# 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 Biological Monitoring with Environmental DNA |
| Job Reference | 67862 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$86,434 to AU$94,679 pa + up to 15.4% superannuation |
| Location(s) | Hobart (preferred), Canberra, VIC or Perth, WA |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents * Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible candidates) |
| Position reports to the | Team Leader, Marine Biodiversity (Ocean and Atmosphere) |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Oliver Berry via email at [oliver.berry@csiro.au](mailto:oliver.berry@csiro.au) or phone +61 8 9333 6584 |
| 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

**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.**

**Scoping how Commonwealth Marine Park Biodiversity can be monitored with environmental DNA**

A collaboration between CSIRO and Parks Australia

Australia’s Commonwealth Marine Parks are the largest reserve estate in the world and their scale, remoteness, and diversity mean novel approaches to monitoring and management are required. CSIRO in Partnership with Parks Australia (Department of Agriculture, Water and the Environment) are seeking to understand how new genomics-based technologies can contribute to monitoring biodiversity within Commonwealth Marine Parks.

Environmental DNA (eDNA) analysis, where DNA molecules are purified from the environment, sequenced, then used to identify organisms, is revolutionising biodiversity science. Researchers, industry and governments are increasingly incorporating eDNA into their standard toolkits for biodiversity surveys because of its high accuracy and ease of deployment by non-experts.

Largescale ongoing monitoring programs based on eDNA have not yet been implemented. We are seeking to develop a roadmap for the potential integration of eDNA technologies into monitoring of Australia’s Commonwealth marine parks. The roadmap will consider the requirements of government, identify best-practice eDNA field and laboratory protocols, identify the aspects of bio-monitoring that eDNA can best contribute to, consider the unique design and analytical attributes of eDNA monitoring, and determine best practice for databasing these large and unique digital datasets.

### Duties and Key Result Areas:

* Identify, through interviews, facilitated workshops and other elicitation activities, and reference to policy documents, the government’s requirements of biomonitoring of marine reserves and produce draft/final paper capturing these requirements for discussion with stakeholders
* Identify through literature surveys, interviews, workshops and other elicitation activities the capabilities of existing eDNA technologies to address the biomonitoring needs of government and prepare draft/final paper capturing these capabilities for discussion with stakeholders
* Identify through literature surveys, interviews, workshops and other elicitation activities the unique data and analytical attributes of eDNA-based biodiversity monitoring, and prepare draft/final paper capturing these attributes for discussions with stakeholders
* Drawing on research undertaken during scoping (1- 3 above), document the features and key design principles of a best-practice biodiversity monitoring program based on eDNA technologies
* Design a pilot program based on a specific example that implements the principles identified in the scoping phase and facilitate discussions within the Environomics FSP and with internal and external stakeholders
* Produce a roadmap for the integration of eDNA technologies into marine park monitoring in Australia for discussion with stakeholders.
* If time permits, coordinate the implementation of a pilot program to monitor a Commonwealth Marine Reserve.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research
  + Utilise design thinking methodology to plan and prepare research proposals, and apply non-academic impact methodology to research projects
  + 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.
  + 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 Ecology, molecular biology, conservation biology.

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 understanding of DNA meta-barcoding, high-throughput amplicon sequencing, biodiversity monitoring or molecular biology technologies and principles, including eDNA.
2. Demonstrated excellent organisational skills
3. Demonstrated excellent inter-personal skills
4. 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.
5. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
6. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Demonstrated experience in scientific research
2. Honours, postgraduate level training, or significant experience in science communication
3. An 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 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 ($83,687). 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.

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.

**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/)!

Find out more about the CSIRO [Environomics Future Science Platform](https://research.csiro.au/environomics/)

Find out more about CSIRO [Oceans and Atmosphere](https://www.csiro.au/en/Research/OandA)

Find out more about CSIRO [National Collections and Marine Infrastructure](https://www.csiro.au/en/Research/Collections)