# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Water Quality Modeller |
| Job Reference: | 61284 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | * All Candidates |
| Reports to the: | Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Klaus Joehnk, [Klaus.joehnk@csiro.au](mailto:Klaus.joehnk@csiro.au).  *Please do not email your application directly to Klaus Joehnk. Applications received via this method will not be considered.* |
| Contact Details For Applying | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon |

## Role Overview:

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You 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.

The Research Scientist will apply advance modelling and prediction tools for water quality of rivers, lakes and reservoirs using emerging technologies in remote sensing. This requires an in-depth understanding of aquatic remote sensing and modern data analysis techniques for big data, as well as basic understanding of ecological and biogeochemical processes in natural and artificial inland waters.

## Duties and Key Result Areas:

* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing and further research.
* Advance knowledge in water based ecosystems response to environmental stressors using modern monitoring (e.g. remote sensing) and modelling tools.
* Develop models and decision-based support tools to underpin water management, considering legacies, current and proposed development.
* Assist in leading small research projects, including the negotiation of resource requirements, and managing activities involving the implementation of water quality models and analysis of remote sensing data.
* Develop approaches for integrating socio-economic and health aspects into water quality management of inland waters to achieve ecological outcomes.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals and for presentation at national and international conferences.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* 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 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 regionally 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.

## Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **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.**
6. **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:

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

* A PhD in a relevant discipline area, such as remote sensing, water science, or ecological modelling.
* Demonstrated experience in aquatic remote sensing and modern data analysis techniques for big data.
* A solid record of publications in quality, peer reviewed journals.
* Strong written and oral communication skills including the ability to publish research results, prepare reports and present the results of scientific investigations at national and international conferences and stakeholder meetings.
* Experience with regional spatial analysis and remote sensing to inform large scale environmental model development.
* Experience in developing or adapting custom software and scientific models.
* Knowledge in water quality modelling.
* Willingness and ability to undertake field based research.
* Demonstrated ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.
* A record of science innovation and creativity plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## Desirable Criteria:

* Process knowledge of water quality in rivers, lakes and reservoirs.
* Experience with 1D or 3D hydrodynamic models for aquatic systems.
* Experience in managing and analysing large datasets.

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents 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/>

## About CSIRO:

At CSIRO we solve the greatest challenges through innovative science and technology. See more [online](http://www.csiro.au/)!

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