

Fern Cave Survey

Summary from 1/28/22 – 9/17/22: Survey Teams 190-206

Written by: Marion Akers

Participants

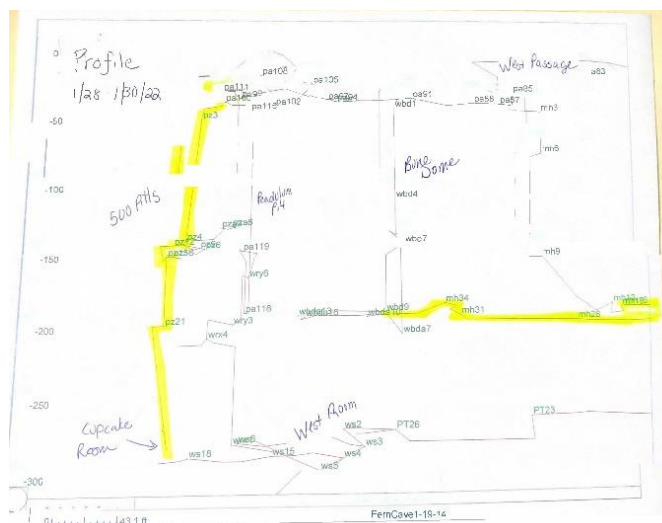
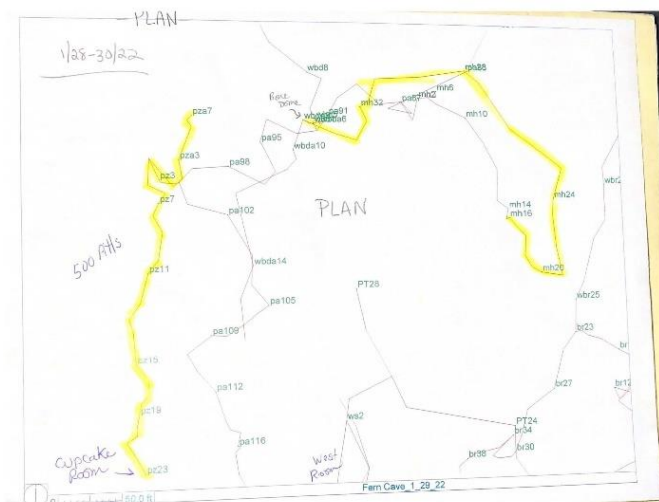
Ron Adams
Marion Akers
Simon Akers
Tony Akers
Nick Anderson
Rand Heazlitt
Thomas Hawkins
Mark Jones
Edd Kuedell
Joe Kinder
Greg McNamara
Val McNamara
Kevin Mulligan
Steve Pitts
Rob Spangler
Jessica VanOrd

2022 Survey Summary

Since the end of January, we have added over 6100' of survey in 12 different trips with 16 different teams, and have made some important connections in various parts of the cave. The total horizontal length of the cave is currently 10.28 miles and the total depth is 508.8'. Steve Pitts and Mark Jones have been our guides on many of the trips, helping us learn the cave's important routes and junctions. We traveled major routes with them, and our survey efforts have led to 7 connections within the system. We began the survey at the bottom of Surprise Pit that will lead to Bottom cave, and have finished the wet, low crawls in that connection passage. I have made various "Line Plot Reviews", that detail out our progress from each of the trips. At the end of this report, I have a chart that shows all the data results from each trip.

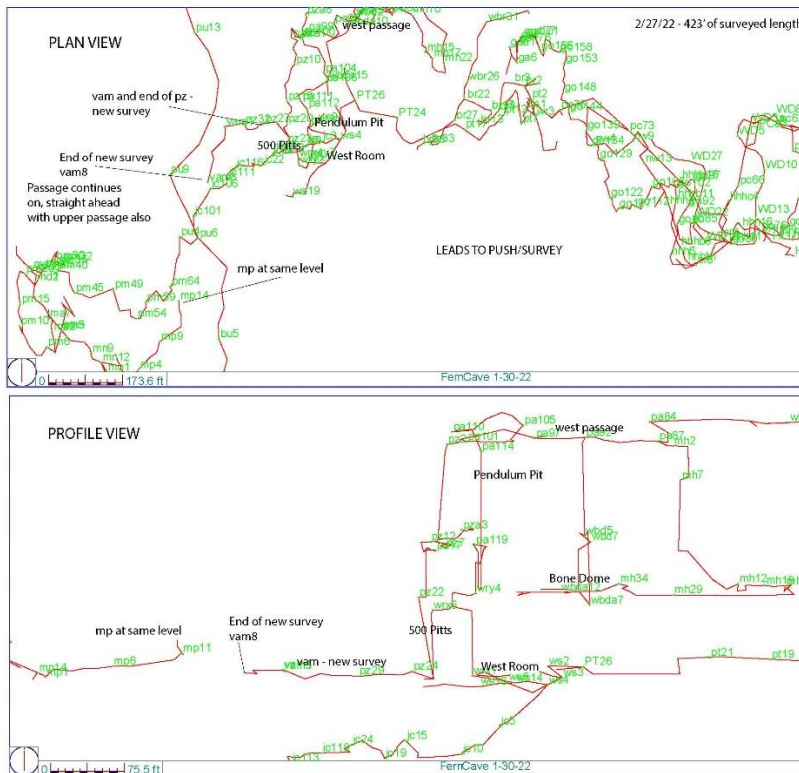
1/28-1/30/22: Teams 190 – 191

We began our trips out of the Johnston entrance, traveling the West Passage past the Guano Rooms to areas that needed survey. Initially, we dropped a 100' 2 pitch pit at pa85 and began a survey at mh16 that led to the bottom of the Bone Dome room. The connection to the Bone Room still needs surveyed to the middle of the Pendulum Pit, but will require a traverse line. Also, within this survey lies the connection from the East Canyon, which still needs surveyed. On the other trip, we continued in the far reaches of the West Passage, dropping a 3 pit series at pa 100 into the Middle Cave (112', 49', 87'), calling it 500 Pitts. This set of line plot profile and plan views show the trip results from the end of January. The two survey areas are highlighted. These pits do not have permanent ropes.



2/25/2022: Teams 192-193

Steve and Mark took two teams to North Cave, one to an upper area in North Cave, then down Coney's Chasm, and the other from the Lower Stream of North Cave. The latter team took the route from the Blowing Hole, down the vertical maze and past the Lunch room. The two teams began their surveys in order to meet with each other. The survey was not fully completed. Below are results from that trip at the end of February. One more trip should make the connection. The pit at Coney's Chasm, connecting to the lower level, has not been tied in and surveyed. Also, from that lower stream, the passage continues past the tie-in station, pcn34, after pcn38. That passage continues lower but wide, with more contact with the stream, and will need survey and exploration.



5/27/22: Connections and survey from Pendulum Pit Series in the West Passage

FCS_195: connection from Antlion Trap Room— to Banana Room: 385'
CAVERS: Marion Akers (sketch), Jessica Van Ord, Simon Akers

FCS_196: connection from Antlion Trap Room - to Jericho Canyon: 327.8'
CAVERS: team: push: Rand Heazlitt, Nick Anderson, Tony Akers, survey: Edd Keudell (sketch), Kevin Mulligan, Thomas Hawkins

FCS_197: Survey of side passage from vam12 (just north of the Banana Room): 236.0'
CAVERS: Ron Adams (sketch), Greg & Val McNamara

Leads:

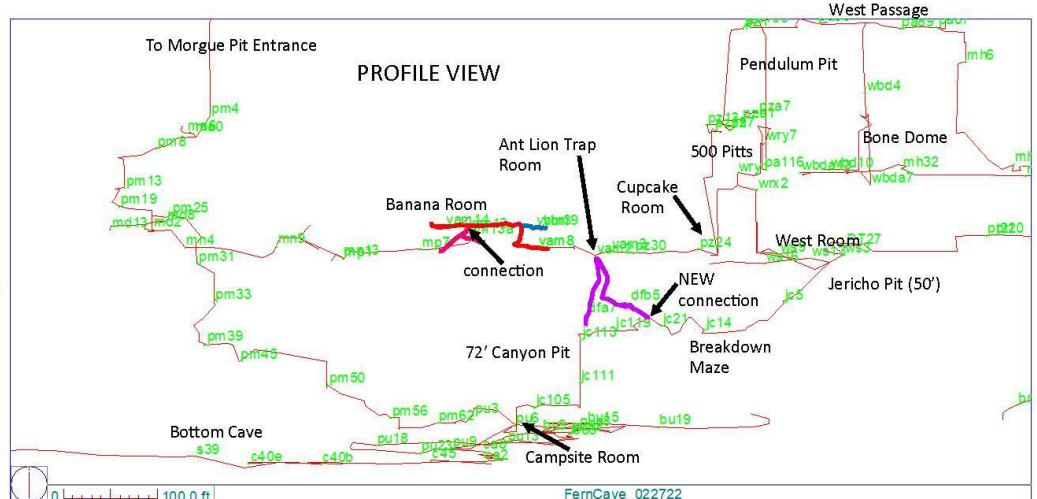
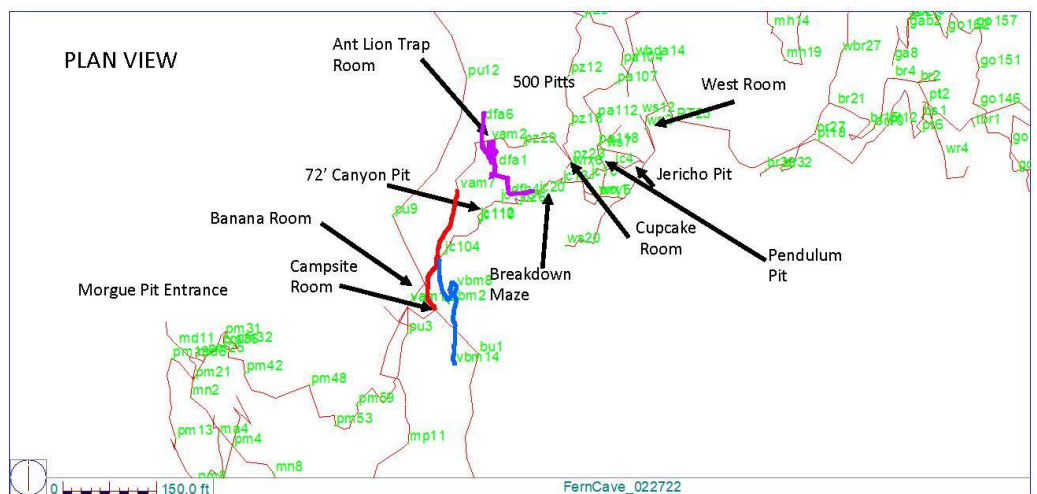
Campsite Room and adjoining passage—10+ leads
Investigate Banana Room / Stinky Room mop up survey

Survey Goals:

Survey traverse and upper Antlion Trap Room passage—about 50'+ feet
Survey upper passage from Pendulum Pit following West Passage to the Morgue entrance
Survey 200' Pit in upper West Passage above the Pendulum Pit
Investigate Morgue Area existing survey notes to find potential survey areas

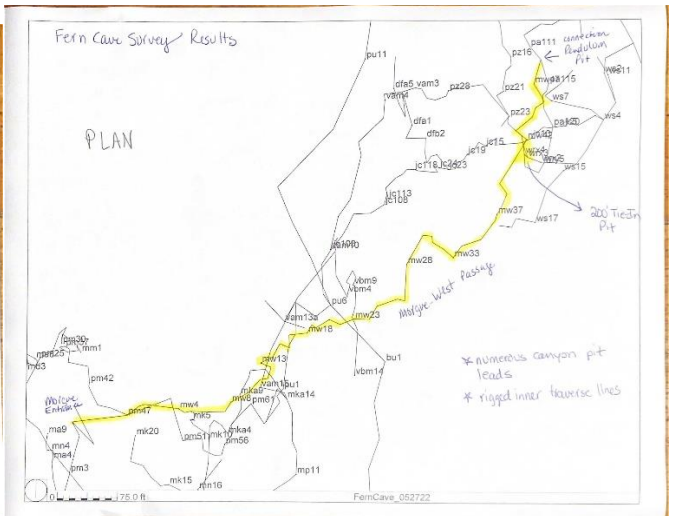
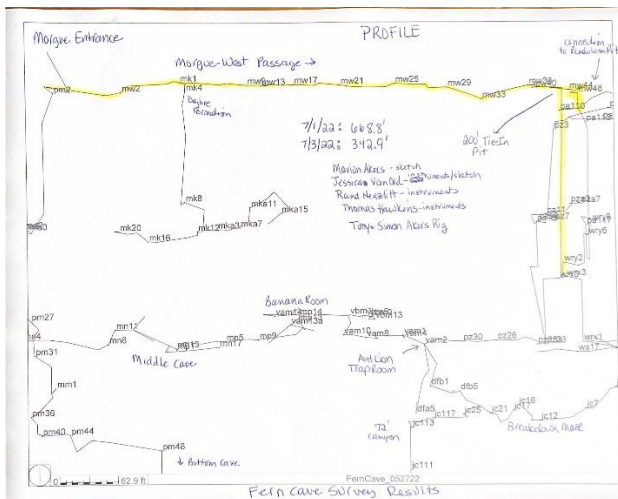
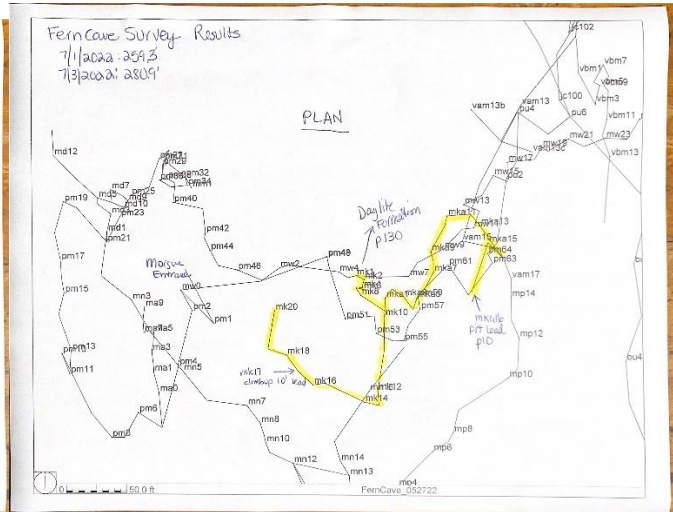
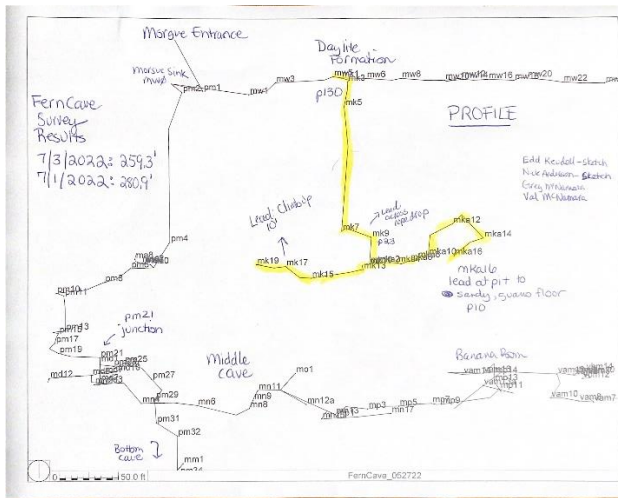
New Rigging / Gear Notes:

Antlion Trap Room pit—15' pit with Natural Rig—50' rope, 2nd 15' pit w/ 60' rope
Extra 200' poly/poly 11mm highline for future use



7/1-7/3/2022: Teams 198 – 201

In two different trips at the beginning of July, we completed the upper Morgue-West Passage connection, and made progress in the survey below the Daylite Formation. We first started with a team going across the upper Morgue passage to connect to the West Passage. This connection, along with the 200' Tie-in pit to the Pendulum Pit area, took two days of survey. Another team surveyed down the Daylite Formation area, 132' pit, then a 23' pit and continued the survey in two directions. Another team was led by Mark down the main 97' pit in the Morgue sink, in order to familiarize the group with this area. Below are the line plot reviews from those trips.



Harts tongue fern: 7/3/2022

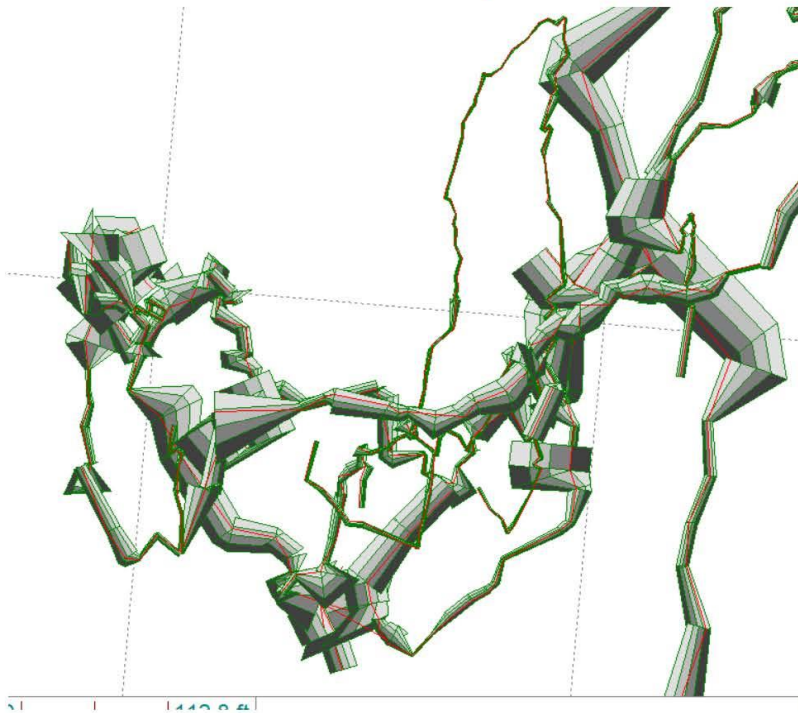
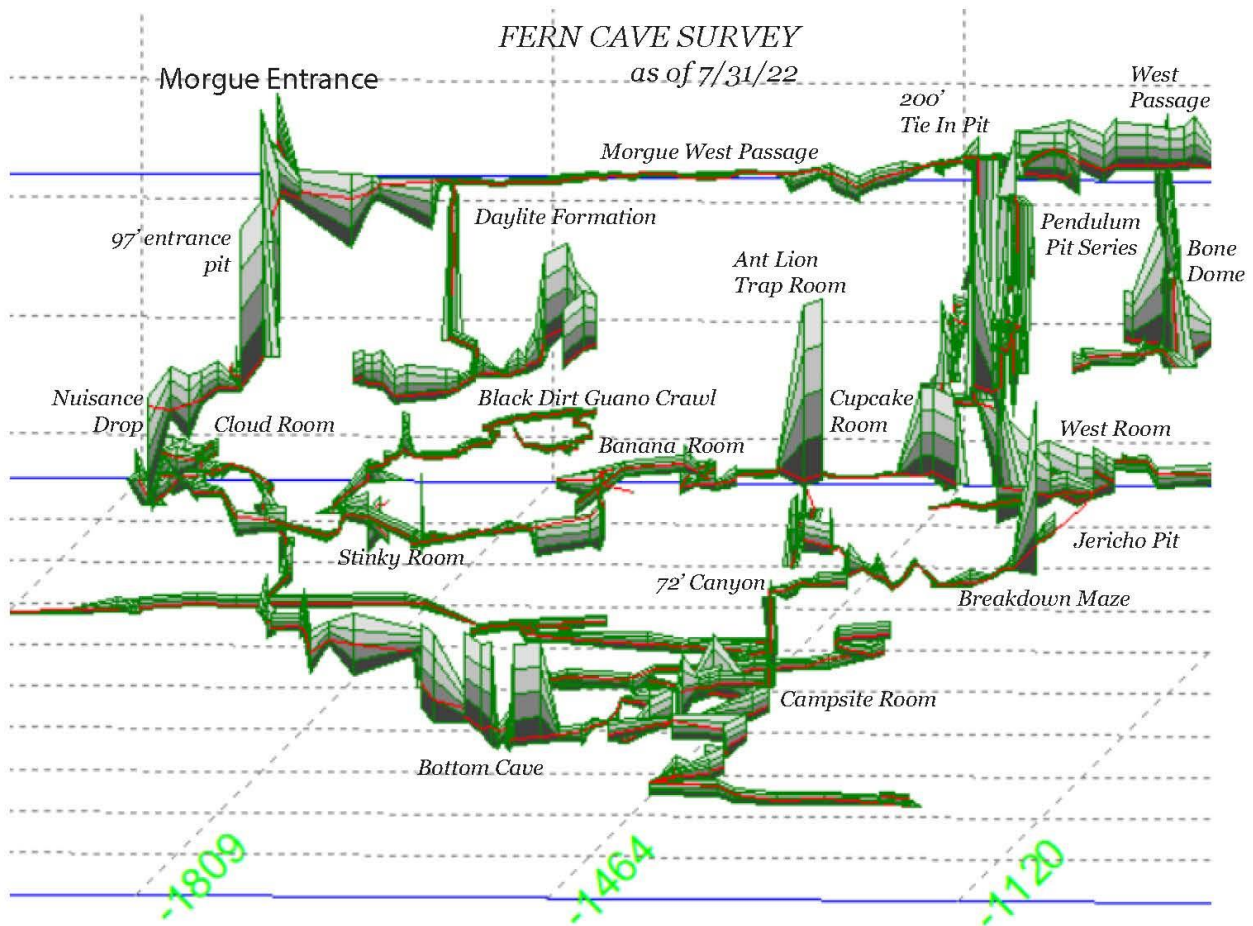


Harts tongue fern: 7/30/22

Photos by: Marion Akers

7/29-7/30/2022: Teams 202-204

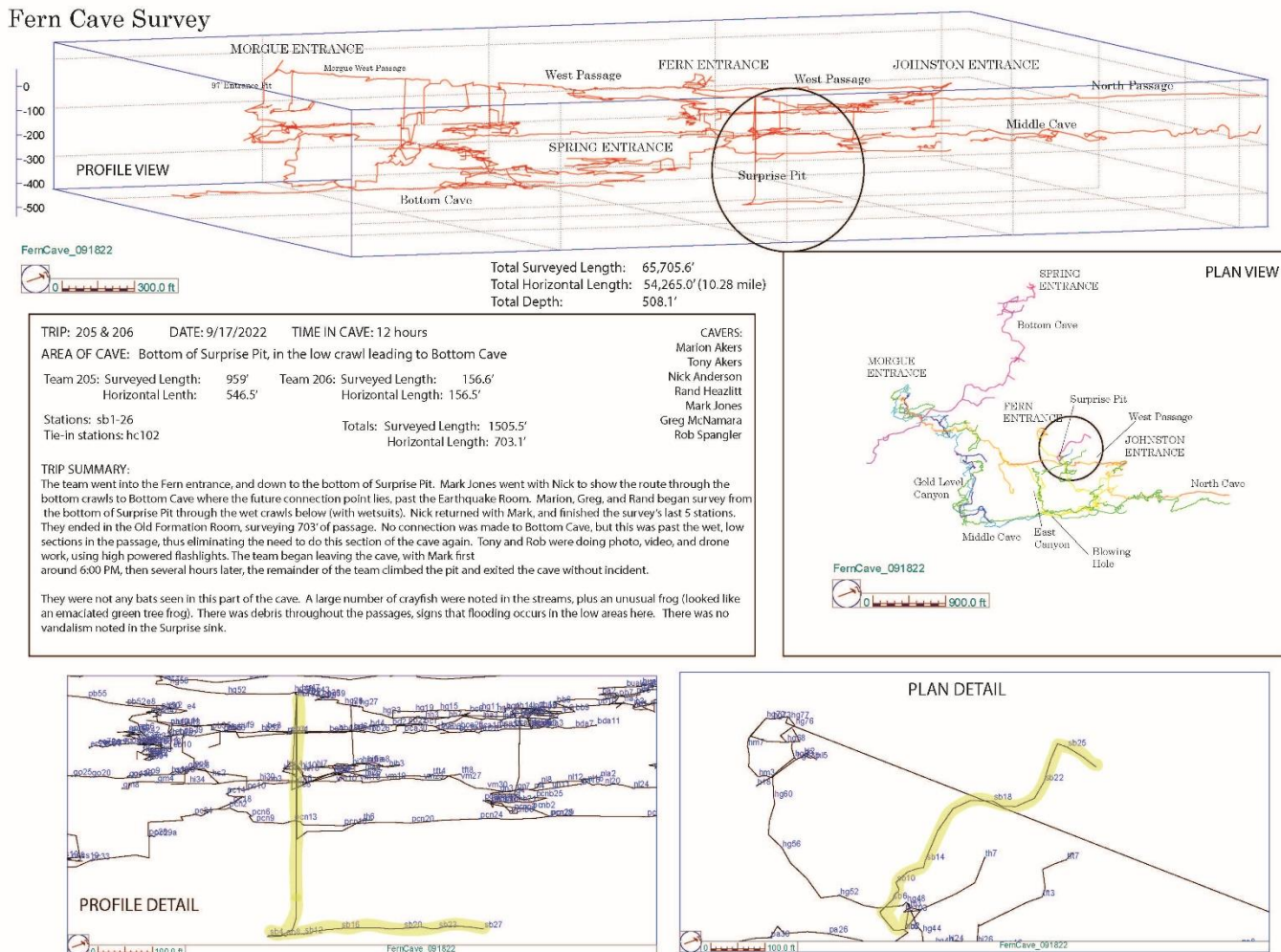
We continued our work in the Morgue at the end of July. Mark Jones again led the group to the area where the Black Dirt Guano Crawl began. He continued with several members to again show part of the Morgue. We managed to survey the whole crawl but couldn't tie in to the Daylite Formation area. This required a vertical 30' pitch from above. We also surveyed the Cloud Room, with a future plan to continue into the Funnel Room to the north. We have a lot of survey work to complete in the Morgue. The following line plots show the passage, filled in and slightly tilted. It is only partially complete, without all the written details in the plan view.



9/17/2022: Teams 205-206

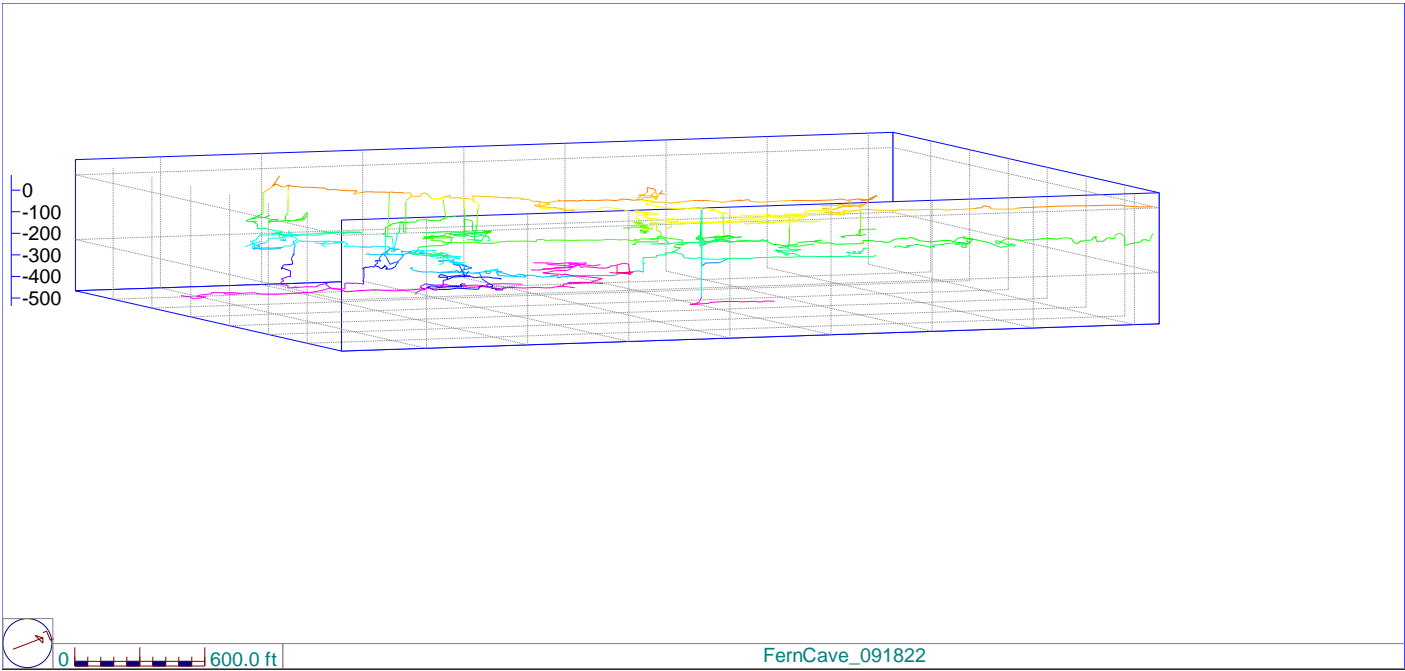
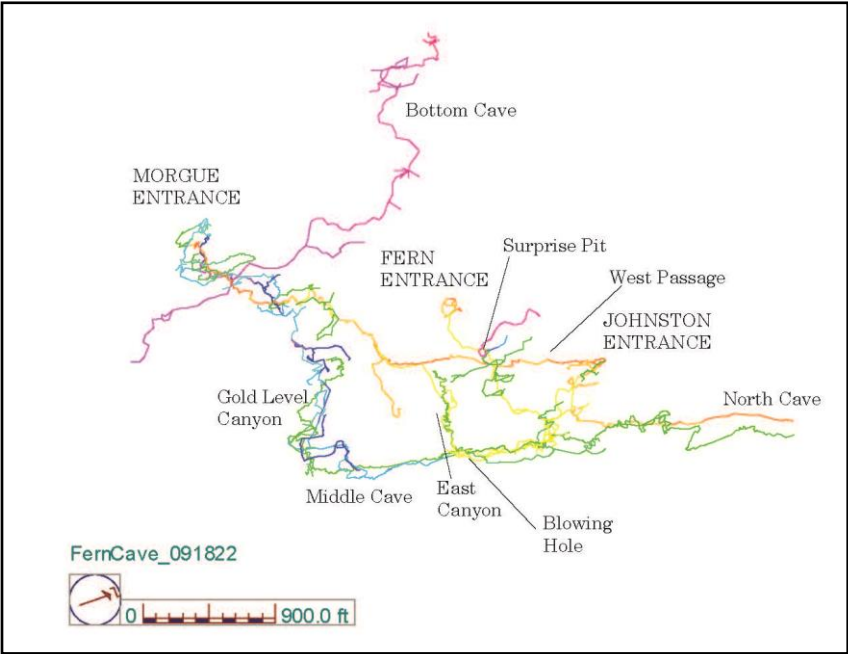
Mark Jones had taken another group into the Fern Entrance and down Surprise Pit during August. Being the driest time of the year, they wanted to attempt the lower connection to Bottom cave. The wet gravel had to be partially dug out, in the first really tight area. The trip was successful, and Mark and his team found their way to Bottom Cave. Our group then planned a trip for September 17th to do the survey. Again, it was very dry, and the drainage into Surprise Pit was very low. The team went into the Fern entrance, and down to the bottom of Surprise Pit. Mark Jones went with Nick to show the route through the bottom crawls to Bottom Cave where the future connection point lies, past the Earthquake Room. Marion, Greg, and Rand began survey from the bottom of Surprise Pit through the wet crawls below (with wetsuits). When Mark returned with Nick, he finished the last five stations. They surveyed 703' to an area called the Old Formation Room. This was past the wet, low sections in the passage, thus eliminating the need to do this section of the cave again with wetsuits. Tony and Rob rigged the pit, and after the survey team began, they photo-documented the Surprise Pit area with a drone video and extra lights. Following is the line plot review of the results of this trip.

Fern Cave Survey



The above line plot review also shows the current view of the whole cave, both the vertical profile and the plan view. The views are shown at angles at 69°, the direction of the quad maps.

Shown below are the current profile and plan line plot view, colored by level, a profile line plot view, and a chart showing the survey data with current totals.



FERN CAVE SURVEY - STARTING 2022

Survey Date	Team Number	Area of Cave	Stations surveyed	Surveyed Length	Horizontal Length	Vertical Depth	Total Surveyed Length	Total Horizontal Length	Miles
								48,109.5	9.11
1/28/2022	190	West Passage - cont. of mh survey	pit at pa85: mh16-mh35-wbda9	485.6	480.3				
1/30/2022	191	West Passage - at pa100 - pz pit series	pa100 - pz23, pza1-pza7	622.4	430.4				
2/25/2022	192	North Cave - nlb survey	nlb39-nlb64	311.9	296.6				
2/25/2022	193	North Cave - pcn38-pcna	pcn34-pcna1-pcna28	326.5					
2/27/2022	194	West Passage - Pendulum Pit - pa112 - wrx	wrx6-pz23-vam3, vam1-vam8	423.6				49,316.8	9.34
4/27-4/29/2022		West Passage - Pendulum Pit	no survey - replacing rope and adding traverse lines						
5/27/2022	195	Ant Lion Trap Room to Banana Room	vam8-vam17 to mp 14	385.0					
5/27/2022	196	Ant Lion Trap Room to Breakdown Maze	vam2-dfa dfb to jc23	327.8					
5/27/2022	197	Banana Room side passage	vam12 - vbm1 - vbm14	236.0			60,862.4	50,427.2	9.55
6/26/2022	99	Middle Morgue: 8/12/95	mn15-mn17 - these two shots were not in Compass, but were found in the survey notes	99.3			60,961.7	50,526.3	9.57
7/1/2022	198	Morgue - West Passage / Pendulum Pit	mw1-mw33; mk1	676.5	668.8		61,638.2	51,195.1	9.70
7/1/2022	199	Morgue - Daylite Formation	mk1-mk20	421.9	280.9		62,060.1	51,476.0	9.75
7/3/2022	200	Morgue-West passage connection & 200' Tie-in Pit	mw33-mw48; tie in pa112; mwa1-mwa3; tie-in: wrx3	552.8	342.9		62,612.9	51,818.9	9.81
7/3/2022	201	Morgue-Daylite Formation continued	mka1-mka16; tie-in: mk10	283.1	259.3		62,896.0	52,078.2	9.86
7/29/2022	202	Morgue - Black Guano Dirt Crawl	mn12; bdg1-27	420.9			63,316.9	52,478.6	9.94
7/30/2022	203	Morgue - Black Guano Dirt Crawl	bdg27-bdg88	803.6			64,120.5	53,272.6	10.09
7/31/2022	204	Morgue - Cloud Room	md13; mc1-6; mda1-7; mc5a	396.2			64,516.7	53,561.9	10.14
9/17/2022	205	Surprise - Bottom survey partial	hc102; sb1-22	959.3	546.5				
9/17/2022	206	Surprise - bottom survey partial to Old Formation Room	sb22; sb22-27	156.6	156.6	508.0	65,750.6	54,265.0	10.28

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