



**5<sup>th</sup> International Conference  
on Mediterranean Pines**

**PROGRAM**



MONDAY 22 <sup>th</sup> SEPT	
20:00	Registration and Welcome Icebreaker (Consell Comarcal)
Free dinner	

TIME	TUESDAY 23 <sup>th</sup> SEPT		
08:00 – 8:45	Registration (CTFC's Hall)		
08:45 – 9:10	<b>OPENING CEREMONY (Conference Room)</b> José Climent, INIA Denis Boglio, director general del Centre Tecnològic Forestal de Catalunya Antoni Trasobares, director general del Medi Natural i Biodiversitat del Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Natural de la Generalitat de Catalunya		
09:10 – 09:50	<b>KEYNOTE #1 A. MÄKELÄ</b> <b>“Modelling stand growth for optimal management under climate change: experiences from Scots pine stands in Finland “</b>		
09:50 – 10:10	Abiotic interactions and Climate change	How do climate, competition and site quality affect radial growth and fruiting in young post-fire Aleppo pines? <b>ALFARO et al.</b>	
10:10 – 10:30		Attribution of growth to global-change drivers in Iberian pine species: scarce evidence of any CO <sub>2</sub> -fertilization effect <b>CAMARERO et al.</b>	
10:30 – 10:50		Resource use efficiency: Lower stand density can mitigate damages by extreme climate events in Mediterranean pine forests <b>DEL RÍO et al.</b>	
10:50 – 11:20		COFFEE BREAK	
11:20 – 11:40		Ecophysiological responses of <i>Pinus uncinata</i> , <i>Betula pendula</i> and <i>Rhododendron ferrugineum</i> to environmental factors associated with climate change <b>FERNÁNDEZ et al.</b>	
11:40 – 12:00		Comparison of the root, needle and xylem cold tolerance in four Iberian pines <b>OLIET PALÁ et al.</b>	
12:00 – 12:20		Spatial patterns and dynamics of <i>Pinus nigra</i> at the treeline ecotone in central Apennines (Italy) <b>PIERMATTEI et al.</b>	
12:20 – 12:40		Regional variation in tree functional traits along wide climatic and forest structural gradients <b>VILÀ-CABRERA et al.</b>	
12:40 – 13:00		Differences in seedling field performance, water use efficiency, and root structure and function explains the distribution of four Iberian pines <b>VILLAR-SALVADOR et al.</b>	
13:10 – 14:20		LUNCH ( <i>Can Mascaró</i> )	
14:20 – 15:40	POSTER SESSION A		
15:40 – 16:20	<b>KEYNOTE #2 F. LEFEVRE</b> <b>“Adaptation: where functional ecology and evolutionary biology meet”</b>		
16:20 – 16:40	Abiotic interactions and Climate change	Evolution and adaptation	Genetic, environmental and ontogenetic effects on cone serotiny in Aleppo pine ( <i>Pinus halepensis</i> Mill.) <b>CLIMENT et al.</b>
16:40 – 17:00			Decline analysis of Aleppo Pine in Natural Senalba Forest (Djelfa-Algeria) <b>CHAKALI &amp; GUIT</b>
17:00 – 17:20			Subsoil properties as the main factors in drying and mortality of <i>Pinus halepensis</i> at the Yatir forest, northern Negev, Israel <b>HERR et al.</b>
17:20 – 17:40			The process of drought-induced tree mortality in Mediterranean Scots pine populations <b>MARTÍNEZ-VILALTA et al.</b>
17:40 – 18:00			COFFEE BREAK
18:00 – 18:20			A long term history of pinewoods in central Iberia: lessons from the Holocene macrofossil record <b>RUBIALES</b>
18:20 – 19:40	<i>Pinus halepensis</i> : a masting pine too? <b>THANOS et al.</b>	First insights into Aleppo pine population genomics <b>VENDRAMIN et al.</b>	
18:40 – 19:00	Age- related radial growth patterns of <i>Pinus pinaster</i> Ait. in response to climate variability in the south-central Spain <b>RIOFRÍO et al.</b>	Ecotypic differentiation in water uptake patterns of <i>Pinus halepensis</i> as inferred by stable isotopes of xylem water <b>VOLTAS et al.</b>	
20:00 – 20:40	CITY TOUR (Solsona city centre)		
Free dinner			

TIME	WEDNESDAY 24th SEPT	
08:30 - 9:10	<b>KEYNOTE #3 J.G. PAUSAS</b> <b>“Evolutionary fire ecology: lessons learned from pines”</b>	
9:10 - 9:30	Adaptive management of <i>Pinus nigra</i> Arn. stands when fire risk is present. <b>GONZÁLEZ-OLABARRÍA et al.</b>	Degree of susceptibility of six European <i>Pinus</i> spp. to the pinewood nematode ( <i>Bursaphelenchus xylophilus</i> ) <b>DÍAZ et al.</b>
9:30 - 9:50	Heritability and quantitative genetic divergence of serotiny, a fire persistence plant trait <b>HERNÁNDEZ-SERRANO et al.</b>	Defensive strategies in <i>Pinus pinaster</i> : interprovenance variation in constitutive and induced allocation to chemical defences <b>LÓPEZ-GOLDAR et al.</b>
9:50 - 10:10	What happens to pine roots after fire and logging? Cicadas offer an answer <b>PONS &amp; PUIG-GIRONÈS</b>	Contrasted functioning of fungal communities in forests of two Mediterranean pine species <b>PÉREZ-IZQUIERDO et al.</b>
10:10 - 10:30	Assessing the impact of prescribed burning on the growth of four pine species <b>VALOR IVARS et al.</b>	Tritrophic interactions: population responses of herbivores when the host pine is parasitized by mistletoe <b>ZAMORA et al.</b>
10:30 - 10:50	Post-fire salvage logging versus non-intervention: effects on dead fuel accumulation and fire behaviour in a <i>Pinus pinaster</i> forest <b>GUIJARRO et al.</b>	Importance of nests of pine processionary moth <i>Thaumetopoea pityocampa</i> Schiff (Lepidoptera: Thaumetopoeidae) in the Aleppo pine forests of semi-arid zone (Djelfa, Algeria) <b>HEZIL &amp; CHAKALI</b>
10:50 - 11:20	COFFEE BREAK	COFFEE BREAK
11:20 - 11:40	Post-fire genetic structure of <i>Pinus halepensis</i> <b>BEN-SHLOMO et al.</b>	Brutian and Stone Pine stands in the upper Metn region (central Lebanon): a functional typology for forest conservation and management <b>VARESE et al.</b>
11:40 - 12:00	Long-term patterns of post-fire recovery in <i>Pinus brutia</i> forests <b>TAVŞANOĞLU &amp; GÜRKAN</b>	Evolution of species richness and turnover rate of pine forests under climate change <b>GARCÍA CALLEJAS et al.</b>
12:00 - 12:20	Forest fires impacts on landslides <b>ABDALLAH et al.</b>	Functional diversity influence the balance between tree growth and mortality in Iberian pinewoods <b>HERRERO MÉNDEZ et al.</b>
12:20 - 13:20	<b>DYNAMIC SESSION I</b>	<b>DYNAMIC SESSION 2</b>
13:20 - 14:30	LUNCH ( <i>Can Mascaró</i> )	
14:30 - 15:30	<b>POSTER SESSION B</b>	
15:30 - 19:45	<b>CONFERENCE FIELD-TRIP</b>	
20:30 =>	SOCIAL DINER (Restaurant Gran Sol) AND JAM SESSION (Sputnik Bar)	



PROGRAM

TIME	THURSDAY 25th SEPT		
08:30 - 9:10	<b>KEYNOTE #4 R. ZAS</b> <b>“Can we improve the health of our pine forests by managing tree investment in resistance traits?”</b>		
09:10 – 09:30	Stand dynamics and forest management	Optimizing <i>Pinus sylvestris</i> management for the provision of multiple goods and ecosystem services under fire risk in a Mediterranean context <b>GRACIA et al.</b>	
09:30 – 09:50		A model-based analysis of climate change vulnerability of <i>Pinus pinea</i> stands under a multi-objective management in the Northern Plateau of Spain <b>PARDOS et al.</b>	
09:50 - 10:10		Identifying the roles of emergence, survival and growth in a regenerating pine forest submitted to a range of disturbance intensities <b>PRÉVOSTO et al.</b>	
10:10 – 10:30		Using remote sensing data for assessing mid-term post-fire regeneration trajectories in sub-Mediterranean black pine forests <b>MARTÍN-ALCÓN et al.</b>	
10:30 – 10:50		Availability of maritime pine wood in Portugal in the period 2015-2105 <b>SOARES et al.</b>	
10:50 – 11:20		COFFEE BREAK	
11:20 – 11:40		Growth response and competition mode as modulated by climate and thinning intensity in Mediterranean pinewoods <b>BRAVO-OVIDO et al.</b>	
11:40 – 12:00		Estimation of leaf area index in a Mediterranean pine ( <i>Pinus pinea</i> L.): from the needle to the stand level <b>CORREIA &amp; FREIRE</b>	
12:00 – 12:20		Impact of forest management intensity on landscape-level mushroom productivity in Mediterranean pine forests: a regional model-based scenario analysis <b>DE MIGUEL et al.</b>	
12:20 – 12:40		PINEA Project: Modelling growth and pine nuts production for <i>Pinus pinea</i> under changing environmental conditions <b>FONTES et al.</b>	
12:40 – 13:00	Effect of Aleppo pine thinning on development of introduced hardwood species: a comparison between SE France and SE Spain <b>GAVINET et al.</b>		
13:10 – 14:20	LUNCH ( <i>Can Mascaró</i> )		
14:20 – 15:40	POSTER SESSION C		
15:40 – 16:20	<b>KEYNOTE #5 D. PETTENELLA</b> <b>“Markets development for pine products: actors and patterns of trade in a changing market condition”</b>		
16:20 – 16:40	Stand dynamics and forest management	Competition and productivity of Mediterranean <i>Pinus</i> species in mixed forests: basing a particularised silviculture <b>VERICAT et al.</b>	Policy and social implications
16:40 – 17:00		Height and diameter growth modeling of young <i>Pinus pinea</i> trees elevated on various substrates in forest nursery: Results after 15 years of growth in field trial <b>SGHAIER et al.</b>	
17:00 – 17:20		<i>Pinus nigra</i> Arn. ssp <i>salzmannii</i> seedling recruitment is affected by stand basal area, shrub facilitation and climate interactions <b>LUCAS BORJA et al.</b>	
16:20 – 16:40		Scenarios for payment of forest ecosystem services provision in Aleppo pine in Catalonia (Northeastern Spain) <b>GÓRRIZ et al.</b>	
16:40 – 17:00		Social preferences for key externalities provided by actively managed Aleppo pine forests in Catalonia: an economic valuation perspective <b>VARELA et al.</b>	
17:00 – 17:20		The Stone pine ( <i>Pinus pinea</i> L.) in Southern Latin-America <b>LOEWE et al.</b>	
17:20 – 17:45	CONCLUDING REMARKS		
	Free afternoon / Free dinner		

TIME	FRIDAY 26th SEPT		
08:30	DEPARTURE TO THE OPTIONAL FIELD VISIT		
11:00 - 17:30	Field visit to experimental sites (Prades Mountains)		

PROGRAM

# FINAL LIST OF POSTERS

## POSTER SESSION A – Tuesday 23th September 14:20 – 15:40 h

### ABIOTIC INTERACTIONS AND CLIMATE CHANGE

- A1. Implications of drought-induced forest dieback for the water balance of a Mediterranean mountain ecosystem. **AGUADÉ et al.**
- A2. Linking climate, competition and growth: modellization of annual tree diameter increment in even-aged forests of *Pinus pinea* L. **CALAMA et al.**
- A3. Xylogenesis of *Pinus pinaster* in the Atlantic Coast of Portugal: looking for intra-annual density fluctuations. **CARVALHO et al.**
- A4. “Blue rings” formation in *Pinus nigra*: the influence of air temperature on xylogenesis at the Apennines treeline. **CRIVELLARO et al.**
- A5. Tools for molecular genetic studies in *Pinus halepensis* Miller. **DAVID-SCHWARTZ et al.**
- A6. Polycyclic and growth related traits in provenances of *Pinus pinaster* from contrasting environments in relation to drought. **DELATORRE et al.**
- A7. Drought-induced mortality in *Pinus sylvestris*. **GARCIA FORNER et al.**
- A8. Constraints in the allocation to growth, defences and tolerance to frost stress in Maritime pine. **LARIO et al.**
- A9. Physiological changes in *Pinus canariensis* after a volcanic eruption based on carbon and oxygen stable isotope measurements. **MIRANDA GARCÍA-ROVÉS et al.**
- A10. Monitoring land surface phenology (LSP) changes in relation to climatic variables in the Mediterranean pine forests, southeastern Spain. **MOUTAHIR et al.**
- A11. Climate change-controlled dendroecological signal in *Pinus pinea* in Southern Spain. **NATALINI et al.**
- A12. Soil gypsum effects on root density and site index of *Pinus halepensis*. **OLARIETA et al.**
- A13. Expression of dehydrin proteins from stone pine during water stress. **PERDIGUERO et al.**
- A14. Ecological factors affecting growth of four main conifer species in Catalonia (NE Spain). **VERICAT GRAU et al.**
- A15. Root growth patterns in different pines species. **ZUCCARINI et al.**
- A16. Effects of water stress on germination in six provenances of *Pinus sylvestris* seeds. **PIRES et al.**
- A17. A radial growth analysis of an Aleppo pine plantation using the dendroecological approach (case of a reforestation localized in the Aures). **GARAH & BENTOUATI**

---

### EVOLUTION AND ADAPTATION

- A18. Gene expression analysis in *Pinus canariensis* Chr.Sm. ex D.C. in response to mechanical injury. **CHANO et al.**
- A19. Understanding genetic diversity in a relict population of Scots pine in Scotland. **GONZÁLEZ-DÍAZ & JUMP**
- A20. The infestation by mistletoe changes the chemical defense against herbivores in Black Pine. **LÁZARO-GONZÁLEZ et al.**
- A21. Aleppo pine escape from drought in the seasonal and local scale as expressed in daily transpiration rates. **TATARINOV et al.**
- A22. Ex-situ genetic conservation of *Pinus nigra salzmannii* endangered populations from the Spanish Central Range. **TRANQUE PASCUAL et al.**

## POSTER SESSION B – Wednesday 24th September 14:30 – 15:50 h

### FIRE SCIENCES

- B1. Fire effects on seed germination of the maritime pine- does seed provenance affect this? **CALVO et al.**
- B2. The contribution of fabaceae and cistaceae to post-fire recolonisation of *Pinus halepensis* forest in North-Eastern Algeria. **BEKDOUCHE & DJAOUIDA**
- B3. Are community flammability traits driven by climate? Evidences from Alpine mountain forests. **FRÉJAVILLE et al.**
- B4. Effects of fire regime changes on the extent and seral stage structure of Mediterranean pines: a landscape dynamics modelling approach. **GIL-TENA et al.**
- B5. Thinning treatments in overstocking Aleppo pine forest to reduce vulnerability and improve resilience after fire. **JIMÉNEZ-MANRIQUE et al.**
- B6. Secondary metabolites of three Mediterranean pine species before and after prescribed burning: assessment of preliminary ecological consequences. **ORMEÑO LAFUENTE et al.**
- B7. Seed removal by rodents in burned and logged pine forests. **PUIG-GIRONÈS & PONS**
- B8. Comparing *Pinus halepensis* and *Pinus pinea* post fire mortality. **RIGOLOT et al.**
- B9. Silvicultural treatments in the natural regeneration of pine forests to reduce fire risk and its handling for mature, stable and diverse forests. **SAAD et al.**

---

### BIOTIC INTERACTIONS

- B10. The role of herbivores in seedling performance in Pyrenean pine stands: influence of micro- and macro-habitat factors on browsing pressure. **AMEZTEGUI & COLL**
- B11. Allelopathic effect of aqueous extracts of *Pinus brutia* needles on the germination and seedling growth of 25 Mediterranean plants. **ÇATAV et al.**
- B12. Constitutive vs. induced defences in three pine species against an expanding pest, the pine processionary moth. **HÓDAR et al.**
- B13. Susceptibility evaluation of *Pinus pinaster* families to pinewood nematode (*Bursaphelenchus xylophilus*). **MENÉNDEZ GUTIÉRREZ et al.**
- B14. Generalist frugivore birds govern the seed dispersal of a parasitic plant with strong recruitment constraints that inhabits Mediterranean pinelands. **MELLADO GARCÍA & ZAMORA**
- B15. Severe seed yield loss in Mediterranean stone pine cones. **MUTKE et al.**
- B16. Oviposition behaviour and host selection of the pine processionary moth. **TORRES MUROS et al.**

---

### BIODIVERSITY AND CONSERVATION

- B17. Implementing dynamic conservation units in forest tree conservation: maritime pine as a case study. **RODRÍGUEZ-QUILON et al**
- B18. Effect of regeneration cutting on biodiversity in Mountain Pine (*Pinus uncinata*) forests in the Pyrenees, using birds as bioindicators. **CAMPRODON et al.**
- B19. Seed germination ecophysiology in native *Pinus heldreichii* H. Christ populations of Greece. **DASKALAKOU & THANOS**
- B20. Why are Aleppo pine and umbrella pine so difficult to distinguish on the basis of their wood anatomy in calcareous Provence area (Southern France)? **FOUQUEMBERG & TALON**
- B21. Variation in biomass production and relation to genetic diversity in three *Pinus* species. **HERNÁNDEZ-TECLES et al.**
- B22. Impact of the processionary moth in projects plantations of Aleppo pine in El Hamel area (Boussaada-Algeria). **KHELLAF**
- B23. Complementarity from the viewpoint of two contrasted Iberian pine species. **MADRIGAL et al.**

## POSTER SESSION C – Thursday 25th September 14:20 – 15:40 h

### STAND DYNAMICS AND FOREST MANAGEMENT

- C1. Grafted stone pine stand installation optimization. **FREIRE et al.**
- C2. Cone production of Stone pine grafted onto Aleppo pine. **ALETÀ & VILANOVA**
- C3. Even-aged vs. multi-aged management of *Pinus nigra* Arn. forests in north-eastern Iberian peninsula: silvicultural guidelines and economic implications. **BELTRÁN & PIQUÉ**
- C4. Evolution of the Israeli forestry in the Mediterranean region from pure even-aged pine plantations to mixed uneven-aged forests. **BONNEH**
- C5. Does forest bio-energy reduce fire hazard on Mediterranean Basin? A study case in Caroig range (Eastern Spain) **MADRIGAL et al.**
- C6. Scots pine growth is favoured in mixed pine-beech stands in low fertility stands **GONZÁLEZ DE ANDRÉS et al.**
- C7. Difficulties in natural regeneration of *Pinus pinea* L. and *Pinus pinaster* Ait. in the sandy areas of the Castilian Plateau. **GORDO et al.**
- C8. Relation between NDVI values and watershed morphometry to determine post-fire regeneration and its evolution over time. **HEDO DE SANTIAGO et al.**
- C9. Are Mediterranean pine forests resilient to recurrent fire events? Analysis of stone and Brutian pine stands in Lebanon. **KHATER et al.**
- C10. Stand-level patterns of mortality of *Pinus sylvestris* in Northeast Spain. **MOLOWNY HORAS et al.**
- C11. Response to thinning and pruning of black pine. **MORENO-FERNÁNDEZ et al.**
- C12. The role of nutrient status on the root development of Iberian pines at seedling stage. **MARTÍNEZ-CATALÁN et al.**
- C13. Influence of thinning intensity on stand structure and growth dynamics of Scots pine in a mixed forest from the western Pyrenees. **PRIMICIA et al.**
- C14. Spatial and temporal influence of tapping on the xylem anatomy of *Pinus pinaster* Ait. trees subjected to different tapping methods. **RODRÍGUEZ GARCÍA et al.**
- C15. Study concerning the *Pinus nigra* growth in Portugal. **DIAS et al.**
- C16. Effects of thinning on tree partitioning in a *Pinus sylvestris* L. stand. **RUIZ-PEINADO et al.**
- C17. StarTree project and the use of stone pine, maritime pine and Scots pine forests for non-wood forest production. **SÁNCHEZ-GONZÁLEZ et al.**
- C18. The reforestations carried out in south-central Albania by using Mediterranean pines. Biometric and silvicultural aspects. **TARTARINO & GUALDI**
- C19. Relation between nitrogen fertilization and the frost resistance of four pine species. **TOCA et al.**
- C20. Evaluation of nonlinear height-diameter models for *Pinus halepensis* Mill. in Northern Greece. **TSITSONI et al.**
- C21. The role of thinning treatments on architectural traits of *Pinus halepensis* in dense post-fire Mediterranean forest. **TURRIÓN & BAUTISTA**
- C22. Evaluation of wood quality and growth in Portuguese *Pinus sylvestris* adult trees. **FERNANDES et al.**
- C23. Hydric and photosynthetic functioning of *Pinus laricio* in a Corsican natural stand. **LAPA et al.**

### POLICY AND SOCIAL IMPLICATIONS

- C24. Analysis of the Tunisian pine nut value chain. **MARGGRAFF**

**Chair of the conference:** Lluís Coll (lluis.coll@ctfc.cat)  
**Co-chair of the conference:** José Climent (climent@inia.es)

**Conference secretariat:**

Forest Sciences Centre of Catalonia (CTFC)  
Ctra Sant Llorenç km 2, 25280 Solsona (Spain)  
Phone: + 34 973 48 17 52 (ext. 212#) - Fax: + 34 973 48 04 31  
Mail: medpine5@ctfc.es - Web: <http://medpine5.ctfc.es/>

**Organisers**



**Supported by**

