

Heritage and Global Climate Change: Summer Fires in Greece. The Case of Olympia

The presence of fires is linked to climate change

During the summer of 2007, millions of stremmas¹ of forests and agricultural land, spanning from the Iberian shores to the Turkish hinterland, were engulfed by fires. It was one of the largest catastrophes in the Mediterranean in the last century.

The dramatic changes that have been observed on the forest fire map of the Mediterranean over the last 15 years has led to the conclusion that global warming is the main cause of the frequency and intensity with which fires appear today. Moreover, research carried out by the Athens Observatory in collaboration with NASA has shown that climatic change can lead to changes in soil humidity and an increase in the frequency of thunderbolts. The combination of these phenomena with other factors, such as the disturbance of water levels, can lead to an increase in the number of fires.

Climatic change cannot be seen simply as a future scenario in Greece

We saw signs of this in the winter and experienced a terrible summer. Three drawn-out and severe heat waves struck Greece in the summer of 2007. The first data provided by the Hellenic National Meteorological Service have indicated that 2007's three summer months were the hottest of the last 50 years. At the same time, this increase in Greece constitutes a link in the chain of temperature increases that have been observed over the last thirty years. The greenhouse effect has already arrived at our doorstep.

The first heat wave (19-28 June 2007) mostly affected eastern and southern Greece, with extremely high temperatures reached in Athens and the eastern Peloponnese. The Athens Observatory registered 44.8 degrees Celsius, the highest temperature since the end of the 19th century. The second heat wave (18-25 July 2007) mostly affected western and northern Greece, with record-breaking temperatures in several towns (Serres, Thessaloniki, Corfu). The third heat wave (21-26 August 2007) mostly affected western Greece and clearly contributed to the increase in intensity of the destructive fires in the western Peloponnese. The descending strong northeast winds led to an increase in temperatures above 40 degrees Celsius. However, it is not just the three heat waves that have caused alarm. The average maximum temperature was also very high in the summer of 2007. This is not an isolated phenomenon. In total over the last ten years, the average maximum temperature in Athens exceeded 34 degrees Celsius six times, something that would have been rarer in the past.

The hot summer that we experienced in 2007 was one of the worst in the last decades and had a terrible outcome: millions of stremmas of forest and agricultural land were burnt, villages destroyed and lives lost. According to the data provided by the Forest Authority of Greece, approximately 2.300.000 stremmas were burnt in the Peloponnese. The greatest catastrophe took place in Ileia where 950,000 stremmas and more than 4,500,000 olive trees were burnt.



Summer fires in Olympia (www.viewimages.com)

The summer fires in Greece have destroyed communities and cultural landscapes, have cost the lives of at least 64 people and have angered Greek citizens. A whole population – not just those affected by the fires in the specific areas – gradually became aware of a threatening and doubtful future, and summers in Greece will no longer be as carefree as they used to be.

A recent study by the Athens Observatory presents a very bleak picture in terms of the consequences of climate change. Scientists estimate that, despite efforts by the European Union to limit the increase in temperature by two degrees Celsius, the average increase will be at least 3.5 degrees Celsius over the next few years. The consequences of climate change for Greece in four different fields – energy, agriculture, water sources and coastal areas – was explored by the Team for Energy Planning, Climate Change and Sustainable Development in the context of research conducted by the Athens Observatory. The results of the study are extremely worrying. There will be insufficient energy levels, agricultural production will vary tremendously with a possible reduction by 40%, substantial coastal areas will be flooded as a result of a rise in sea level by at least 60 cm, whereas our capital, Athens, will face severe water shortages, as water reserves will be 40% less than today's requirements. Scientists stress that these observations confirm the urgency for measures that slow down the phenomenon of climate change and address its consequences. It is not only the heat wave and the high temperatures that indicate that the climate has changed, but the frequency with which these extreme phenomena occur.

However, climate change is not the only cause of fires

Fires break out in many parts of the world, but the fires in Greece are unique in that they are the result of an amalgamation of other factors, including bio-natural, political, social and cultural.

In the course of the 20th century, poverty, war and financial politics led to the abandonment of the countryside by many of the people that knew how to manage the land; they had grown up in the countryside and had a sound knowledge of the methods with which to control their often rocky and precipitous terrain. Mass successive migrations led to the abandonment of a large part of the Greek countryside. Young people left the fields, the animals, the olive groves and the vegetable gardens for a better future abroad or in Greek urban centres. Certain of these abandoned areas have been overtaken by forests. However, there are also many areas where olive and citrus groves remain abandoned and vulnerable to fire.

The local populations have lived with fires for millennia, but now their traditions and their knowledge regarding the control and protection of the land are threatened by a combination of inappropriate political decisions and methods, and uncontrollable climatic consequences.

Following the fires of the 1990s, Greece has increased its fire fighting forces over the last nine years. However, it is a tragic fact that the intensity and extent of the 2007 fires exceeded the ability of firemen to protect the population, let alone our cultural heritage and ecosystems.

Addressing the problem; suggestions by scientific bodies

On a general level, scientists are proposing that there should be a 20-year plan, since they estimate that climate change will intensify over the next few years. An important series of suggestions for the restructuring of the areas affected by the fires was put forward by seven technical and social bodies on 3 September 2007. They point out that the consequences of climate change and floods will intensify over the following years and, therefore, measures should be incorporated into a 20-year framework and should not only address problems of the immediate future.

In addition, the Technical Chamber of Greece in collaboration with ICOMOS Hellenic, the Economic Chamber of Greece, the Plenum of Law Associations in Greece, the Greek Medical Association, the Geotechnical Chamber of Greece, the Union of Legal Workers of the Council of State, and the National Technical University of Athens stressed the need for a long-term plan to restructure the areas affected by the fires, based on the history of each area, the needs of the inhabitants, the existing economy and the presentation of the cultural heritage. New scientific methods should be proposed, whereas a speedy tourist development of the burnt areas should be avoided at all costs.

General view of Olympia" (Credit: Hellenic Ministry of Culture – General Directorate of Antiquities & Cultural Heritage, Directorate of Prehistoric and Classical Antiquities, Department of Greek and Foreign Scientific Institutions, Organizations and International issues)



Olympia: a heart wrenching cry for our cultural heritage

From 23 August 2007, the fires threatened to burn our most precious assets, our cultural heritage in the Peloponnese. This included the Arcadian landscape, Byzantine churches and monasteries, Apollo Epicurius at Bassae (a World Heritage Site), the Antiquities in Ilieia and especially the archaeological site of Olympia (also a World Heritage Site²).

There was damage to the area surrounding the Olympia archaeological site. The Kladeos stream, a tributary of the Alpheios River, was burnt to a great extent, whereas the Kronios Hill was burnt entirely. The park and the surroundings of the International Olympic Academy were destroyed. Furthermore, some slopes near the ancient stadium were also burnt.

However, in the context of this overall disaster it is important that there was no damage to the archaeological museum of Olympia, nor to the rest of the buildings, stadium or the ancient monuments, which were a priority. Thus, the archaeological site of Olympia has remained intact. Furthermore, there was no damage to the buildings of the Academy which belong to the International Olympic Committee, with the exception of the fire in the park.

The automatic fire extinguishing system 100 m north and north-east of the museum, which worked – even in high temperatures – to keep the area around the museum damp, enabled fire-fighters, volunteers and archaeologists to contain the fire and stop it from reaching the museum and from destroying one of the most important monuments of humanity. But, unfortunately, the fire was of such intensity that the electronic fire protection system that had been installed for the 2004 Olympic Games was not sufficient to combat all of the fire alone.

The fires are now followed by another, equally immense danger: the flooding of the Alpheios River and its tributaries (Kladeos, Altis, Neda, etc.). This is a danger that affects the entire archaeological park which is located in the burnt areas of the Ilieia Prefecture. This park is home to many important antiquities.

Immediate restoration measures for ancient Olympia

The Hellenic Ministry of Culture announced immediately the measures for the restoration, protection and further enhancement of the archaeological site of Ancient Olympia. The following measures are in progress or completed:

- The cleaning of the low burnt vegetation in the area surrounding the perimeter of the archaeological site has proceeded – wherever this was required – and the burnt lawn in the perimeter of the stadium is also being replaced. The cleaning and removal of the low burnt vegetation between the architectural members, which originate from excavations conducted by the German Archaeological Institute and which are being stored south of the stadium, is now complete.
- The conservation of the architectural members that were damaged in the fire is well advanced by the Directorate of Conservation of Ancient and Modern Monuments with the participation of permanent staff of the 7th Ephorate of Prehistoric and Classical Antiquities. New, temporary conservator positions became available. In order for this to be carried out, the conservation works are

scheduled for completion in December 2007.

- The cleaning of the covered storage area of the German Archaeological Institute is now complete. Following discussions with the German Archaeological Institute, it has been agreed that a new, larger storage area will be constructed in the same location.
- The National Agricultural Research Foundation shall function the technical consultant for the restoration of the landscape and the reforestation of the Kronios, Zouni and Kalosaka Hills and the Park of the International Olympic Academy.

In collaboration with the Ministry of Culture and the Ministry for the Environment, Physical Planning and Public Works, a project is under construction to provide anti-flooding and anti-erosion measures in areas of archaeological interest that have been affected by the recent fires. For the further protection of the archaeological site, the Hellenic Ministry of Culture had implemented the following:

- Construction works for the procurement of water (boreholes, technical works on a flat section of the adjacent river for water collection, construction of water reservoirs in suitable locations).
- Monitoring of the area via satellite (Athens Observatory).
- Creation of a PUP-UP system³ in areas of low vegetation (stadium slopes).
- Expansion of the existing fire protection system in the complex around building perimeters.

The Nymphaion (taken from Greece – Prehistoric and Classical Monuments, edited by the Hellenic Ministry of Culture)



Concerning the enhancement of the archaeological site and the restructuring of the surrounding area, the following decisions were taken:

- The establishment of a committee within the Credit Management Fund for the Execution of Archaeological Projects for the further restoration of the Temple of Olympian Zeus, the restoration of the monument of Ptolemy, as well as the enhancement of monuments affected by the fires in the wider region. The issue was submitted to the Central Archaeological Council on 4 September 2007.
- Construction of a modern sports centre in the Municipality of Ancient Olympia.

In regard to the inspection of the remaining areas of archaeological interest that were affected by the fires, the following decisions were made:

- As a first step, the Hellenic Ministry of Culture is taking immediate measures for the protection of the affected sites and monuments (immediate replacement of supports). The 6th Ephorate of Byzantine Antiquities in Ilieia has already been provided with guidelines and funding for the immediate restoration of Panagia Church at Anilio in Zacharo and the monastery of Isova, monuments in the upper region of the Prefecture that were greatly damaged.
- Within this context, proposals for the formulation of basic prin-

ciples for the restoration of affected monuments and archaeological sites and for the establishment of necessary teams for the implementation of the aforementioned works will be submitted to the Central Archaeological Council for discussion and assessment.

International solidarity

While visitors are once again able, since 28 August 2007, to admire the ancient stadium and the sculptures in the Olympia museum, there are crews that are undertaking restorations and anti-flooding measures.

The ancient spirit remains alive; it was not extinguished on Kronios Hill, but in fact it was rekindled by the moving offers of solidarity from ICOMOS International and the concerned countries: Turkey, Israel, Russia, Germany, Italy, France, Spain, Portugal, USA, Canada, distant Japan, and China where the Olympic Games of 2008 are due to take place. We are truly grateful.

Sofia Avgerinou Kolonia
ICOMOS Hellenic

¹ 1 stremma is equivalent to 1,000 square meters.

² THE ARCHAEOLOGICAL SITE OF OLYMPIA
WH Inscribed in 1989 (Criteria I, II, III, IV, VI)

The archaeological site of Olympia extends over the valley of the rivers Alpheios and Kladeos in a natural environment of outstanding beauty and harmony. It is a site endowed with a rich intangible heritage and evidence of human activity starting in the 4th millennium c. BC. On it developed the Panhellenic sanctuary of Olympian Zeus. In the Altis, the sacred grove that began to take shape in the 10th-9th c. BC, masterpieces of sculpture have been discovered in a good state of preservation, amongst them the famous Hermes of Praxiteles and the Nike of Paionios, as well as outstanding architectural monuments like the Palaestra. These buildings served cult, athletic, administrative and social purposes, and attest to the scale of influence of the sanctuary and its prestige throughout the entire ancient world. Today, they are reference points in the history of art. The Olympic Games were instituted here, making Olympia a unique universal symbol of Peace and Competition at the service of Virtue. Here, too, prominence was given to the ideals of physical and mental harmony, of noble

contest, of how to compete well, of the Sacred Truce. In modern times, the Olympic flame is lit every four years in the area of the temple of Hera, in a ceremony that provides an ideological basis for the modern Olympic Games. On the buildings in the sanctuary are imprinted some of the most important steps in the history of art, particularly regarding the Doric order which was to evolve into a worldwide symbol of monumental expression. The early history of Doric temple-building can be traced in the Heraion, while the temple of Zeus, with its famous pedimental sculptures, is the most perfect example of the Severe Style. In this tranquil natural and cultural landscape can still be heard the echoes of myths in which leading roles are played by Zeus, Herakles and Pelops, which have been a source of inspiration and provided iconographic models for world art.

Hellenic Ministry of Culture, General Directorate of Antiquities, Directorate of Prehistoric and Classical Antiquities, Department of Greek and Foreign Scientific Institutions, Organizations and International Issues, Greece, World Heritage Sites, UNESCO, Melissa Publishing House, Athens, 2007.

³ A type of fire suppressant system.