

Soundscape Monitoring of Mangroves Through Citizen Science

Joshua Cooper, Dr. Daniella Teixeira, Lea Breistroff, Tòyah Bird and Maggie Muurmans

www.oceanconnect.com.au



Mangroves protect coastlines, support biodiversity, and store valuable blue carbon, yet traditional monitoring is often limited in scope and hard to scale.



Project Scope

This project engages citizen scientists to monitor ecosystem health non-invasively using eco-acoustics. It establishes baseline soundscapes at Tallebudgera Creek and Coomera River sites to guide management and raise public awareness.



How did we do it ?

Training

Volunteers were trained to use eco-acoustic recorders and analysis tools through workshops

Fieldwork

Collecting sound data from contrasting estuary sites

Analysis

Terrestrial: BirdNET species detection	Underwater: Acoustic indices (ACI, NDSI)
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Collaboration

Researchers and participants worked together on data interpretation

Key findings

- Healthier mangroves = Richer soundscapes
- Citizen scientists collected reliable data
- Participants gained deeper understanding of mangrove value
- Scalable, cost-effective, non-invasive
- 65 bird species detected

Impact

Environmental

We created a method for ongoing mangrove health monitoring



People

Empowered community members to contribute meaningfully to scientific research

Community

Strengthened connections between citizens, researchers, and local ecosystems

Conclusion

- Eco-acoustics are a powerful, low-cost, scalable, and inclusive way to monitor mangrove ecosystem health
- Proof that science and stewardship can work hand in hand, **one recording at a time.**

Next Steps

- Start a local soundscape monitoring project
- Apply eco-acoustics to mangrove, wetland, and bushland restoration
- Engage the public through listening walks and sound art
- Collaborate with researchers to guide management decisions

Get involved

