

JOB SPECIFICATION

- JOB TITLE:** Soil Classification and Mapping Technologists (TECH/JC/1009)
- LOCATION:** Environment Research Centre, Johnstown Castle
- REPORTING TO:** Dr Rachel Creamer
- GRADE/SALARY:** Teagasc are seeking to fill 4 posts at Technologist Level. The current salary range is €37,302 to €66,974 with a starting salary of €37,302 to €50,790 depending on qualifications and relevant experience.

Appointment will be for an expected duration of up to 24 months

BASIC FUNCTION: To assist in the development a soil classification system for Ireland through the following roles:

- Field soil survey and sampling over a two year period.
- Description of soil profiles for enhancement of existing data on soil modal profile information
- Logistical support to the project management for the field survey and laboratory analyses
- Laboratory analyses of soils for a range of chemical and physical parameters
- Data analyses and technical writing support to the working group manager
- To provide support to the project co-ordinator of this large-scale project with national and international partner institutes and stakeholders.

BACKGROUND:

Soil is a vital non-renewable resource essential to human life and the ecosystems that support this. Increasingly, soil is recognised as a habitat in its own right as well as a foundation to others. Living soil systems deliver valuable ecosystem services (biodiversity, clean air and water, food security and cultural heritage, etc). There is good agreement over the functions that soil performs in the environment and the economy and the importance that should be given to its sustainable management. With the introduction of the proposed EU Soil Framework Directive, soils will receive equal status to water quality and air quality.

In Ireland, soil data exist in variable forms and complete coverage at 1:250,000, the target scale identified at European level, does not exist. A comprehensive inventory of Irish soil data has been compiled by Daly and Fealy (2007) to assess their utility, availability and application. This review of data and survey of scientists and users of soil data confirmed that most soil data are currently held by Teagasc, and consist of mapping at 1:127,560 scale for 44% of the country, the General Soil Map of Ireland at 1:575,000 scale and other miscellaneous small area-large scale mapping of experimental farms. Daly and Fealy (2007) have highlighted that soil data coverage of Ireland is incomplete in both detail and extent. This has created difficulties for users of Irish soil information and has often led to inappropriate use of soil data. It is on this basis that Teagasc is planning to embark on an ambitious programme to develop a soil map of Ireland at 1:250,000 scale and an associated digital Soil Information System for Ireland.

The Soil Information System for Ireland comprises of a programme of structured research into the distribution of soil types over the whole of Ireland and construct a digital soil map, at a scale of 1:250,000 as a final output along with a soil database. The project will involve novel research involving the development of predictive mapping models to determine soil associations within currently unmapped areas. The model outputs will be tested and refined by a subsequent field surveying programme. Collected data of soil profile descriptions and associated chemical and physical parameters will be used to produce a comprehensive database of soils across Ireland.

We are now seeking to recruit 5 contract technologists for a 2 year period to assist in the field survey and laboratory analyses of a national scale project enhancing the current knowledge on soil classification of Irish soils. The ideal candidate will preferably have active research experience in a range of soil related disciplines, e.g. pedology and soil classification, understanding of soil mapping or soil monitoring in the field and supporting knowledge of soil chemistry and soil physics.

Teagasc - Johnstown Castle Environment Research Centre

Teagasc - Johnstown Castle is Ireland's leading research institute on the rural environment, and conducts both fundamental and applied research on a wide range of subjects, e.g. nutrient efficiency, water quality, gaseous emissions, soil quality, agro-ecology, land use and organic farming. The Environment Research programme is conducted by 9 permanent researchers, 6 contract researchers, 1 IRCSET post-doctoral researcher and 13 post-graduate research students.

Johnstown Castle has extensive laboratories to support the research programme with soil, slurry/sludge, water and plant analyses. In addition, the centre is progressing advanced plans to build new, state-of-the-art soil research laboratories and research facilities that will include microbiological and molecular laboratory facilities. Johnstown Castle has 190 hectares of farmland and operates 3 scientific research farms. These enterprises facilitate a range of research projects at plot, field and farm level. Teagasc is actively investing in the development of Johnstown Castle.

Our programme is funded by, among others, the Department of Agriculture, the Irish National Development Plan, EPA and EU. The main users of our research are farmers, Government Departments, the Environmental Protection Agency, policy makers, development agencies and rural communities. A significant proportion of the research is carried out in close collaboration with researchers in other institutions in Ireland, the EU, USA and other countries.

MAIN DUTIES AND RESPONSIBILITIES

1. Soil surveyor on the field programme. Leading 1 of 5 teams to evaluate, validate and refine predicted soil maps produced for previously unmapped areas.
2. Detailed pedological profile descriptions of modal soil profiles
3. Laboratory analyses of soil physical and chemical parameters required for description and classification of soil types.
4. Appreciation/understanding of the Irish and World Reference Base (WRB) soil classification systems.
5. To support the project management team in the completion of rationalisation of soil associations from the final dataset and correlation with the WRB system.
6. To disseminate in prominent international scientific journals, as well as technical and popular press.
7. To contribute to the teamwork and team-spirit in the agri-environmental research department at Johnstown Castle, and to foster and add to further collaboration and integration.
8. To assist Teagasc in meeting the commitments of the Quality Customer Service charter and action plan.
9. To actively participate in the annual business planning and PMDS processes.
10. To complete additional duties as they may arise and be assigned by the line manager.

PERSON SPECIFICATION

	ESSENTIAL	DESIRABLE
QUALIFICATIONS	<ul style="list-style-type: none"> • Minimum of an honours Level 8 Degree in soil science, or related relevant discipline 	<ul style="list-style-type: none"> • PhD in soil science, soil classification, soil mapping or related and relevant discipline.
KNOWLEDGE	<ul style="list-style-type: none"> • Knowledge of pedology, soil sampling, monitoring or mapping. • General cross-disciplinary knowledge of soils, including soil chemistry and physics. 	<ul style="list-style-type: none"> • Knowledge of soil classification systems (including WRB/FAO). • Working knowledge on issues surrounding soil mapping, e.g. scale, applicability, sampling programmes.
SKILLS	<ul style="list-style-type: none"> • Research skills: general soil field survey skills/field sampling experience • Research skills: general soil laboratory skills • Data analysis skills 	<ul style="list-style-type: none"> • Research skills: soil classification, including WRB/FAO. • GIS mapping skills • Writing skills: popular?
BEHAVIOUR COMPETENCIES	<ul style="list-style-type: none"> • Excellent interpersonal skills, proficiency in communicating with stakeholders and researchers • Ability to work as part of a team, and to align personal research and personal development objectives with departmental, centre, and organisational objectives. • Ability to work independently, and meet self-imposed milestone and deliverables • 	<ul style="list-style-type: none"> • Ability to contribute actively and positively to collaboration and integration within our vibrant and expanding research team.
OTHER	<ul style="list-style-type: none"> • Full driving license 	Trailer license

HOW TO APPLY

Application forms can be accessed on our website at www.teagasc.ie/careers.

Completed application forms may be emailed to recruit@teagasc.ie

Please state relevant reference code in all correspondence.

The latest date for receipt of completed application forms is: **5.00pm on Monday 4th January 2010.**

Teagasc is an equal opportunities employer. Canvassing will disqualify.