# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Research Scientist – Soil and Landscape Modelling |
| Job Reference | 79368 |
| Tenure | Specified Term of 4 years  Full-time |
| Salary Range | AU$102,724 to AU$111,165 pa + up to 15.4% superannuation |
| Location(s) | Canberra, Brisbane, Adelaide, or Perth preferred  Other locations may be considered |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents currently residing in Australia. * Australian Temporary Residents currently residing in Australia, with a valid working visa to cover the length of the term (at least until end of 2026), without the requirement of sponsorship from CSIRO. |
| Position reports to the | Team Leader Prediction, Soils and Landscapes Group |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Mr Peter Wilson via email at [peter.wilson@csiro.au](mailto:peter.wilson@csiro.au)  Please do not email your application directly to Peter Wilson. Applications received via this method will not be considered by the selection panel. |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

### Role Overview

The role of Research Scientist in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO's strategies. They identify research opportunities worthy of investigation because of their economic, social, and environmental benefit and/or the advancement of relevant scientific disciplines. They build and maintain alliances and networks that provide an up-to-date awareness of advances in technology and ideas. They report on and, where appropriate, collaborate on the uptake of the research results. They acquire a breadth and depth of scientific interests, an awareness of potential application of their research and the capacity to vary their scientific interests and skills to suit research priorities.

The Research Scientist – Soil and Landscape Modelling will drive a deep understanding and focus on our national soil landscapes and their function and role in supporting Australia’s modern agriculture and the delivery of a range of ecosystem services. This will include developing and applying advanced quantitative approaches to soil modelling and assessment that support our improved understanding of the spatial-temporal distribution of soils and their functional change, constraints and the impacts of land use and management. The Research Scientist will play a lead role in further developing our understanding of Australia’s needs for well managed accessible soil data, the use of standards, and the development of information tools and how we can fulfil these needs more fully through the enhancement of the Australian National Soil Information System and the Australian Government’s National Soil Strategy. Under direction from the Senior Research Scientist Soil and Landscape Processes, the Research Scientist will undertake use case assessments, develop modelling approaches and applications for farmers and other land managers, and develop the modelling frameworks which sit behind national carbon sequestration, natural capital accounting and other soil related assessments.

This position is for 4 years, with possibility of extension or conversion to indefinite, subject to funding and strategic alignment.

### Duties and Key Result Areas:

* Design and undertake national, regional and farm scale assessments as a key member of the CSIRO soil information team to demonstrate the use and value of the Australian National Soil Information System (ANSIS) to multiple users.
* Investigate and document soil data and information use cases and value propositions for future ANSIS development and funding consideration.
* Develop and apply innovative approaches to combine process-based soil understanding and spatial-temporal modelling techniques for improved prediction of functional soil properties relevant to soil state and trend assessment and incorporation within natural capital accounting and other reporting frameworks.
* Active involvement in ongoing development of the ANSIS and related soil databases, data collation and harmonisation processes, assessment of soil data needs and use.
* Produce high quality research reports and scientific papers suitable for publication in high impact international journals and conferences.
* Work effectively as part of a multi-disciplinary research team, to undertake independent scientific investigations and carry out associated tasks under the guidance of Senior Research Scientists/Engineers and in collaboration with external partners and stakeholders.
* Develop and lead research projects, including the negotiation of resource requirements.
* Communicate openly, effectively, and respectfully with all staff, clients, and suppliers in the interests of good business practice, collaboration, and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, often nationally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Required Competencies:**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD or equivalent combination of qualification and demonstrated extensive research experience in soil science, agricultural science, spatial and temporal modelling of soil attributes or similar fields of science.
2. Demonstrated understanding of soil processes and functions, and the impacts of land management practices on soil state and trends and their delivery of ecosystem services across different landscapes and land uses.
3. Demonstrated ability to conduct national and regional assessments including spatial and temporal modelling of soil process and functional attributes using diverse data of variable quality from multiple sources in a range of data analysis tools.
4. Demonstrated experience and excellent skills in programming including (but not limited to) R, Python including data manipulation (FAIR principles), model development using statistical and machine learning algorithms, and ability to use high-performance computer (HPC) facilities for the prediction of soil properties, processes, and function
5. Excellent written and oral communication skills including the ability to publish research results, prepare reports and present findings at stakeholder meetings and national and international conferences, evidenced by a solid record of publication in top-tier journals and conference proceedings.

## **Desirable:**

1. Demonstrated practical knowledge of Australian landscapes and soils, their constraints, and opportunities.
2. Experience in field-based soil investigations and having a well-grounded national perspective on pedology and the spatial distribution of soil types, attributes, and function across Australian landscapes.
3. Good understanding of remote and proximal soil sensing, and their potential uses to support soil and plant modelling contexts.
4. A current driver's Australian drivers' licence.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e., IELTS test) – <https://ielts.com.au/>

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* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted

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