

Instructions for cave documentation in Slovenia

Table of contents

INTRODUCTION.....	1
PRINCIPLE OF OPERATION	1
INTRODUCTION TO THE RECORDS	2
INSTRUCTIONS FOR CAVE REGISTRY RECORDS	4
RECORD A (PRINCIPAL RECORD).....	4
RECORD A, PAGE 1.....	4
RECORD A, PAGE 2.....	9
RECORD A, PAGE 3.....	10
RECORD A, PAGE 4.....	11
RECORD B (SUPPLEMENTARY RECORD)	12
RECORD C (CARTOGRAPHIC DATA)	16
RECORD D (OTHER DATA)	16
RECORD E (CAVE SURVEY).....	16
RECORD F (PHOTOGRAPHS).....	17
RECORD G (TABLE OF MEASUREMENTS).....	18
OTHER INSTRUCTIONS.....	19
CAVE TYPE TABLE.....	19
RECOMMENDATION OF CAVE NAME CHOICE.....	20
ESTIMATE OF CAVE SURVEY PRECISION	21
EXAMPLES OF CORRECTLY FILLED-IN RECORD FORMS	23
RECORD A.....	23
RECORD B.....	27
RECORD E.....	28
RECORD H.....	29

Introduction

Principle of operation

The Cave Registry is the national database and library of all the known caves in Slovenia. It is a joint project between the Speleological Association of Slovenia and the Karst Research Institute of the Scientific Research Centre at the Slovene Academy of Sciences and Arts. Two copies of all the documents (numbering over 70,000 units) are held, one by each partner organization. Each cave has a unique number assigned to it, the so-called registry number. In 2011, there were 10,260 caves in the database.

New caves or new discoveries in old caves are reported by cavers, using standardized record formats. The reports are sent to the Cave Registry of the Speleological Association of Slovenia. In order to protect the priority of the discovery, the following data are published in a matter of a few weeks on the web: cave name, registry number (if known), record type, record date, author and organization. The cave location and its full data are not made available.

Twice a year the records supplied by the cavers are sent to the Institute for refereeing. Each document is evaluated to ensure that it fits to the correct cave. Potentially new caves are checked, to confirm that they are indeed new. If so, registry numbers are assigned to the new caves. When the refereeing is complete the documents are added to the library and the database is updated.

The written documents and database are both available to all cavers within the Speleological Association of Slovenia. On request, they can also be made available to other cavers active in the area. For inquiry, send a mail to kataster@jamarska-zveza.si.

Introduction to the records

The discovery of a new cave is reported in the four-page Record A (principal record). The form contains spaces for all the cave's basic parameters (location, size, etc) and plenty of empty fields for reporting on cave shape, geology, biology, etc. A small map of the area should be embedded in the record to allow easy location of the cave. A separate Record E (cave survey) must be added, which should contain both elevation and plan views. If possible, also provide a photo of the cave entrance (Record F) and a table of measurements (Record G). Other documents are welcome, such as any other cartographic data (Record C), photocopies of articles, reports, web pages (Record D). A form on cave condition, with an emphasis on cave pollution (Record H) is also available.

If you carried out new research in a cave that is already registered, you should report your findings on the one-page Record B (supplementary record). As most of the data provided in an earlier Record A (when the cave was discovered) have probably not changed, you should report only on the discoveries you made. This may be just a minor report on cave fauna, or the discovery of a new passage. In the latter case a cave survey (Record E) is also required, whereas other documents are optional.

Although this recording system might seem rather too bureaucratic, it is essential that the discoveries of different cavers are reported in a standardized way. This makes subsequent work (refereeing, database building, etc) much easier. Please do not use your own record forms; use only the standardized ones. Even if you do not understand what is required in all the fields, try to fill them in as best you can. If the meaning of a field is not clear to you, simply leave it empty. This system has been in operation for almost a century, with only minor changes. The older records have slightly different fields, but the form has remained generally stable throughout the period.

To date the vast majority of records in the Cave Registry are in the Slovene language. Even when foreign expeditions explored the Slovene caves, there was usually a strong collaboration with local cavers (in accordance with the UIS guidelines). In such cases, local cavers provided the records in Slovene. If such assistance is available, please make use of it. If nobody among your group or partners is fluent in Slovene, then the records can be completed in English – as described in these guidelines. As far as other languages are concerned, any record will be accepted, in any language, rather than no record. However, as most Slovenes are fluent in English, non-Slovene cavers are strongly recommended to report their discoveries in English.

According to Slovene law, all geographical names should be exclusively in the Slovene language, which of course applies equally to cave names (also in accordance with UIS guidelines). In principle, as a discoverer, you may name a cave as you wish. However, there is a list of preferences (see the chapter on Recommendation of cave name choice for details). In any case, the name should be in Slovene even though it may exceptionally contain foreign-language parts. For example »Bear Cave« would be »Medvedja jama«, »Shakespeare's Cave« would be »Shakespearova jama«. If the discoverer presents only a foreign-language cave name, the Cave Registry reserves its right to translate this into Slovene, and to treat the translated version as the official name.

The following description is organized into sections, one for each record type. Each section provides a short introduction to the record and its usage, and then describes the use of each

field in the record forms. Examples are provided in *italics*; cross references to other fields are underlined.

The help of the following contributors to the forms and manuals is greatly acknowledged: Matej Dular, Irena Stražar, Andrej Mihevc, Jure Hajna, Franjo Drole, Mateja Ferk, Borivoj Ladišić, David J. Lowe and Miha Čekada.

Instructions for Cave Registry records

Record A (Principal record)

Record A is used to register a new cave. However, you may also use Record A if the cave you explored is already registered, but only very poorly documented. It is also advisable to complete Record A if you have found a sizeable extension to a known cave, say, a 300m-long passage in a previously known 20m-deep pit.

Record A comprises four pages (double A3 format). The first page is the most important, as it contains details of the basic features of the cave, which will later be included in the database. You should always include a cave survey (Record E) when reporting on a new cave, as it is the basis for cave identification. Other supplements are welcome, though not mandatory: cartographic data (Record C), photographs (Record F), table of measurements (Record G) and cave condition (Record H).

Record A, page 1

The first page is dedicated to cave identification. The most important fields are those that define the cave entrance location: Access starting point, Access, Gauss-Krüger coordinates and Entrance altitude. These ought to be defined as precisely as possible, as any other data are meaningful only if one can find the cave. If measured, also include Bearings and GPS coordinates – WGS84. Yet another important data item is the cave size. If the reader cannot distinguish various lengths, the Passage length and Vertical range at least should be filled in.

Registry number

If you carried out research in an already registered cave, fill in its registry number. This is applicable in the case of work in a cave that is already registered, but poorly documented. In most cases, however, research in pre-registered caves is reported using Record B. If you are not sure about the cave's identity, it is better to leave this field empty (or complete it in pencil). Any theories about the cave's identity can be explained in the Notes and personal impressions field.

Only check The cave is not registered box if you are positive that the cave is not registered.

Document designation (Leave blank!)

Leave it blank as it will be entered by the Cave Registry.

Record number

For your own identification of records.

Date of visit

Insert the date of the exploration. If there was more than one visit, write the interval (e.g. 26. 8. – 18. 9. 2003). If the precise date is not known, insert the most probable date.

Date of record

Insert the date that the record was completed.

Cave name

Insert the cave name. If the cave has more than one name, then choose one of them as the »official« name and write the others (synonyms) in brackets. This should only be applied if these are locally known names. Do not give the cave more than one invented name! The name should be in the Slovene language – if it is written in any other language, the Cave Registry will translate it into Slovene and use the translated form as the official name. Explain the name's origin in the Origin of cave name field on page 4. See the Recommendation of cave name choice section for guidelines on choosing appropriate cave names.

Organization

Insert the name of the club, society or institute that explored the cave. If the work is a collaboration between several organizations, you can include all of them, but the first should be the one the person mentioned in Author belongs to. If you explored the cave on your own, outside any organization, then leave the field empty.

Author

Enter the author name and surname; the author should also sign at the bottom of page 4.

Municipality

Enter the name of the municipality where the cave is located. If you do not know it, leave the field empty.

Landowner

If the cave entrance was shown to you by local people, they will surely know on whose property it is located. If possible, write down the owner's name and address. If it is in a public forest, write down the sector number, which is usually written on the larger trees.

Geographical location

Explain the cave location very briefly, in five to ten words. It should be written in such a way that anybody broadly familiar with the region realizes where the cave is. If possible use names from the »Atlas Slovenije«, the widely available atlas at the 1:50,000 scale.

Nearest settlement

It is best if you copy the name from the »Atlas Slovenije«, the widely available atlas at the 1:50,000 scale, where village names are written in block capitals (unlike hamlets or isolated farmsteads, which are written in small letters). Instead of the closest village, the name of the village used for access can be inserted, or the home village of the landowner or guide.

Access starting point

The point from where the Access to the cave is described must be clearly defined. It should be identifiable from the »Atlas Slovenije«, the widely available atlas at the 1:50,000 scale, and anybody should be able to find it. Applicable starting points are settlements, important crossroads or sizeable isolated buildings (such as a church, castle or mountain hut). Avoid references that are too general, such as the caving club headquarters, big city, region, etc.

Access

The access description is one of the most important parts of the record, and often more useful than the coordinates and bearings. The access description starts at the Access starting point and finishes at the cave entrance, where it overlaps with the description of Immediate surroundings field. It should be described as a polygon, from recognizable point to recognizable point. If a turning is easy to miss, it is advisable to add a warning, such as, »*If the road starts to descend, you have missed the way*«.

Ensure that you use reference points that are clearly noticeable, are distinguishable from similar objects and – above all – are permanent. Good examples are forest roads, houses and other solid buildings (bridges, monuments, chapels, reservoirs, etc). As these objects can be common in the region, describe them precisely (e.g. *chapel with a sculpture of a saint, 1.5m-high chapel, chapel at a spring*, etc). Avoid features that are too general or are not permanent (e.g. *old chapel, red chapel*). If there are no permanent sites in the area, combine the description with topography: »*The track climbs gently towards the SW; after 250m there are two dolines on the right...*«. In this manner, one would still be able to follow the track, even if it became overgrown.

If fixing the location is very difficult, it is a good idea to measure a polygon from the nearest clear reference point to the cave. In such cases, a sketch should be added, with the polygon and basic topography marked on it. A guide is worth mentioning only if you can provide an actual name and contact address.

The description should be written in such a way that the reader need only use a compass and a map. Altimeter and GPS data are welcome, but they should not be an essential part of the description. One should also be aware that commonly the reader might not search for the cave in the same season. Be careful to write in autumn, for example: »*The cave entrance is clearly seen under the trees...*«, as in the spring this may no longer be true.

Bearings

This field is used when recording caves in open terrain, where describing and fixing a location is difficult, such as on mountain plateaus. For each bearing the direction from the cave to the object, in degrees, is written in the first field and the object name in the second. Only clearly visible and unmistakable objects are applicable, such as sharp mountain peaks, mountain huts, isolated churches. Inappropriate objects include flat peaks, unclear bumps on ridges, large settlements, etc. The chosen objects should be clearly identifiable on a map, preferentially on the »Atlas Slovenije«, the widely available atlas at the 1:50,000 scale.

Details of map extract (map type, scale, number, date/edition)

Include data about the map extract embedded in the frame underneath: map type, scale, number in series and date/edition (year of publication).

(frame for map)

The main purpose of the map extract is to provide an approximate location of the cave easily. It is advised that you use the »Atlas Slovenije«, the widely available atlas at the 1:50,000 scale, or a 1:25,000 scale topographical map. Do not use maps that are too detailed, neither non-topographic maps. Map characteristics should be written in the Details of map extract (map type, scale, number, date/edition) field. The location of the cave should be clearly marked on the map. If necessary, mark any other caves or sites that are important for cave identification (especially the ones mentioned in Access). It is advisable to add a separate sheet

with an extract from a more detailed map, say at 1:5000 scale (this is regarded as Record C). This is especially useful if it is difficult to provide directions.

Cave type

Describe the overall cave shape in just a few words, e.g. *diagonal cave with entrance pit*. If possible, ascribe one of the pre-defined types to the cave, e.g. *5.2 horizontal cave* (see the Cave type table section).

Gauss-Krüger coordinates (mandatory!)

This is probably the most important field of the record. Use the national Gauss-Krüger coordinate system and **not** the WGS84, applied in GPS systems (these data are entered in GPS coordinates – WGS84). The grid is printed on the topographic maps. The leading »5« is already inserted in the field, and you should add kilometres (three digits) and metres (three digits). They are separated with a double bar. In most cases you will not be able to determine the location to one metre, so in such cases put a zero in the last metre digit position. A typical coordinate of 5435480 (5435km, 480m) is correctly inserted as |5|4|3|5||4|8|0|. The first field is the Y coordinate (west-east), marked with a right-pointing triangle; the second is the X coordinate (south-north), marked with an upright triangle.

It is very important to write the source, from which you obtained these coordinates (based on). It can be a map (write the type, scale, number in series and edition) or GPS (write the model, and possibly the precision). If you determined the location with the GPS, make sure you used the national Gauss-Krüger system, as the difference between this and the WGS84 ellipsoid is over 1km! The parameters for the Slovene national grid (D48) are the following:

UTM grid	
longitude origin	E 15.0°
scale	0.9999
false easting	+500,000
false northing	–5,000,000

datum	
DX	+667.0
DY	–205.0
DZ	+472.0
DA	+739.8
DF	+0.10037483

If the cave has several entrances, locate the one that you described in Access. Additional entrances can be described under Notes and personal impressions.

GPS coordinates – WGS84

Use exclusively the WGS84 ellipsoid, with the following digits: degrees (first two boxes), minutes, seconds, hundredths of seconds; e.g. |1|4||2|3||5|1||9|7| (= 14°23'51.97"). For longitude the leading »1« is already printed, as is the leading »4« of the latitude. If you did not determine the location with a GPS, leave the field empty! The first field is the longitude (west-east), marked with a right-pointing triangle, the second is the latitude (south-north), marked with an upright triangle.

Entrance altitude

Insert the altitude above sea level. If possible, do **not** use GPS for altitude measurement as the difference between the WGS84 ellipsoid and local geoid is more than 50 metres in altitude.

Write the source of the measurement in the on field: map (type, scale, number, edition), altimeter (type, precision) or GPS (type, precision).

Polygon length

The polygon length is the sum of all the distances measured in the cave, including perimeter measurements of large halls, closed loops, etc, but it does not include the transverse passage profiles. If only passage lengths were measured, with no auxiliary measurements, the polygon length equals the Passage length. In general, however, the polygon length is always longer than the passage length.

Passage length

The passage length is the sum of all the measurements along the passage. Auxiliary measurements are not included. The measurements are not projected into the horizontal, i. e., the passage length of a 20 metre pit is 20 metres. The passage length of a completely horizontal cave equals its projected horizontal length (Horizontal length); the passage length of a completely vertical cave equals its Vertical range. If you are not familiar with the three »lengths«, at least the Passage length should be inserted.

Horizontal length

Horizontal length is the length of the passages as projected onto a horizontal plane. The horizontal length of a completely horizontal cave equals its Passage length; the horizontal length of a completely vertical cave equals the diameter of the pit.

Vertical range

The vertical range is the difference between the highest and the lowest point in the cave. In a pit the vertical range equals its depth. In a completely horizontal cave the vertical range equals the highest point of the passage. However, only measured values should be taken into account. Do not include vague estimates of the heights of chimneys that nobody has climbed or measured.

Entrance dimensions

Enter the cave entrance width and height, e.g. $5m \times 2m$ (= the entrance is 5m wide and 2m high). In vertical entrances (pits) enter both dimensions (entrance length and width) as well, although the order is not important.

Entrance pit

Fill in this field only if the entrance is vertical. The shortest vertical should be written. The bottom is regarded as being where there is no need for further climbing, not just the first bolt or step on the wall.

Internal pits

If there are additional pits in the cave after the entrance pit, write in their depths. If a pit was not explored to the bottom, add a plus sign beside its furthest explored point, e.g. »25m+«. Chimneys can be written if they have a horizontal continuation. In this case a plus sign is added in front of the size, for convenience add a minus for pits in this case: »-45m« (= pit), »+15m« (= chimney).

Siphons

Write the length and depth of the siphons, if any, e.g. »30m / 4.5m«. If the cave was visited in different seasons, write the values for low water level.

Record A, page 2

The second page of Record A is dedicated to the cave description, including its surroundings, entrance, internal parts and contents. It is collectively called the Cave morphology. There is plenty of space to write about the cave morphology, with no need for specialist knowledge.

Immediate surroundings

Insert a short description of the terrain around the cave. Give its basic characteristics: slope, inclination direction, presence of rocks, soil, etc. Vegetation should be briefly mentioned, such as forest type, visibility, penetrability, etc.

Entrance and entrance passage(s)

The entrance passage of the cave is regarded as where there is enough natural illumination to allow safe movement without artificial light. This includes shallow entrance pits, passages just inside the entrances of horizontal caves, etc. Very small caves are generally entirely included within this category.

The description should be based on the basic features and dimensions. Do not forget to include technical characteristics if appropriate, such as bolts locations, which potential dangers should be taken into account, etc.

Internal passage(s)

The internal passages are generally considered to start where there is not enough natural light to allow safe movement through the cave without artificial illumination. Always describe from the entrance along the main passage into the cave. The description should »guide« the reader through the cave, with the emphasis on basic features (directions and dimensions). It is advisable to include more important measurement points in the description and repeat them on the cave survey (e.g. »At point 12 there is a 10m-deep pit«). Avoid using words like *substantially*, *close*, *less*, etc – use numbers instead (*twice*, *5 – 8m*, *several tens of metres*, etc). Use plenty of bearing directions; they should always accompany descriptions like *left* or *slightly right*.

Simultaneously, present other features worth mentioning, like floor type (mud, stones, water), dripstones, etc. Do not forget the technical characteristics (potential dangers, bolts, etc). Write also which parts of the cave were not explored in detail, where continuations are suspected, etc. A useful parameter in larger halls or chambers is an estimation of the volume.

If there is not enough room in the space provided, add a line: »Continued on separate sheet«, and continue the description on a page of its own. In this case do not forget to write the cave name, your name, the organization and the date at the top of the page.

Cave sediments, interesting features and forms

Describe the natural objects you found in the cave. This includes sediments (type, where, quantities), water-carried material (branches, leaves), guano, carcasses, etc. Limestone features should be described as well. Human-related objects are described in the Pollution and other human impact field.

Record A, page 3

The third page is dedicated to Scientific data about the cave. Although most cavers are not professionals in geology or biology, it is still easy to note a few observations. Even the report »*We did not find anything*« or »*We did not observe*« is a useful contribution.

Geological

The field is dedicated to data about the rocks. Even without geological knowledge one can note the bed thickness, inclination angle, the presence of faults and joints, whether the rock is brittle, etc. Ideas about the cave's mode of formation can also be given here.

Hydrological

Hydrological data are related to underground water. If the cave is dry, simply note that fact. Small pools or drips from the ceiling are also worth mentioning. In the case of an underground river, the following data are of interest: flow direction, average flow (litres/second), clarity/muddiness, water level, temperature. Do not forget to mention rainfall during the past week. Siphon descriptions also fit in this field.

Meteorological

This field is used mainly for description of air currents. Note where air currents are present, how strong they are, how they were measured, and also note the temperature outside the cave.

Ice conditions are also reported in this field: where, how big, in which form (icicles, bulk ice, ice crystals, frozen lake, etc). Do not forget to mention the outside temperature, and a report on the weather for the previous weeks can also be useful.

Biological

Anybody can write a few basic notes on the animals seen in the cave. Count the bats, describe them in a few words, were they active or not, where were they seen, etc. Insects and spiders are also commonly encountered. Animal remains or traces can be reported too (faeces, footprints, bones, etc).

Archaeological

Traces of past human residence or visits are reported here. This includes remains of old walls, fireplaces, various artifacts, possible rock paintings, etc. Do not report on modern graffiti or litter here – they should be written in the Pollution and other human impacts field. Legends and stories from past times are reported in the History field.

Economic

If the cave is appropriate for any economic use, or is being used in this way, write it here (storeroom, watering place, tourism). If the cave was used in any way, but is no longer used, record this as well. The »economic use« of the cave as a rubbish dump should be recorded in the Pollution and other human impacts field. In this case it is highly recommended to submit a separate Record H.

Pollution and other human impacts

This field is mainly dedicated to the description of litter in the cave. Describe the type of litter, estimate the volume and note if the littering has ceased or is still going on. Remains left

by other cavers are also mentioned here: spent calcium carbide, telephone wires, graffiti, etc. The Record H is specifically dedicated to pollution and if a degraded cave is encountered, that form should be submitted too.

Record A, page 4

Concluding remarks are written on the fourth page.

History

History is the collection of historical data on the cave. It is partly connected to the Archaeological data, except that oral information is acceptable in the History section. Most such information can be gathered from the local population. Even if the story sounds more like a fairy-tale, it is worth reporting. If the cave has a long history of exploration, note this too.

In the western part of Slovenia many caves were assigned an Italian registry number (VG – Venezia Giulia) between the World Wars. If such a number exists, note it here.

Origin of cave name

Describe how the name of the cave arose. If it is a local name, ask the local people what it means. There may be several names for one cave. If the name is your (or your group's) invention, describe the background. This may be very useful for resolving possible future disputes about which name is authentic, and can also help with understanding the orthography of more difficult names.

Technical difficulty and equipment required

Make sure to describe the equipment that is necessary for a visit: how many ropes, plates, carabiners; perhaps a boat, additional carbide. Warn especially of major difficulties like rock brittleness or instability, sudden water level changes, severe narrows, etc. Note also the condition of technical aids in the cave (traverses, fixed ladders, bolts, etc).

Research recommended

After your exploration is over, it is fair to pass on hints to future explorers, about whether it is worth carrying out further research in the cave. Mention air currents (draughts), narrow or low passages that might be extended, unclimbed chimneys, etc.

Notes and personal impressions

This is the field for »all the rest«. You can comment on the cave's identity, e.g. *»Based on the entrance shape the cave probably corresponds to cave No. ..., but its location is over 1km away from the recorded position«.*

References

Here you can list books, articles and web pages where further information on the cave can be found.

Participants

List the people who participated in the research, if possible with full first names and surnames. If the participants belong to different societies, add the related society names in brackets.

Measured by

List the people who participated in the cave measurement.

Position determined by

List the people who helped to determine the cave's position.

Photographs by

List the people who participated in the cave photography.

Samples collected by

List the people who collected geological, biological or other samples.

Measuring equipment used

Describe the equipment used for cave measurement and position determination. Rather than just a simple list (e.g. *compass, metre tape, etc*) add details of the models and their precision. If you improvised, record this too, e.g. »*We measured the distance using a rope*«.

____ on ____

Write the place and date of the record.

Stamp

Add the official stamp of the society or organization you quoted in Organization on page 1, if available.

(signature)

Signature of the author of the record, whose name is supplied in Author on page 1.

Record B (Supplementary record)

Record B is intended for documentation of research in the caves that are already registered. However, if a cave is very poorly documented, but you re-explored it, it is advisable to fill in a complete Record A.

Fill in Record B only if you provide some new information for the reader. This doesn't have to be details of a new passage. For instance, a short report on cave animals is worth documenting, and can be of great value to biologists. Systematic survey or other ongoing work in the cave should by choice be reported only periodically, not after each visit. Invalid records with the text »*Visit to the cave*« will be rejected.

Record B has three parts: the basic data about the visitor (similar to Record A), a form with boxes for quick reference, and a blank space for a description of activities and results. Supplements can be added to Record B, depending on the work done: cave survey (Record E),

cartographic data (Record C), photographs (Record F), table of measurements (Record G) and a report on cave condition (Record H). If reporting new passages the cave survey is mandatory; other supplements should be provided if necessary.

Registry number

Record B is used mainly for documenting research in a previously registered cave, so in most cases the registry number will be known. If you are not sure about the cave's identity, then it is better to leave this field empty (or complete it in pencil). Any hypothesis or discussion about the possible identity can be provided in the Description of activities and results field.

Only check The cave is not registered if you are positive that the cave is not registered.

Document designation (Leave blank!)

Leave it blank as it will be entered by the Cave Registry.

Record number

For your internal identification of records.

Date of visit

Insert the date of the exploration. If there was more than one visit, write the interval (e.g. 26. 8. – 18. 9. 2003). If the precise date is not known, insert the most probable date.

Date of record

Insert the date that the record was completed.

Cave name

As in most cases Record B is used for previously registered caves, just copy the cave name here. If you think the cave is not registered, insert a name of your own. See the Recommendation of cave name choice section for guidelines on choosing appropriate cave names.

Organization

Insert the name of the club, society or institute that explored the cave. If the work is a collaboration between several organizations, you can include all of them, but the first should be the one the person mentioned in Author belongs to. If you explored the cave on your own, outside any organization, then leave the field empty.

Author

Enter the author name and surname; the author should also sign at the bottom of the page.

Participants

List the people who participated in the research, if possible with full first names and surnames. If the participants belong to different societies, add the related society names in brackets.

Boxes, upper part

This field is intended to allow the reader a quick guide to the content of the record. If somebody is interested in, say, air currents in the cave, they will look whether the box for meteorological data is checked. In Word you can check the box by a right-click on it and selection of Properties|checked. Below, in the Description of activities and results field, describe the details of your work.

The first column of boxes is designed for noting research of the cave's form and its surroundings.

cave location search: Mainly for noting an unsuccessful search for the cave entrance. Note below where you searched for the cave, so that others will know where not to look for it.

cave area examination: Meant for noting searches for additional caves or draughting holes around the cave entrance. Even if nothing was found it is worth mentioning.

cave exploration: For noting routine re-exploration of the cave, looking for any new parts. If a new passage was found, describe it precisely and include a cave survey. Pay attention to the point where you join the new part to the old. If there are any polygon points on the old cave survey, use them as reference. If nothing new was found, note that too.

digging, widening tight sections: Describe where you were trying to get through. Pay attention to the point where you join the new part to the old. If there are any polygon points on the old cave survey, use them as reference. Note if the digging was not successful, e.g. *»We managed to widen a tight section at point No.23, but after 2m it closes down to a 5cm joint«*.

advanced climbing or crossing: This box is dedicated to noting inspections of less accessible parts of the cave: chimney climbs, traverses over pits, hardly accessible passages, etc. Make sure also to note unsuccessful work, e.g. a dead-end of a chimney.

diving, siphon emptying: Use this box to highlight any kind of research in the water, including free-diving, digging canals, emptying siphons...

The second column of boxes is designed for noting documentation of basic data on the cave.

coordinates determined: The correction of cave coordinates is extremely important work. Write the corrected coordinates below. Verification of coordinates can also be mentioned.

cave measurement: Measurement of the cave or part of it is noted here. Details of other supplementary work can also be given, like depth verification with altimeter. In most cases measuring is followed by drawing, to produce a cave survey (see next box).

cave survey: Checking this box tells that there is a survey added to the Record B. In most cases it is based on measurement (preceding box). If no measurements are available, a sketch may be given (but this should be only in exceptional cases).

photography, filming: Check this box if you took photos or made films in the cave. A picture or two can be added as a supplement (Record F).

information from oral sources: If you heard a story of any kind about the cave, check this box and note the story below.

references: Provide onward references to books or articles about the cave.

The third column of boxes has identical captions to those on the third page of Record A (see Record A for more detailed explanation).

geological data: Data on the rocks in the cave;

hydrological data: Data on water in the cave;

meteorological data: Data on air currents and ice, etc, in the cave;

biological data: Data on animals in the cave;

archaeological data: Data on traces of past human presence in the cave;

environmental data: Data on pollution and current human impacts on the cave; it is recommended to submit a separate Record H.

The fourth column is dedicated to non-research work in the cave.

guided excursion: This is usually intended for the guide to fill in, but not for every visit. The guide may write one record as an overview of the guided tours made during the past year. Caving school exercises can also be included.

cleaning: Report on cleaning the cave of human-related objects (litter, spent calcium carbide, etc) ; it is recommended to submit a separate Record H.

construction: Report on any major works in the cave, not connected to exploration or cleaning, e.g. footpath or electrical lightning repair in tourist caves, stabilization of dangerous rocks, etc.

accident: If an accident happened, describe it briefly to warn the reader where to take care.

rescue drill: Report on the cave rescue drill.

other: If your contribution does not fit into any of the boxes described above, check this box, add a few words of explanation and explain in detail below.

Boxes, central part

These boxes are meant for a rough classification of the cave's condition. In most cases none of the boxes will be checked. If necessary, check one (or more) of them and describe the situation and whereabouts in detail in the Description of activities and results section.

heavily polluted: There is a substantial quantity of litter in the cave, which should be described below. Do not check this box if there are only isolated items, like one tin can, a small chunk of calcium carbide, etc. It is recommended to submit a separate Record H.

heavily or recently damaged: The cave is heavily damaged due to human impact. Describe the circumstances below: broken dripstones, graffiti, waste water, etc. Recently damaged means within a matter of a year or so. It is recommended to submit a separate Record H.

locked: The cave is locked and has a guardian. If possible, write the guardian's name or contact address.

inaccessible: A visit is not possible, though it might be accessible sometimes in the future. Describe the circumstances below: partly buried; entrance from a building; lies in a restricted area, etc.

destroyed: The cave no longer exists. Describe below what happened to it: walled in; completely buried; removed (quarry, motorway, etc).

Boxes, bottom part

Based on this record we suggest that the basic data on the cave should be changed: Check this box if you suggest changing any of the following data: cave identity (ambiguous

registry numbers, etc.); cave name; coordinates; length and depth. Write the new data below.

Description of activities and results

Describe what you found in the cave or relating to the cave. Summarize the text touched upon in the boxes above. If there is much to be written, insert subtitles to make the data more intelligible. If there is not enough space, write *Continued on back of this page*, and continue the description on the reverse side of the paper. If even this is not enough, write *Continued on separate page*, and continue on a sheet of its own. In this case do not forget to write the cave name, your name, organization and date at the top of the page.

(signature)

Signature of the author of the record, whose name is supplied in Author.

Record C (Cartographic data)

Record C is regarded as any cartographic data attached to Record A or Record B: topographic map copies, orthophoto maps, cave survey superimposed on a topographic map, access sketch, etc. Enclose these data if necessary, especially if finding the cave is difficult. There is no specified form, however, you should always mark the cave name, your name, organization, date, and registry number if known. The form for Record E can preferably be used. Naturally, an appropriate symbol should be placed on the map to indicate the cave entrance.

Record D (Other data)

Any other documents not described in these instructions are also welcome, if they relate to the cave: newspaper articles, advertising posters, tourist brochures, reports on exploratory expeditions, web pages prints, etc.

Record E (Cave survey)

Record E is a mandatory supplement to Record A. If new passages were discovered in a previously registered cave the Record B should be accompanied by a survey of the newly discovered passages. If the cave is too large to be drawn on the form, use a larger sheet and fold it to A4 size. In such cases the fields written on this form should be embedded in the lower-right corner of the larger sheet.

Usually the cave survey is drawn in plan and elevation. Cross-sections are useful at distinctive points. The cave survey should always be based on measurements; a free-hand sketch is acceptable only in exceptional cases. Always add a scale bar and the north direction (on the plan). Certain fields (registry number, cave name, date of visit, organization) are identical to the ones in Record A and Record B. Please make sure the data provided are identical too.

Registry N

If the cave survey applies to a previously registered cave, write its registry number. If you are not sure about it, leave the field empty. In any case it should be identical to the enclosed Record A or Record B.

Cave name

Copy the name as it appears on Record A or Record B. Regarding the choice of name, see the Recommendation of cave name choice section.

Measured by

List the people who participated in the cave measurement.

Date of visit

Insert the date of the visit. If there was more than one visit, write the interval (e.g. 26. 8. – 18. 9. 2003). If the date is not precisely known, write the most probable date. The date should be the same as the one on the related Record A or Record B.

Drawn by

List the people who participated in the cave survey drawing (usually only one person).

Date of cave survey

Enter the date when the cave survey was drawn.

Organization

Write the name of the club, society or institute that explored the cave. If the work is a collaboration between several organizations, you can include all of them, but the first should be the one the person mentioned in Drawn by belongs to. If you explored the cave on your own, outside any organization, then leave the field empty.

Scale

Enter the scale of the cave survey. If parts of the cave survey are in a different scale (e.g. the cross sections, meander details, etc), mark it at the appropriate place. For examples of suitable scales see the Recommendation for choice of cave survey scale and precision section.

Precision

Enter the appropriate precision code according to the table (see the Estimate of cave survey precision section).

Record number

For your internal identification of records.

Document designation (Leave blank!)

Leave it blank as it will be entered by the Cave Registry.

Record F (Photographs)

If possible take a photograph of the cave entrance, as this will greatly aid cave identification. A suitable indication of scale is welcome, e.g. a human. A short caption is also advisable such as »Picture of the entrance from the SW, the access path is directly above«. No specific form is used, but you should always mark the cave name, your name, organization, date, and

registry number if known. The form for Record E can preferably be used. Photographs from inside the cave can be added as well, with suitable captions.

Record G (Table of measurements)

Though not mandatory, a table of the measurements that served as a basis for cave survey drawing can be added. This is especially useful in larger caves where future discoveries are expected. A printout from the cave drawing program can also be enclosed. No specific form is used, but you should always mark the cave name, your name, organization, date, and registry number if known.

Other instructions

Cave type table

The cave type table used by the Cave Registry is composed of two digits. The first designates the hydrological type, while the second specifies in more detail the hydrology and the morphology. By far the most common are type 5 caves which account for more than 85 % of all caves. Some subtypes have just a few caves assigned to it. For more information, see P. Habič, A. Kranjc, R. Gospodarič, *Naše jame* 15 (1973) 86–89. In this chapter, only a list of the cave types is given.

1 Spring caves

- 1.1 cave permanent spring
- 1.2 cave intermittent spring
- 1.3 cave intermittent spring at permanent flow
- 1.4 cave intermittent spring at intermittent flow
- 1.5 pit permanent spring
- 1.6 pit intermittent spring
- 1.7 pit intermittent spring at permanent flow

2 Ponor caves

- 2.1 cave permanent ponor
- 2.2 cave intermittent ponor
- 2.3 cave intermittent ponor at permanent flow
- 2.4 cave intermittent ponor at intermittent flow
- 2.5 pit permanent ponor
- 2.6 pit intermittent ponor
- 2.7 pit intermittent ponor at permanent flow
- 2.8 pit intermittent ponor at intermittent flow

3 Estaveles

- 3.1 cave
- 3.2 pit

4 Water caves with inactive entrance

- 4.1 cave with pools of drip water
- 4.2 cave with permanent flow
- 4.3 cave with intermittent flow
- 4.4 pit with permanent flow
- 4.5 pit with intermittent flow
- 4.6 pit flooded at local water table level

5 Dry caves

- 5.1 shallow blind cave or rock shelter
- 5.2 horizontal cave
- 5.3 cave with pits and levels, oblique cave
- 5.4 cave system
- 5.5 pit
- 5.6 oblique and cascade pit

6 Ice and snow caves

- 6.1 cave with permanent ice
- 6.2 cave with intermittent ice
- 6.3 cave with snow
- 6.4 pit with permanent ice
- 6.5 pit with intermittent ice
- 6.6 pit with snow
- 6.7 well-type pit with snow

Recommendation of cave name choice

Although in principle the discoverer has the right to name a new cave at will, there are certain guidelines you are asked to follow (see the following section). The name should be in the Slovene language (although it may contain names of foreign people or places). It should be clear, not too long, and without unintelligible abbreviations or symbols, etc. If more local names exist for a cave, choose one as the principal name, and others as synonyms. Due to limitations of computer databases, diacritical signs cannot be entered.

The Cave Registry will basically accept all names, but reserves the right for certain changes:

- Translation of foreign-language names into Slovene
- Orthographic corrections (capitals, missing letters, etc)
- Technical corrections (deleting unnecessary symbols, uniformed enumeration, etc)
- Shortening of excessively long names
- Vulgar, offensive or completely unintelligible names will be rejected. In this case the author will be asked to present an alternative name, otherwise the Cave Registry will assign a name on its own choice.

The cave name scale

You are kindly asked to use the following rules when naming a new cave. First try to find a name according to the first rule. If no such name is available, go to the next rule and so forth until you find an appropriate name.

1. **Generally known native name**, e.g. *Križna jama*, *Vilenica*: If a native name exists, it should be applied. If a cave was shown to you by a local person, ask about the name. Beware of confusing two caves that are close to each other. There may be confusion about the names among the local population, who might not use the same adjectives, e.g. *velika-mala* (*big-small*) or *zgornja-spodnja* (*upper-lower*). If there are several caves with one name, add number suffixes (e.g. *Bilpa 1*, *Bilpa 2*, etc.).
2. **Local native name**, e.g. *Debigne*, *Bršlinka*: Only locals from the closest villages know the name. If it is generally known by another name (Rule No.1), give preference to the general name.
3. **Name based on the geographic location**, e.g. *Jama v Kanjaducah*, *Brezno pri Simščevem laz*: If there is no native name, the first choice is to name the cave according to its geographical location. The above example *Jama v Kanjaducah* means *Cave at Kanjaduce*, which is the name of a woodland near the town of Sežana. Use a name that is locally known as well as written on maps. Avoid names that are too general.
4. **Name based on the landowner**, e.g. *Vidrihovo brezno*, *Ukmarjeva jama*: If the cave was shown by a local who does not know its name, ask him about the landowner of the parcel. The above example *Vidrihovo brezno* means *Vidrih's pit* (Vidrih is the surname of the landowner).

5. **Name based on a particular feature**, e.g. *Brezno Dvojčki*, *Ozka jama*: Such a name can be applied if a cave has a particular distinguishing feature, that makes it stand out from the other caves in the area. The above example *Brezno Dvojčki* means *Twins Pit*, which describes a double pit, not a very common feature. Avoid using names of features that are too general, like *Jama v vrtači* (*Cave in doline*).
6. **Name based on a research sector**, e.g. *D-10 (Kanin)*, *IV/7 (Lanski vrh)*: During systematic research (usually in the mountains) sector names are often used. It is up to you to decide on the designations, but do use a consistent format (*D10*, *D 10*, *D/10* or *D-10*), the last example format (*D-10*) is advisable. For convenience, the name of the area is usually added in brackets, as in above examples.
7. **Name based on the discoverer**, e.g. *Štefanovo brezno*, *Matijetova jama*: If possible, avoid giving such a name.
8. **Name based on a caver or event**, e.g. *Renejevo brezno*, *Gromova jama*: This can be used only in exceptional cases.

Estimate of cave survey precision

[Ref: F. Šušteršič, D. Verša, Vestnik Katastra, Jamarska zveza Slovenije, 1993, p. 10–13]

Introductory remarks

The Cave research Group of Great Britain (forerunner of the British Cave Research Association) formulated a scale for precision estimation. With minor revisions this scheme is applied in Slovenia as well. It is composed of two estimated values, one for the precision of the measurement of the polygon and the other for the level of detail. The polygon precision includes considerations of the precision of all three elements of the polygon sections (distance, bearing and inclination angle) as well as the precision of survey station location. The precision grade of the polygon depends on the precision of all the polygon sections. When one of the sections has lower precision, the whole polygon precision estimate falls into a lower grade. Grades 0, I and X are to be avoided, grade II is partially acceptable, grades III, IV and VI are acceptable. Grade V is generally recommended. The polygon precision estimate is supplemented by the detail precision estimate in the following form: V/C or III/B, etc. The precision estimate is written in the field Precision on the cave survey (Record E).

Polygon precision scale

Grade 0: Polygon sketch, based on memory;

Grade I: Polygon sketch, based on estimate and not on measurements;

Grade II: Used exceptionally in difficult conditions (water-filled parts, narrows, dangerous parts, etc.) when grade III cannot be achieved. A polygon sketch is drawn in the cave, inclinations and distances estimated, only general directions are measured.

Grade III: Bearings are measured with a precision of $\pm 2.5^\circ$. Inclinations are measured with a precision of $\pm 2.5^\circ$, but only on those parts where slopes change substantially. Distances are measured with a precision of $\pm 50\text{cm}$. Survey station error is $\pm 50\text{cm}$. Equipment used includes compass, inclination meter (inclinometer), and a metre tape (for distance measurements the length of auxiliary equipment such as ropes or ladders is acceptable).

Grade IV: Used exceptionally in difficult conditions (water-filled parts, narrows, dangerous sections, etc.) when grade V cannot be achieved. It is superior to Grade III.

Grade V: Bearings and inclinations are measured with a precision of $\pm 1^\circ$. Distances are measured with a precision $\pm 10\text{cm}$. Survey station error is $\pm 10\text{cm}$. Bearing measuring

equipment includes a hand-held compass with floating display. Distance is measured by metre tape, stretched to the eye. Before use the precision of the equipment must be controlled. Polygon sections should not be too long, and all should be of comparable length. For polygons of over 15 legs a control measurement is recommended (backtracking or surveying a closed loop).

Grade VI: Bearings and inclinations are measured with a precision of $\pm 0.5^\circ$. Distances are measured with a precision $\pm 2.5\text{cm}$. Survey station error is $\pm 2.5\text{cm}$. All survey equipment must be mounted on a tripod. Survey stations must be marked in the cave.

Grade X: Polygons are measured by theodolite, usually by a professional surveyor.

Detail precision scale

Class 0: Sketch based on memory (with no supporting measurements)

Class A: Sketch based on memory (with supporting measurements)

Class B: Sketches of the passages drawn in the cave, approximately to scale. Passage width and height are estimated.

Class C: Sketches of the passages drawn in the cave. Passage width and height measured at survey stations.

Class D: Sketches of the passages drawn in the cave. Passage width and height measured at survey stations and also at other points where necessary (e.g. where the passage profile changes substantially).

Class E: Survey drawn to scale on the spot. Individual points defined simultaneously.

Recommendation of choice for cave survey scale and precision

limiting values		scales			recommended combination
length (m)	depth (m)	1:100	1:250	1:500	
<10	<10	recommended	not acceptable	not acceptable	III/B
10–50	10–20	recommended	not acceptable	not acceptable	III/B
50–100	20–50	recommended	acceptable	not acceptable	III/B
100–400	50–100	acceptable	recommended	not acceptable	IV/B, IV/C
400–1000	100–200	acceptable	recommended	not acceptable	IV/B, IV/C
1000–2500	200–350	not acceptable	recommended	acceptable	IV/B, IV/C
2500–5000	350–500	not acceptable	acceptable	recommended	V/C, V/D
>5000	>500	not acceptable	not acceptable	recommended	V/C, V/D

Note: If the cave falls into one grade based on length, and another based on depth, claim the one lower in the table.