

Burrowing my way into earthworm ecology



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My (young) history



Bsc & Msc in Natural Sciences
University of Naples Federico II (Italy)

- Zoology, botany, systematics, geology, palaeontology, etc.
- In my final undergrad year I found my niche in soil ecology
- Bsc thesis on the soil mesofauna of a urban area
- Msc thesis on the soil mesofauna of beech woodland and montane grassland



My (young) history



MRes in Ecology
University of Aberdeen (UK)

- Last year I did a research master in order to get a better preparation for a doctorate
- Final project on the effects of herbivores and nutrient enrichment on the food structure of soil nematodes assemblages (Isle of May, Scotland)



At present



PhD student in Soil Ecology
University College Dublin & Wageningen University



- In September I started the project “Soil fauna functions in soil structure, water regulation and nutrient cycling”
- Supervisors: O. Schmidt, T. Bolger (UCD), L. Brussaard, J. Faber (WU)
- Part of the EU project EcoFINDERS, Work Package 2





EcoFINDERS Work Package 2

Soil Functioning and Ecosystem Services

Objectives:

- Examine the relationship between soil biodiversity and the delivery of key ecosystem services
- Quantify soil ecosystem processes that produce soil ecosystem services, in relation to human-induced variations in environmental conditions

Approach:

- Experiments will be designed to quantify links between diversity and soil functioning
- This will be combined with field studies at long-term ecological research sites to assess the link between biodiversity loss and ecosystem dysfunction under human-induced perturbations

So what am I actually doing?

- Still in the process of formulating a clear research question, but intend to focus on anecic earthworms
- Aim is to perform both field and lab experiments
- One of the field experiments should be performed at the INRA agricultural research station in Lusignan (France)
- Anecics to be selectively removed with mustard oil
- Stable isotopes (enriched material) will be used to investigate the fate of nutrients (C, N, possibly S)
- Still to decide how to measure effects on water regulation (field lysimeters in Lusignan)



In a nutshell:

LOADING...

Earthworms and macropores

- Last week I participated in the autumn sampling session at the INRA field site in Lusignan
- I took part to a macropore assessment with Paul Henning Krogh (Aarhus University)



Earthworms and macropores

- Soil surface was exposed at 10, 20, 30, 50 & 100 cm depth
- Visible macropores were delineated on transparent plastic sheets in a 50x100cm area
- Brilliant Blue FCF was spread on the surface to visualise



Earthworms and macropores

- I sampled anecic earthworms from visible macropores as the pits were excavated
- I identified them to species level and, when possible, took their weight and length
- Macropore data yet to be processed, but can predict a correlation between number of anecics and pore density



So in the end...

... I'm here to learn!

