

# Geo-and biodiversity in the Parnassos National Park: Ecotourism promotion and nature trails management and enhancement

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## Abstract

The "National Park of Parnassos" is a protected area, in order to preserve and protect the rich fauna and flora, as well as the mountain's unique geodiversity (diversity of landforms, soil, and water). The concept of protected areas rose as a consequence of the need to protect the flora and fauna and the natural landscape in general. The development of ecotourism in a protected area is a "multifactorial" system. Proper assessment requires a multidisciplinary approach and detailed study, in order to carry out its objectives efficiently. Ecotourism should have minimal impact on both the environment and the local culture. The mountain of Parnassos, crisscrossed by a dense network of trails. Parnassos network of trails includes numerous hiking and mountaineering routes, with various thematic interests and degrees of difficulty. The so-called thematic trails, such as the "nature trails", "geological trails", "botanical trails", "rural trails", etc, offer outdoor recreation and physical activity, but they have been proven to be an indispensable tool, used by the specialists to highlight the characteristics of the natural environment, ecology, biodiversity, geological-geomorphological characteristics and water resources, as well as the historical background, mythology and culture of certain areas. To facilitate these scientific endeavors, the thematic trails have to be developed and managed accordingly.

The main purposes of the present research are to describe the strategy for developing the sustainable tourism, ecotourism, the various types of trails (hiking trails, biking trails, etc.) and to highlight the biodiversity, landscape, geodiversity sites and ancient history and mythology, of the Parnassos National Park, in order to propose improvements over the management and its sustainable ecotourism promotion.

## Protected areas of Parnassos National

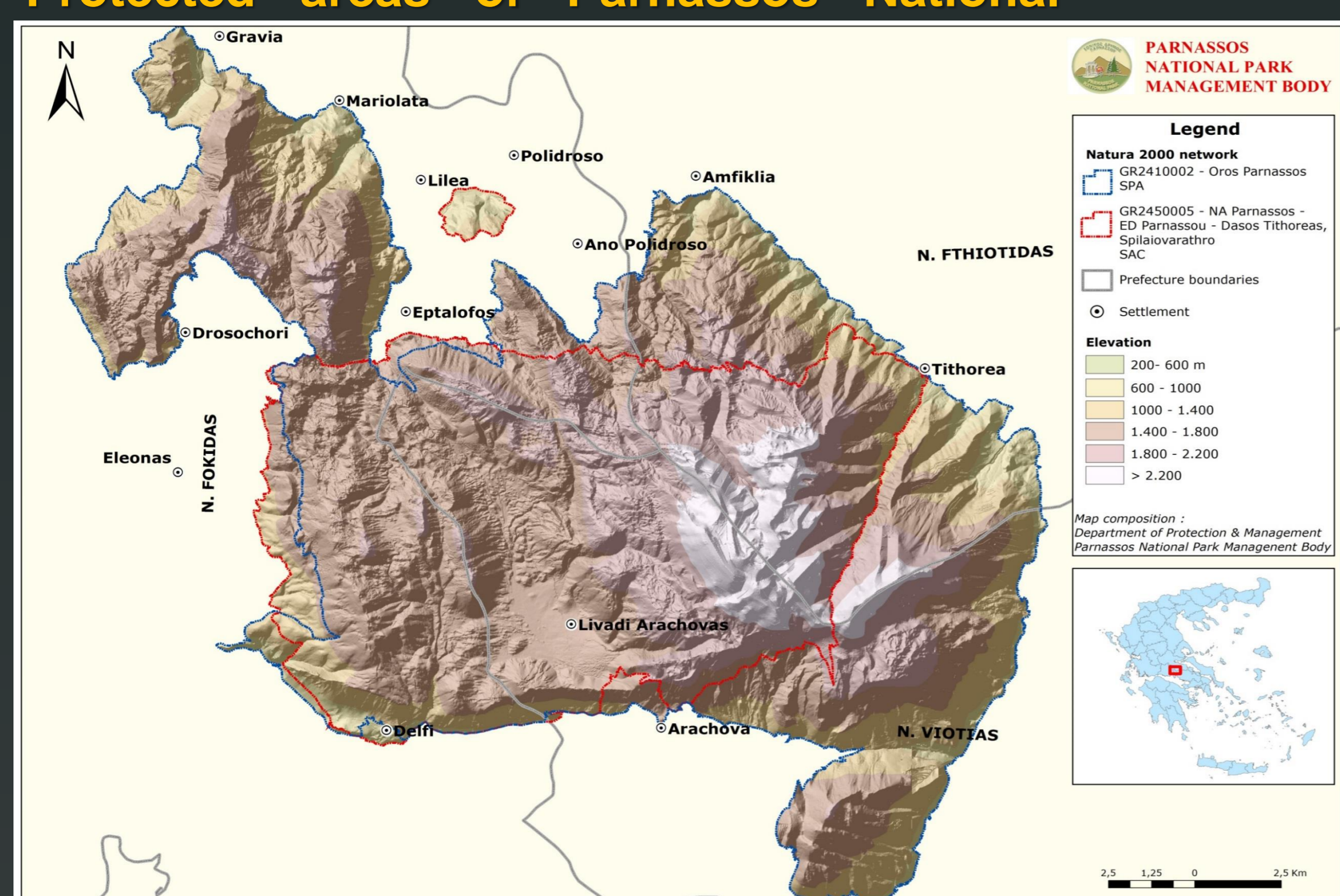


Figure 1: Map of Parnassos National Park protected areas

## Results – Discussion

### Thematic trails at Parnassos National Park

The study area constitutes an ideal ecotourism destination, endowed with a unique natural environment and landscape, flora and fauna (Figure 2), rich cultural heritage and lively traditions, warm local hospitality and gastronomy, mountain shelters, hiking trails and climbing routes, mountain bike, horseback riding (Region of Central Greece). The most attractive tourism resources of Parnassos territory include mountainous areas, caves, canyons, waterfalls, archaeological sites, byzantine/ medieval monuments, traditional settlements.

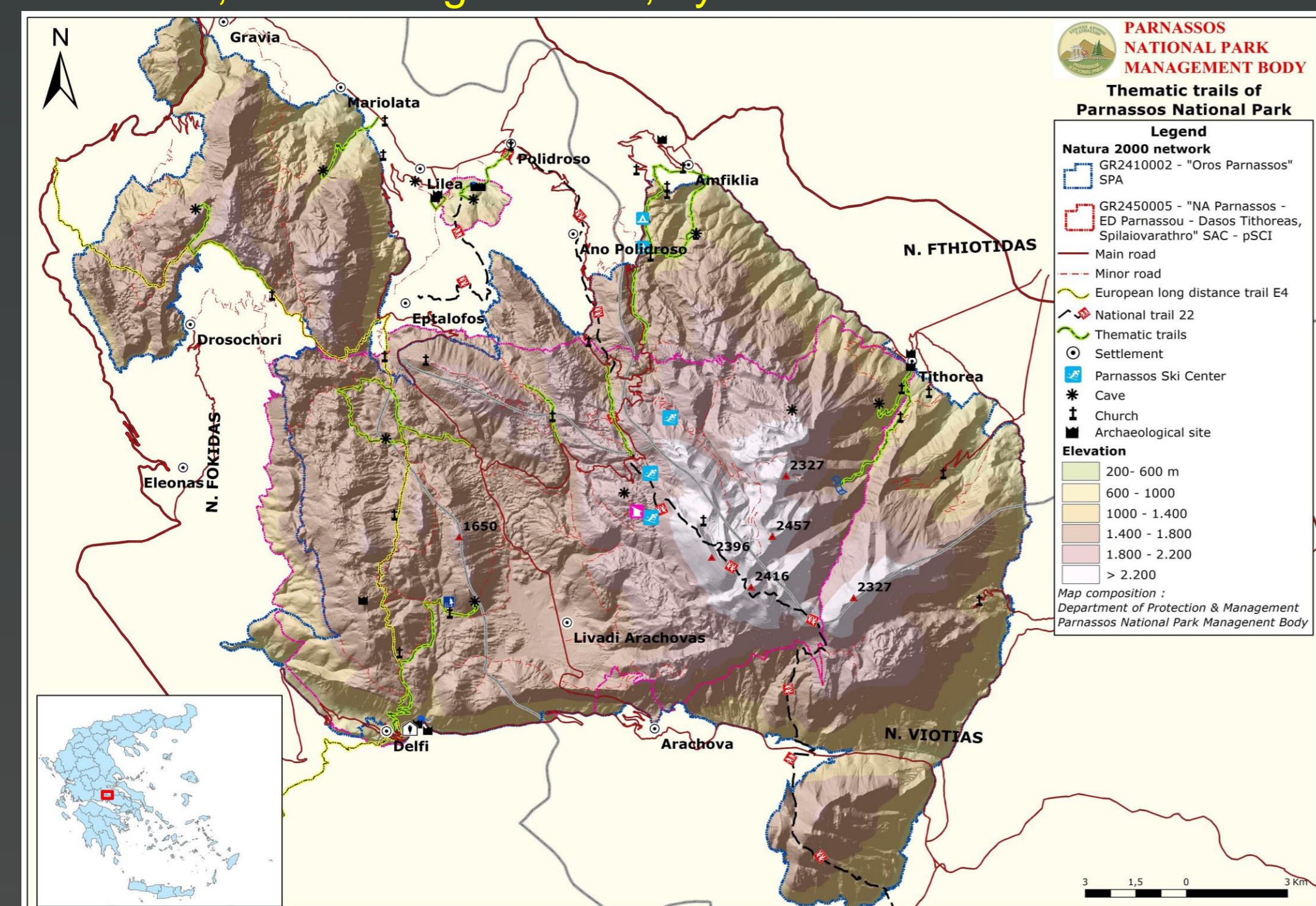


Figure 4 : Map of "thematic" trails at Parnassos National Park

## Conclusion

A dense network of paths is can be found at Parnassos Mt. and in the limits of Parnassos National Park. The trails of the Parnassos Mt., are of great ecological (geo-and biodiversity) (Figure 5), archaeological, scientific and research interest. Parnassos network of trails includes numerous hiking trails, walking trails, recreational trails, trekking trails, and mountaineering routes, including thematic trails (nature trails, geological trails, ecological trails, cultural heritage trails). Following their route, the traveler can enjoy many of the special features, geo-and biodiversity, archaeological sites and offer hikers opportunities for exercise, recreation and environmental education. These include, among others: 1. the extensive fir forests, 2. rare and impressive species of plants and rich fauna, 3. the fragile environment of mountain meadows and small temporary ponds of high altitude, 4. the karst landscape, dolines and poljes (polje at Livadi Arachova), karst springs, 5. the impressive gorges (Kahala gorge), steep slopes and intense morphological contrasts (twin rocks of the Phaedriades), 6. Sinkholes (Eptastomos Sinkhole, Karkaros of Lilaia) and caves (Korikion Andro cave, Neraidospilia cave, cave of Odysseas Androutsos, etc.) and 7. the Pan-Hellenic Sanctuary of Delphi, with the most famous oracle of ancient Greece (archaeological site - UNESCO World Heritage Site), Korikion Andron cave, etc.

The "Natura 2000" is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. It stretches across all 28 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Bird Directive (Directive 2009/147/EC, Special Protection Areas SPAs) and the Habitats Directive (Council Directive 92/43/EEC, Special Areas of Conservation SACs). Stretching over 18 % of the EU's land area and almost 6 % of its marine territory, it is the largest coordinated network of protected areas in the world. At Parnassos National Park has been instituted the according protected areas (Figure 1) : a. The Special Protection Area (SPA) "Oros Parnassos"- GR2410002 as an important area for the reproduction and residence of birds under protection status, b. The Special Area of Conservation (SAC-pSCI) "Notioanatolikos Parnassos - Ethnikos Drymos Parnassou – Dasos Tithoreas, Spilaiovarathro" - GR2450005 to ensure the preservation and restoration of habitats and species of flora and fauna.



Figure 2: Paeonia parnassica

The mountain of Parnassos, crisscrossed by a dense network of hiking trails and mountaineering routes, is one of the ten Mountainous National Parks of Greece. Due to the modern lifestyle, trail walking and hiking offers unique opportunities for contact with nature, biodiversity, ecology and cultural heritage (Figure 3), ecotourism of each region. The so-called "thematic trails" (Figure 4) such as "nature trails", "geological trails", "cultural heritage trails" used by specialists for highlighting the characteristics of the protected area, the geo-ecological characteristics as well as the historical and artistic value.



Figure 3: The archaeological site of Delphi



Figure 5: The "Tripi" waterfall