



Marine and  
Estuarine Ecology

## Complex data collection with clear, concise answers



Environment ISO 14001    Quality ISO 9001    Health & Safety AS 4801

Ecosure personnel have extensive experience in the development and implementation of small to large scale marine and estuarine impact assessment and monitoring programs.

We understand the importance of delivering safe, timely, cost-effective services to achieve project targets. Through our certified environment (ISO14001), quality (ISO 9001) and safety (AS/NZS 4801) systems, we have streamlined our business operations to lower our environmental impact, guarantee customer satisfaction and increase staff safety.

Here are just a few of the marine and estuarine ecology services that Ecosure has to offer.

### Water and sediment quality assessments

- Collection and analysis of water and sediment samples in accordance with the ANZECC/ARMCANZ guidelines and National Assessment Guidelines for Dredging
- In-situ depth profiling
- Deployment of water quality loggers
- Dredge spoil and plume monitoring
- Contaminant bioaccumulation studies

### Habitat mapping

- Riverine, intertidal and shallow subtidal mapping of marine habitats through remote imagery
- Subtidal habitat classifications and mapping using acoustic sampling

### Flora and fauna assessments

- Soft sediment benthic communities using grab sampling, benthic trawling and video analysis
- Seagrass and reef communities using submersible cameras
- Mangrove and saltmarsh surveys
- Estuarine and marine fish communities using a range of netting techniques and passive video analysis
- Targeted surveys for fauna and flora of conservation significance

### Water and sediment quality sampling

- In situ physio-chemical water quality measurements
- Diurnal data collection and analysis
- Collection and assessment of surface water and groundwater samples
- Collection and assessment of sediment samples by coring, grab or direct collection

### Reporting

- Design and implementation of monitoring programs
- Environmental management plans
- Baseline data collection and reporting for EIA and EIS studies
- Fisheries values assessments
- Statistical analysis of community data



Our Experience

## A sample of our recent projects

### Baseline Assessment and Reporting

In response to recent widespread beach erosion, the Gold Coast City Council has endorsed a 'Three Point Plan for Coastal Protection' as a long term solution for the management Gold Coast beaches. This plan incorporates a beach nourishment program that will involve sub tidal dredging activities for replacement of sands in areas subject to considerable sand loss. To assist in planning, Ecosure has been engaged by Council on two separate occasions to determine key ecological features and functions of relevant coastal areas, also key areas of ecological and environmental significance.

Project work has involved:

- A comprehensive literature review to determine key ecological features and communities.
- Baseline surveys of intertidal and sub-tidal habitats including; the use of remotely operated underwater vehicles (ROV's) to undertake reef and soft substrate transects; grab sampling and analysis of soft sediment fauna, and; the deployment of fish attraction devices for video identification.
- Stakeholder consultation on species of significance and supporting habitats.
- Construction of an extensive ecological inventory of recorded fauna and flora species.
- Preparation of habitat maps detailing key areas of ecological significance.

Through successful completion of these tasks, Ecosure has been able to effectively inform council to ensure key species of ecological and economic significance and supporting habitats are maintained.

### Commonwealth Guidelines Compliance

Ecosure was engaged by a major developer to determine if a referral under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) would be required for a change in their scope of works that involved dredging / reprofiling areas of estuarine habitat.

A detailed report was constructed by Ecosure that; (i) identified Matter of National Environmental Significance (MNES) within the Project Area; (ii) identified potential impacts to MNES with broad regard to the work being undertaken, and (iii) provided actions that would reduce the impact to MNES identified.

A self-assessment process was then completed using 'significant impact criteria' (DEWHA, 2009), to determine whether the residual impacts could be deemed to be 'significant' and thus require a referral to the Federal Environment Minister for approval under the EPBC Act. This assessment concluded that providing that impact mitigation measures were implemented in accordance with Ecosure's recommendations, it is likely that any impacts of the dredging operation on MNES would be minimal to negligible and of a short term nature, and therefore a referral would not be required.



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