Bagshawe Cavern Conservation Plan

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Introduction

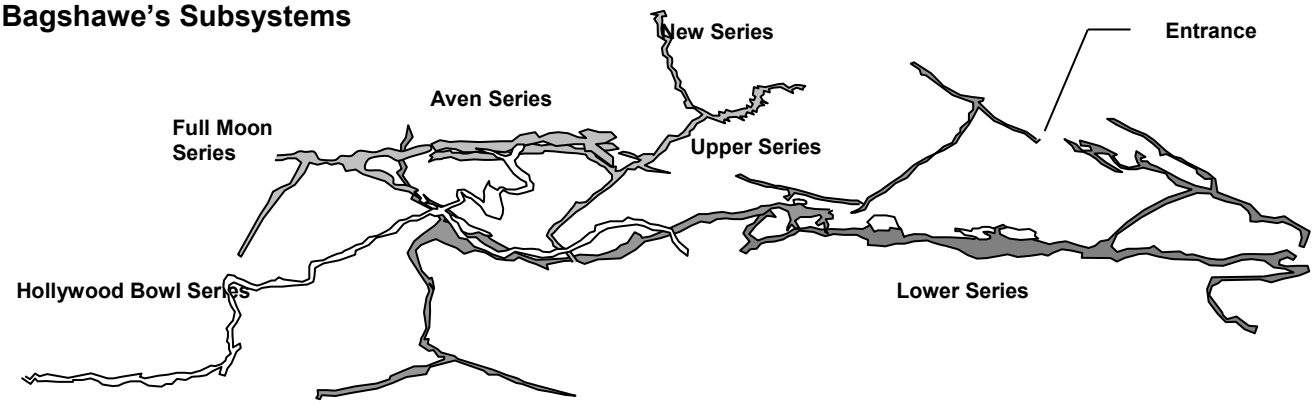
The underground drainage network of the Bradwell area has a large catchment of approximately 13.5 square kilometres (Gunn & Beck 2002). The catchment's boundaries are formed by Dirtlow Rake to the north, the Namurian sediments of Bradwell Edge to the east, Hucklow Edge Vein to the south and Bradwell Moor to the west. Bagshawe Cavern (NGR: 17148088) is the only accessible part of that drainage network and was discovered in the early 19th century when it was intersected by Mulespinner Mine, a lead mine on Moss Rake. Although only accessible from the mine, there is no evidence that the miners ever ventured beyond what is now known as the entrance passage. The entrance lies at an altitude of 235m, at its deepest the system achieves a depth of 51.8m and is made up of around 5km of passage. The known passages lie between the major mineral veins of Moss Rake, to the north, and Earl Rake, to the south, but it is crossed by many smaller veins trending east-west or southwest-northeast. The Bagshawe system demonstrates a developmental sequence resulting in a series of cave levels, which are probably related to stages in the downcutting of the Hope Valley (Gunn & Beck 2002). The subsystems or series used to describe the system on the survey and in this document are, however, delineated more by natural physical boundaries than sequence of development.

The entrance to the cavern lies within the Bradwell Site of Special Scientific Interest, SSSI, and, although the system extends beyond the boundary of the SSSI, the system itself has been designated a SSSI. This designation managed, by the government's advisory body on conservation, Natural England, offers protection against alteration.

The Revell family ('the Custodian') have ownership of the entrance and carefully control access as well as applying conservation measures such as a leadership system and exclusion zones. The access control and conservation measures exercised have undoubtedly aided in the conservation of the cave, which, on the whole, is in very good condition.

Exploration of the system continues with the permission of Natural England and the Revell family.

Bagshawe's Subsystems

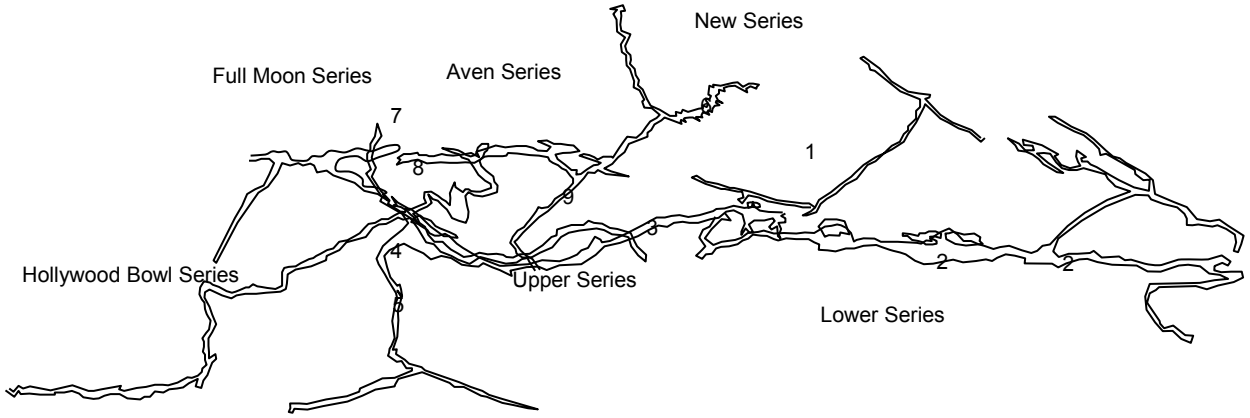


Arial view of the west side of Bradwell Dale with Bagshawe Cavern's approximate position overlayed

1 Features of Special Scientific Interest Within Bagshawe Cavern

The entrance to Bagshawe Cavern lies within the Bradwell Dale Site of Special Scientific Interest, SSSI, which gives the Cavern itself SSSI status. As a SSSI features within the cave have been identified as being of special scientific interest. These features fall into three categories: Cave Passage Morphology - CPM, Speleothems - S and Clastic Sediments – CSS.

Location of Features



1	1 Entrance Passage	CSS
2	2 Lower Series	CPM
3	3 Upper Series Main Passage	CPM
4	4 The Hippodrome	CSS
5	5 Blackpool Sands	CSS
6	North end of the New Series	CPM
7	The Aven Series	S
8	Hollywood Bowl	CPM
9	Batham Gate	CPM

Entrance Passage

Extensive sediments of fluvial origin (partly excavated by miners) in a vadose trench. (Shaw, 1984. p 133)

Lower Series

Phreatic passage controlled by mineral veins evident running along the axis of the passage. There are limited amounts of vadose incision and, in places, extensive tabular breakdown.

Upper Series Main Passage

Large bedding controlled strike tube modified by extensive breakdown and showing a small degree of vadose incision.

The Hippodrome

Extensive Tabular Breakdown

Blackpool Sands

Extensive silty sands of fluvial origin derived from Namurian strata, probably Bradwell Edge.

North end of the New Series

A series of joint oriented cavities joined by low arches. This section of passage is an example of the influence of joints on cave passage formation.

The Aven Series

Examples of flowstone and stalactites throughout this passage and its avens, especially at the Great Aven.

Hollywood Bowl

A very large chamber with ancient beehive slopes of flowstone.

Batham Gate

A large relict phreatic tube containing sediments of unknown origin.

The Derbyshire Caving Association SSSI Monitoring Scheme

Natural England is the government's advisor on nature conservation and is responsible for designating and monitoring the condition of SSSIs. The Derbyshire Caving Association, DCA, has developed the SSSI Monitoring Scheme to provide Natural England with regular monitoring of its underground SSSI sites. As part of the SSSI monitoring scheme features of special scientific interest within Bagshawe Cavern are assessed regularly and reports on their condition submitted to Natural England.

2 Access to Bagshawe Cavern

Bagshawe Cavern has three tiers of access control, Overall Access Control, Leader System Control and Exclusion Zones. These methods of control are applied either locally or across sections of the cave system

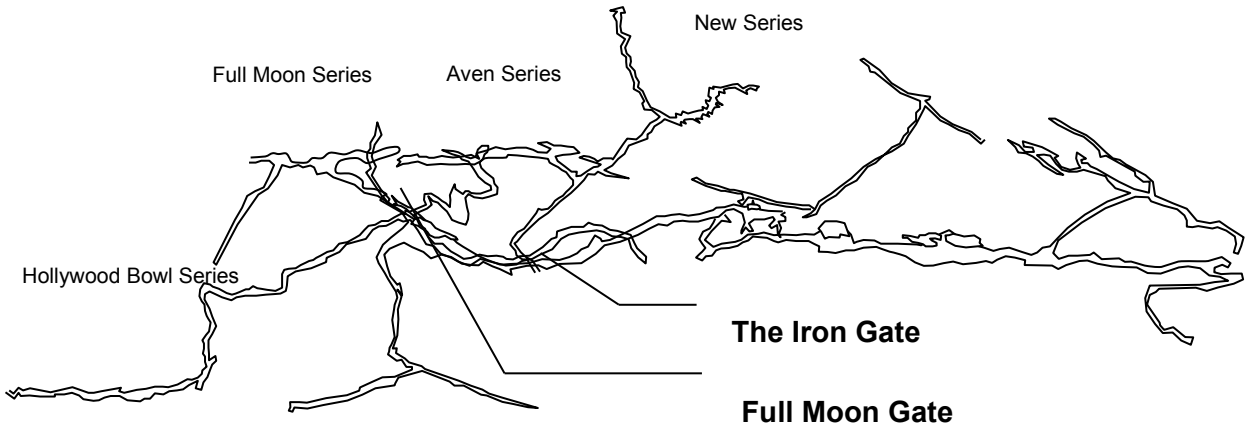
Overall Access Control

Bagshawe Cavern is entered via a coe, which is locked. The key can be obtained from the Custodian who charges a fee for access.

Leader System Control

Bagshawe Cavern contains two areas that have access controlled by locked gates: the New Series, beyond the Iron Gate, and the Full Moon Series beyond Snakes Pyjamas. Any trips into these areas must be guided by a leader for that area.

Location of Gated Leader Controlled Passages



3 Sensitivity of Bagshawe Cavern

Grading

The Grading System

A - Low sensitivity
Robust system that can withstand all but deliberate destruction.

B - Moderate sensitivity
Possibility of damage to elements of the system.
Cavers must have a basic knowledge of conservation issues.

C - High sensitivity
Elements of the system can be damaged easily.
Cavers must have a good knowledge of conservation issues.
Cavers should assess the need to use this section of the system and not do so unless there is good reason.
Precautions must be taken to limit impact.

X - Extremely Sensitive
A section of cave/mine that will be damaged irrevocably.
Complete avoidance of the area should be observed.

U - Unclassified
A section of cave or mine that has not yet been assessed
Cavers using unclassified sights must assess each part of the system visited and apply the above criteria.

Sensitivity Grading Within Bagshawe

4 Use of Bagshawe Cavern

Types of Use

There are four types of use of the system: Guided Adventure Trips, Unguided Sport Caving, Leader Controlled Trips and Exploration.

Guided Adventure Trips

Bagshawe is used by commercial caving organisations for adventure caving trips. Groups of up to ten people with little or no underground experience are led by one or two qualified cave leaders. This activity is suited to the Upper Series but smaller more experienced groups may occasionally be taken to the Lower Series.

Unguided Sport Caving

Cavers can access Bagshawe by contacting the owner who charges a small fee and provides a key to the entrance. This gives access to all of the Upper and Lower Series. Party sizes are usually small with up to five individuals with caving experience.

Leader Controlled Trips

Experienced cavers can request trips into the two access controlled areas, Full Moon and New Series. The owner will then contact an experienced leader for that area who will lead the trip. For these sensitive areas party size is usually limited to four people per leader.

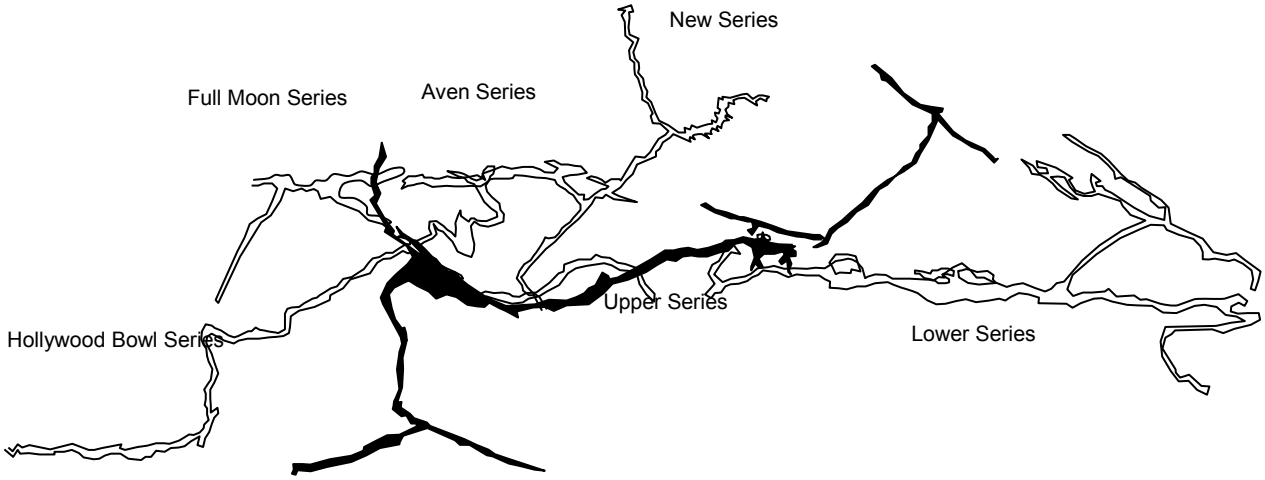
Exploration/Under Alteration

This category of cave use covers sections of cave that are being deliberately altered for the purpose of study and exploration. Work of this nature is carried out by experienced cavers known by the owner and is only undertaken after agreement with the owner and Natural England. The greatest care is taken to limit the impact of exploratory activities.

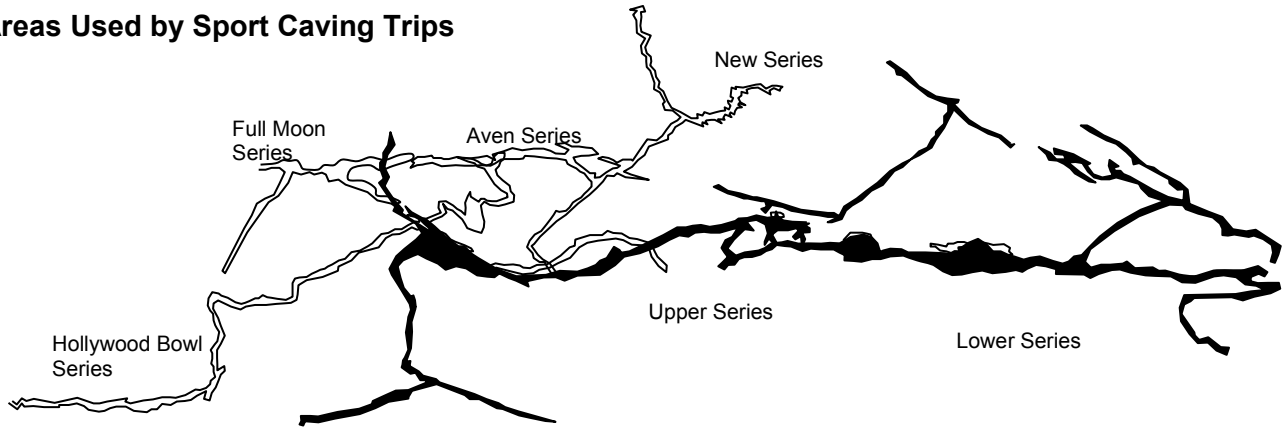
Use By Area

Areas within Bagshawe are allocated to each use according to the ability of the cave to withstand that use. In this way the type of use corresponds with the level of sensitivity in chapter three – *Sensitivity of Bagshawe Cavern.* Where the type of use is considered a risk but is required due to some other imperative, such as exploration, conservation measures are taken.

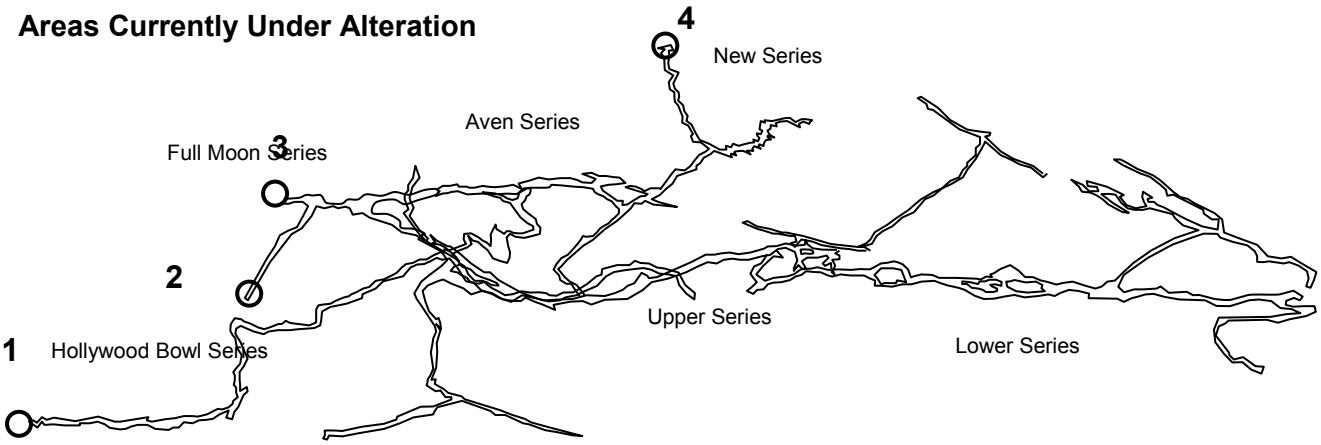
Areas Used by Adventure Trips



Areas Used by Sport Caving Trips



Areas Currently Under Alteration



1 Bedding Crawl at the end of the Hollywood Bowl Series
2 Silted Vadose Trench at end of Moose's Revenge
3 Dead Ahead Dig at the western end of the Full Moon Series
4 Bedding Crawl at the end of High Level Passage in the New Series

5 Potential Impact of the Uses of Bagshawe Cavern

The potential impact on the system of each use can be high, moderate or low depending upon party size, experience of individuals in the party, the activities of the party and the frequency of use.

High Potential Impact

Regular visits from large guided groups - Adventure Caving Trips
Deliberate alteration of system for the purpose of exploration/study - Exploration

Moderate Potential Impact

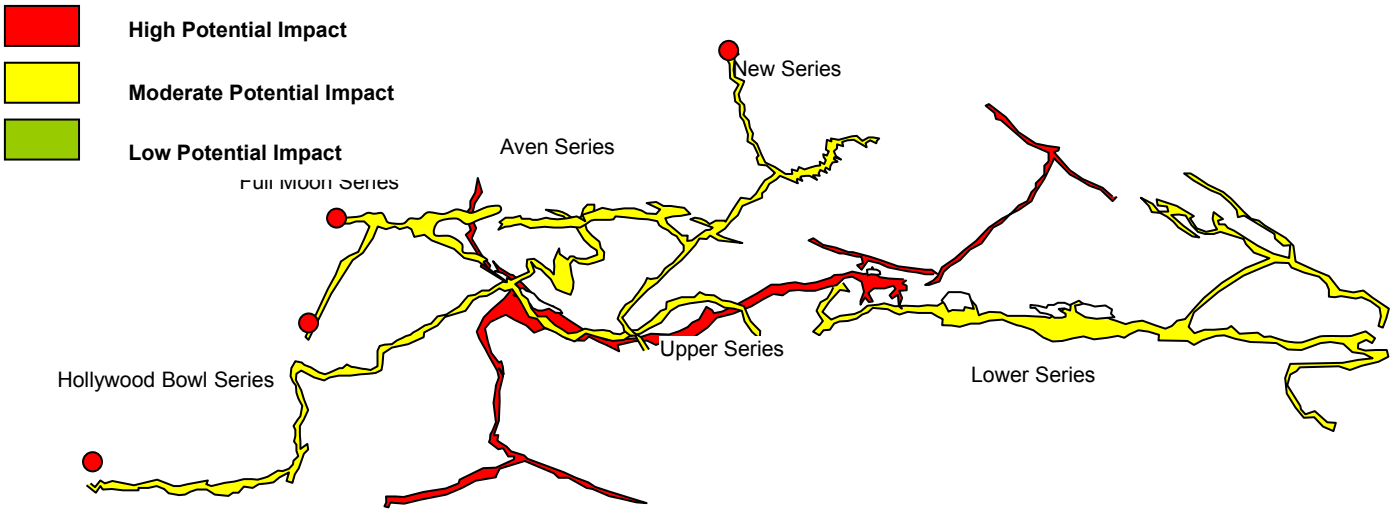
Occasional visits by groups who have met the owner and been briefed on the cave system – Sports Trips

Low Potential Impact

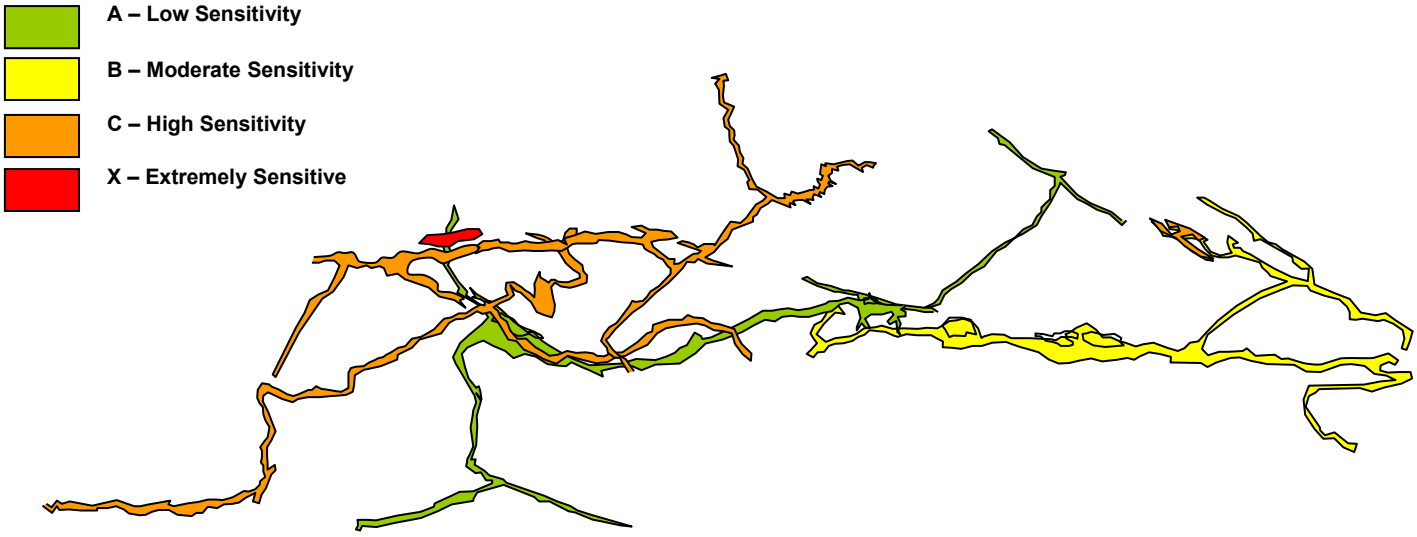
Occasional visits from leader controlled trips

Level of Potential Impact by Area

By taking the use of each area and applying the potential impact of that use we can produce a diagram of potential impact on all areas. By comparing this diagram with the sensitivity diagram we can see the areas where conservation measures need to be applied in order to minimise impact of use.



Sensitivity of System



6 Conservation Measures Employed to Minimise Impact of Use

Exclusion Zones

Applied where undirected traffic would destroy features and access is unnecessary as exploration potential is known and area can be viewed/studied from outside the restriction. The method of identifying each section where access has been excluded is decided with consideration to the sensitivity of each section and the impact, on the surrounding area, of the method of identification. Two methods of identifying exclusion zones are used: Taping and Verbal communication.

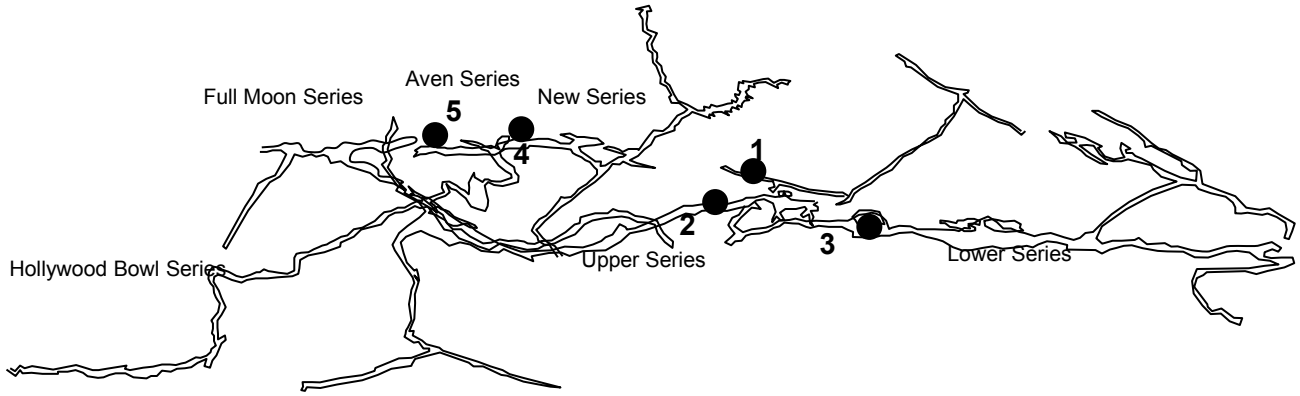
Taped Exclusion Zones

Tape is used to denote areas where undirected traffic could easily damage or destroy features and where the imperative to conserve overrides the intrusive nature of the artificial barrier.

Verbally Communicated Exclusion Zones

As the system can only be entered by obtaining a key from the Custodian cavers can be briefed about the areas which should not be accessed. This method is applied to areas where undirected traffic would, over time, damage features but occasional transgression of the exclusion boundary would not have a lasting effect. An advantage of this system is that it can be applied where tape would be an unwanted intrusion. Access exclusion within areas controlled by the leader system are either taped or verbally communicated by the leader.

Bagshawe's Exclusion Zones



Verbally Communicated Exclusion Zones
1 Calypsos beyond the Flowstone Cascade
2 Pool on left hand side of passage just beyond The Dungeon
3 Right hand side of Straw Chamber
4 Designated route through Aven Series
5 The Great Aven

Leader System Control

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