

Burrodromo



★ Cenote Entrances

— Cave Passages

.... Former Cave Passages







Page 51: Map showing the passages in Burrodromo (red lines), alongside Guadalupe (yellow lines) to its east. The dotted lines represent the connection between these two caves. Stars indicate cenote entrances, some yet to be explored and some described in this book.

Page 52: Burrodromo contains both highly decorated passages and some that are just soft limestone tunnels. Ivo is shown here in a section that demonstrates characteristics of both types.

Left: Ivo hovering over the 2nd T in the biggest room of Burrodromo. This line runs to an intricate deeper section of the cave that loops back around to the main passage further into the cave.

Right: Matt is positioned in the tunnel that leads to the beautiful church passage, described on page 63.







Left: Setting up for each dive took a couple of hours. Here we are carrying tanks into Burrodromo's cavern along the nature trail.

Historically, the showpiece cave of the Mayakoba property, Burrodromo, can be entered right beside one of Mayakoba's well-traveled nature paths on the western edge of the property. And though many of the visitors to Mayakoba were familiar with its entrance, very little was known about what lies beneath.

The entrance to Burrodromo is a set of stairs descending into a dry section of the cave used for nature tours. Once inside the cave itself, water surrounds an elevated limestone platform. With a large pool of water encircling this central limestone, it wasn't immediately clear where we should start our exploration.

But like in Guadalupe, we decided to check upstream first, to see if we could prove that the cave extended farther than the mile or so of passage leading to Guadalupe. We hoped this cave might lead under the highway to the west and towards a glorious unbounded run under the jungle.

To find this upstream passage, we started in the western-facing section of the dry chamber. The largest part of the cavern, this area extends quite some distance under a ceiling that is literally covered in bats, hanging upside down like hundreds of small stalactites. Careful to disturb them as little as possible, we slid into the water, anxious to see what we might find. The cool water revived us after the two hours in the June heat we spent gearing up for the dive.

The water wasn't very deep. We sank into a soft bottom, the pungent scent of rotten eggs emerging from the detritus that had accumulated for thousands of years on the cave floor. We mounted our tanks, did our pre-dive checks, and added gas to our wings so that we could float around on the surface. Keeping clear of the bottom, we gently propelled ourselves deeper into the chamber while we shined our lights on the rock walls below. Gazing into the water, we saw many small holes, but nothing so obvious that we were ready to commit to descending. As we continued to float out into the chamber, the bats began swirling around our heads, tracing the room's circumference. Making a large loop, the bats picked up speed and generated a remarkable racket and wind. The drama mounting, we reminded ourselves that bats' unique sonar allows them to "see" in the dark and they likely would not hit us.

Right: A “fish-eye” view of the Burrodromo cavern, with divers getting ready to descend.

When we reached the end of the chamber, we decided to dive below. Making tie-offs to the rock and stalagmites as we went, we shined our lights into the narrow gap between the cave floor and sloping walls. We finally found an area that looked promising but was too small for two divers. Ivo took the reel of guideline and went in while Matt positioned on the line, ready to help Ivo or to follow him if the passage continued.

Ivo was back to the start of the line with Matt 10 minutes later, having found that the passage terminated in a small and highly decorated chamber with nothing beyond it. We continued to search the cave walls looking for signs of another opening, paying particular attention to whether we could feel any water flow that would indicate the direction of an upstream tunnel. While we noted flow from an upstream direction, we never located another passage.

A bit disappointed, we decided to look for the downstream side of the cave. We knew this must exist somewhere on the south or eastern side of the cavern, so we moved our tanks to the other end of the platform and prepared to dive again. We dipped below the water and used a large boulder for tie-offs. Circling the perimeter, we found a crevice that allowed us to go deeper and below the rocks that blocked our path. Eventually, we were south of the cavern, in the area behind the visitor stairs. Highly decorated and filled with very shallow water, we did a mix of swimming and crawling. Running the line with us this whole time, progress was tiring. Finally, we saw the welcome beginning of deeper water, as the floor fell away and began to slope downward. It was here that we found something unexpected. From the end of a stalactite, an old guideline and a navigational arrow hung. Excited, we tied our own line into the old one to form a continuous connection back to the surface.

Taking advantage of the last air pocket we might see for a while, we popped our heads up to chat about our discovery. Now ready to go, we dipped below the water and descended a steep slope, careful to avoid disturbing the deep layer of silt. Swimming into a tricky and tight passage while rotating our bodies up, down, and sideways, we worked our way into the cave, thrilled to see deeper inside Burrodromo for the first time.







Left: Ivo, Matt, and SJ preparing for a dive from Burrodromo's main entrance as Eric shoots footage for the documentary film.

Top: The cavern was quite dark, requiring us to bring lights even before we went into the cave.

Bottom: Matt and Ivo conduct the pre-dive briefing before heading into the cave.

Left: Just a few of the many perplexing cave formations that grow here.

Right: Henry hovers in the big room near the front of the cave. The abundance of formations growing from the floor combined with the very flat ceiling gave this cave a look we hadn't seen before.



We proceeded cautiously, not knowing what we would find, or if tight confines might halt our progress and require us to turn around in what was a very awkward and tight space. But after about 10 minutes, we navigated a minor restriction and ascended the face of a rock wall to a huge, submerged chamber. Taking it all in, we saw that we had now entered a space of massive proportions. Highly decorated, this new room was very shallow, with water rising to the ceiling in most places, but with some air pockets where the ceiling rose above the waterline to form an air bell. The black silt and yellow walls made the cave dark, but not overly so, since the shallow water in the air domes created a mirror that reflected our lights. A thin layer of dust covered everything, turning the water to a moody smoke.

The vastness of the room was impressive. The ceiling was unusually flat and uniform—a limestone slab with tiny calcite formations that looked like a layer of barnacles on an otherwise smooth roof. Incredible stalagmites decorated the floor, forming a veritable forest of towering spindly formations greater than six feet tall. We continued a bit farther, appreciating the uniqueness of our newfound room. Eventually, it was time to head back. As we exited, we took some extra time to find an alternate exit and lay our guideline. With this new route, we would be able to swim, allowing us to bypass the crawling section on our next dive.

Henry arrived the following day. While we were excited to show him our new cave, we also wanted to peek across the highway at Ciudad Mayakoba, where we took a bit more than a week to explore Senderos (page 118).

Back at Burrodromo, we were alternating divers on the project, trying to keep ourselves fresh amidst the very long dives and even longer days as we replaced the old cave line, started our cave survey, and began seeking more passages.





Left: Matt swims by a monstrous slab of limestone. We know this rock fell from the ceiling many years ago due to the speleothems that have formed on what used to be the interior part of the rock. The shimmering surface at the top of the photo is from an air pocket that extended through this passage.

Right: Burrodromo has many places where water doesn't quite reach the ceiling of the cave, as in this picture which shows the exposed cave ceiling.

Page 64–65: This dry chamber we found well into the cave was a magical place, allowing us to admire the enormous formations that emerged from the water.



Burrodromo was quite shallow, and with our side-mount doubles and stages we had a lot of time to extend our gas reserves. Our longest project dives were here, routinely three-and-a-half to four hours and a few times more than five hours long.

Since we built our survey data as we went, we always knew precisely where we were below ground. The cave headed east from its entrance along a primary conduit that made a series of zigs and zags with alternating narrow and wide passages and rooms, and with many small, branched passages that extended a few hundred feet in each direction.

Our favorite tunnel was the third branch from the entrance, a right turn from our mainline. Extending more than 100 m (330 ft) through a series of twists and turns, it emerged into a huge room with a ceiling high enough to form a large pocket of air. A giant slab of rock had fallen from the ceiling so long ago that the top of it was now decorated with stalagmites which formed before the cave had filled with water, dating this collapse to at least 15,000 years ago and probably much older. The passage kept turning right until it headed west, parallel to the mainline, making us hope this would turn out to be the “missing” upstream passage we couldn't find on our first day. Alas, we never found this upstream connection.

Later, this area would become one of our favorites for photography, as the air dome made lighting the cave easier and slowed the percolation of limestone that tended to reduce our visibility before we could do a proper photo shoot. The passage itself traversed directly below a beautiful little church in Mayakoba's small pueblita above, making this passage even more special.

Back on the mainline after a few weeks of diving, our progress east stopped when we reached a collapse that blocked the main passage. Matt and Henry spent several dives trying everything to get around this collapse, searching for small offshoot passages and pushing the narrow bedding plane that extended in all directions.









The area was very chalky and fragile—and even a few minutes of breathing would severely impair the visibility for hours as our bubbles agitated the fine calcite dust and slowed our progress. Parts of this area were under an air pocket, which made a further collapse more likely since the water that normally “floats” the rock above it had receded, making the force of gravity much greater. To be extra cautious, we used our survey data to find the spot above ground where the collapse had occurred, and fortunately found nothing indicating a further collapse might be possible.

These were long days, as we balanced the risks of pushing on against the prospect of the cave ending before we’d found the connection to Guadalupe. There were some tense moments as we ran our lines into tight spots looking for further progress as the visibility quickly fell to zero. Being careful to take things slowly, we took a few days to clear our heads with a few dives shooting photos in the front part of the cave, and by cleaning up lines and doing additional surveying. Eventually, Matt and Henry found a small chute that led up into the air to a dry cave passage. Hopeful that this passage might lead around the collapse, we decided to return the following day.

On July 27th, 2020, Ivo and Matt did the one-hour dive back to the dry passage just as Matt and Henry had done the day before. Emerging from the water, we climbed out of the water and into the dry chamber. Being here was surreal, as we now found ourselves in dry air thousands of feet from the only known entrance to the cave system. Cautiously checking that the air was breathable, we doffed our gear and stood to look around. The room was more than 20 m (65 ft) across, with another pool of water on the far side. Excited, we carried our gear across the rocky floor, huffing and puffing for almost an hour through a very hot and uncomfortable set of tasks. We were especially careful not to fall or sprain an ankle, as an injury inside this room could make diving back out of the cave very difficult, if not impossible.

Plunging into the water on the far side, we ran our line in the direction that seemed like it might loop back around to the exit side of the collapse. Finding a submerged connection back to our exit was important, so that we could navigate past the collapse without entering the dry chamber again. The direction of water flow in the cave made finding this connection easier as the percolation would be pushed in front of us, helping to preserve just a bit of precious visibility.

Continuing our search, we found a small and low restriction that looked promising. Matt hovered in place as Ivo cautiously pushed his narrow frame into the restriction. Disappearing into a cloud of smoke, Ivo made it through the restriction as Matt followed. Excitedly swimming another couple of minutes, we finally found our connection and tied into the line that led back to the entrance of Burrodromo. We took a few minutes to add navigational arrows to the *T intersection* we had now formed between our much longer mainline and the line running to the dry chamber. With the lines cleaned up, we turned around and headed back through the restriction to the far side of the cave to see what our victory had opened for us.

Soon, we were swimming through a very shallow and twisty passage that required us to flip sideways as we navigated the awkward path. After a ten-minute swim, we came up a steep rock face and emerged into a new air bell, this time filled with natural light. As we broke the surface of the water, we emerged into a rocky debris-filled air dome with an ancient-looking wooden ladder that led through a narrow *chimney* in the limestone cave ceiling to the outside world. The scene held an eerie, forgotten feeling, full of mystery.

But where were we, exactly? No one at Mayakoba knew anything about a cenote in this area.

Methodically, we removed our tanks and equipment until we could leave the water behind, climbing onto the rocky embankment and finally ascending the rickety ladder toward the daylight above. We emerged into a patch of overgrown jungle that clearly hadn’t been visited in a long time. Taking a compass direction, we decided to head west and soon found a fence, beyond which was the golf course.

It was comical, after a long dive through the inside of the Earth, to pop up like aliens in a long-forgotten cenote which in turn was adjacent to a world-class golf course.

We called our new discovery Cenote Broken Stairs, after the wooden ladder someone built beneath the jungle long ago, probably to enjoy a dip in the water below. Now forgotten and in ill repair, it serves as a reminder that these places came long before us.

Page 66: A highly decorated section of Burrodromo.

Page 67: A thin film of calcite formed on the surface of the water at Cenote Broken Stairs, reminding us that formations are still growing in parts of the cave that aren't submerged.

Left: Cenote Broken Stairs is a small "borehole" through a thick platform of limestone that connects the jungle to the cavern below.

Right: Viewing the exit into the jungle from inside the cave at Broken Stairs. The rickety ladder is visible near the top-center of the photo.







Left: The area just beyond Cenote Broken Stairs was intricately decorated.

Right: Jungle roots sometimes grow through the limestone to tap the water below. Here, a tuft of life is swept by the water flow in the cave.



Left: Percolation from the limestone passages creates a spooky atmosphere.

Righth: A large bat colony lives in the Burrodromo cavern.

Page 74–75: Henry descending from an airdome near the church passage.



Satisfied with our good fortune, we carefully climbed back down the shaky stairs. Putting our gear back on, we made the long swim back to the main Burrodromo entrance, arriving at the surface about six hours after our journey had begun.

Unfortunately, Cenote Broken Stairs wasn't a useful entrance for exploration into the cave system. We found it too hard to reach by land and too risky for transporting our heavy equipment down the fragile staircase. Eventually, the ladder broke completely when Matt took a few of the Mayakoba staff out to see it and one of the visitors stepped on the wood in the wrong place.

This meant that for every dive to explore beyond Cenote Broken Stairs, we'd have to start all the way from the main Burrodromo entrance. This made for a significant dive before we even reached the start of our new exploration zone. To get there, we had to enter through the dry cave at the nature trail, swim through the length of Burrodromo, navigate a few tight spots and one restriction before dropping our stage tank (a third tank of gas that gave us more penetration time) at about the 50-minute mark, then squeeze through the sketchy restriction near the collapse, and finally swim the last bit before reaching Broken Stairs. Altogether, it was well over an hour of diving before exploration could even begin.

We kept going though, excited that Burrodromo was getting longer. Checking every passage we found, laying new line, and looking for the best path forward was a slow and methodical process. The passages beyond Broken Stairs contained some very interesting rock formations and a mixture of hard decorated cave, but also lots of crumbly, chalky areas that caused poor visibility as we poked our way deeper and deeper into the Burrodromo cave system.

On the last day of the summer 2020 leg of our project, Matt and Henry were excited to make one last dive to the far reaches of the cave. About three hours into the dive, we saw the unmistakable glow of light. Not expecting to find another cenote, the thought crossed our minds that we might have made a big circle and were now heading back to Broken Stairs. We quickly dismissed this thought since we are always quite careful to build a mental map of our position through regular compass readings and our innate sense of direction.





Left: Ivo swimming past a large “column”
formed by a stalagmite and a stalactite
that fused together as they grew over
many years.

Right: Matt swimming through a branched
passage near the 3rd T from the entrance.







Left: The church passage contained a magnificent “gate” that was a favorite for photographs.

Page 80: The profile of the cave passage in some parts of Burrodromo added lots of interest to our dives.

Page 81: Ivo swims through an intricate passage just before reaching Cenote Broken Stairs. The shimmering surface is from air that filled the top part of this tunnel.

As we approached the light, our anticipation mounted. Getting clearer and brighter, the water was emerald-green as it passed through a large horizontal slot in the cave wall. In a moment of pure euphoria, we swam toward the void, now seeing what were clearly turtles diving down into the cave from the water above. Within a few minutes, we had emerged into the warmth and sunlight of a large, open canal, surrounded in every direction by turtles.

There are few experiences that hold so large a contrast as this moment did for us. We emerged from the dark, cold, barren cave system into an explosion of life. We were suddenly on the surface, breathing warm fresh air, in the middle of a *turtle party*.

Looking around, we thought we might recognize our location. But this is an area of canals that is quite complex, so we noted some geographic features and prepared to find them from land after the dive.

Turtle Party, as we named it, was an exciting discovery that proved to be extremely functional. Now we had a new entrance into Burrodromo. Instead of the monumental trek from the nature trail, we could initiate our cave dives from the dock at Matt’s house at Rosewood, scooting 1.5 km (1 mi) or so through the canals right into this new Burrodromo entrance. The new cenote was more fun, and a lot less work than hauling our gear from the old entrance.

This was an incredible way to end our first summer of the Mayakoba exploration project. We departed Mexico with a great sense of accomplishment, eagerly anticipating our return.

By Thanksgiving, Matt and Ivo were back at Turtle Party, having expanded our surveying ambitions to complete a full cartographic map of Burrodromo. Over almost a week of very long dives, most pushing over four hours, Matt and Ivo added detail to the *stick-map* survey we’d taken before, measuring left, right, up, and down (LRUD) dimensions at each of hundreds of survey points (*stations*) in the cave. This allowed us to create a visual representation of the passage walls and to construct a three-dimensional model. Combined with sketches of notable cave features, this data would form the basis for the full cartographic map we produced, painstakingly drawn by Ivo over the next year. This map is one of a small handful of complete cartographic maps ever made of a cave in the northern part of the Yucatán Peninsula.

The Nature Trail to Broken Stairs and finally to Turtle Party were now all connected. Three separate entrances, three seemingly separate bodies of water, were now one. And it was possible to swim between them, right beneath the surface of Mayakoba.

It didn’t take long for us to update our survey data onto a satellite image where we could see the full Mayakoba property. And when we did this, it suddenly became clear: the newly discovered Turtle Party was now the missing link to Cenote Guadalupe at the Rosewood spa. The connection was formed from Turtle Party through a narrow section of cave that had turned into an open canal when the ceiling of the cave had collapsed. Now united, we had linked all known caves across the property, yielding a cave system that was more than 1.6 km (1 mi) long. ♦



