



# Teacher Training Course



## LIVING RIVER

CARING AND PROTECTING THE LIFE AND CULTURE AROUND RIVERS AND STREAMS

**2018-I-PT01-KA201-047513**

## Universidade de Coimbra (Portugal)

**21 – 24 October 2019**



# Lecturers

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# Timetable

## LivingRiver

October					
		21	22	23	24
		Universidade Nova de Lisboa		Universidade de Coimbra	
Time					
09:00 - 9:30	<b>Welcome</b>				
9:30 - 10:30	UNL1. Visit to the University Archive	UNL4. Oral History: introduction and guidelines	UNL5. Historical and heritage research - Part 1	UC1. Watercourses, waters of life	UC2. Tools to evaluate streams' integrity
11:00 - 12:30					UC5. Field Trip
<b>LUNCH</b>					
14:00 - 15:30	UNL2. Rivers as agents of History: an introduction to historical research	UNL5. Historical and heritage research - Part 2	UNL6. Visit to Santa Clara-a-Velha Monastery	UC3. Litter decomposition and the litter bag technique*	UC4. <i>Hands-on</i> litter bags*
16:00 - 17:00	UNL3. Historical and heritage research: guidelines and sheets				UC6. Sample processing
17:00 - 17:30					UC7. Data analysis
					<b>Farewell</b>

\* Participants will be divided in two to four groups;

**UC.** Universidade de Coimbra; **UNL.** Universidade Nova de Lisboa.

**Sessions** UNL2-UNL5 & UC1, UC2, UC7, will be held at the Mathematical Department of the University of Coimbra (room 3.8) and **Laboratories** (UC3, UC4, UC6) of the Department of Life Sciences.

**Field Trip.** Ribeira de S. João, Serra da Lousã, Lousã (Burgo), Portugal. Please bring adequate outfit!



## Goals

The international training course of the LivingRiver Project has as main goal endowing its participants with the theoretical bases and practical experience needed to approach and explore running waters (mainly streams), its historical contexts and ecology.

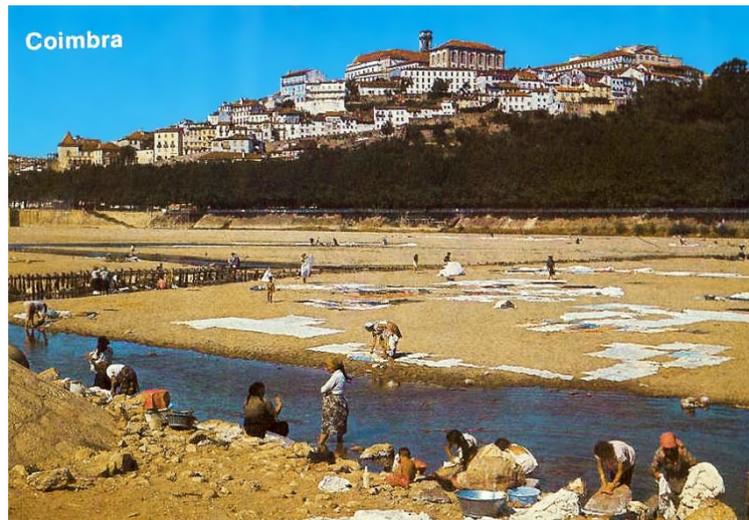
The first part of the course will introduce the methodologies of historical research, identifying the various typologies of sources and the registration of tangible and intangible heritage, which contribute to the knowledge of the history of watercourses in strict relation with the communities who live and occupy its margins.

The second part of the course addresses basic principles and concepts of stream ecology and allows the participants to develop hands-on skills in the use of leaf litter decomposition – key stream ecosystem process – as a "tool" to get insights on the stream biota, streams functioning and their functional integrity.

During the training course, participants will be testing the tools built and adapted by the partner Universities, to be applied with local and school communities, in order to gather information and data about the river and streams in each partner's location. The participant's multiple experiences and backgrounds will enrich this experience and contribute to a shared knowledge and strategies to better understand, protect and safeguard river and streams as complex human and natural ecosystems.



## Part I



Postcard depicting washerwomen by the Mondego river, in Coimbra (Portugal)[mid 20<sup>th</sup> century].

## Sessions Contents

**UNL1.** Visit to the University Archive.

**UNL2.** Rivers as agents of History: an introduction to historical research. The case of the river Mondego.

**UNL3.** Historical and heritage research: guidelines and sheets.

**UNL4.** Oral History: introduction and guidelines.

**UNL5.** Historical and heritage research: a practical guide and implementation and discussion of results.

**UNL6.** Visit to Santa Clara-a-Velha Monastery.





## Part II

# LIVING RIVER

GRASPING THE STREAM WITH A LITTER BAG



## Sessions Contents

- UC1.** Freshwater systems: their importance, characteristics and services provided to men. Life in small watercourses. Streams functioning. Threats to water quality.
- UC2.** Streams health. Methods to assess stream ecosystems integrity. Insights of stream functioning through leaf litter decomposition. The litter bag technique, an important tool to understand and “sense” streams.
- UC3.** Leaf litter decomposition. Leaf litter characteristics. Construction of the litter bags.
- UC4.** Sample preparation.
- UC5.** *Field Trip.* Evaluation of the water physico-chemical analysis. Exposure and recovery of litter bags.
- UC6.** Laboratorial processing of the collected samples.
- UC7.** Analysis of the results (excel file) according to the provided information. The importance (and limitations) of the information provided by the litter bag technique.

During the course, a “decomposition kit” and theoretical supporting material (protocols, bibliography) will be provided.



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**FREE**  
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XUNTA DE GALICIA  
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IES Ribeira do Louro



**AMB**  
AGENCIA METROPOLITANA  
BRAȘOV  
AGENCIJA METROPOLITANA  
REGIONI DE VOLIARIE GORANILA  
BRNOVO





## Additional Information

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