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## WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

### ISOLE EOLIE (AEOLIAN ISLANDS) (ITALY) ADDENDUM TO 1999 IUCN EVALUATION

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#### 1. DOCUMENTATION

The above nomination was reviewed by the Bureau at its twenty-third extraordinary session (29 November to 4 December, 1999) which reached the following conclusion:

*“The Bureau noted that the site has the potential to meet natural criterion (i). The Bureau decided to refer the nomination back to allow the State Party to provide additional information and to address the exclusion of human use areas and to propose more sharply defined boundaries for the Nature Reserves and buffer zones.*

*The volcanic landforms of the site represent classic features in the continuing study of volcanology worldwide. With scientific studies on the site from at least the 18<sup>th</sup> century, the islands have provided two of the types of eruptions (Vulcanian and Strombolian) to volcanology and geology textbooks and so have featured prominently in the education of all geoscientists for over 200 years. They continue to provide a rich field for volcanological studies of on-going geological processes in the development of landforms. The area also has a long history of land use, and subsequent abandonment, which has led to an on-going processes of maquis recovery.”*

Following the Bureau’s extraordinary meeting the World Heritage Committee, at its twenty-third session noted the examination and, after debate, noted that Italy and 1999 IUCN would clarify the management issues and that the site would be presented to the twenty-fourth Bureau session.

Additional information has been received from the Italian authorities in response to this request and is the subject of IUCN’s review below. The Bureau may wish to refer to the IUCN Technical Evaluation submitted to its twenty-third extraordinary session (attached).

#### 2. REVIEW OF SUPPLEMENTARY DOCUMENTATION

IUCN has examined the additional information received from the Italian authorities which comprised a response to questions of clarification on the legal and planning framework for the nominated area. IUCN notes the following:

- The additional information provides for clearer delineation of the area to be inscribed onto the World Heritage List (marked blue on the maps) and a buffer zone (marked red on the maps) which is not included in the nominated area. IUCN believes this to be a positive step which simplifies the boundaries and restricts the listing to those core areas of greatest value under criterion (i). The legal protection afforded to the buffer zones, which include modified natural landscapes and some historic areas, will significantly assist in the management and protection of the nominated area. IUCN retains some concerns with the inclusion of a number of developed areas within the nominated area. Specifically the settlement of Ginostra on Stromboli; Filicudi Porto on Filicudi; and the settlements of S. Marina Salina and Lingua on the south-eastern tip of Salina. The additional documentation provided by the State Party suggests these areas have traditionally been part of the volcanic landscape and do not adversely impact on the volcanic values of the nomination site. If requested IUCN would be pleased to work with the Italian authorities in addressing these concerns.
- The Italian authorities have adequately responded to a number of specific concerns on the protection and management of the nominated area through reference to a Territorial and Landscape Plan known as the PTP (Piano Territoriale Paesistico) for the Aeolian Islands. This plan, which covers the islands in their entirety, specifies an objective to manage the nominated area consistent with its outstanding volcanic landscape values.

- The Italian authorities have identified potential threats to the nominated area and the measures which are detailed within the PTP to address these.
- The supplementary information identifies the specific Sicilian Regional legal instruments which will provide adequate protection to the site's volcanic values and the authorities have given a commitment to legally identify the boundaries of the nominated area.
- A co-ordinated management structure has been in place since 1998 to oversee the management of the important heritage values of the Aeolian Islands. This is a syndicate of the four local municipalities which administer the Aeolians known as 'Ecosviluppo Eolie'. With the collaboration of this syndicate an individual Superintendent has been nominated and empowered to oversee protection of the entire nominated area.
- A significant commitment of resources has been identified toward preparing a separate Management Plan for the nominated area and implementing a range of protective and educational/interpretive actions. Specific funding sources are noted to address development, environmental restoration and professional training of staff.
- Specific actions are listed to monitor the on-going integrity of the nominated area.

### 3. CONCLUSION

IUCN holds by its conclusion that the site meets the requirements for inscription under natural criterion (i) based on its outstanding volcanic values. The Italian authorities have further strengthened the nomination by simplifying the boundaries and creating a clear buffer zone.

The authorities have responded positively to the request for clarification on protection and management issues. The detail contained within the Territorial and Landscape Plan (PTP) provides sufficient assurance that the nominated area will be adequately managed, however, a separate management plan for the World Heritage area is needed. IUCN notes that the Italian authorities have initiated and are committed to the preparation of such a plan.

IUCN believes that the supplementary information provided satisfies the requirements of paragraph 44 (b) (v) of the Operational Guidelines concerning management plans.

### 4. RECOMMENDATION

The Bureau recommended to the Committee that the Aeolian Islands be **inscribed** on the World Heritage List under natural criterion (i). The Bureau noted that the volcanic landforms of the site represent classic features in the continuing study of volcanology worldwide. With their scientific study from at least the 18<sup>th</sup> Century, the islands have provided two of the types of eruptions (Vulcanian and Strombolian) to volcanology and geology textbooks and so have featured prominently in the education of all geoscientists for over 200 years. They continue to provide a rich field for volcanological studies of on-going geological processes in the development of landforms.

The Bureau may commend the State Party for further strengthening the nomination by simplifying the boundaries of the nominated area and creating a clear surrounding buffer zone. The Bureau also commended the State Party for establishing a co-ordinated management structure and initiating a separate management plan for the nominated area.

The Bureau encouraged the State Party to expedite the completion of the separate management plan and the process of legalising the nominated area boundaries.

IUCN noted that the State Party should be encouraged to cooperate with IUCN in addressing the concerns regarding inclusion of a number of settlements within the legalised nominated area boundaries.

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## 1999 WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

### ISOLE EOLIE (AEOLIAN ISLANDS) (ITALY)

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#### 1. DOCUMENTATION

- i) **IUCN/WCMC Data Sheet:** nil
- ii) **Additional Literature Consulted:** **Volcanoes of the World.** Smithsonian, Simkin T. et al., 1981. **Volcanoes: A Planetary Perspective.** OUP, Bullard F.M. 1973. **Guida Naturalistica alle Isole Eolie.** P. Lo Cassio ed. E. Navarra, L'Epos, Palermo, 1997. **Isole Eolie: Vulcanologia, Archeologia.** Milano, Oreste Rogusi, L. Brea e M. Cavalier. 1991. **Confirmed breeding of the storm petrel in the Aeolian Islands (Italy).** Naturalista Sicil., Anon. 1994. **Amphibians and reptiles of the circumsicilian islands: new data and some considerations.** Boll. Mus. Reg. Sci. Nat. Torino, C. Corti et al., 1997. **Guida Excursionistica Vulcanologica delle Isole Eolie.** Centro Studi e Ricerche de Storia e Problemi Eoliani, N. Calanchi et al., 1996. **Guida Alla Natura della Sicilia,** WWF, Milan, F. Pratesi e F. Tassi, 1974.
- iii) **Consultations:** 7 external reviewers. Officials of the Ministry of Cultural Property and Environment (Rome), Cultural Property and Environment (Province of Messina). Mayors of Lipari, Sindaco, Sant Marina di Silina, Sindaco, and Malfa. Provincial level management staff and field staff. Specialists in vulcanology and biology.
- iv) **Field Visit:** February-March 1999. Lawrence Hamilton, Ray Bondin (ICOMOS).

#### 2. SUMMARY OF NATURAL VALUES

The Isole Eolie (Aeolian Islands) are located less than 40km off the northern coast of Sicily (see Map 1). The group consists of seven islands (Lipari, Vulcano, Salina, Stromboli, Filicudi, Alicudi and Panarea) and five small islets (Basiluzzo, Dattilo, Lisca Nera, Bottaro and Lisca Bianca) in the vicinity of Panarea. The total area of the Aeolian Islands is 1,216km<sup>2</sup>. The islands range in size from Panarea which is 34km<sup>2</sup> to Lipari which is 376km<sup>2</sup>.

The original nomination included the islands in their entirety, however, this has been changed following referral back to the State Party after the July 1999 Bureau meeting. The Bureau specifically requested the State Party to provide additional information and to address the exclusion of human use areas and to propose more sharply defined boundaries for the nature reserves and buffer zones. The revised nomination encompasses Zone A areas (nature reserves) being those areas of greatest scientific importance and Zone B areas being surrounding natural areas (see Map 2a-2c). Zone C areas are not included in the nomination, however, for the most part act as predominantly human modified landscape buffer zones to Zone A and B areas.

The islands' volcanic landforms represent classic features in the continuing study of vulcanology world-wide. With their scientific study from at least the 18<sup>th</sup> Century, the islands have provided two of the types of eruptions (Vulcanian and Strombolian) to vulcanology and geology textbooks and so have featured prominently in the education of all geoscientists for over 200 years. They continue to provide a rich field for vulcanological studies, as significant on-going geological processes in the development of landforms. The nominated site provides an interrelated set of volcanic features and phenomena, as noted in Section 44 (b) (i) of the Operational Guidelines for the Implementation of the World Heritage Convention.

The revised nomination material provides additional information on the islands' biota. Information on the faunal characteristics of the archipelago has been made available with indications of levels of endemism. It was also noted on the evaluation mission that floral and faunal recovery seem to be occurring following past land-use, including terracing for wheat and olive cultivation. Some rare plants, lizards and insects are returning to the islands. Bird colonies are increasing also, now that hunting has been largely controlled. Additional information on flora has also been provided with species lists for each island and indications of levels of endemism and protection for threatened plants.

The cultural properties of the nomination, mainly buildings, have been evaluated separately by ICOMOS. The recommendation from ICOMOS was that the site did not meet cultural World Heritage criteria. However, in the proposed nature reserves there is considerable evidence of ancient land use, particularly stone-walled terraces, many of which were maintained until the depopulation of the islands during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries.

### 3. COMPARISON WITH OTHER AREAS

By various counting methods there are at least 454 active volcanoes in the world (Bullard, 1973) or as many as 1343 (over the past 10,000 years) as tallied by the Smithsonian Institution (Simkin, 1981). The majority of the world's active volcanoes are found in the "Pacific Rim of Fire" that extends around the Pacific Ocean.

There are at least 22 island or portions of islands now inscribed on the World Heritage List. There are several active or dormant volcanoes located in World Heritage sites such as Sangay National Park, Virunga National Park, Kilimanjaro National Park, Tongariro National Park, Hawaii Volcanoes National Park, Galapagos Islands, Morne Trois Pitons National Park, Kamchatka Volcanoes, Mount Kenya National Park/Natural Forest, and Heard and McDonald Islands. Heard and McDonald are volcanic islands, as is Hawaii Volcanoes, and the Galapagos are a volcanic archipelago of islands very much like the Aeolian Islands. However, the Aeolian Islands gave their name to two recognised types of eruptions and are among the earliest ever studied and documented. Perhaps the principal distinguishing value of the Aeolians lies in the diversity of "textbook" volcanic features located within such a compact area and their history and on-going role as a field laboratory for the study of vulcanology. Comments from expert reviewers note the significance and importance of the nominated site for vulcanology. The twenty third (23<sup>rd</sup>.) World Heritage Bureau meeting (July, 1999) noted that this site has the potential to meet World Heritage natural criterion (i).

There are other existing World Heritage sites in the Udvardy Mediterranean Sclerophyll Biogeographic Province: Mount Athos (Greece), Meteora (Greece), Ichkeul National Park (Tunisia), Doñana National Park (Spain), and Cape Girolata, Cape Porto, Scandola Nature Reserve and the Piana Calanches in Corsica (France). The maquis vegetation biome, within this biogeographic province, and associated fauna, are not well represented in the World Heritage List. On the Aeolian Islands the release of large areas from anthropogenic pressure (except low-level grazing) has permitted native vegetation and some native fauna to return, however, these elements do not provide a solid case to differentiate this site from other volcanic sites already on the World Heritage list.

### 4. INTEGRITY

The integrity of the proposed listing is strengthened by the revised boundaries and the exclusion of developed areas. The planned reserves are mainly the upper volcanic cones and the steep lands plunging to the sea. The field evaluation noted that almost all reserves (Zone A) were free from modern human structures and uses, except for grazing, and some park structures in the existing Reserve of Mount Felci and Porri on Salina. In general, these areas are free from human disturbance due to either volcanic risk or very steep, rough slopes. Zone B areas show some development problems. For example, "modern" urban type housing already occurs within the areas proposed as B Zones.

While most of the delineated Zone A and B areas are only planned, Reserva Naturale "La Montagne delli Felci e dei Porri" on Salina is a statutory reserve, created by the Region of Palermo in 1984 and has a small protection staff. This reserve consists of the upper reaches of two volcanic hills covering roughly 278ha. Unfortunately Felci has been planted with alien tree species, such as pine and eucalyptus, seriously affecting the recovery of native species. The small islands of Alicudi (278ha.), Panarea (154ha.), Filicudi (562ha.) and Stromboli (718ha.), plus their islets, have been designated Nature Reserves under Regional law, however, there are no reserve staff on any of them and no administration on Alicudi or Filicudi. Vulcano and Lipari do not apparently have any legally defined reserves. On both, there is a substantial amount of urban and suburban development in the proposed Zone B, and some also in the proposed Zone A areas.

The Vulcanology Museum located in the Acropolis of Lipari, although still under development, provides an impressive educational and interpretive adjunct to the understanding of the volcanics of the islands. The maintenance and development of this facility would be essential and central to the value of any World Heritage listing.

No consolidated management plans exist for natural areas on the islands. However, there is a general regulatory plan for the four local communes (Lipari, Santa Marina Salina, Malfa and Leni) which aims to control further haphazard development. The additional information on biota also provides some indication of biodiversity values and threats. Issues of fragmentation, convoluted boundaries, and poor perimeter/area ratios can impact on natural values limiting the capacity for effective management. These issues stress the need for effective integrated management plans.

IUCN suggests there are a number of activities which could help develop the heritage significance of the area, including:

- ◆ development of museum facilities, including support of the current museum project. It is noted that, except for the excellent museum displays in the town of Lipari, there is currently limited interpretation on site or near site and it is recommended that more attention be given to this aspect;
- ◆ inclusion of professional geological input in published books and maps, and for the planning of tourist trips, and also for the education and training of tourist guides, and general publicity about the volcanic heritage of the Islands;
- ◆ development of a regular series of on-site conferences to build up information for the use of visitors to this area; and
- ◆ the development of a volcanic trail (a concept being used in the young volcanic area of western Victoria, Australia).

## **5. ADDITIONAL COMMENTS**

Marine reserves and the presence of coral reefs are not mentioned in any of the documentation notwithstanding the islands being strongly oriented to coastal tourism.

At its Twenty-second ordinary session, the Bureau noted that the site has potential to meet natural criterion (i). The Bureau decided to refer the nomination back to allow the State Party to provide additional information and to address the exclusion of human use areas to propose more sharply defined boundaries for the Nature Reserves and buffer zones.

The information requested was provided by the State party and reviewed by IUCN.

## **6. APPLICATION OF WORLD HERITAGE NATURAL CRITERIA**

### **Criterion (i): Earth's history and geological features**

The merit of the nomination rests upon the Aeolian Islands being an outstanding record of volcanic island building and destruction, the ongoing volcanic phenomenon, and the influence that vulcanism has had on the culture and peoples of these islands. Moreover, their activity and influence is in evidence today, with the active volcano of Stromboli and the continuing threat of Vulcan (and Vulcanello). The seven islands are in a volcanic arc or archipelago, much like the Hawaiian Islands. They offer in relatively small geographic space a model on a small scale of the story of volcanoes. They are well studied and monitored and have international significance in the study of vulcanology.

IUCN considers that the Aeolian Islands nomination possesses outstanding universal value within the meaning of criterion (i).

### **Criterion (ii): Ecological processes**

The nomination does not directly address this criterion. It is noted that the Aeolian Islands have a long history of land use, and subsequent abandonment, which has led to an on-going processes of maquis recovery.

IUCN considers that the Aeolian Islands nomination does not meet this criterion.

### **Criterion (iii): Superlative natural phenomena, scenic beauty**

The nomination does not directly address this criterion, though the still-active vulcanism, especially in Stromboli, is an interesting natural phenomenon. Though the juxtaposition of volcanic topography and seascape is very scenic, unsightly “modern” development, including visible solid waste dumps, mining activity, housing, small businesses, and infrastructure, impacts negatively on the setting of the volcanic and natural features.

IUCN considers that the Aeolian Islands nomination does not meet this criterion.

**Criterion (iv): Biodiversity and threatened species**

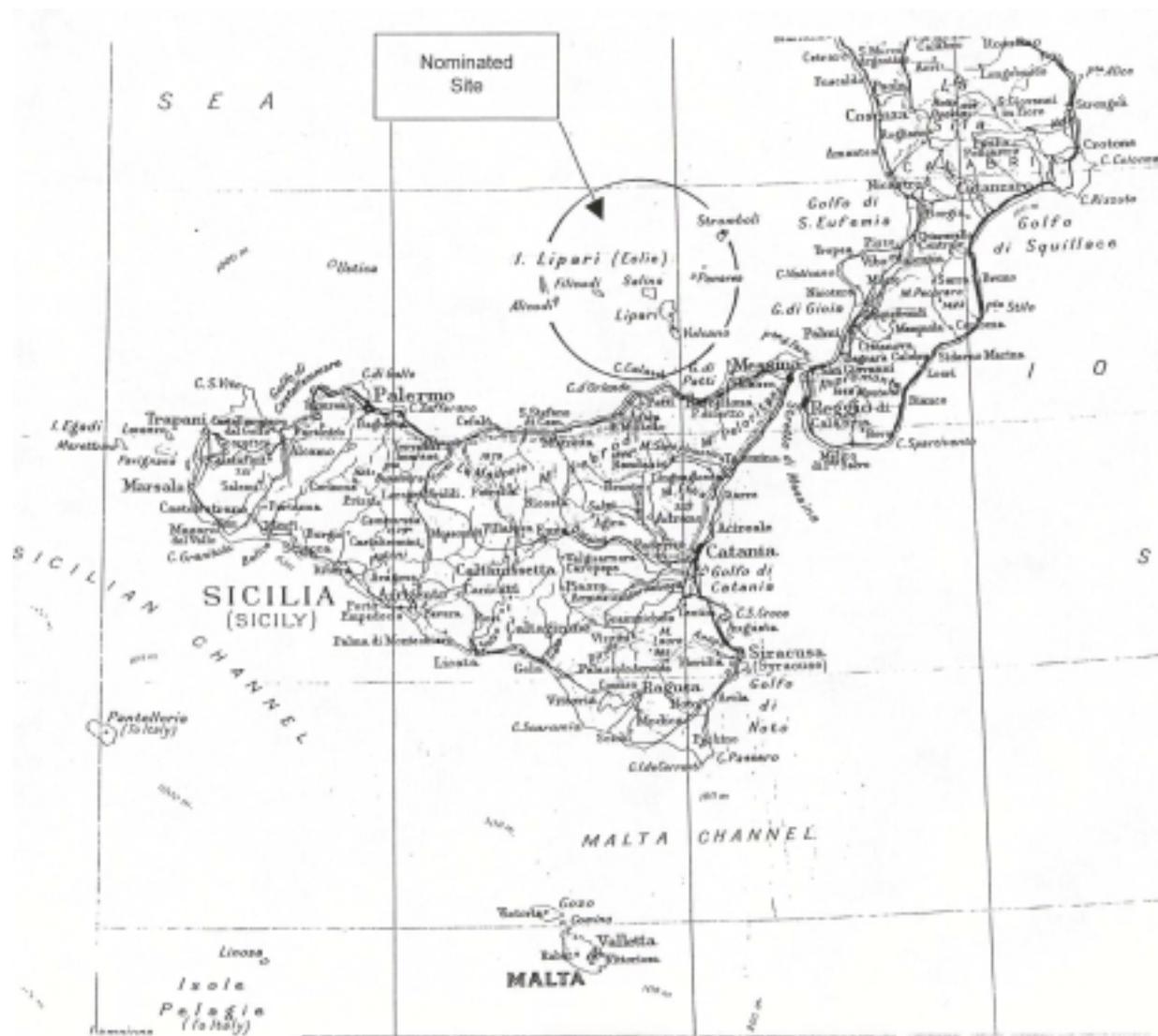
Mediterranean climatic areas of the world are regionally important for their high plant diversity, high number of rare taxa, and high endemism. The Mediterranean basin suffers from prolonged human impact, and consequently many species of both flora and fauna are rare or threatened. The nomination provides evidence of the important contribution these islands make toward the conservation of biodiversity in the Mediterranean basin, however, this is considered a secondary value to the vulcanism.

IUCN considers that the Aeolian Islands nomination does not meet this criterion.

**7. RECOMMENDATION**

It is recommended that the Aeolian Islands, comprising zones A and B in the revised nomination from the State Party, be **inscribed** on the World Heritage List under criterion (i). The revised nomination submitted by the State Party is more complete and presents a strong case for inscription based on volcanic values and also addresses issues relating to the boundary of the nomination.

However, IUCN notes some concerns in relation to the long term integrity of the site and recommends that the Committee urge the State Party to expedite formal legal protection for the nominated area and develop an integrated management plan for the area to ensure effective management of World Heritage values. The Committee may wish to request the State Party to report back in one year time in relation to progress with these issues.



Map 1: Location Map – Isole Eolie (Aeolian Islands)

## Map 2: Site Maps – Isole Eolie (Aeolian Islands)

