GLOBAL CHANGE AND MEDITERRANEAN PINES: ALTERNATIVES FOR MANAGEMENT

IUFRO
DIVISION 1: Unit 1.01.10 – Ecology and silviculture of pine
DIVISION 2: Unit 2.02.13 – Breeding and genetic resources of Mediterranean conifers
DIVISION 4: Unit 4.01.00 – Forest mensuration and modelling
Joint International Meeting

Abstracts accepted by the Scientific Committee
10–12 February, 2010
University of Valladolid at Palencia, Spain

Sustainable Forest Management Research Institute

With the scientific support of:
Instituto Universitario de Gestión Forestal Sostenible UVa–INIA

With the technical collaboration of:
FAO Silva Mediterranea
EFI Mediterranean Regional Office – EFIMED

Universidad de Valladolid

GOBIERNO DE ESPAÑA · MINISTERIO DE CIENCIA E INNOVACIÓN · INIA Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria

Sustainable Forest Management
Research Institute

Universidad de Valladolid

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FINAL ANNOUNCEMENT

Background and theme

Global change challenges forestry around the world by changing both environmental and social conditions. This fact is especially true in the Mediterranean basin, one of the biodiversity hotspots, where climate change and demographic development will likely have strong impacts in the near future.

The Meeting faces the following key challenges:

a. *A better understanding of the mechanisms underlying the physiological and ecological responses of different Mediterranean pine species (in terms of nutrient uptake, growth, biotic stress factors, etc.) to climate change and water availability is needed to define new adaptive management regimes for reducing water use and ensuring the long-term soil preservation.*
b. *Understanding the ecological and genetic adaptive capacity of pine species in response to environmental changes and various forest management scenarios.*
c. *Anticipating the effects of interactions between different components of future environmental changes.*

Programme

The Meeting is estructured in three main sessions:

- Session 1: Forest Management. Forestry strategies to cope with global change
- Session 2: Genetics. Genetic adaptations to climate change
- Session 3: Ecology. Interaction between factors affecting Mediterranean pines under global change conditions

The complete programme also includes inaugural and closing sessions, two poster sessions and a field trip, being structured as follows:

Location

Sustainable Forest Management Research Institute UVa-INIA
Escuela Técnica Superior de Ingeniería Agrarias, Universidad de Valladolid
Avda. Madrid 57
34004 Palencia (Spain)

The Meeting room ("Salón de Actos del edificio verde"), as well as other Campus facilities being used for the benefit of participants, will be appropriately signalled throughout the Campus. Further practical information can be found in the Meeting's webpage www.iufro2010.es and in the following contact means:

Tel.: (+34) 979108440
Fax: (+34) 979108430
Mail: secretariat@iufro2010.es

Participation

Registration for participation in the Meeting is open until the closing of business the Friday, 29 January. Registrations (made as per the instructions provided under "practical info" in www.iufro2010.es) will be listed on Monday, 1 February, and only registrations included in that list will be deemed acceptable.

Registration fee

The registration fee entitles the participant with venues, materials, coffe breaks/meals included in the programme, field trip and certificates. Although it can be paid at the Meeting, it is strongly encouraged that payment is made beforehand in order to be considered confirmed, as well as to avoid the 50% surplus that payment made after 25 January will mean.

Reaching Palencia in time

Given the early start of sessions the Wednesday, 10 February, it is strongly encouraged that participants make their way to Palencia so as to be appropriately accommodated the Tuesday, 9 February.

Communications selected for oral presentation

Authors with a communication selected for oral presentation are strongly asked to confirm their availability to render a 15-minute presentation in due time (listed under "Detailed programme" below), in order to have the sessions properly organised. The lack of such confirmation can result in the communication being removed from the session. Please contact the Secretariat at secretariat@iufro2010.es, as well as for in-advance release of materials (PowerPoint/Keynote files, etc.).

Communications selected for poster presentation

Two poster sessions have been envisaged in the programme. Therefore, authors with a communication selected for poster presentation are also encouraged to prepare a short presentation of their work and be available for the defence of their work during those two sessions.

Publication

Due to the uncertainties of scientific publishing in the present economic environment, arrangements for the publishing of the meeting's proceedings have not yielded final results as of yet. Therefore, authors are not asked to present their final papers before the Meeting, although the publishing of outstanding communications is still envisaged but will take place after the Meeting. Further information on this matter will be provided at the Meeting.

The Meeting

As per the closing of business of Friday, 8 January 2010, 107 participants have registered, with a total of 62 voluntary communications submitted. Of them, 28 have been selected for oral presentation, along with 3 invited (keynote) communications by renowned experts in the field.

Detailed programme

Day 1, 10 February 2010

9:00-9:30	Reception of participants
9:30-10:30	Inaugural session
10:30-11:00	Coffee break (Salón de Actos)
11:00-13:30	Session 1: Forest Management Invited communication: **Dr. Roberto Mercurio. Direttore del Dipartimento "Gestione dei Sistemi Agrari e Forestali", Università Mediterranea di Reggio Calabria (Italy)** Voluntary communications: ▪ Short-term effects of overstory reduction and slash mulching on ground vegetation in a Mediterranean Aleppo pine afforestation in SE Spain ▪ Carbon Stocks in Portuguese Maritime Pine Stands ▪ Role of Mediterranean pines on CO2 uptake and storage: Aragon a case of study. ▪ Performance of modelling techniques for the prediction of forest site index: a case study for pine and cedar in the Taurus Mountains, Turkey. ▪ Predictive modelling of climate suitability for Pinus halepensis in Spain ▪ Temporal pattern of seed production and seedling establishment in Pinus sylvestris and Pinus pinea naturally regenerated stands in Central Spain ▪ Tree survival and stand structure in maritime pine (Pinus pinaster) remnants resulting from wildfire in Northern Portugal ▪ Growth and yield modeling and simulation of even-aged Pinus brutia Ten. stands in Middle East ▪ Spatial and temporal patterns of Spanish black pine natural regeneration forests in Mediterranean mountains areas.
13:30-14:30	Lunch (Cafetería de La Yutera)
14:30-15:30	Poster session (Pasillo principal de La Yutera)

15:30-18:00	Session 2: Genetics Invited communication: **Dr. Santiago C. González-Martínez. 'Ramón y Cajal' Research Fellow, Center of Forest Research, INIA (Spain)** Voluntary communications: ▪ The Italian network of Mediterranean Pines (Pinus sect. Halepensis), their possibile use in view of the Global Change effects ▪ Index selection for growth and wood quality traits for parental selection in Pinus pinaster ▪ Assessment of genetic variability in Portuguese mature stands of Pinus sylvestris L. using molecular markers ▪ May adaptative differentiation be confounded with epigenetic plasticity? The case of Mediterranean stone pine ▪ ADAPTIVE GENETIC VARIATION IN ALEPPO PINE SPANISH PROVENANCES GROWTH RHYTHM TRAITS ▪ Variation of early reproductive allocation in multi-site genetic trials of Maritime pine and Aleppo pine. ▪ COMPARISON OF GST and QST in Pinus brutia BREEDING POPULATIONS WITH RESPECT TO POSSIBLE CLIMATE CHANGES IN THE EASTERN MEDITERRANEAN REGION ▪ Identification and characterization of genes induced by water stress in Pinus pinaster Ait. ▪ Impact of Climate Changes on Mediterranean Forest Ecosystems
	End of Day 1

Day 2, 11 February 2010

9:00-18:00	Field trip

Day 3, 12 February 2010

9:00-11:30	Session 3: Ecology Invited communication: **Dr. Javier Retana. Professor, Centre for Ecological Research and Forestry Applications. Autonomous University of Barcelona (UAB), Spain** Voluntary communications: ▪ RESPONSE OF POST-FIRE Pinus halepensis Mill. REGENERATION TO THINNING IN MEDITERRANEAN FORESTS OF SOUTH-EASTERN ▪ Effects of climatic change in the distribution of Pinus sylvestris L. stands in Spain. A previous phytoclimatic approach based on projected future cli ▪ TEMPORAL VARIATION AND CLIMATIC INFLUENCE ON RESIN PRODUCTION IN MARITIME PINE ▪ Drought and Heat induced Forest Dieback in Algeria ▪ Climate change impact on carbon sequestration prediction in pine ecosystems based on the FOREST-BGC ▪ Climatic causes of forest decline due to global climate change in Mediterranean pine forests in southeastern Spain. ▪ Changes in the local nutrient cycle of softwood species caused by climate change ▪ SITE INFLUENCE ON PINUS PINASTER AIT. STEM FORM OF 43 PROVENANCES ON 5 LOCATIONS IN CENTRAL SPAIN. ▪ SOIL MOISTURE SPATIO-TEMPORAL BEHAVIOUR OF Pinus pinaster STANDS ON SANDY FLATLANDS OF CENTRAL SPAIN. ▪ Environmental gradients and morpho-functional characteristics of Pinus halepensis after reforestation
11:30-12:00	Coffee break (Cafetería de La Yutera)
12:00-13:00	Poster session
13:00-14:00	Wrap-up and conclusions session Dra. Rosario Sierra, Director ETSIIAA
14:00	Lunch (Cafetería de La Yutera)
	End of Day 3 and farewell

Responsibilities

Honour committee

- María Jesús Ruiz Ruiz – Vicepresident and Head, Environment Secretary, Junta de Castilla y León
- Heliodoro Gallego Cuesta – Mayor of Palencia
- Dr. Rosario Sierra de Grado – Director, ETS de Ingenierías Agrarias, Universidad de Valladolid
- Dr. Alejandro López de Roma – Director, Centro de Investigación Forestal, CIFOR- INIA
- Dr. Björn Hånell- Coordinator Division 1, IUFRO
- Dr. Moujahed Achouri – *Silva Mediterranea* Secretariat, FAO
- Dr. Ricardo Alía Miranda – President of EFI

Scientific committee

- Dr. Felipe Bravo Oviedo, Coordinator Unit 1.01.10 IUFRO (Chairman) – Sustainable Forest Management Research Institute UVa-INIA, Spain
- Dr. Fulvio Ducci, Coordinator Unit 2.02.13 IUFRO – Consiglio per la Ricerca e la Sperimentazione in Agricolture CRA-ISSEL, Centro di Ricerca per la Selvicoltura, Lab. Risorse Genetiche Forestali, Italy
- Dr. Oudara Souvannavong, Senior Forestry Officer (Biological Diversity and Conservation), Forest Management Division, FAO
- Dr. Ricardo Alía Miranda, President of EFI – Sustainable Forest Management Research Institute UVa-INIA, Spain
- Dr. Marc Palahí – Head, EFIMED
- Dr. Margarida Tomé, Coordinator Div. 4 IUFRO – Instituto Superior de Agronomía, Universidade Tecnica de Lisboa, Portugal
- Dr. Isabel Cañellas, Deputy Coordinator Div. 1 IUFRO – Sustainable Forest Management Research Institute UVa-INIA, Spain
- Dr. Teresa Fonseca, Deputy Coordinator Unit 1.01.10 IUFRO – Universidade de Trás-os-Montes e Alto Douro, Portugal
- Dr. Emin Z. Başken, Faculty of Forestry, Karadeniz Technical University, Turkey
- Dr. François Lefevre, Directeur de l'Unité de Recherches Ecologie des Forêts Méditerranéennes, INRA-Avignon, France

Organising Committee (Sustainable Forest Management Research Institute UVa-INIA)

- Felipe Bravo (Chairman) – Escuela Técnica Superior de Ingenierías Agrarias, Universidad de Valladolid, Spain
- Gregorio Montero, Ph.D. – Instituto Nacional de Investigaciones Agrarias, Spain
- Irene Ruano – Escuela Técnica Superior de Ingeniería Agrarias, Universidad de Valladolid, Spain
- Cristóbal Ordóñez – Escuela Técnica Superior de Ingeniería Agrarias, Universidad de Valladolid, Spain
- Carlos del Peso – Escuela Técnica Superior de Ingeniería Agrarias, Universidad de Valladolid, Spain

- [redacted] (secretariat)

Carbon Stocks in Portuguese Maritime Pine Stands

Luís Nunes, Maria Patrício, José Tomé & Margarida Tomé*

One of the Pan-European Criteria for the Sustainable Forest Management is the Maintenance and Appropriate Enhancement of Forest Resources and their Contribution to Global Carbon Cycles. Carbon dioxide (CO2) is the most important anthropogenic greenhouse gas. Its annual emissions increased by about 80% between 1970 and 2004 according to the 2007 report from IPCC, being the main responsible for the changes in the world climate. Today, the carbon sequestration is among the most important services that are expected from the forests. Growth and yield models should be able to predict carbon stocks in forests from National Forest Inventory data. Carbon pools in a forest ecosystem are generally partitioned into live trees, understorey vegetation, forest floor litter, coarse woody debris, and soil. A study was recently carried out in three regions from the distribution area of maritime pine (*Pinus pinaster* Ait.) in Portugal, aiming to quantify the carbon stocks in the understorey, forest floor, dead wood and soil. A total of thirty 500 m2 plots (10 in each region) were established. In each sampling place, the distance to the plot centre and the azimuth of all trees were registered. Dendrometrical and qualitative variables were also taken. A 1x1 m plot was used to sample understorey vegetation. Forest floor (L and F+H layers) was sampled using a quadrat of 50x50 cm. Concerning the dead wood, snags were measured for dbh and total height when they were present in the plot area. Logs were sampled by the line interception method, using 4 transepts of 25 metres in the directions N-S, E-W, NW-SE and NE-SW, passing through the plot centre. Both for logs and snags 3 decomposition classes were considered. Mineral soil was collected from the depths 0-10 cm, 10-30 cm and 30-60 cm. This data is being analysed and hopefully will be incorporated in a growth and yield model in order to predict carbon stocks in different forest management scenarios which is important for the equilibrium between timber production and carbon sequestration.

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