Adapting forests to climate change

Principal organizers

Bruno FADY (INRA)
Sylvie ODDOU-MURATORIO (INRA)

Session description

The conservation and sustainable use of forests in the twenty-first century pose huge challenges for forest management and policy. Society demands that forests provide a wide range of ecosystem services, from timber products, raw materials and renewable energy to sociocultural amenities and habitats for nature conservation. Innovative management and policy approaches need to be developed to meet these often-conflicting demands in a context of environmental change of uncertain magnitude and scale. There are many biological components of resilience and adaptability that are currently found in forests worldwide. Overall, forest tree populations are genetically very diverse, phenotypically plastic, can migrate over long distances given time and form a vast array of communities. This is conferring them an enormous potential for adaptation. However, how this potential can act naturally or be harnessed by management remains unclear and debatable. A particularly dire question is how single processes, whether biological, environmental or societal, will interact to either enhance or diminish resilience and adaptability, particularly at range edges and in ecological margins. The symposium will propose answers to this challenge by inviting speakers that can provide cutting edge results, using experimental or modelling techniques or both, at the interface between several processes, within the biological sciences or between biological sciences and socio-economic sciences.

Speakers

- Sylvie ODDOU-MURATORIO (INRA Avignon, France) *Modeling physiological, demographic and genetic processes for predicting the dynamics and evolution of forests under global change*

- Rachid CHEDADDI (ISEM Montpellier, France) *Using past climate change data and niche modeling to predict the past, modern and future distribution of Atlas cedar forests in Morocco*

- Jean-Sauveur AY (INRA Dijon, France) *Integrating economic constrains in tree species distributions*

- Xavier Morin (CEFE, Montpellier) *Effect of species distribution and community changes on forest ecosystem functioning in a climate change context*

- Joanne Fitzgerald & Marcus Lindner (European Forestry Institute, Joensuu, Finland) *Adaptive Challenges for European Forests*

- Alexander Kubisch (University of Würzburg, Germany) *Paradise burns: modeling life-history evolution to predict the survival of serotinous tree species*

- Frédéric Mortier et al. (CIRAD) *Can we predict forest composition across space and time in Central Africa ?*