# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants |
| Advertised Job Title | CSIRO Postdoctoral Fellowship in Marine Ecosystem Modelling for Management  |
| Job Reference | 76404 |
| Tenure | Specified Term of 3 years Full-time  |
| Salary Range | AU$88,163 to AU$96,573 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | St Lucia (Brisbane), QLD |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Permanent Residents
* Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates)
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| Position reports to the | Senior Principal Research Scientist |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Eva Plagányi via email at Eva.Plaganyi-lloyd@csiro.au or phone +61 7 3833 5955 |
| 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 or call 1300 984 220. |

### Role Overview

**CSIRO Early Research Career (CERC) Postdoctoral Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships aim to develop the next generation of future leaders of the innovation system through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system.
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence;
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition; and
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

CERC Postdoctoral Fellows **are appointed for three years or part time equivalent.**

The Great Barrier Reef (GBR) is under threat from the cumulative impacts of climate change and coral predation by the crown-of-thorns starfish (CoTS). Since 2012, CSIRO have been working with the Great Barrier Reef Marine Park Authority (GBRMPA), and other research and industry partners to reduce the damaging impacts of CoTS on coral populations across the Marine Park. The Control Program is currently based on manual culling of CoTS across numerous reefs using boats and divers, which is costly and resource intensive. Any improvement to current control methods has the potential to both reduce costs and improve biodiversity outcomes. Given the value of coral reef assets and the high costs of intervention, control strategies need to be rigorously evaluated using robust modelling approaches to ensure they are likely to be effective before being implemented.

This project will explore innovative ways to advance efforts towards greater use of tactical ecosystem models such as Models of Intermediate Complexity for Ecosystem assessment (MICE) to efficiently explore CoTS control options. The Postdoctoral Fellow will be responsible for leading development of fine-scale spatially resolved models for use in advising on dynamic optimisation of the spatial and temporal distribution of CoTS control under alternative bleaching and outbreak scenarios. The proposed modelling will also consider more innovative management interventions utilising improved monitoring and ecological understanding combined with novel approaches based on genetic methods, high protection zones and re-introduction of natural CoTS predators. The project will also involve coupling of reef-scale with larger-scale models.

The Postdoctoral Fellow will work as part of a collaborative team with researchers at CSIRO and several partner agencies, and will be expected to regularly communicate with managers and other stakeholders.

### Duties and Key Result Areas:

Under the direction of senior research scientists and engineers, the successful CERC Postdoctoral Fellow will:

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes pertaining to the management of coral cover and crown-of-thorns-starfish on the Great Barrier Reef.
* Recognise and exploit opportunities for innovation and further development and application of novel ecological modelling approaches such as MICE.
* Translate outcomes of research activities to partners and end-users, for instance, through participation in management meetings, field visits and presentations.
	+ Produce high quality scientific papers suitable for publication in peer reviewed journals, and internal and external reports. Prepare appropriate conference papers and present those at national and international conferences as agreed with their supervisor.
	+ Carry out research investigations requiring originality, creativity and innovation
	+ Record, manage, and analyse data/information using relevant domain data science techniques.
	+ Proactively undertake development to grow effective researcher capabilities to support career goals.
	+ Work collaboratively with colleagues within the team, the business unit and across CSIRO.
	+ 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.

[**The CERC Postdoctoral Fellow learning and development program**](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships)is developed between the CERC Postdoctoral Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

## **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:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **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 doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as Applied Mathematics, Ecological Modelling, Quantitative Marine Ecology or Statistics.

Please note: To be eligible for this role you must have **no more than 3 years** (or part time equivalent) of postdoctoral research experience.

1. Demonstrated experience in computer programming (e.g. in R, Matlab, ADMB, TMB or similar)
2. Direct experience in the development, calibration and delivery of ecosystem models.
3. High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences and other relevant fora.
4. A demonstrated history of publication in peer reviewed journals and/or authorship of scientific papers, reports or grant applications.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. An appreciation of modelling principles and frameworks such as MICE, size spectra, CONNIE, Atlantis or agent-based platforms such as OSMOSE, NetLogo.
2. An appreciation of the principles of ecosystem-based management and knowledge of Australia’s Great Barrier Reef system.
3. Ability to remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
4. **The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

To be appointed to this CERC Postdoctoral Fellowship role within CSIRO, candidates will be expected to commence employment by December 2021/January 2022. To be appointed as a CERC Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 ($85,361). Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

**Our value proposition**

We want CERC Postdoc Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

CSIRO Early Research Career (CERC) Postdoctoral Fellow Experience Employee Value Proposition (EVP). Find out more [here](https://www.csiro.au/en/careers/postdoctoral-fellowships)!

## **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 [Oceans and Atmosphere](https://www.csiro.au/en/Research/OandA)