



UNIVERSITY OF  
NEWCASTLE

# CENTRE FOR INTEGRATED RESILIENCE: COASTS, WATER AND CLIMATE

**Building resilient communities through science and engineering**

**The Centre for Integrated Resilience: Coasts, Water and Climate is a cutting-edge interdisciplinary research hub uniting experts in earth and environmental science, engineering, built environment and social science to tackle pressing challenges at the intersection of climate change, water security, and coastal resilience. The Centre's work spans local, national, and Pacific regional contexts with strong focus on community impact and policy influence.**

## PARTNERSHIP CAPABILITIES

- AI-driven environmental modelling and remote sensing technologies
- Digital dashboards for real-time environmental monitoring
- Nature-based solutions and blue carbon strategies
- Disaster risk reduction and infrastructure resilience planning

## PROVEN IMPACT

- Provides data-driven tools for infrastructure planning, disaster preparedness and sustainable resource management
- Develops AI-driven environmental modelling, remote sensing and digital dashboards for real-time decision-making
- Promotes nature-based solutions, blue carbon strategies and coastal ecosystem restoration
- Reduces financial risks from climate-related disasters and water shortages through scalable solutions

## UNLOCKING TREE SECRETS TO GUIDE WATER MANAGEMENT IN NSW FLOODPLAIN FORESTS

For the first time in NSW, scientists are searching for hidden clues buried deep inside some of the state's most iconic trees, using cutting-edge science to uncover the secrets of endangered floodplain forests to help safeguard their future. In a groundbreaking new study, water scientists from NSW DCCEEW have teamed up with University of Newcastle researchers to shed light on the Gwydir Wetlands' coolibahs and river red gums, answering key questions like – exactly how old are they? This critical data will help the NSW Government make water management decisions to better support these unique forests. The project will also help advance climate research and protect our natural resources for regional communities into the future.



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