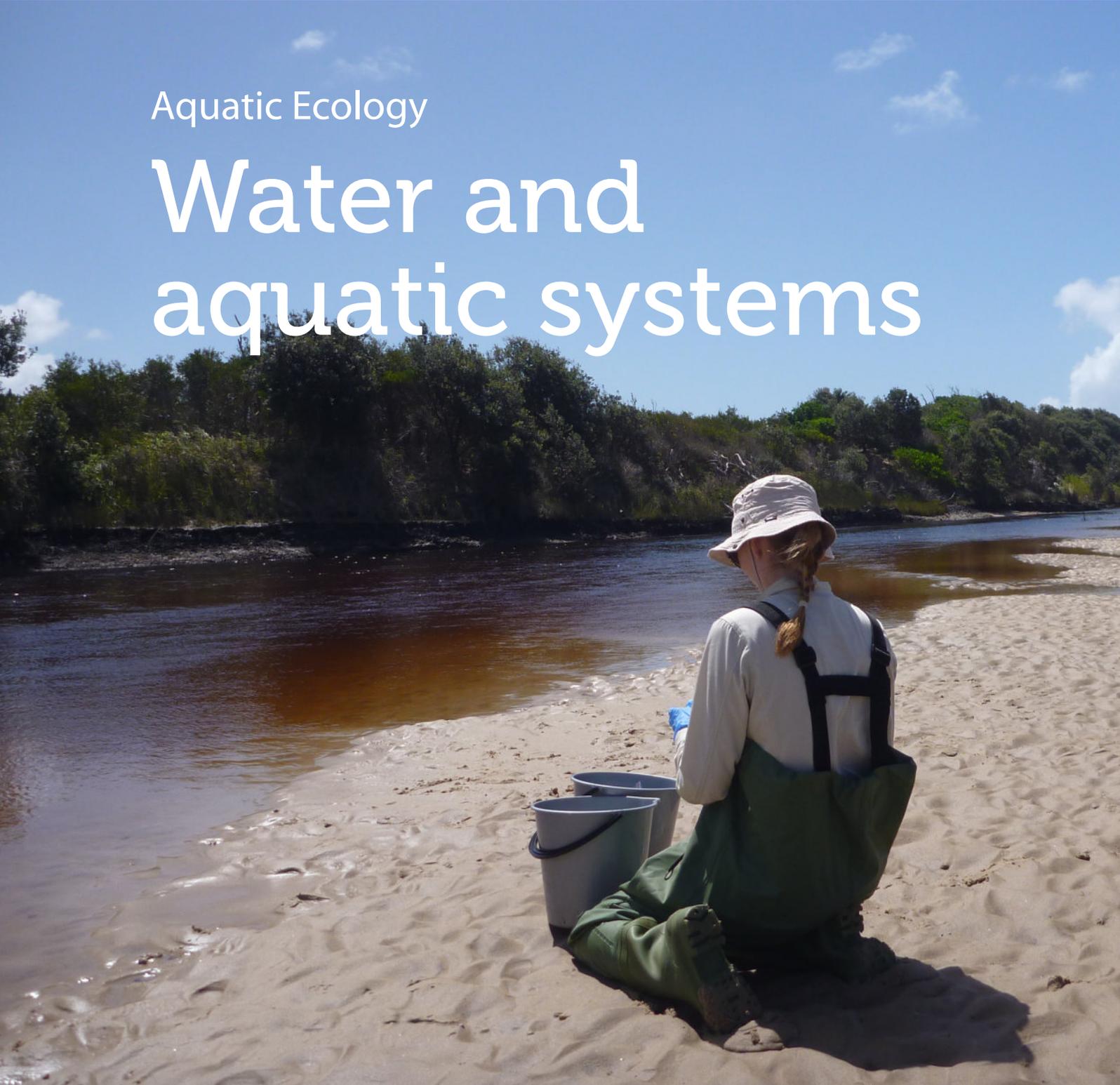




Aquatic Ecology

# Water and aquatic systems





Aquatic Ecology

## Water and aquatic systems



Australia is the Earth's driest inhabited continent. It has the most variable and least predictable rainfall and few would argue that water is this country's most precious resource. Despite our dependency on water for drinking, irrigation, cooling and its intrinsic ecological and amenity values, it continues to be under pressure from surrounding land-use activities.

Protecting the values of rivers, lakes, streams and groundwaters takes passion, energy and the best science. It takes a thorough understanding of each piece of the puzzle, their interaction and integration. It takes a pragmatic approach to provide realistic and workable solutions for our clients.

Ecosure maintains expertise, equipment and approvals to undertake best practice ecological surveys.

Our key services include:

### Aquatic ecology assessments

- Biological surveys of fish, turtles, platypus, macroinvertebrates and stygofauna
- Botanical surveys of in-stream, riparian and wetland habitats
- Stream health assessment by Australian River Assessment System (AusRivAS) accredited ecologists

### Environmental impact assessments

- Collation and interpretation of the existing aquatic environment
- Impact assessment and development of tailored management plans
- Legislation compliance assessments

### Water quality compliance monitoring

- Development and implementation of baseline water quality monitoring programs and Receiving Environment Monitoring Programs
- Regular monitoring of surface water and groundwater for compliance with guidelines and regulations
- Event based, reactive and discharge monitoring



Our Experience

## A sample of our recent projects

### Aquatic Values Surveys and Management Plans

Ecosure was engaged to undertake desktop assessments and field surveys to establish the aquatic ecological values of waterways intersected by a number of our client's proposed gas pipelines. Field investigations included habitat assessment and collection of physico-chemical water quality data, fish survey (using backpack electrofishing techniques, seine nets, fyke nets and box traps), turtle survey (using cathedral traps and fyke nets), macroinvertebrate sampling (following AusRivAS protocols), botanical inventories and physical habitat assessment. Aquatic Values Management Plans were developed and provided site-specific impact mitigation measures to protect identified aquatic values at each proposed waterway crossing.

### Targeted Fauna Survey

Ecosure was engaged to undertake a literature review, habitat assessment, platypus and turtle survey (including bank observation, snorkelling and overnight deployment of baited cathedral traps and fyke nets) to establish the potential for platypus (*Ornithorhynchus anatinus*), Fitzroy River turtle (*Rheodytes leukops*) and southern snapping turtle (*Elseya albagula*) to occur within riverine habitat in the vicinity of a proposed pipeline Right of Way. Potential habitat was identified and actual use confirmed. Construction works were scheduled to avoid the breeding and nesting periods for confirmed target species, to minimise the risk of mortality to juveniles or destruction of active nests, and to help plan a suitable waterway crossing construction timetable.

### State and Commonwealth Guidelines Compliance

Ecosure's client is a major energy provider and operator of key power stations in Queensland. They required a manual to be written that enabled the ongoing testing of water quality between contained and receiving environments. In addition, Ecosure was asked to submit a report to the regulators detailing the procedures for achieving compliance with water quality guidelines.

Following this work, the client asked Ecosure to conduct an ongoing quarterly and annual assessment of surface water and groundwater in the vicinity of the power station.



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