# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Spatial Ecological Modeller |
| Job Reference | 91093 |
| Tenure | Indefinite  Full-time |
| Salary Range | AU$105,806 to AU$114,500 pa + up to 15.4% superannuation |
| Location(s) | Canberra, ACT or Adelaide, SA preferred |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens and Australian Permanent Residents Only |
| Position reports to the | Team Leader, Modelling Water Ecosystems |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Danial Stratford via email at [Danial.Stratford@csiro.au](mailto:Danial.Stratford@csiro.au) or phone +61 2 6246 5993 |
| 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. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

The role of Research Scientist/Engineer staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist/Engineer may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist/Engineer will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

As part of the ‘Managing Water Ecosystems’ Group, the Spatial Ecological Modeller will apply their extensive experience in environmental and water security research to deliver science strategy, participate in existing research initiatives and lead new projects. Reporting to Team and Project Leaders, they will contribute to and lead projects that combine multiple sources of evidence, both empirical and spatial (e.g., ecological, hydrological, climate), to guide sustainable management of rivers, wetlands and floodplains. This research will progress scientific understanding of the relationship between ecology, freshwater systems, environmental factors and agricultural development where outcomes can be translated to inform river and wetland ecology and management in Australia. The Spatial Ecological Modeller may be required to undertake occasional field based research, depending on the project needs.

### Duties and Key Result Areas

* Apply or develop approaches using modelling, spatial analysis, remote sensing ad machine learning that progresses understanding of temporal dynamics of ecological and ecosystem change.
* Incorporate ecological understanding of freshwater systems, adapting and/or developing original concepts and ideas for existing and future research projects, across spatial scales including basin scale.
* Contribute to models and modelling, including systems scales and decision-based support systems providing recommendations that can be used by water managers.
* Interact with key clients, (e.g. MDBA, CEWO, State Governments), other research programs in CSIRO Environment Business Unit and across various Business Units within CSIRO, and with external project-based research partners.
* Develop and lead research projects.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and Business Unit, to carry out tasks to support CSIRO’s scientific objectives.
* Produce high quality client reports and scientific papers suitable for publication in quality journals and for presentation at national and international conferences. Communicate findings to broader stakeholder audiences.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Communicate research results to clients and the scientific community through oral and written reports, which may include the preparation of documents for patent applications.
* 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.
* Undertake research, demonstrating a considerable degree of originality, creativity and innovation in solving problems and introducing new directions and approaches.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A PhD in spatial science, ecology or relevant discipline area, with skills in freshwater ecology, machine learning techniques and modelling.
2. Demonstrated skills in working with and managing ‘big data’ including use of data platforms, such as Google Earth Engine including excellence in script production using Python and R.
3. Extensive network and experience in environmental research particularly related to modified rivers, and an understanding of the research needs and ecological issues within Australian river systems.
4. A demonstrated history of publications in quality, peer reviewed journals and contribution to client reports.
5. Strong written and oral communication skills and the ability to publish results and present to a range of audiences.
6. Demonstration of ability to effectively work in multi-disciplinary teams, regionally dispersed research teams, and ability to undertake independent individual research, to achieve organisational goals.
7. A record of science innovation and creativity, including the ability and willingness to incorporate novel ideas and approaches into scientific investigations.
8. Experience in developing new projects.

## **Desirable**

1. Knowledge of hydrology.
2. Knowledge of wider aspects of riverine and floodplain ecology.

## **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 responses 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 change.

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 Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

CSIRO is a values-based organisation. In your application and at interview you will need to demonstrate behaviours aligned to our values of:

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

Find out more about CSIRO [Land and Water](https://www.csiro.au/en/Research/LWF)