
Roşia Montană Mining Landscape (Romania) No 1552rev

Official name as proposed by the State Party

Roşia Montană Mining Landscape

Location

County of Alba

Municipalities of Roşia Montană and Abrud

Romania

Brief description

Roşia Montană is located in the Metalliferous range of the Apuseni Mountains. As Alburnus Maior, it was the site of extensive gold-mining activities during the Roman Empire from 106CE, with some 500 tonnes of gold being extracted in the following 166 years. Roman galleries are found in four underground localities chosen for their sources of high-grade ore. Wax-coated wooden writing tablets have provided detailed legal, socio-economic, demographic and linguistic information about the Roman mining activities, not just in Alburnus Maior but also across the wider Dacian province.

Roşia Montană was mined to a lesser extent between medieval times and the modern era. These later extractive works surround and cross cut the Roman galleries. More recently open-cast mining evidence has been practiced.

The ensemble of mining sites is set in an agro-pastoral landscape which largely reflects the structures of communities that supported the mines between the 18th and the early 20th centuries.

Category of property

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a *site*.

In terms of the *Operational Guidelines for the Implementation of the World Heritage Convention* (July 2019) paragraph 47, it is also nominated as a *cultural landscape*.

1 Basic data

Included in the Tentative List

18 February 2016

International Assistance from the World Heritage Fund for preparing the Nomination

None

Date received by the World Heritage Centre

3 March 2017

Background

This is a referred back nomination.

In June 2018, during the 42nd session of the World Heritage Committee in Manama, the State Party requested that consideration by the World Heritage Committee of ICOMOS's evaluation, which recommended inscription, be formally delayed and that the Committee refer back the nomination. This was agreed in the following decision (42 COM 8B.32):

The World Heritage Committee,

1. *Having examined Documents WHC/18/42.COM/8B and WHC/18/42.COM/INF.8B1,*
2. *Taking note of the Advisory Body's evaluation whereby the nominated property justifies Outstanding Universal Value on the basis of criteria (ii) and (iv), and meets the conditions of integrity and authenticity;*
3. *Acknowledges the official request for referral made by the submitting State Party due to ongoing international arbitration;*
4. *In compliance with paragraph 159 of the Operational Guidelines, refers the nomination of Roşia Montană Mining Landscape, Romania, back to the State Party, due to the ongoing international arbitration, and to implement the measures required to ensure the protection and management of the potential OUV of the property as identified by ICOMOS and encourages the State Party to work in close cooperation with the Advisory Bodies to this end.*

Consultations

ICOMOS has consulted TICCIH and several independent experts.

Comments about the evaluation of this property were received from IUCN in November 2017.

Technical Evaluation Mission

An ICOMOS technical evaluation mission visited the property from 25 to 30 September 2017. Problems with obtaining access to privately controlled lands during the mission limited the amount of the property that could be visited.

Additional information received by ICOMOS

ICOMOS sent a letter to the State Party on 22 September 2017 requesting additional information on the key attributes, proposed Outstanding Universal Value and criteria, ownership and state of conservation of the nominated property. On 30 October 2017, the State Party sent a response including maps depicting the locations of attributes and current land ownership, and a historic map showing surface mining works in 1869. The additional information has been incorporated into the relevant sections below.

On 22 December 2017, ICOMOS sent to the State Party an interim report requesting additional information on the justification for inscription, and protection and management.

A response from the State Party was sent on 28 February 2018 stating that the State Party was unable to provide any additional information due to a pending arbitration case involving the Romanian government and the mining company Gabriel Resources before the International Center for Settlement of Investment Disputes.

Since 2018, the State Party has not made any contact with ICOMOS.

On 31 January 2020, the nomination was re-submitted. It includes a slightly revised boundary and a re-configured justification for inscription that reflects ICOMOS's recommendations to concentrate on the ensemble of Roman gold mining remains.

On 6 February 2020, ICOMOS sent a letter to the State Party requesting clarification on the following issues: the extension of the Gabriel Resources large scale mining concession; the proposed new mining law; the proposed small scale mining within the property and the draft management plan.

The State Party responded on 21 February 2020 and their response has been taken into consideration in the finalisation of this report.

Date of ICOMOS approval of this report

12 March 2020

2 The property

Description

Located in the Apuseni Mountains of western Romania, Roşia Montană features extensive evidence of gold mining both below and above ground during the Roman period. Four gold bearing massifs are at the centre of the property -Cârnic, Lety, Orlea and Cetate – and all have underground works, while Cârnic and Cetate both have open air mines. Many related archaeological sites are present in the immediate landscape and the wider region.

The layout of the Roman mining works reveals a systematic consistency in the shape and distribution of uniform, highly engineered, workings. There are 7 km of Roman era galleries. These, do not form a single network, rather they are spread across the four massifs, and are part of a total of 80 km of galleries that have been recorded at Roşia Montană, dating from the Roman era to modern times. Roman miners were heavily selective of the highest-grade ores, which means that they left a still profitable resource for later miners using different technologies. Most Roman workings are therefore commonly intersected by later workings.

Roman archaeological sites are also present in the property. These represent residential areas, temples and necropoli used by the people who lived and worked in the mining landscape.

The Roman mining galleries in Cârnic Massif contain extensive remains of four major mining typologies: helicoidal staircase galleries, vertical stopes with roofs cut in reverse stairs, pillar-supported stopes, and stepped communication galleries. A hydraulic system was discovered in the Păru Carpeni mine, consisting of a series of four waterwheels to lift water for drainage, while treadmill powered waterwheel system has been found in the Cătălina Monuleşti galleries of the Lety Massif.

Orlea Massif has a series of Roman galleries that are open to the public as part of the mining museum. The remaining Roman galleries at Orlea have been little explored, as is the case for the Roman workings in the Cetate Massif.

Two areas of Roman surface mining are present at the Cârnic and Cetate Massifs.

Medieval galleries are found in the Văldoaia Massif. Later underground miners built a series of galleries in these massifs that cut through and connected many of the Roman mines. The humid conditions of the mines have preserved wooden artefacts including the waterwheels, wood lined drainage channels, and wooden ladders.

Beginning in the early 18th century the pace of mining intensified, and a network of header ponds was created with dams to gather water from springs, streams and snow melt for use by the ore processing works. These ponds were repaired and remained in use until the end of this type of traditional mining in the early 20th century. A railway built in the mid-19th century leads from the mines at Roşia Montană 6 km west to ore processing facilities at Gura Rosiei. Other 19th century structures are the headquarters of the mining company, and a complex of several industrial buildings including the entrance and control centre of the mine.

The town of Roşia Montană surrounding the mining headquarters has a building stock that dates primarily from the 18th to early 20th centuries including several neighbourhoods with vernacular houses, although a number have been demolished in the last two decades. Several small traditional churches with their parish ensembles also exist in the town including those of the Roman Catholic, Unitarian, Greek Catholic, and Orthodox faiths. Further afield on the eastern side of the property is the modern village of Corna which has a dispersed pattern. Three other small satellite villages are present on the edges of Roşia Montană; these are Țarina, Balmoșești, and Blidești.

An agro-pastoral landscape surrounds the mining landscape and villages. In some places new vegetation growth has reclaimed the former mining features. The villages, mining works, header ponds and the pathways

that link them form a dense network of landscape features.

History and development

The Metalliferous Range of the Apuseni Mountains is one of the richest gold deposits in Europe. Gold artefacts that date to the Bronze Age have been found nearby suggesting that small scale mining and recovery has a long history in the region. The Romans conquered Dacia in 106 CE and they began underground mining immediately after. The district of Roşia Montană was then known as *Alburnus Maior*. Romans extracted around 500 tons of gold during their 166 year rule. A series of wax coated wooden writing tablets have been found in one of the mines. The tablets reveal explicit details of mining organisation, sale and purchase contracts, receipts of loans with interest, and the sale of slaves. The evidence attests that not only Illyrians, but also Greek and Latin migrants were hired to work in the mines and organised in associations such as the *collegia aurariorum* and *societas danistaria*. The period of Roman mining lasted until 271 CE when Dacia was abandoned by the Roman army after fighting with the Goths.

Roman mineral extraction was neither extraordinary nor revolutionary technology, but it was deployed in a systematic manner. Mining was done by hand using iron tools: picks, hammers and chisels. Timbering for support was rarely used in Roşia Montană because the inclined shafts and galleries were small in cross section. Lighting was by rush lamps, and niches in the sidewalls of tunnels are commonly encountered. Many ancient lamps have been recovered. Horizontal galleries were trapezoidal in cross section. Helicoidal staircases and inclined stairway galleries connected the vertical stopes (extraction areas), and ranks of multiple water wheels aided drainage of the shafts.

Processing also followed standard methods of the time. Ore was heated and broken up before being ground into a power and then the precious metal was concentrated using water and gravity. Combined with lead, the silver-gold mixture was melted and poured into moulds which were then heated further to remove the lead by oxidation. Finally, the gold and silver were parted by using salt cementation, heating the alloy with salt in a closed chamber.

Evidence for gold mining appears again in the 13th century in the form of historical references, and these appear sporadically in the written record for the next four centuries. By 1690, the Habsburgs gain possession of Transylvania including the gold mining region of Roşia Montană. Mining activities increased during the reigns of Maria Theresa (1740-1780) and Joseph II (1780-1790) with a mix of improvements sponsored by the state and by private activity. Immigration of miners from Slovakia took place, bringing their expertise. Gunpowder blasting was used to expand the galleries and ore was transported in wagons on wooden rails. At this time, the network of header ponds was also elaborated with the water used to power stamping mills that processed the ore, many of

them privately owned. The hydraulic system was also used for dressing the ore, separating the particles of gold from the matrix. Workings from this time have been archaeologically investigated in the Cărnic Massif. In this era, the first discoveries were made of Roman wax covered wooden tablets that bore legal documents describing transactions, legal issues and the lives of the Roman mining community.

Mining continued under similar conditions during the 19th century with many small private family-run mines. The ore railway was built in mid-century and repairs of the network of header ponds continued into the early 20th century. Most mining stopped during the First and Second World Wars and all private mining was ended after the Communist takeover in 1948. Mining continued after nationalization, although now with large scale industrial methods both underground and in open cast surface mines. In the 1970's, parts of the Roman works in the Cetate Massif were destroyed by open cast mining. The state mine ceased operations in 2006; its last years of operation were subsidized by the state. Recently, a foreign mining company has attempted to restart mining at Roşia Montană, becoming a major landowner in the area, but it has not been able to gain the needed approvals to proceed.

Additional information received from the State Party on 30 October 2017 pointed out that radiocarbon dates from wooden samples from underground mining works include isolated dates from Late Antiquity (6th c. CE), the Middle Ages (late 9th - early 11th c. and 13th c.), Renaissance (16th c.), and the "modern" period (18th – 19th c.), giving an indication that underground mining continued across the centuries. The State Party acknowledges the data gaps in above ground works and points to the potential of discovering further medieval archaeological evidence in future campaigns. Also, the mining company has recently agreed to share their rescue archaeology data for heritage purposes. All features that relate to modern industrial mining activity, i.e. those that postdate 1948, have been excluded from consideration in the nomination.

3 Justification for inscription, integrity and authenticity

Comparative analysis

The State Party structured the comparative analysis to include examples of Roman mining as well as gold mining within Europe. Mining properties that have been inscribed on the World Heritage List and those placed on Tentative Lists were also examined as were other Roman mining properties within Romania and other selected mines.

The property of Las Médulas, Spain (1997, criteria (i), (ii), (iii), and (iv)) has some similarity with Roşia Montană. It was the principal Roman source of gold in the century before the development of Roşia Montană and its decline in production may have contributed to Trajan's decision to invade Dacia for its gold. However, it was a placer deposit and so was worked solely with open cast methods instead

of the combination of open cast and underground mining seen at Roşia Montană. No other inscribed properties have evidence of Roman gold mining.

One other inscribed property represents later gold mining activities in Europe. The Historic Town of Banská Štiavnica and the Technical Monuments in its Vicinity, Slovakia (1993, criteria (iv) and (v)) is noted for its silver and to a lesser extent gold mining from the 15th to 19th centuries. Banská Štiavnica grew up into a larger urban settlement than Roşia Montană, and during this time its mines operated at a larger scale and saw more technical innovation than those of Roşia Montană. The town hosted the Habsburg Mining Academy and miners and their methods immigrated from Banská Štiavnica to Roşia Montană.

Other worldwide mines and mining landscapes have been considered as well. Tr'ondëk-Klondike (Canada, Tentative List) represents the Yukon gold rush at the end of the 19th century. Ancient Lavrion (Greece, Tentative List) represents Hellenic silver mining. Mining Historical Heritage (Spain, Tentative List) is a serial site that includes one component from the Roman era at Tinto and Tharsis Rivers where both precious and base metals were mined. One other comparative site is Tresminas, Portugal, an open pit Roman mining complex that is different in nature from the underground mining works found at Roşia Montană.

Within Romania, only Bucium represents a confirmed Roman mining complex. Bucium is 6 km southeast of Roşia Montană, and is primarily an open cast mine with limited underground works.

In conclusion, ICOMOS considers that the typology of Roman mining works is much more varied at Roşia Montană compared to anywhere else. Helicoidal staircase galleries, vertical stopes with roofs cut in reverse stairs, and pillar-supported stopes are only found at Roşia Montană.

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

Justification of Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- Roşia Montană Mining Landscape is a testimony to the Roman Imperial era of gold exploitation in the Golden Quadrilateral of the Romanian Western Carpathians.
- It illustrates the strategic control and vigorous development of precious metal mining by the Roman Empire, and became after 106 CE the only significant new source of gold for the Roman Empire,

- Roman exploitation for gold occurred throughout the property, and includes over 7 km of ancient underground workings discovered to date as well as processing areas, living quarters, administrative buildings, sacred areas and necropoli, some with funerary buildings and complex architecture,
- A number of artificial lakes, formerly header ponds for ore processing greatly expanded from 1733, may have a Roman origin;
- Villages of Roşia Montană and the much smaller Corna overprint earlier Roman settlement, while steeply sloping meadows are part of agro-pastoral practices as old as the mining activity itself.

ICOMOS considers that this new justification is appropriate because Roşia Montană Mining Landscape contains the most significant, extensive and technically diverse underground Roman gold mining complex currently known in the world.

ICOMOS considers that only the Roman period mining works and associated archaeological sites have been demonstrated to have a high significance. Many of the other aspects of the cultural landscape, such as the header ponds, the 18th and 19th century villages and the agro-pastoral landscape, appear to date to later time periods and with no direct evidence for evolution from Roman times. Thus, ICOMOS considers that the property is not an evolved cultural landscape and would not be inscribed for on-going mining activities. Rather, as the boundaries contain not only many aspects of Roman mining but also remains of civil sites and necropoli, the property can be read as a fossilised mining landscape, around which agro-pastoral activities provides an appropriate context for the known mining remains and possible source of further evidence.

Integrity and authenticity

Integrity

The State Party states that the property contains all the necessary attributes to express its Outstanding Universal Value.

ICOMOS considers that all the elements necessary to express the values of the nominated property for the Roman mining period are included within the boundaries of the nominated area. The nominated property is of adequate size to ensure the complete representation of the features and processes which convey the nominated property's significance for this time. A significant proportion of the elements necessary to read and understand the values conveyed are still present and included in the nominated area. Moreover, it comprises an area in which future archaeological research will probably discover a large number of further surface and underground mining, ore processing and settlement structures of the Roman period.

Later works, especially those from the 18th, 19th and 20th centuries intersect the Roman galleries at many places. While the impacts of these later galleries do represent a loss of integrity for the earlier works, they also serve as connection tunnels, allowing access to Roman works that could otherwise have remained inaccessible.

The State Party notes that there have been two recent detrimental impacts to integrity. In 1971, opencast mining by the state company destroyed the “Fortress” on Cetate Massif, a series of Roman era openworks. In 2004, over 250 properties in the Corna valley were demolished in preparation for the resumption of opencast mining activity. Despite this loss, significant 18th and 19th century structures remain in the Corna valley. Threats remain to the state of conservation to many of the property’s standing structures.

Any proposal to resume opencast mining would represent a serious threat to the integrity of the property.

Authenticity

The nominated property contains attributes that are high in authenticity in terms of the location, form and materials of surviving historic features, with a clear sense of how, when and by whom mining shaped the land. In terms of knowledge, epigraphic and documentary evidence combined with a decade of intensive systematic archaeological investigation has provided a major contribution to the understanding of Roman mining techniques and organisation.

ICOMOS notes that there is considerable potential for future research and for new discoveries related to many periods of the region’s mining history.

ICOMOS considers that any proposal to restart large scale mining at Roşia Montană would have a severe impact on the authenticity of the property. Authenticity is considered to be highly vulnerable to new mining proposals.

ICOMOS considers that the conditions of integrity and authenticity have been met for the remains that relate to mining in the Roman period, but are highly vulnerable.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (ii), (iii), (iv) and (vi).

Criterion (ii): *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;*

This criterion is justified by the State Party on the grounds that it contains the world’s pre-eminent example of an underground Roman gold mine. It illustrates a fusion of imported Roman mining technology with locally developed techniques, unknown elsewhere from such an early era. Multiple chambers that housed treadmill operated water dipping wheels for drainage represent a Roman technique routed from Hispania to the Balkans,

whilst perfectly carved trapezoidal-section galleries, helicoidal shafts, inclined communication galleries with stairways cut into the bedrock, and vertical extraction areas (stopes) superimposed above one another with the roof carved out in steps. They are in a combination so specific to Roşia Montană that they likely represent pioneering aspects in the technical history of mining. Roşia Montană is also a testimony to the development and diffusion of precious metals and mining technology during the expansion of the Roman Empire in the 2nd and 3rd centuries CE, an important stage in the global history of mining.

ICOMOS considers that there is exceptional evidence in the property for mining in the Roman era. The Roman workings demonstrate an interchange of values through innovative techniques developed by skilled migrant Illyrian-Dalmatian miners to exploit gold in ways that suited the technical nature of the deposit. A decade of professional underground archaeological campaigns, demonstrate a fusion of imported Roman mining technology with locally developed techniques, unknown elsewhere from such an early era. Roman underground mining works exist in four massifs, Cărnic, Lety, Orlea and Cetate. Multiple chambers that housed treadmill-operated water-dipping wheels for drainage represent a technique likely routed from Hispania to the Balkans, whilst perfectly carved trapezoidal-section galleries, helicoidal shafts, inclined communication galleries with stairways cut into the bedrock, and vertical extraction areas (stopes) superimposed above one another with the roof carved out in steps, are in a combination so specific to Roşia Montană that they likely represent pioneering aspects in the technical history of mining.

ICOMOS considers that this criterion has been justified.

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared;*

This criterion is justified by the State Party on the grounds that it embodies the cultural tradition of one of the oldest documented mining communities in Europe, anciently founded by the Romans. Detailed physical testimony is provided by: the underground mining works, chronologically differentiated by distinctive technical features; the socio-technical surface mining landscape consisting of ore-processing areas, habitation areas, sacred areas and necropoli.

Interpretation of the site’s history is enriched by the wax-coated wooden writing tablets discovered in the mine during the 18th and 19th centuries. Together with prolific stone epigraphic monuments discovered on site, they provide an authentic picture of daily life and cultural practice in this ancient frontier mining camp community. Combined with outcomes of recent, intensive and systematic archaeological investigation, a compelling picture of the organisation, strategies and practices of ancient mining community have emerged. ICOMOS considers that an exceptional reflection of Roman mining

practices can be seen through the overall traditions of the mining complex, which are exemplified by both engineering and civil evidence from the many and diverse sites of the property.

ICOMOS considers that this criterion has been justified.

Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

This criterion is justified by the State Party on the grounds that it is testimony to the Roman Imperial era of gold exploitation in Golden Quadrilateral of the Romanian Carpathians illustrating the strategic control and vigorous development of precious metals' mining by the Roman Empire, essential for its longevity and military power. The pre-eminent Roman mining works represent a technological ensemble unknown elsewhere from such an early era.

ICOMOS considers that Roşia Montană exhibits an exceptional ensemble of Roman underground and aboveground mining works and associated Roman era archaeological sites.

ICOMOS considers that this criterion has been justified.

Criterion (vi): *be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance;*

This criterion is justified by the State Party on the grounds that the Roman wax-coated wooden tablets (*tabulae ceratae*) of *Alburnus Maior* represent a significant source for the interpretation of Roman law and on the law of obligations, which had a significant impact on the German Civil Code, subsequently forming the basis for similar regulations in other countries.

ICOMOS considers that the *tabulae ceratae* are excellent written sources regarding Roman law and economy, but that they in themselves as movable objects cannot be seen to be of outstanding universal significance.

ICOMOS considers that this criterion has not been justified.

ICOMOS considers that criteria (ii), (iii) and (iv) have been justified. The conditions of authenticity and integrity have been met but are highly vulnerable.

Description of the attributes

Roman underground mining works exist in four massifs, Cărnic, Lety, Orlea and Cetate. Specific attributes include trapezoidal tunnels, helicoidal stairways, inclined stairway communication passages and pillar supported stopes. Two waterwheel drainage features have been found in the Cărnic and Lety Massifs. Roman opencast

mining evidence is still present at Cărnic and Cetate Massifs.

A series of surface archaeological sites that date to the Roman era have also been found at Hăbad Sacred Area (temple), Găuri (habitation), Hăbad (habitation), Tăul Țapului (habitation), Hop (necropolis), Nanului Valley Sacred Space (temples, necropolis), Carpeni Zone (habitation, possibly a temple and a necropolis), Jig-Piciorag Area (ore processing and necropolis), Țarina (necropolis), Pârâul Porcului - Tăul Secuilor (necropolis), Tăul Cornei - Corna Sat Zone (necropolis), Balmoșești - Islaz Area (Roman features, possibly earlier Bronze Age features as well). The wider landscape must also be included as a source of possible further evidence for Roman activities.

4 Factors affecting the property

The main development pressure is the possibility of continued gold and silver mining at Roşia Montană.

The Roşia Montană Gold Corporation (RMGC), established in 1997 and in the ownership of Gabriel Resources Ltd (80.69%) and the State mining company Minvest Roşia Montană S.A (19.31%) owns a large part of the property. It tried to promote a development plan that envisaged four large open cast mines (Cetate pit, Orlea pit, Cărnic pit, Jig pit), two large waste dumps and a large tailing pond that would drown the Corna valley. A resumption of mining at this scale would mean that only a small portion of the Roman mining galleries would be preserved in the immediate area of the town of Roşia Montană. The majority of the Roman remains described in the nomination dossier would be destroyed.

The realisation of this plan would result in the destruction of a major part of the nominated property leaving only a small historic "island" of built heritage and some underground Roman mining works at Roşia Montană.

At the time of the ICOMOS's first evaluation, the Roşia Montană Gold Corporation (RMGC) still had an extraction licence that ran until 2019. Gabriel Resources the main owners of the RMGC had taken the State Party to the World Bank arbitrators claiming \$4.4bn in compensation from the Romanian Government for lost earnings as a result of the mining being effectively stopped in 2014.

In 2018 a new draft Mining Law was proposed to replace the existing law and this could have made it easier to grant new permits for the Roşia Montană mine, though, amongst other things, the elimination of approval of production mining licenses by the Government. It is understood that this proposed law has now been dropped.

In 2019, the mineral resources agency passed an addendum to extend the RMGC's extraction licence for a further five years until 2024, and also increased the level of royalties payable to the government. There is apparently no justification under Romanian law to refuse

such a requested extension of a mining licence. Currently no valid permit is attached to this licence.

In supplementary information provided on 21 February 2020, the State Party indicated that 'Subject to further detailed consideration and the rights of any license holders, no mining – at any scale – will be allowed where it may pose any risk, whatsoever, to proposed Outstanding Universal Value'. Quite what rights, though, might be pertinent is unclear.

The results of the World Bank arbitration have not yet been announced but are expected in 2020. The State Party indicated in its letter of 28 February 2020 that its position in the World Bank arbitration is that 'RMGC has not met to date but may still meet the requirements under Romanian law to obtain the environmental and other permits necessary for the Roşia Montană mining project'.

The State Party has further indicated that some of the action points in the management plans could only be implemented 'in circumstances in which the rights under the mining license are no longer enforceable'.

The situation with regards to large scale mining thus remains somewhat unclear. Although there are no active concessions at the current time, it remains the case that permits could be approved under certain circumstances for existing licences and thus large-scale mining remains a threat.

Small scale mining is mentioned in the draft Management Plan that has been submitted as supplementary information. It is suggested that a future development strategy for the property could include sensitive small scale mining, and further that this would be in line with the UNESCO Policy to integrate sustainable development within the activities of the World Heritage Convention. It is not clear whether such mining would be within the nominated property, in the buffer zone or in the wider setting, nor whether on land owned by State, by RMGC, or by private owners, or whether the mining would be within existing licences. The State Party has commented that there are many kilometres of modern mining tunnels and chambers within the nominated property that are not part of proposed Outstanding Universal Value and where small-scale mining could contribute to re-employment, the safety and conservation of underground Roman workings, cultural heritage interpretation, and also revenue. The re-commencement of mining activities, even if on a small-scale, could have a highly detrimental and cumulative impact on the integrity of the landscape and its Roman mining remains and it is difficult to understand how these might contribute in a meaningful way to sustainable development.

In terms of other threats to the landscape, the mining company has systematically bought and demolished houses and encouraged residents to move away with the result that the population of the municipality has fallen from 3,800 in 2002 to under 1,000 today. Many remaining

buildings are empty and their state of conservation is fair to poor and declining.

Additional information received from the State Party on 30 October 2017 provides more detail about the demolished houses, their locations and heritage potential. The only houses that have been demolished in the historic centre of the town (the protected area) were said to be in very poor condition, essentially ruins. Of the roughly 200 demolished homesteads in other parts of the property, most dated to the 20th century. Very few were considered notable, rather they were typical examples of local vernacular houses.

There is little tourism and visitor facilities are limited at present.

There is no seismic threat to the region. Nevertheless, the dams that have created the header ponds could pose a long term risk of decay or collapse if they are not regularly inspected and maintained.

IUCN notes that the header ponds are wetland habitats and host rare aquatic plants that require acidic conditions. Mires and grasslands are other semi-natural habitats within the property that can host rare species.

The former mines are a source of water pollution. The main drainage adit that flows into the Roşia River shows traces of iron oxide leaching out of the mine. There is a water treatment plant, but it appears to be inoperative.

ICOMOS recommends that the water treatment plant be activated to reduce the pollutants flowing out of the main adit into the Roşia River.

ICOMOS considers that the main threats to the property are the potential resumption of large scale open-caste gold mining, the potential, cumulative impact of small-scale mining, and water pollution from old mines.

5 Protection, conservation and management

Boundaries of the nominated property and buffer zone

In the referred back nomination, the boundaries of the nominated area have been slightly reduced to exclude modern parts of the property that do not include Roman remains.

The small buffer zone around the nominated property, especially at the back sides of the mountain ridges, is considered sufficient to protect the underground and surface Roman archaeological remains. There is no view from the boundary of the property or its buffer zone to the large open pit mine (*Cariera Roşia Poieni*) which is to the east of the property.

ICOMOS considers that the boundaries of the nominated property and of its buffer zone are appropriate.

Ownership

It is estimated that the Municipality of Roşia Montană together with the State mining company Minvest S.A. owns around 45% of the land within the nominated property, the Roşia Montană Gold Corporation around 30%. The rest is held by individual owners, associations of owners, and organisations (churches).

Additional information received from the State Party on 30 October 2017 indicates that all underground mining fields are in the public property of the State and currently they are part of the mining concession that was granted to Roşia Montană Gold Corporation in 1999 with an initial duration of 20 years and which has now been extended for a further five years. Public property in Romania is inalienable.

Protection

Roşia Montană Mining Landscape is legally protected as, in accordance with Romanian law, all provisions for World Heritage sites apply to a property once a nomination has been submitted to UNESCO.

The entire Municipality of Roşia Montană is designated under the *Law for the approval of the National Spatial Development Plan* – Section III, Protected areas (L. 5/2000), which enables comprehensive zoning and planning, and by the *Law for the protection of historic monuments* (L. 422/2001) which protects historic monuments of exceptional national value (urban ensembles [e.g. the historic centre], industrial architecture [e.g. the Roman gold mining galleries] and monuments of vernacular architecture/village dwellings [e.g. houses from the 18th and 19th centuries]). Currently, 50 specific places within the nominated property are protected by this law and 18 more are in the process of being listed.

In its first evaluation, ICOMOS noted that while planning controls have been enabled, specific zoning by the local council (a General Urban Plan) was still in the process of being enacted and that development of the Zonal Urban Plan (*Plan Urbanistic Zonal*, PUZ) and the revised General Urban Plan (*Plan Urbanistic General*, PUG) would be completed in the next 18 months.

In the supplementary information provided, the State Party has stated that currently no urban planning regulations are valid within the administrative territory of Roşia Montană, as the former plans (both PUZ and PUG) have been declared legally invalid. No explanation has been provided for this situation but it is stated that the Ministry of Culture has initiated a dialogue with the Municipality of Roşia Montană, in order to assist in the process of drafting new regulations as quickly as possible, and has requested funding to be granted to the Municipality.

Currently there are active mining licences on the property and inadequate controls to stop these being extended. To activate these, permits need to be approved. The development of PUG and PUZ could set the framework for restricting approvals for mining permits.

It is indicated that the current situation creates a *de facto* moratorium on new development, while allowing protection measures to be undertaken, as building permits regarding heritage protection and public space enhancement can still be issued. It is further stated that positive development can be progressed but not who decides on what is positive or how negative development is halted.

ICOMOS is concerned at this hiatus in planning regulations, as both the PUG and the PUZ are needed for control of all development, including mining permits, and for the successful implementation of the management plan once approved.

Since the first evaluation, the situation with regards to planning has not improved but rather become worse, as there is now no timescale for the development and approval of these essential planning tools.

ICOMOS considers that the legal protection in place is adequate but the current lack of comprehensive zoning and planning regulations is a cause for concern and the PUG and the PUZ need to be developed and implemented as soon as possible.

Conservation

Between 1999 and 2013, extensive archaeological research programmes financed by the mining company were undertaken in the nominated property. This has led to the documentation of numerous underground and surface archaeological sites, especially from Roman times, and the discovery and physical preservation of more than 10,000 artefacts that are now preserved in several public and private museums. For example, 6,864 objects are in the National History Museum, Bucharest and 5,385 objects are held by the mining company. Additional information received from the State Party on 30 October 2017 indicates that processing, analysis and reporting of the finds made during the rescue archaeology investigations are planned for but are yet to be completed.

Since 2012, research on a less intensive scale has been undertaken by the National Heritage Institute (Alburnus Maior archaeological research programme) and by Non-Governmental Organisations and professional bodies based in Bucharest and Cluj-Napoca (e.g. the Architecture Restoration Archaeology Association (ARA), Pro Patrimonio Foundation, the Romanian Chamber of Architects, ICOMOS Romania, Romanian Academy, and Cultural Foundation Roşia Montană).

Research, recording and inventories have concentrated on the Roman era with lesser attention having been paid to the early industrial period (18th/19th century). A few small scale family owned ore dressing and smelting operations from the 18th/19th centuries have been preserved in residential houses of the mining settlement.

Additional information received from the State Party on 30 October 2017 describes avenues of planned research including the processing and analysis of artefacts retrieved during the 2000-2006 campaigns, archival work in Vienna, in Banská Štiavnica (Slovakia) and elsewhere that targets records from the 18th and 19th centuries. A LIDAR survey of the entire property is also planned.

The present state of conservation of the underground Roman mining works is variable; some areas are in very good condition, others appear to be flooded, while others have not been considered safe to enter. Roman surface archaeological sites and features are generally in fair to poor condition and many need conservation work. A temporary shelter has been built to cover the circular funerary structure at the Hop necropolis.

There is a need for a specific conservation plan to be developed that gathers together documentary evidence for all the Roman remains, including those in the wider landscape, analysis their state of conservation and sets out a framework and action plan for conservation work over, say, the next ten years, together with details of how the work will be undertaken and how it can be resourced, in terms of funding and conservation staff.

The Ministry of Culture has initiated a programme for the conservation and reactivation of some built heritage at Roşia Montană, funded through the National Restoration Plan, managed by the National Institute of Heritage. The programme was started before submission of the first nomination but was then halted for legal reasons. These legal issues have now been resolved and the first public tenders were due to be launched in February 2020.

The two buildings selected are the Greek-Catholic Church and its Parish House, and the Calvinist Parish House.

Additional information indicates that the NGOs noted above have restored more than 50 historic buildings in recent years with more work planned in the future.

ICOMOS considers that while serious conservation challenges are present at this nominated property, the State Party should concentrate its immediate efforts on ensuring the long term protection of its Roman attributes, including those scattered across the landscape and areas of high potential for further research. ICOMOS strongly recommends that a conservation plan for Roman remains should be developed, approved and implemented.

Management

Management structures and processes, including traditional management processes

The National Institute of Heritage (INP) is responsible for World Heritage Sites in Romania and it has a team in place who are responsible for monitoring the property. Locally, the county office of the Ministry of Culture as well as the Government Technical Assistance Unit (UGAT), with the scientific cooperation of INP, are to provide assistance to local initiatives for conservation and restoration as well as for new private or public interventions and infrastructure works in order to ensure their integrated approach and compatibility with the authenticity and integrity requirements.

Policy framework: management plans and arrangements, including visitor management and presentation

No management plan existed for the nominated property and its buffer zone at the time that the nomination dossier was written. In July 2017, a team at the National Institute of Heritage in Bucharest began work on a management plan. A first draft version was presented by this team to the ICOMOS Mission Expert. A draft plan was submitted as part of the supplementary information in January 2020. The plan has been drafted by the World Heritage Unit within the National Institute of Heritage, with the consultation and involvement of experts from relevant fields of research. The plan covers protection and management, conservation, opportunities and threats, as well as strategic policies. It includes an Action Plan, a Plan of Governance and a Plan of Monitoring. The plan is to be submitted to local authorities and the local community for consultation. No timetable has been provided for when the Plan will be finalised and approved.

ICOMOS notes that based on the nomination dossier, it is not clear who will be responsible for administering the property. No staffing levels nor annual budget amounts are indicated.

ICOMOS recommends that a management plan together with a conservation plan and a tourism management strategy be drafted, approved and implemented. ICOMOS also recommends that the State Party encompass the necessary staff and financial resources for the implementation of the management plan.

The scientific interpretation and presentation of the property is fostered by universities (e.g. Babeş-Bolyai University, Cluj Napoca), the Romanian Academy, the Cultural Foundation Roşia Montană, the National Museum of History of Romania, ICOMOS Romania, the National Commissions of Archaeology and Historical Monuments as well as by foreign archaeological and heritage experts. Numerous scientific and other publications have presented the Roşia Montană mining landscape. Local public presentation is made in the Mining Museum at Roşia Montană, although only at a very basic scientific, didactic and design level.

ICOMOS recommends that local interpretation and presentation of the nominated property should be improved, especially at the mining museum.

Tourism planning is at present very limited. The main tourist attraction is the Mining Museum at Roşia Montană, at present owned by the mining company. During recent years only the independent activities of NGO's and some residents (e.g. the annual Fan Fest, Gold Trail, Adopt a House) have attracted larger numbers of visitors from the region and from abroad to Roşia Montană. Nevertheless, first steps towards tourism development in the region have been taken by the local NGO's and residents.

ICOMOS recommends that a management tourism strategy be integrated into the management plan.

Involvement of the local communities

A diverse range of heritage related activities have been undertaken by the local community, although some programs such as Adopt a House, focus on more recent standing structures rather than Roman era remains. Given the drop in population of the municipality in recent years, special effort should be made to involve local residents in the development of the management plan and the operation of the site. As well, the polluted water flowing out of the main adit affects the quality of life of local residents and this should be addressed.

ICOMOS considers that better involvement of all stake holders in the development and implementation of the management plan is necessary.

ICOMOS recommends that the management plan be approved and implemented. It should be augmented to include an internationally supported conservation plan, a tourism strategy to improve visitor management, interpretation and presentation of the property, and a commitment to provide the necessary staff and financial resources for its implementation.

6 Monitoring

The nomination dossier indicates that a monitoring regime will be created as part of the management plan. The technical mission reports that a first monitoring mission to Roşia Montană was done by the INP management planning team in summer 2017. Due to the complicated ownership situation, this monitoring mission could only be realized for the aboveground heritage and not for the underground heritage. Five key indicators for monitoring are envisaged, including 1) archaeological and built immovable heritage, 2) surface and underground mining works, 3) the landscape character, 4) flora and fauna, and 5) geology and water systems.

These indicators need to be further developed to set out in more detail what attributes of Outstanding Universal Value need monitoring, precisely which aspects will be monitored and how, who will undertake the monitoring, and what periodicities will be adopted.

ICOMOS considers that the monitoring programme for the property needs to be further developed and implemented.

7 Conclusions

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List; and that the nominated property meets criteria (ii), (iii) and (iv) as the most significant, extensive and technically diverse underground Roman gold mining complex currently known in the world. The conditions of integrity and authenticity are satisfied but both are considered to be highly vulnerable to future mining activity.

The main threat to the property, and a major uncertainty, remains the possibility that a mining company will be given the necessary permits to allow the resumption of large-scale open cast mining at some point in the future. This large mining company has a licence that extends until 2024. To activate that licence, it would need to obtain permits, which it has so far been unable to achieve, but there still remains a chance that they could be obtained under existing Romanian Laws and regulations.

The position with regard to mining has not changed since ICOMOS wrote its first evaluation in 2018. Its conclusion then was that the on-going uncertainty relating to the arbitration process and the still active mining licence could be considered as ascertained threats to the integrity of the property, in accordance with the paragraph 179 of the *Operational Guidelines*.

ICOMOS still considers that the property is faced with specific and proven imminent danger, which could lead to significant loss of historical authenticity and of cultural significance.

Adding to the uncertainty over large –scale open cast mining, there are now two other areas of concern. First the possibility of small scale mining is highlighted in the draft management plan, but without any clear details or justification. The current lack of planning regulations is a second further cause for concern and something that needs to be addressed as quickly and as effectively as possible in order to provide clear constraints and controls for the property, including in relation to mining activities. As in 2018, ICOMOS recommends that Roşia Montană should be inscribed on the World Heritage List but at the same time be inscribed on the List of World Heritage in Danger. This recommendation should be seen as a way to ensure that the attributes are not impacted by the resumption of mining, that appropriate planning regulations are developed, that resources are mobilised to address the conservation challenges, and that the protection,

conservation, management and monitoring regimes for the property are completed and implemented.

ICOMOS considers that inscription on the World Heritage List in Danger should be the opportunity to gain the attention and support of the international community for the protection of the property and for its conservation. Such an approach could be seen as a continuation of a process that has been on-going for at least a decade. The nomination of this property is a testimony to the continuous efforts of civil society to preserve its heritage through garnering international support for its protection.

8 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the Roşia Montană Mining Landscape, Romania, be inscribed as a cultural landscape on the World Heritage List on the basis of **criteria (ii), (iii) and (iv)** and at the same time that the property be inscribed on the **List of World Heritage in Danger**.

ICOMOS recommends that a reactive monitoring mission be invited to the property to establish a desired state of conservation and a programme of corrective measures to remove the property from the List of World Heritage in Danger.

Recommended Statement of Outstanding Universal Value

Brief Synthesis

Roşia Montană Mining Landscape contains the most significant, extensive and technically diverse underground Roman gold mining complex currently known in the world, dating from the Roman occupation of Dacia (106-271 CE). Roşia Montană is situated in a natural amphitheatre of massifs and radiating valleys in the Metalliferous range of the Apuseni Mountains, located in the historical region of Transylvania in the central part of Romania.

Roman gold mining occurred within four small mountains (Cărnic, Lety, Orlea and Cetate) that visually dominate the landscape of Roşia Montană, itself surrounded on three sides by dividing ridges and peaks. Roman archaeology in the surrounding landscape is prolific and pervasive, comprising ore-processing areas, living quarters, administrative buildings, sacred areas and necropoli, some with funerary buildings with complex architecture, all set in relation to over 7 km of ancient underground workings that have been discovered to date.

Criterion (ii): Roşia Montană Mining Landscape contains the world's pre-eminent example of underground Roman gold mining and demonstrates an interchange of values through innovative techniques developed by skilled migrant Illyrian-Dalmatian miners to exploit gold in ways that suited the technical nature of the deposit. Multiple

chambers that housed treadmill-operated water-dipping wheels for drainage represent a technique likely routed from Hispania to the Balkans, whilst perfectly carved trapezoidal-section galleries, helicoidal shafts, inclined communication galleries with stairways cut into the bedrock, and vertical extraction areas (stopes) superimposed above one another with the roof carved out in steps, are in a combination so specific to Roşia Montană that they likely represent pioneering aspects in the technical history of mining.

Criterion (iii): Roşia Montană Mining Landscape embodies the cultural traditions of one of the oldest documented mining communities in Europe, anciently founded by the Romans, as manifested in extant underground mining works, chronologically differentiated by distinctive technical features; and a socio-technical mining landscape consisting of ore-processing areas, habitation areas, sacred places and necropoli. The interpretation of its history is enriched by Roman wax-coated wooden writing tablets discovered in the mines during the 18th and 19th centuries. Together with prolific stone epigraphic monuments, they provide an authentic picture of daily life and cultural practice in this ancient frontier mining community.

Combined with outcomes of recent, intensive and systematic archaeological investigation, an exceptional reflection of Roman mining practices has emerged.

Criterion (iv): Roşia Montană Mining Landscape illustrates the strategic control and vigorous development of precious metals' mining by the Roman Empire, essential for its longevity and military power. Following the decline of mining in *Hispania*, Roşia Montană located in *Aurariae Dacicae* (Roman Dacia) was the only significant new source of gold and silver for the Roman Empire, among the likely key motivations for Trajan's conquest.

Integrity

Roşia Montană contains all the elements necessary to express the values of the property for the Roman mining period. The property is of adequate size to ensure the complete representation of the features and processes which convey its significance. Moreover, the property comprises an area in which future archaeological research will probably discover a large number of further surface and underground mining, ore processing and settlement sites of the Roman period. However, the current mining proposal means that the integrity of the property is highly vulnerable.

Authenticity

The property contains attributes that are high in authenticity in terms of the location and the form and materials of surviving historic features, with a clear sense of how, when and by whom mining shaped the land. In terms of knowledge, epigraphic and documentary evidence combined with a decade of intensive systematic archaeological investigation has provided a major contribution to the understanding of Roman mining

techniques and organisation. There is considerable potential for future research and for new discoveries related to many periods of the region's mining history. However, the current mining proposal means that the authenticity of the property is highly vulnerable.

Protection and management requirements

Roşia Montană Mining Landscape is legally protected in accordance with Romanian law as a World Heritage property.

The protection of Roşia Montană is supported by listing under the Law for the protection of historic monuments (L. 422/2001) which allows for the development of urban planning measures. Currently there are no planning controls in place and these need to be urgently developed. Currently there are active mining licences on the property and inadequate controls to stop these being extended. To activate these, permits need to be approved. There is clearly a need for the development of a General Urban Plan (*Plan Urbanistic General*) and a Zonal Urban Plan (*Plan Urbanistic Zonal*) to restrict approvals for mining permits.

The management plan for the property is being finalized by the National Institute of Heritage who is also responsible for the monitoring of the property. The management plan should be augmented by an internationally supported conservation plan and a tourism strategy should be implemented.

Additional recommendations

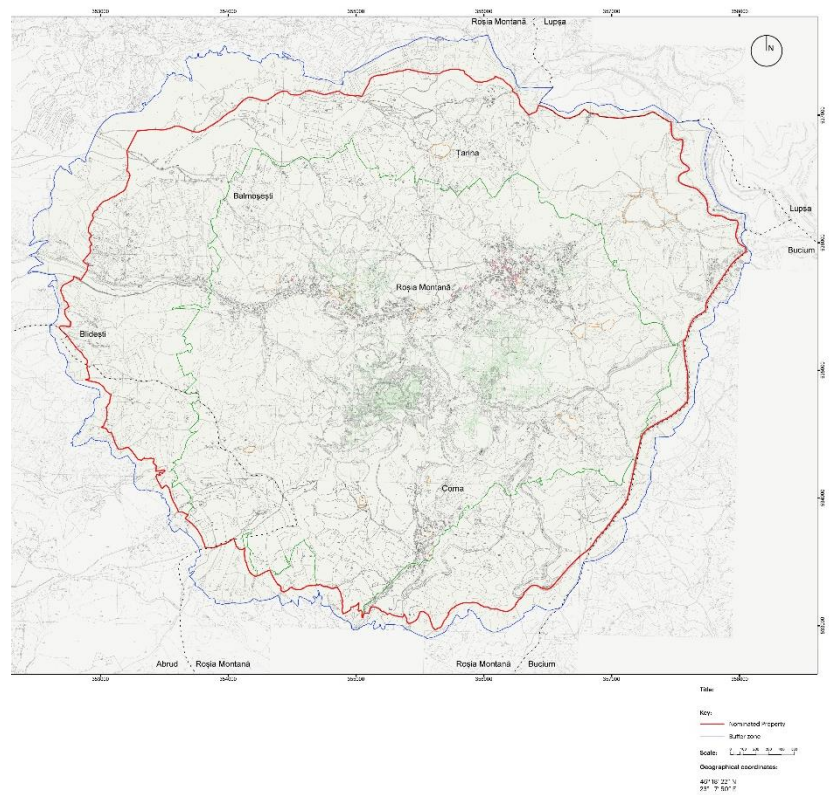
ICOMOS additionally recommends that the State Party give urgent consideration to the following:

- a) Halting approval of mining permits at the property,
- b) Developing as soon as possible planning controls for the property, in the form of a General Urban Plan (*Plan Urbanistic General*) and a Zonal Urban Plan (*Plan Urbanistic Zonal*), that prevents further mining at the property and submit these in draft to the World Heritage Centre for review by ICOMOS,
- c) Approving, submitting and implementing the management plan of the property, and augmenting through:
 - o An internationally supported conservation plan for the Roman remains,
 - o A management tourism strategy, to improve visitor management and interpretation and presentation of the site,
 - o The involvement of the stakeholders in the management of the property,
 - o A commitment for adequate human and financial resources for its implementation,
- d) Developing an inspection and maintenance plan for the header ponds to ensure their long term stability,

e) Developing and implementing a monitoring programme for the property,

f) Submitting to the World Heritage Centre by 1 December 2022 a report on the implementation of the above-mentioned recommendations for examination by the World Heritage Committee at its 46th session in 2023;

ICOMOS encourages international cooperation to support the protection and conservation of the property.



Map showing the boundaries of the nominated property (February 2020)