



**PhD Project Title: Hydrological and sediment impacts of forestry operations in Ireland (HydroSED)**

**Funding Agency: Department of Agriculture Food and the Marine (DAFM)**

**Description:** An exciting opportunity has arisen for a suitably qualified and strongly motivated graduate to undertake a PhD in University College Dublin (UCD) as part of a large-scale interdisciplinary 3-year research project “Hydrological and sediment impacts of forestry operations in Ireland” funded by the Irish Government’s Department of Agriculture Food and the Marine. This project is collaborative and involves research teams in UCD (Schools of Civil Engineering, Biology and Environmental Science, Agriculture and Food Science and Geography) and Cork Institute of Technology (School of Building & Civil Engineering) and also involves Coillte and Green Belt Ltd.

Forestry presents pressures to the ecological status of watercourses, with sediment release being a recognised stressor. This field-based project will measure hydromorphological change and sediment release at seven forestry sites with adjacent or nearby lotic waterbodies. Study sites will reflect a range of soils, topographical and hydrological settings relevant to Irish forestry and the monitoring strategy will specifically target a range of forestry operations (afforestation, harvesting, windrowing and reforestation). Data for establishing levels of deposited sediment in riverbeds and changes in hydromorphology and aquatic community health will be collected. Sediment fingerprinting will be used to disentangle forestry operation impacts on suspended and deposited fine sediments from other catchment pressures.

**Proposal**

The PhD study will require the successful student to:

- Contribute to selection of study sites (with wider project team)
- Prepare a state-of-art review of academic literature relevant to the field of study
- Quantify deposited fine sediment levels in forested river reaches through extensive field investigation
- Assess hydromorphological condition of forested sites and compare these with non-forested sites
- Apply multi-parameter sediment source fingerprinting to investigate sediment provenance and relative contribution from forestry operations
- Evaluate ecological conditions at study sites and the potential for impact on Water Framework Directive (WFD) status
- Publish/ present research findings in academic journals and at national and international academic conferences
- Engage with other project activities as deemed appropriate by Supervisors

**Requirements/Qualifications:** The successful candidate will hold a 2.1 or First Class honours degree in Ecology, Environmental Science, Physical Geography or a related discipline. A master's degree in Environmental Science or in a related area may also be suitable. The successful candidate will also have knowledge of freshwater ecology.

The candidate must be highly motivated and capable of working both independently and within a team. Strong numerical and analytical skills are essential as is an ability to communicate scientific research findings. Experience in laboratory investigations and field measurements are desirable, but training will be given as required. The successful candidate will be required to design and play a lead-role in an extensive programme of field data collection over a 3-year period, which will involve sometimes working in inclement conditions. A full, clean driving license is also required.

**Project Duration:** 36 months

**Conditions:** €18,000 Stipend per annum

Postgraduate fees for EU students will be covered by the project.

In addition, any necessary travel and material costs incurred during the project will be covered.

*Please Note:* Candidates from outside the EU are eligible to apply but will be expected to provide evidence of sources of additional funds to cover excesses associated with non-EU fees. If English is not the applicant's first language, a certificate of English language ability is required. For IELTS, an average score of 6.5 over all components and a minimum of 6.0 in each band on the Academic Version is required. Scores deemed to be comparable under different tests will be considered.

**Proposed Start Date:** September 2022

**Application Closing Date:** This competition will remain open until the position is filled. Applications will be reviewed on a rolling basis (weekly-fortnightly).

Applicants should submit their Curriculum Vitae (with names of 2 referees), together with a personal statement explaining (i) how you meet the requirements of the position and; (ii) why you would like to pursue a PhD Research Programme, to Assoc. Prof. Mary Kelly Quinn ([mary.kelly-quinn@ucd.ie](mailto:mary.kelly-quinn@ucd.ie)) and *simultaneously* to Dr. Jonathan Turner, UCD School of Geography ([jonathan.turner@ucd.ie](mailto:jonathan.turner@ucd.ie))

For further information on the project please contact:

Assoc. Prof. Mary Kelly Quinn, UCD School of Biology and Environmental Science ([mary.kelly-quinn@ucd.ie](mailto:mary.kelly-quinn@ucd.ie))

Dr. Jonathan Turner, UCD School of Geography ([jonathan.turner@ucd.ie](mailto:jonathan.turner@ucd.ie))