

IUCN Conservation Outlook Assessment 2017 **(archived)**

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Please note: this is an archived Conservation Outlook Assessment for Caves of Aggtelek Karst and Slovak Karst. To access the most up-to-date Conservation Outlook Assessment for this site, please visit <https://www.worldheritageoutlook.iucn.org>.

Caves of Aggtelek Karst and Slovak Karst

SITE INFORMATION

Country:

Hungary, Slovakia

Inscribed in: 1995

Criteria:

(viii)

Site description:

The variety of formations and the fact that they are concentrated in a restricted area means that the 712 caves currently identified make up a typical temperate-zone karstic system. Because they display an extremely rare combination of tropical and glacial climatic effects, they make it possible to study geological history over tens of millions of years. © UNESCO

SUMMARY

2017 Conservation Outlook

Good

The conservation outlook for the karst features of the site is positive overall. Only about 1% of the caves are open for visitation and careful monitoring programmes are in place. Protection and management of the karst areas is relatively effective both in Hungary and Slovakia and on transboundary level. However, there are some concerns regarding the lack of resources, particularly in Slovakia where the current staff numbers are insufficient and significantly lower than the staff numbers of the Aggtelek National Park in Hungary. Certain areas will require improvement, including better cooperation between different institutions and better engagement of local communities. Potential threats, such as pollution from agricultural activities in the broader region, will require monitoring and careful planning, including development of an integrated management of the entire water catchment and this will need to be supported by adequate funding in the long term.

Current state and trend of VALUES

Good

Trend: Stable

More than 99% of the Caves of Aggtelek Karst and Slovak Karst is preserved in its original natural condition and is well protected. The other 1% has been substantially modified as “show-caves” to allow human use, which includes 300,000 visitors annually (SoOUV, 2013). These caves are also in good condition and monitoring programmes are in place.

Overall THREATS

Low Threat

Current threats to the site’s values (large number of visitors, associated litter, and illegal garbage disposal in the surrounding area and the effects of climate

change) are relatively low but together add up to a source of concern for the conservation of the site's values. Potential threats from increasing number of visitors, as well as pollution from different activities in the area, require application of the precautionary principle, monitoring and careful planning, including development of an integrated management of the entire water catchment.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Protection and management of karst features is relatively effective in both countries. An integrated management plan has been prepared for the transboundary site. The administrative bodies in two countries also carry out joint projects including research and monitoring. However, there are some concerns regarding the lack of resources, particularly in Slovakia where the current staff numbers are insufficient and significantly lower than the staff numbers of the Aggtelek National Park in Hungary.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► **Remarkable diversity of caves types and important evidence of geologic history**

Criterion:(viii)

The site is distinctive in its great number (with 712 recorded at time of inscription) of different types of caves found in a concentrated area. Geological processes causing karst features to be buried by sediment and then later reactivated or exhumed provide evidence pertaining to the geologic history of the last tens of millions of years. Relicts of pre-Pleistocene karst (i.e. more than about 2 million years old) are very distinct in the area, and many of them show evidence for sub-tropical and tropical climate forms. These include rounded hills that are relicts of tropical karst later modified by Pleistocene periglacial weathering. This suite of paleokarst features, showing a combination of both tropical and glacial climates, is very unusual and is probably better documented in the Slovak Karst than anywhere else in the world. These caves are also noted for having the world's highest stalagmite, aragonite and sinter formations and an ice filled abyss, which considering the territory's height above sea level, is a unique phenomenon for central Europe (SoOUV, 2013).

Other important biodiversity values

► **Important cave biodiversity**

Cave and subterranean water fauna are of particular scientific interest. Beetles and other insects are abundant, 2000 butterfly species have been identified. Cave worms are often found in sand and clay deposits whereas molluscs are associated with underground streams, and crustaceans occur including an endemic species of primitive crab. 500 species of animals live in the caves, many of them endemic. A total of 21 bat species have been identified in the Slovak and Aggtelek Karst (SoOUV, 2013).

► **Above-ground biodiversity**

A unique biotope arises where two floral sectors (Carpathian and Pannonian) overlap, and consequently many rare endemics can be found throughout the territory. Approximately 70% of the territory consists of deciduous woodland dominated by hornbeam and oak. The fauna includes wolf, lynx, red deer, roe deer, wild boar, wild cat and badger. Nesting bird species include: rock bunting, black stork, corncrake, imperial eagle, dipper, Ural owl, saker falcon, short-toed eagle, honey buzzard (SoOUV, 2013).

Assessment information

Threats

Current Threats

Low Threat

Despite the strict conservation activities, the fact that the caves are visited by such a large number of visitors might eventually lead to some damage and pilferage. Effects of new threats, such as climate change, are hard to predict. However, the level of threat remains low.

► **Solid Waste**

Very Low Threat

Inside site

Outside site

Elimination of illegal garbage disposal and building debris in the surrounding settlements is necessary to prevent pollution of the water in the caves system (SoOUV, 2013) .

► **Water Pollution**

High Threat

Inside site, widespread(15-50%)

Outside site

There is a serious pollution problem which is contaminating cave waters and threatening the park's ecosystem. This arises from the increased use of pesticides and fertilizers in the surrounding areas and from tourist's vehicles and nearby industry (IUCN, 2000).

► **Tourism/ visitors/ recreation**

Very Low Threat

Inside site, localised(<5%)

More than 99% of the Caves of Aggtelek Karst and Slovak Karst is preserved in its original natural condition and is well protected. The other 1% has been substantially modified as “show-caves” to allow human use, which includes 300,000 visitors annually (SoOUV, 2013). Despite the strict conservation activities, the fact that the caves are visited by such a large number of visitors might eventually lead to some damage and pilferage.

► **Storms/Flooding, Temperature extremes**

High Threat

Inside site, throughout(>50%)

Outside site

Climate change manifests through its effects on flora and fauna, as well as decreased ice in the ice caves Silica and Dobsina, erosion of soil and deposition of sediments in caves and associated possible changes in hydrological regime. Water scarcity above the ground and droughts can also affect the hydrologica regime of the caves (Periodic report, 2014; IUCN Consultation, 2017).

Potential Threats

Low Threat

There is a potential risk of pollution of the cave system from mining, agricultural and forestry activities on the land in the area. Protection of the unique geological features of the site requires integrated management of the entire water catchment.

► Other

Low Threat

Inside site, widespread(15-50%)

Outside site

The cave system is exceptionally sensitive to environmental changes, including mining, agricultural and forestry activities. Maintenance of the integrity of active geological and hydrological processes (karst formation and the development or evolution of stalagmites and stalactites) requires integrated management of the entire water catchment area (SoOUV, 2013).

► Oil/ Gas exploration/development

High Threat

Inside site, scattered(5-15%)

An oil and gas pipeline crosses the Slovak Karst national park with approximately 25 kilometres of the pipeline running through the national park territory. While the necessary monitoring and prevention measures are in place (<http://www.transpetrol.sk/en/category/ecology-and-assistance/>), a potential oil leakage would cause serious impacts on the property.

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

There is one sizeable settlement (Silica) and two hamlets within the Slovak

protected area and two villages (Aggtelek and Jósvalfő with approximately 1,100 inhabitants) inside the Aggtelek National Park's boundaries (SoOUV, 2013). Some challenges remain related to ensuring better involvement of key stakeholders in site management, communications and benefits sharing.

► **Legal framework**

Mostly Effective

All of the caves are State-owned and their protection is guaranteed by the Act no. LIII. 1996 on nature protection in Hungary and by the Slovak Constitution no. 90/2001, and the Act of Nature Protection and Landscape no. 543/2002 in Slovakia, irrespective of ownership or protection status of the surface areas (SoOUV, 2013). The Aggtelek Karst (Hungary) was first declared a protected landscape area in 1978 under decision No.8/1978 of the President of the National Authority for Environment and Nature Conservation (OKTH), and in 1985 was designated a national park by law-decree No.7/1984 (XII.29.) OKTH (IUCN, 2000). The Slovak Karst Landscape Protected Area was established in 1973 and in 2002 the Slovak Karst National Park was designated (Act No. 543/2002). The protection arrangements were considered highly effective in Hungary and sufficiently effective in Slovakia (Periodic Report, 2006). The latest Periodic Report (2014) stated that legal framework provided an adequate basis for effective management and protection but that some deficiencies remained.

► **Enforcement**

Some Concern

Permanent monitoring and control of caves' condition used to be carried out by Speleological Guardian Service (Speleologická strážna služba), which due to lack of financial sources stopped this activity in 2010 (Gaál et al., 2015). Closing of some caves for public, camera systems, technical equipment and protective zones of caves have improved the situation.

► **Integration into regional and national planning systems**

Mostly Effective

Both national parks are well integrated into the regional systems of protected areas and are also Multi-Internationally Designated Areas (Natura 2000, Ramsar site, Biosphere Reserve). In Slovakia the caves are located within the

territory of the Slovensky Kras National Park.

► **Management system**

Some Concern

In Slovakia, management of the caves system is implemented by the Slovak Caves Administration in Liptovský Mikuláš as part of State Nature Conservancy of Slovak Republic. Management of terrestrial ecosystems is implemented by the Authority of the Slovak Karst National Park in Brzotín. Aggtelek Karst is administered by the Aggtelek National Park Directorate. The administrative bodies in two countries carry out joint projects including research, protection and monitoring (SoOUV, 2013). An Integrated Management Plan has been prepared for the transboundary site. However, it has not been approved yet. Coordination between different administrative bodies and levels could be improved (Periodic report, 2014).

► **Management effectiveness**

Some Concern

Protection of the caves appears effective. However, there is some room for improvement (for example, in Slovakia management activities related to surface areas and the cave environment appear not well connected). Sharing of economic benefits derived from tourism with local people in area and their involvement could also be improved. Use of the caves appears better planned and realized in Hungary (Gemer Korzar, 2015). Results of management evaluation (Tomaškinová & Tomaškin, 2013) showed a need for more effective management and protection in the Slovak Karst national park area, including in such topics as zoning, cooperation, marketing and PR, communication and involvement of relevant stakeholders and regional development).

► **Implementation of Committee decisions and recommendations**

Data Deficient

No recent Committee decisions.

► **Boundaries**

Mostly Effective

The site's northern and southern boundaries are defined by the geological borderline between karstic and nonkarstic rocks, whilst the western and northeasternmost points comprise Jelsava town and Jasov village, respectively (IUCN, 2000). Boundaries are adequate to maintain the property's values. However, they are not well known by local residents, communities and landowners (Periodic report, 2014).

► **Sustainable finance**

Some Concern

In both countries the national parks receive budget from the state which appears adequate, particularly in Hungary. Yearly budget of Aggtelek NP is approx. 4,25 mil. Euro. On Slovak side, data on Protected Areas expenses is currently not comparable. State Nature Conservancy of the Slovak Republic does not record expenditures in a way that would allow to compare unit expenditure by national parks or protected landscape areas. Just for comparison whole budget of State Nature Conservancy of Slovak Republic (9 National Parks, 14 Protected Landscape Areas including Slovak Cave Administration) in 2015 year was only 7,90 mil. Euro (State Nature Conservancy, 2015). Existing sources of funding coming from few sources are not secure in the long-term and could be improved to meet management needs (Periodic report, 2014). Additional financial resource are needed to support control and monitoring activities, as well as risk preparedness and contingency planning for potential accidents (IUCN Consultation, 2017).

► **Staff training and development**

Mostly Effective

In Slovakia, there are 11 administrative staff members of national park administration and 6 caves open for public have administrator and few guides as staff members of Slovak cave administration. Due to lack of financial resources, the current staff numbers are insufficient, especially the number of cave guards (IUCN Consultation, 2017). In Hungary, the Aggtelek National Park Directorate is comprised of 81 staff members. Speleological staff in both countries receive regular training.

► Sustainable use

Mostly Effective

The current levels of visitation appear sustainable, however, careful monitoring is required to ensure conservation of the site's values.

► Education and interpretation programs

Mostly Effective

Both countries have good education and interpretation programmes in place (Periodic report, 2006). Interpretative trail, exhibition, promotion materials including film and lectures have been developed for visitors (Gaál et al., 2015). However education and awareness building activities could be still improved (Periodic report, 2014).

► Tourism and visitation management

Highly Effective

Interpretation of cave protection, cave values and cave benefit for local people is very effective. There are a lot of materials available in both countries. A tourism management plan is available on both countries (Periodic Report, 2006). Visitation is relatively stable (Nudziková, 2012). Visitor rules for caves exist and are being applied.

► Monitoring

Mostly Effective

Regular monitoring of the caves' state and development is carried out by the Aggtelek National Park Directorate in Hungary and the Slovak Caves Administration (Periodic Report, 2006)

► Research

Mostly Effective

In Slovakia, different home and foreign institutions (e.g. Slovak Academy of Sciences, Czech Academy of Sciences) are involved in the research activities (mainly geological, geomorphological, hydrogeological, speleoclimatic, biospeleologic studies) (Gaál (2015). Research in Hungarian caves is undertaken by the Hungarian Academy of Science in collaboration of the

Aggtelek National Park Directorate (Gruber, 2015). The scientific research is increasing (e.g. biological, archaeological and hydrogeological research of the caves). See: Gruber Péter, Gaál Lajos (szerk.) 2014: A Baradla-Domica barlangrendszer. A barlang, amely összeköt. — Aggteleki Nemzeti Park Igazgatóság, Jósvafő 512 p. ISBN 978-615-80050-0-5 (in Hungarian and in Slovakian).

Overall assessment of protection and management

Mostly Effective

Protection and management of karst features is relatively effective in both countries. An integrated management plan has been prepared for the transboundary site. The administrative bodies in two countries also carry out joint projects including research and monitoring. However, there are some concerns regarding the lack of resources, particularly in Slovakia where the current staff numbers are insufficient and significantly lower than the staff numbers of the Aggtelek National Park in Hungary.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

Management programs are mainly focused on the internal threats. The few threats from outside the site, such as water flow from arable agriculture lands, have not been addressed to any extent.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Remarkable diversity of caves types and important evidence of geologic history

Good

Trend:Stable

More than 99% of the Caves of Aggtelek Karst and Slovak Karst is preserved in its original natural condition and is well protected. The other 1% has been substantially modified as “show-caves” to allow human use, which includes 300,000 visitors annually (SoOUV, 2013). These caves are also in good condition and monitoring programmes are in place.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Good

Trend: Stable

More than 99% of the Caves of Aggtelek Karst and Slovak Karst is preserved in its original natural condition and is well protected. The other 1% has been substantially modified as “show-caves” to allow human use, which includes 300,000 visitors annually (SoOUV, 2013). These caves are also in good condition and monitoring programmes are in place.

► Assessment of the current state and trend of other important biodiversity values

Data Deficient

Trend: Data Deficient

There is little information available about the state of the site’s above-ground biodiversity.

Additional information

Benefits

Understanding Benefits

► Outdoor recreation and tourism

Tourism generates considerable economic benefits. In past some caves were

used for speleotherapy - medical effects of stay in cave environment.

► Importance for research, Contribution to education

Unique natural phenomena (e.g. rareness of ice-filled caves) including archaeological findings and historical monuments served as exemplary study objects for science and education.

Summary of benefits

The site contributes to the national economies through tourism and is also important for science and education.

Projects

Compilation of active conservation projects

No	Organization/individuals	Project duration	Brief description of Active Projects
1	Aggtelek National Park Directorate		Several conferences, symposiums and workshops
2	Slovak Caves Administration		Organization of Conferences, Symposiums and Workshops (e.g. in October 2017 there will be already 11th Scientific Conference - Research, Use and Protection of Caves), projects supported by EU ERDF (e.g. Ensuring the care of natural monuments - waste disposal from the Dobšinská Ice Cave, Adaptation of entry to the Gombasecká Cave, Information and Training Center Domica, Reconstruction of the Walking Trail in Dobšinská Ice Cave etc.)
3	Local Action Group Kras	To: 2017	The Association for the implementation of the jointly developed integrated Territorial Sustainable Development Strategy

No	Organi zation/ individ uals	Proj ect dur atio n	Brief description of Active Projects
4	Eastern Slovak Museu m of Košice	To: 201 7	Different projects in cooperation with NP administration - e.g. conclusions and recommendations for the management of selected parts of the Slovenský Karst NP area (Interreg SK-HU), destruction of invasive species, visitors' survey, bats and birds monitoring etc.
5	WWF Slovaki a	Fro m: 201 7 To: 201 9	Project is focused on green and gray infrastructure in the Carpathians - pilot area is Slovak Karst (Interreg Danube).

REFERENCES

Nº References

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- 1 Aggtelek NP Board of directors, report, 2014, 36 pp., http://anp.nemzetipark.gov.hu/_user/browser/File/uvezgzeb/a...
-
- 2 Baross G. (ed.), 1998: Az Aggteleki Nemzeti Park (Aggtelek National Park). — Mezőgazda Kiadó 519 p. (in Hungarian)
-
- 3 Bella P. & Holúbek P., 1999: Zoznam jaskýň na Slovensku (List of Caves in Slovakia). Bratislava: Ministerstvo životného prostredia SR, 268 pp.
-
- 4 Bella P. (ed), 2000: Výskum, využívanie a ochrana jaskýň (Research, using and conservation of Caves). Zborník referátov z vedeckej konferencie. Liptovský Mikuláš.
-
- 5 Bella P. et al., 2015: Outstanding values of the WHS “Caves of the Slovak and Aggtelek Karst”. Aragonit 20 (1): 15-23. Slovak Caves Administration, Banská Bystrica, ISSN 1335-213X. <http://www.ssj.sk/sk/clanok/448-casopis-aragonit-c-20-1>
-
- 6 Gaál L. et al., 2015: Research, protection and management of the WH caves in Slovakia: an overview of activities since 1995. Aragonit 20 (1): 24-43. Slovak Caves Administration, Banská Bystrica, ISSN 1335-213X. <http://www.ssj.sk/sk/clanok/448-casopis-aragonit-c-20-1>
-
- 7 Gemer Korzár (article in newspaper, 22.9.), 2015: <https://gemer.korzar.sme.sk/c/8011137/kiska-potencial-domic...>
-
- 8 Gruber P., 2015: Research, protection and management of inorganic nature in the Aggtelek Karst: 20-years’ retrospective. Aragonit 20 (1): 44-52. Slovak Caves Administration, Banská Bystrica, 76 pp. ISSN 1335-213X. <http://www.ssj.sk/sk/clanok/448-casopis-aragonit-c-20-1>
-
- 9 IUCN, 2000: Advisory Body Evaluation.
-
- 10 Jakál J. (ed.), 2005: Jaskyne svetového dedičstva na Slovensku (The Caves of the World Heritage in Slovakia). Liptovský Mikuláš: Správa slovenských jaskýň, 159 pp. ISBN 80-8064-235-4.
-
- 11 Nature conservation objectives, Strategies in the Aggtelek National Park, Z öld Horizont journal 1 | 2014/4 melléklet, 4 pp., http://bnpi.hu/doc/2014/12/ZH_31_melleklet_web.pdf
-
- 12 Nudziková Ľ., 2012: Caves of WH UNESCO in Slovakia. Power Point Presentation, 13 pp. <http://www.unesco-slovakia.sk/sk/prirodne-pamiatky/jaskyne-...>
-

No **References**

13 Periodic report, 2006.

14 Revision of Environmental Expenditure - Final Report, Institute of Environmental Policy, Bratislava 2017, 64 pp., http://www.minzp.sk/files/iep/zaverecna_sprava_zivotne_pros...

15 Székely K., 2003: Magyarország fokozottan védett barlangjai (Strictly protected caves of Hungary) . — Mezőgazda Kiadó 426 p. (in Hungarian)

16 Tomaškinová J. & Tomaškin J., 2013: Integrated management of NP Slovak Karst. Belianum Banská Bystrica, 148 pp. ISBN 978-80-557-0589-7. <https://publikacie.umb.sk/prirodne-vedy/environmentalistika...>

17 UNESCO, 2010: World Heritage Sites. A Complet Guide to 890 UNESCO World Heritage Sites. UNESCO Publishing. Firefly Books. New York, U.S.A. 840 pp.

18 Vološčuk I. & Tomaškinová J., 2011: Ekologický, vedecko-výskumný a environmentálny potenciál krajiny a ekosystémov Svetového dedičstva Slovenský kras (Ecological, Scientific-Research and Environmental Potential of Landscape and Ecosystems of the Slovak Karst World Heritage). Banská Bystrica: Matej Bel University, Faculty of Nature Sciences, 132 pp. ISBN 978-80-557-0291-9.

19 Vološčuk I. et al., 2011: Dynamika sukcesných procesov, štruktúry a ekologickej integrity ekosystémov Slovenského krasu (The Dynamics of succession processes, structure and ecological integrity of the Slovak karst ecosystem´s). Banská Bystrica: Matej Bel University, Faculty of Nature Sciences, 240 pp. ISBN 978-80-557-0296-4.

20 WHC, 2013: Retrospective Statement of Outstanding Universal Value.

21 WHC, 2014: Periodic report - Second cycle. Section II - Caves of Aggtellek Karst and Slovak Karst. WHC, 13 pp.

22 <http://anp.nemzetipark.gov.hu/erzekeny-termeszeti-teruletek>

23 <http://www.anp.hu/en/vilagorokseg> (web page of Aggtelek National Park Administration)

24 <http://www.sopsr.sk/slovkras/index.html> (web page of Slovak Karst National Park Administration)

25 <http://www.ssj.sk/sk/clanok/1-svetove-prirodne-dedicstvo> (WH site - web page of Slovak Cave Administration)

No **References**

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<http://www.vilagorokseg.hu/caves-of-aggtelek-karst-and-slov...> (Hungary's official WH web page)