

**INVENTORY OF THE ŠKOCJAN WORLD
HERITAGE SITE**

**INVENTAR ŠKOCJANSKE SVETOVNE
DEDIŠČINE**

DANIEL ROJŠEK

Izvleček

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Daniel Rojšek: Inventar Škocjanske svetovne dediščine

Po predstavitevi predloga za zavarovanje naravne dediščine na matičnem Krasu v letu 1987, smo dopolnili prvi inventar naravne dediščine Krasa in po novi metodologiji izdelali inventar Škocjanskega jamskega spleta, kjer smo obdelali 62 enot naravne dediščine. Članek prinaša kratko poročilo o zavarovanju naravne dediščine Krasa in inventarju Škocjanskega jamskega spleta.

Ključne besede: inventarizacija naravne dediščine, inventarni list, kraški pojavi, Slovenija, matični Kras, Škocjanski jamski splet, UNESCO

Abstract

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Daniel Rojšek: Inventory of the Škocjan World Heritage Site

After report on the natural heritage of Matični Kras in 1987 the first inventarisation of the Kras natural heritage has been upgraded and new inventory of 62 units of the Škocjan Cave System recorded. A short report about protection of the Kras natural heritage after 1987 and the inventory of Škocjan Cave System are introduced in this paper.

Key words: inventarisation of natural heritage, inventory foil, karst phenomena, Slovenia, Classical Karst, Škocjan Cave System, UNESCO

Address - Naslov:

mag. Daniel Rojšek
Zavod za varstvo naravne
in kulturne dediščine Gorica
Delpinova 16
6500 NOVA GORICA
Slovenija

INTRODUCTION

Natural heritage inventories of the Classical Karst and the Velika Voda - Reka drainage area were upgraded (Sušnik-Lah & Klemenčič/Eds. 1990; Gorkič et al. 1990). In the Škocjan World Heritage Site the first inventarisation of natural phenomena was made after improved methodology (Rojšek 1989, 1994).

Access to some parts of the Škocjan Cave System is not easy and there are some problems to organise a team of cavers and experts for inventarisation of natural heritage and a financial support. To the end of September 1992 146 natural phenomena were registered in the protected area, after September 62 units have been sufficiently processed and presented in resumption, but many of natural features are not yet registered.

The most recent recognitions of natural heritage inventarisation methodology are also published (Rojšek 1994) and recommended for easier understanding of the present paper.

A BRIEF NATURAL HERITAGE INVENTORY OF THE CLASSICAL KARST

After a report about the natural heritage of the Classical Karst (Rojšek 1987) an upgraded brief inventory of the Sežana commune natural heritage was achieved (Sušnik-Lah & Klemenčič /Eds. 1990) where 754 units are registered to be protected by a regional plan in the Kras region of Slovenia.

Assembly of the Sežana commune proclaimed the natural features (1992) cited in the report (Rojšek 1987).

Cave Register at the Karst Research Institute ZRC SAZU, Postojna, registered 564 speleological objects (at this occasion I should like to acknowledge J. Hajna and A. Mihevc) on the Classical Karst in November 1995 or 127 more than eight years earlier. 16 new registered speleological objects per year in the area seem a lot, however the whole area was not checked equally. The question remains open at the contact of the Brkini, Materija and Kras (Rojšek 1987, 258-259).

Among the last inventarisations of the important natural heritage the surface hydrogeographical ones have to be mentioned. There were 72 units registered in the Kras "waterless" area in 1990. 14 of them are called "lokev"

BRIEF DESCRIPTION: Underground course of *Velika voda - Reka* in *matični Kras* begins in the Škocjan Cave System. The course can be reached in *Kačja jama* and in *Lobodnica* in Italy, only 100 m from border and 14 km from the ponor above Škocjan. In airline of 4 km above *Kačja jama* 7.5 km water galleries have been discovered. On the surface *Reka* can be traced by blowing holes in Povir and in *Sežanski Kras*. Majority of *Velika voda - Reka* springs in *Brojnice* above *Nabrežina*, some of it however in Timav springs. In aquifair of *matični Kras* waters from few drainage zones are mixed. In submarine *Brojnice* springs and in *Timav* springs are flowing waters through *Kras* from: * *Pivka* flisch (*Bistrica* and *Podsenjski* springs from upper *Pivka* basin and Mt. *Snežnik* massive *Lokva* and *Šmihelski potok* through Mt. *Nanos*); * *Slavina-Košana kras* (karst brook *Rakuljščica* springs in high water level through estavelle *Gabranci* in *Sušica* brook in the *Reka* drainage basin (D. Rojšek, 1987: 20, 22); * river network of *Vipava* respectively from *Vipava* and *Senožeče* flisch and from other impermeable semiimpermeable rocks (*Raša* and other brooks; *Vipava* above *Miren* (o.c. 7) and * groundwater of *Gorica* plain, which is fed largely by *Soča* river (Lc).

Active and fossile spelaeological objects: caves, pits, galleries, halls halfhalls or huge abris are intervolven with surface part of the cave system, which is represented by huge chasm of *Mala* and *Velika dolina* with running water. Lengths of dolines is not counted to the total length of the system. Separate parts are intervolven by water and/or by location inside surface circumference of entry parts.

Data of system components and other natural heritage units are presented in individual inventory foils.

Date/s of visit/s: more than 40 visits pending May 1973 and

Date of last visit: 9.06.93

STATUS preservation: > D. Rojšek, 1990, Human Impact on Škocjanske jame System, Studia casologica 2: 120-132, Brno.

Basic source/s: Notes and computations of the caves surveys notes of terrain sights and plans of spelaeological objects in cadastres of *Društvo za raziskovanje jam Ljubljana* and *Institut za raziskovanje krasa ZRC SAZU*

Author/s of data: Daniel Rojšek Author/s of description: Daniel Rojšek

Processed by: Andrej Pokorn & Daniel Rojšek Date/s of processing: 15.12.91, 31.8.1992, 12.09.92, 27.02.93, 02.03.93

Date of the last change/s: 11.03.93

^1 By the name Škocjan Cave System 11 locationaly and geneticaly intervolven spelaeological objecs are designated. There are same problems by names of the parts. German names were given by official discoverers from German-austrian alpine club, but some Slovene toponyms and names of brave men were noticed. Cave administration of CAI SAG italianised the spelaeo-names, Slovene origin names were deddited. The system have not been undertook sistematically for a long time by Slovene cavers and spelaeologists after association to motherland, but improper names have not been solved, yet. German names *grotte* and *höhle* have been translated to *jama*, unaccording to spelaeotype of cavern (for example: *Tiha jama* is not cave, but gallery, *Schmidlova jama* is not cave, but hall and so on). Names of the system parts are used as are enforced by locals and cave guides, respectful original names as it is possible and by regarding Slovene spelaeomorphogenetical terms. Local hireling cavers, virtual discoverers were probably given names by their own, but A. Hanke was put down only official german names to the first cave plane.

^2 Y, X in Z coordinate are taken by cave cadastre of *Institut za raziskovanje krasa ZRC SAZU* and centre of *Okruglica* entrance is noticed. Level of *Martelovo jezero* is surveyed by laser theodolit.

^3 The system has not been discovered, yet. The lenght is a sum of the singular parts quoted in the signature, the depth is a altitude difference beetween the lowest point of *Velika dolina* circumference (425 m), the ponor level (317) and average water level in *Martelovo jezero* (214). The lowest points of runoff syfon and of the newest discoveries after the syfon should be noticed, but enough exact data have not been available, yet.

^4 The system can be treated as a part of *Velika voda - Reka* proper and wider channel networks or as a part of *Timav* karst hinterland with the *Soča* drainage area.

Fig. 2.

- 1 Škocjanski jamski splet - *Škocjan Cave System*:
 I. geol., I. geom., II. hidrl., III. bot., III. den., III. for., IV. zoo.
 2 Škocjanska jama - *Škocjan Cave*:
 I. geol., I. geom., II. hidrl., IV. zoo.
 3 Mahorčičeva dvorana - *Mahorčič Hall*:
 I. geol., I. geom., II. hidrl., IV. zoo.
 4 Jezero v Mahorčičevi dvorani - Lake in *Mahorčič Hall*: II. hidrl.
 5 Czörnigova dvorana - *Czörnig Hall*:
 I. geol., I. geom., II. hidrl., IV. zoo.
 6 Marinitscheva dvorana - *Marinitsch Hall*:
 I. geol., I. geom., II. hidrl.
 7 Škocjanski prelom - *Škocjan Break*: I. geol., I. geom.
 8 Rov - Gallery: I. geol., I. geom., II. hidrl.
 9 Sigove tvorbe Rova - Cave Corals of *Rov*: I. geol., I. geom.
 10 Mala dolina - Small Doline:
 I. geol., I. geom., II. hidrl., III. bot., IV. zoo.
 11 Kalonci Betancova -
 Farmhouse Small Entry of *Betanc*: I. geom., III. bot.
 12 Reka v Mali dolini -
Velika voda - *Reka* River in Small Doline: II. hidrl.
 13 Rečni "vodnjak".
 River's "Well - Pothole": I. geol., I. geom., II. hidrl., III. bot.
 14 Most med Malo in Veliko dolino -
 Natural Bridge between Small and Big Doline:
 I. geol., I. geom., II. hidrl., III. bot., IV. zoo.
 15 Miklov skedenj - *Mikulč H.S.* Hay Store:
 I. geol., I. geom., II. hidrl., III. bot., IV. zoo.
 16 Jezero pod Miklovinim skedenjem -
 Lake above *Mikulč* Hay Store: II. hidrl.
 17 Zgornje okno pod Miklovinim s. -
 Upper Window above *Mikulč* H.S.: I. geol., I. geom.
 18 Korita pod Miklovinim skedenjem -
 Erosion Channels above *Mikulč* H.S.:
 I. geol., I. geom., II. hidrl., III. bot.
 19 Spodnje okno pod Miklovinim s. -
 Lower Window above *Mikulč* H.S.: I. geol., II. hidrl.
 20 Stranski rov Miklovega s. -
 Side Gallery of *Mikulč* H.S.: I. geom.
 21 Slap pod Miklovinim skedenjem -
 Waterfall above *Mikulč* H.S.: II. hidrl.
 22 Lepi žeglj (Prinula auricula) -
Primula auricula Growing Site: III. bot.
 23 Veliki dolina - Big Doline:
 I. geol., I. geom., II. hidrl., III. bot., IV. zoo.
 24 Slap v Veliki dolini - Waterfall in Big Doline: II. hidrl.
 25 Jezero v Veliki dolini - Lake in Big Doline: II. hidrl.
 26 Podorne skale v Veliki dolini -
 Boulders in Big Doline: I. geom.
 27 Jama strahov - Cave of Ghosts: I. geol., I. geom.
 28 Pruker - *Pruker* or Abri of the *Brucker Family*:
 I. geol., I. geom.
 29 Tominčeva jama - *Tominč* Cave: I. geol., I. geom.
 30 Sigove tvorbe na stenah Velike doline -
 Cave Corals of Big Doline Walls: I. geol., I. geom.
 31 Šumeča jama in Tibi rov - Rustle Cave and Silent Gallery:

I group of natural heritage units - some elements of relief or geological (I. geol.) and geomorphological (I. geom.) heritage;
 II. group of natural heritage units - hydrological (II. hidrl.) and nival-glacial or hydrological heritage;
 III. group of natural heritage units - some elements of soil and vegetation or pedological and botanical, botanical (III. bot.), dendrological (III. den.) and festosal (III. for.) heritage;
 IV. group of natural heritage units - some elements of animality or zoological (IV. zoo).
 There are no units of V. group - natural heritage with anthropological elements or formed heritage (parks, gardens and colonnades of trees)

SLOVENE AND TRANSLATED NAMES, POSITIONS, GROUP AND SPECIES OF NATURAL HERITAGE UNITS OF THE ŠKOCJANSKI JAMSKI SPLET

Fig. 3. a

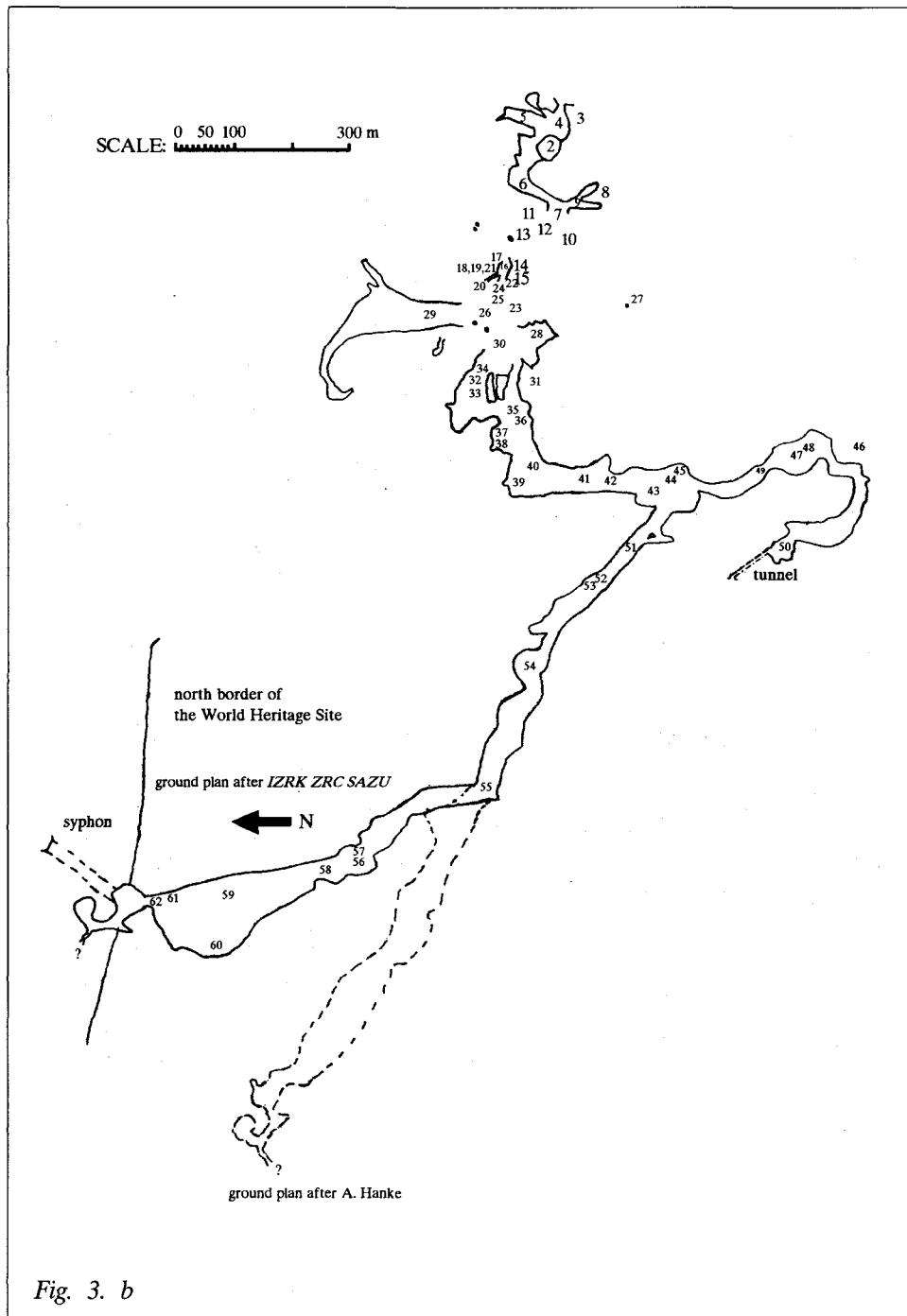


Fig. 3. b

and 58 "kal", but Gams (1973, 11) all of them quoted by English term "sinkhole pond".

"Lokev" is man-made shallow-hole, the most interesting hydrogeographical unit where epikarst water is captured. In the past this water was used for drinking. Nowadays, due to water supply they are no more kept but some of them are used for children swimming or water games.

On the other side all the preserved samples of "kal" were registered too; they are man-made also and maintain open water fed by rain only and are used as drinking water for cattle.

Both phenomena are important from the ecological point of view or as units of the second, the third or the fourth group of natural heritage; in some cases as the first group even.

NATURAL HERITAGE INVENTORY OF THE ŠKOCJAN CAVE SYSTEM

Brief inventory of natural heritage of the Škocjan World Heritage Site was done by brief methodology of inventarisation (Rojšek 1989). After the first inventory of the Site methodology of inventarisation has been improved and new inventory prepared (Rojšek 1994). Parts of the system were determined (Fig. 1) and 62 unit of the heritage processed (Fig. 3).

The system consists of 11 speleological objects linked by the Velika Voda - Reka river or by position inside huge collapse dolines (Velika and Mala Dolina) as follows: Škocjanska Jama (1) with Okroglica (1a) and Rov (1b), Velika (2) and Mala (3) Koščakova Jama, Rečni Vodnjak (4), Miklov Skedenj (5), Jama (6), and Jamica (7) Nad Jezerom, Tominčeva Jama (8), Ozka Špilja (9), Jama Strahov (10), and Šumeča Jama (11) with Pruker (11a) and Tihi Rov (11b). The parts of the system are displayed on Fig. 1.

The most frequent units (21 specimen) of the first and the second group of the natural heritage (Rojšek 1994-2, Fig. 2) appear in the inventory: 14 units belong to the first group only; 11 to the second group; 6 to the first three groups; 4 to the first four groups; 2 to the first or the third group; 2 to the first and the fourth group; 1 to the first, second and fourth group and 1 to the third group only. There are no units of the fifth group registered in this area.

Among the units of the first group belong the huge cave chambers (a volume of Martelova Dvorana (Fig. 3, No. 59) is estimated to 2.100.000 m³), stalagmites (Orjaki height (Fig. 3, No. 48) up to 15 m), and massive gours (Fig. 3, No., 45). Evorsion channels and fast deposition of flowstone are very important too. There are 8 river lakes (7 underground lakes, up to 110 m long and 50 m large) and 3 waterfalls (5 m, 12 m, 6 m) belonging to the second group. Growing sites of Alpine species *Primula auricula L.* and Mediterranean fern *Adinatum capillus veneris L.* are the most exceptional units

of the third group. Some endangered bird and bat species are noticed within the fourth group.

The most important feature is Šumeča Jama with Pruker and Tihi Rov (Fig. 1. No. 11 & Fig. 3, No. 28, 31-62) where 32 or more than half of the units were processed, but it is known that the majority of the system natural heritage units is located in this cave. Access to these units in the cave is the most difficult as the cave's volume is one of the greatest on the Earth.

After the last inventarisation the unique site of cave pearls was discovered in Tominčeva Jama (Fig. 1, No. 8 & Fig. 3, No. 29).

The inventory is graphically introduced by a printed specimen inventory foil presenting the System (Fig. 2); Fig. 3 provides groundplan of locations and the names of the units.

CONCLUSION

Nemo propheta in patria, however we daresay that more than 200 units of natural heritage may be inventoried in the Škocjan Cave System, not including the natural heritage in the Škocjanski Kras and Vremska Dolina - the extended Sites of Škocjan.

A team of cavers and experts for the inventarisation should be organized to confirm or to deny the prediction if the responsible organs of the Republic of Slovenia recognize a need to support such inventarisation of the protected area.

REFERENCES

- Cave Register, Situation November 1995; Inštitut za raziskovanje krasa ZRC SAZU, Postojna
- Drašček, E. & Gorkič, M. & Osmuk, N. & Rojšek, D. & Sušnik, M., & Svetina, J., 1989: Krajinske zasnove Škocjan (Landscape Plan Škocjan). Typeprint of branch base for natural and cultural heritage conservation in the World Heritage Site, the first natural heritage inventory of wider protected area. Zavod za varstvo naravne in kulturne dediščine Gorica v Novi Gorici
- Gams, I./Ed. 1973: Slovenska kraška terminologija. Ljubljana
- Gorkič, M. & Markič, M. & Jamnik, A. & Pokorn, A. & Rojšek, D. & Sušnik-Lah, M., 1990: Inventar naravne dediščine občine Ilirska Bistrica. Zavod za varstvo naravne in kulturne dediščine Gorica v Novi Gorici
- Odlok o razglasitvi naravnih znamenitosti in kulturnih spomenikov na območju občine Sežana, 1992. Primorske novice - Uradne objave, 13/17.4.1992, Koper
- Rojšek, D., 1987: Natural Heritage of the Classical Karst. Karst and Man, Proceedings of the Int. Symp. of Human Influence on Karst, 255-265,

Ljubljana

- Rojšek, D., 1989: Methodology and inventory of geological, geomorphological and hydrogeographical heritage of the World Heritage Site. In Drašček et al.
- Rojšek, D., 1990: Human Impact on Škocjanske jame System. *Studia Carsologica*, 2, 120-132, Brno
- Rojšek, D., 1994-1: Geografsko vrednotenje naravne dediščine na primeru Škocjanskega jamskega spletja z okolico in varstvo okolja. Third degree Thesis, FF, Ljubljana
- Rojšek, D., 1994-2: Inventarisation of the Natural Heritage. *Acta carsologica* 23, 111-121, Ljubljana
- Sušnik-Lah, M. & Klemenčič, B./Eds., 1990: Strokovne osnove za varstvo naravne in kulturne dediščine za izdelavo prostorskih ureditvenih pogojev za občino Sežana. Zavod za varstvo naravne in kulturne dediščine Gorica v Novi Gorici

INVENTAR ŠKOCJANSKE SVETOVNE DEDIŠČINE

Povzetek

Po predstavitvi predloga za zavarovanje naravne dediščine na matičnem Krasu (Rojšek 1987) smo na Zavodu za varstvo naravne in kulturne dediščine Gorica v Novi Gorici dopolnili prvi inventar naravne dediščine Krasa (Sušnik-Lah & Klemenčič/Eds. 1990) s pripravo strokovnih osnov za varstvo naravne in kulturne dediščine pri izdelavi prostorskih ureditvenih pogojev za tedanjo občino Sežana. Registrirali smo 754 enot naravne dediščine, med katerimi izstopajo hidrogeografski pojavi.

Tedaj smo namreč na Krasu, "brezvodni" pokrajini, registrirali 72 vodnih pojavov, štirinajst primajo lokev, osem in petdeset pa kal. Gams (1973, 11) pojava enači, vendar gre za dve različni umetni hidrogeografski kraški tvorbi. Lokev je plitva izkopana vodna globel, ki jo napaja epikraška voda. V preteklosti so jo uporabljali za pitno vodo. Registrirali smo vse ohranjene kale, ki predstavljajo umetno narejene in vzdrževane zbiralnice deževnice za napajanje živine. Oba pojava sta pomembna z ekološkega vidika.

Skupščina občine Sežana je razglasila vse naravne znamenitosti (odlok 1992), ki jih navajamo v poročilu (Rojšek 1987).

Za izdelavo krajinske zasnove smo pripravili kratek inventar naravne dediščine zavarovanega ozemlja Škocjanske svetovne dediščine (Rojšek 1989). Po tem prvem inventarju smo izboljšali metodologijo in izdelali nov inventar naravne dediščine Škocjanskega jamskega spletja (Rojšek 1994). Na zavarovanem ozemlju smo registrirali 146 enot naravne dediščine, strokovno pa smo jih obdelali 62 (Sl. 3). Določili smo tudi dele jamskega spletja (Sl. 1). Tega sestavlja 11 speleoloških objektov: Škocjanska jama (1) z Okroglico (1a) in

Rovom (1b), Velika (2) in Mala (3) Koščakova jama, Rečni vodnjak (4), Miklov skedenj (5), Jama (6) in Jamica (7) nad jezerom, Tominčeva jama (8), Ozka špilja (9), Jama strahov (10) in Šumeča jama (11) s Prukerjem (11a) in Tihim rovom (11b). Ponikalnica Velika voda - Reka in lega znotraj oboda Velike in Male doline jih povezujeta v jamski splet.

Največ enot (21 primerkov) pripada prvi in drugi skupini naravne dediščine (Rojšek 1994-2; Sl. 2); 14 enot sodi samo v prvo, 11 pa samo v drugo skupino; 6 v prvo, drugo in tretjo; 4 v prvo, drugo, tretjo in četrto; 2 v prvo in tretjo; 2 v prvo in četrto; ena v prvo in četrto in ena v tretjo skupino naravne dediščine. Na zavarovanem ozemlju ni enote naravne dediščine, ki bi sodila v peto skupino.

V prvi skupini omenimo največje jamske dvorane, stalagmite in ponice v Sloveniji, korita in hitro odlaganje sige. Osem jezer in trije slapovi sodijo v drugo skupino. Rastišča lepega jegliča (*Primula auricula L.*) in venerinih laskov (*Adinatum capillus veneris L.*) so med največjimi posebnostmi v tretji skupini, v četrti pa omenimo ogrožene vrste ptičev in netopirjev.

Najpomembnejši naravni pojav je Šumeča jama s Prukerjem in Tihim rovom, kjer smo obdelali 32 ali dobro polovico vseh enot naravne dediščine Škocjanskega jamskega spleteta. Predvidevamo, da leži večina enot naravne dediščine ravno v tej jami. Dostop do posameznih naravnih pojavov spleteta je v njej najtežavnejši, kajti njena prostornina sodi med največje na Zemlji.

Po zadnji inventarizaciji smo v Tominčevi jami (Sl. 1, št. 8 & Sl. 3, št. 29) odkrili edino znano nahajališče jamskih biserov.

Inventar predstavljamo grafično s primerkom inventarnega lista Škocjanskega jamskega spleteta (Sl. 2) in tlorisom lokacij enot naravne dediščine z imeni (Sl. 3).

Nemo propheta in patria, vendar si upamo napovedati, da Škocjanski jamski splet vsebuje več kot 200 enot naravne dediščine, skupaj z naravno dediščino Škocjanskega krasa in Vremse doline pa je teh enot še precej več. Skupina jamarjev in strokovnjakov za inventarizacijo bi napoved potrdila oziroma ovrgla, če bi se odgovorni organi Republike Slovenije zavedli svoje dolžnosti in finančno podprli inventarizacijo zavarovanega ozemlja.