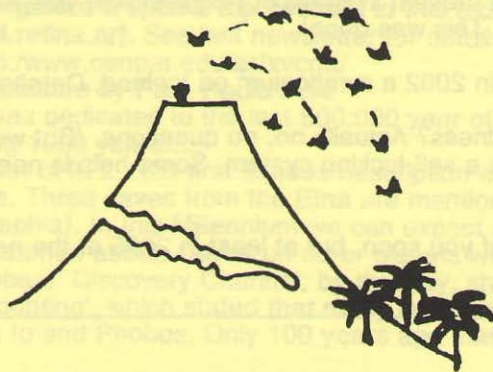


MEETING OF THE COMMISSION ON VOLCANIC CAVES  
during 18th International Congress of Speleology  
Bislett, 18 July 2001 - chaired by J. B. Kirk (UK)

INTERNATIONAL UNION OF SPELEOLOGY  
UNION INTERNATIONALE DE SPÉLÉOLOGIE

# Commission on Volcanic Caves



Some other points:  
The current Chairman is J. B. Kirk (UK).  
The Commission is a non-profit organization.  
The Commission is open to all members of the IUGS.  
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**Newsletter # 31**

August 2001

## MEETING of UIS COMMISSION on VOLCANIC CAVES

during 13<sup>th</sup> International Congress of Speleology

Brasilia, 16 July 2001 - chaired by J.P. van der Pas

1. Opening by the Chairman
2. Participants: Dr. Trimmel (Austria), Dr. Kashima & wife (Japan), P. Deriaz & D. Spring (Switzerland), Lic. Silvia Barredo (Argentina), Rune Magnusson (Sweden), M. Gradzinski (Poland).
3. Report activities 1997-2001, staff, newsletter were explained. Dr. Trimmel remarks the 'Proceedings of the 8<sup>th</sup> Symposium' are still available (as an issue of the International Journal of Speleology).  
A set of the Newsletters is shown - several participants like to obtain them. Will be arranged.
4. Liaison with other Commissions is explained. These are excellent (due to the fact nobody of the staff of the Commission on Pseudokarst could be present in Brasil our commission was asked to represent them. This was done)
5. Future plans: in 2002 a symposium on Iceland. Details awaited.
6. Any other business? Actually no, no questions. (But we have room # 8, which has a self-locking system. Some help is needed to get us out....)

Hope to see all of you soon, but at least in 2005 at the next congress in Greece!

***This Newsletter is send free to all members of the Commission. It is not possible to subscribe - but will be send to all interested in lava tube caves. But news and info are always appreciated!***

Honorary President: Dr. W.R. Halliday  
bnawrh@webtv.net

Chairman & editorial address:

J.P. van der Pas  
Vauwerhofweg 3  
6333 CB Schimmert  
Netherlands

tel 0031 45 40 41 600  
fax 0031 45 40 42 198



**Some notes about the 13th International Congress of Speleology, July 2001, Brasilia, Brazil**

The congress was, no doubts about this, a success. Nearly 500 participants, some 40 countries participated, good parties, good trips, some 250 lectures. A meeting of the commission on volcanic caves... However, no lectures about our topic.

**People met.....**

Only a few people of the commission on volcanic caves attended. Of course Paolo Forti was there, and in 'The Opening Lecture' by him the importance of lava tube caves was enhanced.

Our commission member of Argentina, Lic. Sylvia Barredo, was there. She promoted again the 'XV Argentine Geological Congress'. **In case enough people participate with interest in lava tube caves there is a possibility to organize a special trip devoted to this (contact sbaredo@mail.retina.ar).** See last newsletter for details of this congress: <http://www.cenpat.edu.ar/xvcga/>

**The Opening Lecture by Prof. Paolo Forti**

This speech was dedicated to the last 500.000 year of speleology, and the coming 1000 years.....

Some points out of it: .... the first serious description are probably volcanic caves. Three caves from the Etna are mentioned in 1590 (in Aetna Topographia). In this Millennium we can expect speleological feats never dreamed about. Caves on other planets will be visited (of course lava tubes). Discovery Channel, by the way, showed '95 Worlds and Counting', which stated that many lava tubes wait for exploration on Io and Phobos. Only 100 years ago man couldn't even fly... So.....

**Some other point:**

The current Chairman (J.P. van der Pas) wants to stop with the chairmanship somewhere in 2002 (e.g. at the symposium in Reykjavik). Reasons for this are multiple. The person who could/should take over:

Feels responsibility for the commission, knows or keeps contact with commission members, speaks English well enough to maintain contacts with UIS, commission members, maintains contact via the newsletter or other means (an informal offer is received from Greg Middleton, Australia, to do the newsletter).

The 'mission statement' of our commission was published in several newsletters (repeated on page 16. of this one).

All for now,

*Jan Paul* (chairman)



## ICELAND

**Fascinating expedition report about lava tube caves in the Laki (Iceland) area.**

This expedition took place August/September 2000.

Although the Laki area is well known for its huge eruptions some 200 years ago, there is still much to be discovered under the ground.

This very well done report describes all aspects of the expedition in the Skaftáreldarhraun area, but also measurements done in the Hallmundarhraun area (with Surtshellir).

A fantastic front-cover with a view from the Laki Mountain, 36 pp, 14b/w pictures, 14 maps, plans and graphs, of which three in color. My copy also contained a 4 page supplement about 'administration and logistics'.

Cost £14, see address below for availability.

Highly recommended!

### LAKI UNDERGROUND 2000

#### The Bournemouth/Dundee Universities Joint Expedition to Iceland

in association with  
the Icelandic Speleological Society (Hellarannsóknafélag Íslands)  
and the Shepton Mallet Caving Club

#### EXPEDITION REPORT

Prepared by Chris Wood, Paul Cheetham,  
Rob Watts and Nicola Randall

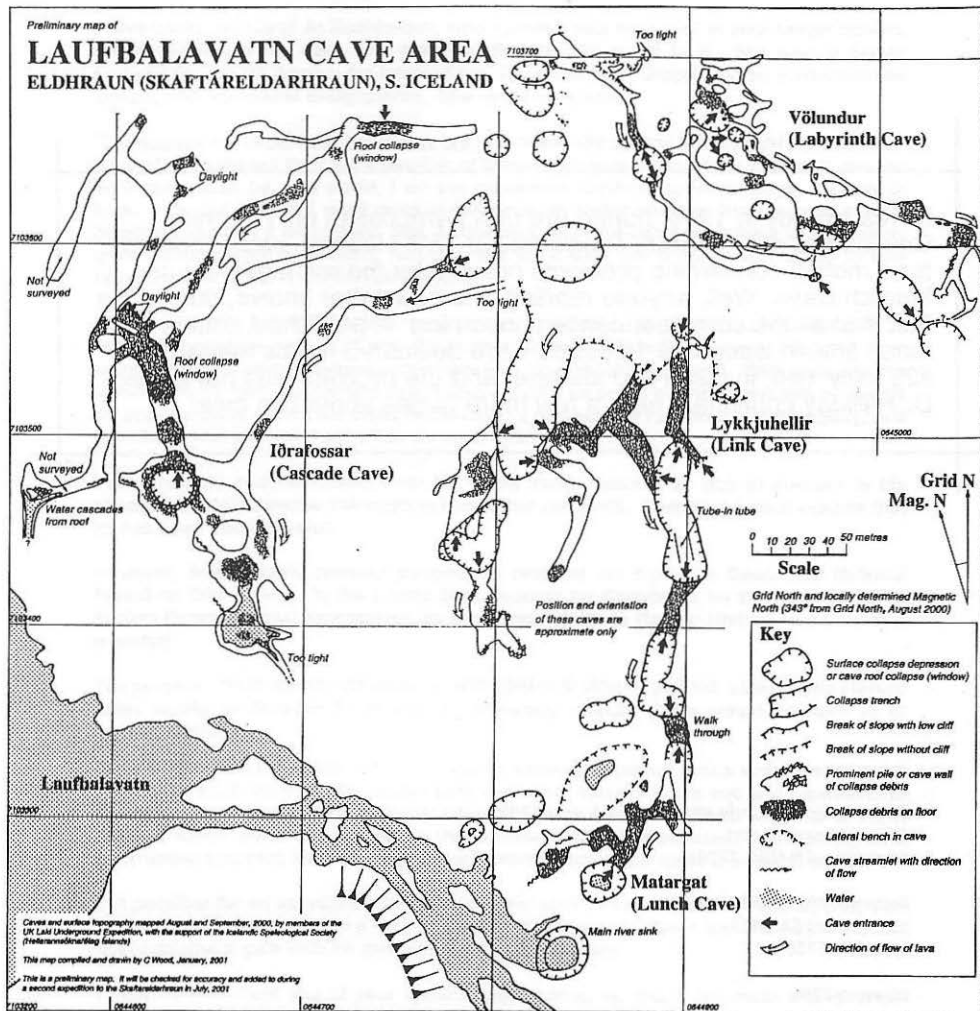
*Front cover: The SW crater row, viewed from the summit of Laki mountain*

*Back cover: Flooded passage in Iðrafossar, upper Eldhraun*

ISBN: 1-85899-127-7

**May 2001**

Further copies of this report are available at a cost of £14 (incl. p&p) each from:  
Dr Chris Wood, School of Conservation Sciences, Bournemouth University,  
Talbot Campus, Poole BH12 5BB, UK



A tempting map from the 'Laki Underground 2000' Iceland expedition report.

Many new features....

In small print (maybe to small on this reproduction):

'This map compiled and drawn by C. Wood, January 2001.

This is a preliminary map. It will be checked for accuracy and added to during a second expedition to the Skaftareldarhraun in July 2001'.

So this second expedition took already place!

## **MOWICH...**

It was already in 1999, during the IXth Symposium on Volcanic Caves, that our honorary President, Dr. WR Halliday, came forward for a motion concerning problems created by the management of Mowich Cave. Well, anyone reading this newsletter knows, due to the fact that all the correspondence concerning is published, that in the mean time in issue #28 10 pages were dedicated to this matter, in #29 'only' two, in issue #30 still one, and the problem was not solved. Dr Halliday continues, here a few more pages about this cave.....

**Address until 31 July and after 28 August 2001:**  
6530 Cornwall Court  
Nashville, TN USA 37205

**Summer 2001 field address:**  
101 Aupuni St. #911  
Hilo, HI 96720

**28 June 2001**

**Mr. John Ouimet, District Ranger  
Diamond Lake Ranger District  
2020 Toketee Ranger Station Road  
Idlelyd Park, OR 97447**

**Dear Mr. Ouimet:**

**re: Mowich Cave**

**In followup of my letter of 16 December 2000, I have now obtained what appears to be all possible additional information about bat population counts and estimates in Mowich Cave.**

I have contacted Carol Jo Rushin-Bell, who formerly was stationed at your ranger station, frequently visited the cave, and prepared the old trail guide to it. She now is Senior Forester for the US Agency for International Development, Global Bureau Environmental Center, with worldwide assignments. She wrote as follows:

"I remember the occasional bat or two, but no maternity colony that caught my attention. Several of us visited the cave a number of times at various times of the year as it was the only cave close by, and again, I do not remember anything pronounced in the way of bats. I do not believe I went there in the dead of winter, so may have missed a large hibernaculum had it been there. But a statement that I probably went there in reasonably good weather (spring, summer, fall) and that there were not enough bats for me to take special notice of them seems about right."

As you probably know from Mike Hupp (whom I copied on my letter), I also attempted to obtain information from Dr. Steve Cross about documentation of harm to *Plecotus* from entry during the period between maternity and hibernaculum periods. With regard to the possible harm from the present gate, I also asked if he could provide estimates or counts on specific dates during his visits to the cave. I received no response to this inquiry, and therefore must assume that he has no such data.

I have had no communication from Mr. Hupp about success or lack of success in his attempts to obtain similar information from other channels. Therefore I must assume that he has been unsuccessful.

However, some highly relevant information reached me from the Deschutes National Forest on this subject. In the 1 June 2001 Request for Comments on the Road 18 Caves-Project Environmental Assessment, by the Bend-Fort Rock Ranger District, the following is stated:

"To provide multi agency consistency with seasonal closure periods hibernacula closure dates would be October 15 to May 1. Maternity closure dates would be April 15 to September 30."

Under these circumstances, I hereby request a research permit (not a special use permit) for a 3-hour study between the multiagency maternity closure dates and and hibernaculum closure dates, namely between September 30 and October 15. If you wish me to utilize specific forms rather than relying on the informal method emphasized in the background information you sent last year, please send them to me at the earliest possible moment.

If it possible for an appropriate member of your staff to accompany me at that time, I am hopeful that it would lead to a very constructive discussion about the best way to replace the problematic gate with an appropriate protective fence.

I hope to hear from you at your earliest opportunity, so that I can make arrangements which would take advantage of current cheap airline fares.

Very sincerely yours,

*W.R. Halliday*  
William R. Halliday

cc: Mike Hupp  
National Speleological Society  
Conservation Committee and Section on Cave Geology and Geography  
International Union of Speleology Commission on Volcanic Caves  
Bat Conservation International



United States  
Department of  
Agriculture

Forest  
Service  
Umpqua  
National  
Forest

Diamond Lake Ranger District  
2020 Toketee Ranger Station Road  
Idleld Park, OR 97447  
(541) 498-2531  
FAX (541) 498-2515

File Code: 2670

Date: July 11, 2001

William R. Halliday  
6530 Cornwall Court  
Nashville, TN 37205


Dear Mr. Halliday,

The Diamond Lake District received your letter dated June 28<sup>th</sup> in our office on July 2<sup>nd</sup>. Within this letter, you reference a Deschutes National Forest proposal for seasonal closures for hibernacula closures between October 15<sup>th</sup> and May 1 and seasonal closures for maternity colonies between April 15<sup>th</sup> and September 30<sup>th</sup>. Your letter also includes a request to access Mowich Cave between the dates mentioned in the Deschutes National Forest proposal (September 30<sup>th</sup> to October 15<sup>th</sup>).

This most recent request is very similar to your previous requests to visit Mowich Cave last year. The difference appears to be a modification in the proposed entry date that corresponds with the proposed seasonal restrictions you referenced for the Deschutes National Forest. I have again reviewed the information and recommendations received from the Diamond Lake District Wildlife Biologist, Umpqua Forest Wildlife Biologist and recognized bat experts while considering your request. I also investigated whether our monitoring efforts have provided any new information that would warrant reconsidering my denial of your request last year. Cooperative monitoring with the Oregon Department of Fish and Wildlife confirms that Townsend's big-eared bats still utilize the cave and that restricting human access is still warranted.

Based on the latest information available; and considering the recommendations of federal and state biologists and bat researchers; it is my decision to deny your most recent request to access Mowich Cave. Although your request is important, the Forest Service has an over-riding obligation to protect the viability of the Townsend's big-eared bat colony within the cave. The available information leads me to conclude that any human activity within the cave while occupied by Townsend's big-eared bats could lead to serious adverse effects. Ultimately, federal law that requires the maintenance of species viability and protects cave resources guided my decision. If you have any questions about this situation, you are welcome to call me at the District Office.

Sincerely,

  
John Ouimet  
Diamond Lake District Ranger



Caring for the Land and Serving People

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Address until 31 July and after 28 August 2001:  
6530 CornwallCourt  
Nashville, TN 37205

Summer 2001 field address:  
101 Aupuni St. #911  
Hilo, HI 96720

18 July 2001

Mr. John Ouimet, District Ranger  
Diamond Lake Ranger Station  
2020 Toketee Ranger Station Road  
Idleld Park, OR 97447

Dear Mr. Ouimet: re: Mowich Cave; yr decision letter dated 11/7/2001

I hereby request reconsideration of the decision or decisions promulgated in your letter of 11 July 2001, in response to my request dated 28 June 2001.

This is for the following reasons:

1) your denial of my request to enter the cave was based on an incorrect interpretation of my request, namely that the requested study would occur while the cave was occupied by Townsend's big-eared bats.

This is not the case.

In contrast to my request last year (when the dates of occupancy had not been determined), my present request is for a research permit for studies in the period determined to be between the maternity and hibernation periods for this bat.

For your easy reference, I am enclosing another copy of my letter of 28 June, specifying the time period between 1 October and 15 October 2001.

As documentation of the determination of the appropriateness of this time period, I am enclosing a photocopy of the June 1, 2001 Request For Comments of the Bend-Fort Rock Ranger District of the Deschutes National Forest. Please note that it specifies the period between 1 October and 15 October as being between the maternity and hibernation periods for this bat, on the basis of an interagency determination.

2) Your letter gave no reason for your unstated refusal to send me the necessary forms for formal application for this research permit, as requested in my letter of 28 June 2001. In my opinion, completion of these forms and formal action thereon is necessary for an appropriate "paper trail" in view of your obvious hostility toward the proposed studies.

In addition to the reconsideration requested above, I therefore again request the necessary forms for formal application for this research permit.

Very sincerely yours,

William R. Halliday  
Honorary President  
Commission on Volcanic Caves of the International Union of Speleology

cc: Office of the Forest Supervisor, Umpqua National Forest att: Mike Hupp  
National Speleological Society  
Conservation Committee and Section on Cave Geology and Geography  
International Union of Speleology Commission on Volcanic Caves  
Bat Conservation International, att: Merlin Tuttle



United States  
Department of  
Agriculture

Forest  
Service

Deschutes  
National  
Forest

Bend-Ft. Rock Ranger  
District  
1230 NE 3rd, Suite A-262  
Bend, OR 97701

### Request for Comments

JUN 1 2001

Road 18 Caves Project Environmental Assessment  
Deschutes National Forest  
Bend-Fort Rock Ranger District  
Deschutes County, Oregon

This letter is to inform you that the Road 18 Caves Project Environmental Assessment (EA) has been completed. Public comment on the preferred alternative is now being requested. This letter provides a summary of the purpose and need for action and the alternatives developed and analyzed. If you requested an EA during the scoping period, an EA will be provided with this mailing. Copies of the EA are available on request at the end of this letter.

**The comment period for these actions is 30 days. In order for your comments to be considered, they must be postmarked or faxed by July 5, 2001.**

#### **Location**

The Road 18 Caves project area is approximately eight miles southeast of Bend, Oregon, in the northeastern portion of the Bend/Ft. Rock Ranger District of the Deschutes National Forest. The project lies within portions of T19S, R13E; Sections 4, 8, 14, and 27 Willamette Meridian. The area is located east of the Northwest Forest Plan boundary line, and lies outside the range of the northern spotted owl. It is located in the Kelsey Butte/Arnold Subwatershed.

#### **Purpose and Need for Action**

The primary purpose and need for this EA is to preserve and protect cave resources of the eight caves located within the Arnold lava tube system and Skeleton Cave. The EA addresses emerging impacts of a visitor use philosophy that promotes mostly unrestricted cave access. Management adjustments are designed to reduce or eliminate impacts to caves and cave resources from human use. This approach is designed to provide the Forest Service with a template for uniform and consistent management for each cave discussed in this EA.

**Alternative C is the Preferred Alternative.** It best meets the purpose and need for action and responds to issues identified during analysis and scoping. It would balance the need for reducing impacts to cave resources while maintaining a quality recreation experience and access to most caves throughout the year. Alternative C proposes the following:

- **Boyd Cave:** The existing parking area will be improved with rock barriers to eliminate motor vehicles driving near the cave entrance and over vegetation. The parking lot would be better defined to accommodate large Recreational Vehicles and vehicles towing

horse trailers. A trail would be improved to provide a defined footpath to the cave entrance. The area would remain open for equestrians using this site to ride shorter loop trails rather than those using the Horse Butte Trailhead. Also, an information kiosk would be installed near Road 18. The kiosk would direct visitors to the caves. It would provide useful cave information such as existing closures and "leave no trace" ethics.

- **Skeleton Cave:** Relocate the parking area away from the cave entrance to minimize impacts to vegetation and cave resources. The alteration of rocks on the floor in the entrance area of Skeleton Cave would be designed to provide for public/climber safety, but in a manner that would be more natural appearing (to be determined by the Forest Service, spelunkers, and the local climbing community). There would be a seasonal closure during the bat winter hibernation period (October 15 – May 1).
- **Wind Cave:** Relocate the parking area away from the cave entrance to minimize impacts to vegetation and cave resources. Two bat gates would be installed. One at the main entrance to the cave and one at the skylight area to improve habitat conditions for the western big-eared bat. The gate at the main entrance would be locked during the bat winter hibernation period (October 15 – May 1).
- **Hidden Forest Cave:** Completed existing bolted routes would be authorized for climbing. Incomplete routes would be removed. New climbing routes would not be authorized in this or any other cave in the project area.
- **Bat Cave:** Two bat gates would be installed. One at the main entrance to the cave and one at the skylight area to improve habitat conditions for the western big-eared bat. The gate at the main entrance would be locked during the bat winter hibernation period (October 15 – May 1).
- **Charlie-the-Cave:** A bat gate would be installed to improve nursery habitat conditions (April 15 – Sept. 30).
- **Charcoal Cave #1:** A year around closure order would remain in place until further analysis is completed.

The following "Actions Common To All" would also occur:

- For caves with parking facilities, institute a self-issuing permit program to collect information on the visitor's name, purpose, number in party, comments and use patterns. There would be cave information and proposed cave etiquette on the permits or information board.
- Should the need arise; allow additional Special Use tours under authorized permit. Permittees should display a public need with an approved operating plan. Limit existing and future group size to 6-8 people at one time and no more than three tours per cave per day. Appropriate caves for this activity include Boyd, Skeleton, and Wind. Permittees would be responsible to include cave sensitivity/conservation etiquette for each group. Other special uses, such as movie making, would be authorized on a case-by-case basis.

- Restrict access to foot traffic only to promote public safety and to protect cave resources. Do not allow mountain bikes, horses, or motorized vehicles in caves. Continue to evaluate new recreational attractions and make recommendations based on impacts to cave resources and visitor safety.
- Prohibit use of internal combustion engines (such as generators) in caves.
- Prohibit the use of glass containers within caves to reduce litter and provide a safer environment to visitors.
- Maintain current populations of unique plant species in and near cave entrances by encouraging foot traffic in designated areas only.
- Add the wording “. . . and possession of” to the ban on use of hand drying agents {36 CFR 261.9 (a)(j)}.
- Prohibit possession and use of alcoholic beverages as defined by state law in all caves. Current restrictions are from sunset to sunrise.
- To provide multi-agency consistency with seasonal closure periods, hibernacula closure dates would be October 15 to May 1. Maternity closure dates would be April 15 to September 30.

**Additional Information**

Address written comments to Walter C. Schloer, Jr., District Ranger. Comments should include your name, address, and telephone number; title of the document reviewed, and specific comments and rationale you feel should be used in reaching a final decision. All comments received would become a matter of public record.

For further information or to request a copy of the Road 18 Caves Environmental Assessment contact Leslie Moscoso at the Bend/Fort Rock Ranger District, 1230 NE 3rd St., Suite A-262, Bend, OR 97701. Telephone: (541) 383-4712; FAX (541)383-4700.

Published one time only in The Bulletin June 6, 2001.



WALTER C. SCHLOER, JR.  
District Ranger

Well, sorry, this is now just 'for the record'. Arrived via courtesy of Bill Halliday. Since dead-line is (was...) July 5 now too late for any remark. But gives an idea what they will do for protection.

This article reached me twice, Bill Halliday sent it, and it also came to me via Mrs. Barredo (Argentina). It has been published in Salamanca #10, August 1999. Reprinting quality not too good... Sorry....

## Descripción topográfica y geológica de la caverna halada y su entorno PROVINCIA DE LA PAMPA

Tomado de Revista Salamanca N°10, Grupo Espeleológico Argentino, Buenos Aires, 1998

Oswaldo N. MARTÍNEZ

Grupo Espeleológico Argentino, Heredia 426, C1427CNF, Buenos Aires, Argentina.

E-mail: gea@mail.retina.ar Sitio Web: www.pettersen.com.ar/gea

### Introducción

La Caverna Halada, se halla ubicada en la Provincia de La Pampa, Departamento Puelén. El nombre de esta cavidad, alude a quien supuestamente fuera su descubridor, un antiguo poblador de la zona, Don Martín Halada.

Se halla en el paraje conocido como "El Puesto", al noroeste de los puestos Buta Ranquil, Los Pajaritos y Martín.

Su boca de entrada es visible solo desde muy cerca pues se halla al ras del suelo; es de forma circular, de 1 m de diámetro aproximadamente. Su ingreso debe practicarse en forma vertical a través de un conducto en forma de tubo de unos 2 metros de extensión, para alcanzar el piso de la cavidad.

Esta presenta un desarrollo horizontal con una suave pendiente hacia el interior. Las galerías son amplias hacia los laterales, con una altura promedio de 1,60 m. Posee un conducto principal que se ramifica en tres galerías secundarias de poca longitud. Variados derrumbes impiden avanzar en ellas.

Las galerías son secas y no presentan espeleotemas tales como estalactitas, estalagmitas, columnas, etc. Muchos sitios del cavernamiento se encuentran cubiertos por depósitos detríticos basálticos y arena fina.

Las tareas de relevamiento topográfico, permitieron determinar que la longitud total es de 369,50 m, con un desnivel máximo de 10,24 m respecto a la boca de entrada. La altura máxima es de 2,20 m y su ancho máximo es de 22,90 m.

### Marco geológico

El terreno geológico de la región esta compuesto por basaltos olivínicos cenozoicos que corresponden a coladas de 8 a 12 metros de espesor. Sus fuentes se encuentran cerca del límite con la provincia de Mendoza. Hacia el Este, llegan hasta Punta de La Barda y cubren buena parte del Departamento Puelén.

En el área pueden distinguirse coladas de basaltos de diferentes edades. Estas coladas han fluído por una superficie plana de suave pendiente inclinada al este-sureste labradas principalmente sobre las formaciones *Cerro Azul*, *Vaca Mahuida* y *Roca*.

**Formación Roca** (Bertels, 1964): De edad terciaria, esta unidad aflora restringidamente en el pequeño valle de Copel y en la zona de Agua de la Viuda, extremo oeste del valle del mismo nombre. Se presenta en bancos delgados compuestos por areniscas calcáreas, gruesas, cuarzosas, fosilíferas, de colores amarillo rojizos y anaranjados muy claros.

**Formación Vaca Mahuida** (Uliana y Camacho, 1974): Se compone de calizas, areniscas, calcáreas, limos yesíferos, arcillitas y bancos de yeso, conformando una secuencia en bancos delgados, hasta láminas de colores claros, amarillentos, rojizos, grisáceos y verdes, que contrasta notablemente con el paisaje. La edad de la unidad es terciaria.

En la parte noroeste de la Provincia, González Díaz (1972), denominó **Formación Morada Alto** a las coladas parcialmente sepultadas por detritos modernos y recortadas por la erosión y **Formación El Mollar** a aquellas mas recientes.

Por su parte, Núñez (1976) homologó las coladas que llegaron hasta Puelén con la **Formación El Puente o Puentelicense**.

La edad no se pudo establecer con exactitud ya que las dataciones radimétricas publicadas por varios autores como Corteletti y Dirac (1969), Núñez (1976) fueron hechas sobre un número reducido de muestras. Con los pocos datos disponibles, puede decirse que las coladas mas antiguas datadas hasta el presente corresponden al Mioceno (Cerro La Parva, provincia de Mendoza).

### Marco espeleológico

La caverna esta labrada en el basalto olivínico de la Formación Morada Alto y/o El Mollar (González Díaz, 1972) de pasta cuasi dolomítica. La parte superior de la cavidad y por ende del basalto, es porosa y la parte inferior es mas compacta; el piso se halla tapizado por clastos de lava y arena.

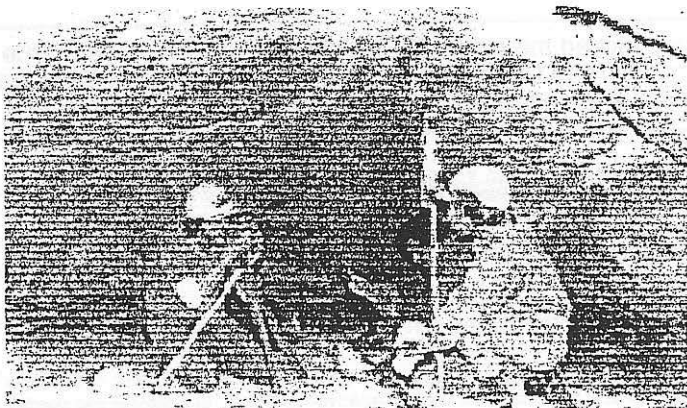
Su origen puede ser producto del vaciamiento a través de una chimenea volcánica que eliminó el material de la cámara al exterior.

El mecanismo eruptivo al que se hace referencia pudo haber sido del tipo Hawaiano, que constituyen en general las efusiones mas tranquilas, con extrusión mayoritaria de lavas muy fluidas de composición básica. Suelen alternar con estadios mas activos

(estromboliano, vulcaniano). La efusión de eyectos, constituyen principalmente aglutinados, cenizas basálticas, brechas, aglomerados poco voluminosos y muy locales.

El magma, procedente de focos con actividad volcánica, comenzó a abrirse camino entre materiales consolidados y afloró en superficie formando a su paso la chimenea que constituye hoy la boca de entrada. La presencia de este tubo de emisión, conjuntamente con la existencia de fracturamiento subhorizontal acompañados de procesos de erosión y corrosión, permitió la evolución de la cavidad cuyo acceso es vertical y el desarrollo horizontal. En algún momento de la historia geológica, debió haber cesado la emisión de materiales fundidos debido probablemente a que el flujo interno se detuvo. La posibilidad que existiera una segunda boca de acceso ubicada a una cota inferior por donde se desviara el material, no es aceptable dado que en este caso el cavernamiento cuenta con una sola entrada, y no existe evidencia de otros orificios que se conecten en las inmediaciones. En la parte basal, de la cavidad se observa pequeños afloramientos en forma de ubre de yeso, probablemente vinculadas a recristalizaciones producto de la filtración del agua de lluvia. La continuidad del basalto del techo esta interrumpida por desmoronamientos de la lava debido al intenso diaclasamiento. El techo posee cristales de yeso transparentes de hasta 6 cm de largo, que también se presentan en forma de masas granulares uniformes, compactas que se desprenden al tacto.





Relevamiento topográfico con brújula taquimétrica (precisión 6D).  
Fototeca GEA

### Conclusiones

Con este trabajo se procura aportar nuevos conocimientos espeleológicos sobre terrenos geológicos de origen volcánico en una región del oeste pampeano.

Los datos de campo fueron obtenidos de las tareas de exploración que realizó el Grupo Espeleológico Argentino (GEA) en el mes de diciembre de 1981 y en posteriores trabajos. En función de estos se elaboró un modelo de evolución. El mismo apunta a un origen vinculado con un proceso volcánico sobre las lavas cenozoicas. Su origen puede vincularse al vaciamiento a través de una chimenea volcánica que eliminó el material de la cámara al exterior.

El mecanismo eruptivo pudo haber sido del tipo Hawaiano, con extrusión mayoritaria de lavas muy fluidas.

La existencia de otras cavidades en los alrededores, sugieren una génesis similar a la de la caverna Halada. Nuevos estudios permitirán un esclarecimiento sobre la historia geológica de estas cavidades.

El estado de conservación de la cueva es muy bueno, por ser casi nula la afluencia de visitantes y encontrarse lejos de sitios densamente poblados.

### Agradecimientos

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# CAVERNA HALADA

Depto. Puelén, La Pampa

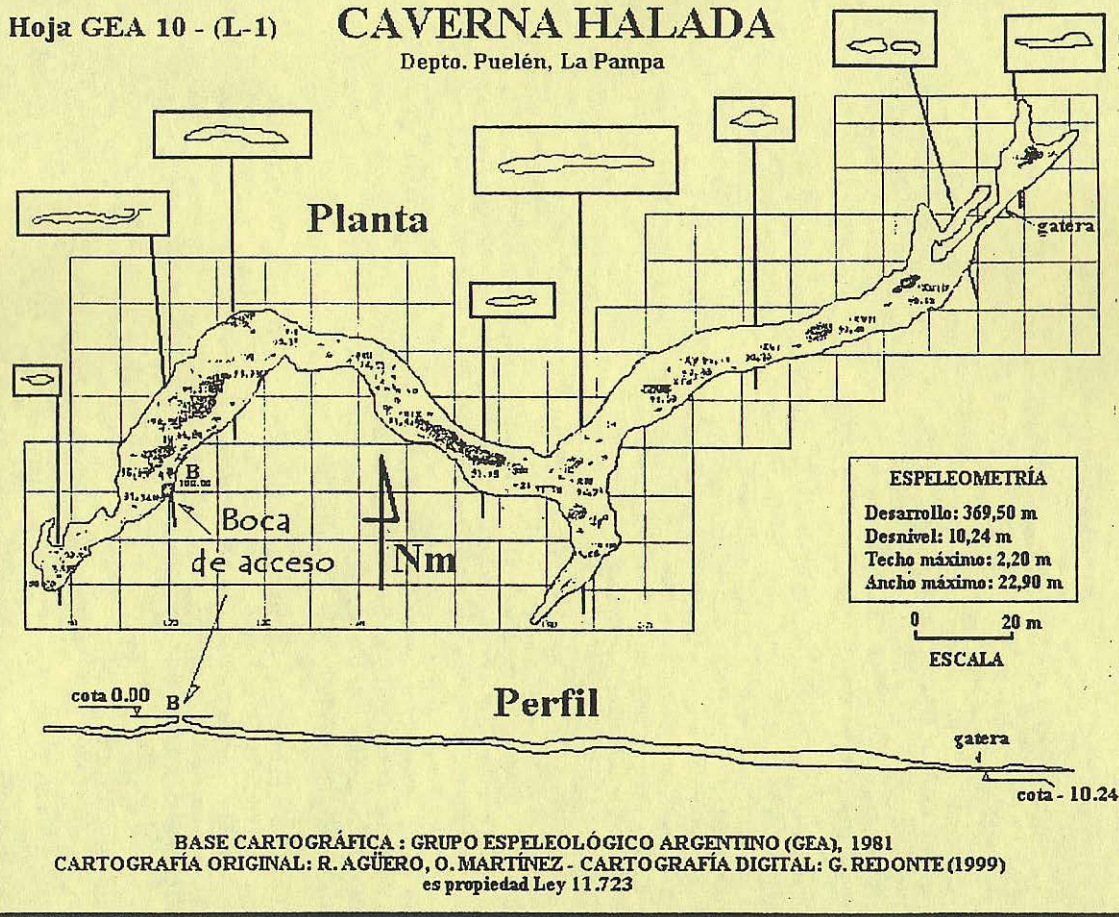


fig. 3 - Hoja topográfica de la Caverna Halada (tomada de: Grupo Espeleológico Argentino, 1981).

## ABSTRACT

This paper is focussed on the topographic and geomorphic description of the Halada volcanic cave which is situated to the West of La Pampa province, Argentine Republic. It is also intended to explain a probable theory of the origin of the cave, closely related to the geologic environment. A brief summary about the climatic characteristics of the cavern and its surroundings is also included, together with cartography and photography plans.





## MISSION STATEMENT

### of the UIS Commission on Volcanic Caves

The Commission on Volcanic Caves is an integral unit of the International Union of Speleology and upholds the high standards of its parent organization. It meets during international congresses of speleology, during international and regional symposia and all appropriate occasions. It solicits and approves sites for such symposia, held to date in the USA (2x), USA-Hawaii, Italy (3x), Japan, Spain (Canary Islands) and Kenya.

The basic mission of the Commission is to advance the scientific exploration, study, and preservation of lava tube caves and related features in volcanic rock, throughout the world. It seeks to bring together all persons, organizations, and agencies with legitimate concerns with volcanic caves, their features, and their environments. Its members are leading vulcano-speleologists from each country or area with especially important lava tube caves or related figures. Members are expected to keep the Commission informed about progress and problems in vulcano-speleology and to disseminate vulcano-speleological information to other speleologists in their country or study area.

The Commission collects and disseminates information through its Newsletter, through sponsorship of internal symposia and conferences and through exchange visits, through meetings of its Chairman/President with individual Commission members and cooperators, and through data compilation in a world data base on lava tube caves at Arizona State University (USA). Currently this world data base contains information on more than 2000 lava tube caves in 40 countries. Further, the Commission provides reports and recommendations to national and regional organizations as the American Geological Institute. Its Newsletter is published at least two or three times each year. In addition to current information it contains reports and abstracts. It is archived at two U.S. Geological Survey libraries, in the UIS library (Switzerland) and is abstracted in Volcano Quarterly.

The Commission intends to continue and expand all current projects. Especially it intends to expand its cooperation (as requested by the UIS Committee during the XII-th International Congress of Speleology in Switzerland - 1997) with other Commissions and Working Groups of the International Union of Speleology and with national and regional speleological organizations working in the field of vulcano-speleology.