



## Urban Ecology: the green within the city

**Organizers / Lecturers:** Ana Catarina Luz, Pedro Pinho, Cristina Branquinho, Paula Gonçalves, Filipa Grilo, Raquel Mendes, Joana Vieira, Margarida Santos-Reis (cE3c)

**Date:** February 19<sup>th</sup>-23<sup>rd</sup> 2018

**Schedule:** Lectures/Computer Lab – 4 days, Field trip – 1 day (36h)

**Timetable:** 9:00-12:30 and 14:00-17:30

### Context

The continuous urban development associated with the growth of the world population has become one of the most important challenges of the present time. Today, cities accommodate more than 54% of the world's population, a proportion that is expected to increase to 70% by 2050. Trends in urbanization show that cities are becoming more complex and heterogeneous social-ecological systems with growing demand for natural resources mainly for infrastructure, housing, food, water, and energy. These coupled with generalized environmental degradation and rapid social transformation is posing growing challenges that require innovative and holistic ways of planning, managing and governing urban areas.

In this context, research is focusing on the role of the urban green infrastructure to deliver the ecosystem services necessary to city-dwellers. The urban green infrastructure is composed by the network of green spaces, such as public parks, urban forests, allotment gardens, green roofs, derelict lands, and street trees among other. These green spaces are important for addressing urban

sustainability and resilience to global changes, as they play an important role to ensure the well-being of human populations.

## Objectives

The goal of this course is to provide the participants with current and practical knowledge on urban ecology, including ecological and social aspects. It aims at providing an integrated approach on urban socio-ecological systems. The focus of the course will extend from learning how to assess ecosystem services, the use of ecological indicators, to evaluate the status and trends of the environment, as well as, people's perceptions and knowledge regarding biodiversity and ecosystem services. Additionally, participants will gain knowledge of concepts, methods, and tools through presentation of key findings from recent projects carried out in multiple case studies in European cities.

## General plan

### Day 1:

- Welcoming and overview of the course
- Lectures on:
  - i. theory and concepts on urbanization patterns and environmental impacts
  - ii. cities main challenges and urban green infrastructure
  - iii. ecosystem services and nature-based solution to address urban resilience
  - iv. environment and people's health
  - v. introduction to functional diversity and traits
- City council of Almada presentation – a planner perspective I

### Day 2:

- Presentation of case studies regarding:
  - i. Ecosystem services assessment
  - ii. Heat-island effect
  - iii. Air pollution
- Field trip to parks in Almada city

### Day 3:

- **Open morning** with lectures given by international visitors
  - i. Presentation of the UrbanL@b and the GREEN SURGE project (<http://greensurge.eu/>)
  - ii. Marco Moretti (Swiss Federal Institute for Forest, Snow and Landscape Research WSL) - From biodiversity to ecological processes in urban ecosystems
  - iii. Joan Casanelles Abella (Swiss Federal Institute of Research (WSL) & ETH Zürich) - The conservation of wildlife in an urbanizing world

- iv. Samson Roeland (University of Antwerp) - Citizens and science, a good combination?
- Talk about the biocultural diversity framework
- City council of Lisbon presentation – a planner perspective II

#### Day 4:

- Presentation of case studies regarding:
  - iv. Ecosystem services and soil condition
  - v. Urban allotment gardens – people’s motivations and practices
  - vi. Permaculture as a potential tool for sustainable food production
- Field trip to parks in Lisbon city

#### Day 5:

- Remote sensing in Urban Areas (computer lab)
- Presentation of the ClimAdapt project
- Application of the acquire knowledge in a practical case on the implementations of solutions and nature-based solutions in one of the parks visited.

This course can have a recognition of 6 ECTs for FCUL PhD students enrolling in it as part of their first doctoral year. For students only requiring 5 ECTs recognized in their specific PhD programmes the last 6 hours of the course are not mandatory and the certificate will be on 'Topics in Urban Ecology'.

#### Specific needs

- . Lectures’ room
- . Computers’ room
- . Transportation to the field

**Nº (min, max) students:** 10-20

**Minimal formation of students:** Bachelor in Natural Sciences or Social Sciences with interest in urban green spaces management

**Directed to:** MSc or PhD students in Biology, Environmental Sciences, Ecology or related areas, postdocs and professionals working in related topics

**Fee:** Free for 1st year PhD students in the Doctoral program in Biology (FCUL), Biodiversity, Genetics and Evolution (BIODIV FCUL/FCUP) and Biology and Ecology of Global Changes (BEAG UL/UA) when the course counts credits for their formation, in which case the delivery of a final report done after the course is mandatory; 25 € for PhD students from institutions of the PEERS network (cE3c, CFE); 125 € for FCUL Master students and unemployed; 180 € for BTI, BI and other PhD students; 250 € for Professional and postdocs.

When the maximum number of students is reached 10 vacancies will be available for non-paying 1st year PhD students mentioned above, being, by order of preference: 1) cE3c students; 2) BIODIV students (not from cE3c); 3) FCUL students (not from cE3c); 4) BEAG students (not from FCUL).

**Deadline for applications:** January 19<sup>th</sup> 2018

Candidates should send to Ana Luz ([anaccluz@gmail.com](mailto:anaccluz@gmail.com)) a short cv, motivation letter and the following information:

Full Name:

E-mail:

Phone:

Professional activity: Professional/Postdoc, BTI, BI (or other non-post-doc research grant), PhD student (with/ without scholarship), Lic. (Bachelor)/Master student

Academic formation:

PhD student of the 1st year of Doctoral programme BIODIV (FCUL/FCUP), Biologia (FCUL) or BEAG (FCUL or UA)?:

If yes to the above question, PhD student doing the Course to count credits for 1st year?:

PhD student of cE3c or CEF (Centro de Ecologia Funcional):?

If PhD student from another programme/centre, which: