



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine



## TEAGASC PHD OPPORTUNITY

### “Optimising water table management on carbon rich soils”

#### Background

We are seeking an enthusiastic and highly motivated student for a 4-year PhD that will focus on the hydrological impact of rewetting works on organic soils to establish best practice in water table management and quantify impacts at field scale. There is an estimated 300,000 ha of drained carbon-rich farmed soils in Ireland. Plans to restore these soils and prevent additional carbon release will rely on manipulating the water table by removing and blocking existing artificial drainage features in a process referred to as “rewetting”. The main objective of this project is to assess the application and impact of water table management on carbon-rich grassland soils. The project will focus on hydrological impacts. There is currently little guidance the rewetting process in practice, the magnitude of the response achievable in terms of hydrological changes imposed, or the impact on adjoining lands. This project will test the functionality of a range of rewetting techniques to establish what works in practice and in particular circumstances. It is likely that some areas will be easily and efficiently rewetted while others will remain problematic due to variability in discharge conditions, extent and efficacy of artificial drainage, micro and macro topography, and influence on surrounding lands. Furthermore, it will measure changes in hydrology and assess the actual effect of rewetting on soil moisture and storage, water table depth and discharge dynamics. The sensitivity of water table depth to external manipulation will vary by site, as will corresponding costs and the magnitude of benefits accrued. The refinement of water table control methodologies will allow for imposed land use changes to yield maximal benefits on a per hectare basis. The project will inform strategies for the sustainable management of land resources, reduce the impact of greenhouse gas emissions on the environment, promote improved soil health and support sustainable habitats at all scales.

#### Requirements

The work programme of the student will involve a blend of experimental design, data collection at field sites, data analysis and networking with experts in the field. Applications are invited from graduates holding a first or upper second-class primary degree or equivalent or M.Sc. in a relevant discipline (Environmental Science, Hydrology, Environmental Engineering, Civil Engineering, Agricultural Science, Soil Science, Water resource Management etc.). The successful candidate should be practically minded and self-motivated. A full EU driving licence is required.

#### Award

The PhD Scholarship is a joint research project between Teagasc and National University of Ireland, Galway (NUI Galway). The student will work under the supervision of Dr. Pat Tuohy and Prof. Owen Fenton (Teagasc) and Dr. Eve Daly and Prof. Mark Healy (NUI Galway). The Scholarship provides an annual stipend of €24,000. University fees up to a maximum of €6,000 per annum are paid by the student from this stipend, which is tenable for 4 years.

#### Further Information/Applications

Dr Pat Tuohy, Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland; Phone +353 (0)25 42366; email: [patrick.tuohy@teagasc.ie](mailto:patrick.tuohy@teagasc.ie)

Dr Eve Daly, Earth & Ocean Sciences, College of Science and Engineering, National University of Ireland, Galway, Co. Galway; Phone +353 91 522183; email: [eve.daly@nuigalway.ie](mailto:eve.daly@nuigalway.ie)

#### Application Procedure

Applicants should submit a CV and covering letter detailing their qualifications and experience to Pat Tuohy ([patrick.tuohy@teagasc.ie](mailto:patrick.tuohy@teagasc.ie)) and Eve Daly ([eve.daly@nuigalway.ie](mailto:eve.daly@nuigalway.ie))

#### Closing date

Friday 26th August 2022