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# Gibraltar Neanderthal Caves and Environments (United Kingdom) No 1500

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## Official name as proposed by the State Party

Gibraltar Neanderthal Caves and Environments

## Location

Gibraltar  
United Kingdom

## Brief description

Located on the eastern side of the Rock of Gibraltar, steep limestone cliffs contain four caves with extensive archaeological and palaeontological deposits that provide evidence of Neanderthal occupation over a span of more than 125,000 years. These caves have provided extensive evidence of Neanderthal life, including rare evidence of exploitation of birds and marine animals for food; and use of bird feathers and abstract rock engravings, both indicating new evidence of the cognitive abilities of the Neanderthals. The sites are complemented by their steep limestone cliff settings, and the present-day flora and fauna of Gibraltar, much of which can be also identified in the rich palaeo-environmental evidence from the excavations. While long-term scientific research is continuing, these sites have contributed substantially to the debates about the Neanderthal and human evolution.

## 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*.

## 1 Basic data

### Included in the Tentative List

27 January 2012

### International Assistance from the World Heritage Fund for preparing the Nomination

None

### Date received by the World Heritage Centre

27 January 2015

## Background

This is a new nomination.

## Consultations

ICOMOS has consulted its International Scientific Committee on Archaeological Heritage Management and several independent experts.

## Technical Evaluation Mission

An ICOMOS technical evaluation mission visited the site from 16 to 20 September 2015.

## Additional information received by ICOMOS

A letter was sent to the State Party on 28 September 2015 requesting further information on the delineation of the buffer zone, inclusion of sea waters in the buffer zone, criteria used to assess the historical significance of graffiti, detail of plans to establish viewing platforms at the Europa Advance Batteries, protection of archaeological remains associated with Moorish and Spanish fortifications, redundant infrastructure associated with former military functions, current and proposed visitor centre functions, and the involvement of the Ministry of Defence in the management of the property. The State Party responded to these queries on 20 October 2015.

As requested by the revised *Operational Guidelines*, the State Party received an Interim Report on 21 December 2015. Further information was provided by the State Party on 22 February 2016 in relation to the issues raised, including clarifications about the inclusion of underwater caves in the property boundary; protection of visual integrity and extension of the buffer zone to include sea waters adjacent to the nominated property; provision of a five-year archaeological research strategy; plans for retention of archaeological deposits within Gorham's and Vanguard Caves; further information about Ibeex Cave; and update on the condition surveys of historic buildings within the nominated property.

All additional information provided to ICOMOS by the State Party is incorporated into the relevant sections of this evaluation report.

## Date of ICOMOS approval of this report

11 March 2016

## 2 The property

### Description

The nominated property is located on the eastern side of the Rock of Gibraltar on the Mediterranean coast, suspended between the south-western tip of the Iberian Peninsula and the coast of North Africa. It covers 28 ha of limestone cliffs and caves, surrounded by a buffer zone of 313 ha. The vertical extent of the nominated property rises from the modern sea level to the highest point of the Rock of Gibraltar and demonstrates a geomorphological history spanning two million years.

Since the discovery of the first hominid skull in the 19<sup>th</sup> century (later identified as Neanderthal), Gibraltar has been an internationally-known location of archaeological and palaeontological research. Excavations of deposits in caves on Gibraltar have yielded evidence of occupation spanning more than 125,000 years.

There are more than 200 caves occurring on Gibraltar, and 46 of these are located within the property, occurring in two main clusters – the Gorham's Cave Complex (28 caves) and the Main Cliff, Southern Peak (18 caves). Many of the caves in the nominated property are wholly or partly submerged by the sea, but these do not contain archaeological deposits in most cases, except for a few with some material associated with 'historic' periods. Of the remaining caves in the nominated property, only some contain archaeological deposits (from any period of human history).

The four caves that are the central element of this nomination all occur within the Gorham's Cave Complex (Gorham's Cave, Vanguard Cave, Hyaena Cave and Bennett's Cave). These four caves have extensive evidence of Neanderthal occupation and in the case of Gorham's Cave also evidence of Early Modern Human occupation. Several other caves in the nominated property that do not contain Neanderthal material, contain Early Modern Human deposits (including Martin's Cave and the Goat's Hair Twin Cave, both located within the nominated property boundary).

A programme of archaeological research over 25 years has demonstrated that Gorham's and Vanguard Caves together provide detailed insights into Neanderthal life over more than 100,000 years. These two caves are of particular quality in providing evidence of the Neanderthal way of life and cognitive capacities. Continuity can be demonstrated between the flora and fauna in and around the property today and many of the species identified in the deposits associated with Neanderthal activity in the caves. The nominated property features the limestone cliffs in which the caves are set, along with fossil sand dunes, fossil beaches, scree slopes and shorelines, all contributory to understanding the environmental context of Neanderthal occupation and the changes in geomorphology, climate and sea levels since that time.

The nominated property consists of the four caves in their landscape setting that contain archaeological material associated with Neanderthal and/or early modern human occupation (Gorham's, Vanguard, Hyaena and Bennett's Caves); and the present-day flora and fauna of Gibraltar, including many species identified in the palaeo-environmental evidence recovered from the excavations in the caves. These are considered in turn:

#### Gorham's, Vanguard, Hyaena and Bennett's Caves

These four caves are the primary focus of the values of the nominated property. Excavations undertaken at Gorham's and Vanguard caves have provided extensive evidence of Neanderthal occupation, including rare evidence of the exploitation of bird and mollusc resources and a rock engraving in Gorham's Cave. In addition to the richness and extent of the deposits, these rare finds have stimulated further scientific debates about the Neanderthals. Gorham's cave is the largest cave, a sea cave with Neanderthal deposits that span the period 32,000-40,000 years ago. Vanguard Cave extends this

sequence and has been dated between 127,000- 75,000 years ago. The findings include the largest collection of fossil bird species from this period anywhere in the world.

#### Limestone Cliffs

The caves containing evidence of the Neanderthal occupation of Gibraltar are set within 426-metre high Jurassic limestone cliffs. These provide a record of environmental and sea level changes over three million years, encompassing the Quaternary and part of the Pliocene.

#### Gibraltar's Flora and Fauna

Pollen, charcoal and animal fossils recovered from the excavations in the caves match many of the plant species growing on the limestone cliffs today, as well as local and migrating birds, and marine and inter-tidal species. The State Party considers that these commonalities demonstrate continuities between the present and the periods of Neanderthal occupation, providing a testimony to the 'world of the Neanderthals'.

There are several components of interest located within the proposed buffer zone, including some sites where Neanderthal material has been recovered but have limited or no further scientific potential (Forbes' Cave, Ibex Cave and Devil's Tower Rock Shelter), and the 14 ha Catalan Bay Sand Dune, now restored after having been covered for most of the 20<sup>th</sup> century by metal sheets to collect rainwater.

Two further sites have been found on Gibraltar with evidence of Neanderthal occupation (Beefsteak Cave and Europa Point 1). These are legally protected, but are located outside the buffer zone. They are considered to be of higher significance as explained below.

#### History and development

The Rock of Gibraltar is located at the confluence of the Mediterranean Sea and the Atlantic Ocean, between the continents of Africa and Europe. It has been a recognised landmark since ancient times; and has been a focus of conflict, strategic importance and conquest for centuries of human history.

Paleontological research at Gibraltar began in the 19<sup>th</sup> century, and the rich fossil record has been of international scientific interest to the present. The first hominid skull (later identified as Neanderthal) was discovered at Forbes' Quarry in 1848, eight years before the discovery of the specimen in the Neander Valley in Germany which gave the Neanderthal its name. Further finds of Neanderthal fossil remains were made at Devil's Tower in 1926.

Archaeological excavations began in the 19<sup>th</sup> century and continued sporadically after that time, including the first excavations of Gorham's Cave in the 1950s; but it is the archaeological research conducted since 1989 that has confirmed the importance of the Gibraltar cave sites. Gorham's Cave has been systematically excavated since that time (starting in 1989, and new sections begun in

1997); and Vanguard Cave was first excavated in 1995-1998. Forty-four academic institutions from ten different countries have partnered with the Gibraltar Museum in the 'Gibraltar Caves Project', which has also been supported by European Union funding sources.

As described above, of the nine Neanderthal sites on Gibraltar, four are within the nominated property and are those with the greatest scientific significance and research potential (Gorham's, Vanguard, Hyaena and Bennett's Caves). The five others have lesser scientific potential for various reasons: Forbes' Cave is a small rock shelter located at the edge of the northern boundary of the proposed buffer zone that was quarried in the 19<sup>th</sup> century and now has no remaining archaeological deposits; Devil's Tower Rock Shelter is located on the north-eastern boundary of the proposed buffer zone and was fully excavated in the 1920s resulting in the recovery of a partial skull of a Neanderthal child; Beefsteak Cave is located beyond the proposed buffer zone to the south of the nominated property and has produced a small amount of stone tools dated to 90,000 years ago; Europa Point 1 is located outside the proposed buffer zone, near the southern tip of Gibraltar, and is an eroded remnant of a larger cave with a small deposit of stone tools in the cave floor; and Ibex Cave, an isolated rock shelter, located within the proposed buffer zone is a Neanderthal hunting and butchery site in fair condition, with very little archaeological deposits associated with the Neanderthals.

The Gibraltar complex of cave sites is recognised internationally because of the number of caves with evidence of Neanderthal activity and for their ability to span 100,000 years of Neanderthal occupation from the last interglacial to the latest surviving Neanderthal populations around 30,000 years ago, apparently living in isolation at a time when modern human-Neanderthal contact was taking place elsewhere. Evidence from the nominated property has also contributed to scientific debates about the Neanderthals, including concerning their cognitive abilities.

Prior to the property coming into the ownership of Her Majesty's Government of Gibraltar it was owned by the United Kingdom's Ministry of Defence. As a result, the nominated property has a range of military heritage features reflecting the history of Gibraltar since the 18<sup>th</sup> century, as well as a series of redundant tunnels and disused quarries.

### **3 Justification for inscription, integrity and authenticity**

#### **Comparative analysis**

This nomination responds to initiatives of the World Heritage Committee and the Advisory Bodies to increase the inclusion of properties that have the ability to contribute to knowledge of human evolution and prehistory in the World Heritage List. The comparative analysis has made use of the ICOMOS World Heritage

thematic study on potential fossil hominid sites, and the outcomes of UNESCO's 'HEADS' thematic program (*Human Evolution: Adaptations, Dispersals and Social Developments*).

Of the Neanderthal sites identified in these studies, only the Sites of Human Evolution at Mount Carmel: The Nahal Me'arot / Wadi el-Mughara Caves in Israel (2012, criteria (iii), (v)) has been inscribed on the World Heritage List.

The State Party compares the nominated property with sites representing Neanderthals and Neanderthal-modern human transition (Mount Carmel, Israel); sites representing Neanderthals and potentially the Neanderthal-modern human transition (La Chapelle-aux-Saints, Le Moustier in Prehistoric Sites and Decorated Caves of the Vézère Valley (1979, (i), (iii)) and La Ferrassie, France; Monte Circeo, Italy; and Krapina, (Croatia); sites representing only Neanderthals (Shanidar, Iraq); and sites representing Neanderthals only or Neanderthals and potentially the Neanderthal-modern human transition (Crimean Caves as part of the Cultural Landscape of "Cave Towns" of the Crimean Gothia (Tentative List), Ukraine; El Sidrón, Spain; El Castillo, Spain; Zafarraya, Spain; Neander Valley, Germany; Saccopastore, Italy; Amud, Israel).

ICOMOS notes that the State Party has also briefly considered a number of additional properties on the World Heritage List that demonstrate processes of human evolution across similar time periods (or longer), including early modern human occupations: Willandra Lakes Region, Australia (1981, (iii), (viii)); Peking Man Site at Zhoukoudian, China (1987, (iii), (vi)), Lower Valley of the Omo, Ethiopia (1980, (iii), (iv)), Sangiran Early Man Site, Indonesia (1996, (iii), (vi)), Lake Turkana National Parks, Kenya (1997, (viii), (x)), Fossil Hominid Sites of South Africa, South Africa (1999, (iii), (vi)), Archaeological Site of Atapuerca, Spain (2000, (iii), (v)), and Ngorongoro Conservation Area, United Republic of Tanzania (1979, 2010, (iv), (vii), (viii), (ix), (x)); as well as Tentative List properties in Ethiopia, Kenya, South Africa and Italy. However, these do not directly address questions about the Neanderthals, so ICOMOS considers that the comparisons made by the State Party are appropriate.

The State Party further considers that the caves containing Neanderthal and early modern human evidence on Gibraltar contain exceptional ecological richness and evidence of behavioural ecology over a long time span. In addition, the State Party asserts that the relict environments have persisted to the present day – particularly the cliff vegetation and birds – and that this offers an 'unrivalled' insight into the Neanderthals.

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

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### 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:

- The cave sites in the nominated property contain exceptional, long and high-resolution sequences of archaeological and paleontological evidence of the Neanderthals and early modern humans;
- The presence of evidence of the cognitive capacities of the Neanderthals, including the only documented example of a Neanderthal rock engraving;
- The only known evidence of the Neanderthal exploitation of marine mammals and birds for food and the only sequence that demonstrates the use of bird feathers in ornamentation;
- Evidence of the arrival of early modern humans to Gibraltar;
- The natural setting of the caves contains a high number of species of flora and fauna that are also found in the fossil and pollen records from the periods of Neanderthal occupation, allowing the property to function in ways that are equated to both a 'laboratory' and an 'archive'.

ICOMOS considers that the justification of this property on the basis of its scientific significance and potential associated with the Neanderthals is appropriate. Although not a central orientation of this nomination, ICOMOS considers that the State Party conceptualisation of the property as a 'living laboratory' and an 'archive', the references to the Neanderthals as a 'people' and the archaeological evidence at this property as their 'home' is likely to generate scientific controversy and interest, but is unnecessary for the evaluation of Outstanding Universal Value.

### Integrity and authenticity

#### Integrity

The nominated property includes the four most important caves containing evidence of the Neanderthal and early modern human occupation of Gibraltar and their landscape setting.

ICOMOS considers that all elements necessary to express the values of the property are included in the nominated boundary; and that the nominated area includes sufficient consideration of the setting of the caves in relation to the topography and vegetation of Gibraltar, including the limestone cliffs, fossil sand dunes, fossil beaches, scree slopes, shorelines and flora and fauna.

The nominated property also contains military heritage features reflecting the history of Gibraltar since the 18<sup>th</sup> century. Assessments of redundant military infrastructure and graffiti are occurring to determine whether some

redundant elements can be removed to improve the visual integrity.

The State Party provided additional information in January 2016 regarding mechanisms for ensuring the visual integrity of the property, reiterating the statutory protection arising from the Nature Reserve and Marine Special Area of Conservation designations; the processes in place to consider new proposals; and the requirements for Environmental Impact Assessments, Heritage Impact Assessments and public consultations. The setting of the nominated property to the south (Europa Advance Road) had been improved by the removal of redundant facilities and revegetation.

#### Authenticity

The authenticity of the nominated property is supported by the presence of stratified archaeological deposits in the caves, the landforms that contain the caves, and the cliff vegetation and fauna that can be associated with the environmental conditions of the past.

Systematic archaeological research has been undertaken on the sites on Gibraltar for more than 25 years and is ongoing at Gorham's Cave and Vanguard Cave where discoveries have contributed significantly to the ongoing scientific debates about the Neanderthals. The important archaeological and environmental evidence gained from these excavations underpin the authenticity of the nominated property.

The caves and archaeological and palaeo-environmental deposits they contain are largely intact. The deposits in Hyaena and Bennett's Caves are largely undisturbed, and approximately 90% of Vanguard Cave and 70% of Gorham's Cave remain unexcavated, providing the basis for a long-term research programme of international interest.

The results of archaeological excavations indicate the timing and character of the major phases of occupation, as well as providing evidence about the lifestyle of the Neanderthals, such as the only known examples of exploitation of birds and marine mammals for food and evidence for symbolically based behavior in the abstract pattern engraved at Gorham's Cave.

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ICOMOS considers that the conditions of integrity and authenticity have been met.

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### Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (iii) and (v).

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 the property provides an exceptional testimony to the cultural traditions of the Neanderthals

and early modern humans through a period spanning more than 125,000 years. This is expressed by the rich archaeological evidence in the caves (particularly Gorham's and Vanguard Caves), including stone tools, hearths, and cut and fractured bones and molluscs. Archaeological findings at Gorham's Cave have also included rare rock engravings that can be dated to more than 39,000 years ago. The cave deposits contain substantial evidence of the climatic and environmental conditions during this span of time, including fossil vertebrates (with an especially diverse representation of avian species), molluscs, pollen and charcoal. The archaeological and scientific potential of the caves continues to be explored through archaeological research. The State Party argues that these sites provide opportunities for understanding Neanderthal life, including their capacity for abstract thinking.

ICOMOS considers that the nominated property provides an exceptional testimony to the occupation, cultural traditions and material culture of Neanderthal and Early Modern Human populations.

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ICOMOS considers that this criterion has been demonstrated.

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*Criterion (v): be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;*

This criterion is justified by the State Party on the grounds that the specific combination of fossil and geological features, together with Gibraltar's present-day environmental resources (such as bird and plant species) demonstrate in an exceptional way the environmental context of Neanderthal life.

ICOMOS considers that while the State Party has provided an excellent documentation of the natural components of the nominated property, and has provided detailed scientific evidence of the palaeo-environmental characteristics drawn from the excavations on Gibraltar, these are not strongly presented in relation to this cultural criterion.

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ICOMOS considers that this criterion has not been demonstrated.

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ICOMOS considers that the nominated property meets criterion (iii) and conditions of authenticity and integrity.

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#### **Description of the attributes**

The attributes of the property are the striking cluster of caves containing archaeological deposits that provide evidence of Neanderthal and early modern human occupation of Gibraltar (Gorham's, Vanguard, Hyaena and Bennett's Caves); and the landscape setting of the caves which assists in presenting the significance of this

property (including the landforms and living flora and fauna components). The artefacts and excavated materials housed in the Gibraltar Museum are also associated with the values of the nominated property.

#### **4 Factors affecting the property**

Development pressure is minimal, and there are no developments proposed in the nominated property. The property is uninhabited. There is some redundant military infrastructure which could be removed, but the State Party has indicated that no further infrastructure will be provided.

The environmental pressures are potentially significant, especially in relation to sea level rises and flooding associated with climate change. These pressures are recognised by the State Party and a Risk Preparedness plan based on the World Heritage Resource Manual on this topic has been prepared, and a Preliminary Flood Risk - Assessment was prepared in 2011. Pollution from ships is a low risk, as are the risks arising from rock falls and erosion.

Gibraltar has been a tourist attraction since the 19<sup>th</sup> century. While there are more than 11 million visitors to Gibraltar each year, the topography and difficulty of access limit visitor access to the sites in the nominated property. Tourism to Gibraltar focuses mostly on aspects located elsewhere, such as the Barbary Macaques, the sites of St. Michael's Cave, the Moorish Castle, and Great Siege and World War II tunnels. Current visitation to the Upper Rock represents only 7-8% of the visitor population; and visitation to the nominated property is smaller still: in recent years numbering 24,000 to the Mediterranean Steps; 200 to Gorham's Cave; approximately 3,500 view the caves from the sea via boat tours; and 12,500 to the Gibraltar Museum. It is likely that visitation could increase – especially to the Museum and other visitor facilities to be developed outside the property boundary – but visitation to the property is anticipated to be low, and visitor pressure is not a problem at present.

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ICOMOS considers that the main threats to the property are sea level rises, flooding and other effects of climate change. While visitor pressure is not a current threat, it is likely that visitation will increase and will need monitoring.

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#### **5 Protection, conservation and management**

##### **Boundaries of the nominated property and buffer zone**

The nominated property is located within the Gibraltar Nature Reserve (Upper Rock Nature Reserve) and its boundaries follow natural topological features. In the additional information received from the State Party, it was confirmed that, although difficult to indicate in mapping formats, the boundary includes caves that are

part of the cliff landform that are now underwater due to the lesser sea levels in modern times.

The buffer zone includes the immediate setting of the nominated property and protects key views. It provides an additional resource pool of the flora and fauna that characterise the property. The boundaries of the buffer zone are clearly delineated and lie almost entirely within the Gibraltar Nature Reserve: the Upper Rock buffer zone, eastern buffer zone (including the Catalan Bay Sand Dune, the cliffs above the dune and talus slopes in the north-east corner) and a narrow zone located to the south of the nominated property.

The maps supplied by the State Party show a small strip of land omitted from the buffer zone on the eastern side. ICOMOS requested further information from the State Party about this, and was satisfied by the explanations provided by the State Party that the area includes a road, low cliffs and groins as well as existing buildings at Both Worlds and Catalan Bay village. The buffer zone boundary aligns with the edge of the sand dune to the east of Sir Herbert Miles Road and protects attributes that are functionally important for natural plant species and bird habitat.

ICOMOS requested further information from the State Party about the possibility of incorporating sea waters to the east of the nominated property in the buffer zone. Although protection of this marine area is provided by local and European Union marine protected area mechanisms, ICOMOS considered that explicit protection of the Outstanding Universal Value of the property should be ensured by extending the buffer zone to include this area of the sea. ICOMOS also noted information provided by the State Party about continuing underwater archaeological research in this area and considers that, while no evidence of Neanderthal deposits have yet been located, extension of the existing buffer zone could also provide for this future possibility.

In response to requests from ICOMOS, the State Party advised in additional information provided in January 2016 that the eastern buffer zone has been extended to include sea waters immediately adjacent to the nominated property. An area of sea waters of approximately 300 metres wide has been included in the buffer zone in order to provide the requested additional protection, and aligns the buffer zone in this area with the edges of the Town Plan Zones (as revised in 2015). The State Party advised that this new boundary for the buffer zone coincides with the -10 metre contour.

There are a small number of leased properties located in the Upper Rock zone which operate as visitor attractions and are regulated by Town Planning processes.

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

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### **Ownership**

The nominated property is State-owned. Most of the nominated property is owned by the Government of Gibraltar, and a small section of the nominated property is owned by the United Kingdom Ministry of Defence. Some small areas within the buffer zone are leased to the operators of visitor and community facilities.

### **Protection**

The nominated property and most of the buffer zone is located within the Gibraltar Nature Reserve (Upper Rock Nature Reserve). The area of sea adjacent to the property is located within the Eastern Marine Conservation Zone, protected as a marine area of conservation under Gibraltar and European Union legislation. The property and its buffer zone are given legal protection by Gibraltar Heritage Trust Act (1989), the Nature Protection Act (1991) the Town Planning Act (1999), the Town Planning (Environment Impact Assessment) Regulations (2000), and the Nature Conservation Area (Upper Rock) Designation Order (2013). The individual caves containing evidence of Neanderthal and early modern human occupation are protected as Schedule 1 Category A (maximum protection) sites under the Gibraltar Heritage Trust Ordinance.

The sea waters adjacent to the property are designated in part as a European marine Special Area of Conservation and are protected under the Marine Nature Reserve Regulations (1995), the Marine Strategy Regulations (2011) and the Marine Protection Regulations (2014). Anchorage for ships is located in a designated area located 2 km offshore.

Planning and development are regulated by the Town Planning Act and by implementation of policies in the Gibraltar Development Plan 2009. Planning controls and procedures are enforced by the Development and Planning Commission (established under the 2009 Act) with full public participation.

Legal protection is further supported in the 2014 Town Planner's amendment of the Gibraltar development plan which identifies specific policies to safeguard the attributes of the nominated property and its values, including explicit provision for consideration of proposals in terms of their potential impact on the Outstanding Universal Value (once the property is inscribed in the World Heritage List).

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ICOMOS considers that the legal protection in place is adequate. ICOMOS recommends that Heritage Impact Assessment processes be established and applied to future proposals for change to facilities located within leased lands in the buffer zone.

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### **Conservation**

A baseline condition survey of the whole property was compiled in 2015 with an extensive photographic record. An archaeological and condition survey of military and fortification buildings located within the nominated property was completed at the end of 2015, and the report

was provided to ICOMOS by the State Party in January 2016. These buildings include the Europa Advance Batteries (18<sup>th</sup> century to World War II), the Mediterranean/Martin's Battery (19<sup>th</sup> century to World War II), Advance Light Aircraft Site (World War II), and four AROW Street sites (World War II). The report establishes the basis for future monitoring of the condition of these buildings, and outlines brief recommendations for each of them.

Archaeological research is continuing at Gorham's Cave and Vanguard Cave. These caves and their deposits have been surveyed in detail, and all excavations are extensively recorded. Access platforms have been constructed to protect the archaeological deposits and security gates have been installed at these sites. The Gibraltar Museum is the primary repository for the archaeological archive.

Archaeological excavations are small in scale and are subject to considerations of the conservation of archaeological deposits. However, as is always the case, archaeological excavations are ultimately an irreversible process, which puts significant onus on excavators to comprehensively recover and report on available evidence. While acknowledging that the deposits are substantial, ICOMOS considers that it is necessary to outline the means by which the objectives of continuing scientific/archaeological research and excavation are balanced with the need to retain *in situ* deposits for long-term future examination. ICOMOS requested further information about how the research objectives will provide for long-term retention of some areas of archaeological deposits.

A Research and Conservation Strategy has been prepared and guides the International Research and Conservation Committee to assess the archaeological research at Gorham's and Vanguard Caves. It provides for an annual assessment of research and the development of conservation plans. In January 2016, the State Party provided an additional Appendix to Volume 4 of the Nomination dossier. This five-year Archaeological Excavation Action Plan for 2016-2020 outlines the planned work and addresses the questions posed by ICOMOS about the balance of excavation and conservation of deposits. The Action Plan establishes a maximum volume for removal during this 5-year period (0.082% of the Palaeolithic deposits); and stipulates that at least 50% of each identified archaeological level will be retained *in situ*. An annual program is established by the Action Plan that includes post-excavation assessment and analysis, and publication of outcomes. This Action Plan will assist the International Research and Conservation Committee in its advisory role, and in monitoring the condition of the caves and their deposits.

It is understood that no excavations are planned for Hyaena and Bennett's Caves. However, ICOMOS considers that it could be useful to establish whether they have a similar scientific potential to Gorham's and Vanguard Caves using non-invasive methods.

Under the current Management Plan there has been a proactive programme undertaken by the Gibraltar Museum and other Government Departments (working together through the World Heritage Steering Committee and Executive Management Group) to improve the physical condition of the nominated property. This includes stabilisation of steps and cliff faces and installing removable stainless steel mesh on vertical surfaces with the potential to erode, clearance of rubble that had accumulated at the base of cliffs and at cave entrances, and protection of delicate deposit surfaces. New access steps, balustrade and security gate have been installed at Gorham's Cave complex, new access paths to Gorham's Cave and Vanguard Cave have been constructed, and new matting, ladders and scaffold walkways have been installed to protect the archaeological deposits. A landfill site in a disused quarry is being cleared in preparation for use as a car park adjacent to the proposed viewing platforms at the Europa Advance Batteries, and landscaping to improve the visual quality of the main vehicular approach route from the south through the buffer zone has been undertaken. Renovation and repainting work to the façade of Monkey's Cave Convalescent Hospital has been undertaken to lessen its visual impact.

All parts of the property are well-maintained and the condition and visual integrity of the nominated property and its significant features are good, supported by an active conservation programme set out in the Management Plan.

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ICOMOS considers that conservation is adequate. The five-year Action Plan should be regularly updated in order to: assist with the monitoring of the state of conservation of the property; strengthen the role of the International Research and Conservation Committee; underpin the annual review and planning processes; and ensure continued maintenance of scientific standards for excavations and dissemination of results.

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## **Management**

Management structures and processes, including traditional management processes

Her Majesty's Government of Gibraltar has appointed the Gibraltar Museum, through its Director, to manage the nominated property. A governance structure has been established, headed by the Executive Management Group which includes relevant government agencies and oversees implementation of the management system; and the Gibraltar Museum's multi-disciplinary World Heritage team, which is responsible for day-to-day management activities. The Executive Management Group reports to a Steering Committee which includes a wide spectrum of stakeholders. The State Party proposes to convert the Steering Committee to an Advisory Forum with a similar composition and role if the nomination is successful. ICOMOS welcomes the advice from the State Party indicating that the Advisory Forum will meet quarterly (rather than annually as indicated in the nomination

dossier). The United Kingdom's Ministry of Defence participates in the World Heritage Steering Group.

Levels of resourcing, including staffing are reviewed annually. The recurrent budget for the management of the nominated property is provided by Her Majesty's Government of Gibraltar (£450,000 in 2014-1015). The initial staffing of the Gibraltar Museum's World Heritage team with a direct role in management of the property is fifteen people with diverse areas of expertise relevant to the conservation and management of the property. The international team working on the excavations is highly qualified and experienced, and are supported by local specialists. The Gibraltar Tourist Board has a staff of 77, and licenses 440 guides; and the Department of the Environment's 28 staff include the Upper Rock team, and environmental monitoring and environment protection staff.

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

A Management Plan is in place and serves as a basis for the development and delivery of the management system. The Management Plan is organised around eight policy objectives and provides a detailed rolling programme of proposed works and monitoring indicators. The establishment of an integrated management database and archive using the Government of Gibraltar's Geographic Information System (GIS) for mapping is identified as a top management priority and this is detailed in the Management Plan.

The Management Plan is supported by the Risk Preparedness plan, the Research and Conservation Strategy and the integrated visitor strategy. The Risk Preparedness Plan has been developed and is integrated with existing disaster and risk preparedness plans for Gibraltar, including the Marine Contingency Plan.

There is also a Management Plan for the Gibraltar Nature Reserve which is being revised to cross-reference the proposed World Heritage Management Plan.

While the Mediterranean Steps are open to the public, access to the caves is strictly controlled, and visitors must be accompanied by a guide approved by the Director of the Gibraltar Museum. The carrying capacity of the property will be reviewed annually, and there are plans to utilise non-intrusive monitoring technology to support access restrictions.

Tentative Listing of the nominated property has proven to be a stimulus for improved visitor planning and interpretation for Gibraltar as a whole. The central element of the strategy is the Gibraltar Museum, which has been open since 1930 and presents information on the history and archaeology of Gibraltar, acts as the repository for archaeological excavations and provides laboratory facilities for researchers. There are some seasonal issues with traffic congestion at the Upper Rock, and the State

Party is currently working on revisions to the Upper Rock Management Plan to address these matters.

The draft integrated visitor strategy aims to maximise access while minimising impacts on the nominated property and its setting. New visitor and research facilities have been proposed at Parson's Lodge and the Moorish Castle, as well as a new storage facility for archaeological samples within the World War II tunnel complex at Hay's Level (near the Moorish Castle). Other components of the strategy are: new walking routes (including guided walks and a new five-million-year transect), specialised boat trips to allow viewing of the caves from the water, enhanced signage, construction of viewing platforms at the Europa Advance Batteries (following removal of a redundant recycling facility), education programs, improvements to the Gibraltar Museum and enhanced web access.

ICOMOS is aware that some of these proposals are being reconsidered (such as the proposed visitor centre at Parson's Lodge) due to practical issues, and considers that the integrated visitor strategy should be revised as a priority. The effects of dispersing the interpretation across several locations and facilities could be given additional attention; and Heritage Impact Assessments should be completed for proposals involving new buildings or adaptive re-use of historic structures.

Involvement of the local communities

There is a long tradition of community involvement in nature and heritage conservation in Gibraltar, and non-government organisations with interests in the values of the nominated property have supported the development of the nomination and are involved in the Steering Committee, including the Gibraltar Heritage Trust (which has 3000 members) and the Gibraltar Ornithological and Natural History Society. The recent establishment of the Europa Point campus of the University of Gibraltar is also an important new partner within the local community.

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ICOMOS considers that the current management is effective and that the management system for the property is adequate. ICOMOS notes that the Management Plan for the Gibraltar Nature Reserve is being revised and considers that it will be critically important that it is consistent with the proposed World Heritage Management Plan, and that the retention of the Outstanding Universal Value is given clear priority across these documents. ICOMOS further notes that the integrated visitor management strategy requires revision and adoption; and that the integrated management database should be revised and finalised as an urgent and immediate priority to ensure ongoing effective management of the nominated property.

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## 6 Monitoring

Monitoring for the nominated property commenced in 2014, augmenting previously existing monitoring of the



natural attributes within the Gibraltar Nature Reserve. Forty-three indicators have been developed by the State Party, including indicators related to cave conditions (including archaeological deposits), cliff stability and fauna/bird species. Monitoring is assisted by the Department of the Environment (in its monitoring of the Gibraltar Nature Reserve), and by the Gibraltar Ornithological and Natural History Society (which monitors bird migrations).

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ICOMOS considers that the monitoring system is adequate although some aspects have only been recently established.

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## 7 Conclusions

The global scientific debates about the place and role of the Neanderthals in human evolution are continuing, and the nomination of this property could be seen as premature for that reason. However, ICOMOS considers that research at the nominated property has already contributed significantly to these debates, and it can be expected that archaeological and paleontological evidence from future excavations will continue to do so.

In the view of ICOMOS, the Outstanding Universal Value of the nominated property - Gibraltar Neanderthal Caves and Environments – has been demonstrated according to criterion (iii). The attributes that express this value are the striking cluster of caves containing intact archaeological deposits that provide evidence of Neanderthal and early modern human occupation of Gibraltar and the landscape setting which assists in presenting the natural resources and environmental context of Neanderthal life. The property includes the elements necessary to express its Outstanding Universal Value. The sites are authentic and will continue to provide evidence for Neanderthal life through archaeological and related research.

ICOMOS notes that some management planning processes are still underway, and notes the Action Plan for ensuring an appropriate balance between the objectives of scientific discovery and longer-term preservation of significant deposits. The management plan and associated systems, conservation practices and policies and awareness of the key issues of interpretation and visitor management demonstrate the capacity to manage the site in ways that can be relied upon to preserve the Outstanding Universal Value of the property.

## 8 Recommendations

### Recommendations with respect to inscription

ICOMOS recommends that the Gibraltar Neanderthal Caves and Environments be inscribed on the World Heritage List on the basis of **criterion (iii)**.

## Recommended Statement of Outstanding Universal Value

### Brief Synthesis

Located on the eastern side of the Rock of Gibraltar, steep limestone cliffs contain four caves with extensive archaeological and palaeontological deposits that provide evidence of Neanderthal occupation over a span of more than 125,000 years. These caves have provided extensive evidence of Neanderthal life, including rare evidence of exploitation of birds and marine animals for food; and use of bird feathers and abstract rock engravings, both indicating new evidence of the cognitive abilities of the Neanderthals. The sites are complemented by their steep limestone cliff settings, and the present-day flora and fauna of Gibraltar, much of which can be also identified in the rich palaeo-environmental evidence from the excavations. While long-term scientific research is continuing, these sites have contributed substantially to the debates about the Neanderthal and human evolution. The attributes that express this value are the striking cluster of caves containing intact archaeological deposits that provide evidence of Neanderthal and early modern human occupation of Gibraltar and the landscape setting which assists in presenting the natural resources and environmental context of Neanderthal life.

**Criterion (iii):** The Gibraltar Neanderthal caves provide an exceptional testimony to the occupation, cultural traditions and material culture of Neanderthal and Early Modern Human populations through a period spanning more than 125,000 years. This is expressed by the rich archaeological evidence in the caves, the rare rock engravings at Gorham's Caves (dated to more than 39,000 years ago), rare evidence of Neanderthal exploitation of birds and marine animals for food, and the ability of the deposits to depict the climatic and environmental conditions of the Island over this vast span of time. The archaeological and scientific potential of the caves continues to be explored through archaeological research and scientific debates, providing continuing opportunities for understanding Neanderthal life, including their capacity for abstract thinking.

### Integrity

The boundary includes all elements necessary to express the Outstanding Universal Value of this property, including the setting of the caves in relation to the topography and vegetation of Gibraltar (limestone cliffs, fossil sand dunes, fossil beaches, scree slopes, shorelines and flora and fauna). The property is vulnerable to sea level rises, flooding and other effects of climate change.

### Authenticity

The authenticity of this property is demonstrated by the substantial stratified archaeological deposits in the caves, the landforms that contain the caves and demonstrate the geomorphological history of Gibraltar, and the cliff vegetation and fauna that can be associated with the environmental conditions of the past.

## Management and protection requirements

The property and most of the buffer zone are located within the Gibraltar Nature Reserve (Upper Rock Nature Reserve). On the land, the property and its buffer zone are given legal protection by Gibraltar Heritage Trust Act (1989), the Nature Protection Act (1991) the Town Planning Act (1999), the Town Planning (Environment Impact Assessment) Regulations (2000), and the Nature Conservation Area (Upper Rock) Designation Order (2013). The individual caves containing evidence of Neanderthal and early modern human occupation are protected as Schedule 1 Category A (maximum protection) sites under the Gibraltar Heritage Trust Ordinance.

Development is regulated by the Town Planning Act and by implementation of policies in the Gibraltar Development Plan (2009), including the 2014 Town Planner's amendments. Planning controls and procedures are enforced by the Development and Planning Commission.

The area of sea adjacent to the property is included in the buffer zone and is located within the Eastern Marine Conservation Zone, protected as a marine area of conservation through European Union legislation (European Marine Special Area of Conservation), and Gibraltar legislation (Marine Nature Reserve Regulations (1995), the Marine Strategy Regulations (2011) and the Marine Protection Regulations (2014)).

The property is managed by the Gibraltar Museum. The Executive Management Group (comprised of relevant government agencies) oversees implementation of the management system, assisted by the Museum's multi-disciplinary World Heritage team. The Executive Management Group reports to a Steering Committee (Advisory Forum) which includes a wide spectrum of stakeholders. The International Research and Conservation Committee assists in establishing research programs and reviewing scientific outcomes. Levels of resourcing, including staffing are reviewed annually.

Management plans are in place for the World Heritage property and for the (larger) Gibraltar Nature Reserve. The latter will be revised to ensure compatibility with the World Heritage inscription and to ensure priority is given to the retention of the Outstanding Universal Value of the property. The management system is further supported by the Risk Preparedness Plan, Research and Conservation Strategy and Integrated Visitor Strategy. A five-year Archaeological Excavation Action Plan (2016-2020) outlines the planned work and addresses the need to balance excavation and the conservation of deposits.

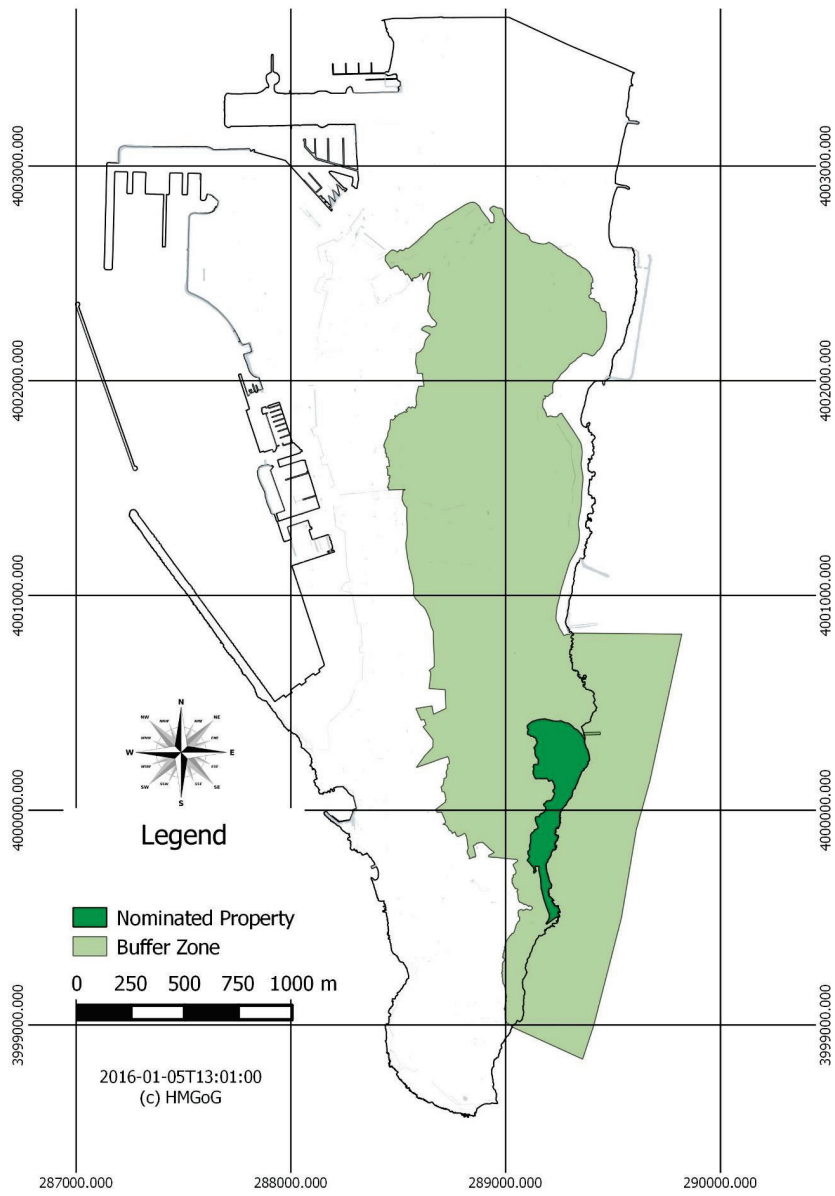
While visitor pressure is not a current threat, it is likely that visitation will increase. Access to the caves is strictly controlled, and visitors must be accompanied by a guide approved by the Director of the Gibraltar Museum. Monitoring is in place and the carrying capacity of the property is reviewed annually. Implementation of the

Integrated Visitor Strategy will improve the visitor experiences and presentation of the Outstanding Universal Value.

## Additional recommendations

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

- Regularly updating the five-year Archaeological Research Action Plan to: assist with the monitoring of the state of conservation of the property; strengthen the role of the International Research and Conservation Committee; underpin the annual review and planning processes; and ensure continued maintenance of scientific standards for excavations and dissemination of results;
- Establishing Heritage Impact Assessment processes for future proposals for new buildings, adaptive re-use of historic structures and planned changes to facilities located within leased lands in the buffer zone;
- Continuing the assessment of the heritage significance of the features of military history, graffiti and infrastructure located within the nominated property in order to clarify which elements can be removed or adapted to other site management purposes;
- Completing and implementing the integrated management database as a priority to ensure ongoing effective management of the nominated property;
- Revising the integrated visitor strategy in light of changed proposals for visitor management, ensuring coherence in light of the delivery of interpretation in a number of locations;
- Completing the current revisions to the Management Plan for the Gibraltar Nature Reserve ensuring that it is consistent with the provisions of the World Heritage Management Plan, and that the retention of the Outstanding Universal Value is given clear priority across both documents;
- Considering investigating the scientific potential of Hyaena and Bennett's Caves using non-invasive methods;
- Fully implementing the monitoring of the nominated property, ensuring a focus on the attributes of Outstanding Universal Value.



Revised map showing the boundaries of the nominated property



Caves at sea level



Gorham's Cave



Bennett's Cave



Solutrean cave paintings in Gorham's Cave – Red Deer Stag