One Tree Island Handbook

Diving regulations

Note: Current regulations regarding diving are under review and will changed in the near future. Please check with the Managers if the rules below still apply.

All SCUBA diving at One Tree Island must be conducted according to AS/NZS 2299.2:2000. All visitors will be asked to read the manual and sign that they have done so, please ask OTIRS Managers to send you a copy.

One Tree Island Research Station is not responsible for supervising diving operations at One Tree Island. The Station Manager has the final say as to whether boats can be used with respect to weather, tide and other conditions.

All researchers who choose to dive at One Tree Island must do so with the approval of their home institution Diving Safety Officer (DSO) and provide supporting documentation (Appendix A - Dive Register). One member of every team must be approved to be the Dive Coordinator by their resident DSO and provide supporting documentation. Dive Coordinators will be responsible for the diving activity of their dive teams and must be present at all team dives.

Dive proposals must be prepared using the standard form given in the manual, with documentation of risk assessment, and approved by the home institution DSO.

When planning repetitive dives at One Tree Island, note the reduced bottom time limits for remote locations, over 6 hours from a decompression chamber. A copy of all approved Dive Plans and diver registration should also be sent to the DSO at the University of Sydney along with the Managers at OTIRS, where it will be kept on file.

All researchers from Australian and New Zealand institutions should be diving according to the standard (AS/NZS 2299.2:2000). Dive teams from institutions which do not have a DSO from their home institution may be required to undergo a check-out procedure with the University of Sydney's DSO.
Dive teams from outside of Australia will dive under the authority of the University of Sydney and may need to go through a check-out procedure with the University of Sydney’s DSO.

Many overseas divers have scientific diving qualifications which are at the standard (i.e. American Academy of Underwater Scientists). All reciprocity for overseas researchers will be granted through the University of Sydney’s DSO.

Evidence of emergency evacuation insurance will also be asked for. OTIRS will not cover the cost of evacuation. It is highly recommended that all visitors have medical travel insurance such as that offered by DAN - https://www.diversalertnetwork.org/

**Snorkelling**

Although snorkelling is generally a safe activity, the strong tidal currents at One Tree Island can influence your safety. Always check tides and weather with Station Managers prior to snorkelling. You may require additional supervision, including surface support depending on your level of experience.

**Weather forecasts**

Weather forecasts from the Bureau of Meteorology are available daily from Station Managers.

The Dive Coordinator must satisfy him/herself that the weather and sea conditions at the proposed diving site(s) will not compromise the safety of any personnel.

The Station Manager has the final say as to whether boating and diving activities are permitted in marginal or rough weather/sea conditions.

**Tides and currents**

The tidal range around One Tree Island can be up to 3.5 metres and strong currents are associated with these spring tides. Tidal variation during the lunar cycle can influence the accessibility of research and dive sites within the lagoon and access to the reefs edge.
It is recommended that you consult with the Station Managers to ensure the best dates for your boating activities. Tide tables for One Tree Island are available from the Station Managers.

Tide tables must be consulted prior to any diving or boating operations taking place. Divers, snorkelers and boat operators must always check the current strength and direction before entering the water, and anticipate any increase in current flow or change in direction.

Dive coordinators and leaders must be aware of precautions that must be exercised with regard to currents. Prior to entering the water the dive coordinator, dive attendant, boat person and dive team must discuss the rescue procedures to be followed should one or more divers be caught in a current whilst other divers are still underwater/on-site.

Diving in currents demands an extra level of fitness and divers must pay particular attention to their air supply, as air consumption can be dramatically increased due to the extra exertion involved in diving in currents.

Diving in currents stronger than a diver can easily swim against is strongly discouraged.

All divers involved in diving in strong currents must be experienced in this type of diving and be tethered to the boat or use a surface float so their location is always visible.

An experienced boat handler with knowledge of local conditions must be in charge of the vessel.

Where an anchored vessel is being used for untethered SCUBA operations in strong currents, a float line must be used by all divers and a current line of at least 30 metres length and 10 mm diameter must be streamed behind the vessel.

The divers must only work 'up-current' of the vessel and must remain in buddy contact.

It is strongly recommended that divers descend and ascend along the anchor line.

A diver on the surface caught in a current downstream of the dive boats current line, should remain calm, and fully inflate their BCD and their
surface signalling device. A whistle should also be used to attract the Dive Attendant's attention.

Underwater visibility in the lagoons and around the outer reef edge may be dramatically reduced with ebbing tides, to less than 2 metres. This should be considered before every dive. Measures should be considered and used if necessary, prior to any dive, which may assist divers to operate in poor visibility.

Operational cut-off limits for diving from a marine vessel

Vessels must be anchored safely and securely. Immediately upon entering the water divers must check that the anchor will hold securely for the duration of their dive, and that no parts of the anchor rope will become damaged by chaffing on coral or reef. Consideration must be given here to the fact that conditions, such as tidal currents and wind speed/direction may change throughout a dive, i.e. a boat's position may shift through 180 degrees in a short period of time.

**Boats less than 6 metres length:** Diving on the windward reef edge when wind speeds are in excess of 10 knots and/or significant wave height is in excess of 1.0 metres should not be undertaken. No boating at all should occur on the windward reef edge when wave conditions exceed 1.0m.

**Boats 6 metres in length or greater:** Diving on the windward reef edge when wind speeds are in excess of 15 knots and/or significant wave height is in excess of 1.0 metres should not be undertaken.

Boating and diving outside the reef crest during a **Strong Wind Warning** is at the Manager's discretion. As per the University of Sydney Diving Operations Manual, weather and sea conditions must be evaluated by the Dive Coordinator and discussed with all divers. Attention should be paid to weather and sea conditions beyond the sheltered areas of the reef, such that in the event of a rescue or search operation being required to be conducted at sea, i.e. away from sheltered conditions, it would not impose unsafe conditions for any persons or vessels involved.

No boating or diving operations are to take place outside the reef crest during a **Gale Warning** issued by the Bureau of Meteorology.
No diving is to take place outside of the lagoon system when surface visibility is less than 100 metres.

**Fresh water**
The only fresh water available on One Tree Island is that collected and stored from rainfall. The water is filtered down to 0.5 micron and then UV sterilised. Therefore water conservation is a high priority on the island. There is usually sufficient water for showering (one bucket per person per day), but during times of low rainfall and high usage by visitors, restrictions can be enforced at the Manager’s discretion.

**Power**
The Station is supplied with 240 volt power from a comprehensive solar system. It is the aim of the station to run solely on solar power. There is a diesel generator that can supply additional power with a petrol driven generator as back up; the generator is noisy and generates pollution as well as electricity, visitors are encouraged to save energy to avoid having to turn the generator on. Generated power is directed through an interactive inverter that provides mains quality power. The laboratories and accommodation huts are all serviced by 240 volt outlets.

**Disposal of waste materials and liquids**
Sewage: The station has three composting toilets.

Recycling: Food and drink packaging is sorted and removed from the island for disposal at Heron Island.

Non-recyclables: Bagged and removed for disposal at Heron Island.

Cooking oil must be collected in containers and never poured down the drains.

Laboratory wastes: Visitors who bring non-biodegradable, toxic or radioactive material to the island are solely responsible for all safety aspects of storage and use whilst on the island, and its removal on departure.
First aid
Anyone with a pre-existing medical condition should inform the Station Manager prior to arrival.

The island has a well-equipped Royal Flying Doctor Medical Chest and access to RFDS medical staff. In case of emergency, the RFDS can be on the island within 30 minutes, weather and tide permitting. However scientists are required to provide their own basic first aid needs.

Items you should bring:
- Sea-sickness tablets (if required)
- High SPF sun screen
- Aqua Ear (preventing swimmer's ear)
- Aspirin or your preferred pain relief tablet
- Aloe Vera or calamine lotion for sunburn
- Band aids
- Insect repellent
- Antiseptic cream
- Betadine or similar to treat coral cuts

Weather
The Australian Institute of Marine Science (AIMS) maintains a marine weather station at One Tree Island. This weather station is part of the Integrated Marine Observing System (IMOS) and weather data can be accessed here - [http://weather.aims.gov.au/#/station/131](http://weather.aims.gov.au/#/station/131)

Tidal information
One Tree Reef is a mesotidal environment, with a maximum tidal range of 3.5 m. Due to the raised reef rim, the lagoon ponds at low tide. As a result, boats may only enter or exit the lagoon at certain tidal heights.