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

About Lleida…

Airport Lleida Alguaire

Train Station Lleida- Pyrenees

La Llotja Congress Hall

Fountain Square La Pau
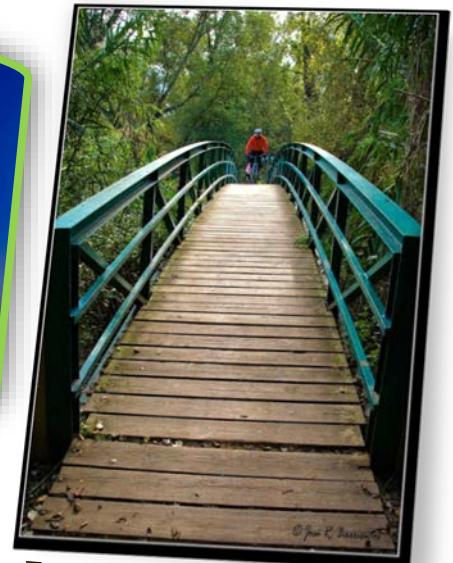
La Mitjana Park

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

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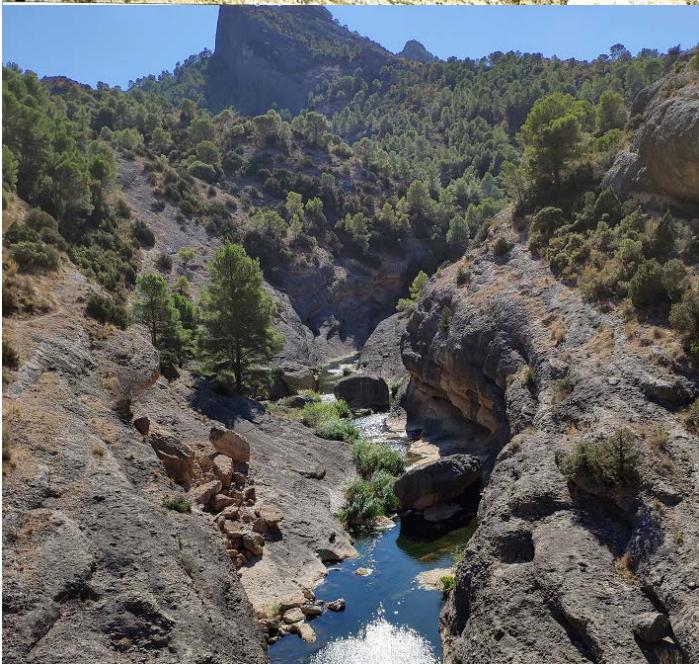
Our location is suitable for study and research in the fields of agriculture, stockbreeding, food technology and environmental and forest sciences.

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

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

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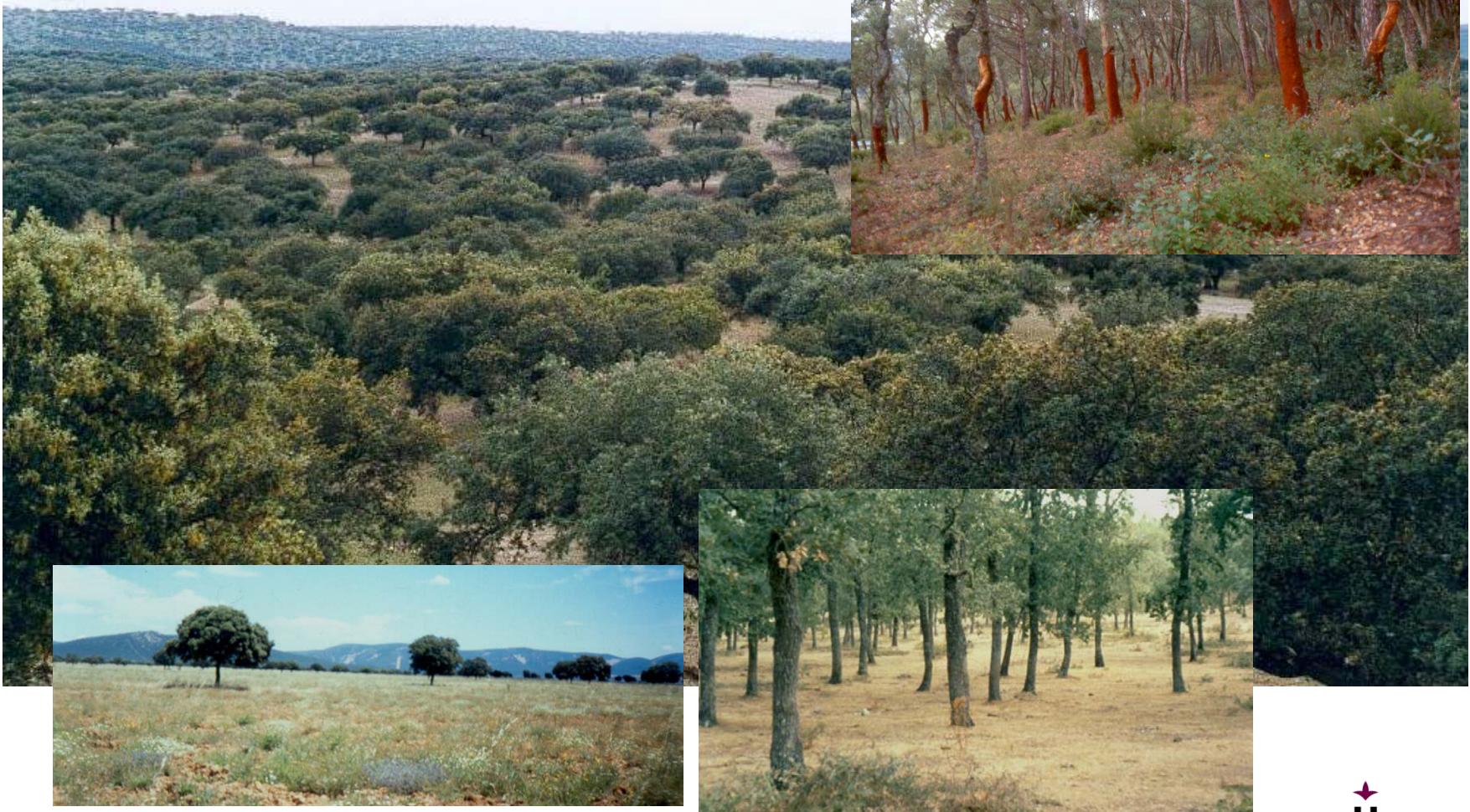
Broadleaved evergreen oak forest (holm and cork oak)

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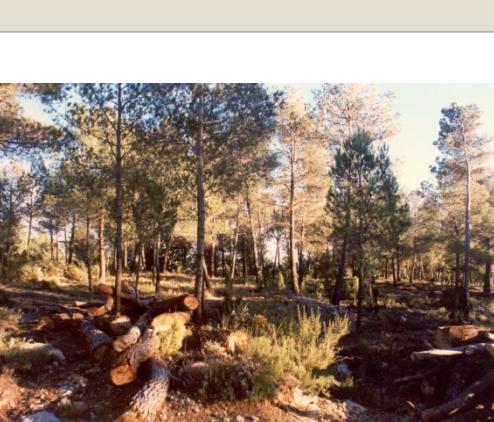
Xerophytic forests dominated by coniferous species (pines, firs, junipers, cypress)

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

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Researchers & other collaborating institutions

Ajuntament del Montmell

Associació de Propietaris de l'Alt Empordà

Associació de Propietaris Forestals Berguedà Verd

APs 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

Part of the Campus IBERUS of International Excellence

Universitat de Lleida

campus iberus

CAMPUS DE EXCELENCIA
INTERNACIONAL
DEL VALLE DEL EBRO

Campus Iberus ⌄   Investigación ⌄   Doctorado ⌄   Estudiantes ⌄   Internacionalización – Proyectos ⌄

Parc Científic i Tecnològic
Agroalimentari de Lleida

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arborètum
jardí botànic de Lleida

VISITES   RECERCA   ARBORÈTUM   NOTÍCIES   DESCÀRREGUES

BOSCOS ACICULIFOLIS

SABIES QUÈ...l'ambient de taigà representat en aquest arbotètum, inclou una barreja d'espècies d'Euràsia i d'America del nord, així com també de les muntanyes del centre i sud d'Europa.

❶❷❸❹

Arboretum

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/

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

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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 1st or 2nd academic year:

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

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List of Tracks:

•   <u>Track 1</u>: Decision support systems for resource management (Coordinator AgroParisTech), including Forest Informatics and Precision forestry.

•   <u>Track 2</u>: Resource management for ecosystem services (Coordinator: BOKU), including Carbon resource management, Resource efficient bio-resource analysis, Precision forestry.

•   **<u>Track 3</u>: Spatial and Ecological modelling (Coordinator: University of Lleida), including Production ecology, and Spatial modelling technology, Natural hazards and risks**.

•   <u>Track 4</u>: Resource economics and policy (Coordinator: University of Freiburg), including Applied forest bio-economy, Environmental policy/governance, New bio-materials and Economics of multipurpose forestry.

•   <u>Track 5</u>: Silviculture and Engineering in Eastern Europe (Coordinator: TU Brasov developed during the first 2 years).

•   <u>Track +</u>: Global perspective (a standard track 1, 2, 3 or 4 in Europe + additional studies with global Associate Partners in Canada, China, or Brazil).

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List of Elective Courses SEE Forestry:

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

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List of Elective Courses SEE Forestry:

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.

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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 gullying 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.

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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.

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

Thesis in projects

https://fireurisk.eu/

https://lifeclimark.eu/en/

European Forestry in Lleida

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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**

Sept 2020

LA VILA DE LLEIDA

HOME   SERVICES   FLATS   PRICES   RESERVATIONS   ACCESS   LIVE LA VILA   CONTACT

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 200×90cms (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:
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Pere Gelabert, perejoan.gelabert@udl.cat

I came to Lleida because not coming seemed crazy:
https://www.youtube.com/watch?v=4mOmo1Lp_j4

Thanks!!!