

Mediterranean Pines under a Global Change Scenario: Threats and Adaptive Solutions

By Teresa Fonseca and Felipe Bravo, IUFRO 1.01.10

The IUFRO Meeting “Global Change and Mediterranean Pines: Alternatives for Management” that took place from 10 to 12 February 2010 in Palencia, Spain, offered an excellent platform for international debate on the ecology and silviculture of Mediterranean pines with a focus on climate change, its potential effects and adaptive solutions.

Mediterranean pine forests play an important economic role on the local and regional levels. They provide timber and non-wood products as well as non-paid benefits, such as the uptake and storage of CO₂. However, threats such as fire, drought and water stress might put the valuable legacy associated to these forest resources at risk. Seed production and seedling establishment for naturally regenerated pine stands may already be endangered for some of the Mediterranean species.

In addition, under a global change scenario, changing environmental conditions may well lead to irreversible consequences for the spatial distribution of pine forests and for ecosystem dynamics. In order to be able to deal with this uncertainty, a better understanding of pine ecology and of genetic adaptive capacity of pine species response is needed. In this field research assumes a major role as it offers a strategy to cope with global changes by producing evidence of the behaviour of materials under unfavourable conditions like drought. It is therefore crucial to communicate the results from scientific experiments to policymakers and forest managers because different policies and silvicultural options might have to be adopted in an adaptive forest management context.

The meeting contributed to a better understanding of the importance of pine ecosystems in the Mediterranean areas



44-year-old Mediterranean maritime pine (*Pinus pinaster* Ait.) plantation in Palencia (northern Spain).
Photo by Celia Herrero.

and of the major constraints and threats that these pine ecosystems are faced with nowadays or that are predicted to occur under a climate change scenario. Two technical visits to Scots pine stands allowed the participants to observe *in situ* issues addressed during the sessions, such as CO₂ ecosystem estimation and sustainable forest management practices. Information about the constraints that Mediterranean pine ecosystems face as well as the researchers' proposals to deal with the critical factors and the predictable changes will be published in a special issue of the Forest Systems (formerly Investigación Agraria: Sistemas y Recursos Forestales) journal.

<http://www.inia.es/forestsystems>

The Meeting was promoted by IUFRO Unit 1.01.10 - Ecology and silviculture of pine, and co-sponsored by IUFRO Units [2.02.13](#) – Breeding and genetic resources of Mediterranean conifers, and [4.01.00](#) – Forest mensuration and modelling. The event counted on the scientific support of the Sustainable Forests Management Research Institute UVA-INIA, and the technical collaboration of FAO Silva Mediterranea and EFI Mediterranean Regional Office–EFIMED. There were 63 participants from Spain, Portugal, France and Italy. Twenty voluntary oral presentations and a considerable number of posters were presented.

Abstracts are available for download from the [IUFRO Unit 1.01.10 webpage](#) and the Meeting webpage <http://www.research4forestry.eu>

For further details, contact:

Felipe Bravo Oviedo (fbravo@pvs.uva.es), Coordinator IUFRO Unit 1.01.10

Fulvio Ducci (fulvio.ducci@entecra.it), Coordinator IUFRO Unit 2.02.13

Teresa Fonseca (tfonseca@utad.pt), Deputy Coordinator IUFRO Unit 1.01.10