

Craig Skinner

KIND OF LOST AND FOUND: The Little Belknap Crater Cave System

" No visitor to this region should fail to climb to the top of Little Belknap, and see for himself the stalactites, the stalagmites, the splatter cones, the conduits through which the lava poured, and other details of this marvelous crater."

Edwin Hodge, 1925, in Mount Multnomah

The Little Belknap Crater Cave System is a rather unique and certainly unusual two-level lava tube and conduit located nearly at the summit of Little Belknap Crater, the focus of some of the most recent and spectacular volcanic action in Oregon.

I'd wanted to find and look at this little-known (so I thought) cave on top of Little Belknap ever since I read an account of it in a newly acquired publication (3:29) a couple of years ago. The mention of the cave as a "lead" and a pit in the July, 1979, Speleograph finally spurred me and an old friend, Scott Murdock, into action.

And so, on a sunny and late August morning, we found ourselves on the Oregon Skyline Trail near the Dee Wright Observatory at the McKenzie Pass. Heading up the well-worn trail, we quickly ran into the barren and spectacular Little Belknap lava flows. Some eager young burnout specialists (tends to be anyone in better condition than I am) that we passed on our way out of the trees to the lava fields called sagely to us, "It's a long one." Two or three miles later at the top of the long uphill climb (done strategically in the heat of the day in August), wondering if we hadn't grossly underestimated our water supply, we were forced to agree.

Sweating with anticipation, we forthwith arrived at the trail cutoff to Little Belknap, and shedding considerably overweight packs, we hurried to the top. Following the path to the peak of the "parasite" volcano, we walked directly into a feature of some import and interest to those kinds of persons interested in this sort of thing - a cave with a hole at the end that on first impression in the dim light looked like it could spiral right down to the very center of things.

This cave has apparently been known for many years (the earliest reference that I found later was in the quote that heads this piece), but it has somehow eluded the officialcaving groups in Oregon to the extent of being classified as an unfound "lead".

My guess for the cause of this state of affairs is simply that no one got around to checking to see if the cave was really where it was supposed to be. It was one of the easiest to locate caves I've ever tried to find. The upper level of the cave is probably visited by several hundred hikers a year, as it's only a few minutes tempting diversion from the Skyline Trail.

The lower level, however, is another matter, for it's nicely insulated from most visitors by a 24-foot pit near the entrance of the main cave in the system. This hole is the only apparent passage into the lower area though there is a small and easily missed lower entrance. The only way down is via rappel, and with the cave about four miles into the Mt. Washington Wilderness Area, the chances of someone with a rope and ascending gear stumbling onto it are fairly slim.

Hoping that the rumored pit would be there but wouldn't be a deep one, Scott and I had come with 80 feet of Goldline and a bag of ascending hardware. We decided to wait until the next morning to go down, though, as our miscalculation in water stocking was beginning to go from inconvenient to serious. This is a very dry and streamless area for most of the year. We spent the rest of the afternoon cruising the slopes of Belknap Crater for a snow pocket and any interesting sights, but with no luck. By sunset, the little remaining water was gone and we reluctantly packed up the stove for a thirsty hike to a small snowfield that we had spotted earlier in the day on the far side of Little Belknap. 45 minutes later, in the dark, we were enthusiastically melting slightly brown snow - never has lukewarm, dead water tasted any better.

As we sat on the snow waiting for the ice to melt and talking of the mornings climb, we got treated to a magnificent moonrise - a brilliant full moon rising directly out of a distant crater far across the lava fields.

Good omens for the next days fun and labors which are recorded in the sections that follow.

THE MAP: A Note

The map of the Little Belknap System that I've included here can be taken as reasonably accurate, but by no means gospel. By any rigid cave or any other surveying standards it's only a crude piece, but it suits my temperament fine.

You can only do so much with a \$5 compass and when I finished drafting the overhead view it seemed, at least in my tired recollection, that the lower entrance was a bit farther northwest of where it's indicated.

Shouldn't pose any serious problems, though.

THE LITTLE BELKNAP CAVE SYSTEM IN THE LITERATURE

The Little Belknap Cave System has found its way into a limited number of articles, papers, and cave inventory lists (see Larson's 1977 bibliography), though it is inevitably only vaguely described. It has recently been listed as a cave "lead", or an unverified cave, by the Oregon Grotto of the NSS (6:91).

The first mention of the Little Belknap System appears to have been in Edwin Hodges 1925 Mount Multnomah (4:51), a technical paper on the geology of the Three Sisters area. The paragraph at the beginning of this article is from the Hodges paper and constitutes the entire description.

E.A. Groh (3:29) provided the next description when he wrote of the #1 cave, "...a small feeder conduit, roofed over by spatter, which connects directly with a lava tube and probably is the last extrusion of Little Belknap."

Edward Taylor (8:132) puts it into a slightly larger context when he writes, "It [Little Belknap Crater] is surmounted by a chaotic heap of cinders and blocks from which collapsed lava tubes diverge radically. One of the western tubes [Little Belknap System] can be followed to its confluence with a vertical conduit approximately 20 feet in diameter..."

These appear to constitute all ^{the} published information on the Little Belknap System, though they really provide almost no information about this fascinating feature.

THE LARGER CONTEXT: Geology

Little Belknap Crater lies in an area of extensive and comparatively recent vulcanism between Mt. Washington and the Three Sisters. Of the many volcanoes that appeared in this region, though*, none produced a greater volume of lava than did Belknap Crater, Little Belknap, and their related vents. The relatively fluid lava from these sources ultimately covered an area of more than 37 square miles and totalled a volume of more than 1-1/3 cubic miles.

The last of the Belknap complex (pictured in figure 1) to appear was Little Belknap, a vent on the eastern flank of Belknap Crater, which poured out large quantities of pahoehoe lava and created a lava shield of its own (8:129). It was probably in the last gasps of life of this small shield volcano that the Little Belknap Cave System examined here was formed (3:29).

As far as a geochronology of the system is concerned, the only evidence is by inference. Taylor (8:131), using some charcoal that he found in a tree cast in the west Belknap flow (older than the Little Belknap flows), performed a radiocarbon analysis that indicated the trees burned about A.D. 360 \pm 160 years.

* Other cones and volcanoes include Little Nash Crater, Nash Crater, Sand Mountain, Hoodoo Butte, Yapoah Crater, Four-In-One Crater and Collier Cone.

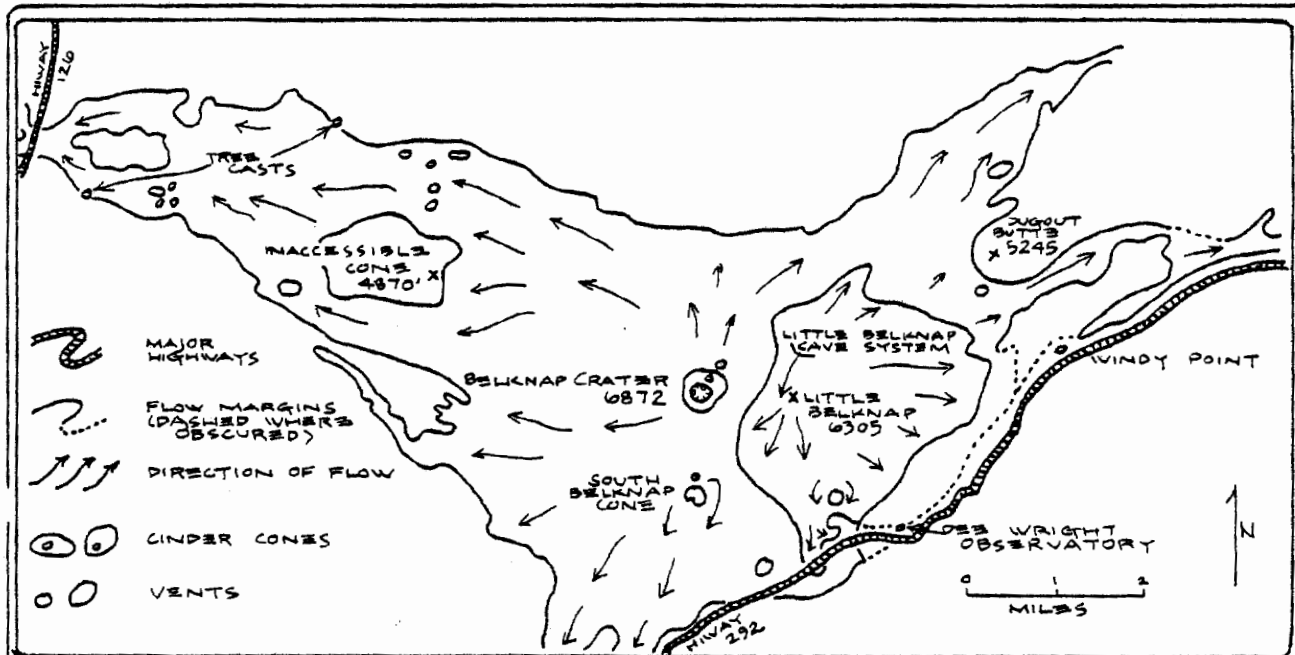


Figure 1 - The Eruptive Flows Of The Belknap Volcano Complex
 (liberally adapted from Taylor, 1965 - 8:130)

From all of this analysis about all that can be said about the cave producing activity on Little Belknap is that it took place less than 2,000 years ago - almost yesterday geologically.

THE LITTLE BELKNAP CRATER CAVE SYSTEM

In General: The Little Belknap System* consists of a series of collapsed and intact sections of a single lava tube that begins just east of the summit of Little Belknap Crater. The system begins as a vertical conduit and lava tube complex and ends several hundred feet downslope as the system, entirely collapsed at this point, is assimilated into other contemporary flow features.

The Lower Caves: There are several very short (less than 20 feet) segments downslope from the #1 and #2 caves that I didn't bother to map. Typically, these are low and mostly filled with breakdown and debris. The last intact segment occurs near the junction of the Oregon Skyline Trail with the turnoff to Little Belknap.

Little Belknap #2: About 100 feet downslope from the #1 cave is the upper entrance to Little Belknap #2. Only about 40 feet long, the floor is extensively covered with lava debris, though the lining is largely intact. The lower entrance of #2 is clearly visible from the previously mentioned trail junction.

The Collapsed Segments: The collapsed segments of this system are easily distinguishable as a prominent lava trench parallelling the trail that leads to the summit of Little Belknap and to the entrance of the main cave.

Little Belknap #1: This cave is, without any question, the most interesting of the system.

The Upper Level

The entrance to the upper level is large and prominent and the well-worn floor attests to many visitors over the years. The short main passage of the upper level appears to be a continuation of a vertical conduit, is partially roofed with spatter, and is well ventilated by one large and one small skylight. Belknap Crater is fully framed in the west-facing entrance, which is also easily visible from the Skyline Trail.

A small side tube dips fairly sharply to the northeast and ends after about 45 feet in a lava seal. We named this the toilet tube because of the service it has provided for many trail weary hikers. The lining is well preserved and is decorated profusely with foil containers, toilet paper, beef jerky packages, etc.

* Greeley has nicely defined a system (2:12) as either a single lava tube collapsed in several places or as a series of anastomosing (interconnecting) tubes in contemporaneous lava flow units.

The Amazing Colossal Pit

This was named , not for its cavernous and abysmal depths, but for its surprise value. The 24-foot pit is a most unexpected find and with a little imagination (especially for hikers who have no way of exploring it) it could be the beginning of a passage to wherever the imagination might take it. The pit, actually a vertical lava conduit, has a smooth lining and widens into a bell shape as it goes down. The pit absolutely requires a rope to negotiate it - the overhang and smooth lining preclude any other method.

The Lower Level

The room at the bottom of the pit is roughly triangular and contains snow throughout the year - also, whatever people have managed to carry up and throw down it. The lighting is fairly impressive and I was sorry that I hadn't brought along a decent camera to try and capture the ethereal qualities. The chamber also contains one of the more unusual lava features that I've run across in a lava cave, a rope-like (spiral) lava cylinder nearly a yard in diameter.

From the pit chamber room runs a tube to the northeast that is bordered on both sides by a two foot version of the lava rope described in the chamber. The main passage turns sharply to the southwest after about 40 feet, though a small tube continues another 45 feet northeast before ending in a seal.

At the turn there is an abrupt five foot rise to the main segment that then leads downslope at a relatively steep gradient. About six feet wide at arm level, we found this section aesthetically satisfying with its regular arch shape for close to its 80-foot length. The lining is smooth, well-preserved and covered with popcorn-like lavacicles.

At the end of this passage the easy walking ends and the cave branches into two crawly passageways.

The left-hand branch again divides after a few feet with the left section continuing, with a two to three foot ceiling, another 30 feet or thereabouts. The right section again separates (see the map if this is getting confusing) with a very small short tube to the right and a very cluttered two to five foot high passage to the left. At this point I decided that I was tired of crawling on the rasp-like floor and opted out.

The right-hand branch leads to the obscure lower entrance and most of it is a low crawl of the nastiest kind over breakdown and grabby bits of abrasive lava. I was completely surprised to find that there was a lower entrance at all, as it's well hidden from the outside. After rappelling back down the pit to retrieve the gear, though, it turned out to be easier to use the Gibbs Ascenders for the escape than to crawl the passage again.

In retrospect: Even though the Little Belknap System isn't a particularly large one by almost any standards, it is one of the most interesting, beautifully set, and fun ones I've ever spent time in. Enjoy.

LITTLE BELKNAP CRATER CAVES

MOUNT WASHINGTON WILDERNESS • LINN COUNTY, OREGON

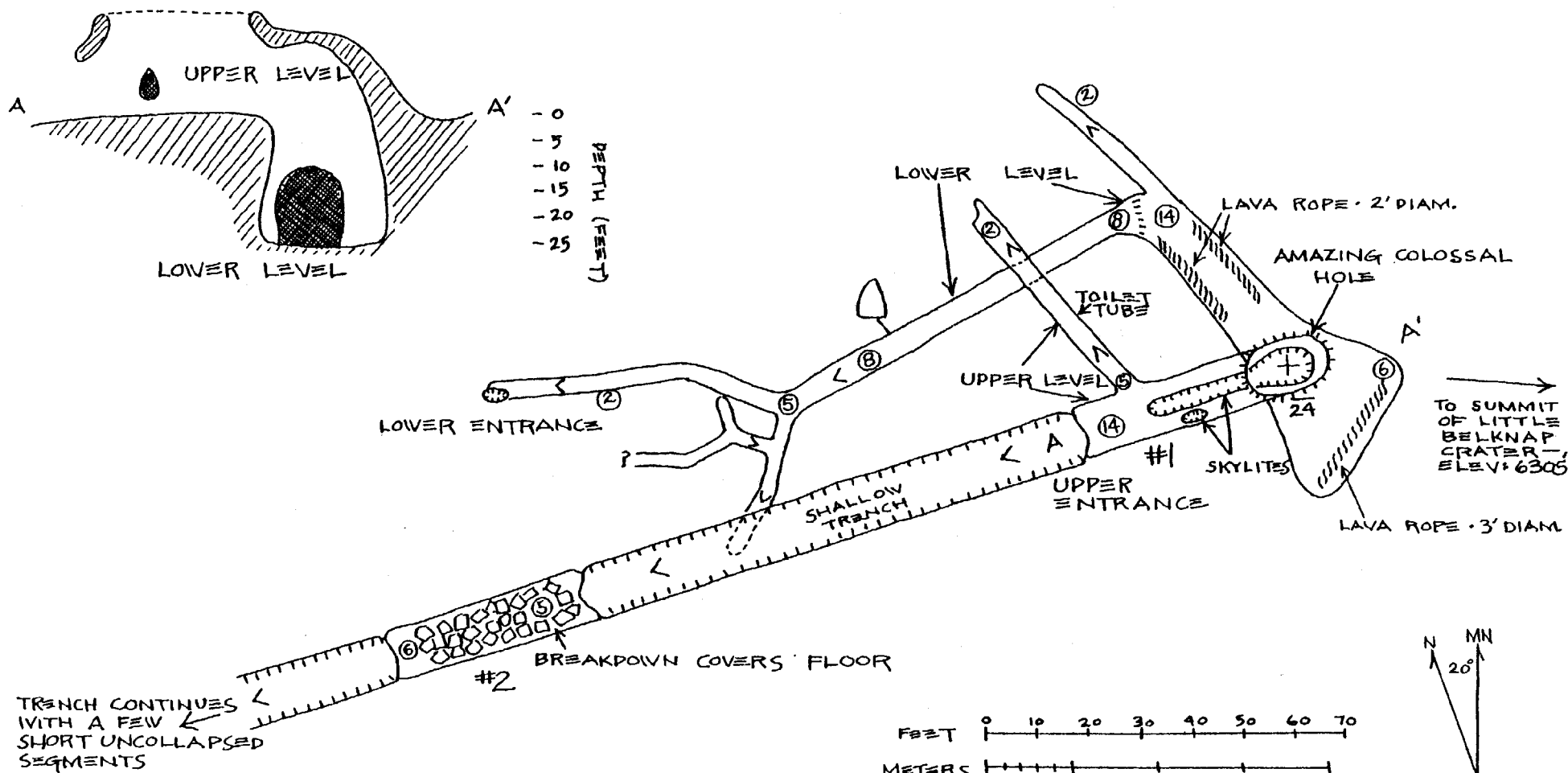
ELEVATION: 6270'

AUGUST 9, 1979

TOTAL PASSAGE LENGTH: #1 APPROXIMATELY 375'

SURVEY BY SILVA COMPASS, TAPE, AND EDUCATED ESTIMATE

USGS MAP: THREE-FINGERED JACK 15' (1959)



DRAWN BY CRAIG SKINNER - MAPPING BY CRAIG SKINNER AND SCOTT MURDOCK 8-9-79

AS LONG AS YOU'RE IN THE AREA: There's More To See

If you've still got time and energy to burn after the Little Belknap System, you might want to look into some of these:

1. Century and Moss Pits: Jim Nieland has thoroughly described two pits, Century and Moss (94 and 74 feet deep, respectively) at nearby Sand Mountain. See his article in the Ore Bin (7:231-236) - also reprinted in The Speleograph and The Underground Express.
2. The Nash Crater Pits: Nieland, in the previously mentioned article, also writes of a 30-foot pit attached to a 50-foot lava tube. Taylor (8:126) also mentions six vertical conduits 30 to 40 feet in depth near the south base of Nash and a 25-foot conduit at the northwest base.
3. The Little Belknap and the other numerous local flows undoubtedly hide several lava caves (though they are probably short due to the gradient). I saw a number of possibilities off the Skyline Trail, but was too tired to check. Collapsed lava tubes are common and Taylor (8:137) refers to at least one 70-foot tube southwest of the Dee Wright Observatory.
4. Taylor also mentions several tree molds six to fifteen feet in depth along the margins of the west Belknap flows (8:137).
5. The Sawyer Trail Caves (or Sawyer's Caves) are just west of the Clear Lake turnoff on the South Santiam Highway (See the February, 1978, Speleograph for maps).
6. There are also several cave leads in the general area (6:91):
 - The Finn Rock Ice Cave is supposedly located near Blue River above a feature called Finn Rock.
 - The Middle Sister Cave is purportedly about 500 feet below the summit on the west side.
 - A lava tube called the McKenzie River Cave or Lower Falls Cave is reported in Sec. 31, T.14S., R.7E. about half a mile above the lower falls and on the east side of the McKenzie River.
 - Another small lava tube may be at the base of the southwest face of the pinnacle on Mt. Washington.
 - A lava tube and vent combination is reported at the north base of Nash Crater. This could be one of the Nash Crater pits.
 - The Little Nash Crater Cave was listed on the 1965 Bookout list of named caves. I don't know if this is a lead or just one that I haven't found.
7. Hot Springs: If you like thermals, may I suggest a stay at Belknap Hot Springs near McKenzie Bridge. Also close by are the Cougar Reservoir Hot Springs and Bigelow Hot Springs. Check with the local ranger station for directions.

BIBLIOGRAPHY: Little Belknap Cave System

1. G.T. Benson, "The Age of Clear Lake," in the Ore Bin, vol. 27, no.2, Feb., 1965, p.37-40.
2. Ronald Greeley, Geology of Selected Lava Tubes In the Bend Area, Oregon, Oregon Dept. of Geology and Mineral Industries, Bulletin 71, 1971, 47 pages.
3. E.A. Groh, "Belknap Crater-Yapoah Crater-Collier Cone Area Field Trip", in Lunar Geological Field Conference Guide Book, Eds., E.A. Groh and N.V. Peterson, Oregon Dept. of Geology and Mineral Industries, Bulletin 57, 1965, p. 28-38.
4. Edwin T. Hodge, Mount Multnomah, 1925, Eugene: University of Oregon, 158 pages.

This paper on Mount Multnomah, the mythical mountain, that the Three Sisters were supposed to have formed the base of, has a picture of the main cave on page 50.

6. Charles V. Larson, Bibliography of Oregon Speleology, 1977, Oregon Speleological Survey Bulletin #6, Western Speleological Survey Serial #55, 95 pages.

Larson's bibliography cites several references that mention Little Belknap Cave. They are either varied cave lists or they are included in this bibliography.

7. Jim Nieland, " 'Spatter Cone Pits,' Sand Mt. Lava Field, Oregon Cascades", in the Ore Bin, vol. 32, no. 12, Dec., 1970, pages 231-236.
8. Edward M. Taylor, "Recent Volcanism Between Three-Fingered Jack and North Sister, Oregon Cascade Range," in the Ore Bin, vol. 27, no. 7, July, 1965, pages 121-147.
9. Howel Williams, Volcanoes of the Three Sisters Region, Oregon Cascades, Univ. Calif. Pub., 1944, vol. 27, no. 3.

- oops-5. Charlie and Jo Larson, "Find A Cave: Leads In The Cascade Range," in The Speleograph, July, 1979, p.90-91.

On page 91: "A hole (pit?) requiring a rope was reported on or near Little Belknap Crater."