Ecosystem restoration

Ecosystem restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. Against a backdrop of rapid habitat degradation on land and along our coastlines, ecosystem restoration is becoming a critically important conservation intervention that can greatly enhance biodiversity and key ecosystem services.

More Information

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Competitive advantage

- Extensive evidence-based expertise in ecosystem restoration and rehabilitation in marine and terrestrial habitats including seaweed forests, seagrass meadows, oyster reefs, mine sites, urbanised settings and bushfire affected ecosystems.
- State-of-the-art analytical approaches including the use of genetic and molecular tools to design restoration programs and monitor biodiversity
- Comprehensive support covering design of restoration, environmental sampling, statistical analyses as well as social research, community engagement and outreach

Impact

- Development of novel socio-ecological approaches to effectively restore and rehabilitate terrestrial and marine habitats, thereby protecting and enhancing biodiversity values and associated ecosystem functions.

Successful outcomes

- Developed bio-inoculants for restoring biodiverse communities in mine-affected areas
- Developed methods to effectively restore self-sustaining crayweed forests at the scale of original degradation in Sydney metropolitan
- Development of 'Living Seawalls', rehabilitation solutions for coastal urban developments
- Development of methods to effectively restore seagrass using new citizen science methods to collect storm-detached seagrass shoots for restoration without damaging existing meadows

Capabilities and facilities

- Specialist skills in flora and fauna taxonomic identification including traditional taxonomy and eDNA analysis
- DNA sequencing facilities with all current state-of-the-art sequencing platforms
- State-of-the-art ecophysiology facilities (fluorometry, photorespiratory/ metabolism chambers, MicroResp)
- Probes to measure environmental parameters (e.g. oxygen, turbidity)
- Equipment to survey terrestrial and marine ecosystems remotely at multiple spatial scales, including drones, radiometers, cameras and remote underwater vehicles
- Programming and pipelining of bioinformatics tools
- Boating fleet and SCUBA facilities for coastal and subtidal restoration

- Brand new laboratories with a wide range of ecological and molecular analysis equipment

Our partners

- Government organisations at the local (Council), State and Federal level
- Other research organisations (domestic and overseas)
- NGOs
- Artists
- Corporations
- Indigenous ranger groups