

Transform flood management through evidence-based Nature-based Solutions



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Nature-based Solutions (NbS) for riverine flood mitigation

harness natural processes to reduce flood impacts while delivering environmental, social, and economic co-benefits. A critical evidence gap persists between the growing enthusiasm for NbS and the practical knowledge needed for effective implementation in Australian contexts. This project will improve understanding, confidence, planning and identify incentives and barriers.

The challenge

Nature-based Solutions for flood management are underutilised in Australia despite their potential.

Why nature-based solutions matter?

1. Natural flood mitigation through floodplain conservation and restoration
2. Multiple co-benefits: biodiversity, water quality, community wellbeing
3. Climate adaptation - more resilient than traditional engineering solutions
4. Cost-effective long-term flood risk reduction

Three-stage research approach

Stage 1: Critical reviews

- Hydrodynamic Tools
- Economic Methods
- Co-benefit quantification
- Incentives and barriers analysis

Stage 2: Case studies

- Richmond catchment (NNSW)
- Bremer catchment (Queensland)
- Mandagery Catchment (CW NSW)

Stage 3: Synthesis and translation

- Updated Guidelines
- Policy recommendations
- Wider stakeholder engagement
- Knowledge transfer



Which nature-based solutions (agreed with stakeholders)?

1. Riparian vegetation
2. Leaky weirs
3. Catchment scale afforestation/revegetation
4. Wetland restoration and reconnection
5. Contouring
6. Palaeochannels

Outputs and outcomes

1. **Better flood preparedness** through enhanced understanding of the impacts of Nature-based Solutions on flood risks
2. **Greater capacity** for communities and agencies to evaluate and implement Nature-based Solutions
3. **Cost-effective solutions** for preventing flood damage
4. **More resilient landscapes** that can absorb flood impacts while providing ongoing environmental benefits.
5. **Multiple potential co-benefits** that may include improved water quality, increased biodiversity, and enhanced recreational opportunities and health outcomes.
6. **Practical tools and resources** that communities can use to advocate for and implement Nature-based Solutions - including a project website for access to project results and resources; and the development of an updated set of national guidelines for nature-based solutions for flood risk mitigation.



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