

Aquatic and coastal ecosystem monitoring



AUSTRALIA



Trinity Consultants Australia offers a comprehensive range of water and environment services, including monitoring of freshwaters, groundwaters and coastal ecosystems.

Our team of full-time research staff, certified coxswains and water quality professionals undertake surveys and habitat mapping, monitoring and a range of other specialisations in diverse water environments.

We have dedicated laboratory facilities, specialised field equipment and a fleet of commercial vessels to provide readily mobilised field technical services. We also have highly qualified in-house taxonomists with international quality control training to ensure our ecology and monitoring services are of the highest standards.

Our capabilities

Monitoring plans and scheduled monitoring

- Design, implementation and reporting of ambient and compliance water quality monitoring plans (WQMP) and receiving environment monitoring plans (REMP)
- Design, implementation and reporting of aquatic ecosystem health monitoring, including long-term habitat changes and impact from acute events
- Continuous and discrete water quality monitoring options

Surveys, investigations and environmental assessments

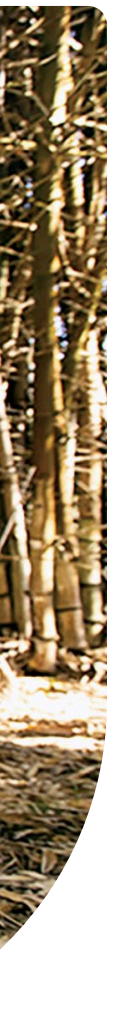
- Design, implementation and reporting of aquatic ecological surveys, including coral reefs; subtidal, intertidal and freshwater soft sediment macroinvertebrate communities; rock reef communities and pelagic systems
- Environmental investigations, including marine and freshwater pest surveys, water quality investigations, ecotoxicological analysis and contaminant risk assessments
- Soil and groundwater monitoring assessments, including for contaminants such as PFAS, metal(loid)s, hydrocarbons, pesticides and herbicides

Where clients require complementary support, we also offer:

- Air quality assessments (e.g. odour modelling, greenhouse gas inventories and health risk assessment) and acoustics (including noise and vibration)

Reporting and output

- Comprehensive reports, including univariate and multivariate statistical analysis, interpretation of results and recommendations for ongoing actions
- GIS habitat mapping combining field-gathered, ground-truthed data and georeferenced aerial imagery
- High quality underwater, land-based and aerial videos and stills
- Telemetered data automatically deconfounded via a real-time SMART algorithm in our cloud databases
- Ability to view updated data after every field reading via a customised secure project dashboard





Equipment and technology

- Commercial in-survey vessels, operated by our in-house coxswains
- Field equipment including underwater still and video cameras, benthic sled tows, underwater and aerial drones (ROV), fish and plankton survey tools, baited remote underwater video stations (BRUVs), sedimentation loggers, stainless steel benthic grab samplers and side scan sonars for bathymetry surveys
- Laboratory facilities for sample preparation, calibration, organisms, taxonomy and image analysis, fume hoods, stereo and compound microscopes, and image analysis software
- NATA-accredited stack testing laboratory, and monitoring of ambient air, noise and vibration

Where clients require complementary support, we also offer:

- Computational modelling of meteorology, air dispersion (e.g. CALPUFF, AERMOD and GRAL) and noise propagation (e.g. SoundPLAN, CadnaA and INSUL).

Data management and dashboards

We build customised water quality monitoring stations for each client and project.

Monitoring stations can be telemetered (real-time data provision) or autonomously logging. Real-time water quality data can be viewed after every field reading via our secure online dashboard.

Accreditations, standards and permits

- All dive operations conducted to AS/NZS 2299.2 and the VE90 Diving Operations Manual.
- Australian Diver Accreditation Scheme-certified dive supervisor, and all divers with minimum qualification of Rescue Diver, holding current occupational dive medicals and advanced first aid certifications.
- Appropriate Great Barrier Reef Marine Park Authority and Fisheries permits, as well as Animal Ethics Scientific Use Registration.

Our clients

- Queensland Alumina (REMP, equipment maintenance, sediment and oyster sampling, mangrove assessments)
- Queensland Curtis LNG (REMP, marine plant assessments, mangrove rehabilitation)
- Papua New Guinea Joint Downstream Development Project (mangrove monitoring, water quality monitoring, environmental investigations)
- Yarwun and Tannum Sands wastewater treatments plants (groundwater monitoring)
- Agnes Water sewage treatment plant (soil monitoring, groundwater monitoring)
- Gladstone waste water treatment plant (REMP, groundwater, irrigation, toxic algae, biosolids)