IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 21 May 2014

Please note: this is an archived Conservation Outlook Assessment for Jeju Volcanic Island and Lava Tubes. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Jeju Volcanic Island and Lava Tubes

SITE INFORMATION

Country:
Republic of Korea (South Korea)
Inscribed in: 2007
Criteria:
(vii) (viii)

Site description:
Jeju Volcanic Island and Lava Tubes together comprise three sites that make up 18,846 ha. It includes Geomunoreum, regarded as the finest lava tube system of caves anywhere, with its multicoloured carbonate roofs and floors, and dark-coloured lava walls; the fortress-like Seongsan Ilchulbong tuff cone, rising out of the ocean, a dramatic landscape; and Mount Halla, the highest in Korea, with its waterfalls, multi-shaped rock formations, and lake-filled crater. The site, of outstanding aesthetic beauty, also bears testimony to the history of the planet, its features and processes. © UNESCO

SUMMARY

2014 Conservation Outlook

Good

The Outstanding Universal Value and attributes of the property are well recognized, are under no significant threats and are effectively managed and protected. Inscription of the property has had a very positive outcome in raising awareness of conservation and the World Heritage Convention among the general public and key stakeholders. The property has brought considerable benefits to the local community through employment and through promotion of tourism, which is a major generator of revenue in the Province. There are no significant threats or other factors detrimentally affecting the property. A few threats are of some minor concern but the existing management regime recognizes them and has the resources to mitigate their impact. Further increase in visitor numbers and in development of tourist infrastructure require vigilance and continual monitoring to avoid any undesirable impacts. There is still considerable potential for strengthening the protection of the property through further purchases of private lands, and there is scope for extending the property to include more volcanic features and to protect the significant biodiversity values.

Current state and trend of VALUES

Good
Trend: Stable

There are no immediate concerns with the current state and trend of the natural values and attributes of the property, which are generally well protected under the current management regime. Developments in the buffer zone need monitoring to avoid any possible negative effects on the property.

Overall THREATS

Low Threat

Overall, the level of both actual and potential threats to the property is low. Management authorities are well aware of the threats, which are being effectively contained and any impacts can be readily mitigated.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Overall protection and management of the property are satisfactory and there are no serious concerns. Matters giving some concern are the lack of staff, and of the provision of sufficient long-term funding.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **An outstanding shield volcano with an extensive lava tube system**
  Criterion:(vii)

  The Geomunoreum lava tube system is regarded as the finest such cave system in the world, displaying a unique spectacle of multi-coloured carbonate decorations adorning the roofs and floors, and dark-coloured lava walls partially covered by a mural of carbonate deposits. The fortress-like Seongsan Ilchulbong tuff cone, with its near-vertical walls rising from the ocean, is a dramatic landscape feature. Mount Halla, with its array of textures and colours through the changing seasons, waterfalls, multi-shaped rock formations and columnar-jointed cliffs, and the towering summit with its lake-filled crater, further adds to the scenic and aesthetic appeal. (SoOUV, 2007 and Periodic Reporting Form)

- **One of few shield volcanoes in the world on a stationary continental crust plate, with the world’s best developed system of lava tubes**
  Criterion:(viii)

  The Jeju property, centred on the Mount Halla volcanic complex, is of outstanding importance in protecting one of the few large shield volcanoes in the world built over a hot spot on a stationary continental crust plate. The volcano is distinguished by the most impressive and significant series of protected lava tube caves in the world – the Geomunoreum system - which includes a spectacular array of secondary carbonate speleothems (stalactites, stalagmites and other decorations) with an abundance and

diversity unknown elsewhere within lava caves. The Seongsan Ilchulbong tuff cone has exceptional exposures of its structural and sedimentological characteristics, making it a world-class location for understanding Surtseyan-type volcanic eruptions. (SoOUV, 2007 and Periodic Reporting Form)

Other important biodiversity values

- **Regionally significant biodiversity including endemic and rare species.**

  The Jeju Island UNESCO/MAB Biosphere Reserve, which is included in the property, recognizes regionally significant biodiversity values, including species endemic to Jeju Island and Korea, and species at their northern and southern distributional limits. Four of 20 mammal spp. and 24 of 1,600 insect spp. are Jeju endemics. Rare cave spiders occur.(IUCN Evaluation Report 2006)

Assessment information

Threats

Current Threats

Low Threat

Most of the identified threats are well recognized by the authorities, are documented in the management plan and are being managed effectively at present. Thus, the overall threat is low.

- **Invasive Non-Native/ Alien Species**

  Low Threat
  Inside site

  Some exotics are present in the Mount Hallasan Reserve within the property.

► Utility / Service Lines

Low Threat
Outside site

Towers have been removed in property but remain in buffer zone (IUCN, 2006).

► Tourism/ Recreation Areas

Low Threat
Outside site

Hotels have been removed from the property but development is occurring in buffer zone (IUCN Evaluation Report, 2006).

► Roads/ Railroads

Low Threat
Inside site
Outside site

Many roads have been removed from core zones, or closed and/or converted into trails. Some roads have been upgraded and new improved roading is planned and budgeted, especially to minimize any vibration from traffic that might affect the lava tubes (IUCN, 2006).

► Tourism/ visitors/ recreation

Low Threat
Inside site
Outside site

Ground surfaces on volcano and in caves are vulnerable to trampling damage, and cave speleothems are very delicate and readily damaged unless carefully protected. The number of tourists has increased significantly since inscription. Especially, the maximum number of visitors as well as visitor pressure on the Manjang Cave and the Seongsan Ilchulbong Tuff Cone needs to be monitored. Overcrowding and impacts such as excessive trampling and erosion of soils and damage to sensitive ground and geological features (especially speleothems in caves) could occur. Careful monitoring and management are required. (Pers. obs.).

► Agricultural/ Forestry Effluents

Very Low Threat
Inside site
Outside site

Some instances of feritlizers being applied to agricultural land inside and outside the property. There are no known impacts at present and only about 15% of the land above the caves is in private ownership and not all this is being used for gardening and farming purposes. The private lands will all be progressively purchased up to 2013, retired from such uses and restored to natural vegetation cover (IUCN, 2006).

Potential Threats

Very Low Threat

All the potential threats are recognized and are being addressed in so far as possible. There is only a remote chance that they will become actual threats.

► Volcanoes

Very Low Threat

Jeju volcano is not extinct but probability of re-eruption is exceptionally low.

► War, Civil Unrest/ Military Exercises

Very Low Threat
Outside site

It is not clear whether the proposed naval base construction outside the property and buffer zone could have an impact on the property.

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

At the time of inscription, there was a high degree of public awareness and support for World Heritage. Local communities directly contribute to some decisions relating to management and indigenous peoples have some input into discussions relating to management but no direct role. (IUCN Evaluation Report, 2006; Periodic Reporting Form)

► Legal framework and enforcement

Highly Effective

A strong statutory and regulatory basis exists at both national and provincial level for strict legal protection of all sites in the property (Nomination Document; IUCN Evaluation Report 2006). Manjanggul lava tube, Seongsan Ilchulbong tuff cone and Hallasan Natural Reserve became Global Geopark sites in 2010 (Periodic Reporting Form).

► Integration into regional and national planning systems

Mostly Effective

The management plan for the property has government approval and is legally binding on national and provincial governments and all administering authorities. The widely consulted plan also reflects the consensus view of national and local institutions and communities. (IUCN Evaluation Report, 2006; Periodic Reporting Form).

► Management system

Mostly Effective

Management policies, provisions and plans are exemplary. A General Plan for Jeju World Natural Heritage Conservation and Utilization was set up by the Province in 2008.The property management plan is due for revision.

► Management effectiveness

Some Concern

Equipment and facilities are adequate and well-maintained. A range of human resources exist, but these are below optimum to manage the property. The availability of professional management staff is reported as only fair for community outreach, education, visitor management,

conservation, administration, risk preparedness and enforcement. (Periodic Reporting Form).

► Implementation of Committee decisions and recommendations

Some Concern

Only about 50% of the private lands in the property have been purchased. Management of visitors and tourism infrastructure is generally satisfactory. Improvements in management of some agricultural activities in the buffer zone have been achieved through new regulations. No obvious consideration has been given to management of significant volcanic features outside the property, but there has been research to improve knowledge of biodiversity values. The potential for extension of the property to include other significant volcanic features and lava tubes does not appear to have been given serious consideration.

► Boundaries

Mostly Effective

Boundaries of the existing property and buffer zone are adequate (IUCN, 2006), but there remains potential for adding further areas to the property to include more tuff cones and lava tubes.

► Sustainable finance

Some Concern

The available annual budget is acceptable but could be further increased to fully meet the current management needs. (Periodic Reporting Form).

► Staff training and development

Mostly Effective

Week-long educational and training programs are in service twice a year to foster management skills. Approximately 230 managers have been trained to date and the number of managers is expected to increase year by year because of the educational/training programs. (Periodic Reporting Form).

► Sustainable use

Data Deficient

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► Education and interpretation programs

Highly Effective

The World Heritage logo is displayed in many localities and is readily visible to visitors. The World Heritage status has been an important influence on public education, information and awareness building activities. The Jeju World Natural Heritage Center constructed in 2012 has greatly improved education and interpretation programs. (Periodic Reporting Form).

► Tourism and interpretation

Some Concern

Since inscription there has been only a minor increase in visitor numbers annually, which is less than the predicted increase at the time of inscription. Improvements could be made in visitor management. There is only limited co-operation with the tourism industry. The number of visitors is monitored daily. Carrying capacity research and surveys have been conducted to determine improved methods for managing the large numbers of visitors on Mount Halla. (Periodic Reporting Form).

► Monitoring

Mostly Effective

Since the inscription a comprehensive monitoring program has been conducted and regular monitoring reports produced. Values and key indicators have been defined but monitoring the status of indicators could be intensified. (Periodic Reporting Form).

► Research

Mostly Effective

Knowledge of the values and attributes of the property are mostly sufficient but there are gaps. There is a comprehensive, integrated program of research, covering all sites in the property, and results have been published in scientific journals and on the web. (Periodic Reporting Form).

Overall assessment of protection and management

Mostly Effective

Overall protection and management of the property are satisfactory and there are no serious concerns. Matters giving some concern are the lack of staff, and of the provision of sufficient long-term funding.

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

Data Deficient

DD

▶ Best practice examples

At the time of the nomination, the State Party instigated a hugely successful and influential national World Heritage awareness-raising and promotional campaign led by politicians, and involving government officials, the business community and the media, which is an excellent model for involving civil society in the World Heritage Convention.
The Stare Party has negotiated a twinning arrangement with the Tongariro NP World Heritage property in New Zealand.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ An outstanding shield volcano with an extensive lava tube system

Good
Trend:Stable

High scenic and aesthetic values are generally very well protected. Obtrusive impacts of hotels, roads, communication towers and transmission lines have been removed from the property, though they do remain in the buffer zone. Exotic plants are still present but their impacts on native vegetation cover

are being progressively reduced. (Periodic Reporting Form).

- **One of few shield volcanoes in the world on a stationary continental crust plate, with the world's best developed system of lava tubes**
  Good
  Trend:Stable

  Geological values and attributes are generally resilient and resistant to impacts and changes. Protection of the lava tubes and their delicate carbonate speleothems is a major task requiring constant monitoring and effective management intervention if necessary. The management regime is well designed and resourced to undertake this task and no problems have been reported to date. Potential impacts from growing tourist numbers require vigilance.

Other important biodiversity values

- **Regionally significant biodiversity including endemic and rare species.**

  The Jeju Island UNESCO/MAB Biosphere Reserve, which is included in the property, recognizes regionally significant biodiversity values, including species endemic to Jeju Island and Korea, and species at their northern and southern distributional limits. Four of 20 mammal spp. and 24 of 1,600 insect spp. are Jeju endemics. Rare cave spiders occur.(IUCN Evaluation Report 2006)

Summary of the Values

- **Assessment of the current state and trend of World Heritage values**
  Good
  Trend: Stable

  There are no immediate concerns with the current state and trend of the natural values and attributes of the property, which are generally well protected under the current management regime. Developments in the buffer zone need monitoring to avoid any possible negative effects on the

property.

Additional information

Key conservation issues

▶ Tourism growth and increasing visitor numbers

National

Although visitor numbers have not grown as much or as rapidly as originally predicted, there remains a threat that visitor use will exceed the physical and social carrying capacity of the property. Overcrowding and impacts such as excessive trampling and erosion of soils and damage to sensitive ground and geological features (especially speleothems in caves) could occur. Careful monitoring and management are required. Development of tourism infrastructure (accommodation, transport, food and other services) is under control in the property but remains a concern in the buffer zone.

▶ Need for management capacity building

Regional

There are two areas of concern – the lack of professionally trained staff and the inadequate budget, especially the need to secure sustainable sources of long-term funding.

▶ Impacts of exotic plant species

Regional

Introduced plants are present in the ecosystems of Mount Halla in particular. Although they are not aggressive invaders their continued presence threatens the health of indigenous plant communities in the property.

Benefits

Understanding Benefits

► Importance for research

Inscription of the Jeju World Heritage property has resulted in very positive outcomes for raising conservation awareness in the general public and among key stakeholders. Interpretation and promotion of the property also contribute significantly to promotion of the World Heritage Convention. A comprehensive research program is conducted. The property is used extensively in education programs within the Jeju community.

► Does management of the site provide jobs (e.g. for managers or rangers)?

The property employs significant numbers of professional and non-professional staff. Training programs are extensive and well-targeted.

► Outdoor recreation and tourism

Tourism is a major industry on Jeju Island and the property plays a central role in promoting tourist operations. Tourism provides extensive employment opportunities and is a very significant generator of revenue.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	SP, Jeju Province and property management authorities.		Construction of World Natural Heritage Centre in the property, nearing completion.
2	Property management authorities.		On-going research and monitoring programs and projects, including scientific publications.
3	Hallasan Preservation Centre, Hallasan Research Institute.		Five-year program for exotic species research and control/elimination.
4	Property management authorities.		On-going staff training and capacity building program.

REFERENCES

№	References
1	Cultural Heritage Administration of Korea 2006. Jeju World Natural Heritage Management Plan. Nomination Dossier, Appendix 8.
2	Cultural Heritage Administration of Korea 2006. Jeju World Natural Heritage Management Plan. Nomination Dossier, Appendix 8.
3	IUCN 2007. Technical evaluation of Jeju Volcanic Island and Lava Tubes nomination (Republic of Korea), No. 1264.
4	Korea State Party for World Heritage 2010. World Heritage Periodic Reporting Form.