

# NSS NEWS

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# Perusing South America

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*"We shall not cease from exploration and the end of all our exploring will be to arrive where we started and know the place for the first time."*

**-T.S. Elliot**

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My eyes were coldly fixated on the wet grass in front of me. Each step from my saturated boots brought an annoyingly loud <squish> as water seeped from deep within the leather confines of my Ozark Trails. <squish><squish> Somewhere close to my front door over 3200 km away sat a pair of hiking boots that I had opted not to bring in order to save weight. This would be a mistake that I would learn to lament.

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A cold, alpine breeze brushed over my weathered hiking pack before continuing its aimless and lonely journey on the barren, treeless landscape. I stopped my modest pace long enough to capture an ever elusive breath that evades the lungs of those unprepared for the extreme elevation above 3050 m. While gasping for air, I looked up just in time to see the ridge disappear beneath a pervasive cloak of fog. Within minutes the day vanished as a purgatory of whiteness transformed the mountainside into a ghostly apparition. Countless cattle trails littered the steep Peruvian grasslands, but none seemed to lead anywhere in particular. I resumed my arduous ascent to base camp, and in turn, continued my labored breathing. Buddha once said that, "life is suffering." Surely he said this while collecting pits at 4250 m (14,000') above sea level. Yes, life was hard for a few weeks, but fruitful all the same for members of the 2010 Peruvian Expedition.

Our team first assembled on June 27th, 2010 at Jorge Chavez International airport in Lima, Peru and collaborated on the expedition details while awaiting our domestic flight. Leading these talks were Peruvian caving vets Jeb Blakeley (ID) and Andy Zellner (GA) who, together, had visited our target region in South America over a dozen times and for months had mulled over the complex logistics required of such an expedition. Also attending were John Swartz (TN) and David Cole (VA), each of whom were participating for a fourth year. First time participants included Brian Gindling (ID), Carl Heitmeyer (NJ), Tony Theriault (GA), and Cody Planteen (CO). This was to be my second trip to the remote mountainside in northeastern Peru and one that I anxiously anticipated since my first expedition in 2005. In total, there were nine of us, a number that was not surpassed on any of the previous



Mike Green

The end of the road at 3050 m into the Peruvian Andes

expeditions. The team was a healthy mix of newcomers and the experienced, type As and type Bs, tall and short; however, one thing that we all had in common was our high energy and an ever-present lust for the unknown.

Little was to change between the 2010 agenda and those years that had preceded: drop as many vertical pits as possible and continue to survey and catalog the entire karst landscape. One would believe that after almost fifteen years of exploration it would become increasingly difficult to locate virgin caves, but the reality is that a vast majority of pits remain undescended. It almost feels as though the caves are propagating faster than their depths can be searched, but with such a large team we were confident that we could make a considerable impact.

## BACKGROUND

*"Only those who will risk going too far can possibly find out how far one can go."*

**T.S. Elliot**

The Andes Mountains are the world's longest continental mountain range at a length of almost 4000 km and contain most of the western hemisphere's tallest mountains. Hidden within this rugged landscape is an area that is dominated by limestone and littered with deep pits that are completely untouched by modern man. The prominence of this limestone, coupled with the extreme elevations of the Andes, creates a depth potential in excess of 1000 m. For the last twenty years, Peru has had a magnetic draw on subterranean explorers and at the current rate of survey should continue to have a pull

One of the many alpine lakes in the project area



Mike Green



Mike Green

**Local mule skimmers work for several hours to secure countless bags on the only means of transportation into the high Andes.**



**The mule train approaches the top of the 3050 m ridge marking entry into Cyclone Valley.**

on the hearts and imaginations of cavers for at least another twenty years.

North American interest in this remote, Peruvian landscape began in 1996 when Steve Knutson (OR) and Jeb Blakeley (ID) organized a reconnaissance mission that set the stage for future expeditions into the alpine karst fields of the Western Andes. Early ventures were anything but ordinary as the team constantly battled the harsh alpine weather; however, the rewards were as great as the elements they fought against. After verifying the existence of thousands of caves, Knutson and Blakeley continued leading expeditions for thirteen years. In those years that followed, 17 of the 23 deepest limestone pits in South America were found in this particular area but many more were left unexplored. At 4250 m, there exists the possibility for deep caves that would compete on a global scale.

The history of caving in this region is best described by Steve Knutson in the February 2004 *NSS News*:

"The Andes Mountains of South America dominate the west side of the continent and run the length of it, with elevations of over 22,000 feet. Strangely enough, this forbidding landscape of tall, sometimes glacier-shrouded peaks, and 8,000 foot deep canyons—the ancient home of some very advanced but mysterious cultures, of whom the well-known Inca are but minor late-comers. Ruins left by these ancients are still being found in remote areas.

In 1985, '86, and '87 a Colorado caver named James Miller had some interesting rambles in the Andes of northern Peru. He was a mining geologist and was working at a site on the edge of the Amazon Basin. When work left him with free time, he naturally headed for the alpine country, to look for caves. He was usually alone but occasionally found non-caver companions. His load often included a 300-ft rope, vertical gear, helmet and lights. He made use of such and dropped

pits even at over 15,000 foot elevation, at least to the extent of his rope. Solo caving at 14-15,000 feet!

I heard of this and got interested. Back in the 70s I had become intrigued with Peru, both for the ancient cultural aspects, and for the potential for great cave depth. But I was nervous about the machinations of Maoist anarchists, like the Shining Path and the Tupac Amaru. I settled for Mexico and Central America instead.

If I were going to finally go, it would be much better if I had someone to go with so I talked it up to Jeb Blakely, from Idaho Falls, Idaho, and his wife, Bitsy, who had been companions on Central American efforts. They thought it was a great idea. Jeb has been a Co-Leader of the expeditions, ever since. We were going—but exactly where to?

I corresponded with Mark Stock. Some years before, he and Marion Smith had gone to check out a large sink that appeared on a topo map in the Huanuco area but had not found much.

I got out the geologic map of northern Peru that I had got in the 70s and the air navigation topographic map on which I had for my early fantasies plotted the extensive limestone bands. These bands run across high altiplano and deep valleys. There was big depth potential everywhere.

Yet there were negative aspects as well. The Andes had been created by rapid mountain uplift, so there may have been little of stable water tables for phreatic development. Indeed, some research showed that previous expeditions had not found anything extraordinary. The longest cave in Peru was only 2.8 km, and the deepest only 407 m.

To help decide the question, I tracked Miller down, and asked him if he wanted to go. He was back in school, now had a wife and child, and was in no position to do so. I asked if he were to go, what would he want to see—what was the area or cave that had seemed most promising? He replied that

he had heard of a tragadero (the Peruvian word for a sumidero, a stream or river submergence) at around 12,000 ft elevation that sounded good, and that he never had chance to check out.

We figured that we needed one trip just to find out about the relevant aspects, travel weather, local attitudes and so on, and so settled on April and May of 1996, April being spent in Peru and May in Ecuador.

As our departure time grew near, we agreed to include Matt Oliphant and Nar Pistole, from California, who would be traveling in Peru at about that time.

As it turned out, April and May are in the wet season in the Peruvian Andes, and the weather was always bad. Traveling road we found was very different from that in Mexico or Central America. There are huge roadless areas. Except for the Pan American



**Our humble abode at 3050 m**

Highway, which stays on the coastal plain from Lima north to the Ecuadorian border, and one or two highways heading into the mountains, main roads are not paved. No road runs for any distance north and south along the axis of the Andes—they all run mostly west to east, from the coast into the mountains to a particular town and then usually end. Few vehicles traverse what roads exist. If you take transport part way to your destination, you may find yourself stranded for a time. We spent two days in one town, and no vehicles passed through in that time.

At roads end we were told that the tragadero, still over a day away on foot or horse, was not enterable. Damn, all that trouble for nothing? Well, they said, there are some 'Infiernillos' up on the mountain, above town. But they are just holes in the ground...of little interest...just a local hazard for grazing animals.

Well, we were there so what the heck. The plateau in question was at over 14,000 ft, and the town at 10,000 so we arranged for horses and mules to pack our gear up there, and a day or two later, were off.

The horse packer was dubious. Tourists never came to this area. What were these strange-looking folks up to? They hadn't wanted to buy the Chachapoyan mummies that townsfolk offered them. Now they wanted to look at holes in the ground?

So at the breakover at the top he stopped, got off his horse and called us over to a gaping pit just off the trail. Picking up a big rock, he gave it a toss, and then turned with a stern look, to judge our reaction. The

rock fell 2 or 3 seconds, hit something, then another interval, hit again, and repeated this until the sounds faded into the depths. Wow! Our looks and exclamations told him enough—these *pendejos locos* actually like these deep holes!

We stayed up there for several rainy, snowy days and saw enough—there were several of such pits around—this needed more manpower, more rope, and better weather. We vowed to return in 97!

We have been returning ever since, and there seems to be no end of deep pits...

Of course, we always hoped for continuing cave, and there are signs that such may be imminent. We will see..." (Knutson, NSS News February 2005)

In his article Steven Knutson also provides insight to the geological and geographical cave development in Northern Peru:

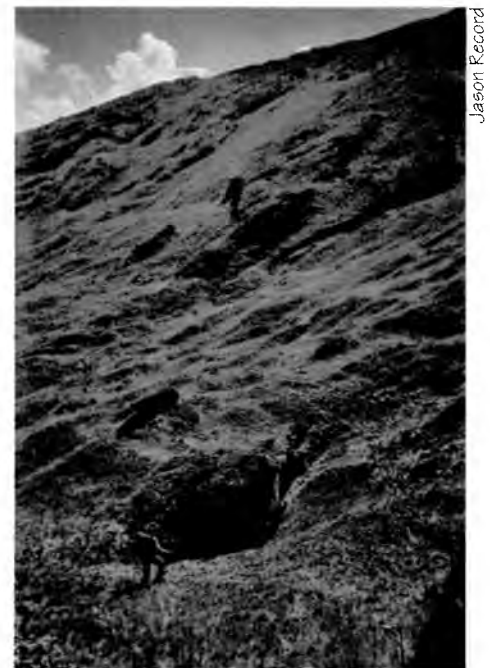
"The Andes are lowest near the border with Ecuador, and broadest south of Lima and on into Bolivia. The structure seems similar to mountains such as the Klamath and Sierras of the American west, with the volcanism of the Cascades occasionally thrown in.

Structure is aligned north-south. In places there are huge volcanoes, but the volcanism is mainly in Ecuador and Colombia, and then on south of Lima and through Bolivia and Chile/Argentina, but not in northern Peru.

It seems never to be a single mountain ridge. Canyons between ridges are sometimes stupendous, over 8,000 feet in depth. There are several major limestone bands along the axis of the mountains and these cross these canyons in places and provide great depth potential for caves. Indeed, some of the highest limestone in the world is present, and I have seen it up to 18,600 feet.

The downside for cave development is that the uplift, the orogeny, of this range is said to have been rapid. One published opinion said there was a stable period during the uplift but there may have been little chance for ordinary phreatic development. On the positive side there are many sites of great vertical relief, to allow vadose solution and there could be thermal water development. Also, in such a big area there are bound to be situations of special geology, where water is trapped or concentrated along the structure, and extensive or significant caves are the result.

Examples of this found just recently are the cave above Soloco, near Chachapoyas, which is now the longest in Peru at some 4 km, and the Pumacocha cave, in the Cordillera Yauyos, which is the deepest, at 638 m. The former is in limestone sitting on an underlying sandstone base, thus trapping the drainage, and the latter is in a narrow band of limestone, catching a surface stream



One of the most prominent features in the valley, South America Pit

coming off granitic rock, creating a vadose cave. The former was done by French cavers (Jean Loup) and the latter by British (Nick Hawkes).

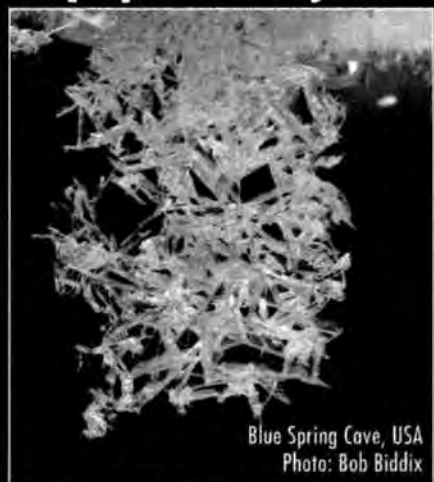
The thermal water development seems to be a viable idea, as I have seen large travertine deposits at elevations of over 13,000 ft., as well as at lower elevations.

After scouting a number of areas in northern Peru, I must say that in many places development seems to be at an early stage and as predicted for rapid uplift. Drain-holes for lakes and existing tragaderos are often small and pinch out after just a short distance. Big expanses of limestone tend to have few good pits, and large closed basins have small drains." (Knutson, NSS News February 2005)

## 2010 ARRIVAL

Following a flurry of introductions in Lima, the 2010 Peruvian expedition officially began with a domestic flight to one of the more remote areas in the country. We would have ample time to become better acquainted during the week of travel that followed. The project site requires that almost half of our four week journey be spent flying between cities, riding in an uncomfortable bus, and enduring a multi-kilometer trek above 3050 m. The days passed very slowly during this time as we anxiously anticipated our arrival, but our team finally reached the "end of the road" on June 29<sup>th</sup>. The road's end consisted of a small village nestled at 3000 m in the Andes Mountains. This town of only a few thousand inhabitants would be the launching point for our trek into the mountains.

## 2012 Caving Calendar by Speleo Projects



Blue Spring Cave, USA  
Photo: Bob Biddix

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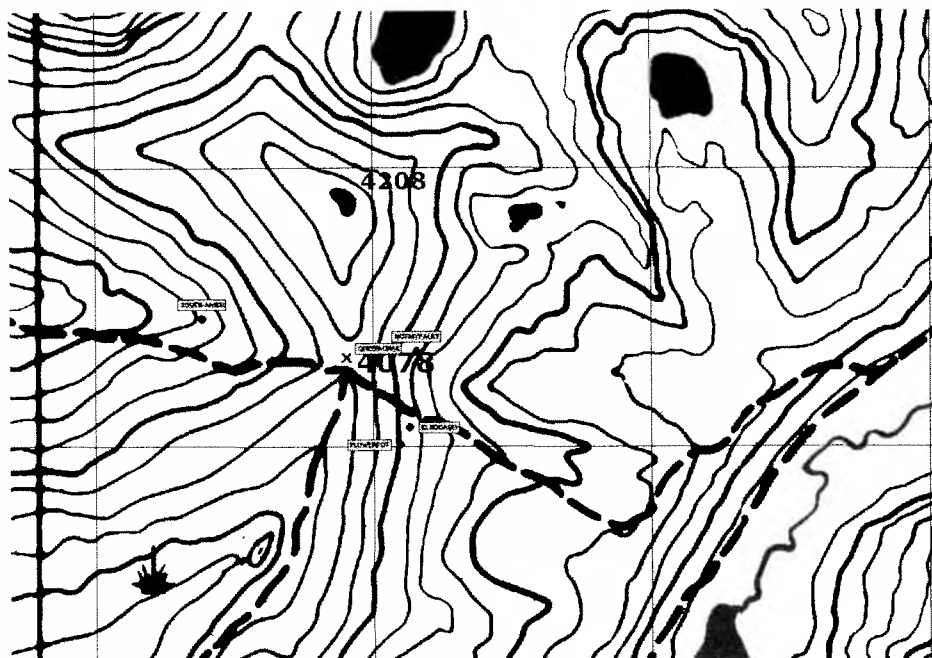


As customary for all expeditions into this particular area, our group met with the local government to obtain official permission to conduct our exploration. This gave us time to gather up boxes of food and provisions to sustain nine people for two weeks.

Once our team finally departed from quasi-civilization on the morning of July 2<sup>nd</sup>, we began the long march with mules and equipment to the ancient Incan pass that looms ominously over the small village below. Upon cresting the 3050 m pass, we were officially in Valle del Ciclón, home to countless infierrillos, many of which hold places on the South American deep pit list. It should be noted that the term "Valle del Ciclón" is in fact a gringo name and is not authentic as it were but rather was chosen to conceal and protect the area that we are working. The karst in Valle del Ciclón is categorized primarily by blind pits with the occasional air-blasting termination. The first expedition to this area in 1995 found practically every pit to be a roaring maw of water. Needless to say, there was not very much exploration in the way of caving on that particular trip. All the water in the area drains somewhere further down the Valle del Ciclón before it continues into the Amazon basin. To this day, the resurgence is a bit of a mystery.

After approximately 4 km of indiscriminately passing hundreds of pits, we arrived at a relatively flat area that is situated at the base of a steep section of mountainside. This was to be our refuge from the harsh alpine environment for the following two weeks. What first drew expeditions to this location was access to a small pond that sustains the needs of no more than ten people. Heavy filtration and purification is an absolute necessity, but even then, the quality of the water quickly diminishes after the first few days. This is the only water source for kilometers, and given the elevation, it is a bit of a novelty for a land dominated by thousands of insurgences. This is both a blessing and a curse as every ungulate knows of this alpine oasis and refuses to share with a bunch of gringos. For these locals, the drinking supply doubles as both a watering hole and bathtub. The pond's limited size constantly dictated its importance as even a small herd of cows could completely drain its reserves within minutes and force our team to abandon our efforts on the mountain.

After weeks of travel, the team finally arrived at our 3050 m home for the following few weeks and the 2010 Peru expedition was well underway. The group wasted no time establishing base camp with all of its alpine amenities, and by the next morning, everyone was busy trekking across the mountainside in search of the unknown.



Caves of the Fault

## Caves of the Fault

*"They say, best men are molded out of faults."*

**-William Shakespeare**

One area of interest since early expeditions to this region is a fault that runs through the ridge and continues for several kilometers into the adjacent valley. The fault has shown great potential time and time again as numerous high volume pits have been found in this geological feature.

### SOUTH AMERICA PIT

South America Pit is the largest of the fault caves and is easily recognized by its shape which closely resembles that of the South American continent right down to the islands of Tierra del Fuego. The 20 m-wide entrance dwarfs the surrounding pits making it one of the most prominent features in the valley. What separates South America Pit from the other fault caves is that it sits directly in the middle of the slowly descending valley floor, therefore making it a likely entrance to the missing drainage system.

The cave was located in 1994 by Steve Knutson on a solo reconnaissance hike from an area that served previous expeditions as a base camp dubbed Gringobamba. Steve had decided to push the edge of the known limestone in an effort to find a new area for future exploration.

"On a Gringobamba expedition, I had the notion that we were exhausting the pits near there and needed a campsite further out. So I took off one day to find one. As I recall, I circled up and over the ridge into the valley and headed down to see if there were indeed pits there. I was looking at one

near the bottom and a herder happened to. To prod him I said something like, 'wow this is a really good pit.' And he pointed to South America Pit which I could see just a short [distance] away and said no that's bigger/deeper. I continued to it and then I the valley passing more pits and was pretty much sold." [An email correspondence with Steve Knutson].

Steve did not have time on that particular expedition to explore South America Pit but did manage to make very accurate and encouraging notes. It was not until 2005 when Bonnie Crystal, Matt Covington, and David Cole first dropped the entrance which measured 61 m. The bottom of the drop was found to be a sloping talus that leads to the top of a 14 m pit. Due to a lack of resources further exploration did not continue until 2005 when Heather Levy, Jason Record, Andy Zellner, and I returned to conduct an official survey. The second drop was rigged and rappelled to find a tall meandering canyon that moved a considerable amount of air. Several climbdowns and filters led us to termination with yet another too tight crack that howled with hints of a large system. The cave was pushed to a depth of 130 m.

### GREEN CHASM

During the 2005 expedition, I decided to take full advantage of the unusually clear and cloudless morning by walking a series of ancient Chachapoyas trails that intersect the primary fault on the west side of the ridge. I left camp immediately after breakfast armed with little more than the clothes on my back and a GPS. While hiking, I stumbled upon several large vertical entrances located just a few hundred meters below the saddle



Cody Plantzen

**Mike Green beginning the 74 m plunge to the bottom of Green Chasm**

The cave entrance, although obvious on a bright and sunny day, was undoubtedly shrouded during previous expeditions by a blanket of clouds that ordinarily dominates the Andes. The quarry-like walls around the pit took some time to negotiate as they all funnel directly into the abyss but I found my way to a ledge where I safely began throwing rocks into the void. The bottom of the drop sounded to be about 60 m away but what really caught my attention was the incessant echo that lent credence to the existence of a large chamber below. My imagination

was immediately captured, and my thoughts constantly wandered back to the pit for the rest of the day. That night, it was not hard to convince Heather Levy that we needed to return the following day with the means of descending the new find.

The caves located directly in the fault had proven to have a lot of potential for large, deep pits so I hoped that this cave would not be any different. Upon throwing rocks into the abyss, I knew that it would require a substantial amount of rope so Heather and I returned to the drop with a 100 m rope. After rigging and rappelling a 10 m drop I was finally able to paint a more complete picture of what we had been observing from the surface. The pair of entrances as a whole is approximately 10m wide in total and is divided by a land bridge that pars off one third of the sink. The smaller of the two entrances slopes steeply to a precipice while the larger section is completely vertical after the lip. Grasses, moss, and vines envelop the entrance from all sides, causing the entire pit to glow like a jade stone in the bright, alpine sunlight. This flora covers the walls all the way to a steep talus slope at the bottom before vanishing into darkness. The shear diameter of the room below the entrance shattered any hope of estimating the depth without scale.

Heather and I were forced to anchor the rope rather far away due to the lack of rigging options, which is fairly typical in an area devoid of trees. Not really thinking too much about conserving our 100 m rope, I began my freefall descent into the massive chamber. The walls shrank back into the dark recesses of the cavern as I descended further and further from daylight. After a few minutes, the floor did not appear any closer from my perspective and I realized that the pit was much deeper than previously estimated. It was not long before I was at the end of the rope that danced freely in space without any promise of reaching a ledge, much less the ground. I cursed the lack of materials and returned to the surface where we rerigged the rope for more length. I returned to the darkness with expectations of touching bottom but this proved to be a hopeless plea because once again, the rope neglected to reach the floor. Without another rope, I changed over for the long climb out. We began our trek back to camp as the sun set on the mountainside but vowed to return the next day to complete our exploration.

Most of my night was spent tossing and turning with the image of a short rope etched into my lucid dreams. Waking frequently, I anxiously awaited sunrise. Morning came fairly early for both Heather and me. She seemed just as eager as I to see the bottom of the Chasm. We ate breakfast quickly and were out on the ridge before eight but this

time armed with twice as much rope. We inevitably had to tie two ropes together but were more than willing to trade another day of changeover practice for passing a knot. We rappelled and measured the deceptively large chamber and found that it was a 74 m-deep shaft. I vividly remember the moss-encrusted talus, algae-covered speleothems, and vine-dominated ledges that created the feeling of standing in a botanical garden. We decided to call it the Green Chasm for this reason.

Green Chasm was located in 2005 but was never fully mapped or photographed during that time so Brian, Cody, and I returned on the 2010 expedition to resume the incomplete survey. We explored and surveyed numerous leads but all attempts proved to be futile. Green Chasm is little more than yet another impressive but blind pit.

### EL HODAGO

South America Pit and Green Chasm are not the only large entrance pits located directly in the fault's path. The 2010 expedition yielded the breathtaking El Hodago that easily outshines many of the surrounding pits due to the entrance's enormous size. Boasting a 10 m-wide entrance, El Hodago drops 49 m into a chamber that quickly bells in excess of 30 m. The bottom is rubble-filled landscape reclaimed by the same alpine flora that dominates the surface. The cave continues for 15 vertical meters before ending at a breakdown choke. Like many of the large pits of the fault, it is a monolith that ends without any chance of continuation.



Mike Green

**Andy Zellner begins setting bolts for El Hodago**



Mike Green

**El Hodago**



Cody Planteen

**Brian Gindling drives in the first bolt at the top of a 56 m pit named Not My Fault.**

#### **NOT MY FAULT**

Not My Fault has a far more modest entrance than that of its neighbor El Hodago but is no less deep. Not My Fault begins as a 5 m shelter and slopes steeply to the lip of a 56 m free-drop. The shaft retains a 6 m diameter to the base where it breaks off into several smaller pits. The deepest of these pits is 21 m and ends at the top of a talus slope leading to a blind 6 m drop. The total vertical extent is 83 m.

#### **FLOWER POT**

Nearby Flower Pot is a shelter cave much like Not My Fault, except that its entrance volume is many times larger and houses a natural bouquet of flowers, vines, and of course the local version of stinging nettle known as Mala Mujer. Flower Pot and Not My Fault were located early during the expedition but not dropped, so Brian, Cody,

and I returned to survey the depths of both pits. We knew that the abyss was deep after launching several stone queries so we were wise to carry several ropes each. Cody was the first to rappel and unfortunately, at least in this case, the first to climb out as well. I say “unfortunately” because he was short-rope’d an unknown distance from the ground and forced to climb out without the pleasure of touching bottom. I proceeded to where Cody left off with another 60 m rope in tow. After tying the two ropes together, I was able to touch bottom, where I viewed one of the most beautiful pits in Valle del Ciclón. As with Not My Fault, Flower Pot’s ceiling is illuminated by the intense alpine sunlight that accentuates the vibrant hues of the moss-covered limestone giving the appearance of a glowing Chinese painting suspended in the subterranean darkness. Breaking out of my trance I called to the surface for Brian and Cody to join me. We immediately began our survey and found that the entrance drop measures 80 m, which to this date is the deepest known pit located in the fault. The cave continues briefly as an 18.5 m pit followed shortly thereafter by another 14 m pit until it inevitably pinched into an air-blasting crack that was much too narrow to permit human occupancy. From the surface, Flower Pot is a 113 m deep cave, and like most other caves in this area, has less than 50 m of horizontal passage.

### **Other Caves in the Area**

#### **MOSSBEARD**

*(as told by Brian Gindling)*

Mossbeard was found on the first full day of ridgewalking on the mountain. A 5 m-wide pit lined with long tendrils of moss drops 60 m to a flat sandy floor. Two parallel 50 m dome pits connect near the bottom of the shaft, which is coated with green moss from the noonday sun that shines straight down the pit to highlight a moss covered



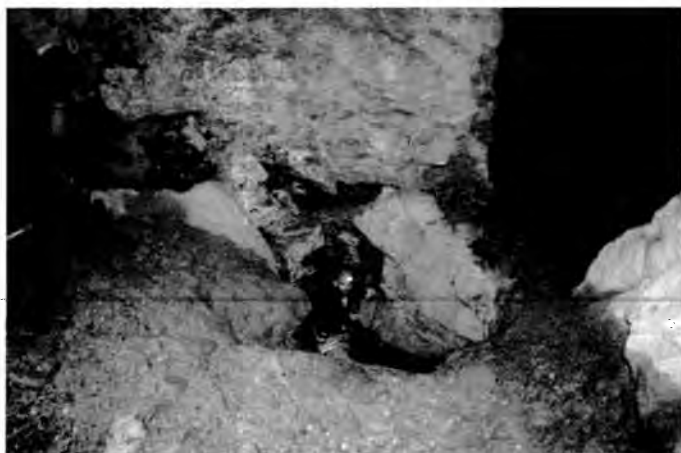
**Mike sets a bolt for the 60 m entrance drop to Mossbeard.**

skull of the now extinct Marsh Deer. A short climbup leads to a 10 m popcorn-lined passage which enters a long, narrow canyon with few 2 m columns and small helictites. A tight crack in the floor drops another 11 m into a similar canyon where there are two lead. One way leads to a blind 18 m pit and the other to a breakdown-choked climbdown.

#### **WISHING WELL**

During the 2005 expedition, Jason Record and Andy Zellner located an interesting cave that was later named Wishing Well. From the entrance, the pair knew that they had found something significant. Jason recalls his personal account on its initial exploration:

“Andy and I set out the morning of the 21<sup>st</sup> [of July] in search of a cave indicated the previous year by Matt Covington to be a ‘second rock rattle’; we would never make



Cody Planteen

**Mike Green at the bottom of the first drop in Flower Pot**



**Mike Green at the entrance of Flower Pot**



David Cole

**Cody prepares to rappel the 100 m + entrance drop to Forth of July Cave**

to that cave. After traveling about 1.5 km, including hiking up the 300 m hill above base camp and descending the west face of the ridge about 150 m, Andy and I saw a small vertical shelter type entrance in the bluff to our left. 'I found a rock,' said I to Mr. Zellner, who had a strange look on his face. It turned out he had already tossed one in and was still listening to it fall as I was talking to him. We tossed another. 'About 100 m,' I said. 'At least,' replied Andy. 'Well do you want to tie another rope to the end of this 100 m rope?' he inquired. 'Andy, if I get my wish we will need to' was my response... I got my wish..."

"Andy began setting the bolts for the entrance drop as I ran around looking at other holes in the same area. Nothing looked too significant, so I suited up and prepared for descent. Andy saw the look on my face, and when I asked if I could go down first he quickly agreed..."

"Before long I was at the knot, and it was at least 20 m off the floor. I passed it, and before giving Andy the signal, I quickly

scouted the bottom. A small crawl with air... and then... another pit!! 'Only about 15 m deep,' I thought. I yelled for Andy to bring the bolt kit and a knife, so that we could get this other pit rigged. He understood, and came down with the proper tools. Assessing the crawl, Andy began placing a bolt at the beginning of it as I calculated the extra rope we had. Before long, I was on rappel. Down I went, and soon I could see another crack in the floor at the bottom of the pit. 'Andy!' I yelled, 'another hundred footer!..."

Andy and Jason had in fact verified the way deeper into the cave, but a blessing in the form of another pit temporarily halted further exploration.

"We should return tomorrow with Mike [Green] and Heather [Levy] to survey this thing,' Andy commented. Agreeing, I threw a couple of rocks to see if I could get them to go further... nothing. Satisfied, I changed over and we exited the cave.

The next morning the four of us, well, to be specific: Andy Zellner, Heather Levy, Michael Green and myself, headed up the hill with 60 m more rope to bottom the cave and get it surveyed. Upon our arrival I grabbed the extra rope and headed for the lead. Andy and I discussed further rigging possibilities to free up extra rope 'just in case,' and decided to rearrange things slightly. Having done this, I sent the rope down the previously short rigged pit, and was soon on the ground at the bottom of the pit. Now for some survey details: The first pit proved to be a whopping 111 m, followed by an 11 m, and now a third pit of 26 m. I peered around the corner at the bottom and noticed a small crack in the floor, the same way every other cave so far had ended. As I raised my eyes to view the rest of the room, I saw a massive void extending up and down. I grabbed a rock and eagerly tossed it over the lip. A couple of seconds went by, and I heard a crash, but before I could calculate what I thought to be the depth, another resounding crash echoed back around 5 seconds after the first. Enthusiastically I exclaimed, 'We're going to need more rope!'... We couldn't believe our ears. The first thing that came to my mind was how we would get more rope without further postponing the trip. Mike would certainly

command admiration from all of us by volunteering to tackle that particular task..."

"Andy and Heather then

surveyed their way out, while Mike battled the elements to get more supplies. A couple of hours passed with no word from anyone, so I decided to go ahead and drop the next pit. It would turn out to be 28 m deep. When I reached the bottom, I found myself in the largest room so far, at least the most horizontally extensive, and walked across it to where I knew the next drop was. I grabbed a rock, approached the ledge, held out my hand, and released..."

"It was a clean 4.5 second freefall all the way down. I set two more bolts for this pit and waited... and waited. Finally I heard voices. Apparently, Mike the Great had brought back 200 m of 11mil PMI all the way up from base camp. I climbed the 28 m pit to meet Andy, and he snaked down the 200 m of rope to me..."

"I was soon joined by Mike and informed that Heather was on her way down to help complete the survey. Soon enough I was at the bottom of what would turn out to be the cave's final pit at 69 m deep. Again, this was a clean, classic drop. Some quick lead checks were done, and companions were called down. We exited the cave at 3:00 a.m. to find the outside temperature well below freezing. Inspired by fatigue and the elements, we embarked on our journey back to base camp for a total trip time of 14 hours." (Record, TAGnet 2005)

Jason's and Andy's find made its mark on the South American deep cave list with a total vertical extent totaling 261 m (pits: 111 m, 11 m, 26 m, 28 m, and 69 m). The discovery of Wishing Well opened up the imaginations of all those who attended the 2005 expedition, showing that there was no shortage of deep virgin caves.

#### **FORTH OF JULY CANYON**

(as told by Cody Planteen)

On July 3, 2010, David Cole and I found a lead (later named Fourth of July Canyon) that sounded promising. The lead was a long and narrow canyon which sounded deep based on dropping rocks. A single rock would set off a cascade of other rocks falling deeper, making it likely there was a ledge or slope down the pit.

On July 4, David and I returned and set two bolts in the rock face adjacent to the pit as there was no natural rigging available. A 105 m rope was lowered into the pit. I entered the pit, which was a narrow canyon passage for the first 30 m. There were two tight spots on the rappel which required some negotiation. The cave then opened up onto a large ledge where the remainder of the rope was stuck.

From the ledge, only a small amount of diffused daylight was visible was due to the tight nature of the canyon passage. I spent roughly 20 minutes untangling the rope,



Cody Planteen

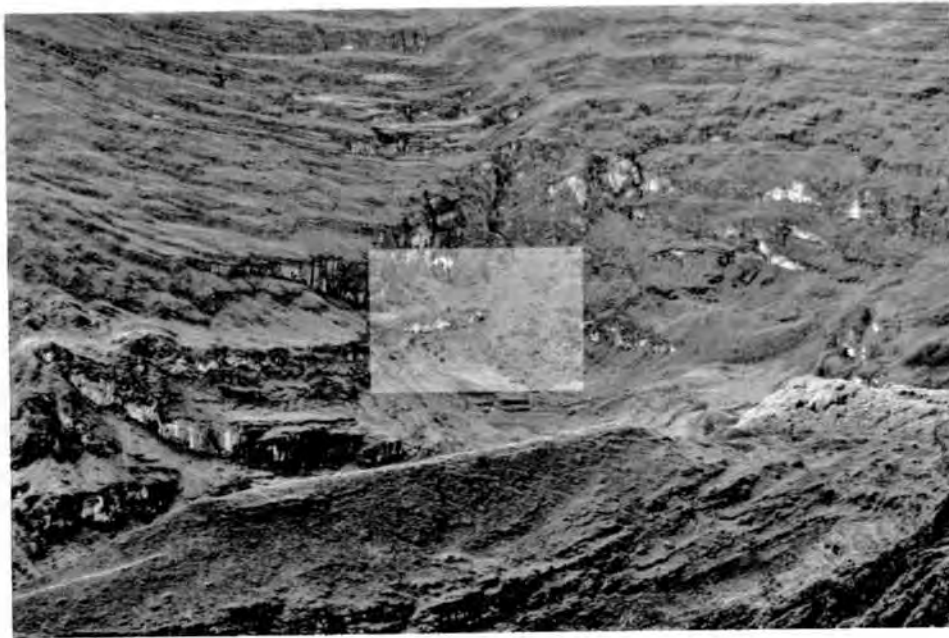
**Forth of July Cave - David Cole shows how to hump rope at 4250 m**





Mike Green

Photos of the Nacimiento del Rio Ciclón entrance as seen from base camp. Rectangle shows area detailed below. Rectangle in below photo includes the entrance.



Mike Green



Brian at the entrance to Nacimiento del Rio Ciclón

Brian notes the water line in Nacimiento del Rio Ciclón



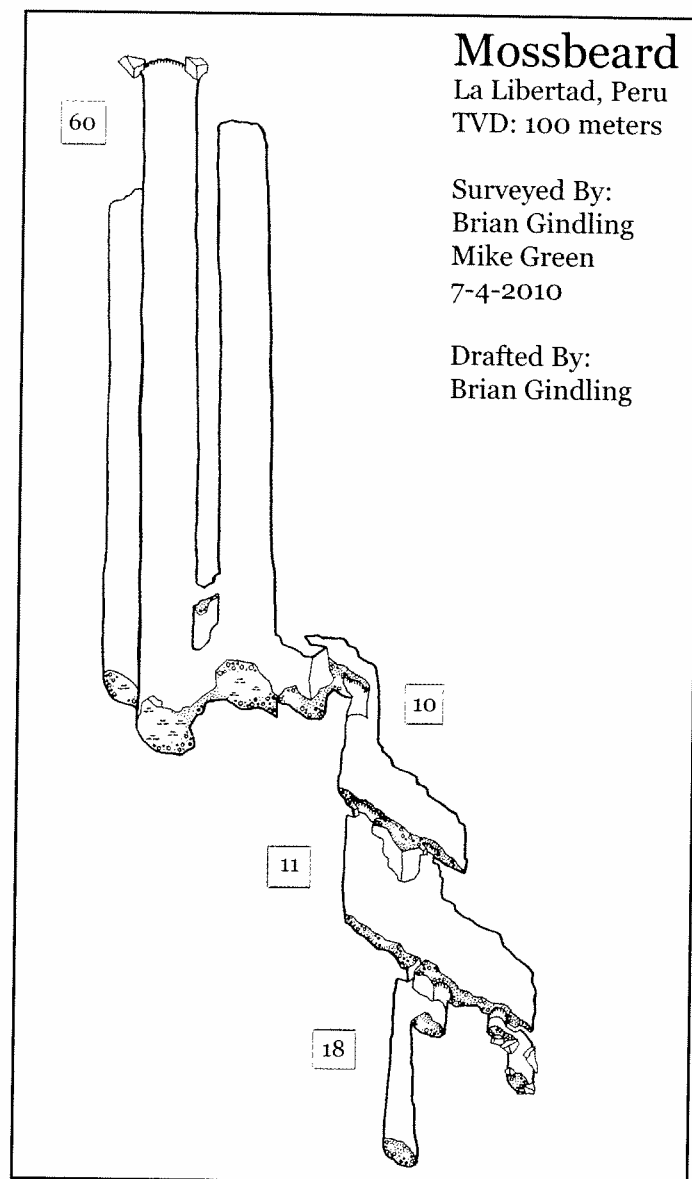
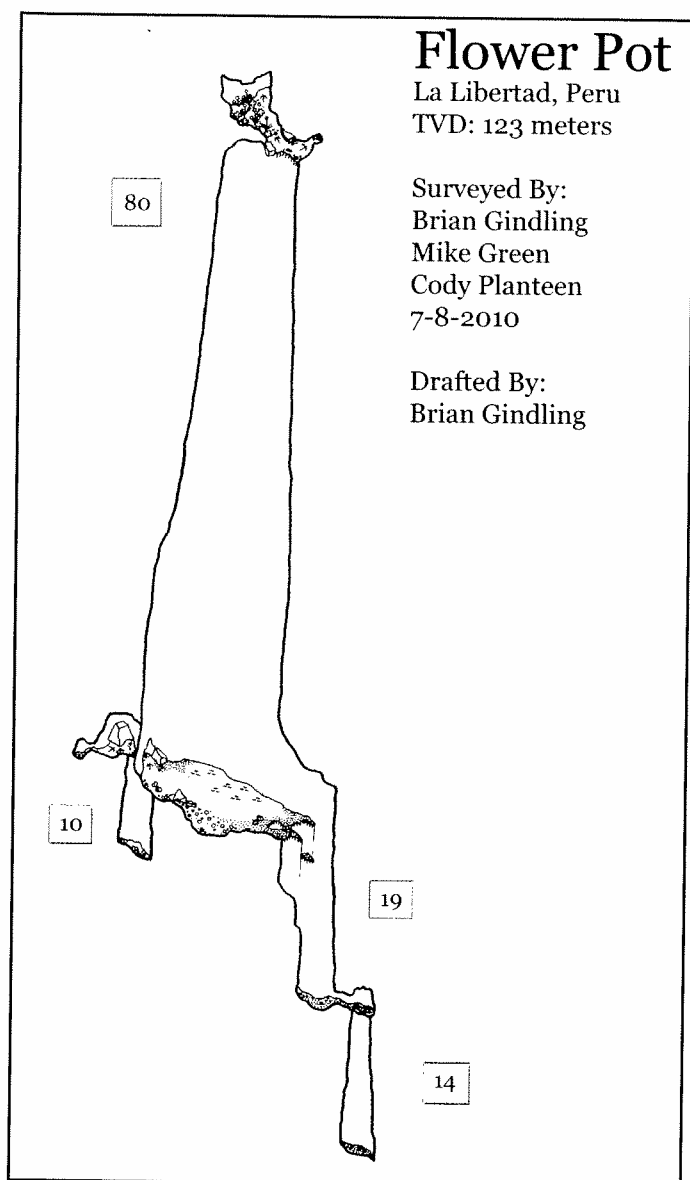
Mike Green

Andy at the bottom of El Hodago's 49 m entrance



Mike Green

El Hodago



gardening rocks off the ledge, and setting a rope pad. I then rappelled down the next pit. The rappel was somewhat terrifying. I remember thinking, "What will I find at the bottom? Am I crazy for exploring caves in the middle of the Andes so far from home?" The pit was 66 m in depth and free after the lip.

Getting off rope, the passage continued in a canyon. After a tight spot in the canyon, there was a small room approximately 3 m in diameter. The room had a small pool of water, walls covered in sandy popcorn formations, and a tight hole in the floor which appeared to lead to another pit.

The cave continued on to wider canyon passage which led to a larger room about 10 m long with a high ceiling. In this room was another pit with a much wider entrance than the first. I estimated the next pit's depth to be 60 m deep based on timing the sound of dropping rocks. Having no extra rope with me, I returned to the surface to tell David what he had found.

On July 5, David and I returned to Fourth of July Canyon. The lengths of rope in camp were not ideal for what was needed to explore the next pit. The choices were a 60 m rope or a 180 m rope. I chose to bring the 60m rope, figuring I had over-estimated the pit's depth.

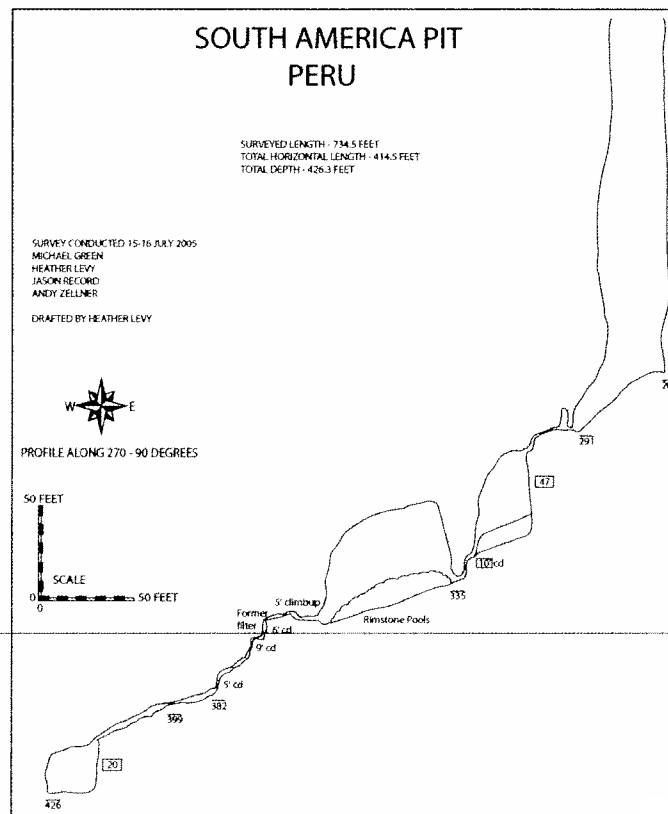
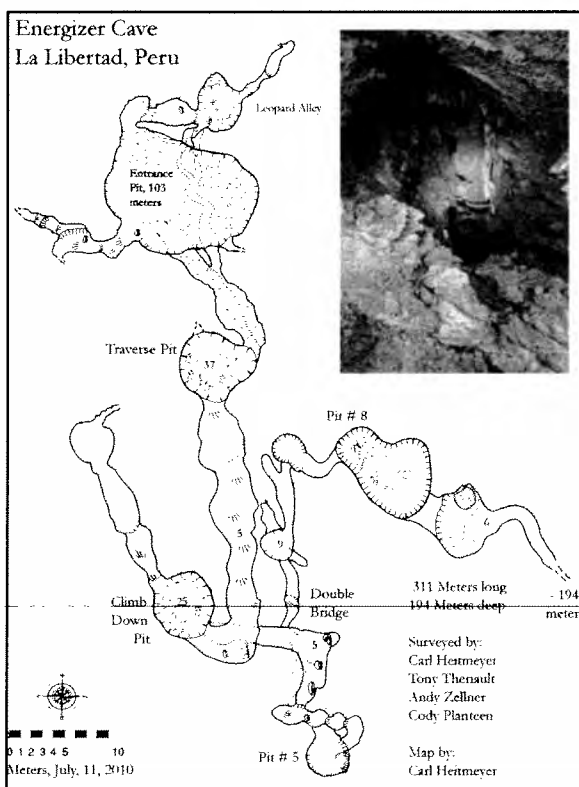
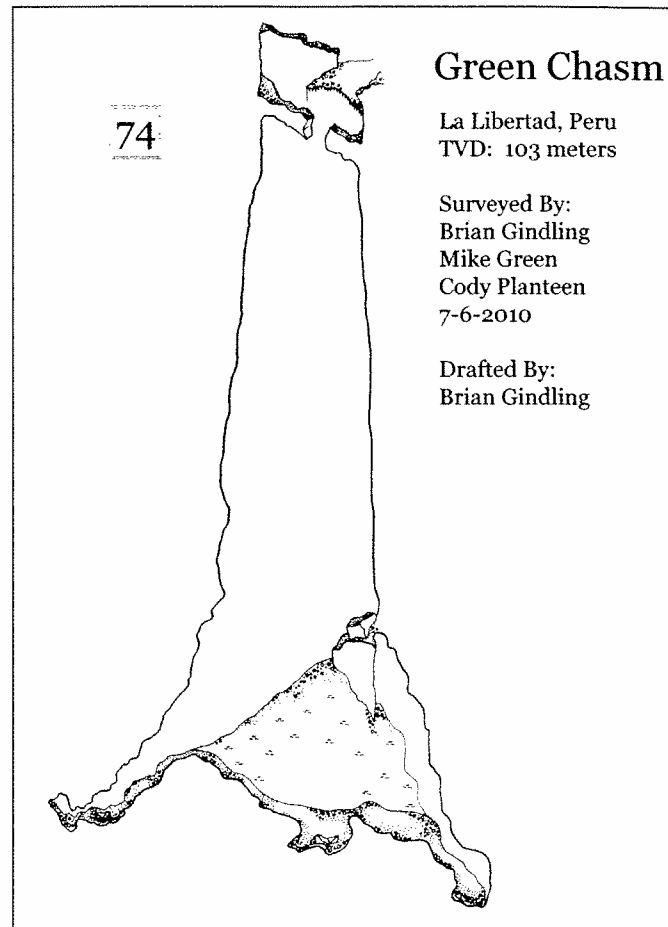
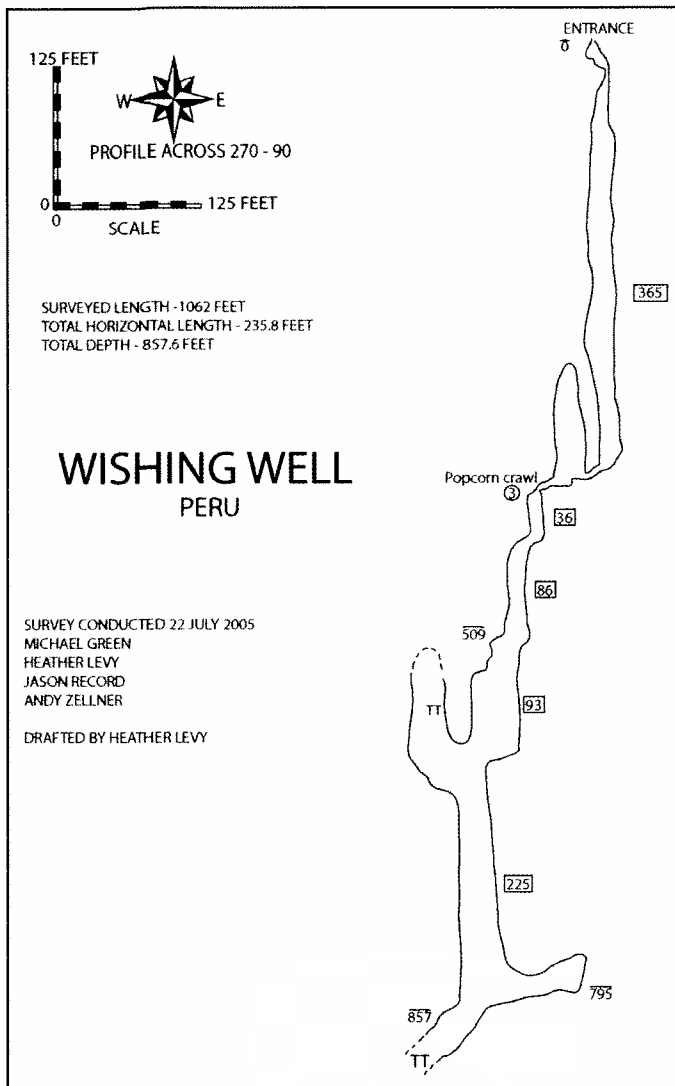
David rappelled down the entrance pit first and set a bolt for rebelay at the ledge. We then continued down the 66 m pit. Natural rigging was used with the 60 m rope for the next in-cave drop. I went down the pit first, which had more sandy popcorn covering the walls. As I rappelled, I saw the rope was approximately 12 m above the bottom. I then executed my first in-cave changeover and climbed back up the rope as I had been short-rope.

On July 6, the longer 180 m rope was brought into the cave and rigged to the in-cave pit. David rappelled down this time and was able to reach the bottom. He set a rebelay bolt near the bottom and swung

while on-rope to explore some side canyon passage which did not go. The pit depth was recorded at 76 m.

While David was at the bottom of the 76 m pit, I went to the other small tight lead and dropped some rocks. David was unable to hear the rocks dropped, indicating that the two pits lead to different parts of the cave. About half an hour was spent hammering on the smaller pit entrance in an attempt to widen it but it was still too tight to enter. I may have been able to squeeze but getting back up would have been quite the challenge and a rescue situation in remote Peru could easily result in a fatality.

In the end, the Fourth of July Canyon had three pits explored with depths of 30 m, 66 m, and 76 m, giving a total depth of 172 m and a lead left behind for exploration in the future.





Tony Theriault

Carl crawls under one of several constrictions in Energizer Cave.

#### ENERGIZER

*"It keeps going, and going, and going..."*

**- The Energizer Bunny**

One of our team's greatest finds during the 2010 expedition was a discovery made by Tony Theriault on a solo recon. Halfway through the expedition, Tony located a deep 100 m+ entrance that overshadowed anything he had seen earlier during the day, but without vertical equipment, he was forced to satisfy his curiosity by simply throwing rocks and snapping a few photos. With



Tony Theriault

Carl finishes his sketch of Energizer Cave.

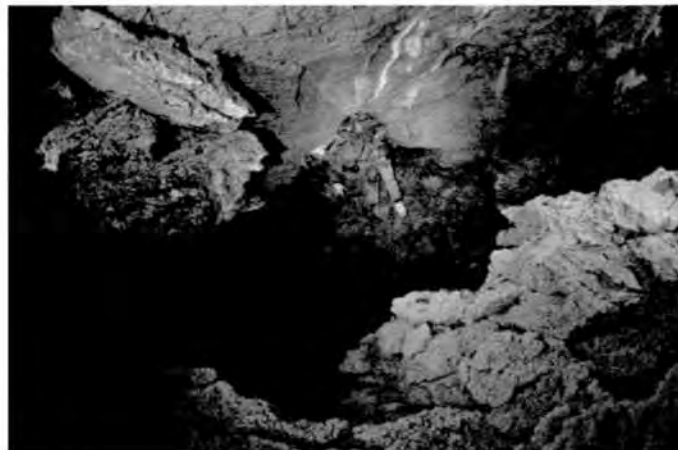
the sun quickly setting, Tony realized that it was probably a good time to return to base camp, a challenge not yet realized. In all reality, the cave was not too very far from our nylon city but this did little to abate the commute as it was 350 m lower in elevation. Tony described this experience in his journal:

"I had to slide most of the way down on my backside which may not make the most ideal route back to camp. I clawed my way back by grabbing clumps of wet grass for anchors and old horse and cow tracks as footholds. The temperature dropped fast as the sun disappeared below the mountains but the effort of getting back to camp, a hot meal, and sharing the day's findings was more than enough to stay warm." (Journal of Tony Theriault 07-06-10)

After climbing the steep mountainside, Tony arrived at camp with tales of a large entrance with a five second freefall. The team's interest was immediately roused and it was not difficult to recruit support to plunder the depths of what would later be known as Energizer Cave.

The following day, Tony and Carl returned to Energizer, and with the aid of a 200 m rope, claimed the honor of being the first two explorers to have ever touched bottom. The pit measured an unanticipated 103 m but what was most surprising was that unlike most of the surrounding caves, Energizer was not just a blind pit but continued with a 10 m drop. The duo followed this passage to the top of a 35 m pitch. Carl bottomed this pit to unfortunately discover that it was blind; however, during his climb to the top, Carl noticed something that seemed inviting. On the opposite wall was a void that was some 10 m from the ceiling. Being too close to the top to pendulum, Carl describes the dangerous traverse by saying, "if I had peeled, I would have fallen halfway down the pit." Within a few nail-biting minutes, Carl had reached safety. This drop was later dubbed the Traverse Pit for obvious reasons. After regaining a little composure, Carl soloed further into the cave and confirmed their hopes of continuation. The tired pair decided that this would make a good point to stop for the evening.

The following nights were filled with dreams of deep caves and booming borehole for both Carl and Tony so it was not long after their first exploratory trip before they were ready to resume the effort in Energizer.



Tony Theriault

Carl checking leads in Energizer Cave.

The pair returned to the newly discovered cave within a few days and made short work of the first two pits. Within an hour of entry, Carl had renegotiated Traverse Pit; however, this time he rigged a fixed handline to avoid any unfortunate mishaps. Carl and Tony continued their survey down two more drops before reaching a constriction and needed to be hammered. Hours passed before the passage was wide enough to permit travel and the two ended their trip at the top of yet another nuisance drop. Close inspection of the data revealed that this area of the cave had in fact broken a depth greater than that of the 35 m Traverse Pit validating their beliefs that the new route was in fact leading them deeper into the mountain.

Subsequent trips into Energizer were made with Andy and Cody to push the cave to a total depth of 194 m. The exploration ended at a typical blowing crack with a trickle of water leading down a tight canyon before undoubtedly resurging at a valley spring a few hundred meters away. On the last trip made into Energizer, Carl made it to the surface with just enough time to watch the sun set behind a spectacular alpine mountainside littered with hopes and dreams not yet realized. On this particularly clear night, the stars kept the team company as each of the exhausted cavers defied the laws of gravity by returning to the surface. When interviewed for this article, Carl followed his description of this surreal experience with, "it was so cold that I had frost on me by the time we last left Energizer behind."

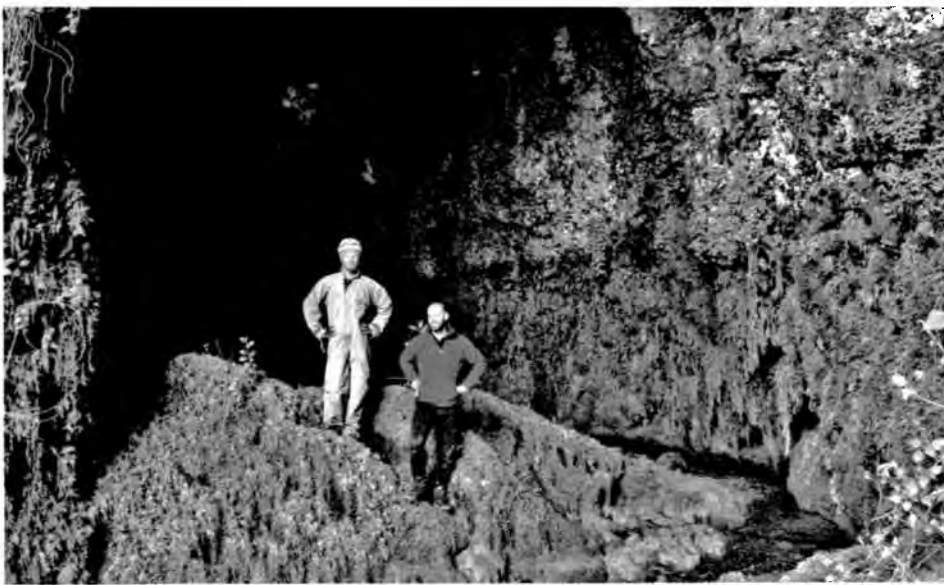
#### NACIMIENTO DEL RIO CICLÓN

*"Commit first, then figure it out."*

**-Napoleon**

"It was one of those classic moments. Unable to find a single loose rock and a beckoning void at your feet, so a grass clump will have to do. Having just stumbled upon a 6-7 second free drop, I'm reminded that I'm not even supposed to be looking for pits today.





Mike Green

Brian and Mike stand in the entrance to Nacimiento del Río Ciclón.

My goal is a conspicuous black hole 3.5 km as the condor flies from base camp at the end of a wall of cliffs plunging into the mountain's foot. Almost every day our esteemed leader Jeb Blakely would remind us that no one had ever been on the other side of the valley, and with our youthful enthusiasm it would be but a quick jaunt 400 m down the mountain, then swim across the wide lake or wade through the wetlands, and then climb back up the 400 m to the opposite side. So that is what I did (except I had no interest in swimming across an alpine lake, and at 4000 m ASL you would be most foolhardy to do so). Off the cliffs I went, and began making a beeline for my target, working my way down and around the valley. I had been following a conveniently inclined bench all morning and now, as it seemed to be ending, I came to the deepest of a long series of pits with three entrances and much potential. Peering down I could see a few sunlit ledges, but with no rope and no gear I was just wasting time. Taking a GPS point, I vowed to return.

In the back of my mind I knew this was coming. It always seems to around here. Before me was nothing but a 60 m

long, near-vertical slope that bristled with bedewed, chin-high clump grass, which rivaled the slickness of the fog laden cow pies. With backtracking out of the question I continued down as far as I could on my feet and, when gravity began to overcome traction, pushed my pack over the brink and followed as well as I could on my posterior. Now don't get me wrong, I searched hours for the best way up and down the cliff wall, and in the end just had to accept the shortest descent in what I've come to know as a controlled fall. My day pack careened down the hillside and came to rest near a lone Peruvian stone barn surrounded by cows. I arrived soon thereafter. Little did I know how intently these cows were observing my proceedings, though later I would come to know. I now found myself in a small cliff surrounded bowl with a magnificent view out and above the large waterfall seen from camp, which fed the twin lakes below and drained into the waters of the Amazon. Springs seeped from numerous ledges at the limestone-sandstone contact and the ground became a true swamp, bisected by a meandering stream issuing from the base

of a 60 m tall vomitous mass of boulders deposited by the cliffs above. Leaning back you could almost see the 5000 m peak of the mountain, which was undoubtedly the source of many of the rocks surrounding me. Deep spongy moss and spear-like succulents hid hip-deep, treacherous trenches and fetid pools with chest-high grasses crowded amongst 2 m-high, extraordinarily potent Mala Mujer stinging nettles, sporting large orange, poppy-like flowers. At the top of this pile beckoned my destination, and after a long afternoon of fiery curses and burn marks on skin from trudging through this damn maze, I arrived directly below the entrance. But as I was catching my breath, the sound of flowing water could be faintly heard above. Soon after scaling a wall of nettles and since the lost stream was before me, sinuous threading its way amongst sandbanks as it exited from the borehole piercing the mountain and immediately sank again beneath the nettle maze. As this was a scouting trip, and having not much more than a helmet and light, I followed only a hundred meters of stream passage before turning around, yet I knew from what I had seen that I would soon return. With daydreams of massive systems and underground rivers, the hike back was just as steep as ever, and I arrived back at camp as the darkness and fog began to settle in." (Brian Gindling)

Towards the end of the expedition Brian and I discussed visiting the promising resurgence he had found on his solo reconnaissance a few days prior. He told stories of large boreholes that feed the headwaters of the Río Ciclón, which is a tributary of the Amazon River. This crystal-clear stream flows from the heart of the tallest peak in the surrounding countryside. Furthermore, the passage was blasting air like a blacksmith bellows. The only downside was that the cave was located on the opposite side of the valley from where base camp was situated. This would entail dropping at least a thousand meters to the valley floor, hiking several kilometers along the Río Ciclón, and then ascending a completely different ridge. In reality, this cave could easily be seen from camp, but the obviously long trek required to visit the cave would force one to turn his attention and efforts to closer goals. There was no doubt that a pilgrimage would necessitate camping somewhere along the way but it would have an incredibly high chance of yielding something very unusual for the area since the landscape is more or less devoid of any horizontal caves. With little contemplation of the details, we committed the last two days of our expedition to the expenditure.

Brian and I set out early on the morning of the 11<sup>th</sup> and quickly began our dreaded decline to the valley floor. It was not long before we were passing our hiking packs at

Brian admires one of several large chambers in Nacimiento del Río Ciclón.



Mike Green



Mike Green

**Brian explores the dry trunk passages in Nacimiento del Río Ciclón**

free climbing near vertical cliffs much as the explorers of Energizer Cave had just a few days prior. At one point, Brian's top-heavy pack managed to escape his attention long enough for it to begin rolling a hundred or so vertical meters before stopping just shy of a pit. Eventually we made it down to the valley floor where we walked passed ancient Chachapoyan dwellings before continuing our journey to the source of the Río Ciclón.

The traverse through the next hanging valley was certainly a relief from the treacherous drop we had endured earlier. We stopped for a few minutes to refresh ourselves in several spring-fed waterfalls that were a much invited change from the cattle bath at base camp; however, our luck quickly changed as we entered the bogs and marshes approximately one kilometer from the now noticeable cave entrance. It was here that the inviting limestone portal began to show itself in all its grandeur. The cave is situated high on a semispherical wall of the valley much like that of an outside auditorium and exuded an aura of mysteriousness. The beauty of the cave recessed into the dark corners of our minds as passage through the bogs became increasingly difficult. We slogged up to our thighs in grass-cloaked potholes and climbed a waist-high jungle of South American stinging nettles. We arrived exhausted at the picturesque resurgence only after negotiating the swamps for almost two hours.

The diameter of the entrance was over 10 m and bored into the darkness without a hint of constriction. The water was clear and fast moving as it banked around the sides of the massive trunk which was draped in a layer of moss several feet in thickness that undoubtedly grew undisturbed for many years. Ferns as long as 2 m hung from the ceiling and rocked gently in the breeze that poured from the heart of the mountain.

Immediately I could feel a large gale wind blowing from deep inside the cave with whispered promises of large, extensive passage beyond. Out of the thousands of caves found in this area, none were remotely similar in nature. It was almost as though we were in a completely different karst area than that of Northeastern Peru. Brian and I wasted no time at all emptying our packs and suiting for exploration. The passage pulled on our spirits and our imaginations much like a planet pulls on its moon. It was not long before we were running tape down large sections of stream passage that showed no interest in ending. One thing that continuously drew our commentary was that of the massive airflow that passed our bodies. Surely there must exist something extensive to move this volume of air through a passage the size of this...

"Mike Green and I returned near the end of our trip for an overnight excursion, loaded with all the gear needed for a line plot survey and photo shoot. Knowing that we wouldn't get anywhere near done, we wanted to get enough information to understand the cave's rough direction and enough eye candy to entice a return in the following years. After attempting numerous alternate routes to the entrance we were once again funneled down and forced to ascend the nettle maze with overloaded packs, reaching the vegetation-lined entrance with the afternoon sun. After donning our gear we were soon on our way upstream in a 4 m x 7 m streamway with dryer upper-level connecting passages. The walls displayed a distinct flood line above our heads and we were relieved to be here in the dry season. After a few photos, we negotiated a deep sandy slope bringing us ten meters above the water. After fifty meters of scrambling,

we were deposited back down to the water's edge and to the first significant side passage. The main passage continued to a confluence of two streams, both blowing significant air. The left way shortly came to an exposed climb-up, which opened onto the foot of a steep talus slope at the bottom of a tall dome/pit with water cascading down from far above. My light could penetrate but 50 m or so before being engulfed by a cyclone of mist, concealing the roof from view. This was the first instance I had yet found of a horizontal exit for the innumerable pits on the mountainside and my imagination was soon working on scenes of deep, wet, multi-drop routes burrowing towards me from the sunlit stone benches above. Back at the confluence, the right way squeezed through two large flowstone deposits protruding from the walls above a deep pool, soon returning to comfortable stream passage again. Here was yet another gathering of waters with one way becoming a narrow, upward trending tube, which we left for a later trip so we could focus our precious time on following the main passage. Mike stayed at the confluence to work on photos while I continued solo another hundred meters, hoping to come to another prominent feature to mark a good return point. The passage was 5 m x 5 m with the stream still flowing strongly, yet now with very steep and eroded sides and treacherous silt-covered boulders that had fallen from the ceiling above, forcing me to traverse between, above, and below them. I stopped just after the last obstacle. The cave beckoned me ahead, but I reluctantly turned back for I knew that Mike would appreciate my help with photos and we still had to survey our way out. The air was strong at my turnaround point and the walls showed no inclination of changing



Mike Green

**Mike and Brian set up an overnight camp in Nacimiento del Río Ciclón.**



Tony Theriault

**Tony contemplates the meaning of life in Vista Pit.**

from their hallway-like dimensions. After finishing 235 meters of survey and taking some good photo documentation we spent a pleasant night in the cave on a sandy gravel bar beside the stream. Once again the fog and rain returned by morning to make our last hike to base camp a memorable one.” (as told by Brian Gindling)

## Conclusion

*“The journey is the reward.”*  
- **Chinese Proverb**

The team began to slowly disperse in Lima the night of July 18<sup>th</sup> after we ate our final meal. One by one we boarded our respective means of travel and went our separate ways into the early morning. All left Peru that day with a sense of victory.



Tony Theriault

**The 2010 Peruvian Expedition Team : (from left to right) David Cole, Andy Zellner, John Swartz, Cody Planteen, Jeb Blakeley, Mike Green, Brian Gindling, Tony Theriault, and Carl Heitmeyer**

## DEEP LIMESTONE PITS OF SOUTH AMERICA

Name (Cave name, if different)	Depth	Country	Reference
1 SP1 (Pumacocha)	282	Peru	N Hawkes (I Mckenzie List)
2 Dos Ojos	255	Peru	J Blakeley / J Swartz / A Zellner
3 Deep Surprise	190	Peru	J Blakeley
4 Pre-Inca	186	Peru	R Sundquist/ C Ream
5 Clatter	145	Peru	J Blakeley/A Zellner
6 Humdinger	137	Peru	R Sundquist/C Ream
7 Steve's	137	Peru	J Blakeley / C Ream
8 Inf Grande del Plano	131	Peru	R Sundquist
9 Ojo de Conejo	131	Peru	J Blakeley / J Swartz / A Zellner
10 Andes Surprise	128	Peru	D Cole
11 Anniversary	126	Peru	J Blakeley / D Cole
12 Hidden	125	Peru	D Cole
13 SP3 (Pumacocha)	125	Peru	N Hawkes (I Mckenzie List)
14 Devoid	125	Peru	D Cole / J Swartz / A Zellner
15 Velozia	120	Brazil	I Mckenzie List
16 Overlooked	117	Peru	D Cole / J Blakeley
17 Entrance Pit (Windy Rift)	116	Peru	D Cole / M Convington
18 Gruta De Bocaina	116	Brazil	I Mckenzie List
19 Skull	115	Peru	D Cole
20 Friendship Well	115	Peru	J Swartz
21 Flower Pot	113	Peru	B Gindling / M Green / C Planteen
22 Ammonite Shaft (Pumacocha)	113	Peru	N Hawkes (I Mckenzie List)
23 Wishing Well	111	Peru	J Record / M Green / A Zellner
24 Echo	103	Peru	D Cole
25 Inf del Condor	103	Peru	J Smith / J Swartz
26 Energizer	103	Peru	T Theriault / C Heitmeyer

\*caves found in project area of Peru are denoted in bold

## DEEPEST CAVES IN SOUTH AMERICA

Name (Cave name, if different)	Meters	Country	Notes
1 Sima Pumacocha	638	Peru	
2 Gruta do Centenario	484	Brazil	quartzite, deepest non-limestone cave in the world
3 Millpu de Kaukiran	407	Peru	aka Sima de Millpu, Sima de Racas Marca, Grutas de Guagapo or Gruta que Lloro
4 Gruta da Bocaina	404	Brazil	
5 Sima Auyan-tepui Noroeste	370	Venezuela	
6 Sima Aonda	350	Venezuela	
7 Tragadero San Andres	334	Peru	
8 Windy Rift	305	Peru	
9 Dos Ojos	290	Peru	
10 Wishing Well	260	Peru	

\*caves found in project area of Peru are denoted in bold

We had succeeded in achieving what we had originally sought out to accomplish and with that came a renewed spirit for exploration. We answered many questions about the karst hydrology of the Valle del Ciclón with the discovery of Energizer Cave and Nacimiento del Rio Ciclón. Energizer showed that some of the caves can be completely independent of other systems by draining to the valley

floor before resurging. Nacimiento del Rio Ciclón opened up the imaginations of those who learned of its existence by proving that the opposite side of the valley not only had the potential for caves, but was littered with them; however, with every answer came a new set of questions: Where is the missing main drainage for all the large volume caves of the fault? What is the source of the mysterious airflow inside of Nacimiento del Rio Ciclón? Fifteen years of dedicated exploration and survey has yet to reveal the truth to these unknowns. Maybe another fifteen years of expeditions can begin to grasp the larger picture that was undoubtedly under our feet the entire time.

We were blessed with many positive factors that lead to great successes in the Valle del Ciclón exploits. Almost forty new caves were explored and surveyed. Still, even after a two week excursion with nine people the mountain proved that it still has many secrets not yet realized. It is difficult to say for sure what could potentially lie waiting in any of the thousands of undescended pits in any of the most remote karst fields in the world.



AUGUST 2011

