

# Saulnier Mélanie

Date of birth: 14 décembre 1982

4, voie Anémone,  
Résidence Galia, appt. 32  
19360 Malemort sur Corrèze  
Tel : +33 6 84 05 44 78  
Email : melanie.saulnier14@gmail.com

## Dr. in Population Biology and Ecology

Ecologist and paleoecologist, I apply both pedoanthracological and dendrochronological approaches in studying history and dynamics of mountain forest at very high spatio-temporal resolution. My researches are based on a pluridisciplinary approach in order to characterize (1) climate-forest relationships and their evolution in response to climate change (2) the role of disturbances and their dynamics and (3) the role of human on forest ecosystem and its evolution. Improving knowledge of the natural and anthropogenic processes, which have led to current forest, will provide essential information to model forest evolution in response to global change and to implement sustainable forest management, as well.

Key words: dendrochronology, pedoanthracology, disturbances ecology, forest ecology, global change impacts

### Education

**2012 PhD (Award: 07/11/2012)** - Aix-Marseille Université, Institut Méditerranéen de Biologie et d'Ecologie continentale et marine (IMBE), Aix en Provence, France.

Dissertation: History and dynamic of subalpine forest in the southern French Alps (Briançonnais, Queyras): pedoanthracological and Dendrochronological approaches

**2008 Master degree in Systemic, Evolution et Paleontology** - Université Pierre et Marie Curie (Paris) et Muséum d'Histoire Naturelle de Paris, France.

Dissertation : Temporal variation of the relation between fir tree ring growth and climate in the Southern natural range in France (laboratory: IMBE, Aix en Provence)

**2006 Master degree in Ecosystem Conservation and Restoration** – Université Paul Verlaine, Metz, France.

Dissertation : future prospects of the spruce-moss forest in the high latitude forest ecosystems (Université Laval à Québec, Centre d'étude nordique, Québec, Canada)

**2005 Msc in Development and Environment** – Université Paul Verlaine, Metz, France.

Dissertation (1st year) : Management of chiropteran populations in the "Gouffre de la Fage" according to Natura 2000 measures.

Dissertation (2nd year): Identification and management of chiropteran population in the Vohimana natural reserve in Madagascar (NGO Man and The Environment, antananarivo, Madagascar)

---

## Expérience professionnelle

---

**2016-2017** Post-doctoral position. GEODE laboratory at Toulouse

Research theme: study of wood charcoal as an interdisciplinary proxy of anthropogenic, forest and geomorphologic dynamics during Holocene surround Bernadouze peat (Pyrennee, France)

**2014-2015** Temporary lecturer- Aix-Marseille University, IMBE, Aix en Provence, France.

Research theme : ecological niche modeling of genus *Silene* to elucidate the biogeographic origins and to evaluate the likely impact of a changing climate on future distribution

**2013** Teacher -Private agricultural high school "Claude Mercier", Le Mayet de Montagne, France.

**2012** Research and communication officer - Centre de Recherche sur les Ecosystèmes d'Altitude, Chamonix

Research theme: Phenological response of mountain forest species to climate change.

## Fellowships and awards

---

**2016-2017** Post-doc research grant from DRIIHM labex.

**2012** Professional qualification as university lecturer in the section "23" (geography) of the French National university commission.

**2011** Award for the best poster at MEDPINE 4 conference. Avignon, 6-10 juin 2011

**2008-2012** PhD research grant from the "Provence, Alpes, Côtes d'Azur" region (PACA Region).

## Research projects

---

**Labex DRIIHM - CHARINTER Bernadouze 2016-2017.** Wood charcoal as an interdisciplinary proxy of anthropogenic, forest and geomorphologic dynamics during Holocene surround Bernadouze peat (Pyrennee, France)

**Management plan of the biological reserve of d'Assan 2015-2018:** referee for the dendrochronological analysis that are aimed to study anthropogenic impact on forest dynamics.

**Gévoclé 2012-2015, PACA region.** Evaluate the importance of the seed germination niche of PACA flora on the species vulnerability.

**ANR ESCARSEL 2007- 2010 :** Climate evolution over the last centuries in circum Atlantic region and response of continental et riparian ecosystems.

**ECCOREV Archipel-Ecrins 2010 -2011 :** archeology, anthropogenic impact and paleoecology in the massif of Ecrins.

**PhénoClim 2004-2014 :** Phenology and Climate. Research project management.

## Students supervision

---

**2014-2015** 4 master students supervision on a project aiming to study the high-altitude colonization by forest species using pedoanthracology and dendrochronology.

**2011** Baccalaureat student supervision (3rd year) in dendrochronology.

**2010** 2 Baccalaureat students supervision (2nd year and 3rd year) in pedoanthracology).

2008

4 master students co-supervision on dendrochronological data treatment.

## Publications

### Published and submitted

Shindo, L., Belingard, C., Edouard, J-L., **Saulnier, M.**, *submitted*. South-east France fir: new dendrochronological data from buildings and living trees

**Saulnier M.**, Edouard J-L., Roques, A., Rozenberg P., Corona C., Guibal F., *accepted*. Spatio-temporal heterogeneity of Larch budmoth outbreaks in the French Alps for the last 500 years. Canadian journal of forest research.

**Saulnier M.**, Talon B., Robin V., 2015. Contribution to history of forest ecosystems at mid altitude in Queyras valley (inner Alps). Quaternary International.

**Saulnier M.**, Edouard J-L., Corona C., Guibal F., 2011. Climate / growth relationships in a Pinus cembra high-elevation network in the Southern French Alps. Annals of Forest Science 68 (1) : 189-200.

Talon, B., Toutlan, P., **Saulnier, M.**, Robin, V., Cattenoz, D., Hardion, L., ... & Guibal, F., 2011. Pedoanthracology and dendroecology: two complementary approaches applied to old forest history. *SAGVNTVM Extra*, 11, 67-68.

**Saulnier M.**, Corona C., Edouard J-L., Guibal F., Thomas A., 2010. Cernes caractéristiques et anomalies extrêmes du climat dans les Alpes françaises entre 1500 et 2000. Collection EDYTEM 11 : 77-86.

Corona C., Edouard J-L., Guiot J., Guibal F., Thomas A., **Saulnier M.** 2010. Reconstruction des températures estivales dans les Alpes françaises au moyen de données dendrochronologiques (749-2007 AD). Collection EDYTEM 11 : 69-76.

### In progress

**Saulnier M.**, Edouard J-L., Guibal F., *in progress*. Larix decidua growth in response to both anthropogenic and climate changes in the Southern French Alps. Trees

Daneyrolles V., **Saulnier M.**, Talon B., *in progress*. Wood charcoal evidence of a wider distribution of Abies alba in the mediterranean Pyrenees during the second half of the Holocene. The Holocene.

**Saulnier M.**, Fritas S., Saatkamp A., Doxa A., Baumel A., *in progress*. Phylogeny, realized and fundamental niches for genus Silene in PACA region. Biogeography

Fouquemberg C., Talon B., **Saulnier M.**, *in progress*. Why are Aleppo pine and umbrella pine so difficult to distinguish on the basis of their wood anatomy in calcareous Provence area (Southern France)?. Annals of forest science.

### Reviewer

- British Archaeological Report (1 article)
- Ecologia Mediterranea (2articles)

## Communications scientifiques

### Conférences, colloques, symposium

Conferences, colloques, symposium	International	National	Awards
Oral	4	2	
Poster	3	3	Best poster award MEDPINE 2011

Fouquemberg C., Talon B., **Saulnier M.** *Why are Aleppo pine and umbrella pine so difficult to distinguish on the basis of their wood anatomy in calcareous Provence area (Southern France)?* 5th International Conference on Mediterranean Pines (medpine5) Solsona, 22-25 septembre 2014. Poster

**Saulnier M.**, Talon B., Edouard J.-L. *Subalpine forest history and dynamics in the French Alps (Queyras): Climatic and Human Pressur.* International open workshop "Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes III", Kiel, 15-18 avril 2013. Oral

**Saulnier M.**, Corona C., Edouard J.-L., Guibal F., Thomas A. *600 years of Larch budmoth outbreaks in the French Alps: methods and history reconstruction.* Eurodendro 2011. Engelberg (Switzerland), 19-23 septembre 2011. Oral

**Saulnier M.**, Talon B., Touflan P. *Subalpine forests history and dynamics in the French Alps (Queyras). 5th International Meeting of Charcoal Analysis.* Valencia (Spain), 5-10 septembre 2011. Oral

**Saulnier M.**, Edouard J.-L., Corona C., Guibal F. *Climate / growth relationships in Pinus cembra in the Southern French Alps under Mediterranean bioclimat.* MEDPINE 4. Avignon, 6-10 juin 2011. Poster

**Saulnier M.** *Histoire et dynamique de la forêt subalpine dans le Queyras : Résultats préliminaires.* Congrès EDSE. Aix en Provence, 12-13 avril 2011. Oral.

**Saulnier M.** et Talon B. *Pedoanthracology : What is exactly a wood charcoal?.* First international workshop in Pedoanthracology. Aix en Provence, 14-16 juin 2010. Poster

**Saulnier M.** *Étude de la relation entre la croissance du Pin cembro et le climat dans les Alpes Françaises depuis 500 ans.* Congrès EDSE. Cassis, 29-30 avril 2010. Poster.

**Saulnier M.**, Corona C., Edouard J.-L., Guibal F., Thomas A.: *Cernes caractéristiques et anomalies extrêmes du climat dans les Alpes françaises entre 1500 et 2000.* Colloque "Panorama de la dendrochronologie en France", Digne-les-Bains, 8-10 octobre 2009. Oral.

Corona C., Edouard J.-L., Guiot J., Guibal F., Thomas A., **Saulnier M.** : *Reconstruction des températures estivales dans les Alpes françaises au moyen de données dendrochronologiques (749-2007 AD).* Colloque "Panorama de la dendrochronologie en France", Digne-les-Bains, 8-10 octobre 2009. Oral

**Saulnier M.**, Corona C., Edouard J.-L., Guibal F. *Spatial patterns of climate extreme anomalies in the French Alps between 1500 to 2000 revealed from a dense tree ring chronology network.* Colloque international. 9th EMS Annual Meeting & 9th ECAM: Applications of Meteorology. Toulouse, 28 septembre – 1er octobre 2009. Poster

Corona C., Edouard J.L., Guiot J. , Guibal F., **Saulnier M.** *Long-term summer temperatures variations in the southern French Alps, A.D. 749-2007*, European Geosciences Union, General Assembly 2009. Vienna, Austria, 19-24 avril 2009. Poster.

**Saulnier M.** *Histoire et dynamique de la forêt subalpine dans le Queyras : objectifs et méthodologie.* Congrès EDSE. Marseille, 31 mars- 1<sup>er</sup> avril 2009. (Poster).

## **Research expeditions**

---

**July 2009** Natural park of Queyras, French Alps. Fieldwork supervision in the subalpine forest consisting in pedoanthracological sampling (18 pits) to study Holocene history of the three main species (*Pinus cembra*, *Larix decidua*, *Abies alba*) with Brigitte Talon (Aix Marseille University). One paper from this work had been already published in *Quaternary international*.

**July-August 2006** Tundra, North Quebec, Canada. Assistant in the fieldwork and data treatment of Sarah Auger (Msc, Université Laval, Québec) within the black spruce forest at the arctic treeline with Serge Payette (Emeritus professor, Laval university). One paper from this fieldwork had been published in *Ecology* (2010).

**February-June 2005** Vohimana Natural Reserve, Madagascar. Fieldwork supervision in the tropical forest to study bats species and their behaviour with Olivier Behra (ONG MATE) and technical support of Richard Jenkins (UICN) and Steven M. Goodman (American Museum of Natural History).

## **Organisation of International conferences**

---

**2012** Organisation of the first panel of the "Centre de Recherche sur les Ecosystème d'Altitude" (CREA) in Chamonix entitled "Les rendez-vous du CREA : Changements climatiques et biodiversité (14- 15 June).

**2010** member of the Organization Committee for the First Workshop of Pedoanthracology : pedoanthracology and environmental studies held at Aix en Provence (14-16 June 2010).