

Lisboa 4 - 8th  
September 2017

The Organising Committee  
welcomes you to the next **EMAPI**

**EMAPI 14**

International Conference on Ecology  
and Management of Alien Plant Invasions

PORTUGAL | 2017



### **Field trip to Arrábida Natural Park and Tróia Península**

South of Lisbon, crossing the bridge over the Tagus River, we reach the "Setúbal Peninsula". It is a large area (500 km<sup>2</sup>) that extends from the Tagus River to the Arrábida Chain and bordered by the Atlantic Ocean on its western boundary. Low altitudes (50-60 m), smooth relief and sandy landscapes characterise this region. Its proximity to the city of Lisbon is responsible for an intense human occupation and degradation of natural landscape, preserved only in restricted areas expanding southwards.

The "Serra da Arrábida" Natural Park, is located in Arrábida Chain an elongated mountain on the southern border of the Setúbal Peninsula, about 40 km south of Lisbon.

The Arrábida Chain is over 30 km long and 6 km broad, extending from Espichel Cape, on the West, to Palmela castle, on the East. Clearly detached from the surrounding areas, it is a geomorphologic unit, with the ocean on the South and West and a sandy plain on the North and East (under 100m). It reaches its maximum height at Formosinho (501m) and there are several hills over 300m. It corresponds to a well-delimited area of Mesozoic (200 to 100 million years old) limestone rocks, uplifted from the more recent surrounding terrains. Its complex geomorphology resulted in a strong relief with steep slopes (nearly half of the area has slopes between 50 and 70%). Due to the strong relief, true soils profiles are almost absent for most of the Serra. Most of the area presents skeletal soils. In some areas dark humic soils and "terra rossa" can accumulate.

The climate is clearly Mediterranean, with the dry season occurring in the summer, fluctuating between subhumid and humid bioclimates with warm and hot winters. Different microclimates and soils generate conditions for the development of different types of vegetation. Present vegetation cover seems to have resulted from long term human influence and we can contemplate fire vegetation gradients (time since last fire) or aridity gradients from drier places to mesic ones.

In this field trip we will look at some of the major community types encountered in Arrábida due to different abiotic factors and time since fire.

Lisboa 4 - 8th  
September 2017

The Organising Committee  
welcomes you to the next **EMAPI**

**EMAPI 14**

International Conference on Ecology  
and Management of Alien Plant Invasions

PORTUGAL | 2017



The **first stop - Cabo Espichel** is located in the west, is an impressive flat plateau that cuts its way through the sea with dramatic south-facing limestone cliffs. These cliffs are home to some of the most striking living remains of an african sub-tropical flora that was once widespread in the African continent and became increasingly isolated in a few scattered places along with the desertification of Africa. Two of these species are exclusively endemic to this narrow 12-km long fringe spanning from the tip of Cabo Espichel to Sesimbra, and many others find their only place of occurrence in Portugal, in Iberia, or even in Europe, in the south-facing slopes of Arrábida-Espichel.

In the first part of this excursion we will cross the Cabo Espichel plateau, with its typical limestone mediterranean vegetation mosaic of maquis, low shrublands and fallows, that is among the most diverse in the whole country. We will then arrive at the rim of the plateau, where we will look for some of those unique floristic elements that are known nowhere else in Portugal. Finally, we will observe the two most famous species of Cabo Espichel in the south-facing cliffs, and focus on their bizarre morphological features - an imprint of their afro-macaronesic origin.

The **second stop - JASPE**, is located in the western section of the Serra and belongs to the anticlinal of Formosinho, along with the hills of Guincho and Fojo (elevation around 300m altitude) it is a small hill exposed to the south where shrub formations are present, like the maquis and garrigue from Mediterranean area. These stands are dominated by the evergreen sclerophyllous species, some lianas and mediterranean aromatic plants.

From **JASPE** the view is fabulous, to the north we can observe vegetation very diversified that accompanies the orography and also the occurrence of fires, like a patchwork of habitats. To the south a wonderful view to the ocean with a spectacular tonality of blue colours and maritime scarps that fall abruptly to the ocean, where we can observe the "Serra do Risco" escarpment that falls perpendicular over the sea, being the highest limestone escarpment in Europe.

Lisboa 4 - 8th  
September 2017

The Organising Committee  
welcomes you to the next **EMAPI**

**EMAPI 14**

International Conference on Ecology  
and Management of Alien Plant Invasions

PORTUGAL | 2017



From Jaspe we can arrived to the base of a protected valley exposed to the north, with more humid conditions and deep soils, due to the absence of anthropogenic factors prevails a mixed sclerophyllous forest dominated by deciduous and sclerophyllous trees (Mata do Solitário). The “**Mata do Solitário**”, is in the unmistakable Solitary Valley, where a mixed sclerophyllous Mediterranean forest has been established over the years with a very complex structure, with trees, shrubs, lianas and herbaceous, being highly diversified in life forms, morphology, physiology and phenology. Several sclerophyllous species such as *Quercus coccifera*, *Phillyrea latifolia*, *Arbutus unedo*, *Pistacia lentiscus* and others reach here arboreal size with large trees not very frequent in other Mediterranean regions. This forest is one of the best testimonies of the vegetation of the Tertiary, in the Portuguese territory, translating the Mediterranean environment that the glaciations did not affect.

**Lunch stop at Setúbal** city, near the river Sado (13:30-14:30)

At 15.00h we will **cross the river Sado by ferry-boat** to Peninsula of Tróia. During the crossing, if we are lucky we will be able to observe dolphins accompanying the course of the boat and a spectacular view of the Serra da Arrábida and the city of Setúbal.

The **Peninsula of Tróia** is a sandy territory, approximately 16 km long per 1 km wide, stretching between the estuary of Sado’s river and the Atlantic Ocean. It was progressively formed along different geologic periods. Several core areas age more than 2000 years and possibly were part of ancient scattered bodies of a complex system of barrier islands. Other parts of the peninsula were formed recently. A debate about the effect of the 1755 tsunami has focused the origin of an important dune ridge, that longitudinally cross the northern part of the territory, differentiating two morphological contrasting subareas. These areas are different regarding sand ridges orientation and the associated wind regimes that in specific geologic periods were responsible for their respective formation. Tróia had evolved to a heterogeneous continuous territory linked to the main land, offering different migratory opportunities for animals and plants.

Along the peninsula we can observe the dune ecosystems with the characteristic species of sand dunes. In some places the invasiveness of these ecosystems by Acacia species has contributed to a change in the Peninsula landscape.