# Corozera Los Enamorados, 1st Corozera North of Uaxactun

# Road to El Biotopo Naachtún Dos Lagunas

Drone Pilot and Aerial Photos, May 3, 2025: Carlos Elgueta
Text and Photos from the Ground: Nicholas Hellmuth

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On May 3rd, 2025, we had originally planned to visit and photograph the corozera south of Uaxactun, towards the north border of PANAT. But people in Uaxactun said that so many trees and branches have fallen across the road that it would take many hours to clear the road, so we decided to head north along the road to El Biotopo Naachtún Dos Lagunas. This road is transited most of the year so 90% of the fallen trees are already removed by other drivers.

This field trip is for the FLAAR project of coordination and cooperation with CONAP for the RBM area of Peten.

We went with Teco (Moises Daniel Perez Diaz), park ranger of PNYNN, who has worked with FLAAR now for over six seasons of field trips. We also hired Jaime España of Uaxactun as a guide. He knows lots of ecosystems since he has previously worked with the Proyecto Arqueológico Regional SAHI-Uaxactun, so knows the areas surrounding Uaxactun.

On this field trip we found two corozeras (possibly two segments of one giant corozera but since the two segments were several kilometers apart when visible from the dirt/mud road, I name them as separate).

We found an unexpected *Heliconia* species adjacent to a spiny coyol palm at our first stop. We will show these in separate reports because they were not in a noticeable corozera. Most *Heliconia* species in Guatemala are in Alta Verapaz and Izabal—not that many in Peten.

The mud road (dirt road at height of the dry season) has ruts very deep from heavily loaded large-tire 4x4 pickup trucks that are needed to get food and supplies to El Biotopo Naachtún Dos Lagunas. So no 4x4 SUV would survive the deep ruts and high center. And no normal 4x4 pickup truck would survive either (the center of the road will scrape off all the parts of the underside of the motor when your tires slip into the very very deep ruts). So you need a 4x4 pickup truck that has been “raised”. There is a popular company in Coban, Alta Verapaz, that can do this--SLYM Taller industrial y Accesorios 4x4. In Guatemala City there is a capable company, Mas Accesorios, that can provide every kind of improvement to your 4x4 pickup. We had our VW Amarok improved here, but so far we have not wanted to “lift” the vehicle. But if a kind soul can donate so we can obtain a 4x4 double-cabin Toyota pickup, this would become super helpful for all future field trips when raised.

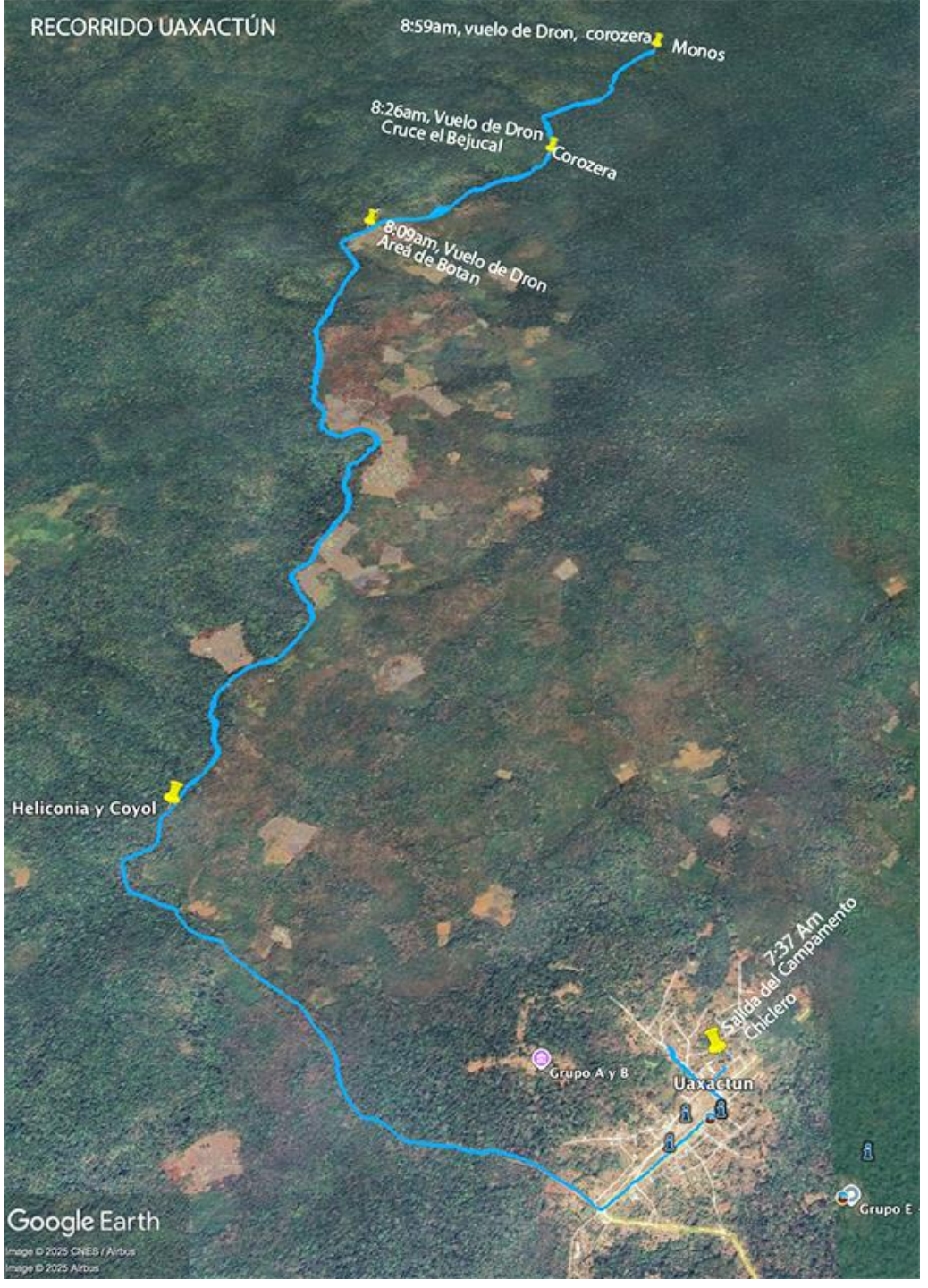


Fig. 1. Map by Byron Pacay showing the locations of the two corozeras in the area named Los Enamorados, a few kilometers north of Uaxactun.

Fig. 2.

Corozo palms, *Attalea cohune*, are the dominant species in a corozera. But botan palm, guano palm, escobo palm (and other palm species) are often present as well. You would need to dedicate an entire day to hiking through each corozera to find how many other palm species are present. But we did not notice as many pacaya palms around Uaxactun as were in the corozeras around Naranjo-Sa'al.

The structure of corozo palms is very photogenic, *Attalea cohune.*

Fig. 3, a and b.

Corozeras are my favorite palm ecosystem.

All the photos from the ground are by Nicholas Hellmuth with iPhone 15 Pro Max, FLAAR Digital Photo Archive of Flora, Fauna, and Biodiverse Ecosystems of Guatemala.

Fig. 4.

Fig. 5. Here you see literally solid corozo palms, *Attalea cohune*, with one escobo palm barely visible at the left, *Cryosophila stauracantha*.

1st corozera north of Uaxactun along the road towards El Biotopo Naachtún Dos Lagunas. Photo by Nicholas Hellmuth with iPhone 15 Pro Max in Pano mode. FLAAR Photo Archive of Flora, Fauna, and Biodiverse Ecosystems of Guatemala. A telephone that does precise and good resolution panorama photos is essential for any modern botany, ecology, or archaeology project.

Fig. 6. Solid corozo palms as far as the eye can see. 1st corozera north of Uaxactun along the road towards El Biotopo Naachtún Dos Lagunas. Photo by Nicholas Hellmuth with iPhone 15 Pro Max in Pano mode. FLAAR Digital Photo Archive of Flora, Fauna, and Biodiverse Ecosystems of Guatemala.

Escobo palm, *Cryosophila stauracantha*, is very common in most corozeras of PNYNN and surrounding areas.

Corozo palm is very easy to distinguish (photo at the right)

1st corozera north of Uaxactun along the road towards El Biotopo Naachtún Dos Lagunas. Photos by Nicholas Hellmuth with iPhone 15 Pro Max.

Fig. 7, a and b.

Fig. 8. Here you can notice that escobo palm, *Cryosophila stauracantha*, is very common in most corozeras of PNYNN and surrounding areas. 1st corozera north of Uaxactun along the road towards El Biotopo Naachtún Dos Lagunas. Photo by Nicholas Hellmuth with iPhone 15 Pro Max in Pano mode.

Botan palms, *Sabal mauritiiformis,* are like guano palms on steroids. Botan palms grow 300% taller than guano palms (which can grow to the height of a 2-story house).

*Sabal Mexicana* is guano palm**.**

The tall palm in this photo is botan; the other palm below and in the front is guano palm.

Fig. 9, a and b.

Having a good quality drone to take aerial photos is essential for botany, ecology, and archaeological field work. Cheap “Go-Pro” drones are for hikers and bikers on a weekend or family vacation—not appropriate for scholarly field work documentation. We have a DJI Mavic 2 Pro and a DJI Mavic 3. The Mavic 3 can be flown between trees. The new Mavic 4 Pro would be significantly better.

In addition to having a good drone camera, it is crucial to have a professional drone pilot on your team. Haniel Israel Lopez Lopez and David Emmanuel Chocooj Garcia and Edwin Solares and Brandon Hidalgo have piloted our drones in past years. Javier Archila has been drone pilot for all our field trips to document wasps that make edible honey. For the April-May field trip Carlos Elgueta was drone pilot, aerial photographer, and also ground photographer of birds and other aspects. Edwin Solares was photographer and videographer from the ground.

Byron Pacay and Norma Cho are experienced organizers of field trip equipment. Vivian Hurtado is field trip manager but there is not space in the 4x4 wheel pickups so she prepares everything from home office.

Here is Carlos Elgueta with the drone controller.

If a kind benefactor can donate funds so we can have a Mavic 4 Pro this would help hugely for field work later in 2025 and all year 2026 and onward.

Fig. 10.

All the previous and all the following aerial photos are by Carlos Elgueta with the FLAAR drone Mavic 3.

In this photo you can see one mature corozo palm with four tall fan palms. I estimate they are very tall escobo palms though the other option would be botan palms (which you always see as very tall).

Fig. 11.

Fig. 13. Cropped by Hellmuth from previous aerial photo by Carlos Elgueta. In the crop you can see the corozo palms in the middle and several very thin and very tall fan palms, probably botan.

Fig. 14. This corozera is surrounded by trees of medium height so you can’t see any shorter (younger) palms. Escobo and corozo palms.

Here you can see one corozo palm and four fan palms. Plus lots of other tree species.

So some corozera areas are almost solid palms, and other corozera areas are many palms but surrounded by lots of tree species—that you see here.

Fig. 15.

Fig. 16. Two large mature corozo palms and several fan palms, surrounded by dense vegetation of other tree species.

Fig. 18. Three corozo palms with one fan palm rising above them in the middle, and two more fan palms at the left.

Fig. 19. Looking straight down you can see at least three corozo palms and one tall fan palm, surrounded by lots of other tree species. All these aerial photos are by Carlos Elgueta with the FLAAR drone Mavic 3, FLAAR Digital Photo Archive of Flora, Fauna, and Biodiverse Ecosystems of Guatemala.

Fig. 20. Three tall fan palms with no corozo palms visible in this segment.

Fig. 21. Rubelsin, experienced 4x4 raised pickup truck driver at the left. Drone pilot Carlos, then park ranger Teco, then Byron Pacay, FLAAR Mesoamerica. Corozera Los Enamorados, 1st Corozera North of Uaxactun along road to El Biotopo Naachtún Dos Lagunas.

Carlos, Jaime, Rubelsin, Nicholas, Byron, Norma, Teco.

In this photo you can also see fan palms behind Carlos, Jaime and Rubelsin.

Fig. 22.

We had three or four different drivers (since each time one of the 4x4 pickup trucks had its underside scraped off and had to be towed or abandoned, the replacement 4x4 had a different driver). But Rubelsin stayed with us the entire week since his over quarter-century old Toyota vehicle was the only one that was raised high enough not to have its bottom destroyed by the high center of the mud/dirt roads.

# References Cited and additional Suggested Reading

A more complete bibliography is in Hellmuth 2025. The present bibliography is mainly on corozeras of PNYNN.


**GRIFFIN, Robert Edwards**

2012 The Carrying Capacity of Ancient Maya Swidden Maize Cultivation: A Case Study in the Region around San Bartolo, Petén, Guatemala. PhD dissertation, The Pennsylvania State University. 417 pages. Easy download on-line.

**HELLMUTH, Nicholas**

2022a Multi-Colored Masses of large berry-sized Fruits of *Gaussia maya* Palms, Parque Nacional Tikal (PANAT) Reserva de la Biosfera Maya (RBM) Peten, Guatemala.

Also available on-line in Spanish.

**HELLMUTH, Nicholas**

2022b Corozera, Palm Area South of Nakum. Corozera around a giant *Ceiba pentandra*, Parque Nacional Yaxha, Nakum and Naranjo (PNYNN), Reserva de la Biosfera Maya (RBM). FLAAR (USA) and FLAAR Mesoamerica (Guatemala). 81 pages.

Also has several pages showing the Corozera West of Naranjo-Sa'al, the corozera at north end of Bajo La Pita.

**HELLMUTH, Nicholas**

2022c Solid Corozo Palms around Botan Palms, Part 2, May 11, 2022 Corozera with Botanal north of Yaxha, Parque Nacional Yaxha, Nakum and Naranjo, Reserva de la Biosfera Maya (RBM), Peten, Guatemala. FLAAR (USA) and FLAAR Mesoamerica (Guatemala). 82 pages.

**HELLMUTH, Nicholas**

2025 List of Palm Species to find and document in PNYNN, PANAT and Uaxactun areas of RMB. *FLAAR Reports*, FLAAR (USA) and FLAAR Mesoamerica (Guatemala).


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# Credits and Acknowledgements

We visited with Mario Vásquez (CONAP for PNYNN area) while passing through San Benito/Santa Elena en route to the corozera areas.

The field trip concept and initial itinerary was initiated by Nicholas Hellmuth. He also does pano photography and other photography from the ground with an iPhone 15 Pro Max.

Norma Estefany Cho and Byron Pacay, FLAAR Mesoamerica, prepare all the photography, drone, and camping equipment, plus assist every day the entire week of the field trip. Byron also drives the VW Amarok—he knows all the roads from years of experience.

Edwin Solares did video and ground photography. He is also very experienced in video editing.

Carlos Elgueta is a professional drone pilot, aerial photographer, and photographer with his Sony camera. He was recommended by Haniel when Haniel himself had other projects so was not available the first week of May.

Vivian Hurtado prepares the daily menu and oversees the organization of all field work and research projects. Since there is not space in the pickup trucks she works from her home office.

Teco, the nickname for Moises Daniel Perez Diaz, park ranger at PNYNN for 23 years so has impressive experience on flora, fauna and ecosystems of this part and also of surrounding areas. He often comes along on his motorcycle. That said, the back of our pickup truck has been outfitted with features so people riding in the back can easily hold on. But since the ruts were so deep, we decided it was not a good idea to bring the Amarok on these mud roads.

Franklin Baudilio Perez Mendez helped as general assistant setting up camp at each base camp and helped as porter carrying needed things during each day's hike. He is the son of Teco.

Rubelsin Ariel Recinos Orellan, driver of the decades old Toyota 22r that survived all the ruts and gullies washed out across the roads because this Toyota was "raised" so the underside of the motor did not get scraped.

Perfecto Matus driver who transported our equipment to the camp of Naranjo Sa´al, in his Toyota 22r.

Daniel Ramirez Mendez, driver of the Ford Ranger.

Daniel Alexander Recinos Corrales, driver of the Izusu DMA.

Neria Virginia Herrera Pinelo, hospitable owner of place to overnight, Campamento Chiclero Uaxactun. She is also the founder of the Museo de Piezas Arqueológicas de Uaxactún.

Maria Isabel Jacome Franco has assisted as a cook on several FLAAR field trips. There are obviously no hotels or restaurants at Nakum or Naranjo, but there are cooking areas that the local park personnel make available to research teams who have permission from the park administrators to camp in those areas.

Jaime España assisted as corozera guide on our day heading north to the corozers on the road towards Dos Lagunas.

Ruben Edmundo Carreto Almaraz, park ranger in Naranjo-Sa'al, provided helpful assistance in our camping at that site.


Fig. 23,a

The “area of botan” palm was an amazing cow pasture with dozens of very tall botan palms—but not many corozo palms. We show these botan palms in a separate FLAAR Reports.

I estimate the two corozeras are separate but in theory they could be continuous with each other. Need very high satellite photos which we lack. Satellite photos on-line are not high enough resolution.

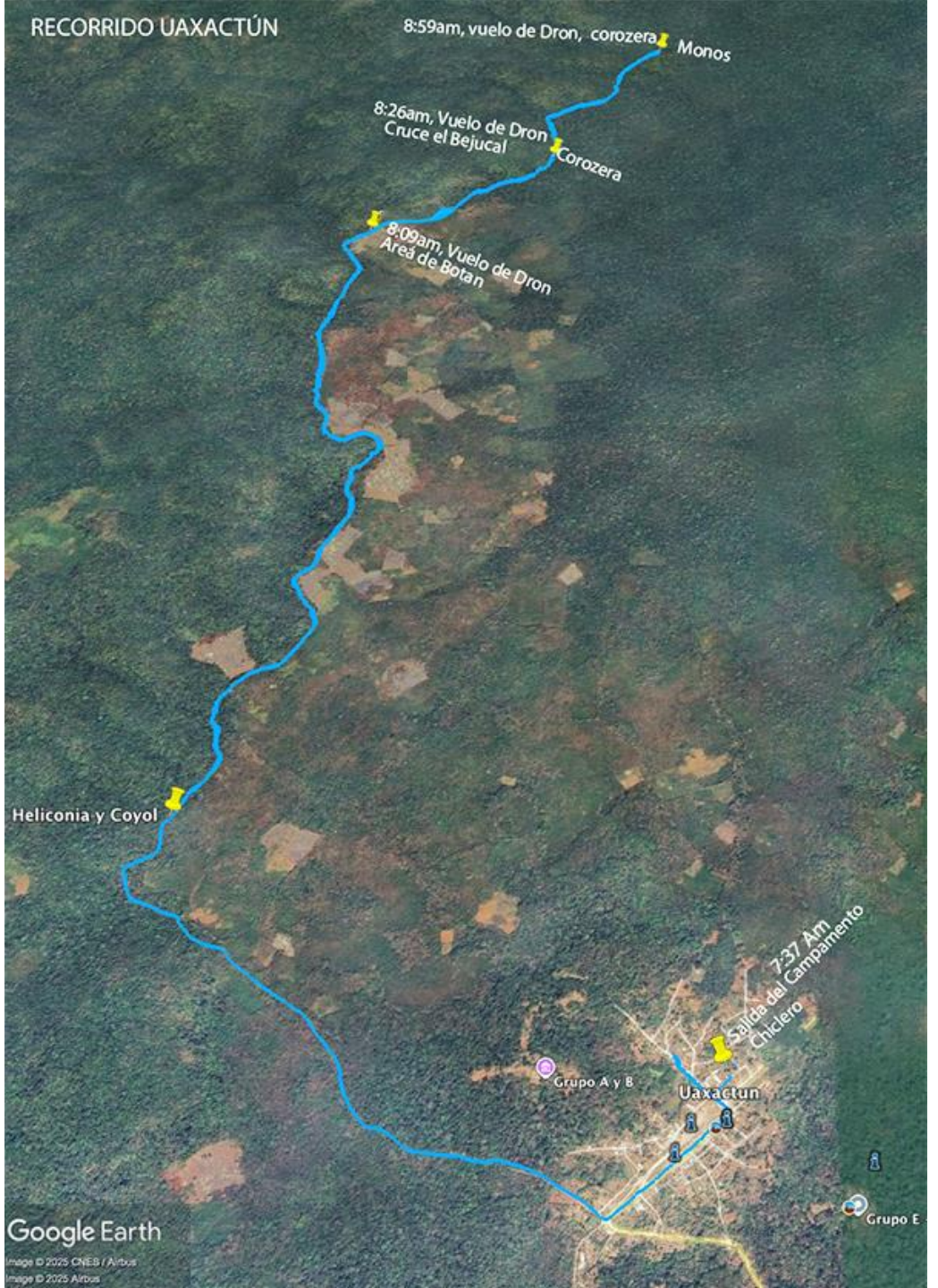


Fig. 23,b