



**Eco-design Engineer**  
PhD and Post-Doc in Forest Ecology  
MSc in Environmental Engineering and Ingénieur Généraliste

## Personal information

Name **DR. CHRISTOPHE COUDUN**

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Other Nationality: French – Date of birth: 24 September 1977 – Gender: Male – Marital status: married



## Work experience

Dates Since January 2007

Occupation or position held **Eco-design Engineer**

Main activities and responsibilities

- Responsible for the EcoMat project (promotion of eco-design in SMEs in south-east France)
- Responsible for the Inter-Plast project (French/Italian research project on biopolymers)
- Responsible for the ENER-Plast project (European research project on energy efficiency in the polymer industry)
- Development of a simplified eco-design software
- Supervision of two last-year engineering students

Name and address of employer Centre d'Animation Régional en Matériaux Avancés (CARMA)  
AREP Center, 1 traverse des Brucs – 06560 Valbonne Sophia-Antipolis, France  
Website : <http://www.materiatech-carma.net>

Type of business or sector Eco-design

Dates April 2005 – December 2006

Occupation or position held **Research Associate**

Main activities and responsibilities

- Development and integration of process models describing forest carbon and ecosystem dynamics at various spatial and temporal scales.
- Model calibration, validation, sensitivity and uncertainty analysis.
- Development of a high-resolution dynamic forest vegetation model.

Name and address of employer Centre for Terrestrial Carbon Dynamics (CTCD)  
Forest Research, Alice Holt Lodge, Farnham, Surrey GU10 4LH, England  
Website: <http://www.shef.ac.uk/ctcd>

Type of business or sector Ecological Modelling

Dates October 2001 – March 2005

Occupation or position held **Ph.D. Student in Forest Ecology (PhD obtained with highest honours)**

Main activities and responsibilities

- Study of the ecological behaviour of forest plant species with regard to edaphic and climatic factors in France.
- Participation to the creation and management of EcoPlant, a phytoecological database for French forests (6,000 relevés scattered all over the territory of France, 2,000 vegetal species, 200 ecological variables).
- Teaching assistant in a course on phytoecological data analysis (principal components analysis, correspondence analysis and hierarchical cluster analysis, applications in S-Plus). I was responsible for the labs (20 hours per year between 2001 and 2005).
- Funded by the French National Forestry Office (ONF) and the Regional Council of Lorraine.

Name and address of employer French Institute of Forestry, Agricultural and Environmental Engineering (ENGREF)  
14, Rue Girardet – 54000 Nancy – France  
Website: <http://efdp.nancy-engref.inra.fr>

Type of business or sector Plant Ecology Modelling

Dates January – August 2001

Occupation or position held **Internship in Forest Ecology**

Main activities and responsibilities

- Statistical modelling of the ecological behaviour of forest plant species with regard to ecological variables linked to global change. Application in North-East France.
- M.Sc. report and oral presentation judged excellent (A).

Name and address of employer French Institute of Forestry, Agricultural and Environmental Engineering (ENGREF)  
14, Rue Girardet – 54000 Nancy – France  
Website: <http://efdp.nancy-engref.inra.fr>

Type of business or sector Plant Ecology Modelling

### Education and training

Dates 1999-2001

Title of qualification awarded **Master of Science in Environmental Engineering**

Principal subjects/occupational skills covered Environmental Engineering, Environmental Management, Water Hydrology, Water Treatment, Supply and Pollution, Soil Pollution and Remediation, Industry, Waste, Air Pollution

Name and type of organisation providing education and training Department of Environment and Resources, Technical University of Denmark, Lyngby, DK  
Funded by the Danish Government and the Fondation Georges Besse (Fondation de France)

Dates 1997-1999

Title of qualification awarded **Ingénieur Généraliste**

Principal subjects/occupational skills covered General scientific and technical background, introduction to company functioning and management (GPA: 3.71/4.00)

Name and type of organisation providing education and training Ecole Centrale, Lille, FR  
Funded by the French Centre National des Œuvres Universitaires et Scolaires (CNOUS)

### Personal skills and competences

Mother tongue(s) **French**

Other language(s)

Self-assessment

*European level (\*)*

**English**

**German**

**Danish**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user
A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user

(\*) *Common European Framework of Reference for Languages*

Technical skills and competences

- Up-to-date knowledge of statistical methods for plant ecology (multivariate analyses, generalized linear and additive models)

Computer skills and competences

- Competent with most Microsoft computer programs and some experience with HTML
- Very good knowledge of programming languages (R/S-Plus, C, Pascal, Maple, Matlab) and statistical software for ecological analysis (ADE4, GRASP, vegan)
- Basic manipulation of geographical information systems (Geoconcept)

Driving licence Category B

## List of publications

### Written publications

- **Coudun, Ch.** (2007) Mieux connaître les propriétés et les applications industrielles des bioplastiques. *Matériaux et Techniques, sous presse.*
- **Coudun, Ch.** (2007) EcoMat, une action de promotion de l'éco-conception pour les PME/PMI de la région PACA. *Environnement & Technique, 269*, 58.
- **Coudun, Ch.** and J.-C. Gégout (2007) Quantitative prediction of the distribution and abundance of *Vaccinium myrtillus* (L.) with climatic and edaphic factors in French forests. *Journal of Vegetation Science, 18*, 517-524.
- **Coudun, Ch.** and J.-C. Gégout (2006) The derivation of species response curves with Gaussian logistic regression is sensitive to sampling intensity and curve characteristics. *Ecological Modelling, 199*, 164-175.
- **Coudun, Ch.**, J.-C. Gégout, Ch. Piedallu and J.-C. Rameau (2006) Soil nutritional factors improve models of plant species distribution: an illustration with *Acer campestre* (L.) in France. *Journal of Biogeography, 33*, 1750-1763.
- **Coudun, Ch.** and J.-C. Gégout (2005) Ecological behaviour of herbaceous forest species along a pH gradient: a comparison between oceanic and semi-continental regions in northern France. *Global Ecology and Biogeography, 14*, 263-270.
- Gégout, J.-C., **Ch. Coudun**, G. Bailly and B. Jabiol (2005) EcoPlant: a forest site database to link floristic data with soil resources and climatic conditions. *Journal of Vegetation Science, 16*, 257-260.
- **Coudun, Ch.** (2005) Quantitative ecological response of forest plant species in France: stressing the importance of soil nutritional factors. Ph.D. Thesis (in French), French Institute of Forestry, Agricultural and Environmental Engineering (ENGREF).
- Gégout, J.-C., **Ch. Coudun**, H. Brisse and L. Bergès (2002) Ecological behaviour of forest plant species with regard to edaphic and climatic factors: an application for the assessment of acidity and nitrogen critical loads. Final report (in French) written for the French Agency for Environment and Energy Management (ADEME), Nancy, 51 p.
- **Coudun, Ch.** (2001) Vegetal species sensitive to Global Change in Northeast France. Department of Environment and Resources, Technical University of Denmark, M.Sc. thesis report, 67 p.
- **Coudun, Ch.** (2000) Influence of global change on the distribution of vascular plant species in France. Department of Environment and Resources, Technical University of Denmark, 35 p.

### Oral communications

- **Coudun, Ch.** (2007) EcoMat, une action de promotion de l'éco-conception pour les PME/PMI de PACA. Invited speaker for the Pollutec exhibition and in Roubaix.
- **Coudun, Ch.** (2007) Les bioplastiques. Invited speaker for a special day on Materials and Eco-design in Castres.
- **Coudun, Ch.**, J.-C. Gégout, I. Seynave and Ch. Piedallu (2006) EcoPlant: a phytoecological database that allows the prediction of tree species niches and productivity. Invited speaker during the 5<sup>th</sup> workshop on vegetation databanks, Bremen, Germany.
- **Coudun, Ch.**, J.-C. Gégout and Ch. Piedallu (2005) Predicting the distribution of *Acer campestre* L. with climatic and nutritional soil factors. Talk in a plenary session during the 48<sup>th</sup> Symposium of the International Association for Vegetation Science, Lisboa, Portugal (<http://www.isa.utl.pt/iavs>).
- **Coudun, Ch.** (2004) Participant to a one-week workshop, with the world's top ecologists and statisticians working on species distribution modelling techniques, Riederalp, Switzerland (<http://www.cscf.ch/workshop>).

### Reviews

Reviewer for *Journal of Vegetation Science*, *Journal of Biogeography*, *Global Ecology & Biogeography*, and *Folia Geobotanica* in 2006 and 2007.

### References

**Prof. F. Ian Woodward** ([f.i.woodward@sheffield.ac.uk](mailto:f.i.woodward@sheffield.ac.uk)): Professor in plant ecology, with international reputation gained through numerous publications and books.

**Prof. Jean-Claude Gégout** ([gegout@engref.fr](mailto:gegout@engref.fr)): Lecturer and research worker in plant ecology and geographical information systems; main author of the phytoecological database EcoPlant.

**Dr.-Ing. Jean-Claude Giannotta** ([giannotta@carma.fr](mailto:giannotta@carma.fr)): Director of CARMA.