

# MSc European Forestry

January 2022



## MSc Spatial and Ecological modelling in European Forestry SEE-Forestry

The Med Environment

University of Lleida  
The School of Agrifood and  
Forestry Science and Engineering



Cristina Vega-Garcia





# Airport Lleida Alguaire



Universitat de Lleida



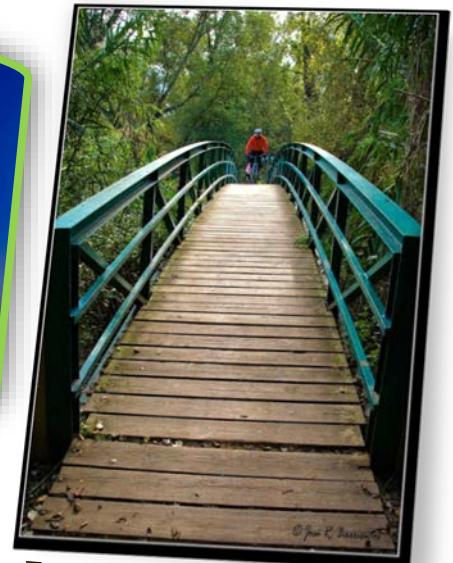
Train Station Lleida- Pyrenees



Fountain Square La Pau



La Llotja Congress Hall



La Mitjana Park



# Historical depth



# About Lleida...



- ✓ Located south of the Pyrenees (100 km)
- ✓ Near to Barcelona (150 km)
- ✓ Population is 130.000
- ✓ Mediterranean climate

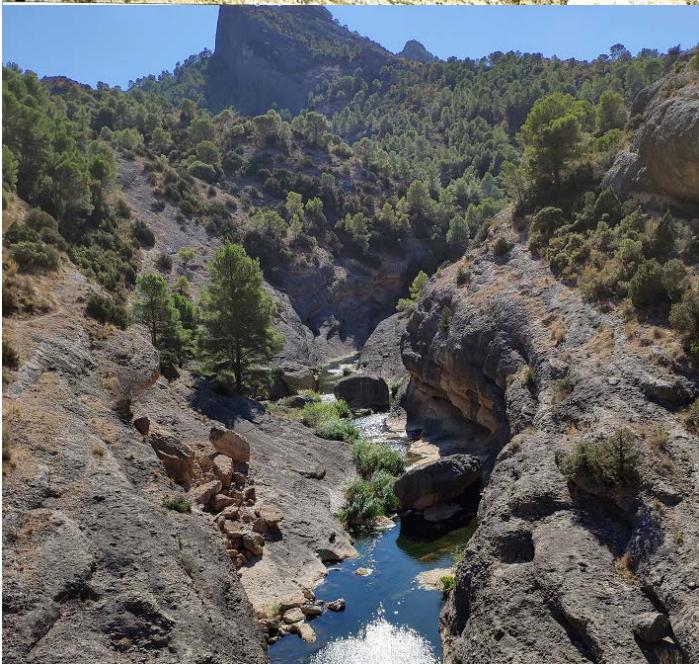


**JAZZ TARDOR**  
XXV FESTIVAL de JAZZ de LLEIDA



# Location

Environmental gradient: From arid steppe lands to alpine high mountains



**Our location is suitable for study and research in the fields of agriculture, stockbreeding, food technology and environmental and forest sciences.**

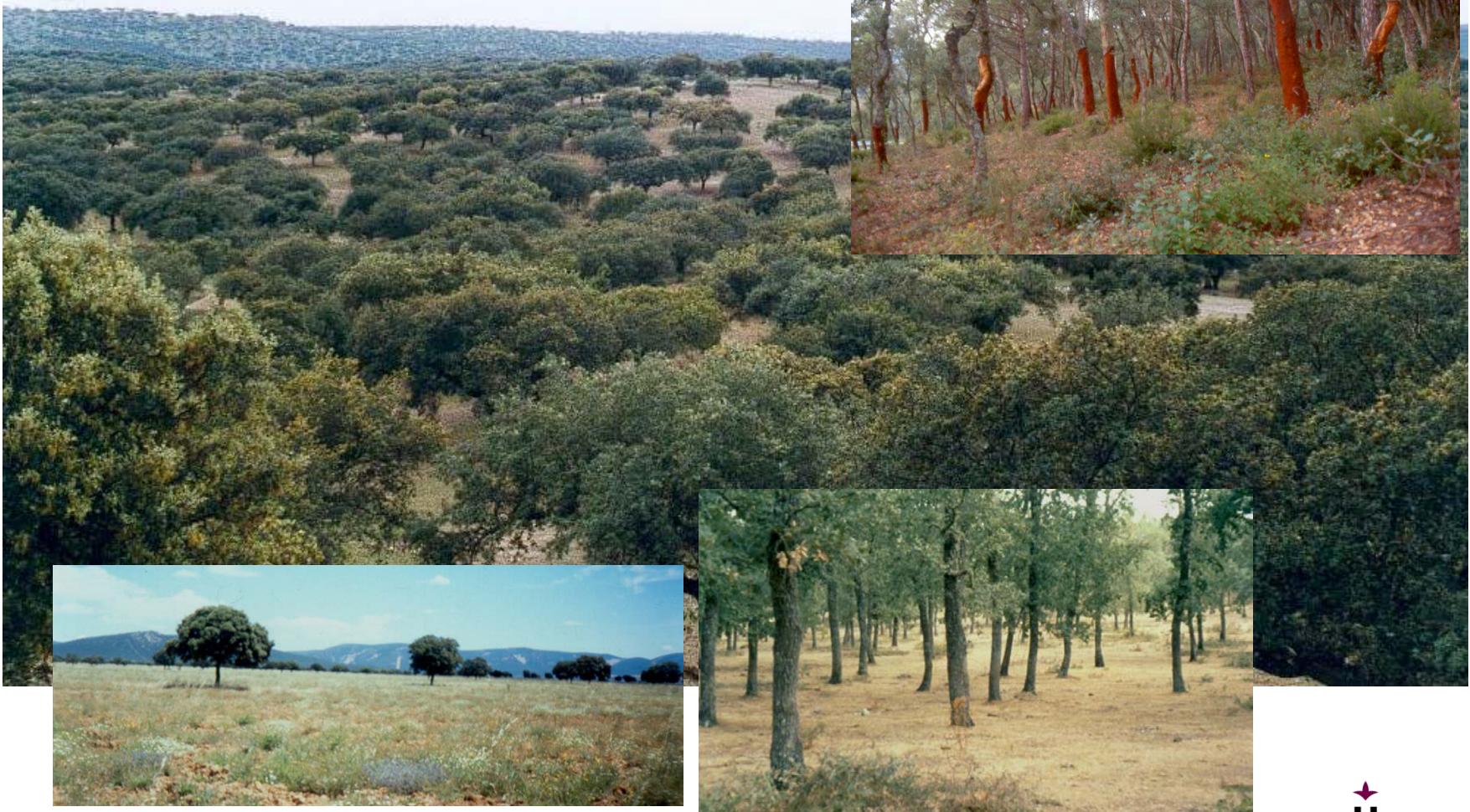


**The topographic gradient allows for a great diversity in forest and wildland environments: coastal, grasslands, riparian, shrublands, woodlands, forest:**

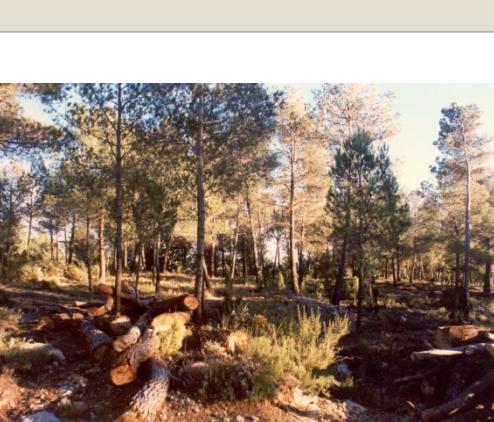
EFFC 2018



**Forest dominated by deciduous or semideciduous  
thermophilous species, mainly *Quercus pubescens***



**Broadleaved evergreen oak forest (holm and cork oak)**



**Xerophytic forests dominated by coniferous species (pines, firs, junipers, cypress)**



**History has left an imprint in the Mediterranean forest:  
seminatural forests at best, cultural landscapes, high biodiversity**



**Recently developed young forests challenging for silviculture**

# University of Lleida



- ✓ Founded in 1297
- ✓ 7 Faculties and 2 affiliated centers
- ✓ 4 Centers of technological innovation
- ✓ 30 Scientific-Technological Services
- ✓ +100 Research groups and +800 researchers

- ✓ **11.000 Students**
- ✓ **10 Students/Teacher**



# Agrifood and Forestry Science & Engineering School

## THE World University Rankings 2021

- World Ranking: posición 601–800 entre 1.527 universidades
- National Rank: posición 9 entre 50 universidades

## THE Impact Rankings 2020

- Ranking: posición 301-400 entre 767 universidades
- SDG 4 Educación de Calidad: posición 21 entre 676 universidades
- SDG 5 Igualdad de género: posición 94 entre 548 universidades
- SDG 7 Energía asequible y no contaminante: posición 201-300 entre 361 universidades
- SDG 10 Reducción de las desigualdades: posición 101-200 entre 459 universidades
- SDG 17 Alianzas para lograr los objetivos: posición 401-600 entre 807 universidades

## THE Europe Teaching Ranking 2019

- Posición 151 - 200 entre 258 universidades

## THE World University Rankings by Subject 2021

- Arts and Humanities: posición 401-500 entre 565 universidades
- Clinical and Health: posición 601+ entre 856 universidades
- Education: posición 301-400 entre 537 universidades
- Engineering: posición 301-400 entre 1098 universidades
- Life Sciences: posición 401-500 entre 895 universidades
- Social Sciences: posición 401-500 entre 791 universidades

## U-Ranking 2020

- Global: 4a posición (junto con otras 7) entre 70 universidades
- Docencia: 3a posición (junto con otras 17) entre 70 universidades
- Investigación: 7a posición (junto con otras 9) entre 70 universidades



It's is one of 7 Faculties at the University of Lleida (UdL)

✓ The University of Lleida is ranked 65th world's best and Spain's 2nd best in scientific publications according to ISI.

# Departments



- ✓ Agriculture & **Forest Engineering**
- ✓ Animal Science
- ✓ Chemistry, Mathematics
- ✓ Crop and **Forest Sciences**
- ✓ Environment and Soil Sciences
- ✓ Food Technology
- ✓ Natural Resources Administration and Management
- ✓ Horticulture, Botany and Gardening



# Researchers & other collaborating institutions

The screenshot shows the EFI Mediterranean Facility page. At the top, there's a navigation bar with links like Home, Who we are, What we do, Where we work, Our knowledge, Membership, Explore EFI, EFI blog, Bioeconomy, Resilience, Governance, Policy support, and Mediterranean. Below the navigation is a section titled "Mediterranean Facility" with a sub-section about the facility's focus on creating sustainable value from Mediterranean forested landscapes. There are three image cards: "Will you invest in the next generation? Join us for YLP-MED" (Young Leadership), "Progress, plans and potential impact at SINCERE project" (showing a forest scene), and "Facing Forest Fires: Visions and actions for global fire-resilient" (showing a conference room). A red box highlights the "Diputació de Barcelona" logo in a list of partners.

Ajuntament del Montmell  
Associació de Propietaris de l'Alt Empordà  
Associació de Propietaris Forestals Berguedà Verd  
**Diputació de Barcelona**  
Associació d'Iniciatives Rurals de Catalunya (ARCA)  
Associació per la Gestió Forestal de la Baronia de Rialb  
Ajuntament de la Baronia de Rialb  
Serveis Territorials del DARP  
Associació de Propietaris Forestals Serra Miralles–Orpinell  
Ajuntament de Vallcebre

The screenshot shows the CTFC Staff page. At the top, there's a navigation bar with links for HOME, THE INSTITUTION, STAFF, BLOG, CONTACT, CA, ES, EN, FR, and social media icons. The main content area is titled "Staff" and includes sections for "General Direction" and "Multifunctional forest management". Each section lists a team member with a photo, name, title, and a note indicating the number of members. A red box highlights the "CTFC" logo at the top left.

Trasobares Rodriguez, Antoni  
Director  
7 members +  
Pique Nicolau, Miriam  
Head of programme  
De Cáceres Ainsa, Miquel  
Deputy Head of programme  
24 members +

The screenshot shows the "Head of group" and "Researchers / Specialists" sections of the CTFC staff page. Each section displays a grid of six researcher profiles, each with a photo, name, title, and a brief description. The "Head of group" section includes Casals Tortras, Pere; Coll Mir, Lluís; De Cáceres Ainsa, Miquel; Pique Nicolau, Miriam; and Rovira Castellà, Pere A. The "Researchers / Specialists" section includes Améztegui González, Aitor; Beltrán Barba, Mario; Coello Gómez, Jaime; Domènech Jardi, Rut; Garcia Pausas, Jordi; and Taüll Taüll, Marc.

Head of group  
Casals Tortras, Pere  
Coll Mir, Lluís  
Forest Functioning & Dynamics  
De Cáceres Ainsa, Miquel  
Vegetation Modeling  
Pique Nicolau, Miriam  
Sustainable forest management  
Rovira Castellà, Pere A.  
Soils and fertilizers

Researchers / Specialists  
Améztegui González, Aitor  
Forest Functioning & Dynamics  
Beltrán Barba, Mario  
Sustainable forest management  
Coello Gómez, Jaime  
Sustainable forest management  
Domènech Jardi, Rut  
Sustainable forest management  
Garcia Pausas, Jordi  
Taüll Taüll, Marc

# Part of the Campus IBERUS of International Excellence



Universitat de Lleida

Sede Electrónica Delegaciones

Directorio Español



CAMPUS DE EXCELENCIA  
INTERNACIONAL  
DEL VALLE DEL EBRO

Campus Iberus

Investigación

Doctorado

Estudiantes

Internacionalización – Proyectos

A screenshot of a website for the Parc Científic i Tecnològic Agroalimentari de Lleida (Parc Científic i Tecnològic Agroalimentari de Lleida) and the Arboretum. The website features a header with the logos for both entities, a search bar, and navigation links for Inici, Mapa web, Avis legal, and Contacte. Below the header is a banner for the Arboretum, which includes the text "Arborètum jardi botànic de Lleida". The main content area shows a green box with the title "BOSCOS ACICULIFOLIS" and a map of the world highlighting regions in orange. The text below the title reads: "SABIES QUÈ...l'ambient de taigà representat en aquest arboretum, inclou una barreja d'espècies d'Euràsia i d'Amèrica del nord, així com també de les muntanyes del centre i sud d'Europa." At the bottom right, the word "Arboretum" is written in a large, bold, black font.

# Our programmes

## BSc Degrees

- ✓ Biotechnology
- ✓ Animal Health and Science & Veterinary Sciences
- ✓ Food Science and Technology
- ✓ Agricultural and Food Engineering
- ✓ Forest Engineering
- ✓ Forest Engineering and Nature Conservation

## PhD Programmes

- ✓ Agriculture and Food Science and Technology
- ✓ Forests and Environmental Management

[http://www.udl.cat/ca/estudis/doctorat/en/  
programes-de-doctorat/gestio-forestal-i-del-  
medi-natural/](http://www.udl.cat/ca/estudis/doctorat/en-programes-de-doctorat/gestio-forestal-i-del-medi-natural/)

## Master Programmes Forest Science: Doble degree

**MSc in Spatial and Ecological modeling in European Forestry-SEE Forestry Erasmus mundus**

**MSc European Forestry-Master universitario Erasmus mundus en modelización espacial y ecológica en la ciencia forestal europea**



Universitat de Lleida

# European Forestry in Lleida

## Modular programme

### Year 1

#### **Module 1 – Professional Knowledge Improvement, 12 ECTS**

- Trends in European Forestry, 5 ECTS
- Academic Skills in Forest Sciences, 1.5 ECTS
- Research Methodology in Forest Sciences, 3.5 ECTS
- Global Virtual Seminar, 2 ECTS

#### **Module 2 – Practical perspective and industrial visits, 18 ECTS**

- European Forestry Field Course, 8 ECTS
- Applied Period in Forest Institutions, 10 ECTS

#### **Elective Courses, 30 ECTS**

### Year 2

#### **Module 3 – Specialization within Study Tracks, 30 ECTS, MSc Thesis and Online Thesis Seminar, 30 ECTS**

- Track 1: Decision support systems for resource management
- Track 2: Resource management for ecosystem services
- Track 3: Spatial and ecological modelling
- Track 4: Resource economics and policy
- Track 5: Forest silviculture and engineering
- Track +: Global perspective

#### **European Forestry Forum, Graduation Ceremony**

The University of Lleida offers three online courses, which our students will be able to choose during the 1<sup>st</sup> or 2<sup>nd</sup> academic year:

<b>Online course name</b>	<b>ECTS</b>
111017 <a href="#">Forest dynamics in a global change context: drivers, processes and modelling approaches</a>	5
111018 <a href="#">Stand to Continental Forest Health Management</a>	5
111019 <a href="#">Introduction to Spatial Statistics: Spatial analysis with R</a>	5

# European Forestry in Lleida

## List of Tracks:

- **Track 1**: Decision support systems for resource management (Coordinator AgroParisTech), including Forest Informatics and Precision forestry.
- **Track 2**: Resource management for ecosystem services (Coordinator: BOKU), including Carbon resource management, Resource efficient bio-resource analysis, Precision forestry.
- **Track 3**: Spatial and Ecological modelling (Coordinator: University of Lleida), including Production ecology, and Spatial modelling technology, Natural hazards and risks.
- **Track 4**: Resource economics and policy (Coordinator: University of Freiburg), including Applied forest bio-economy, Environmental policy/governance, New bio-materials and Economics of multipurpose forestry.
- **Track 5**: Silviculture and Engineering in Eastern Europe (Coordinator: TU Brasov developed during the first 2 years).
- **Track +**: Global perspective (a standard track 1, 2, 3 or 4 in Europe + additional studies with global Associate Partners in Canada, China, or Brazil).

# European Forestry in Lleida

## List of Elective Courses SEE Forestry:



Groups	Code	Course name	ECTS
<b>Methods and tools in spatial analysis and ecological modelling (27 ECTS)</b>	111001	<a href="#">ST in Mapping and Monitoring Forest Natural Resources</a>	3
	111002	<a href="#">ST in Spatial Statistics</a>	5
	111003	<a href="#">ST in Methods in Hazard Analysis and Risk Assessment</a>	3
	111004	<a href="#">ST in Global Environmental Change and invasive species</a>	3
	111005	<a href="#">ST in Precision Forestry</a>	3
	111006	<a href="#">ST in Multi-Scale Forest Dynamics Models</a>	5
	111022	<a href="#">ST in Data management and visualization with R</a>	5
<b>Understanding Spatio- Temporal ecological processes (23 ECTS)</b>	111007	<a href="#">ST in The Earth system in a time of change</a>	5
	111008	<a href="#">ST in Landscape Ecology and Biological Connectivity</a>	5
	111009	<a href="#">ST in Biodiversity and Ecology</a>	5
	111010	<a href="#">ST in Disturbance Ecology and Forest Health</a>	5
	111021	<a href="#">ST in Molecular forest ecology: from genes to management</a>	3
<b>Multi-Scale Management of Natural Resources (20 ECTS)</b>	111011	<a href="#">ST in Resource Management and Planning for Ecosystem Services</a>	5
	111012	<a href="#">ST in Decision Support Systems for Resource Management</a>	3
	111013	<a href="#">ST in Forest Research &amp; Development</a>	3
	111014	<a href="#">ST in Bio-economy and Principles of Environmental sustainability</a>	3
	111015	<a href="#">ST in Markets and Payments for Ecosystem Services</a>	3
	111016	<a href="#">ST in European Resource Economics and Policy</a>	3

# European Forestry in Lleida



## List of Elective Courses SEE Forestry:

[http://www.europeanforestry.udl.cat/export/sites/EuropeanForestry/.content/documents/pla\\_estudis/pla\\_estudis-2019.pdf](http://www.europeanforestry.udl.cat/export/sites/EuropeanForestry/.content/documents/pla_estudis/pla_estudis-2019.pdf)



These courses are designated as Special Topics (ST). Contents may be adapted to the needs of the students according to their academic goals and the Master Thesis topic. Instructors and contents may vary within the scientific limits of a Special Topic field yearly.



Universitat de Lleida



# EF Thesis in Lleida

- ✓ Potential for agro-forestry alley-cropping with valuable broadleaves in Central Catalonia
- ✓ Road metrics and fuels to optimize forest fire control
- ✓ Adult sampling and larva rearing of the cork oak pest *Coraebus undatus* (Coleoptera: Buprestidae)
- ✓ An analysis of wildlife suppression resources in 1998-2008 in Spain
- ✓ Assessing post-fire regeneration in a Mediterranean mixed forest using LIDAR technology and Artificial Neural Networks
- ✓ On the relationship between wildfires and reforestation in 1998-2008 in Spain
- ✓ Soil erosion modeling in an agro-forested catchment of NE Spain affected by gullyling using SWAT
- ✓ A mobile terrestrial laser scanning application for characterizing Mediterranean vegetation structure along forest roads.
- ✓ Modelling nutrient cycling and *Pinus radiata* (D. Dau) growth under various management systems
- ✓ Genetic variation in water extraction patterns among populations of Aleppo pine: contributing sources to water consumption under common garden conditions in Eastern Spain
- ✓ Soil organic carbon dynamics after grassland abandonment in Alpine and Mediterranean mountains in North- Eastern Spain
- ✓ Decay fungi related to "Roig" red stain of *Castanea sativa* in Catalonia - A qualitative assessment of the fungi associated with the notorious Roig.
- ✓ Analysis of hydrologic regime and land cover change in a "paired watershed" system
- ✓ Dead wood structures and tree microhabitats in *Pinus nigra* forests of varying management histories in Catalonia
- ✓ Comparison of sustainable forest management on the VPA and FSC standard in Cameroon

# EF Thesis in Lleida

## Recent topics

2019

- ✓ Spatial prioritization of management zones within protected areas for integration of competing objectives
- ✓ Modeling the influence of eucalypt plantations on wildfire occurrence and propagation in western Brazil
- ✓ Endophytic community responses associated with Diplodia shoot blight on four Pinus spp. in NW Spain
- ✓ Estimation of carbon stock and carbon sequestration of community forest in Siwalik region of Nepal
- ✓ The relationship between price and forest stands characteristics: a case study in a Romanian private company

2020

- ✓ Point Cloud Based Algorithm for Individual Tree Detection
- ✓ Analysis of the management interventions for forest fire prevention in “ZAP” (Zones d’Actuació Prioritària) of Province of Barcelona
- ✓ Planning evacuation routes for wildfires in Central Catalonia by analysing transport networks under extreme fire behavior.

# 2021 EF Thesis in Lleida

1. Future climate change in Finland: The influence of teleconnections on fire weather index
2. The influence of thinning intensity and frequency on growth and provision of ecosystem services in Mediterranean mountain pine forest under climate change scenarios.
3. Analysis of forest fire dynamics and contributing factors in Sweden and Finland over 2010-2019.
4. Fire danger pathways under climate change and management scenarios.

The thesis topics are not listed in Lleida in a closed list. Assistance and discussions are provided to define the thesis and best supervisor for it, since options are basically very wide. We encourage students to decide after being half-way in the courses.

Co-supervision is encouraged.

# Thesis output/format

Article

Full-text available

## Modeling the Influence of Eucalypt Plantation on Wildfire Occurrence in the Brazilian Savanna Biome

September 2019 · Forests 10(10):844

DOI: [10.3390/f10100844](https://doi.org/10.3390/f10100844)

License · CC BY

Project:  
western

 Luiz

Article

Full-text available

## Lessons Learned from Arson Wildfire Incidence in Reforestations and Natural Stands in Spain

March 2019 · Forests 10(3):229

DOI: [10.3390/f10030229](https://doi.org/10.3390/f10030229)

License · CC BY

Project: MSc European Forestry Erasmus mundus-SEE Forestry



Emmanuel Da Ponte Canova



Sergi Costa Freda-Aumedes



Cristina Vega-Garcia

# Thesis in projects

PROJECT

APPROACH

CONSORTIUM



RESOURCES

NEWS

CONTACT



<https://fireurisk.eu/>



IDeN

Nuevo Proyecto LIFE ADAPT-ALEPOO

A large, scenic photograph of a green hillside with a wildfire visible in the background, serving as the header for the project page.

**Dissecting risk to prevent extreme wildfires**

A unified European response to an increasing hazard



**Life Climark**  
Beyond carbon

THE PROJECT

ECOSYSTEM SERVICES

ACTIONS AND RESULTS

COMMUNICATION

NEWS

CLIMATE CREDIT

INTRANET



Promotion of forest management for climate change mitigation  
through the design of a local climate credit market



Climate  
Credit

<https://lifeclimark.eu/en/>

# European Forestry in Lleida

Student Support (ORI & Assistant), Pere Gelabert:

- ✓ Scholarship for self-paying students (2000 €)
- ✓ Funding for conferences and thesis-related needs
- ✓ 2 Residences & private flats ((150)200-350€/ month)
- ✓ Welcome week and cultural orientation, Sports Club
- ✓ Semester: mid-September-January; Feb-June (Sep)
- ✓ Thesis deadline 30th September but we aim for JUNE
- ✓ Free Languages Courses at the Lang. Institute-UdL





973 349 075  
info@laviladelleida.cat



ES / CA / EN

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HOME / FLATS

# http://www.laviladelleida.cat/en/

## Flats

La Vila de Lleida consists of 150 apartments of different types for 1 or 2 people. All the flats come complete with the following:

- Fully equipped bathroom
- Fully equipped kitchen and vitro-ceramic hotplate
- Microwave
- Fridge
- Hot water heater
- Desk and chairs
- Dining room table and chairs
- Wardrobe and shelving
- Phone and TV jack
- Free internet connection by RJ-45 connector
- Air- conditioning
- Central heating
- Individual electricity and water meter
- Bed 200x90cms (single bed size)

TOUR ONLINE

All the flats have outside views and are equipped ready for you to move in.



### Tipos de viviendas



Habitación doble



Habitación individual



Dos habitaciones individuales



Adaptados de una habitación

### Imágenes



• • • • •

**More info:**

**Cristina Vega-Garcia, cristina.vega@udl.cat**

**Pere Gelabert, perejoan.gelabert@udl.cat**

*I came to Lleida because not coming seemed crazy:*

[https://www.youtube.com/watch?v=4mOmo1Lp\\_j4](https://www.youtube.com/watch?v=4mOmo1Lp_j4)

Thanks!!!

