

GROUP SNORKELLING

SUPERVISOR INDUCTION PACKAGE

ALL GROUP SUPERVISORS MUST:	Pages
Read and understand the <i>LIRS Group Snorkelling Regulations</i>	2-7
Read and understand <i>Emergency Procedures for Group Snorkellers</i>	8
Read the <i>Risk Assessment for Group Snorkelling</i> and consider it in terms of their own group and plans	9-15
Read <i>Operation and Use of VHF Radio</i> and familiarize themselves with the demonstrator unit	16-17
Read and understand the <i>LIRS Boating Emergency Procedures</i>	18-19
Understand the use and importance of the LIRS Boat Log	20

FORMS & QUALIFICATIONS TO BE SUBMITTED AT OR PRIOR TO INDUCTION	
Group leader	A Group Snorkeller Form for each participant excluding Group Supervisors
All group supervisors	A separate Independent Snorkeller Form for each Group Supervisor and a single Group Supervisor Form
Boat drivers	A current boat license issued by any Australian or an overseas boat license approved by Queensland Transport
First aid and oxy providers	Two current certificates: first aid and administration of medical oxygen, including CPR.

LIRS GROUP SNORKELLING REGULATIONS

DEFINITION

- Group snorkellers visit LIRS as part of a student group or a special interest group led by staff of the group's own institution or by professionals engaged by their institution.
- Group snorkellers may or may not be experienced snorkellers.
- They are supervised while snorkelling by suitably qualified adult members of the group.
- Group snorkellers who are over the age of 18 years may elect to snorkel independently under certain circumstances with the approval of their snorkelling coordinator and after completing an *Independent Snorkeller Form*.

REQUIREMENTS FOR SNORKELLING

- Formal snorkelling qualifications are not required.
- The following supervisory roles must be filled by competent and qualified adults who are part of the group: a snorkelling coordinator, one or more licenced and experienced boat drivers, one or more lookouts or guides, and one or more providers of first aid/ medical oxygen.
- Before any snorkelling takes place:
 - Each group member who is not in a supervisory role must submit to LIRS a completed *Group Snorkeller Form*. This must be signed by a parent or guardian for group snorkellers who are not yet 18 years of age.
 - The snorkelling coordinator and all lookouts and guides must submit to LIRS a completed *Independent Snorkeller Form*,
 - The group leader and the first aid/oxygen provider must complete either the *Group Snorkeller Form* or the *Independent Snorkeller Form* according to their level of snorkelling experience.
 - The supervisors must accept their various responsibilities in writing on the *Group Supervisor Form* (Form 3).
- The LIRS Diving Officer checks that all forms listed above have been properly completed for each person in the group, and follows up on any medical or competency issues revealed on the forms.
- An orientation session is provided for the whole group by a LIRS Director or by a competent person appointed by a LIRS Director.
- A separate orientation is provided for the supervisors by a LIRS Director or by a competent person appointed by a LIRS Director.

RESPONSIBILITIES

Group Leader

- obtains a completed *Group Snorkeller Form* (Form 2) for each person in the group (excluding Group Supervisors who must complete an *Independent Snorkeller Form* instead) and submits them to LIRS (the signature of a parent or guardian is required for snorkellers under the age of 18)
- appoints a competent and suitably experienced person as the snorkelling coordinator (the group leader and the snorkelling coordinator may be the same person)
- ensures that sufficient adults in the group are competent and willing to accept the other required supervisory positions

- advises (or requires the snorkelling coordinator to advise) the group of the institution's restrictions on swimming from shore during free time, with or without snorkelling gear, and enforces those restrictions (or requires the snorkelling coordinator to enforce them)

Snorkelling Coordinator

- ensures that the *Group Supervisor Form* has been signed by each person in the group with a supervisory role
- conducts risk assessment for the group's intended activities
- identifies people in the group who have medical conditions that increase the risks of snorkelling and implements measures to reduce those risks
- assesses snorkelling competence of group snorkellers and provides training, graded experience and particular supervision as required
- approves use of a weight belt to competent group snorkellers under certain conditions
- ensures that all group snorkellers are assigned to and always travel in a particular LIRS boat
- assesses conditions within the defined Low Risk Area and does not allow snorkelling there unless defined low risk conditions exist (Appendix 5)
- obtains approval from the LIRS Diving Officer for all group snorkelling activities outside the Low Risk Area
- posts at least one *lookout* if the snorkelling group is of more than 11 people in total, and ensures that the *lookout* has polarising sunglasses, binoculars and a whistle
- assesses whether more than one lookout is required for each activity
- may post a *guide* instead of a lookout if the snorkelling group is of 11 people or less, and a proper assessment of the risks involved shows that is reasonable not to have a lookout
- ensures that a qualified *first aid and oxygen provider* is present at the snorkelling site who is ready to provide aid immediately if required
- provides a briefing to the group at the site before each snorkelling activity
- leads the first response in an emergency

Lookout

- vigilantly observes the whole area where snorkelling is taking place from a location out of the water
- is solely engaged in being the lookout
- has binoculars and polarising sunglasses to enhance ability to see all snorkellers
- has a whistle to make a general recall signal
- counts snorkellers entering the water and makes frequent head counts during the activity
- keeps track of snorkellers as they return to their assigned boats or as they reach shore
- ensures that all people are present before the group leaves the snorkelling site

Guide

- follows the plan for keeping snorkellers together as outlined by the snorkelling coordinator during the pre-snorkel briefing
- is vigilant for snorkellers in distress and is prepared to go to the aid of a snorkeller in distress immediately
- takes a floatation device so that a snorkeller can use this as a resting station if required
- counts snorkellers entering the water and during the snorkelling activity

- ensures that all people are present before the group leaves the snorkelling site

First aid and oxygen provider

- is present at the site of each group snorkelling activity
- is familiar with first aid equipment provided in LIRS boats and with emergency procedures

Group snorkeller

- discloses any medical or competency issues that may affect snorkelling safety
- follows snorkelling coordinator's instructions and heeds briefings
- maintains close visual contact with buddy
- understands signals for "Help", "OK" and general recall
- uses a weight belt only with approval of the snorkelling coordinator

EQUIPMENT

- Snorkellers bring their own equipment, borrow it from others, or they hire it from LIRS. Masks, snorkels, fins, wetsuits and lycra suits are available.
- Weight belts are provided free of charge to group snorkellers who have been approved to use them by their snorkelling coordinator.

GROUP SNORKELLING LOCATIONS

- Group snorkelling can take place anywhere within the Low Risk Area (see below) that is designated daily at LIRS on the basis of prevailing and forecast weather conditions
- The snorkelling coordinator must assess whether low risk conditions actually exist at the site before snorkelling takes place. If they do not, then the group must move to another location.
- Groups may charter the resort's dive boat for snorkelling trips to reefs away from the Lizard Island Group. These locations are outside the Low Risk Area and such trips are conducted under the resort's regulations.
- Other proposals for snorkelling outside the Low Risk Area are subject to additional risk assessment by the snorkelling coordinator and approval from the LIRS Diving Officer.

LOW RISK AREA

Southeasterly conditions prevail for at least eight months per year and a stable Low Risk Area (shown **shaded**) generally applies during those conditions. Note that:

- The LIRS Diving Officer may cancel this general dispensation at any time
- The LIRS Diving Officer may post a map showing a different Low Risk Area according to prevailing and forecast weather conditions

Low Risk Conditions are defined as:

- Depth of bottom does not exceed 20 metres
- Swell and/or wave height does not exceed 0.5 metres
- Current is nil to slight (snorkellers can swim against it with minimum exertion)
- Underwater visibility is greater than 4 metres
- Activity starts and ends in full daylight



GROUP SNORKELLING PROCEDURES

- Before the group enters the water for each snorkelling activity, the snorkelling coordinator must provide a briefing to the group that:
 - defines the boundaries of the snorkelling area
 - identifies any potential hazards that have not been covered previously or are peculiar to the site
 - identifies the lookout and/or guide to the group
 - informs snorkellers of the plan for following a guide, if a guide is appointed, and
 - requires all snorkellers to form buddy pairs, or trios if an uneven number of people.
- One or more lookouts must be posted if the group size is 12 people or more.
- The snorkelling coordinator must assess whether a single lookout is reasonable for each activity. As a guide, one lookout is usually reasonable within the Low Risk Area for groups of up to 25 people who are competent swimmers but risk assessment may indicate the need for more lookouts under different circumstances.
- When a lookout is posted, s/he must:
 - be positioned out of the water where s/he can see the whole area where snorkelling is taking place
 - be solely engaged in being the lookout
 - have a binoculars and polarising sunglasses to enhance the lookout's ability to see all snorkellers
 - have a whistle to make a general recall signal
 - count snorkellers entering the water and keep constant watch, making frequent head counts

- keep track of snorkellers as they return to their assigned boats or as they reach shore
- ensure that all people are present before the group leaves the snorkelling site.
- If the lookout is not also a first aid and oxygen provider, the snorkelling coordinator must make sure that a person who does have such training is immediately available to assist the lookout if required.
- If a signal for assistance is made by a snorkeller, the lookout must quickly assess the level of emergency. The lookout should consider passing his/her duties to another person while going to the assistance of the snorkeller, or of recalling the group. However, if the snorkeller clearly requires immediate aid, the lookout should act to provide it immediately.
- The snorkelling coordinator may dispense with a lookout and appoint an in-water guide instead only if:
 - the group involved in the snorkelling activity (including the guide) is of 11 people or less
 - the snorkelling coordinator has conducted a proper assessment of the risks involved in not having a lookout (i.e. additional risk assessment on the *Group Supervisor Form* or a similar format), and
 - it is reasonable having regard to those risks not to have a lookout
- When a guide is appointed instead of a lookout, the guide must
 - follow the plan for keeping snorkellers together as outlined by the snorkelling coordinator during the pre-snorkel briefing
 - be vigilant for snorkellers in distress and be prepared to go to the aid of a snorkeller in distress immediately
 - count snorkellers entering the water, during the snorkelling activity, and at the end of the activity
- If group snorkellers over the age of 18 wish to become independent snorkellers during the course of their visit to LIRS, they must obtain the consent of their snorkelling coordinator and complete an *Independent Snorkeller Form*.

NIGHT SNORKELLING

- For the purposes of group snorkelling, “night” is defined as any time between sunset and sunrise.
- The snorkelling coordinator must discuss plans for night snorkelling with the LIRS Diving Officer at least a day in advance. Consideration must be given to locations, weather, tides, personnel, navigation, equipment and specific procedures. The coordinator must submit a risk assessment (i.e. additional risk assessment on the *Group Supervisor Form* (or a similar format) for approval.
- Each snorkeller must have
 - a cyalume or other constant light source firmly attached to the snorkel, and
 - an underwater torch
- At least one lookout must be posted but more may be required depending on the size of the group, weather conditions and other risk factors.
- The lookout must have two torches and a VHF radio.

SWIMMING DURING FREE TIME

- During “free time” from group activities at LIRS, group members often wish to swim from shore with or without snorkelling gear.

- Groups differ in the degree of regulation required of such water activities, ranging as they do from early secondary school students through tertiary students to elderly adults.
- At the beginning of the trip, the group leader must advise the group of the institution's restrictions on swimming from shore during free time, with or without snorkelling gear, and enforce those restrictions. The group leader may delegate these responsibilities to the snorkelling coordinator.
- Restrictions should be based on careful risk assessment, considering age, ability, location, distance from shore, time of day, weather and sea conditions, number of people participating and whether there is a need for supervision or a sign-out procedure.

EMERGENCY PROCEDURES FOR GROUP SNORKELLERS

MISSING SNORKELLER

- Any of the group supervisors (Leader, Coordinator, Lookout or Guide) to recall any snorkellers still in the water using a whistle, shouting and/or beckoning hand signals.
- All group members to scan area continuously for snorkeller.
- The Snorkelling Coordinator may direct a small number of specific, highly-competent snorkellers to conduct an in-water search, considering the history of the incident (e.g. buddy saw missing snorkeller dive but failed to surface, or saw missing snorkeller lying on bottom) and current environmental conditions (e.g. may not be sensible during a strong squall). One of the group's official Lookouts must be assigned to watch any in-water searchers.
- Group snorkellers typically have two or more boats at the snorkel site. If practical, at least one boat must remain anchored/ moored as it was when the snorkeller was last seen. Another boat may be used to search the area for the snorkeller, with one or two people in addition to the boat driver. If there is only one boat and if it must be moved, its position must be noted by the group supervisor and/or an emergency marker buoy must be left (e.g. anchor with float).
- Snorkelling coordinator or other group supervisor to contact LIRS as soon as practical by VHF radio or by the most expedient means, which could include asking the Resort or another boat to relay.
- Failure of boat to return by intended time according to boat log will be taken to indicate a missing snorkeller.
- LIRS staff to start search and rescue procedures (section 8.6) immediately upon notification of a missing snorkeller. At least two people should go together to begin the search, unless finding a second person would result in delay of more than a few minutes.

INJURED SNORKELLER

- Snorkelling coordinator to organise provision of first aid, including administration of oxygen if appropriate.
- Recall any snorkellers still in the water using a signal such as a whistle.
- Ensure all other group members are present and not at risk.
- Collect essential information and relay it to LIRS by VHF radio:
 - Location
 - Number of patients, number of other people present
 - Nature of injury or problem
 - Level of consciousness, needing resuscitation?
 - Progressive state - stable, getting worse/better?
 - Brief history relating to incident
- LIRS to maintain continuous phone and/or radio watch until the situation is resolved.
- LIRS to send trained personnel and additional first aid equipment to the site and/or contact resort for on-site assistance as appropriate.
- LIRS to contact emergency services as appropriate.
- Document other relevant medical history.

RISK ASSESSMENT FOR GROUP SNORKELLING

This risk assessment covers hazards that are or may be encountered by group snorkellers conducting normal group snorkelling activities at LIRS, including boating, and it provides appropriate minimum control measures.

All supervisors of group snorkelling activities (i.e. the snorkelling coordinator, lookouts, first aid/ oxygen providers and any guides) are required to accept this risk assessment by completing and submitting to LIRS a *Group Supervisor Form*. The snorkelling coordinator must also consider whether this risk assessment fully covers the planned activities. If not, an additional risk assessment must be completed.

Conventions used in the risk assessment

- 1) The terms and risk matrix are used in this assessment are in the tables below (Source: *Work Related Incident/ Illness/ Near Miss Report*, Australian Museum Form OHS 002, Feb 2007).
- 2) The abbreviation **LRA** refers to the Low Risk Area as defined above. .
- 3) Control measures that apply to all locations are unshaded. Additional control measures that apply to areas outside the LRA are shaded in grey.
- 4) Practices or operations that require additional risk assessment are *in italics*.

Likelihood of meeting a particular hazard	
Almost certain	Is expected to occur in most circumstances
Likely	Will probably occur in most circumstances
Possible	Could occur at some time
Unlikely	Not likely to occur in normal circumstances
Rare	May occur only in exceptional circumstances
Consequence of incident with hazard	
Insignificant	Injuries not requiring first aid
Minor	First aid required
Moderate	Medical treatment required
Major	Hospital admission required
Severe	Death or permanent disability

Risk matrix					
Likelihood vs Consequence	Insignificant	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Very High	Very High
Likely	Medium	Medium	High	High	Very High
Possible	Low	Medium	High	High	Very High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Medium	Medium	

1) ENVIRONMENTAL HAZARDS

Hazard	Likelihood (L) Consequence (C) Risk (R)	Control Measures used to prevent or minimize risk
Currents	L: Location-specific; Rare to Likely C: Insignificant to Severe R: Low to Very High- controlled	<ul style="list-style-type: none"> ❖ Deploy a float line behind the anchored/ moored boat before entering the water ❖ Snorkelling coordinator to assess current strength at site before group enters the water ❖ If it is necessary to swim or to hold the float line to maintain position, do not snorkel at that site (<i>additional risk assessment required for snorkelling in high current areas</i>) ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) ❖ If slight current is detected, briefing to include current strength and direction, plan for pick-up if snorkellers are unable to swim back to vessel, and boarding procedures ❖ If snorkelling at outer reef on resort charter boat, heed advice from crew
Low underwater visibility	L: Rare C: Minor R: Low	<ul style="list-style-type: none"> ❖ Do not snorkel if horizontal visibility is less than 4 metres ❖ Snorkel in full daylight (<i>twilight and night snorkelling require additional risk assessment</i>)
Strong wind, rough sea conditions or unstable weather	L: Likely C: Minor to High R: Moderate to High -controlled	<ul style="list-style-type: none"> ❖ Snorkel within the LRA and check that low risk conditions actually exist at the snorkelling site (i.e. (depth of bottom does not exceed 20 m, swell and/or wave height does not exceed 0.5 m, current is nil to slight, underwater visibility is greater than 4 metres, and activity starts and ends in daylight (<i>locations outside the LRA require additional risk assessment except if using the resort's charter boat</i>)) ❖ Assess weather, if stormy or unfavourable weather is looming do not venture out. If already out, have snorkellers return to boat before bad weather hits. ❖ If safe to do so, stay on anchor or mooring until squally weather passes. ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) ❖ Load boat conservatively, drive it at speed appropriate to the conditions and ensure passengers maintain low centre of gravity ❖ Select snorkelling site to minimize the effect of wave action ❖ If snorkelling at outer reef on resort's charter boat, accept advice of crew regarding conditions
Exposure to heat and radiation	L: Almost certain C: Insignificant to	<ul style="list-style-type: none"> ❖ Wear hat, sunglasses, protective clothing and sunscreen for boat trips ❖ Wear protective clothing in water suitable to water

	Severe R: Medium to Very High - controlled	temperature (e.g. rash vest, lycra suit, wetsuit) ❖ Stay well hydrated
Exposure to cold	L: Likely C: Minor R: Low	❖ Wear wetsuit appropriate to conditions
Obstructed ascent	L: Possible C: Severe R: Very High - controlled	❖ Do not enter overhangs or caves by more than half body length

2) PHYSIOLOGICAL/ HYPERBARIC HAZARDS

Hazard	Likelihood (L) Consequence (C) Risk (R)	Control Measures used to prevent or minimize risk
Medical conditions that can be made worse by physical exertion (e.g. heart disease, asthma, some lung complaints)	To be assessed on Group Supervisor Form	❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) Depending on assessed risk level, consider: ❖ Not allowing person to snorkel ❖ Snorkel under close supervision ❖ Wear a flotation device ❖ Stay in shallow areas where person can stand ❖ Stay close to shore or boat ❖ Snorkel only in calm conditions
Medical conditions that can result in loss of consciousness (e.g. some forms of epilepsy, some diabetic conditions)	To be assessed on Group Supervisor Form	❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) Depending on assessed risk level, consider: ❖ Not allowing person to snorkel ❖ Snorkel under close supervision ❖ Wear a flotation device ❖ Stay in shallow areas where person can stand ❖ Stay close to shore or boat ❖ Snorkel only in calm conditions ❖ Avoid triggers for condition
Undiagnosed medical conditions in people over the age of 50	L: Possible C: Insignificant to Major	❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) Depending on level of fitness and swimming experience, consider:

	R: Low to High - controlled	<ul style="list-style-type: none"> ❖ Not allowing person to snorkel ❖ Snorkel under close supervision ❖ Wear a flotation device ❖ Stay in shallow areas where person can stand ❖ Stay close to shore or boat ❖ Snorkel only in calm conditions
Drowning	To be assessed on Group Supervisor Form	<ul style="list-style-type: none"> ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>) ❖ Snorkelling coordinator to assess swimming/snorkelling abilities of all group snorkellers ❖ Snorkelling coordinator to provide training, grade experience and special supervision as required ❖ Snorkelling coordinator to consider requiring poor swimmers to not snorkel, accept special supervision, wear a flotation device, stay in shallow areas or close to the shore or boat, and to snorkel only in calm conditions
Snorkelling - related illnesses & injuries	L: Likely C: Major R: High - controlled	<ul style="list-style-type: none"> ❖ Be fit to snorkel ❖ Stay within your abilities ❖ Ensure adequate hydration before and after snorkelling ❖ Do not hyperventilate ❖ Ensure ears are clearing properly while descending and ascending ❖ Do not continue to descend if ear or sinus pain is felt ❖ Do not snorkel if feeling unwell ❖ Snorkel with a buddy to provide immediate assistance if needed ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>)
Fatigue	L: Possible C: Insignificant to Major R: Low to High - controlled	<ul style="list-style-type: none"> ❖ Anchor boat as close to site as is safe ❖ Plan activities to be within the physical limits of the weakest snorkeller in the group ❖ Ensure snorkellers are well rested and hydrated ❖ If heavy or strenuous underwater work is planned, allow plenty of time or increase the team size to distribute the load (<i>frequent heavy work while snorkelling requires additional risk assessment</i>) ❖ If distressed, become positively buoyant (i.e. drop weight belt and any other heavy gear) ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>)
Wearing weight belt	L: Possible C: Insignificant to Major R: Low to High - controlled	<ul style="list-style-type: none"> ❖ Snorkelling coordinator to approve individual group snorkellers to use a weight belt only if snorkeller is highly competent, training is provided and snorkeller is wearing a buoyant wetsuit (<i>additional risk assessment is required for wearing a weight belt without a buoyant wetsuit</i>) ❖ Be trained in use of a weight belt ❖ Conduct buoyancy check to ensure that you are not over weighted ❖ Use only quick release fittings ❖ Ditch weight belt if feeling distressed ❖ Advise group that distressed person should be made

		positively buoyant (i.e. weight belt ditched) ❖ Post one or more competent lookouts (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>)
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3) BIOLOGICAL HAZARDS

Hazard	Likelihood (L) Consequence (C) Risk (R)	Control Measures used to prevent or minimize risk
Dangerous marine animals – bites	L: Rare C: Minor to Major R: Moderate	❖ Do not engage in activities that may attract sharks (<i>potentially attractant activities such as spearfishing, underwater line fishing, fish feeding or barrier netting require additional risk assessment</i>) ❖ Exit water if sharks appear aggressive or if any crocodile is seen ❖ If collecting from crevices, check for moray eels ❖ Have a trained first aider present at the site
Dangerous marine animals – cuts & stings	L: Rare C: Minor to Major R: Moderate	❖ Avoid bumping into corals and other coelenterates ❖ Wear appropriate protective clothing, especially in the stinger season ❖ Consider wearing gloves if handling organisms ❖ Have a trained first aider present at the site

4) ASSOCIATED ACTIVITIES HAZARDS

Hazard	Likelihood (L) Consequence (C) Risk (R)	Control Measures used to prevent or minimize risk
Anchored/moored boat drifts away from snorkelling site	L: Unlikely C: Location-specific; Insignificant to Severe R: Low to Very High- controlled	❖ Anchoring and mooring tackle to be well maintained ❖ Scope of anchor line should be at least 5:1 (i.e. use 10 m of line if water is 2 m deep) and at least 8:1 in winds > 20 knots ❖ Within designated LRA, snorkelling site is located within swimming distance of shore ❖ Ensure anchor is correctly deployed and that the line will not be abraded by inspecting anchor and line in water if possible ❖ Ensure anchor line is not damaged before deploying. ❖ Lookout to be vigilant of the boat's location (<i>additional risk assessment required for using a guide instead of a lookout for groups of 11 or less</i>)
Remoteness from assistance	L: Possible C: Moderate R: High -controlled	❖ Boats to be signed out with a realistic sign-in time, to be monitored by LIRS ❖ Boat to be equipped with safety equipment as required by Queensland Transport, VHF radio, oxygen resuscitation equipment and trauma kit ❖ LIRS to maintain VHF listening watch during all boating operations

		<ul style="list-style-type: none"> ❖ Have a person at the snorkelling site who is trained in first aid and medical oxygen administration ❖ LIRS also to have staff trained in first aid and medical oxygen administration ❖ Medical assistance from the Royal Flying Doctor Service is available by phone from LIRS ❖ Outside designated LRA <i>additional risk assessment is required</i> unless using crewed boat chartered from resort
Lifting, (including raising an anchor, loading & unloading boats)	L: Almost certain C: Moderate R: High -controlled	<ul style="list-style-type: none"> ❖ Use correct lifting techniques (i.e. bent knees, straight back) ❖ Enlist assistance for heavy items, know your limits ❖ Pack equipment into easily-lifted containers ❖ Anchor only on sand ❖ Brace yourself against the boat to prevent falling while lifting anchor ❖ Return to LIRS without anchor if it is stuck fast, inform LIRS staff ❖ Team member to hold vessel in position during loading/unloading, especially important when windy
Loading & unloading boats during on-shore winds	L: Unlikely C: Moderate R: Medium - controlled	<ul style="list-style-type: none"> ❖ Anchor vessel off beach or use the "loading zone" mooring before loading/unloading during strong on-shore winds ❖ Heed LIRS notices concerning loading/unloading sites
Grounding of vessel	L: Unlikely C: Minor R: Low	<ul style="list-style-type: none"> ❖ Reduce speed when operating in or near shallow water and maintain vigilant lookout ❖ Avoid driving over corals ❖ Reduce speed if in doubt about navigable waters ❖ Seek advice from LIRS staff about navigable passages ❖ <i>Outside LRA, additional risk assessment required</i>
Capsizing vessel	L: Rare C: Moderate R: Medium - controlled	<ul style="list-style-type: none"> ❖ Do not exceed vessel loading limits ❖ Do not overload forward area of vessel ❖ Maintain vessel stability by correctly balancing the load ❖ Do not enter areas where waves are breaking
Propeller injury	L: Unlikely C: Severe R: High - controlled	<ul style="list-style-type: none"> ❖ Always have motor turned off when people are near the stern of the vessel ❖ Do not "manta tow" or otherwise drag people behind a boat (<i>additional risk assessment must be conducted for such activities</i>)
Being run over by other boats	L: Unlikely C: Severe R: High - controlled	<ul style="list-style-type: none"> ❖ Deploy dive flag at snorkelling site and stay near the flag ❖ If snorkelling away from the boat or if snorkelling from shore, tow a dive flag on a float in areas where boat traffic might be a hazard ❖ Lookout to signal boats that approach group too closely ❖ Snorkellers to be alert for approaching boats - scan the area periodically and listen for motor noise ❖ If a boat is approaching, signal the driver to make sure

		you have been seen - do not assume you have been seen until you get some response from the driver
Motor breakdown	L: Possible C: Minor R: Medium - controlled	<ul style="list-style-type: none"> ❖ LIRS to maintain outboard motors and provide VHF radio ❖ Complete sign out register before every trip ❖ Stick to plan as entered on register ❖ Deploy anchor if there is a risk of drifting away ❖ If drifting, make boat visible by flying dive flag and displaying V sheet ❖ Be familiar with vessel's emergency equipment
Shallow-drive mechanism on 30 hp Suzuki outboard motors	L: Possible C: Major R: High - controlled	<ul style="list-style-type: none"> ❖ Two-stroke motor must be locked in UP position before shallow drive mechanism is engaged or disengaged ❖ Four-stroke motor has power tilt and trim. Ensure operator's hand or leg will not pinned against seat or elsewhere when operating tilt/trim mechanism. ❖ LIRS to ensure that boat drivers are competent with protocol for using shallow drive mechanism
Equipment other than basic research equipment (slates, cameras, small measuring devices only)	L: Possible C: Insignificant to Severe R: Low to Very High - controlled	<ul style="list-style-type: none"> ❖ Do not use other equipment unless competent through training or experience to use the equipment safely (<i>additional risk assessment is required</i>)

OPERATION AND USE OF VHF RADIO

SITUATIONS FOR USING RADIO

- Emergencies that pose grave and imminent danger to life or vessel
- Vessel is broken down

INSTRUCTIONS FOR USING HANDHELD VHF RADIO

- The VHF radio in dinghies is located under the foredeck in a red or yellow safety container along with other safety equipment such as EPIRB and flares.
- Turn the radio ON (top right button)
- Channel 16 will automatically be displayed
- Slowly turn squelch button (top middle) until noise has just stopped
- Ensure radio is transmitting on 5 watts. If 1 watt is displayed on the screen, press the 1/5 W button (lower left) until 5 watts is displayed
- Listen before transmitting to ensure channel is clear
- To transmit, depress transmit button (on left hand side of radio near the top) and keep it pushed in while speaking into the microphone (lower part of unit, front side) using the following format:

“Lizard Island Research Station (3 times), this is [your boat’s name] (3 times), over”

- After saying “over”, release the transmit button so you can hear a reply
- Within 15 seconds, LIRS will reply as follows:
“[Boat name], this is Lizard Island Research Station. Please switch to Channel 73”
- Before changing channels, speak once more on Channel 16 to confirm that you have heard the LIRS response by saying: ***“OK, going to 73”*** or words to that effect
- Press the UP or DOWN arrow to scroll to Channel 73 - you can then talk freely
- Press the red 16/9 Tri button to return to Channel 16 when radio use has finished, or
- Revert back to Channel 16 after about 15 seconds if nothing is heard on Channel 73

PLEASE NOTE

- A licence is required to operate a VHF radio because it is important that untrained users do not clog up the airwaves. Instead of requiring LIRS users to have a radio licence, these instructions are provided for correct use of VHF in emergencies only.
- Channel 16 is the international calling and distress frequency. It must be used only to make contact or in emergencies. That is why we need to switch channels after making contact.
- If you cannot reach the Research Station and there is a threat to the safety of a person or vessel, try calling *“Lizard Island Resort”* or *“all vessels at Lizard Island”*, using the same format as shown above.
- Reception can be impaired in the vicinity of North Point to Pidgin Point due to the high hills. If trying to raise help from this area, move away from the coast if practical to improve reception and/or make a general call to all vessels in the vicinity or to LI Resort.
- Controls on the boat-mounted radios in *Kirsty K*, *Macquarie 1* and *Macquarie 2* are slightly different to those on the handheld radios. Instructions will be provided to users of those boats.
- A radio transmitter for channel 82 was installed below the peak of Cook’s Look (eastern side) in 2014 to improve coverage. A dual watch (16 & 82) may be organized for vessels working away from the LI Group.



Arrow shows yellow safety container in foredeck of dinghy. Note that containers in some boats are orange rather than yellow.

A handheld VHF radio is stored inside a Pelican case inside the safety container, along with other safety equipment.



Handheld VHF radio in opened Pelican case with spare batteries and instructions for use.

At top of radio, flexible antenna is at left, squelch adjustment is at centre, and on/off/volume knob is at right.

The “transmit” button is on the left side near top.

BOATING EMERGENCY PROCEDURES

MOTOR BREAKDOWN

- Stay with the boat (unless you are immediately adjacent to land).
- Drop anchor and let out adequate line.
- If boat continues to drift, let out all the anchor line except for enough to tie off with.
- Leave all the anchor line out even if boat continues to drift as it will help to slow the rate of drift.
- Use the VHF radio to call for assistance. If you cannot raise anyone, then:
 - Signal other boats for assistance.
 - Examine the contents of the safety kit and plan how you can best use the signalling equipment including the EPIRB.
 - Make the boat highly visible (i.e. fly the dive flag, wrap the V-sheet around someone or something).
 - Sit tight and wait for the rescue boat which should arrive in a reasonable amount of time after your sign-in time, especially if you are in the vicinity of where you nominated on the boat logbook.
 - Cover up from the sun (i.e. use towels, wet suit, V-sheet, nally bin over head)

Important

- In case of a breakdown your course of action will depend on a multitude of variables such weather and sea conditions, proximity to land, time of day and condition of the crew.
- Activation of the EPIRB should occur in dire situations only (i.e. severely injured crew, drifting far off Lizard Island, drifting and darkness approaching).

PERSON OVERBOARD

- The first witness should raise the alarm and keep the overboard person in view.
- The boat driver must immediately disengage the propeller or manoeuvre to miss the person overboard.
- Dispatch lifejacket if appropriate.
- Boat driver notes vessel position or hits MOB button if GPS is fitted to vessel.
- Boat driver manoeuvres vessel back to person overboard being guided by witness.
- Commence recovery by carefully coming alongside to leeward side of person in water.
- Provide first aid including oxygen therapy as required.
- Radio LIRS and return to Station.

FIRE

- Anyone on board should immediately warn other passengers if they observe fire, smoke or excessive heat.
- The person in charge of the vessel should:
 - Identify the location of the fire (it will most likely be associated with the outboard motor).
 - If practical, turn off the outboard.
 - Have passengers put on life jackets.
 - Make a VHF radio call as soon as possible giving location and situation.

- Prepare to abandon ship and activate EPIRB, if necessary.

SEVERE WEATHER

- LIRS monitors weather conditions daily. In general, vessels will not be allowed out if severe weather is forecast.
- If caught in severe weather consider the following actions:
 - Take shelter on the lee side of an island or reef.
 - Radio LIRS, LI Resort or other vessels in area and seek assistance, if required.
 - Stay on mooring or anchor until severe weather passes.

MEDICAL

- The first or the most competent person on the scene is to apply first aid.
- Examine contents of first aid kit and use as required.
- Radio LIRS, LI Resort or vessels in area for assistance, if required.
- The boat driver is to navigate back to LIRS asap or evacuate injured person to another vessel, if required.

GROUNDING OR COLLISION

- Boat driver is to warn others to brace for impact and to not fend off another vessel.
- Tend to injured and assess damage to vessel.
- Control ingress of water, if possible.
- Radio for assistance asap, if required.
- If required, boat driver to activate signalling equipment as appropriate and to instruct everyone to wear lifejackets.
- Boat driver should position vessel to reduce flooding and monitor the vessel's stability.

ABANDON SHIP

If possible, stay with the vessel even if totally flooded since all LIRS vessels have positive flotation.

Person in charge should:

- Explain plan to others on board and have them don lifejackets (and wet suits if available).
- Radio Mayday message asap.
- Set off EPIRB and secure safety container.
- With EPIRB and if possible with safety and first aid containers, consider moving people to land if it is very close taking into account condition and abilities of passengers, tide and sea conditions.

Note – Designation of an emergency or assembly station is not necessary due to the small size of LIRS vessels.

BOAT LOG

Facing pages of the LIRS boat log showing example entries to be discussed at induction.

*** REMINDER TO DIVE SUPERVISORS ***

By listing yourself as Dive Supervisor in the Boat Log, you accept the following summary of responsibilities when diving without a boat attendant.

At the dive site, you must determine that:

- The boat and all divers will be within the designated Low Risk Area throughout the dive
- Defined Low Risk Conditions prevail at the dive site (listed at the sign-out table)
- All divers in the team agree to dive without a boat attendant
- All divers agree that they are capable of swimming to shore from the dive site if necessary

And you must ensure that:

- Dive Leaders are briefed to stay within the Low Risk Area and to terminate the dive if low risk conditions appear to have ceased to exist during the dive
- The anchor line is checked before it is deployed to ensure that it is not damaged
- A float line and a dive flag are deployed from the boat
- Divers swim down the anchor line and visually check its integrity, that the anchor is not dragging, and that the line is not being chafed.

*** REMINDER TO BOAT SKIPPERS ***

When you sign in after each outing, you must state YES or NO in the column headed "Anchor OK on return?"

- You and the Dive Supervisor share responsibility for ensuring that the anchor gear is in good condition every time the anchor is deployed.
- If the anchoring gear has been damaged during the outing (i.e. answer is NO), you must immediately report it to LIRS staff and not use the boat again until it has been made good.

BOAT LOG

DATE	BOAT	LOCATION (If using boat for recreation, must have prior approval and indicate here by adding "R")	NO. OF PEOPLE	NO. OF DIVERS	DIVE SUPERVISOR for this outing (refer above)	TIME OUT	EST TIME OF RETURN	SKIPPER (refer above)	SKIPPER INITIALS on return	ANCHOR OK on return? (Y/ N/ DNU)	LIRS check			
											1200	1400	1600	latest
13/10/15	Louise	Lagoon bonnie	2	2	Joe B	0845	1130	Joe	JB	Y	LV	LV	LV	LV
13/10/15	Sam	Cobia Hole	3	2	Anita P	0900	1200	Sally	SR	Y	↓	↓	↓	↓
13/10/15	Louise	Horse shoe / Thaw / Bch	2	2	Joe B	1230	1530	Joe	JB	Y	↓	↓	↓	↓
13/10/15	snorkel	out front	2	-	Fred - Julie	1245	1330	-	FS JS	DNU	↓	↓	↓	↓
13/10/15	Sam	N th Point - R *	2	-	-	1700	1830 *	Sally	SR	DNU				↓

* OK'd by Anne