IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 08 November 2017

Please note: this is an archived Conservation Outlook Assessment for Mount Etna. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Mount Etna

SITE INFORMATION

Country:
Italy
Inscribed in: 2013
Criteria:
(viii)

Site description:

Mount Etna is an iconic site encompassing 19,237 uninhabited hectares on the highest part of Mount Etna, on the eastern coast of Sicily. Mount Etna is the highest Mediterranean island mountain and the most active stratovolcano in the world. The eruptive history of the volcano can be traced back 500,000 years and at least 2,700 years of this activity has been documented. The almost continuous eruptive activity of Mount Etna continues to influence volcanology, geophysics and other Earth science disciplines. The volcano also supports important terrestrial ecosystems including endemic flora and fauna and its activity makes it a natural laboratory for the study of ecological and biological processes. The diverse and accessible range of volcanic features such as summit craters, cinder cones, lava flows and the Valle de Bove depression have made the site a prime destination for research and education. © UNESCO

SUMMARY

2017 Conservation Outlook

Good

The geological values of the site are well-preserved and its Outstanding Universal Value is not threatened at present. Protection and management of the site are mostly effective; however, some concerns exist regarding the current levels of staffing and funding. Additional financial and technical support could help improve visitor facilities and environmental education programmes. Etna remains one the best-studied volcanoes in the world, however, the capacity of the site management and other institutions to sustain ongoing monitoring and research needs to be strengthened.

Current state and trend of VALUES

Good
Trend: Stable

The geological values of the site are well-preserved and its Outstanding Universal Value is not threatened at present. Etna remains of one the best-studied volcanoes in the world, however, the capacity of the site management and other institutions to sustain ongoing monitoring and research needs to be strengthened.

Overall THREATS

Very Low Threat

Geological values of the site which are the basis for its inscription on the World Heritage List are currently not facing any threats and it is unlikely that any potential threats will emerge.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Protection and management of the site are mostly effective and improvements have been reported regarding the levels of funding and staffing. Additional financial and technical support could help improve visitor facilities and environmental education programmes further. Existing monitoring and research activities also need to be sustained in the long-term, while many efforts have been done to this aim in the recent years.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **One of the world’s most active and iconic volcanoes**
  Criterion:(viii)

  Mount Etna is one of the world’s most active and iconic volcanoes, and an outstanding example of ongoing geological processes and volcanic landforms (IUCN evaluation, 2013, SoOUV, 2013). The stratovolcano is characterized by almost continuous eruptive activity from its summit craters and fairly frequent lava flow eruptions from craters and fissures on its flanks (SoOUV, 2013).

- **One of the best-studied and monitored volcanoes**
  Criterion:(viii)

  Mount Etna is one of the best-studied and monitored volcanoes in the world, and continues to influence volcanology, geophysics and other earth science disciplines. Mount Etna's activity has been documented by humans for at least 2'700 years, making it one of the world's longest documented records of historical volcanism (SoOUV, 2013).

Other important biodiversity values

- **Endemic flora**

  Mount Etna's flora is specialized to the very particular volcanic habitat. Ten endemic plant species are restricted to the zones above 2100 m. Several

species are protected by Italian laws and by the EU Habitats Directive (Nomination Dossier, 2012).

► Endemic fauna

Etna's endemic fauna includes mainly arthropods with numerous endemic insects. Several species are protected by Italian laws and by the EU Habitats Directive (Nomination Dossier, 2012). Furthermore, studies on the biology and eco-ethology of local wildcat are underway, which are demonstrating that this is the only Mediterranean population not introduced by human.

► Unique ecosystems

As an isolated island volcano in the Mediterranean Basin biodiversity hotspot, Mount Etna supports important terrestrial ecosystems and communities with a high rate of endemism and adapted to the edaphic and climatic conditions (IUCN Evaluation, 2013). Several habitats are protected by Italian laws and by the EU Habitats Directive.

Assessment information

Threats

Current Threats

Very Low Threat

Geological values of the site which are the basis for its inscription on the World Heritage List are not facing any threats. There are a number of low threats affecting biodiversity values of the site.

► Solid Waste

Very Low Threat

Outside site

Waste dumps outside the site can indirectly affect the fauna and the flora.

► Tourism/ visitors/ recreation

Low Threat
Inside site, localised(<5%)
Outside site

Public access to the top of Mount Etna continue to be prohibited for safety reasons; access is regulated based on scientific report of the INGV (National Institute of Geophysics and Volcanology).
Mount Etna cableway, which is located inside the buffer zone (Zone C/ALT) and was pre-existant to Mount Etna Regional Park Institution, and organized 4x4 drives, which are authorized by the Park Institution, increase access to the site which increases littering, erosion, noise and disturbance of wildlife.

► Livestock Farming / Grazing

Low Threat
Outside site

Low-intensity livestock grazing is permitted within the property and occurs in parts of the property in the summer season (IUCN Evaluation, 2013). The Management Plan of Natura 2000 Site (which covers the whole property), has resulted in a significant reduction in the permitted grazing intensity (from 2UBA/ha to 1/2 UBA/ha) according to regional disposal DDG in n°36/2015.

Potential Threats

Very Low Threat

The geological values of the property, which are the basis for its inscription on the World Heritage List, do not appear to be faced with any emerging threats.

► Fire/ Fire Suppression

Low Threat
Inside site, localised(<5%)
Outside site

Fires pose a threat to the site’s biodiversity values, especially the vegetation. Fires could be triggered naturally (volcanism, lightning) but also by humans

(IUCN, 2013). Since 2013, there have been no incidences of fire inside the property (Corpo Forestale, 2017). Annual programme for 2017 has been approved by Mount Etna Authority (provision n°239/2017), and includes prevention activities against fires.

► Tourism/ Recreation Areas

Very Low Threat
Inside site, localised(<5%)
Outside site

Development of large-scale tourism infrastructure could potentially be a threat, although no construction activity is permitted within the property.

Protection and management

Assessing Protection and Management

► Relationships with local people

Highly Effective

The World Heritage nomination was developed through a participatory process and was widely supported by a wide range of stakeholders (IUCN Evaluation, 2013). The participatory process, involving local people and stakeholders, is constantly implemented through public audits with associations, universities, citizens, schools, also on specific UNESCO's Man and Biosphere Programme (MAB) themes. Recently, the Park Authorities have presented a tourism flow monitoring, comparing results after and before the inscription of the property on the World Heritage List.
The Park has obtained a state funding from MIBACT (Tourism, Cultural and Environment Heritage Ministry) to implement the project entitled “Strengthening management capacity of the Mount Etna UNESCO Site” (see point 7.11), including participatory initiatives aim to finalize and update the Management Plan.

► Legal framework

Mostly Effective

The site includes part of the Regional Nature Park “Parco dell’Etna”

established in 1987 by Decree of the President of the Sicilian Regional Autonomy which provides for adequate protection for the key values of the site. 77% of the site also overlap with Natura 2000 sites (SoOUV, 2013). Mount Etna Management Plan (including all 13 Natura 2000 sites inside its boundary) was approved in 2016 (D.D.G. of Environment Department n° 783 dated 24/10/2016).

► Enforcement

Data Deficient

Data deficient

► Integration into regional and national planning systems

Mostly Effective

Coordination between different national and regional institutions could be improved. At the time of inscription the World Heritage Committee requested the State Party to “coordinate regional and national authorities to maintain and strengthen their support to the property, to further increase the management capacity of the property” (Decision 37COM 8B.15). In 2017, a project aimed to strengthen the management capacity of the property was funded by the Italian government through UNESCO-Italy (Law 77).

► Management system

Mostly Effective

The management of the site is coordinated by the public agency Ente Parco dell’Etna – the management authority of the Etna Regional Nature Park (IUCN Evaluation, 2013), also through the external involvement of the INGV (National Institute of Geophysics and Volcanology), Catania University, Regional Department for Rural and Territorial Development. The park’s Executive Committee, a technical body, is in charge of decisions concerning the park’s budget, administration and management. The park director leads the day-to-day administration and management of Etna Park (IUCN Evaluation, 2013). The main instrument for the management of the protected area is the park territorial plan and related regulations (Nomination document, 2012).

► Management effectiveness

Mostly Effective

The IUCN Evaluation report noted that the current levels of staffing and funding were adequate, however, they “may be short of the levels required as World Heritage Site” (IUCN Evaluation, 2013).
The Operative Plan of the property for 2016 was implemented by local staff through the involvement of an expert geomorphologist following successfully securing 100,000 EUR, but funding for 2017 has not yet been confirmed at the time of writing (September, 2017).

► Implementation of Committee decisions and recommendations

Mostly Effective

As the site was inscribed on the World Heritage list in 2013, the World Heritage Committee made a number of recommendations, including review and updating of the management plan, enhancement of visitor facilities and promotion of existing education, monitoring and research activities (Decision 37 COM 8B.15).

The above-mentioned MIBACT project, "Strengthening management capacity of the Mont Etna UNESCO site" aims to address and comply with the World Heritage Committee recommendation, both to strengthen staff technical capacity through del Gelo monitoring, and to review and implement the Management Plan. Furthermore, the project includes and activity to implement the communication the property, including the creation of a logo, a website, and an App to communicate the main values of the property. Moreover, many tourism facilities have been restored within the buffer zone.

► Boundaries

Highly Effective

The boundaries of the site are clearly defined and include the site’s key geological values which are the basis for its inscription (IUCN Evaluation, 2013).

► Sustainable finance

Some Concern

The management authority Ente Parco dell’Etna receives its core funding from the Sicilian Regional Authority. Other sources of funding include the Italian State and the European Union. IUCN Evaluation report noted that “additional financial and technical support is needed for example to improve the environmental education and ecotourism facilities in the property, and tourism facilities in the buffer zone and wider park area” (IUCN Evaluation, 2013).

► Staff training and development

Mostly Effective

The management authority Ente Parco dell’Etna has 48 staff members. Although previously onsite management presence had limited expert staff capacity in the fields of volcanology and ecology (IUCN Evaluation, 2013), the park has now recruited an expert in geomorphology.

► Sustainable use

Data Deficient

Data deficient

► Education and interpretation programs

Some Concern

The IUCN Evaluation Report (2013) noted that environmental education could be enhanced with additional financial and technical support. In the recent years, interpretation programmes have been enhanced, including through the production of maps with paths, both in English and Italian.

► Tourism and visitation management

Some Concern

Tourism facilities, including environmental education programmes were noted to require some improvement at the time of inscription (IUCN Evaluation, 2013). In recent years, efforts to restore many of the tourism facilities have been undertaken.

► Monitoring

Highly Effective

There is a large network of monitoring stations and remote sensors to monitor and analyze the volcano's activity level. Data are also being collected on beech and pine forest areas and on tourism pressure (Nomination document, 2012). Ecological monitoring (e.g. fauna / wild cat, wider flora) could be expanded and/or needs additional resources. Ecological monitoring efforts have been expanded in response to the Committee decision at the time of inscription. In 2017,an agreement between the Italian Academy of Forestry Science and Mount Etna Park Authority was established, which aims to undertake an assessment of EU Habitats Directive type 91AA* (Eastern white oak wood).
Furthermore, a project entitled "Study on biology and eco-ethology of wildcat in the Regional Park of Etna, and implementation of a conservation plan" has recently been completed, which aims to support the evaluation process to recognise wildcat in the Habitat Directive Annex II.
Other projects in 2017 include a research project to monitor Sicilian rock partridge, wild rabbit and wildcat conservation inside Etna Park area. Additional monitoring projects that are also underway on other themes include tourist flow, of Grotta del gelo (iced lava caved within the property) etc.

► Research

Mostly Effective

Several research activities are ongoing and involve local and international organizations (Nomination document, 2012). During the last three years, research activities authorized have mainly concerned: classification in mycology various activity in the botanic garden "Nuova Guissonea", beech forest, birch population monitoring.

Overall assessment of protection and management

Mostly Effective

Protection and management of the site are mostly effective and improvements have been reported regarding the levels of funding and staffing. Additional

financial and technical support could help improve visitor facilities and environmental education programmes further. Existing monitoring and research activities also need to be sustained in the long-term, while many efforts have been done to this aim in the recent years.

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

Data deficient

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **One of the world’s most active and iconic volcanoes**
Good
Trend:Stable

The geological values of the site are well-preserved and its Outstanding Universal Value is not threatened at present (IUCN Evaluation, 2013).

▶ **One of the best-studied and monitored volcanoes**
Low Concern
Trend:Stable

Etna remains one of the best-studied volcanoes in the world, however, the capacity of the site management and other institutions to sustain ongoing monitoring and research needs to be strengthened.

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**
Good

Trend: Stable

The geological values of the site are well-preserved and its Outstanding Universal Value is not threatened at present. Etna remains of one the best-studied volcanoes in the world, however, the capacity of the site management and other institutions to sustain ongoing monitoring and research needs to be strengthened.

▶ **Assessment of the current state and trend of other important biodiversity values**

Good

Trend: Improving

Biodiversity values of the site have been slightly impacted, mainly in the buffer zone, by a number of threats, including grazing, impacts of tourism and waste.

Additional information

Benefits

Understanding Benefits

▶ **Livestock grazing areas**

Low-intensity grazing is permitted and occurs in parts of the property in the summer season (IUCN Evaluation, 2013).

▶ **Importance for research**

Mount Etna is one of the best-studied and monitored volcanoes in the world.

▶ **Outdoor recreation and tourism**

The site is an important tourism destination.

► Sacred natural sites or landscapes

Mt Etna is an iconic volcano for Sicily, Italy and is well known all over the world. It has also served as a source of inspiration for literature and art.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	NGOs Giacche Verdi Bronte (Italy) and Manfred-Hermsen-Stiftung (Germany)		“The joint activity of the environmental NGOs Giacche Verdi Bronte (Italy) and Manfred-Hermsen-Stiftung (Germany) aims for saving the threatened „1000 years old oak trees” at Mount Egitto" which is part of Mount Etna.
2	Ente Parco Etna / Accademia Italiana di Scienze Forestali		“Monitoraggio vegetazionale, forestale e dell’avifauna” (Vegetation, Forestry and Avifauna Monitoring). Core zone - Mount Egitto (which is part of Mount Etna)

№	Organization/ individuals	Project duration	Brief description of Active Projects
3	Ente Parco / Servizio Fitosanitario forestale dell'Azienda Foreste Demaniali - Regione Siciliana		"Monitoraggio dell'Entomofauna" (Enthomofauna Monitoring)
4	Istituto Nazionale di Geofisica e Vulcanologia INGV, Ente Parco Etna		Placement of dynamic digital panels along geological sites inside Etna natural Park.Reorganization, enhancement and promotion of the Museum of Etna (Museo Vulcanologico dell'Etna), located in Nicolosi (CT), through a new interactive concept of museum, in order to increase the spread of scientific research and its impact on society
5	Ente Parco Etna		Improvement of Mount Manfrè Woods -buffer zone

№	Organization/ individuals	Project duration	Brief description of Active Projects
6	Ente Parco Etna / Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche dell'Universita' di Palermo		Progetto di ricerca "Studio sulla biologia ed eco-etologia del gatto selvatico nel parco regionale dell'etna e realizzazione del piano di conservazione" ("Study on biology and eco-ethology of wildcat in the Regional Park of Etna, and implementation of a conservation plan"). Il progetto, già ultimato, ha consentito di acquisire il piano di conservazione delle popolazioni etnee di gatto. Dallo studio è emerso che in Sicilia vive l'unica popolazione mediterranea non introdotta dall'uomo; infatti studi recenti hanno evidenziato che il patrimonio genetico di questa popolazione è chiaramente divergente rispetto alle altre popolazioni italiane, di fatto una distinta unità di conservazione. In pratica, se si estinguesse sarebbe persa per sempre. Di conseguenza andrebbero attivate le procedure per il riconoscimento nell'Allegato II della direttiva Habitat. Infatti oggi il Gatto (Italiano) è classificato come "least concern" (specie a rischio minimo) dalla IUCN, anche se le popolazioni sono in declino in tutto l'areale. E' compreso nella lista rossa dei vertebrati italiani e a livello legislativo è inserito nella Direttiva Habitat (allegato IV) della Comunità Europea
7	Ente Parco dell'Etna / Dipartimento di Scienze biologiche, geologiche ed ambientali dell'Università di Catania	From: 2015	Investigation and esearch activity at Nuova Gussonea bothanic garden, referring to native, rare or threatened species and biodiversity conservation. A brief publication on this argument has been published, titled "More representativeplant communities in the Mount Etna UNESCO Site".

№	Organization/ individuals	Project duration	Brief description of Active Projects
8	Ente Parco Etna / Accademia Italiana di Scienze Forestali	From: 2017	Agreement for the implementation of the studies concerning Mount Egitto ecosystem components and priority Habitat 91AA* assessment.
9	Ente Parco Etna / Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche dell'Universita' di Palermo	From: 2017	Agreement for the implementation of the project "Investigation and monitoring for Sicilian rock partridge, wild rabbit and wildcat conservation in the Etna Park area".
10	Mount Etna Park Authority		An educational and information programme for Sicilian schools on Sicilian UNESCO World Heritage properties (called #generazioneunescosicilia), is currently underway and ending in 2018, financed by MIBACT (Ministry of Tourism, Cultural and Environmental Heritage).

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Improvement of visitor facilities	

REFERENCES

№	References
1	IUCN Evaluation, 2013.
2	List of the habitats occurring within the regional park "Mt Etna" (extr. Preparatory documents for the Management Plan of Mount Etna / 2009) in Italian
3	List of the main threats affecting the regional park "Mt Etna" (extr. Preparatory documents for the Management Plan of Mount Etna / 2009) in Italian
4	Parco dell’Etna, 2012. Nomination Document.
5	Statement of Outstanding Universal Value, 2013.