PhD studentship

Environmental supporting conditions for GWDTEs using remote sensing applications

A PhD student is sought for a 3 year EPA-funded project with the overall aim to define appropriate metrics to establish environmental supporting conditions for different groundwater dependant terrestrial ecosystems (GWDTEs), in particular fens, raised bogs and turloughs. This PhD studentship will primarily focus on turloughs but will include applications to the other wetlands. The research will first review the data from previous research studies, particularly where linked hydrological and ecological data exists. It will also review existing Remote Sensing (RS) analytical and modelling methods which can be employed as tools to define metrics applicable to quantifying GWDTE environmental supporting conditions in the Irish context. This will include RS datasets such as aerial photography, active systems (LIDAR, SAR), CORINE land cover, panchromatic and multispectral satellite data (e.g. ESA Sentinel programme, Landsat, SPOT, TerraSAR-X). Using the datasets and most appropriate RS methods, GIS-based metrics will then be developed to provide information on wetland vegetation structure, function and hydrology in the key GWDTE habitats. Environmental supporting conditions for the terrestrial and lake phase ecosystems will be assessed and appropriate metrics derived which are able to characterise these conditions, as well as variations to these conditions, with regard to the sustainability of the wetlands.

An outstanding student with interests in hydrogeology / ecology / remote sensing is required. Applicants should have a strong motivation for research and be able to demonstrate ability in numerical analysis and modelling. Applicants should possess a first class honours degree in Earth Science, Engineering, Environmental Science, Mathematics or Computer Science. A Masters level qualification in Geoinformatics / Remote Sensing would also be desirable. The successful candidate will join a large Environmental Engineering research group at Trinity College Dublin but will also work in collaboration with the School of Natural Sciences. The position is fully funded for three years and brings with it a stipend of €18,000/year plus EU fees together with provision for conference and external course attendance. To apply, please send a full CV and contact details for 3 academic referees, together with a letter of motivation, to Prof Laurence Gill at laurence.gill@tcd.ie (+353 1896 1047) from whom further particulars may also be requested. The deadline for applications is 30th April 2017 for a start not later than 1st September 2017.

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