

February 1993

## Alaskan Caver, Volume 13, No. 1, February 1993

Curvin Metzler

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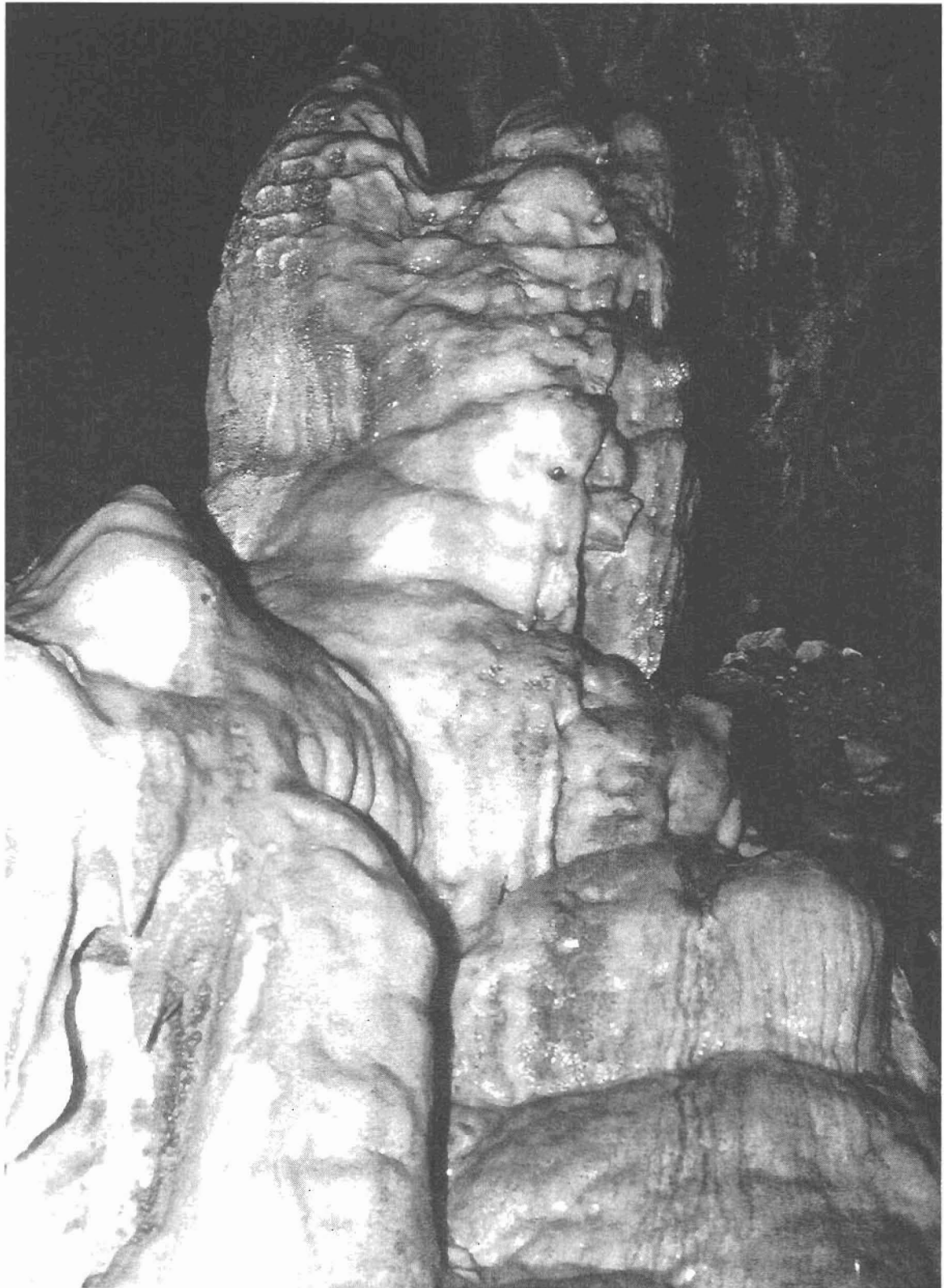
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# The ALASKAN CAVER

VOLUME 13

NUMBER 1

FEBRUARY 1993



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Membership is open to all interested in Alaskan cave discovery, exploration, description, survey, mapping, photography, hydrology, morphology, biology, geology, history, speleogenesis and other speleean processes, conservation, management, adventures, and the fellowship of Alaskan cavers. Annual dues are \$15 for individual or \$20 for family membership. Add \$8 to dues if overseas airmail postage is preferred over surface. Institutional subscriptions are \$20 per volume (six issues).

Dues are due on January 1 and are sent to the Treasurer (address below), payable to Glacier Grotto. Those joining for the first time between October 1 and December 31 will be considered paid through the following year. Dues status is indicated on the mailing label. Meetings are held in Anchorage, Fairbanks, and Ketchikan; see the back page for information regarding meeting times and locations.

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(All telephone number area codes are 907, Alaska, unless otherwise specified.)

Stalagmites in El Capitan Cave, Prince of Wales Island. Photo by Curvin Metzler.

### Table of Contents

Preliminary Report #49:	Cascade Cave . . . . .	4
Preliminary Report #44:	Prop Wash Palace Cave . . . . .	5
Preliminary Report #69:	Vauclusian Cave . . . . .	5
Preliminary Report #70:	Move the Road Cave . . . . .	6
Preliminary Report #71:	Historian Cave; Novice's Nightmare Cave; Keyhole Cave . . . . .	8
Preliminary Report #72:	1991 Investigations of Thunder Mountain Karst . . .	10
Preliminary Report #73:	1991 Investigations of the Devil Karst Area . . .	12
Preliminary Report #74:	1991 Investigations on Mount Calder . . . . .	19
POWIE V Statistics (1991)	. . . . .	20

**Tongass Cave Project**  
General Information on 1993 Expeditions

**PURPOSE AND SITUATION:** The Tongass Cave Project is a project of the NSS (National Speleological Society). Its purpose is the discovery, exploration, survey, conservation and study of karst and caves in Southeast Alaska. In pursuance of a cooperative agreement with the Forest Service, we will be working together with them on these expeditions. Since one of our objectives is conservation, our policy is not to share information or location of caves to the public which be detrimental to the resources contained therein.

This year there will be two simultaneous Project expeditions, both held July 1 through July 31 into Prince of Wales Island (POWIE VII) and Dall Island (DIE III). Cave conditions are often cold, wet, and vertical. DIE III will be mostly on remote, fly-in alpine areas with possible strandings of a week or more because of stormy weather conditions, so these participants should not have stringent schedules, must be very experienced vertically and very competent surveyors. There are presently no fees for joining the Project, but contributions are welcome to help with mailing, survey paper, and Project rope.

**PERSONNEL:** Almost all the caves investigated thus far require at least some vertical skill, and participants should be in good condition and able to cope with thick brush, very rugged terrains and basically an environment many are not familiar with. For the more extreme vertical systems, top rate SRT gear is a must, and one needs to be in practice. We have need of experts in various specialized scientific fields. It is required that each cave trip have a trip sheet filled out in detail, and the survey notes reviewed. We are to provide quality reports and maps and work at least 40 hours per week including paper work for the FS, and they have budgeted \$75,000 support for the expeditions. Some flashlight batteries, survey paper, and carbide will be provided.

**TRANSPORTATION AND FACILITIES:** When joining either expedition to help the Forest Service inventory caves, you need to get yourselves to Prince of Wales Island, and from there those with cars can get you out to the base camps and caving areas. The long distances to Hollis requires a full day's travel and use of a vehicle, so it has become necessary to have only a couple pickup or takeback times through prior arrangement (we are not driving all that way without knowing there are sure to be people waiting). These times are the Sunday ferries leaving Hollis in the mornings and arriving in the evenings. Other times you are on your own. The Forest Service should not be contacted for transportation.

On the POWIE expedition, there are either flights or ferries to Ketchikan, ferries to Hollis, and driving 100 miles on logging roads to base camp at El Cap (it is possible to charter a plane from Ketchikan to El Cap). Arrangements for transfers to DIE III must be made in advance. For ferry reservations call (800) 642-0066 from USA. Vehicles must have reservations months in advance, but walk-ons need none. Write for a "Prince of Wales Island Road Guide" (\$3) Forest Supervisor, Tongass National Forest, USFS, Federal Bldg, Ketchikan, AK 99901.

If on foot at Hollis, you can be picked up on the above mentioned pickup dates if prior arrangements are made. Contact can be made with the Project by writing Kevin Allred, Box 376, Haines, AK 99827 before June, or (on Prince of Wales Island) Pete Smith, WWP, Ketchikan, AK 99950 during June and July. Pete can be contacted by phone beginning in the spring at (907) 846-5223. Letters can reach you on POWIE by addressing "in care of" Pete Smith. Once at base camp on a Forest Service related expedition, "subsistence" food (this means whatever grocery store foods we order) is provided by the Forest Service, so you need to notify us early of your tastes.

Lodging is provided by the Forest

Service, but children are not allowed to stay in the Forest Service work camps, so families need to camp out in our own tents nearby. Write Kevin early for more details on Forest Service support and our obligations in return. For those who wish to be independent of any obligations with the Forest Service, many remote and totally unexplored limestone areas remain in Southeast. Trips here would require more individual planning, work, and travel challenges. Contact principal members of the Project for leads. The Project would hope to have copies of resultant data of such trips.

**SAFETY:** In the past, most of our injuries have occurred outside the caves on rugged terrain. A large contributor to these injuries is a com-

bination of exhaustion and heavy packs. We need to travel in teams whenever possible. Each team needs to sign out on the trip sheet where you are going, your objectives, when you left, and when expected back. Again, it is very important that you be in good shape and in practice vertically. We cannot count on having someone else responsible for rescue or patching us back together. We are not medically covered by the Forest Service, so if you want insurance, you can get it on your own. Since most caves are virgin when entered, there may be loose rock to stabilize. Some caves are very prone to flooding, so be aware. Survey as you explore, and make bomb-proof anchors. Ropes are provided. First aid and outdoor survival skills are helpful.

=> continued on page 19 =>

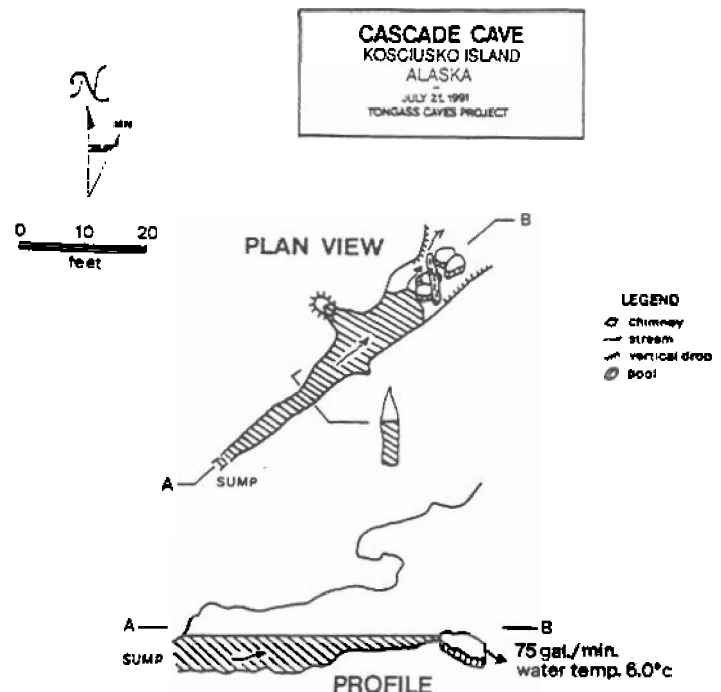
**Cascade Cave**  
Kosciusko Island  
Preliminary Report #49  
by Kevin Allred  
October 31, 1991

**Description**

On the south side of El Capitan Passage, a cascading stream pours from this cave formed in Heceta Limestone. Jim Baichtal first identified it from an airplane in the spring of 1991. It was later investigated and surveyed to a sump at only 38 feet. Estimated flow at the time was 75 gallons per minute and the water temperature was 6°C (Win Wright). It is not known if the sump could be lowered enough to continue without scuba gear, but it may be a good dive site.

**Management Recommendations**

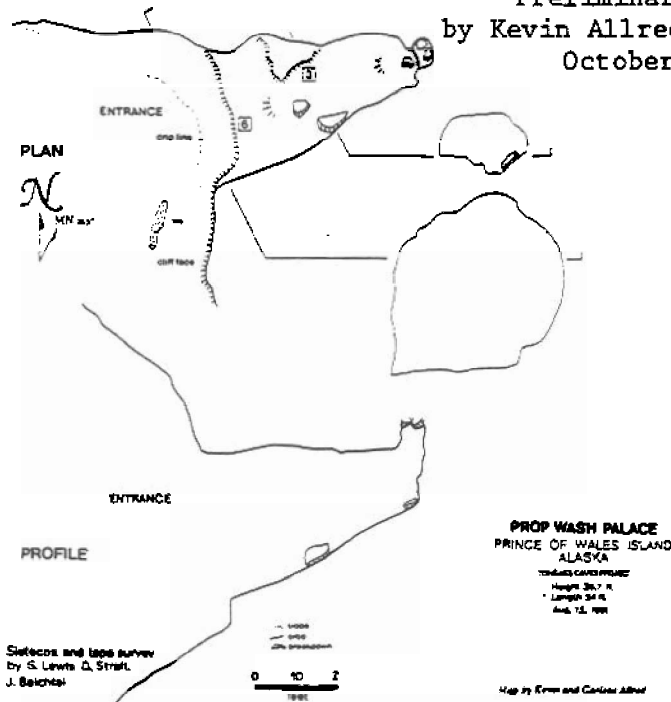
The entrance area should not be logged, nor the bench above—which is the suspected recharge area, and should be searched for upper entrances to the system, especially along the noncarbonate transition. There is no need to restrict this cave location from the public. □



Survey & Tape Survey by Win Wright  
and Fred Grady.  
Surveyed length 38.7 feet

© 1991 by Carlene Allred

**Prop Wash Palace Cave**  
**Prince of Wales Island**  
**Preliminary Report #44**  
 by Kevin Allred and Doug Strait  
 October 30, 1991



**Description**

Though this cave on Perue Peak has a spectacular 50-foot-high entrance, it is only 60 feet long. Large, impressive calcite? crystals are present in breakdown on the floor and scattered downslope below the entrance. Their origin, formation, and exact composition are unknown.

**Management Recommendations**

A minimum 100-foot buffer downslope would help protect the scenic value of this cave. As it contains significant mineralogical deposits, its location should be kept from the general public. □

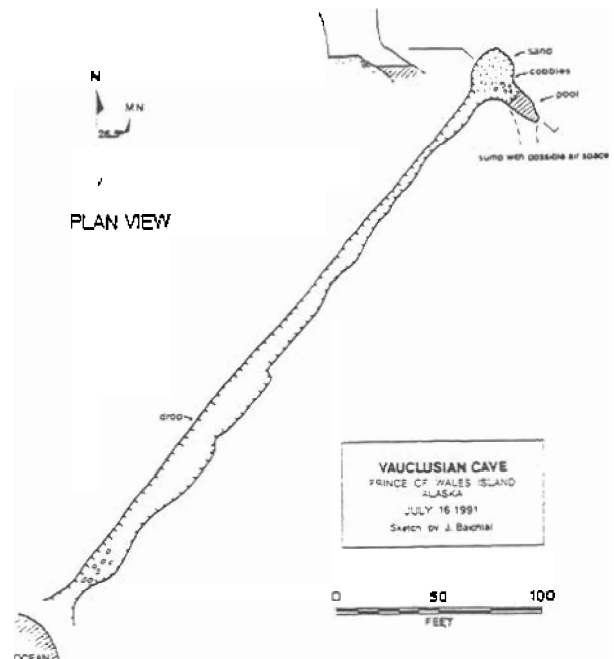
**Vauclusian Cave**  
**Prince of Wales Island**  
**Preliminary Report #69**  
 by Kevin Allred  
 November 6, 1991

**Description**

Located on the east side of El Capitan Passage across from Devilfish Bay, Vauclusian Cave is an interesting karst feature--apparently, a seasonal Vauclusian spring which may be affected by the tides. The cave or spring is located only some 20 or 30 feet above sea level. The recharge area is probably the extensively logged karst area to the east.

**Management Recommendations**

This cave needs to be investigated further at a lower tide. There may also be other higher entrances of the system nearby. This should be checked before the area is considered for timber harvest. There is no reason to restrict the cave location from the general public. □



Map by Kevin and Carlene Allred

**Move the Road Cave**  
Prince of Wales Island  
Preliminary Report #70  
by Kevin Allred  
November 6, 1991

### Description

A significant cave having geological importance, this cave was first reported by Forest Service employees Cole Mullis and Cathy Flick. The area was originally thought to be noncarbonate, but the boundary of the limestone begins further southeast than was indicated on the geologic map. Move the Road Cave begins in a small blind valley which follows the strike of a steeply dipping basalt dike. The small slotted entrance swallows a streamlet which flows through the cave to the end of present exploration. Total surveyed footage is 450.9 feet and the cave depth is 166.1 feet.

The structure of Move the Road Cave is most interesting, for the cave is controlled by the dike mentioned above. Sometimes the dike is hidden by poorly sorted floor fill, but usually it is visibly prominent. In many places it forms the floor, and in some instances it has been undercut by corrosion of limestone and adjacent marble. Some of the most beautiful fossilized brecciated limestone I have seen is found just beyond three of four constrictions dug open by Mark Fritzke this year (see map). At

the present end of the survey, the cave continues as a dig at least 20 feet long and is taking in air flow. When I first entered the cave on June 21, 1991, the air flow at the constriction of the first dig was about 20 miles per hour.

### Safety Considerations

Move the Road Cave should only be entered during reasonably dry weather, as there is a seasonal sump between the second and third dig sites. Two short drops require ropes, and water resistant, warm clothing should be worn for the wet crawlways and drops.

### Management Recommendations

The logging road route has been changed to swing around the no-cut buffer which encloses the blind valley and the cave entrance. One wall of the blind valley of unstable soil should not be traversed by those visiting. The buffer should protect the cave if other nearby trees are felled away from rather than into the buffer zone. The cave location could be shared with those prepared for vertical, wet and cold conditions. □

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### Election of Glacier Grotto Officers Long Overdue

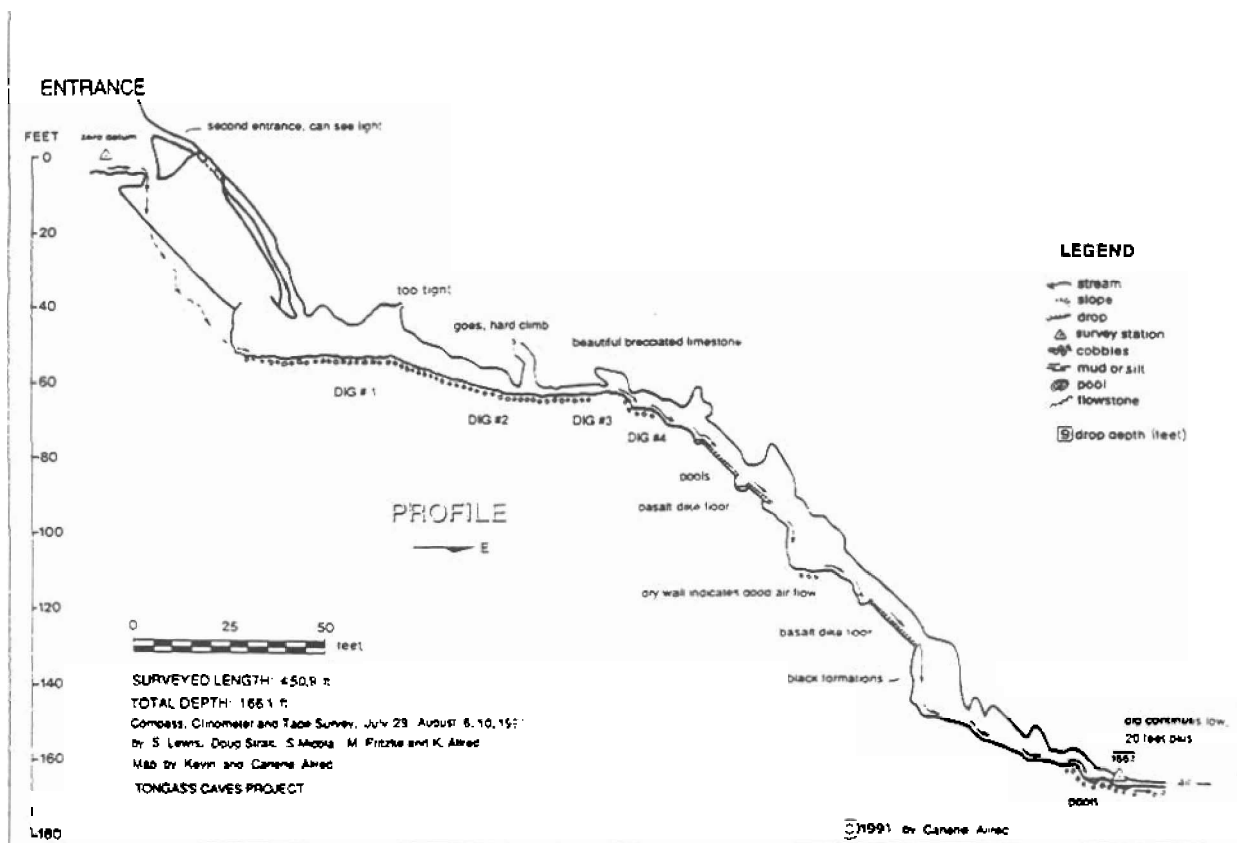
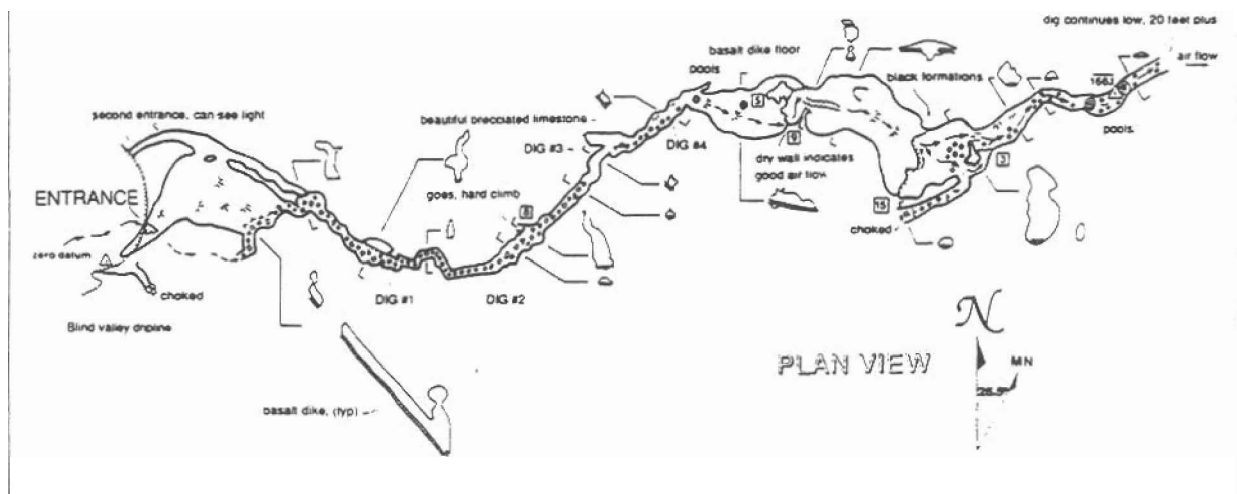
As noted on the back cover, we have not had an election for some time now. Two and a half years, in fact. That's right, our last election was in late 1990, for the 1991 officers. We never had our 1991 election for 1992 officers, and as of today we have not yet made an announcement of our slate of officers for the 1992 election of 1993 officers. According to our bylaws, "the committee shall present its nominations at the December meeting". Also, concerning

elections, they "shall be held at the January meeting each year".

Frankly, I'm very concerned. Not only about getting on with a long overdue election, but also with the future of the Glacier Grotto. Our high rate of turnover for most officers indicates people are not satisfied with things as they are. In meetings, we spend lots of time discussing bylaws, which we don't follow anyway. Instead, we should be talking about what brings us together: CAVING!

# MOVE THE ROAD CAVE

TONGASS NATIONAL FOREST  
PRINCE OF WALES ISLAND, ALASKA





**Historian Cave  
Novice's Nightmare Cave  
Keyhole Cave**  
Prince of Wales Island  
Preliminary Report #71  
by Kevin Allred  
November 7, 1991

**Description**

This group of caves is located in Heceta Limestone just east of a logging road, in a grove of trees adjacent to poorly drained muskegs. No physical connection was made between the caves, but it may be possible for a very small person to travel from Keyhole Cave into Historian Cave with handlines during reasonably dry weather. All three caves were first identified by Jim Baichtal in 1991. There are several surface sinks between the entrances of Historian Cave and Novice's Nightmare Cave.

**Historian Cave**

With a total length of 220.7 feet and depth of 92.7 feet, Historian Cave is the longest cave in this group. The 20-foot entrance sinkhole receives a streamlet from adjacent poorly drained soils. Inside, a steep canyon leads down several short drops to a silty and rocky floored room containing varves, flowstone, and a bat skeleton. Continuing northward, the cave streamlet disappears through a 28-foot-deep pit which connects further in the cave and is more easily accessible by using a handline down eight-foot and twelve-foot drops nearby. The streamlet joins another from a side passage (see map) and sinks into the floor at the deepest point in the cave. It is not known exactly where Keyhole Cave actually may connect, for there are several high or "too tight" leads in the Anchor Room area.

**Novice's Nightmare Cave**

Novice's Nightmare Cave begins as a twelve-foot sinkhole requiring a rope for entrance. A steep passage leads to a 25-foot-high dome. Further downward

progress is halted at a "too tight" lead. Its total survey length is 66.6 feet and its depth is 40.1 feet.

**Keyhole Cave**

The shortest cave of the bunch, only 34.3 feet were surveyed here to a depth of 16.7 feet. Air flows from Keyhole Cave, presumably originating from Historian Cave which has a higher entrance creating a flow of cold, heavy cave cooled air. During winter, the air flow would reverse, causing frost shattered surfaces in Keyhole Cave. The reasonable access ends after a narrow squeeze, an eight-foot handline drop, and the before mentioned tight fissure requiring a tiny person and an additional handline.

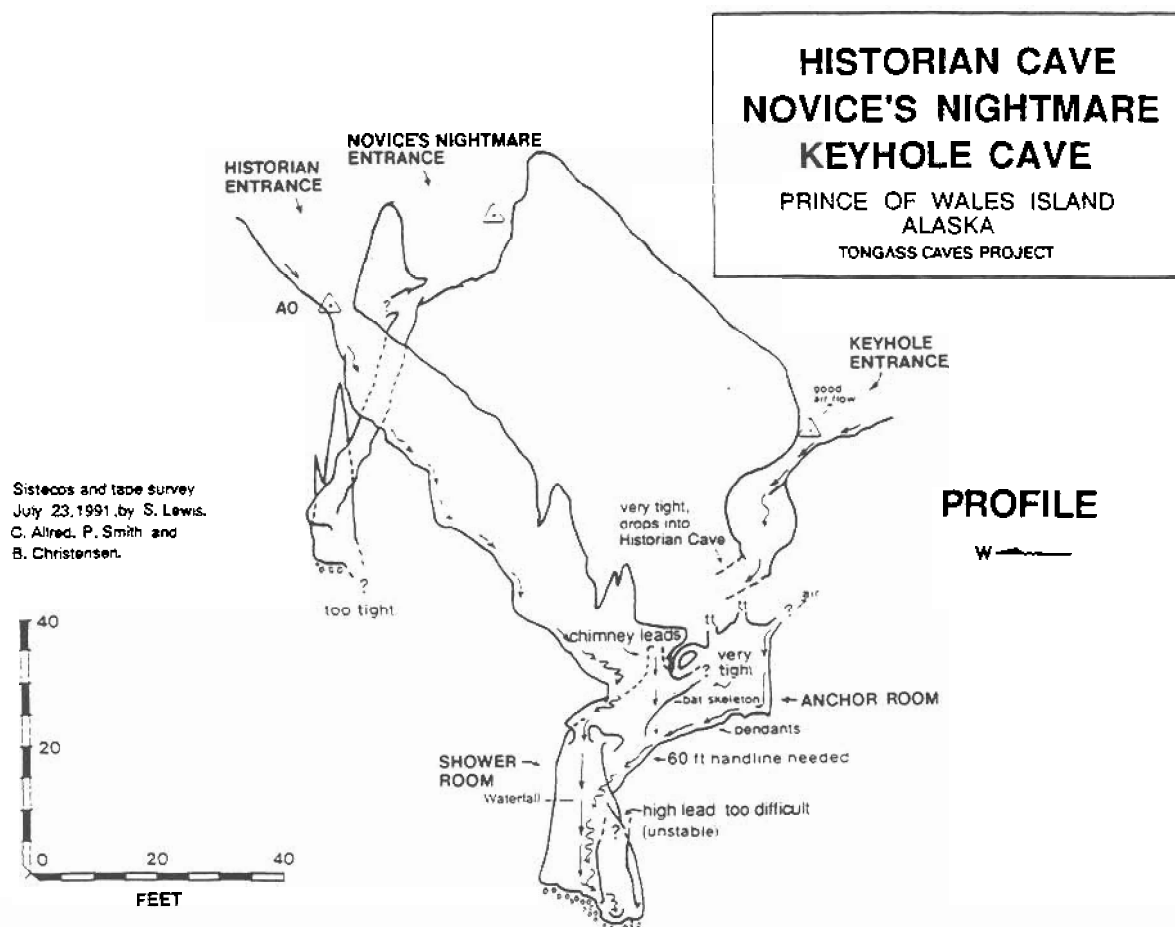
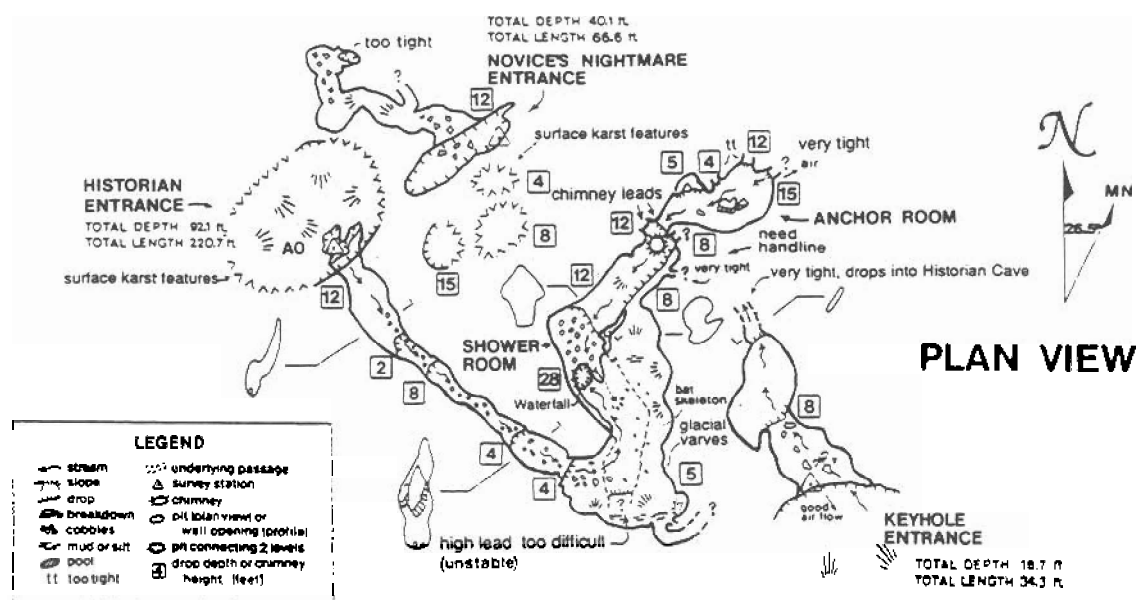
**Management Recommendations**

This group of caves should be buffered off from logging and road building activities to protect their geological, mineralogical, and biological features. The varves could be dated for a better understanding of former glacial activity here. Historian Cave may be a place to which hibernating bats are attracted. The cave locations should not be shared with the general public because of the vertical drops and special features mentioned above. □

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**Byron Glacier Caves Trips**

Of eleven trips scheduled to Byron Glacier last season, the weather was cooperative only three times. The last trip found the caves all bedded down for the winter under a thick blanket of snow.



# **1991 Investigations of Thunder Mountain Karst**

Dall Island  
Preliminary Report #72  
by Kevin Allred  
November 7, 1991

## **Introduction**

During the week of July 23 through July 27, Doug Strait and Mark Fritzke investigated the cave resources of the alpine zone of Thunder Mountain. Although the summit block (3110 feet in elevation) of Thunder Mountain is non-carbonate, the bench to the north is composed of View Cove Limestone with about 700 feet of cave depth potential. Thunder Mountain is included in the proposed Thunder Special Area, one of eight such karst areas on Dall Island.

The precipitation is heavy here and the mountain is enclosed in storm clouds most of the year, making access difficult. Apparently, the karsted area has been extensively broken up by frost wedging. It is likely that, since the mountain is so high and close to sea level, it did not get completely covered by ice during past glacial periods and has suffered long periods of frost damage similar to the summit block of Mt. Calder on Prince of Wales Island. Although most of the karst was extensively broken up and filled with rock fragments, a few small caves were identified and surveyed. Exact locations of these caves was not reported, but they are all on the bench area just north of the summit.

## **Centipede Crevice**

Centipede Crevice has a five-by-15-foot sinkhole entrance without sloping sides. The initial drop of 23 feet is followed by another 30-foot drop to a rubble floor and partially filled way which needs digging to continue. Rocks roll down to an apparent 30-foot blind pit issuing occasional air. Some soda straws are found at the dig site.

## **Thunder Mountain Room**

A large 50-foot-long sinkhole con-

taining snow marks the entrance to Thunder Mountain Room. A short drop brings one into the 50-foot-diameter and 18-foot-high room. The floor consists of angular rocks and breakdown. A nook contains silt and mouse sized rodent droppings. Near the nook is a small second entrance. No speleothems were reported. Total survey length was 128.7 feet and depth was 56.2 feet.

## **Slices and Dices Cave**

Slices and Dices Cave was also mapped and explored during this investigation. The five-by-seven-foot sinkhole drops onto a steep bedrock floor having solution runnels. At the base of the slope is a perpendicular fault controlled passage ending soon in both directions. A "too tight" dig site in the rubble floor issues forth a draft.

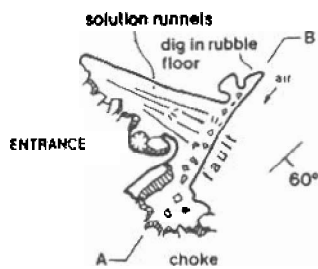
## **Management Recommendations**

Further in-depth investigations should be done on this area. The caves should not be impacted at all by either logging or mining. Some mineral prospecting has already taken place on this karst bench as there are some man-made trenches reported (personal communication, Ken Maas, Bureau of Mines). The area apparently holds little commercial value mineralogically. There is no need to restrict the location of these caves from the general public. □

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## **Summer Expeditions Being Planned**

The snow has already melted, and it is time once again to start planning those summer caving expeditions; please contact Curvin Metzler at 333-8766 for information on proposed summer trips.



PLAN

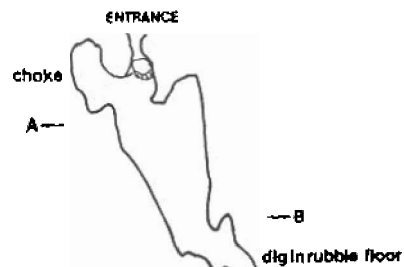
**SLICES & DICES CAVE**

DALL ISLAND, ALASKA

THUNDER MOUNTAIN AREA

SURVEYED LENGTH: 42.7 ft.

TOTAL DEPTH: 35.9 ft.



PROFILE

TONGASS CAVES PROJECT



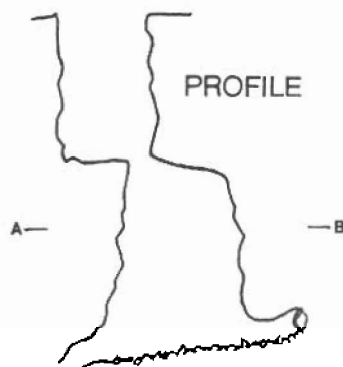
PLAN

**CENTIPEDE CREVICE**

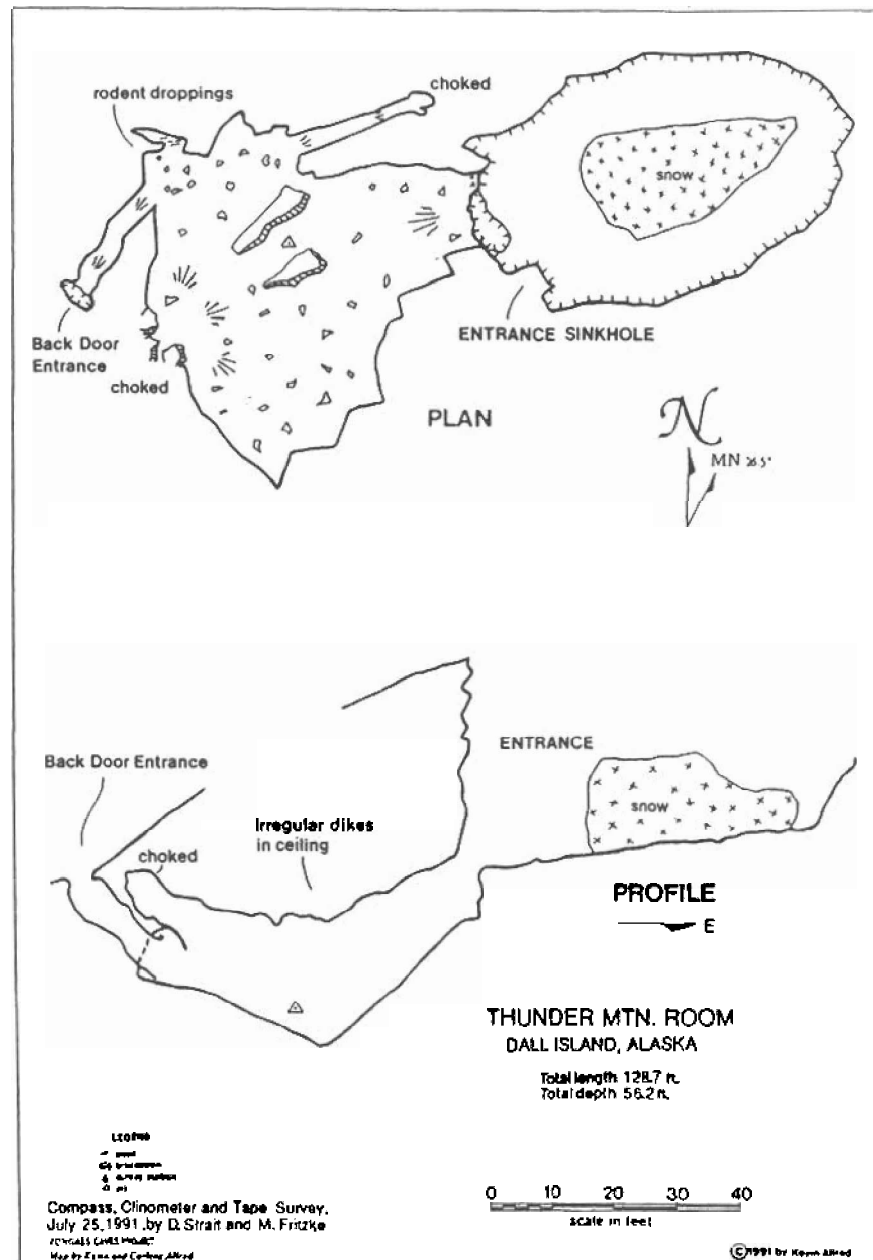
DALL ISLAND, ALASKA

THUNDER MOUNTAIN AREA

TOTAL DEPTH: 53.6 ft.



PROFILE



PLAN

PROFILE

**THUNDER MTN. ROOM**  
DALL ISLAND, ALASKATotal length 128.7 ft.  
Total depth 56.2 ft.

LEGEND  
 - wall  
 - floor  
 - ceiling  
 - choke  
 - rodent droppings  
 - sinkhole  
 - entrance

Compass, Clinometer and Tape Survey,  
 July 25, 1991, by D. Strail and M. Fritzke  
 reveals caves module.  
 Map by Kym and Corlene Allred

0 10 20 30 40  
 scale in feet

# 1991 Investigations of the Devil Karst Area

Dall Island

Preliminary Report #73

by Kevin Allred

November 18, 1991

## Introduction

During August 14 to 23, 1991, Mark Fritzke and Kevin Allred investigated the subalpine and alpine karst proposed as Devil Special Area on Dall Island. This is one of a total of eight such areas on the Island. Devil Area encompasses nearly two square miles of very pitted, rugged limestone terrain having very little surface drainage. Precipitation may exceed 200 inches annually. Trees are stunted and deformed from prevailing storms blowing off the Pacific, and weather seldom allows flying in to these locations.

Our efforts centered on location and survey of cave features thought to underlie the heavily karsted and well drained terrain between elevations of 2000 and 2650 feet (see regional map for area searched). We also noted various surface karst features. It is not yet known where the springs which drain this mountain are located. A total of eight caves were surveyed and one cave was sketched. Eight more caves were identified but not surveyed; only two of the latter were entered (see cave entrance location map). Other years may experience more snow cover than in 1991 as 1972 aerial photographs reveal.

## Rock Characteristics

The host rock, View Cove Limestone of Silurian age (Rogers), contains numerous dikes of varying thickness. They are usually vertical or nearly vertical, and often extend great distances. Dikes often contain large whitish crystals and are probably composed of porphyritic andesite with phenocrysts of plagioclase. There are local areas of marble, likely associated with the former heat of the intrusions. Some dikes were more green colored and there were instances of tiny greenish crystals (probably olivine)

associated with these.

Besides dikes, another noncarbonate in the limestone are small veins and layers of brown fine grained sandstone, rarely in thicker beds. Curious and numerous circular outlines, possibly of sandstone, are located just uphill from Sunday Afternoon Pit. A third noncarbonate present are small veins or sometimes flat bodies of macrocrystalline gray quartz. These resistant structures protrude from the karsted limestone. Inside, they are light gray with some crystals visible to the naked eye. A weak solution of sulfuric acid revealed no calcite in exposed surfaces, but the acid effervesced on some calcite content where freshly broken. Some of the nodules have a white rind, perhaps where the trace calcite has been dissolved away.

The View Cove Limestone is of unknown purity here and ranges in color from light blue to dark blue and into brown. It varies in its karst potential. Beds are commonly massive, but sometimes close inspection, even in walls of vertical shafts, reveals paper-thin bedding. This often weathers out on the surface in crumbly loose, platy debris. There are also areas of thinly bedded schist containing lenses of limestone and perched with ponds and meadows.

## Small Surface Karst Forms

Wherever frost action is not so frequent, small karst solution sculpting is produced by the corrosive action of rainwater. Being a basic form, rillenkarren (Bögli and Jennings) is seen on occasion, and varies in development from fair to excellent. Some fair examples of heelprint karren (Bögli) were seen, with excellent examples of solution funnels (Jennings). Solution bevels (Jennings) are common here along with solution ripples (Jennings). Mark pointed out the rhythmic waves of rain runoff

washing down these solution features. The rhythms probably began due to obstacles to the otherwise smooth flow, and a perpetuated wave-like pattern was etched into the rock surface. A similar example of this is seen in Great Sand Dunes National Monument, in Colorado, where a shallow creek having a rippled sandy bed generates rhythmic waves up to a foot in height (personal observation).

Another fairly common karren feature which is often found below rillenkarren is solution flutes of the second order (Bögli) or rain solution runnels (Jennings). Grading into larger forms which gather more of a trickle in them, they become meandering karren (Bögli). The Devil Karst Area has prime examples of all these forms and more. Also noted were many grikes, pinnacle karst, undercut karren, and some interesting forms we have not seen documented. Namely, one example involves two separate but nearby slopes, one steep and the other gradual. Both were covered with fairly regularly conical knobs up to several inches high. These may be from some impurities or crystal change in the limestone, but the texture and color seemed uniform throughout. They are located in a prominent gully just off the eastern edge of the karst plateau. No solution pans were found.

#### Larger Surface Karst Forms

Larger karst features are numerous dolines, shafts, and solution channels which have developed along dikes, joints, faults, and more pure limestone. These generally are plugged by glacial and frost shattered debris less than 50 feet down.

#### Evidence of Glacial Modifications

An interesting observation of the Devil Karst Area involves the numerous locations where surface shafts begin round and well developed, with large expanses of bare, grikeless limestone in between. This is opposed to normally developed mature karst where surface runoff disappears into bedrock joints

and faults almost immediately and which gradually unite from these small tributaries to form the main shafts. An explanation for the well spread, large diameter shafts is that periodic glacial ice has sheared away the former surface karren and grikes, leaving the larger shafts exposed. Many shafts are at least partially filled with glacial drift and frost shattered rock which is now gradually settling through continued corrosion. Access downwards was usually halted for this reason. Mature pinnacle karst is found only in protected or low areas where ice may have been static. Glacial erratics are widely scattered. Their type may reveal the ice flow direction or directions.

#### Effects of Vegetation

The stable noncarbonate residual soils on dikes form long raised highways to depressed gullies. These support grasses, various plants and sometimes subalpine trees of Sitka spruce and mountain hemlock. Pacific fir were seen in several locations, and in one spot pieces of cones were found. This suggests that the fir could possibly be reproducing from seed here as opposed to cloning as is the case further north, on peaks such as Mount Calder (Prince of Wales Island). The presence of Pacific fir in these hostile environments may indicate that they were able to reproduce normally at some time in the past in a warmer climate (see Pielou and Muir/Ford for similar examples). A study of these trees and other vegetation may help us understand their relation to glacial activity and modification on karst.

The well drained limestone in lower elevations produces residual soils where heavier brush and trees begin. Wherever vegetation occurs, additional carbon dioxide is produced, adding to the corrosive ability of runoff waters. This produces such features as undercut karren and wall karren. The quartz deposits previously mentioned appear dark colored from organic growth—probably moss. It also grows on wetter limestone surfaces, though rarely. Sometimes small, whitish

pink lichen colonies are seen growing on limestone. Project member Bob Christensen pointed these out on El Capitan Peak (northern Prince of Wales Island), and noted that their structure is extremely hard and may contain minerals.

### **Layer Cake Pit**

With a depth of 39.3 feet and surveyed length of 48.6 feet, Layer Cake Pit has a 30-foot-deep, 15-foot-diameter sinkhole entrance containing numerous thin noncarbonate layers around the vertical walls. The cave ends in a small rubble choked chamber.

### **Double Window Pit**

Located next to Layer Cake Pit, Double Window Pit is 71.6 feet deep and contains 109.6 surveyed feet. It does have some flowstone, a rarity in this alpine karst environment. The three entrance sinkholes are bisected with two natural bridges. It becomes too tight in a rubble filled fissure after a 30-foot drop.

### **Devil's Deception Cave**

The 50-foot-deep shaft entrance of Devil's Deception Cave is located on a frost shattered, exposed slope just downhill from a large, dark, solitary, erratic boulder. A series of domepits can be traversed to the southwest on rope. The first 80 vertical feet contain snow to unknown depths. From here, a drop series of 20, 15, and 50 feet ends in a rubble plug. An adjacent shaft enters the system and daylight can be seen from below, presumably from a fissure connected to the entrance shaft. A short fissure passage extends from the bottom and ends in fill. The total length of Devil's Deception Cave is 255.9 feet, and its depth is 169.4 feet.

### **Rubble Pit**

For many years at a time this pit may be entirely filled with snow, as it may be seen on 1972 aerial photographs.

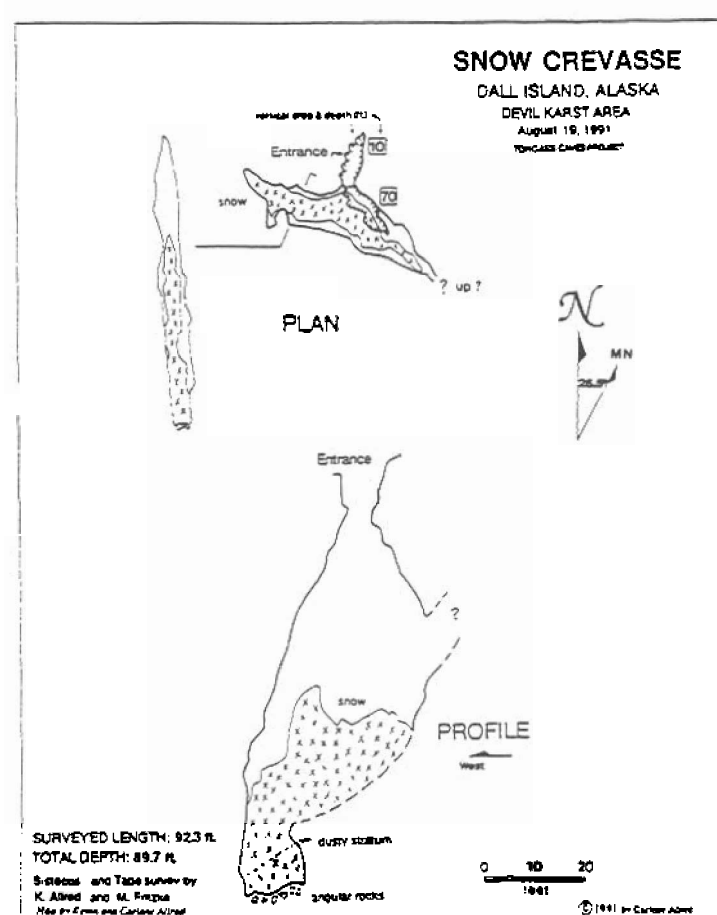
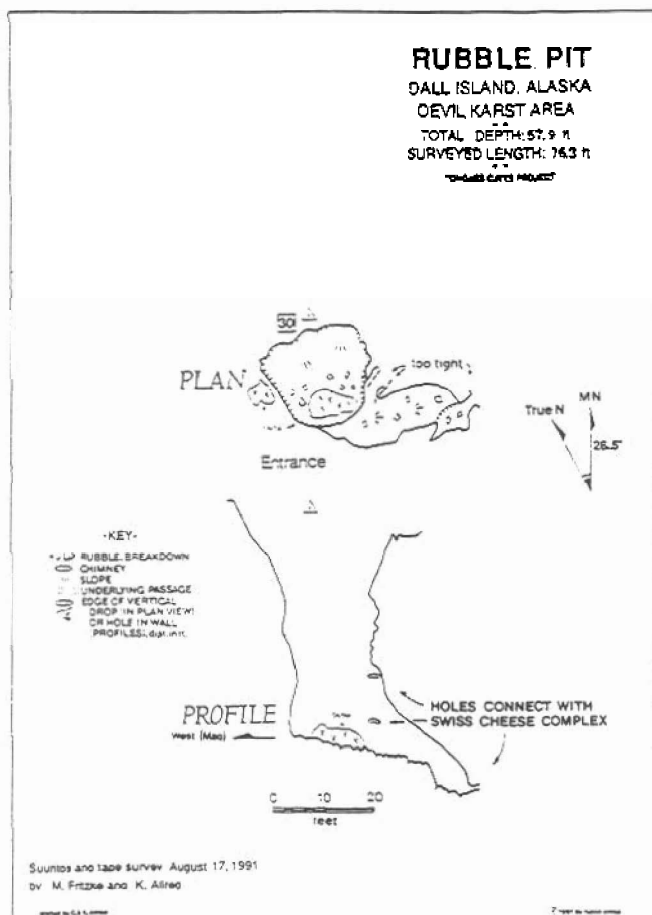
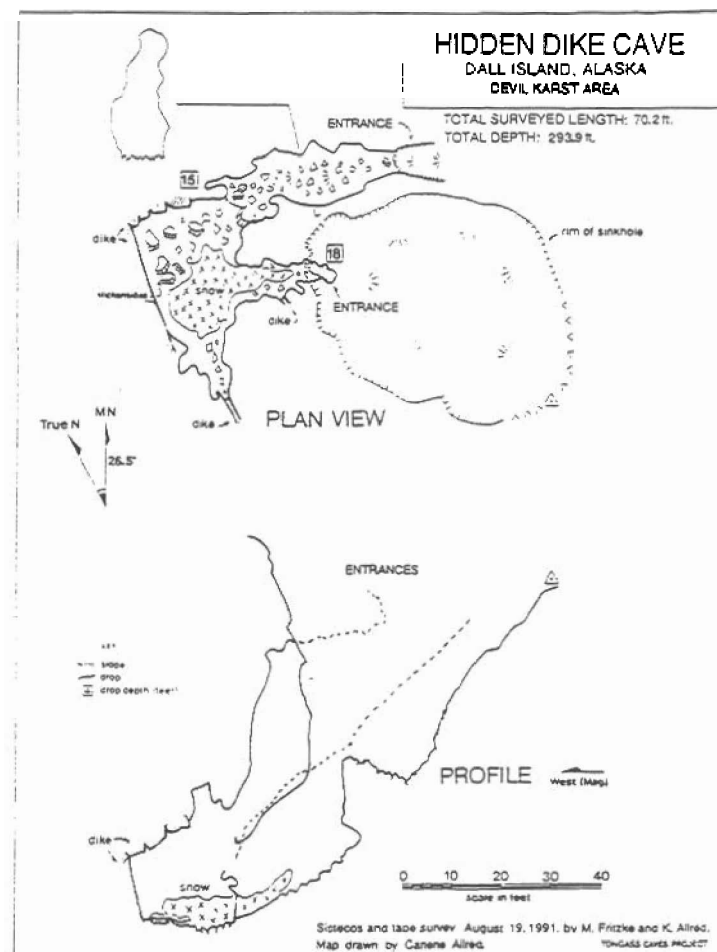
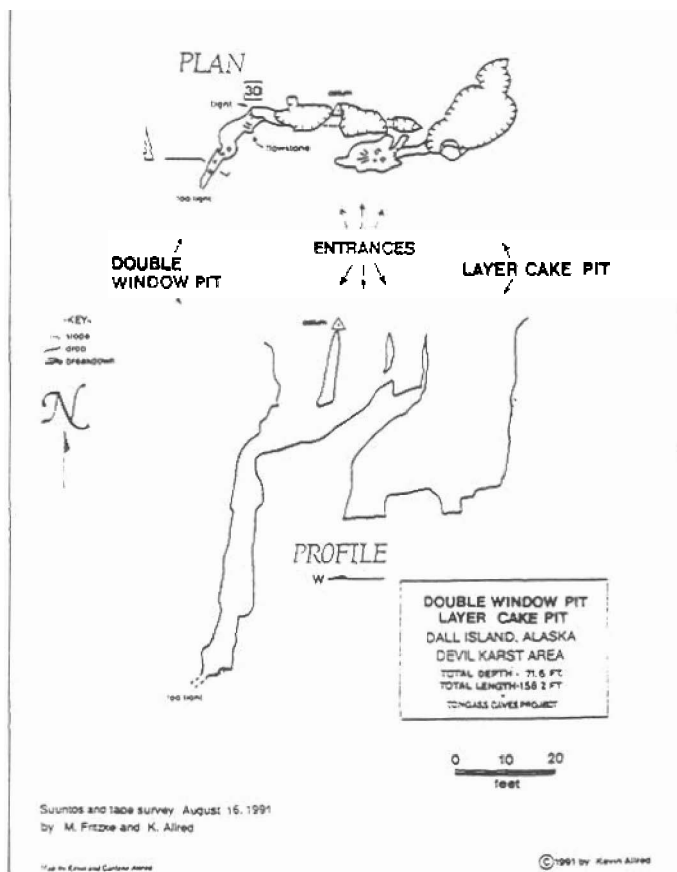
Rubble Pit is located along a prominent, faulted gully. Next to the entrance are the best olivine crystals noted so far on the Devil Karst Area. The 30-foot-deep entrance drop is very broken up and covered with loose frost shattered rock. Three "too tight" spots in the pit connect with nearby Swiss Cheese Complex. Rubble Pit ends in rubble at a total depth of 57.9 feet; its surveyed length is 76.3 feet. It did contain some snow.

### **Swiss Cheese Complex**

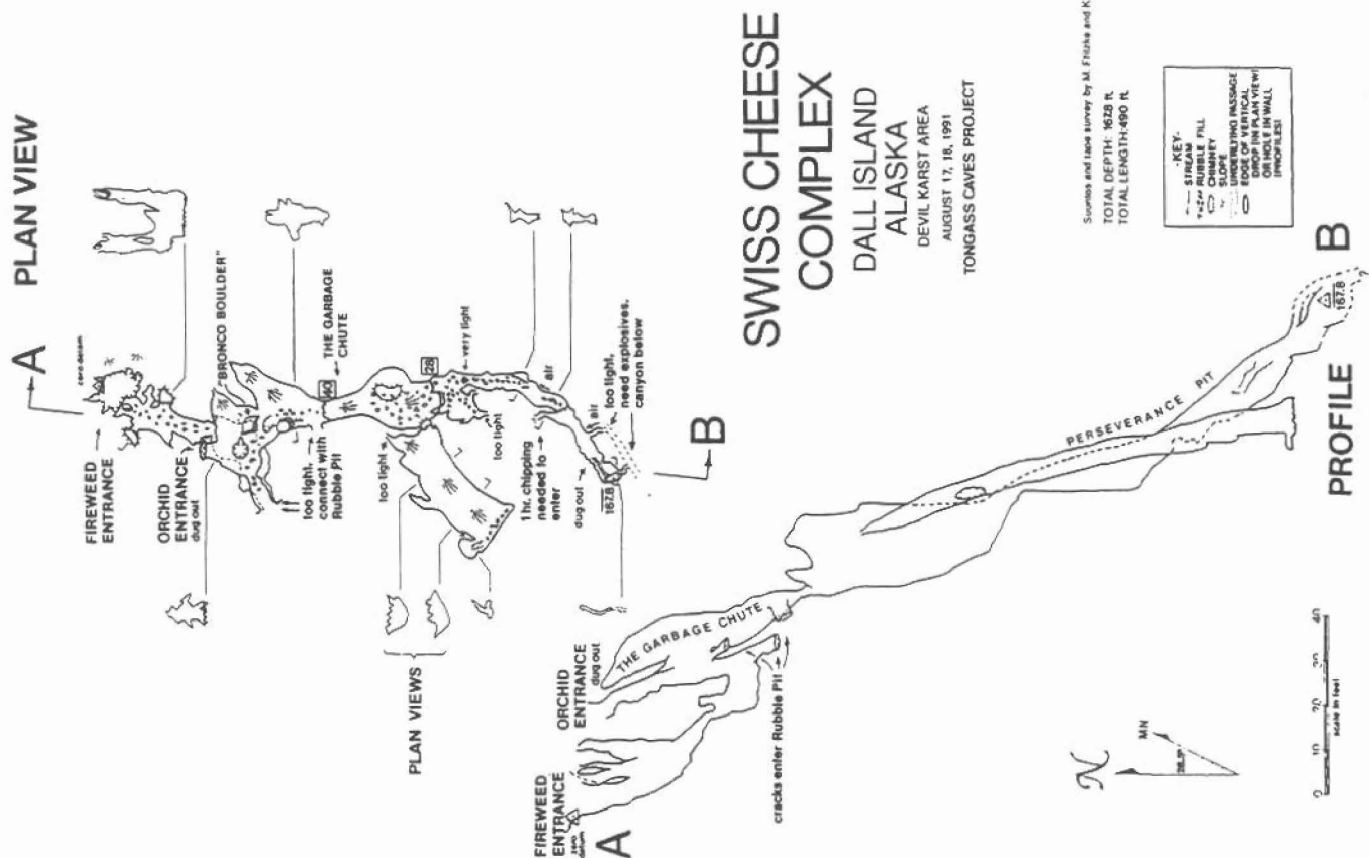
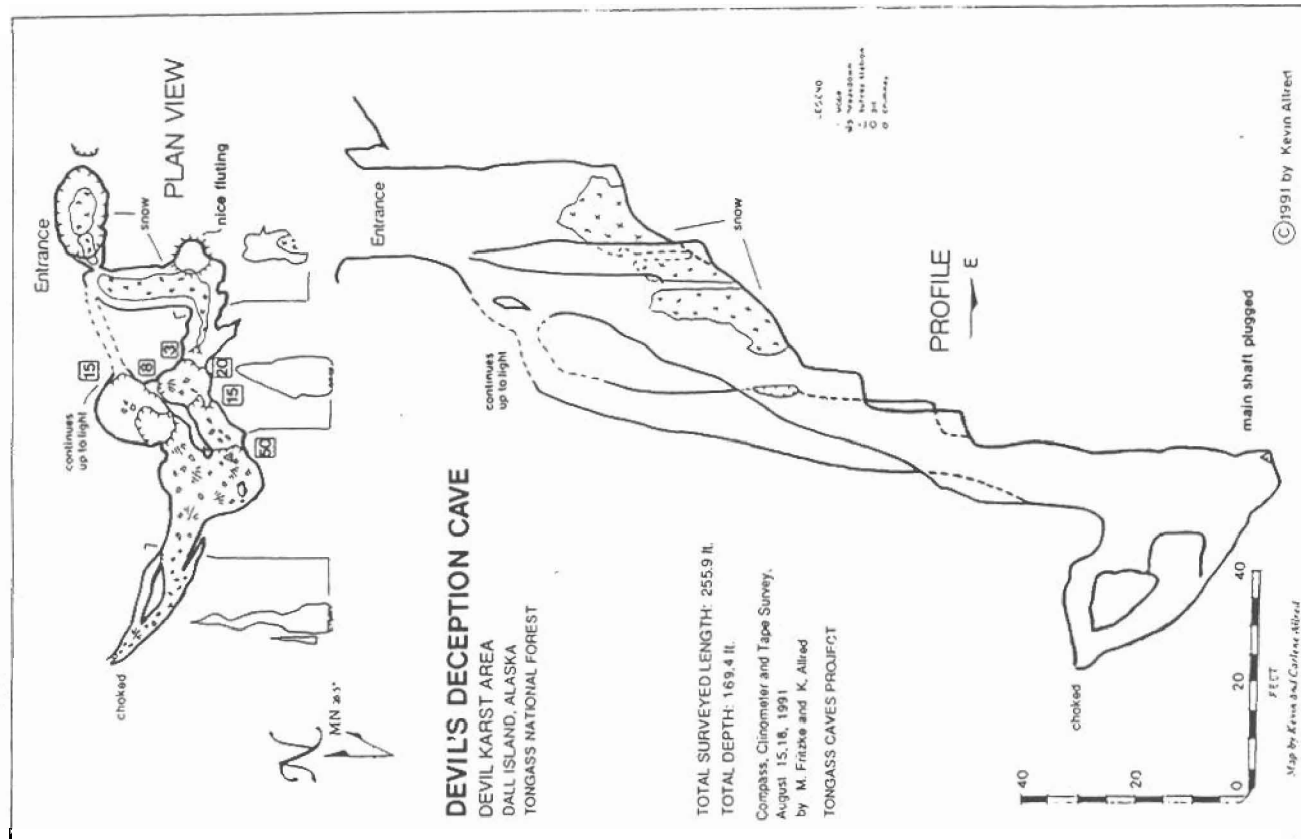
Swiss Cheese Complex (490 feet) was the longest cave surveyed during Devil Karst investigations. It connects in three different "too tight" spots with Rubble Pit. The multiple entrance is located in a matured and heavily karsted depression. At an intermediate level, a pit series begins at Bronco Boulder, which shifted while being stood on. The Garbage Chute was extremely unstable, with tons of frost shattered material released into the abyss before exploration could continue safely. This led down two drops of 40 and 20 feet (Perseverance Pit) and a constriction which was chipped open only to end at two hopelessly tight cracks at -167.8 feet. Air issued from these points; explosives would be needed to continue. A second adjoining shaft just off Perseverance Pit ends in fill. Another tight lead heads upwards 30 feet from the bottom of the cave.

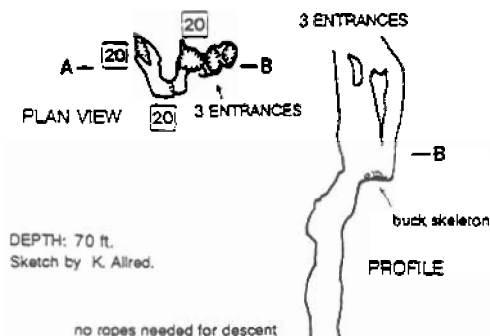
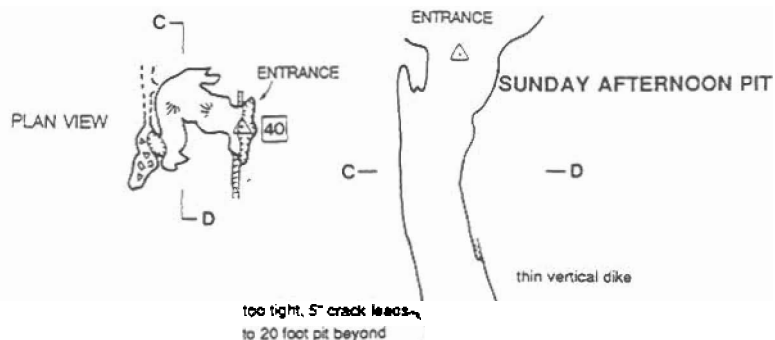
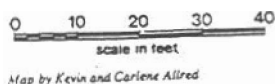
### **Hidden Dike Cave**

The entrance to Hidden Dike Cave is through a slot off the bottom of a large 40-foot-deep and 50-foot-diameter sinkhole. A handline is needed for the initial 18-foot drop to a slope and a large room. Snow is present, indicating a cold trap. Several dikes are present, but on the surface no nearby ones were seen. There are slickensides on a chunk of breakdown. An adjacent entrance is located to the north and does not require a rope. There are no leads of consequence in the cave.









DEPTH: 699 ft.  
Suunto and tape survey  
by M. Fritzke and K. Allred.

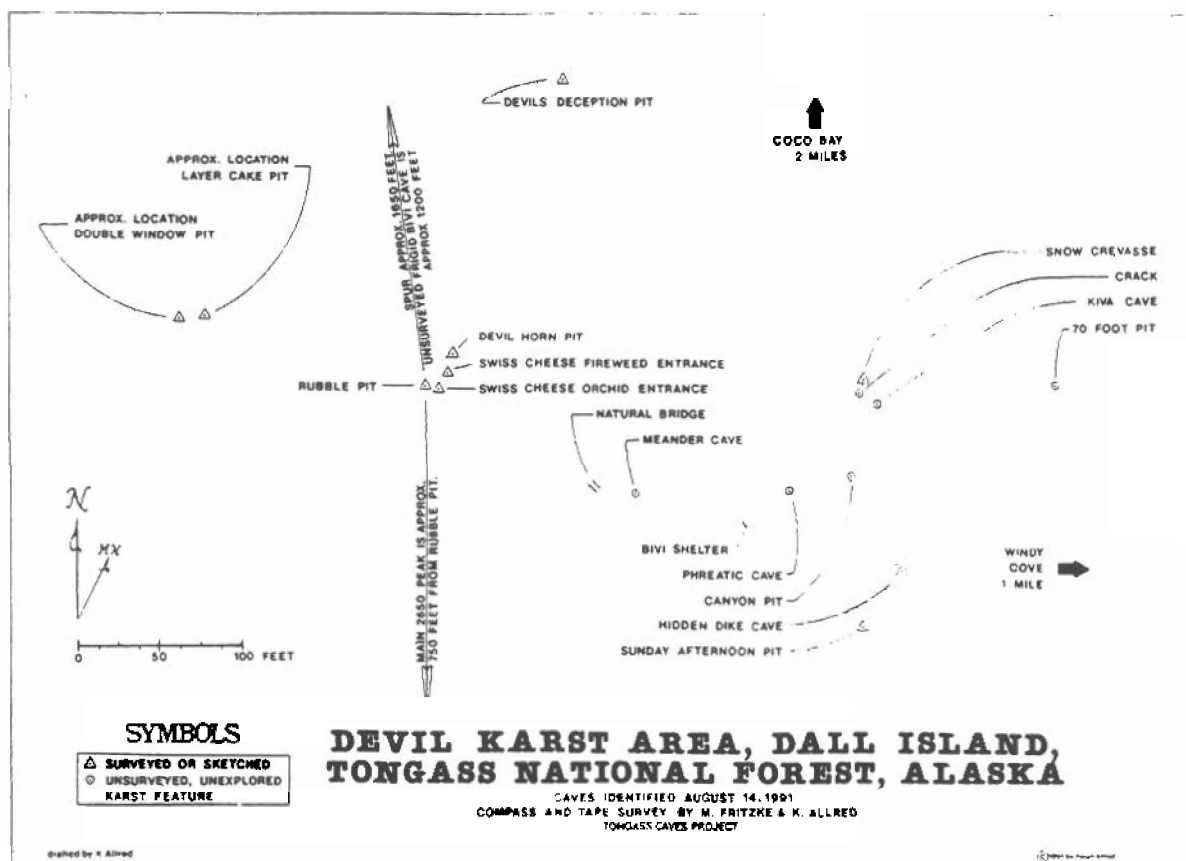


©1991 by Kevin Allred



DEVILHORN PIT  
SUNDAY AFTERNOON PIT  
DALL ISLAND, ALASKA  
DEVIL KARST AREA  
AUGUST 19, 1991  
TONGASS CAVES PROJECT

LEGEND  
- MOOSE  
- BREAKDOWN  
- SURVEY STATION  
- D1  
- vertical drop & depth in feet



## **Snow Crevasse**

Located in a region of well matured karst, Snow Crevasse has an initial drop of approximately 70 feet to a snow plug and a further drop of 20 feet between icy snow and a wall to a rubble floor. The fin shaped snow plug appears to defy gravity and was quite forboding. A dusty diagonal layer near the bottom of the plug is of unknown origin. Total feet surveyed was 92.3 for this 89.7-foot-deep pit.

## **Devil Horn Pit**

Named after the antlers of a buck deer skeleton on a ledge 20 feet below the entrance lip, Devil Horn consists of several short drops to a rubble floor. It was sketched and estimated at 70 feet deep. The entrance is located just uphill from Swiss Cheese Complex.

## **Sunday Afternoon Pit**

Developed along a thin bright green

vertical dike, this diagonal fissure drops 40 feet and then another 20 feet to a rubble floor, for a total of 69.9 feet deep. A five-inch-wide crack leads to another pit estimated at 20 feet plus. The total survey was 81 feet.

## **Management Recommendations**

The Devil Area provides an excellent site for scientific karst studies and remote recreational caving for those prepared to cope with challenging hostile environments.

## **References**

- Bögli, A. 1980. Karst Hydrology and Physical Speleology. New York, Springer-Verlag, 284 p.  
Muir, D., D. Ford. 1985. Castleguard.  
Jennings, J.N. 1987. Karst Geomorphology: New York, Basil Blackwell, 293 p.  
Pielou, E.C. 1991. After the Ice Age.  
Rogers, B. 1979. This Is It! The Alaskan Caver 4(2):3-7. □

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## **Alternative Access to Southeast Alaska**

by Harvey Bowers

The following proposed trip option is for more remote Alaskans wishing to travel to cave areas in Southeast Alaska.

Travel to Prince of Wales Island from Central Alaska can be very expensive and also quite time consuming. In addition, the trip can be waylaid due to weather, ferry schedules, and breakdowns. For this reason, I and some other people have been trying to figure out alternative ways to get to Prince of Wales Island, without it costing a fortune and without spending more than a couple of days in transit, and yet in such a way as to allow some amount of flexibility.

I think I have found a new option. Alaska Airlines has daily flights to and from Petersburg via Juneau, and Petersburg appears to have fewer weather delays for flights than does Ketchikan. Peters-

burg also offers a boat rental, with rates of \$125 per day or \$600 per week, from Tongass Marine, Inc., P.O. Box 1314, Petersburg, AK 99833, telephone (907) 772-3905 or 772-3903, and Fax 772-3347.

From the southern boat launch on Mitkof Island, it is only 30-some miles to Point Baker on Prince of Wales Island. From downtown Petersburg to El Capitan, it is less than 100 miles, and in protected waters. What I also find appealing is the ability to be flexible and visit various areas and other islands that have previously been inaccessible.

A worthwhile side trip is a journey up the Stikine River, which empties into the ocean five miles north of the town of Wrangell. Common destinations include the Chief Shakes Hot Springs (17 miles up) and Garnet Ledge (at the mouth). □

**1991 Investigations on Mount Calder**  
Prince of Wales Island  
Preliminary Report #74  
by Kevin Allred  
November 7, 1991

### Introduction

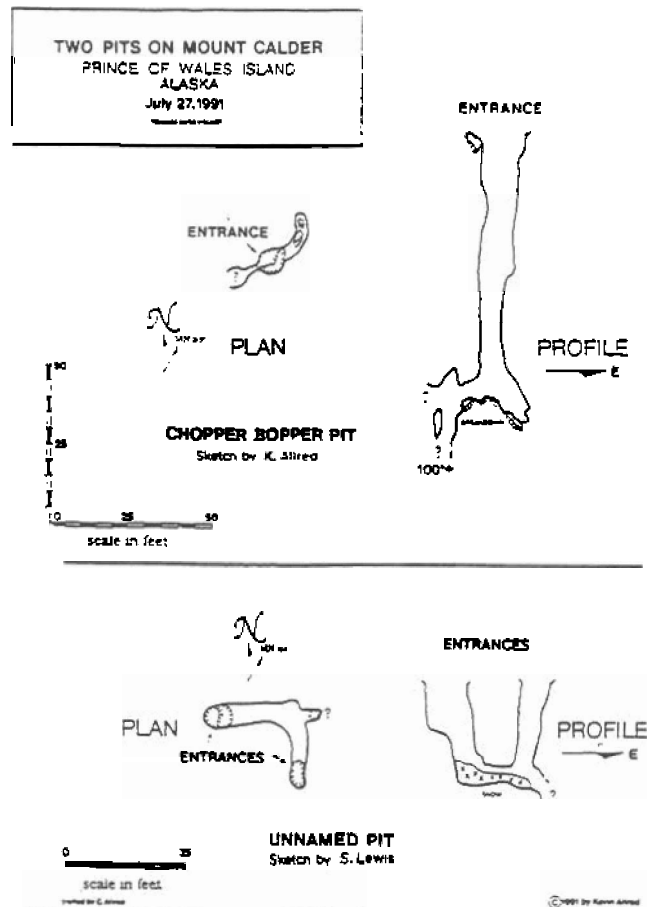
On July 27, 1991, Steve Lewis and Kevin Allred accompanied Ken Maas of the Bureau of Mines and an associate to look at cave resources on the karsted alpine bench located just northwest of the summit of Mount Calder. The rock is Heceta Limestone. Ken discovered only one dike in the area. Bedding was medium to massive, with hints of relatively recent glacial activity. Rillenkarren was usually poorly developed as on the other side of the mountain.

### Chopper Bopper Pit

Our time was limited to identifying only two significant pit features. We descended 100 feet into the first one. A further drop estimated at 100 feet was not explored (see sketch).

### Unnamed Pit

The unnamed second pit sketched by Steve Lewis is still unentered. □



### Equipment List (continued from page 4)

#### Minimum for Easy Caves

1. Coveralls, if possible
2. Two or more layers of insulating clothing (such as polypropylene, wool, pile, balaclava)
3. Standard caving gear (carbide and A and D cell batteries provided)
4. Large backpack
5. Survey gear, if you have it (tape should be in feet and tenths)
6. Vertical gear (mandatory)
7. Rain gear including rain pants
8. Rubber boots (nice; not required)
9. Sleeping bag

#### Required for Difficult Caves

- 1-9. All items from the previous list, with the following clarifications:
  - waterproof nylon coveralls
  - waterproof light sources
  - top quality vertical gear
  - heavy duty rain gear (pants)
  - XTRA-TUF brand rubber boots recommended (\$60 in Ketchikan)
10. Drysuit or wetsuit
11. Waterproof tent, tarp, backpacking gear, if remote or alpine caving

— Kevin Allred, Project Leader □

**POWIE V Statistics (1991)**  
compiled by Julius Rockwell and Kevin Allred

The Tongass Caves Project of the Glacier Grotto (of NSS) conducted the fifth Prince of Wales Island Expedition (POWIE V) from July 15 through August 15 of 1991. The 31-day expedition was extended until August 23 to conduct further investigations on Dall Island. The following 24 individuals participated in the expedition, based at El Capitan Work Camp, Prince of Wales Island:

Carlene Allred	Sharon Hillis
Kevin Allred	Eva Kargard
Jim Baichtal	Matt Keith
Kristen Bentz	Steve Lewis
Bob Christensen	Ken Maas
Glen Coville	Curvin Metzler
Susan DeLisa	Steve Micola
Jim Ferguson	Julia Riber
Mark Fritzke	Julius Rockwell
Fred Grady	Pete Smith
Tim Heaton	Doug Strait
Julie Heaton	Winfield Wright

The number of participants present at any one time averaged out to about ten. Approximately 245 man days and 2482.2 man hours were contributed to the Thorne Bay District and 30 man days with 240 man hours were contributed to the Craig District. The expedition contributed a total of 275 man days and 2722.2 man hours to the Ketchikan Area as a whole.

In the Thorne Bay District, a total of 14,500.6 feet were mapped underground and 1640.5 feet were mapped above ground. In the Craig District, a total of 1673.6 feet were mapped underground and 1980.7 feet were mapped above ground.

The expedition surveyed a grand total of 3.06 miles (4.9 kilometers) of cave passages. The following is a list of the caves explored during the (1991) POWIE V expedition, ordered alphabetically cave name, along with their present lengths and depths (in feet):

<u>Cave Name</u>	<u>Report</u>	<u>Length</u>	<u>Depth</u>	<u>The Alaskan Caver</u>
Arm Pit	55	257.1	117.0	12(1):16-17
B & B Cave	66	151.4	62.4	12(6):7-8
Bashful (Pit)	50	42.6	23.4	12(3):18-20
Bear Pit	53	46.2	47.0	12(1):14-15
Bear's Bed Cave	51	30.0	15.0	12(1):12
Bear's Plunge	43	186.4	147.0	12(1):6-7
* Blowing in the Wind Cave	76	2894.5	460.0	12(6):19-21
Bridal Veil Cave	40	2544.0	362.2	12(3):10-12
Cascade Cave	49	38.7	0.0	13(1):4
Cataract Cave	67	677.3	113.6	12(1):19-21
Centipede Crevice	72	53.6	53.6	13(1):10-11
Chopper Bopper Pit	74	sketch		13(1):19
Conflict Cave	54	118.3	62.3	12(1):14-15
Contact Cave	65	197.5	54.2	12(3):16
Dead Mother Cave	58	25.5	17.5	12(6):11-13
Demely Cave	64	528.9	181.8	12(3):14-15
Devil Horn Pit	73	sketch		13(1):12-18
Devil's Canopy Cave	58	326.2	62.6	12(6):11-13
Devil's Deception Cave	73	255.9	169.4	13(1):12-18
Doc (Pit)	50	sketch		12(3):18-20
Dopey (Pit)	50	part of Happy		12(3):18-20
Double Window Pit	73	109.6	71.6	13(1):12-18
Dragon's Breath Cave	41	1456.8	387.8	12(3):7-9
Eagle's Roost Cave	39	1299.9	132.3	12(6):3-4
* El Capitan Cave	75	10252.9	299.4	12(2):11-13
* El Capitan Pit	42	1111.9	624.9	12(6):16-18

Fault Contact Pit	48		sketch	12(6):18
First Cave	62	52.6	13.1	12(3):14
Grumpy (Pit)	50	91.1	71.0	12(3):18-20
Happy (Pit)	50	85.8	70.0	12(3):18-20
Hidden Dike Cave	73	293.9	70.2	13(1):12-18
Hidden Shaft	57	110.5	59.5	12(6):5
Historian Cave	71	220.7	92.1	13(1):8-9
Junco Cave	58	59.2	22.5	12(6):11-13
Keyhole Cave	71	34.3	19.4	13(1):8-9
Layer Cake Pit	73	48.6	39.3	13(1):12-18
Log-Spanned Shaft	56	90.2	66.8	12(6):5
Move the Road Cave	70	450.9	166.1	13(1):6-7
Nervous Rock Pit	46		sketch	12(1):10
Novice's Nightmare Cave	71	66.6	40.1	13(1):8-9
O.S. Pit	45	72.0	72.0	12(1):7-9
Panic Pit	47	67.2	56.5	12(1):11
Prop Wash Palace Cave	44	54.0	36.7	13(1):5
River's End Cave	45	1029.4	169.4	12(1):7-9
Root Source Cave	52	168.7	21.6	12(1):13
Rubble Pit	73	76.3	57.9	13(1):12-18
Shelter Cave	60	42.0	27.8	12(3):13
Sill Cave	63	268.4	14.7	12(6):6
Sleepy (Pit)	50	90.9	77.5	12(3):18-20
Slices and Dices Cave	72	42.7	35.9	13(1):10-11
Slide Cave	61	102.2	45.2	12(1):18
Sneezy (Pit)	50	110.3	76.9	12(3):18-20
Snow Crevasse	73	93.3	89.7	13(1):12-18
Snow White Cave	59	122.2	35.8	12(3):17
Sunday Afternoon Pit	73	81.0	69.9	13(1):12-18
Swiss Cheese Complex	73	490.0	167.8	13(1):12-18
Thrush Cave	68	125.7	36.9	12(6):8-9
Thunder Mountain Room	72	128.7	56.2	13(1):10-11
Unnamed Pit	74		sketch	13(1):19
Vauclusian Cave	69		sketch	13(1):5
Winter Wren Cave	58	69.3	69.3	12(6):11-13

\* This year was continued exploration.

□

### The First Issue for 1993—A Little Late

The articles of this issue (except for the Tongass Cave Project announcement) have been typed and waiting for publication since the middle of January. Adequate nominations for the six elected officer positions had been received and were to be presented in the next issue of the newsletter at that time. However, changes to the bylaws were suggested at the meeting, and I was instructed to hold off printing this issue until I received the official proposed bylaws changes.

I waited and waited (February/March/April)—until I finally received a note saying not to wait any longer. No bylaw changes—apparently, someone else will be putting out an issue with them in it soon. I guess that means we have a new editor, which is news to me—I didn't know we need a new editor. I've enjoyed getting this newsletter back on track, six issues a year, in spite of each issue averaging 22 pages and involving about 100 hours of work from start to finish.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★  
**Area Grotto Meetings**  
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

▣ SouthCentral Area Meetings

We found another meeting place! The SouthCentral Area Meetings will be held once again at 7:30pm on the **fourth Wednesday** of each month. Our new regular meeting place will be the **Conference Room** of **ENSR Consulting and Engineering Inc.**, located in **Building D** of **4640 Business Park Blvd, Anchorage**, phone **561-5700**. Driving south on 'C' Street, take the first right turn after crossing Tudor Road, then take the next right heading back north; buildings are identified and there is a directory board.

▣ Northern Area Meetings

Northern Area Meetings are held in **Fairbanks** by demand; contact **Mike Mauser** at (907) **456-6953** for more details.

▣ SouthEast Area Meetings

SouthEast Area Meetings will be held at 7:00pm on the **first Monday** of each month. The meeting place is the **Alaska Public Health Service Building, 3054 5th Avenue, Ketchikan**. Practice/training sessions are held the weekend following the meeting; telephone (907) **225-4094** (Marcel LaPerriere) to confirm day, time, and location.

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**Elections coming up ???**

Essentially we have a minor crisis on our hands! Our last Glacier Grotto election was held in late **1990** to elect officers for **1991**. You read it right; there was **no** election in 1991 for 1992 officers, and **we still have not had** our 1992 election for 1993 officers. If you care, voice your concern today!

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**Glacier Grotto**  
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