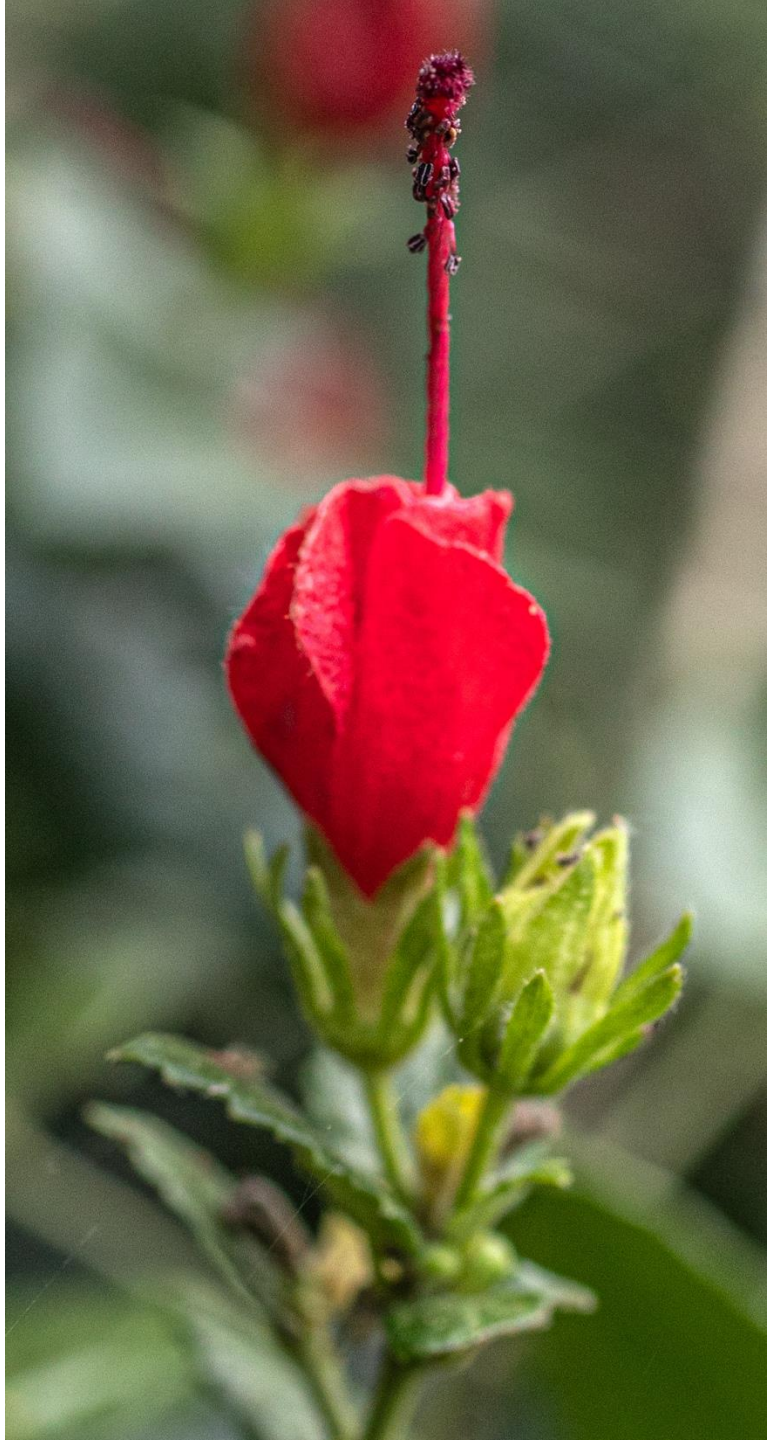
Volume 7 for Series:

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

Contents



Introduction to remarkable red flowers that Never Open

Malvaviscus arboreus is a wild relative of Hibiscus native to Guatemala. *Malvaviscus arboreus* can adapt to grow in various ecosystems but is most common along the edges of rivers, streams, lakes, aguadas, bajos, or in seasonally inundated savannas.

Malvaviscus arboreus **is native to the Americas**

We all know the beautiful hibiscus flowers from garden shrubs or small trees. All these hibiscus species are from Asia, Africa or elsewhere: none are native to the Americas. But there are about half a dozen hibiscus relatives that are native to Guatemala and neighboring countries. For example, you can find *Malvaviscus arboreus* wild throughout Mesoamerica, Caribbean, and northern South America. The 1942 monograph by Schery shows everything that was known up to that time about all species of genus *Malvaviscus*.

Many articles and monographs list *Malvaviscus arboreus* as being edible. One of many references is Chizmar 2009: 230-232. But *Malvaviscus arboreus* is completely missing from most hard-copy monographs on edible plants of the Maya. Because the research teams of FLAAR are out hiking through remote areas for decades, I learned about *Malvaviscus arboreus* being very common in wetlands. Then I accomplished library research and found that many botanists list it as edible (albeit not most botanists for Mesoamerica). So already since 2014 *Malvaviscus arboreus* is included in the FLAAR list of edible plants of the Maya world.

Actually *Malvaviscus arboreus* is frequently found in along the edges of streams, lakes or lagoons plus occasionally in open areas of bajo vegetation. We at FLAAR have been accomplishing field work in remote wetland ecosystems of Peten and Izabal for the recent seven years. We are interested in learning how many plants of biodiverse wetlands ecosystems were available for the Classic Maya to harvest out in the wild and eat—plants that do not require destructive slash-and-burn milpa agriculture.

Malvaviscus arboreus along the banks of Rio Ixtinto, near Topoxte Island, southwest part of Lake Yaxha, PNYNN.

Photos by Nicholas Hellmuth.

Chapter 1

Botanical Information and Documentation on *Malvaviscus arboreus*

Malvaviscus arboreus Cav. var. **mexicanus** Schltdl. — **Syn:** *Malvaviscus arboreus* Cav. var. *brihondus* Schery; *Malvaviscus brevibracteatus* E.G. Baker; *Malvaviscus grandiflorus* H.B.K. — **Loc Use:** FOOD, MED, ORN. — **Reg Use:** MED, PRD, ORN, FOOD, FIBR. — **Nv:** bootblack flowers, catusa, old man's apple, tulipancia, tulipán, tulipancillo, tulipanoia, tulipan del monte, white moho, wild apple. — **Habit:** Shrub.

So this helpful description by Balick, Nee and Atha (2000) documents LOTS of uses available to the Classic Maya people over a thousand years ago and before. Chizmar notes that it is the ripe fruit that you eat. It's the flowers that are mostly used for medicinal treatment.

Where is *Malvaviscus arboreus* found in Mexico?
Malvaviscus arboreus Cav. AGS, CAM, CHIS, CHIH, COL, CDMX, DGO, GTO, GRO, HGO, JAL, MEX, MICH, MOR, NAY, NLE, OAX, PUE, QRO, QROO, SLP, SIN, TAB, TAMS, TLAX, VER, YUC, ZAC (Villasenor 2016: 795). So, *Malvaviscus arboreus* is found all over Mexico and so was totally available to Maya people everywhere.

Where *Malvaviscus arboreus* found in Guatemala on Portal de Biodiversidad de Guatemala:
Alta Verapaz, Baja Verapaz, Chimaltenango, El Progreso, El Quiche, Escuintla, Guatemala, Huehuetenango, Izabal, Jutiapa, Peten, Quetzaltenango, Retalhuleu, Sacatepéquez, San Marcos, Santa Rosa, Sololá, Suchitepéquez, Zacapa. So, as in Mexico, in Guatemala *Malvaviscus arboreus* is found all across the country. For Peten it is listed for being on the top of Tikal pyramid Temple III, Temple IV and also Temple V.

Guatemala, Petén, Flores, Parque Nacional Yaxha-Nakum-Naranjo, northern shore of Laguna Sacnab, 17.0666667 -89.3666667, 200m. Since the south side of Laguna Sacnab was bulldozed by a ranch owner and since the east and northeast parts have been turned into agriculture or ranches, we have not undertaken research trips on that lake—there are plenty of other more pristine areas of PNYNN to achieve field work. *Malvaviscus arboreus* is also listed for Lake Yaxha, 17.06361 -89.39166, 2m, and elsewhere.

Malvaviscus arboreus in Flora of Guatemala

Malvaviscus arboreus, typical form. Monacillo; Poro (Jutiapa); Sobon (Zacapa); Amapola; Manzanita; Tulipancillo (Peten); Tamanchich (Peten, Maya).

Wet to dry thickets or forest, often in roadside hedges or in waste ground, 2,500 meters or less; Peten; Zacapa; Chiquimula; Jalapa; Jutiapa; Santa Rosa; Sacatepequez; Chimaltenango; Solola; Quiche; Huehuetenango; Quezaltenango; San Marcos. Mexico; Honduras and Salvador to Costa Rica; West Indies; northwestern South America.

A shrub or small tree, rarely as much as 5 meters high, the branchlets, petioles, and pedicels densely velutinous-pilose or tomentose with pale stellate hairs; leaves usually long-petiolate, generally lobate, densely and softly stellate-pilose beneath, thinly or very densely stellate-pilose on the upper surface, the margins coarsely serrate or sinuate; flowers bright red, 3-5.5 cm. long; involucre usually densely pubescent, the segments linear-lanceolate to spatulate, longer or shorter than the calyx.

Sometimes known in Salvador by the names "manazana," "arito," and "quesillo," the last in reference to the shape of the fruit; "bizil" (Yucatan); "civil" (Tabasco). The shrub is a rather handsome one when in full flower, because of its showy, bright red corollas, but the flowers usually are not produced in great abundance. In former years it was grown as a pot plant in the United States, but is now seldom seen. The juicy and somewhat mucilaginous fruits are often eaten by children, but they are mawkish in flavor and not appetizing. The shrub is seen sometimes in Guatemalan gardens. In Salvadora decoction or infusion of the leaves is applied to the hair, to make it soft and lustrous.

Standley and Steyermark 1949: 363-364

Most plants have many different common names, and each common name is often used for several different species, but another common name for *Malvaviscus arboreus* is clavel silvestre,

Chapter 2

Malvaviscus arboreus **growing along the banks of Rio Ixtinto**

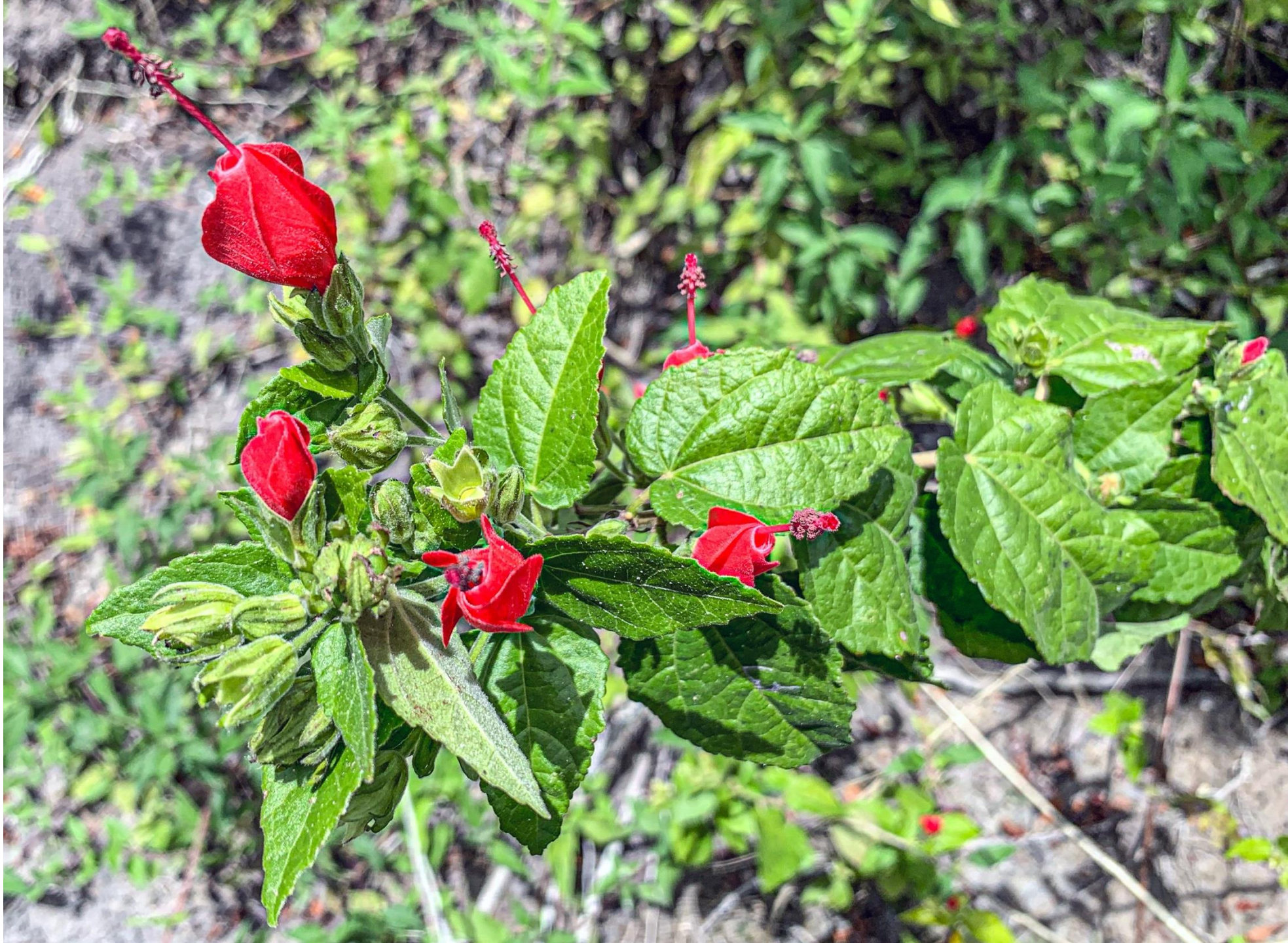
At the lower right you can see the long twigs of *Malvaviscus arboreus* growing out over the water of Rio Ixtinto.

Photo by Nicholas Hellmuth with Nikon camera.

Closer view so you can see the water of Rio Ixtinto more clearly (along the right side of this photo).

At the lower left you can see the shadow that shows the Nikon camera held in two hands by Nicholas Hellmuth. Since we are in a boat we are not using a tripod.

Malvaviscus arboreus growing on the bank of Rio Ixtinto. This river flows by Isla Topoxte to enter Lake Yaxha.



Malvaviscus arboreus growing on the bank of Rio Ixtinto.

Malvaviscus arboreus flowers all over the place. This shrub is filled with bright red flowers much of the year.

These hibiscus-like flowers never “open”. They stay just like you see them here.

Along the banks of Rio Ixtinto, near Topoxte Island, southwest part of Lake Yaxha, PNYNN.

Photos by Nicholas Hellmuth.

By growing along the shores of lakes and banks of rivers, this *Malvaviscus arboreus* plant can receive full sun because there is no shade over the river.

Along the banks of Rio Ixtinto, near Topoxte Island, southwest part of Lake Yaxha, PNYNN.

Photo by Nicholas Hellmuth.

A single *Malvaviscus arboreus* shrub has hundreds of flowers.

Although *Malvaviscus arboreus* grows in many different habitats, it's easiest to see when you are in a lancha going up Rio Ixtinto. This river flows by Isla Topoxte to enter Lake Yaxha.

When you rent a boat be sure to tell them in advance that you would also like to go up the Rio Ixtinto.

You will also often see masses of yellow butterflies enjoying the mud along the banks of the river.

Photo by Maria A. Gutierrez.

Chapter 3

Malvaviscus arboreus
in Yaxha area of PNYNN

Malvaviscus arboreus, Yaxha area of PNYNN, photo by Teco (Moises Daniel Perez Diaz with Huawei, July 17, 2020.

Malvaviscus arboreus, Yaxha area of PNYNN, photo by Teco (Moises Daniel Perez Diaz with Huawei, July 17, 2020.

It definitely helps to photograph flowers from several angles—so not just from straight-on. Seen from below these flowers look all the more interesting.

Malvaviscus arboreus survives mixed with lots of other plants.

Yaxha area of PNYNN, photo by Teco (Moises Daniel Perez Diaz) with Huawei, July 17, 2020.

Chapter 4

Malvaviscus arboreus **along the road through Bajo La Justa between Yaxha and Nakum, PNYNN**

This and the following pages are photos by Maria Alejandra Gutierrez.

Malvaviscus arboreus flowers, visible along the sides of the road between Yaxha and Nakum.

Don’t try to drive to Nakum with any normal car—the underside will be scraped off when your tires sink into the deep ruts. Even 4x4 SUV’s can be damaged. Best a 4x4 pickup truck. You can rent one in the Santa Elena-Flores airport, or at Yaxha with a local driver (best in advance).

But to get to Yaxha, any kind of vehicle can easily reach Yaxha.

At the left the flower is still opening.

At the right the upper flower is fully opened. The lower flower has wilted.

Malvaviscus arboreus flowers most of the year, so when you visit Yaxha you should be able to see these flowers along the banks of Rio Ixtinto—you can rent a boat with lanchero at the park entrance or if you lunch or stay overnight at hotel El Sombrero Ecolodge you can reserve a boat and lanchero from the hotel.

I show the above photo on two pages so you can compare the view from the top with a view from the side.

Seems to be something tasty for this larva.

All the photos up to here are by Maria Alejandra Gutierrez, along the road from Yaxha to Nakum, in PNYNN.

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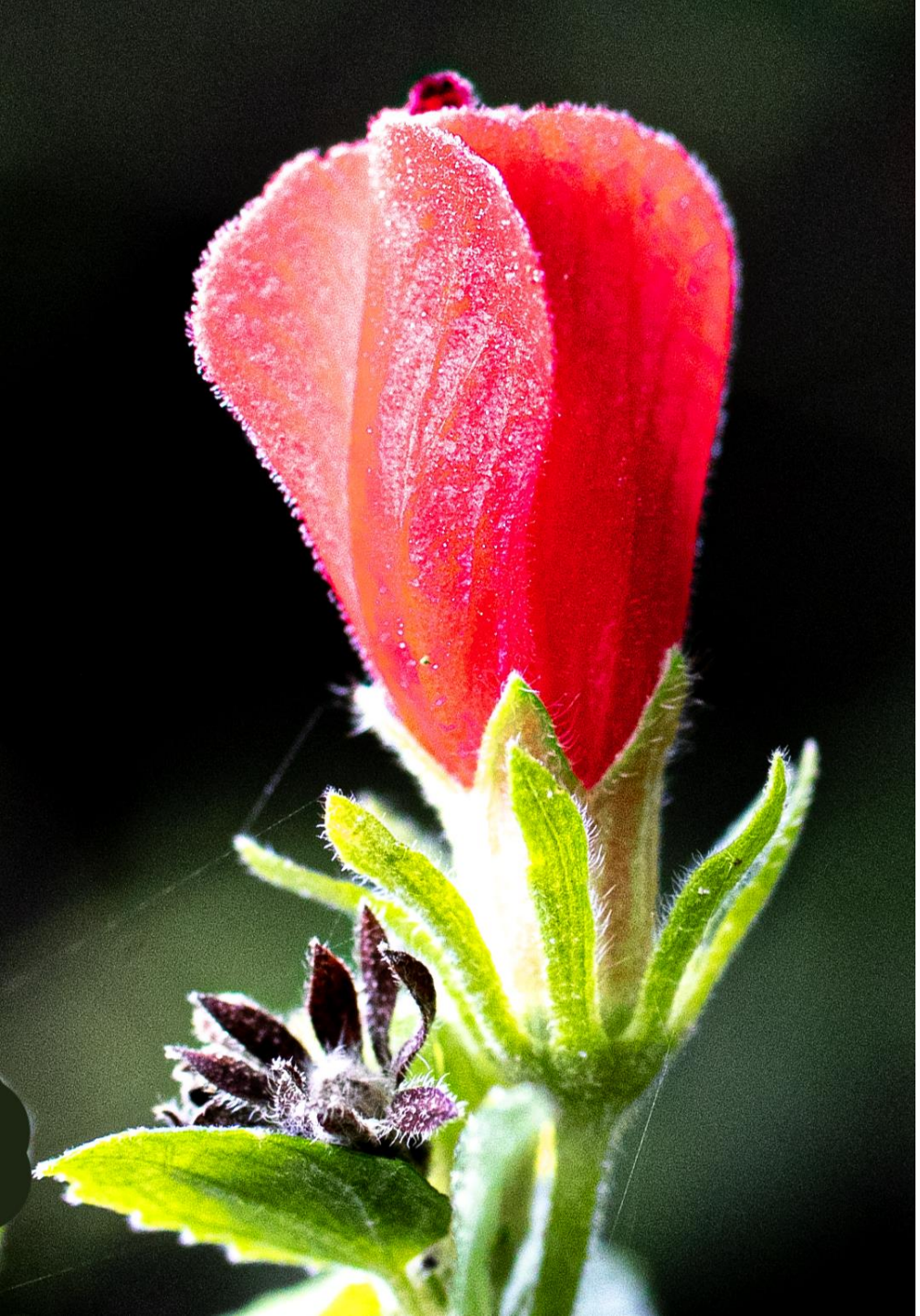
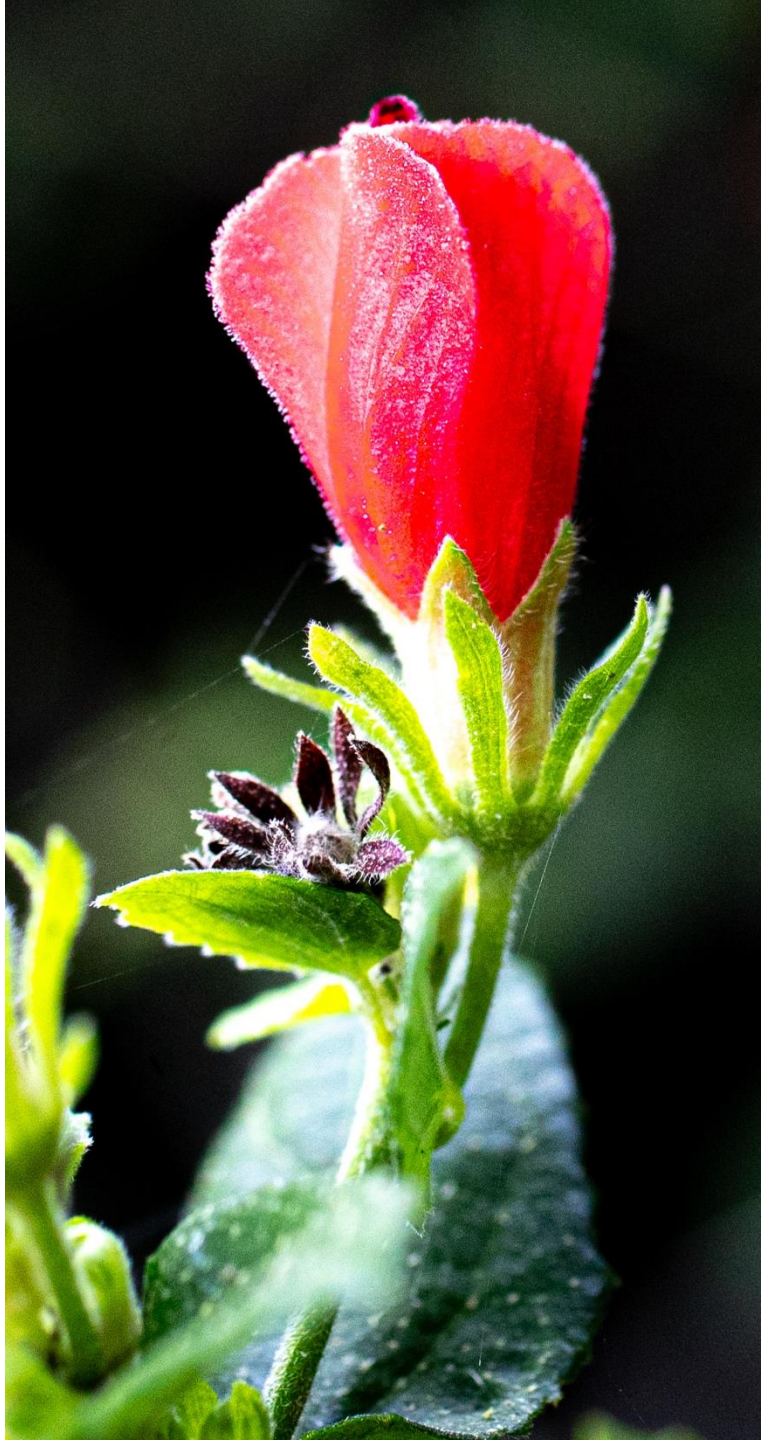


In this photo you can see the row of parallel “fuzz” that sticks out from the edge of the petals and other parts of this plant.

Not sure this much detail would be on a flattened, dried specimen in the drawer of a research herbarium. These specimens are essential, but so are close-up photos of the actual flowers out in the wild, in their natural habitat.

These photos pf FLAAR need a database like iNaturalist or others.

A helpful donation to non-profit FLAAR could make it possible to share more of our photos in on-line databases.



Nakum has Rio Holmul and lots of other wetlands around the camping area, so lots of *Malvaviscus arboreus*.

Photo by Senaida Ba Mucu, Dec 20, 2018.

You can see lots of *Malvaviscus arboreus* along the sides of the road from Yaxha to Nakum, that we show on the following pages.

You do not often see photos of a wilted flower; and seldom the flowers before they really open up. But our goal on the FLAAR field trips is to help botanists and students see more details than are available in herbaria collections.

Along the road from Yaxha to Nakum, PNYNN. This road has seasonally dry/seasonally inundated bajo vegetation in much of the approximately 17 kilometers between Yaxha and Nakum.

Photo by Nicholas Hellmuth, Nikon D5, 100mm macro lens, Dec. 20, 2018, 2:00pm, FLAAR Photo Archive of Flora, Fauna and Biodiverse Ecosystems of Guatemala.

When not in a boat we prefer to use a sturdy Gitzo tripod with a sturdy tripod head. Cheap low-bid tripods wobble—we have used Gitzo tripods for half a century.

In past years we used primarily Nikon cameras but several of our photographers preferred Canon so we added those models. Then in recent years Sony digital cameras were more advanced than either Nikon or Canon, so we provided Sony cameras to the photo teams.

Now mirror-less cameras are much improved, especially for Sony. Canon is gradually catching up. Nikon was a bit slow entering the mirror-less technology but now is focused on these.

In the meantime, the cameras on iPhone Pro Max and on Google Pixel cameras are so advanced you can do a lot of your photography without a camera or tripod—so easier to carry the phone-cameras on narrow trails while hiking to remote biodiverse ecosystems. Plus the panorama photos by telephone cameras are already joined automatically, so you don’t need to work on your computer to add photos from your traditional camera.

Photo by Senaida Ba Mucu, FLAAR Mesoamerica, in Nakum area of PNYNN.

Flowers of *Malvaviscus arboreus a*long the road from Yaxha to Nakum, PNYNN, Reserva de la Biosfera Maya (RBM), Peten, Guatemala. This road has bajo vegetation in much of the approximately 17 kilometers between Yaxha and Nakum. A bajo in Peten is a flat area that is bone dry in the dry season but has standing water in the rainy season (no way to drive to Nakum at the height of the rainy season since the water can be up to a meter high across the mud road).

You can also trek along the road—you will see lots more plants if you are not inside a vehicle. Just be sure to have a guide—and a source of tents and food for when you arrive at Nakum. Sebastian de la Hoz can provide services for trekking and glamping. Teco, Moises Daniel Perez Diaz knows the plants and birds and can be your guide (need to reserve in advance).

Photo by Nicholas Hellmuth, Nikon D5, 100mm macro lens, Dec. 20, 2018, 2:01pm, FLAAR Photo Archive of Flora, Fauna and Biodiverse Ecosystems of Guatemala.

Along the road from Yaxha to Nakum, within PNYNN.

Photo by Juan Pablo Fumagalli, FLAAR Mesoamerica.

Along the road from Yaxha to Nakum, within PNYNN.

Very nice closeup view of the “fully opened (unopened)” flower of *Malvaviscus arboreus* by Juan Pablo Fumagalli, FLAAR Mesoamerica.

Key pollinators and factors for flowers of *Malvaviscus arboreus* (Google AI):

•**Hummingbirds**:

•The flowers are specifically adapted for hummingbird pollination, with nectar production peaking in the early morning when hummingbirds are most active. The principal pollinator in Costa Rica is the cinnamon hummingbird (Amazilia rutila), according to a study on Taylor & Francis Online.

•**Butterflies and Moths**:

•These insects are also attracted to the vibrant red blooms and are known to visit the flowers for nectar, although their role in pollination is less significant.

•**Bees**:

•Bees are another type of pollinator that visits the flowers, contributing to pollen and nectar collection.

Why the flowers attract these pollinators

•**Nectar**:

•The flowers produce abundant nectar, which is a primary food source for hummingbirds.

•**Color**:

•The bright red, distinctive flowers resembling a Turkish fez or cardinal's hat are visually appealing to pollinators.

•**Pollen**:

•The pollen grains are large and linked by viscin threads, which aids in their transport by pollinators.

References Cited and Additional Suggested Reading on *Malvaviscus arboreus* Cav.

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.

CHIZMAR Fernández, Carla
2009 Plantas comestibles de Centroamérica. Santo Domingo de Heredia, Costa Rica: Instituto Nacional de Biodiversidad, INBio. 360 pages.

FRYXELL P. A.
1990 Malvaceae. Flora of Chiapas, 3, 1–90.

GRIJALVA A.
1992 Plantas Útiles de la Cordillera Los Maribios. FAO-MARENA-UCA.

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

LUNDELL, Cyrus Longworth
1938 Plants probably utilized by the Old Empire Maya of Peten and adjacent Lowlands. Papers of the Michigan Academy of Sciences, Arts, and Letters; Vol. 24, pp: 37-56. University of Michigan, Ann Arbor.

SCHERY, Robert W.
1942 Monograph of Malvaviseus. Pages 183-244 in *Annals of the Missouri Botanical Garden*, Vol XXIX. Downloadable on Internet Archive.

STANDLEY, Paul C. and Julian A. STEYERMARK
1949 Flora of Guatemala. Fieldiana: Botany, Vol. 24, Part VI. Chicago Natural History Museum. *Malvaviscus arboreus* is discussed on pages 363 and 364.

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

Helpful web pages on *Malvaviscus arboreus*:

https://tropical.theferns.info/viewtropical.php?id=Malvaviscus+arboreus
Tropical Plants Database, Ken Fern has good basic information on all aspects; plus lists sources (most copy-and-paste webpages have no bibliography or citations).

Acknowledgements and Appreciation

FOR COOPERATION, HOSPITALITY, & ASSISTANCE AT PARQUE NACIONAL YAXHA, NAKUM AND NARANJO PROJECT (Aug. 2018 – Jul 2019)

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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 Balan, Director Regional, CONAP, Peten
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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

TENTS AND COOKING EQUIPMENT AT NAKUM CAMP, PNYNN

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

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

FLAAR was formed in 1969 to map Yaxha (and nearby Topoxte Island and Nakum) and we worked with the then 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 more years, 2021-2026, 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 (RBM), Peten, Guatemala.

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 Lorena Lobos 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.

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

Donations make our Field Trips and Research and Publications Possible

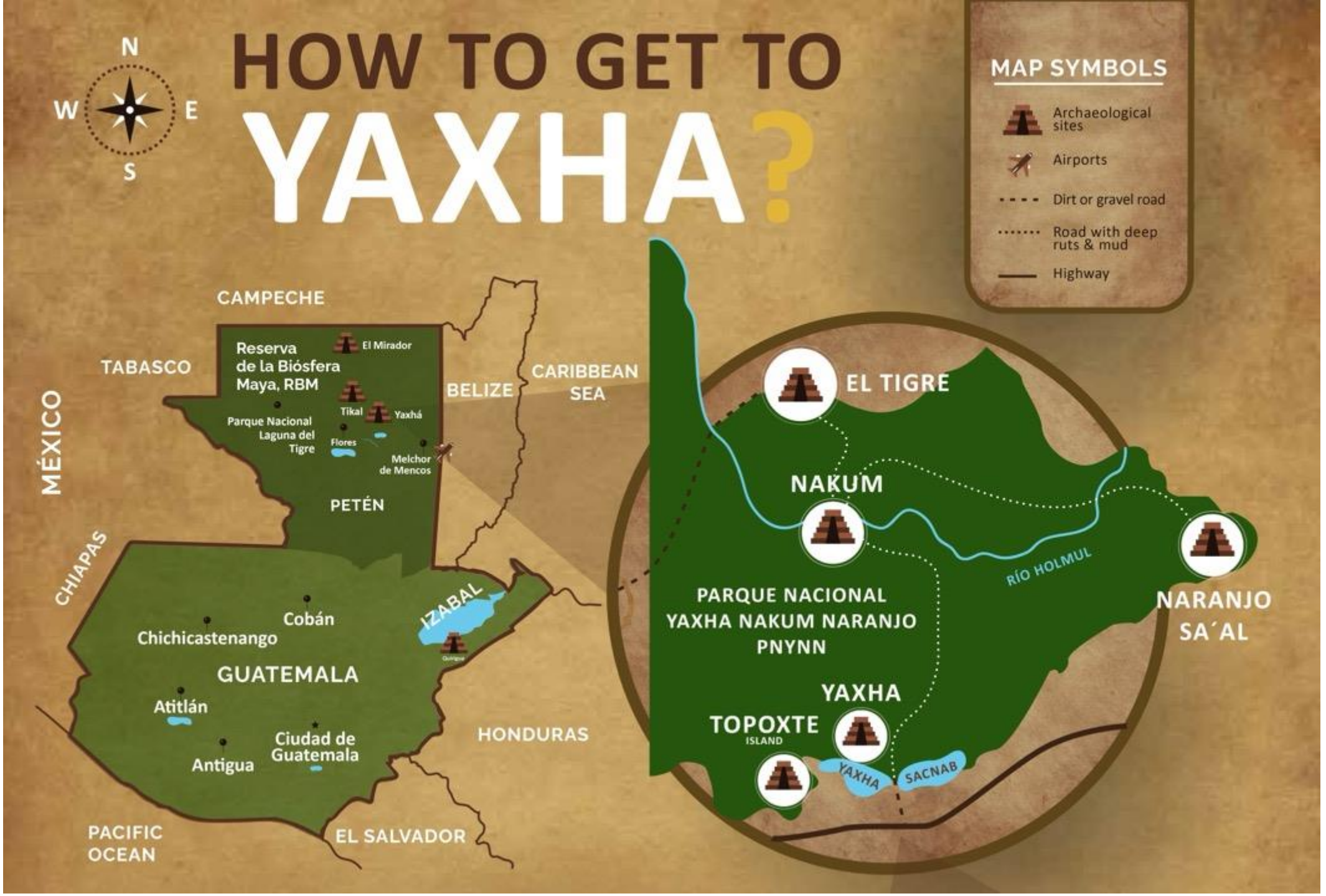
We appreciate a donation during November 2021 to help cover the costs of FLAAR research projects specifically to assist and support the current FLAAR project of flora and fauna in the Reserva de la Biosfera Maya (RBM). This donation also assisted the FLAAR (USA) and FLAAR Mesoamerica (Guatemala) research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


HOW TO GET TO
YAXHA?
N
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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
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BELIZE
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IZABAL
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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 November 2025, all fifteen 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

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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

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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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October 2025

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