

# 1 SNORKELLING OPERATIONS

Snorkelling by JCU personnel should only be used as an observation and/or a light recovery or collection technique, and no difficult or strenuous work of any kind should be attempted while snorkelling.

Any JCU staff, students or volunteers intending to snorkel shall follow all the relevant procedures in this Manual, including creating a profile in *My Register*, and uploading any relevant qualifications and certificates, and completing the Snorkelling & Swimming Health Declaration. (*Appendix 1*)

The Boating and Diving Office will determine if further competency assessment of individuals is required in accordance with the criteria as set out in *Appendix 2*.

All trips involving snorkelling must be lodged in *My Register*, which are then reviewed by the Boating and Diving Office.

## 1.1 FITNESS FOR SNORKLERS

Snorkelling in open waters can be physically demanding and require a reasonable degree of physical stamina, mental focus and skill, especially when environmental conditions are less than ideal.

Fitness for snorkelling means that an individual is in a state (medically, physically and psychologically) to perform work tasks assigned to them competently and in a manner which does not compromise the safety or health of themselves or others.

An individual's fitness for work may be impaired by a variety of factors including level of medical and physical fitness, fatigue, psychological factors or impairment due to alcohol and drugs (including prescription, non-prescription and illicit drugs).

All persons engaged in field work shall be fit for work and ensure any illness, injury or impairment is reported to the Trip Leader and Snorkelling Supervisor before the commencement of any activity.

All persons intending to snorkel must, as a minimum, complete the Snorkelling & Swimming Health Declaration. (*Appendix 1*)

All snorkelers will be asked by the Snorkelling Supervisor to confirm if they are fully fit to snorkel pre-dive as part of the Pre-dive Risk Checklist. (*Appendix 3*)

## 1.2 SIZE AND SUPERVISION OF SNORKEL TEAMS

The size of a normal snorkelling team is three; two snorkelers operating as a buddy pair and a snorkelling supervisor at the surface of the dive site.

Under very low risk conditions, a team of two may be approved, which could comprise either a snorkeler and a surface supervisor, or two buddy snorkelers. For a 2-person snorkel team to be approved, the Snorkelling Supervisor must demonstrate how risks are mitigated addressing the relevant parts in section 6.3.2.

A snorkelling supervisor shall assume the same role and responsibility as Principal Dive Supervisor (see section 3.4). Specifically, a snorkelling supervisor shall:

- Have a thorough working knowledge of the operating and emergency procedures and risk assessments which have been developed to safely manage the activities at the site.
- Have reasonable experience of the site, and/or has experience in supervising snorkelling / diving activities at similar locations.
- Be able to recognise hazards and risks in the marine environment.
- Be able to recognise changes to risks due to snorkeler's abilities and behaviour.
- Be able to respond quickly to changes in risk and alter or abort activities as necessary.
- Be a capable swimmer and experienced snorkeler.
- Be competent to carry out a rescue of a snorkeler.
- Be competent to provide first aid, oxygen resuscitation, and operation of an AED.
- Be capable of coordinating the emergency management plan.

It is highly recommended that all snorkelers should possess current first aid, CPR and oxygen resuscitation certificates.

## 1.3 SUPERVISION OF LARGE GROUPS

Where activities involve large groups of snorkelers, such as during a class field trip, refer to the JCU Snorkelling Standard.

## 1.4 SNORKELLING PROCEDURES

### 1.4.1 Site setup, control and supervision

One or more dive flags must be raised centrally at the site.

When a two-person snorkelling team is operating from a vessel without a surface supervisor;

- The security of anchoring must be thoroughly checked
- The snorkelers should not be working more than 50 metres from the vessel.
- It is highly recommended that towed dive floats should be used – it is important that snorkelers provide maximum visibility of their location to any passing vessel.

If a mothership is present, a long mermaid line should be deployed.

Emergency communications systems should be tested before the commencement of activities.

Special attention should be given to the movement of currents which may sweep snorkelers away from the vessel.

For shore-based snorkelling;

- The Supervisor shall be positioned to maintain full unobstructed vision of the snorkelers.
- The First Aid Kit, Oxygen Resuscitation Kit and AED should be positioned at the egress point (unless the EMP provides for rapid communication and delivery of equipment from a nearby location).

- If snorkelers are in the water with no surface supervision, the use of towed dive floats is mandatory. It is also highly recommended that a reliable communications device is carried (such as a hand-held VHF radio, mobile phone in waterproof case, nautilus lifeline or PLB).
- An emergency communications protocol must be developed by the snorkelling supervisor, and understood by all participants before the commencement of activities.

A pre-dive briefing must be given by the Supervisor to re-inforce;

- Snorkelling techniques, equipment instruction and task limitations (if any)
- Site boundaries
- Hazards present and control measures that are being used to minimise risk
- Entry and egress methods
- Emergency assistance signals
- Recall signal

For duck-diving;

- Reinforce the risks of hyperventilation and shallow water blackout
- Reinforce the risks of ear and sinus barotrauma when doing multiple duck-dives.
- Duck-diving should not exceed depths greater than 2m
- Ensure no snorkeler is negatively weighted
- Ensure buddy pairs operate one up / one down, and maintain constant visual contact with each other.

#### 1.4.2 Breath-hold diving

Breath-hold diving is a technique that involves a diver going to depths greater than 2m on a single breath-hold. Breath-hold diving is considered to increase risk due to the following factors;

- The competence of a person to conduct breath-hold diving
- The risk of shallow-water blackout
- The possibility of buddy separation and rescue capability
- The potential for ear and sinus barotrauma
- The increased exertion of the activity

In managing the added risks associated with breath-hold diving, the following guidance is provided from the Recreational Snorkelling Code of Practice 2018;

- The risk posed to breath-hold divers of hypoxic blackout, which if undetected will lead to serious injury, unconsciousness and death.
- The risk is increased significantly for breath-hold divers who hyperventilate by taking repeated deep breaths before descending, or who do deep dives. Consequently divers should be strongly advised not to hyperventilate in this manner.
- Experienced breath-hold divers are at particular risk in that they do longer and deeper dives.
- Breath-hold divers should always dive in buddy pairs where one buddy remains on the surface and observes the other buddy whilst they are diving.
- Breath-hold divers using weight belts should be carefully weighted to ensure that they are neutrally or positively buoyant while at the surface. The weight belts should have a quick release mechanism and divers should be familiar with its operation.

When snorkelling activities are planned which involve repetitive breath-hold diving, the Snorkelling Supervisor must ensure that added risks are being managed appropriately taking into account;

- The competence, fitness and physical condition of divers on the day
- Environmental conditions and underwater visibility
- Hazards posed by boating traffic in the area
- The viability of using float / life lines for each diver
- The overall number of dives to be conducted daily
- The remoteness of the dive site for access to emergency services
- The need to develop a specific Operating Procedure for the planned activities

#### 1.4.3 Emergency response and aborting activities

An emergency management plan must be developed for every trip, with particular focus on the accessibility of emergency service providers in that area, and the facilities that are available.

Particular care must be taken when snorkelling in areas of high boating traffic (e.g. around boat ramps, shipping channels or in popular boating areas). It is recommended that snorkelling occurs directly adjacent to the work vessel, and/or there is a means to make snorkelers highly visible to passing vessels, for example using towed dive floats and high visibility suits/vests/hoods.

Consideration for aborting activities and recalling snorkelers from the water should be considered if;

- A significant hazard becomes evident at the site.
- If weather or environmental conditions deteriorate.
- If any risks are suddenly elevated.

Recalling snorkelers and aborting activities must occur if;

- A crocodile or large dangerous shark is sighted in the immediate area.
- A snorkeler goes missing.
- A person requires first aid treatment or medical attention.
- Dangerous marine stingers are present

The procedure for treating a drowning or diving incident is in *Appendix 8*

The procedure for responding to a missing person is in *Appendix 6*

## 1.5 EQUIPMENT

All **First Aid** equipment listed below, and at least one form of reliable **Communications** equipment capable of contacting emergency services is mandatory and must be at the site and immediately accessible for use if required. Both visual and audible signalling devices which can be used to communicate between snorkelers and the surface supervisor should be carried.

Types and specifications of equipment that are recommended for use are as follows;

### **Standard snorkeler's equipment should include;**

- Appropriate exposure protection for cold, sun burn and stinger protection (wetsuit or lycra suit)
  - Protection from stingers includes full length steamer, gloves, boots and hood (see section 8.5.1)
- Mask, snorkel and fins

### **Extra floatation devices;**

- Personal Floatation Devices (PFD) AS4758.1 Level 50 minimum
- The Snorkelling Supervisor shall decide if floatation devices are to be used based on the competency of snorkelers and the risk nature of the activities.

### **Rescue devices and aids;**

The Snorkelling Supervisor shall determine the necessity or advantage of using the following types of equipment when planning the activities;

- Binoculars
- Buoyant ropes
- Throw lines
- Mermaid lines
- Life buoys
- Kayak / rescue boards
- Lifesaver buoys / tubes.

### **First Aid equipment and supplies;**

- First Aid Kit – NSCV scale G minimum (or closest equivalent) is mandatory at the site.
- Vinegar – 4 litres minimum
- Oxygen resuscitation kit - DAN kit or Bag Valve Mask (BVM) capable of delivering ANAP 100% oxygen to a breathing or non-breathing person.
- Oxygen supply cylinder(s);
  - For remote sites - within 2hrs of professional medical assistance: minimum 1 x C-size, 2-6hrs: minimum 1 x D-size, >6hrs: minimum 2 x D-size.
- NOTE - It is recommended to have access to an Automated External Defibrillator (AED) at the site, although it may be impractical to store and use on small vessels.

### **Communications and signalling devices;**

- Dive flag (flag Alpha) – mandatory for dive site marking: minimum 50cm x 50cm, for dive floats: minimum 30cm x 30cm
- VHF and/or 2-way radio – mandatory for vessel-based operations
- Loudspeaker
- Air horn
- Mobile phone
- Whistle / siren
- Nautilus life-line

### 1.5.1 Exposure Protection

Snorkelers, as with scuba divers shall wear suitable clothing to protect themselves from environmental conditions such as cold, sun, marine animals, abrasions etc. A full-length wetsuit or stinger-proof suit is recommended at all times.

During periods of the year when marine stingers may be present, full body cover is highly recommended. Full body cover is mandatory when working in inshore areas where *Chironex* (box jelly fish) are likely to be present.

## 1.6 SNORKELLING & SCUBA DIVING COMBINED ACTIVITIES

Doing snorkelling work following a SCUBA dive is discouraged, as is any strenuous exercise post-diving.

No breath-hold diving is to be undertaken by any diver who has a repetitive factor (RF) of greater than 1.0 from a previous SCUBA dive.

**SNORKELLING & SWIMMING HEALTH DECLARATION**

Surname		Preferred Title (Mr. Ms. Dr. etc)	
First Name(s)		Date of Birth	
Department		Staff/Student ID	
Position at James Cook		Phone	
What year did you start snorkelling?		Snorkelling experience in open waters: <input type="checkbox"/> Less than 10 hours <input type="checkbox"/> 10-50 hours <input type="checkbox"/> More than 50 hours	

<b>SWIMMING PROFICIENCY AND FITNESS</b>			
Are you able to swim or tread water for 10 minutes non-stop?  <input type="checkbox"/> YES  <input type="checkbox"/> NO	Are you able to swim 200m without stopping?  <input type="checkbox"/> YES  <input type="checkbox"/> NO	Do you have more than 15 hours experience in breath-hold diving?  <input type="checkbox"/> YES  <input type="checkbox"/> NO	
<b>FITNESS</b> (circle one)	<b>Low</b>	<b>Average</b>	<b>Good</b>
Minutes of vigorous exercise per week:	0 – 30min total	30 – 180min total	More than 180min

<b>DO YOU HAVE ANY OF THE FOLLOWING CONDITIONS?</b> (circle)		
Heart disease	YES	NO
High blood pressure	YES	NO
Low blood pressure	YES	NO
Shortness of breath (especially when exercising)	YES	NO
Asthma	YES	NO
Emphysema or other chronic lung disease	YES	NO
Epilepsy	YES	NO
Fits or faints	YES	NO
Recent head injury or concussion	YES	NO
Diabetes (type.....)	YES	NO
Do you smoke cigarettes?	YES	NO
Are you pregnant?	YES	NO
Are you taking prescribed medication?	YES	NO

<b>Signature:</b>	<b>Date:</b>
<b>Signature for Parent/Guardian:</b>	<b>Date:</b>

## Appendix 2 (James Cook University - Snorkelling Standard)

COMPETENCY ASSESSMENT CRITERIA FOR SNORKELLING			
<p style="text-align: center;"><b>Snorkelling Supervisor</b> <i>Acceptable qualifications may include;</i></p> <ul style="list-style-type: none"><li>• SIS30413 – Certificate III in Outdoor Recreation</li><li>• SISOSNK201A – demonstrate snorkelling activities<ul style="list-style-type: none"><li>• SISOSNK403A – Instruct snorkelling skills</li><li>• SISOSNK302A – Guide snorkelling</li></ul></li><li>• SCUBA Dive Leader, Dive Master, Dive Instructor</li></ul>			
<p style="text-align: center;"><b>Theory (induction content)</b></p>	<p style="text-align: center;"><b>Practical</b></p>		
<ul style="list-style-type: none"><li>• Knowledge of operating procedures, emergency procedures, risk assessments for the site.</li><li>• Knowledge of site risks and control measures.</li><li>• Knowledge of recognising problems in snorkelers</li></ul>	<ul style="list-style-type: none"><li>• Can swim 200m in less than 5min</li><li>• Can fin 400m in less than 10min</li><li>• Use of communications equipment</li></ul>		
<p style="text-align: center;"><b>Lookout</b> <i>Acceptable qualifications may include;</i> Not Applicable</p>			
<ul style="list-style-type: none"><li>• Knowledge of changes in site conditions and risks</li><li>• Knowledge of recognising problems in snorkelers</li></ul>	<ul style="list-style-type: none"><li>• Use of communications equipment</li></ul>		
<p style="text-align: center;"><b>Rescuer</b> <i>Acceptable qualifications may include;</i></p> <ul style="list-style-type: none"><li>• Recognised Rescue Diver Certification</li><li>• SISCAQU002 – perform basic water rescues</li><li>• Bronze Medallion – Royal Life Saving</li></ul>			
<ul style="list-style-type: none"><li>• Knowledge of operating and emergency procedures for the site.</li><li>• Knowledge of snorkelling related illness, injury and treatment.</li></ul>	<ul style="list-style-type: none"><li>• Can swim 200m in less than 5min</li><li>• Can fin 400m in less than 8min</li><li>• Can tow a person (or proxy) 100m in less than 4min</li></ul>		
<p style="text-align: center;"><b>First Aid Provider</b> <i>Acceptable up-to-date qualifications must include;</i> HLTAID003 – Provide First Aid (or minimum equivalent) HLTAID001 – Provide Cardiopulmonary Resuscitation HLTAID002 – Provide basic emergency life support HLTAID007 – Provide advanced resuscitation, or VU21763 – Apply basic oxygen resuscitation therapy</p>			
<ul style="list-style-type: none"><li>• Knowledge of operating and emergency procedures for the site.</li><li>• Knowledge of snorkelling related illness, injury and treatment.</li><li>• Knowledge of first aid and emergency equipment at the site.</li></ul>	NA		
<p style="text-align: center;"><b>Snorkelling Guide</b> <i>Acceptable qualifications may include;</i></p> <ul style="list-style-type: none"><li>• SISOSNK302A – Guide snorkelling</li></ul>			
<ul style="list-style-type: none"><li>• Knowledge of site risks and control measures.</li><li>• Knowledge of recognising problems in snorkelers</li></ul>	<ul style="list-style-type: none"><li>• Can swim 200m in less than 5min</li><li>• Can fin 400m in less than 8min</li><li>• Can tow a person (or proxy) 100m in less than 4min</li></ul>		
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## Appendix 2 (James Cook University - Snorkelling Standard)

### Assessment of Snorkelers

#### *Instructions for using the Snorkelling & Swimming Health Declaration and Competency Assessment*

- The primary purpose of assessing snorkelers is to determine which persons may be **'at risk'**.
- All snorkelers must complete the **Snorkelling & Swimming Health Declaration** form.
- Direct observations which are also part of the assessment include;
  - Is the person either very young or older
  - Are overweight
  - Appear in bad health
  - Exhibit stressed behaviour
  - Have mobility issues
  - Have difficulties understanding instructions
- If a person declares existing health / medical conditions, or the above-mentioned observations have identified concerns, the Manager and Supervisor may, at their discretion;
  - Request the person to seek written advice from a medical practitioner, or
  - Allow the person to snorkel, but treat the person as **'at risk'** and apply additional controls at the site as required, or
  - Prohibit the person from snorkelling.
- If a person declares poor swimming ability, or zero snorkelling experience, the person should be treated as **'at risk'** until the Manager and Supervisor are satisfied they are not 'at risk'.
  - It may be decided that a practical assessment of the person's swimming / snorkelling ability can be done before the person is allowed to snorkel in a group, or
  - A snorkelling guide may be appointed to have direct control of one or more 'at risk' persons.

<b>'TAKE 5'</b> <b>PRE-DIVE SCUBA &amp; SNORKELLING RISK CHECKLIST</b>	
<b>To be completed by the Dive / Snorkel Supervisor prior to in-water activities.</b>	
<b>Is this activity in accordance with your Dive Plan and JCU Diving &amp; Snorkelling Procedures?</b>	<b>Y / N</b>
<b>Are all divers / snorkelers fit for work?</b>	<b>Y / N</b>
<b>Have divers / snorkelers been informed of working within their ability?</b>	<b>Y / N</b>
<b>Divers / snorkelers have been properly briefed about;</b>	
<b>The tasks being performed</b>	<b>Y / N</b>
<b>Dive profiles</b>	<b>Y / N</b>
<b>The risk control measures being applied</b>	<b>Y / N</b>
<b>Emergency procedures – lost buddy, injured diver, rescue, recall, first aid &amp; evacuation</b>	<b>Y / N</b>
<b>Review of communications</b>	<b>Y / N</b>
<b>All SCUBA equipment is checked and functional</b>	<b>Y / N</b>
<b>All emergency equipment is checked and functional</b>	<b>Y / N</b>
<b>All communications equipment is checked and functional</b>	<b>Y / N</b>
<b>Are there unforeseen risks present at the site?</b>	<b>Y / N</b>
<b>Is there a risk from boat traffic at the site?</b>	<b>Y / N</b>
<b>Have you considered the presence of sharks or crocodiles?</b>	<b>Y / N</b>
<b>Do the current environmental conditions elevate risk?</b>	<b>Y / N</b>
<b>Do you have adequate control of the dive site?</b>	<b>Y / N</b>
<b>Extra control measures / actions implemented .....</b> <b>.....</b> <b>Notes: .....</b> <b>Date: ..... Supervisor: .....</b>	

## Response to a missing person at sea





