



SAFETY BRIEFING NOTES

Permit Zones

The Daintree Rainforest Observatory (DRO) property at Cape Tribulation has been divided into eight Permit Zones (A - H) according to who would be expected to access certain areas of the site and the hazards and risks associated with working in those areas. These briefing notes have been prepared specifically to inform researchers and other site visitors of the safety hazards associated with working within the different permit zones at the DRO. These Permit Zones are illustrated and listed in Figure 1 and Table 1, respectively, on page 8.

Scope

In addition to identifying the safety hazards associated with working in these permit zones, these notes provide site users with recommendations regarding the avoidance of these hazards and suggested accident and emergency response procedures. However, it must be recognised that these notes cannot possibly cover every potential safety hazard associated with working in these areas. The most important recommendation made here (and in the General information Package) is that at least one individual (and preferably all members) in a research team should hold a current first aid certificate. The accident and emergency response procedures recommended here should not be regarded as a substitute for knowledge of first aid.

Personal Protective Equipment

It is the responsibility of the visitor to bring with them the appropriate personal protective equipment (PPE) for the work they will be undertaking. It is a requirement for people accessing zones A - G to wear fully enclosed footwear. If venturing off the path within zones E and F it is also a requirement to wear long pants. A hat, sunscreen and water bottle are also recommended due to the tropical climate at the site. Gloves, lab coats, ear plugs and hard hats can be provided if needed.

First Aid Kits

First Aid Kits are kept in the gondola of the crane, in the laboratory and in the work vehicle. These kits are available for use to all site visitors and all visitors are permitted to access these areas to use the First Aid Kits. There are also two field First Aid Kits in backpacks available from the laboratory which visitors can borrow while carrying out work in the forest. All of these kits are checked regularly to ensure they are fully stocked and in good condition. However, if you use any of the materials in the First Aid Kits you should inform the site manager or another DRO official so the materials can be restocked.

UHF Radios

UHF radios are provided at the DRO for use by visitors accessing the forest or crane. It is a requirement that a radio be carried in the gondola while the crane is operating and at least one radio must be carried within each working party when working on the ground. Communication must be maintained at regular intervals with someone back at the research station and this person must keep a UHF radio within hearing distance at all times whilst people are in the crane or forest. These UHF radios can be used for regular communications between parties and also in the event of an emergency to request help (assistance or to contact emergency services) from the personnel at the research station.

EPLB (Emergency Personal Locator Beacon)

An EPLB is kept in the safety equipment box, which is normally carried in the gondola. When the crane is not operating, this box (and the EPLB) is stored in the laboratory. When the EPLB is activated, it sends out a radio signal that will notify authorities of an emergency and an

emergency rescue team (rescue helicopter) will be sent to your assistance. However, please note that the EPLB should only be activated in immediate life threatening situations (i.e. if someone has had a heart-attack or sustained a life threatening injury). Note also that there are severe penalties for misuse of an EPLB.

Satellite Phone

A satellite phone is carried in the gondola of the crane at all times while it is in use. When the crane is not operating, it is stored in the laboratory. This satellite phone can be used to contact emergency services in the event of an accident or injury whilst on the crane or in the event of an emergency where normal phone lines are unavailable, such as during phone line failure or maintenance.

Fire Extinguishers

Fire extinguishers are kept in the driver's cabin on the crane, in the shed at the base of the crane tower, in the generator shed and at the research field station and staff quarters. Fire blankets are located in the kitchens at the research station and the house. These are available for the use of all site visitors in the event of a fire (note however that only the site manager/crane operator can access the driver's cabin of the crane).

Management of Chemicals

Any chemicals brought to the site must be registered with the site manager. A MSDS must be provided and a risk assessment completed. No chemical waste is to be disposed of at the research station and it is the responsibility of the user to take away any chemical waste and unused chemicals.

Responsible Personnel

Every person visiting the site is responsible for his or her own safety, and within reason, the safety of every other person on the site. If you see a person behaving in an unsafe manner, your minimum responsibility is to advise them accordingly. If they persist in behaving in the same manner the incident should be reported to the Site Manager or another DRO official. If you observe that an unforeseen safety hazard exists on the site (e.g. a broken piece of equipment, a feral dog on the site, etc.) you are also obliged to inform other workers on the site and the Site Manager or another DRO official. All accidents and safety incidents at the research station must be reported to the Site Manager or another DRO official.

Personnel responsible for the management of safety on the site are:

Site Manager	Site Safety Officer	Pro Vice Chancellor
Peter Byrnes	Susan Kelly	Professor Jeffrey Loughran
Daintree Rainforest Observatory Ph: (07) 4098 0005 peter.byrnes1@jcu.edu.au	James Cook University Ph: (07) 4042 1456 susan.kelly@jcu.edu.au	James Cook University Ph: (07) 4781 5228 jeffrey.loughran@jcu.edu.au

Accident Response Procedure

- Assess the situation, do not endanger your own personal safety;
- If safe to proceed commence first aid. Stay with your patient and send for medical assistance. This can be communicated via the UHF radio or through other personnel present on the site;
- Do not delay in ringing emergency services;
- If you cannot communicate with another person to get medical assistance, use the EPIRB in life threatening situations **(this only applies to accidents at the crane not at the facility)** or quickly leave the patient to call for help;
- If minor first aid is required, treat the patient using a first aid kit and fill out an Accident, Incident and Injury Report form and first aid treatment record. Notify the site safety officer of the incident when time permits;
- All hazards and accidents should be reported to the facility safety officer.

Emergency Services Phone Numbers

For life threatening injuries and accidents call **Emergency Services (24 hours) on 000**.

The nearest hospital is at Mossman: ph. 4084 1200 (non-urgent medical services only; **in an emergency dial 000**).

The nearest community nurse is located at Diwan (near Cow Bay): ph. 4098 9296.

The nearest Ambulance Service is at Mossman/Port Douglas: ph. 131 233 (non-urgent transports only; **in an emergency dial 000**). It can take several hours for an ambulance to reach the DRO so this needs to be considered in the application of first aid.

The local Police are located at Mossman: ph. 4098 2177 (non-urgent matters only; **in an emergency dial 000**).

QLD Poison Information Centre: ph. 131 126.

State Emergency Services (SES): ph. 132 500.

Coastguard (Port Douglas): ph. 4099 5392 (24hr emergency number: 0427 162 258).

Fire Evacuation Procedure

- Immediately notify all personnel of the fire and evacuate them from the facilities/house/generator shed into the canopy crane car park area.
- In the event of a fire on the crane, stop all operations and assess the situation to see if it is safe before proceeding. If possible return the gondola safely to the ground and remove all personnel from the gondola to the creek near the crane. If safe to do so, switch off the circuit breaker in the shed at the base of the crane to shut down the power.
- Contact the **rural fire brigade** or **local fire warden**. Cape Tribulation Rural Fire Brigade First Captain (Rod):4098 0077 or 4098 0012, Thornton's Peak Fire Warden: 4098 9100. If on the crane, use the UHF radio to notify the research facility to contact the local fire authorities.
- Try to contain the fire with fire extinguishers, fire blankets or hoses if safe to do so.
- Prevent the spread of the fire. Remove nearby obstacles, close windows and turn off the main gas valve and electrical switch boards. Assess the situation first and **only proceed with this instruction if the conditions are safe**.
- Once the fire authorities reach the site listen to their instructions and do not hinder them in any way.
- Notify the Management at JCU (Sue Kelly 4042 1456 or Chris Gillham 4781 6832) of the fire.
- Do not enter any buildings until the all-clear is given by the local fire authorities.

Cyclone Evacuation Procedure

Pre-cyclone Procedures

Perform pre-cyclone checks in the months of November/December. Trim trees around the research facility and house. Maintain a small cyclone kit with batteries, a torch, an AM/FM radio, list of emergency phone numbers and a cyclone plotting map. Check that all gutters are free of any obstructions. Make sure that vehicles are working and full of fuel. Secure important documents or personal items.

During the cyclone period from December to April, periodically check the Bureau of Meteorology (BOM) home page on the internet (<http://www.bom.gov.au/qld/>) to monitor warnings and forecasts for the region.

Ensure that personnel are aware of the cyclone evacuation procedure and have appropriate supplies of food, etc. during the cyclone season as local flooding may occur and access may be restricted for an extended time period.

When a cyclone is approaching

Maintain access to the BOM webpage or listen to the radio. A tropical cyclone watch advice is issued every 6 hours when gale force winds are expected to affect coastal areas within 48 hours. A tropical cyclone warning advice is issued every 3 hours when gale force winds are

expected to affect coastal areas within 24 hours. This warning also includes other detailed information on the cyclones path, intensity, etc.

Notify the management at JCU of the threat of a cyclone and maintain contact over the cyclone watch period. The management will give direction with regards to evacuating personnel off the site. If the management cannot be contacted, evacuation will occur at the discretion of onsite staff if considered necessary to protect the health and safety of staff members and visitors to the site.

Notify researchers using the DRO of the cyclone threat and make plans with regards to retrieving or securing their research equipment. Assess the situation before proceeding into the forest; if conditions are unsafe do not proceed.

If you are a designated crane driver assess the weather conditions; if conditions are deemed safe, secure loose items or equipment on the crane.

Ensure that all loose or light items around the facility and at the base of the crane are stored away or secured down. Secure all windows with tape and remove chairs, etc. from the central or external verandas. Turn off all power points and LPG at the tank. Park vehicles under cover, if possible.

It is a priority that evacuation occurs before the cyclone approaches. Identify if there is enough time to evacuate and prior to departure check the local tide times, creek heights and ferry operations (ph.0438 987 536). Local radio stations will also broadcast local evacuation centres within the region. Local radio stations are:-

- 4CA Cairns: 846 AM
- ABC Cairns: 639 AM, 801 AM, 90.1 FM, 95.5 FM, 106.7 FM
- Zinc FM Cairns: 102.7 FM
- 4AM Port Douglas: 1422 AM
- Hot FM Cairns: 103.5 FM
- Sea FM Cairns: 99.5 FM
- Radio Port Douglas: 107.1 FM
- Port Douglas FM: 90.9 FM
- Country Mossman: 89.1 FM

If a cyclone approaches and you have not evacuated the site, stay inside and keep calm. Shelter in the strongest part of the facility; this may be the generator shed or the shipping container. Protect yourself with either mattresses or blankets or position yourself underneath a strong fixture. Do not leave to go outside; be aware of the calm eye and listen to your radio.

After the cyclone has passed

Listen to your radio and do not evacuate the site until it is safe to do. Strong winds may still persist after the cyclone has passed and trees may still fall and be a hazard.

Do not enter any floodwaters.

Check for leaking gas and do not use any electrical appliances that are wet.

Make a note of any building damages, etc.

Contact neighbouring properties.

Assess the situation and notify the management at JCU of your circumstances.

Snake Bite Emergency Protocol

- Notify the person at facility via radio to **call 000**. Below are a list of alternative numbers to call:
 - Mossman Hospital – 4084 1200 (nearest hospital)
 - Daintree Community Nurse – 4098 9296 (nearest community nurse)
 - Mossman/ Port Douglas Ambulance – 131 233 (nearest ambulance service)

Please note that it can take up to several hours for an ambulance to reach the crane site so please make sure that first aid treatment is administered ASAP.

- Apply first aid treatment (Pressure Immobilisation Technique) to the snake bite victim.
 - Apply firm pressure over the bite, using your hand if necessary;
 - Apply crepe roller bandage to maintain pressure over the area of the bite;
 - For a bite on the leg or arm, use a second crepe roller bandage starting at the toes or fingertips and working upwards to cover as much of the limb as you can. Apply the bandage as tightly as you would for a sprained ankle but not so tightly as to cut off circulation. Leave a small gap in the bandage where the bite itself is so medics can locate it without removing the bandage;
 - Immobilise the affected limb with a splint to reduce muscle movement. Help victim to rest if possible and do not let the victim stand or walk. Bring transport to the victim (using a stretcher located in the DRO Laboratory if necessary), unless this will cause a delay of 2 hours or more;
 - Do not remove the bandages until the victim has reached medical care and then only if you are instructed to do so;
 - If the bandage is applied too tightly, circulation may be cut off below it. Signs of impaired circulation are discoloration of the fingers or toes below the bandage or the victim complains of sensations of coldness or numbness. If any of these symptoms or signs occur, loosen the bandage sufficiently to let blood flow return;
 - Please refer to updated first aid information.

Figure 1: Permit Zones at the Daintree Rainforest Observatory.

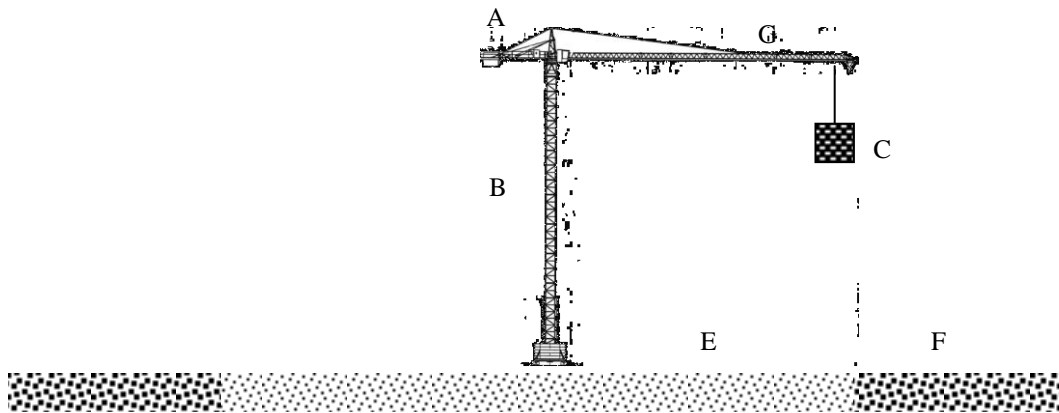


Table 1: Permit Zones at the DRO and personnel authorised to access them.

	PERMIT ZONE	PERSONNEL ALLOWED ACCESS TO ZONE
A	Counterweight jib and operator's cabin	Persons with access to Permit Zone "A" would be expected to include the crane driver, maintenance personnel, JCU safety officer and inspectors and DRO officials.
B	Crane base, compound area and tower section	Persons with access to Permit Zone "B" would be expected to include the crane driver, maintenance personnel, JCU safety officer, inspectors, researchers, film crews and DRO officials.
C	Gondola (dog-box)	Persons with access to Permit Zone "C" would be expected to include the crane driver, researchers, visitors, volunteers, maintenance personnel, JCU safety officer and inspectors, and DRO officials.
D	Generator shed	Persons with access to Permit Zone "D" would be expected to include the crane driver, maintenance personnel, JCU safety officer and inspectors, and DRO officials.
E	Area of forest within the working arc of the crane jib	Persons with access to Permit Zone "E" would be expected to include the crane driver, researchers, visitors, volunteers, maintenance personnel, JCU safety officer and inspectors, and DRO officials.
F	Areas of forest, grass and revegetation within the DRO property boundary but outside the working arc of the crane jib	Persons with access to Permit Zone "F" would be expected to include the crane driver, researchers, visitors, volunteers, maintenance personnel, JCU safety officer and inspectors, and DRO officials.
G	Load jib	Persons with access to Permit Zone "G" would be expected to include the crane driver and crane maintenance personnel.
H	Research Facilities (kitchen, laboratory, general accommodation and staff quarters)	Persons with access to Permit Zone "H" would be expected to include the crane driver, maintenance personnel, JCU safety officer and inspectors, DRO officials, researchers, visitors and volunteers.

OVERHEAD HAZARDS

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Objects Falling from the Crane Counterweight or Load Jib			
B C E	<p>When maintenance work is being performed on the counterweight and load jib of the crane, any personnel working in Permit Zones E must be aware of the possibility of objects falling from the work sites above them.</p> <p>Personnel entering the gondola or tower structure or Zone E from Zone F must be aware of the possibility of objects falling from work sites above them.</p>	<p>While maintenance work is being conducted on the counterweight or load jib, personnel must not work in Permit Zone E until you have been granted permission from a designated crane driver to enter the area.</p> <p>Under these conditions a hard hat and safety glasses are required PPE in Zone E.</p>	<p>Broken limbs, head injuries and other serious or fatal injuries may result from being struck by objects falling from the counterweight or load jib.</p> <p>Personnel working on the site must always carry a UHF radio to call for assistance if necessary.</p>
Objects Falling from the Gondola			
B E	<p>When work is being conducted in the gondola, personnel working in Permit Zones E must be aware of the possibility of objects falling from the work sites above them. Personnel entering the tower structure or Zone E from Zone F must be aware of the possibility of objects falling from the work sites above them.</p>	<p>When personnel are working in the gondola, other personnel working in Permit Zone E must inform the workers in the gondola of their presence in the area.</p> <p>It is recommended that work on the ground directly underneath the gondola be ceased until the gondola moves to another area of Permit Zone E.</p> <p>If you are working in Permit Zone E under these conditions, a hard hat and safety glasses are recommended PPE.</p> <p>If you drop anything or see anything falling while working in the gondola, shout 'WATCH OUT BELOW!' in a loud voice to warn those beneath you.</p>	<p>Broken limbs, head injuries and other serious or fatal injuries may result from being struck by objects falling from the counterweight jib or gondola.</p> <p>Personnel working in permit zones B, C, E and F must always carry a UHF radio to maintain communication with all personnel working at the site and to call for assistance if necessary.</p>

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Objects Falling from Scaffolding/Tower			
B E	Objects falling from scaffolding represent a hazard to those working on or near the scaffold. Personnel working in Permit Zone E must be aware of the possibility of objects falling from the work sites above them.	<p>Personnel working under or near scaffolding (Permit Zone B and E) while work is being performed must inform the workers above of their presence in the area and wear a hard hat at all times.</p> <p>Personnel working on the scaffolding must be made aware of the danger falling objects pose to workers below.</p> <p>If you are working in Permit Zone E avoid working directly below or near the scaffolding.</p>	<p>Broken limbs, head injuries and other serious or fatal injuries may result from being struck by objects falling scaffolding. Work crews must not work in Permit Zone E when work is being carried out on the scaffolding above.</p> <p>A UHF radio must be carried to call for assistance if necessary</p>
Overhead Snags and Treefall Hazards			
E F	Storm damage can leave broken branches and dead trees entangled in the canopy. As these can then fall at any time they are potentially very dangerous.	<p>Before commencing work in the forest assess the area for potential overhead snags and treefall hazards.</p> <p>Avoid working in areas under these hazards, especially if windy conditions develop.</p> <p>If work must be undertaken, never work alone under overhead snags or treefall hazards, always wear a hard hat and always appoint a team member to watch the hazard until the work is completed.</p>	<p>Broken limbs, head injuries and other serious or fatal injuries may result from being struck by a falling branch or tree.</p> <p>A UHF radio must always be carried to call for assistance in necessary.</p>

HAZARDS FROM FLORA

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Wait-a-While or Rattan (<i>Calamus spp.</i>)			
C E F	<p>This native palm species grows abundantly at the research site.</p> <p>The characteristic long, whip-like canes covered in large hook-like spines can easily lacerate skin and become attached to clothing and boots posing a trip hazard.</p>	<p>Everyone visiting or undertaking work at the site must familiarise themselves with this plant so they can visually avoid it.</p> <p>Personnel working in the forest at night must always walk very slowly to avoid injury from unseen rattan.</p> <p>Heavy duty trousers and a shirt must be worn when working off the main crane trail in Permit Zones E and F.</p>	<p>Severe cuts and lacerations can result from accidental contact with wait-a-while. In tropical areas, even minor cuts and abrasions can rapidly become infected and develop into tropical ulcers. Rattan injuries need to be promptly cleaned and have antiseptic applied.</p> <p>When working in the forest, especially in Permit Zone E and F, you must carry a small first aid kit.</p>
Stinging Tree (<i>Dendrocnide moroides</i>)			
E F	<p>This native shrub species is quite common in open, sunlit areas of the site.</p> <p>The large heart shaped leaves have serrated margins. The twig, petiole, upper and lower surface of the leaf blade have tiny stinging hairs.</p> <p>Skin contact with these leaves will result in an extremely painful sting as the needle-like hairs penetrate the skin. This pain may persist for many months as the needle-like hairs slowly release their venom.</p>	<p>Everyone visiting or undertaking research at the site must familiarise themselves with this plant so they can visually avoid it.</p> <p>Contact with this plant must be avoided at all times. A person stung by a stinging tree can develop shock.</p> <p>Heavy duty trousers and a shirt must be worn when working off the main crane trail in Permit Zones E and F.</p>	<p>There is no treatment that will reduce the pain of a sting from stinging tree.</p> <p>Do not rub the affected area as this will further embed the hairs in the skin.</p> <p>Hair removal wax strips (kept in the first aid kits) will remove some of the hairs from the skin; this may reduce the length of time the pain persists.</p> <p>Severe stings may require First Aid treatment for shock and medical treatment.</p> <p>When working in the forest carry a UHF radio to call for assistance if necessary.</p>

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Tar Tree (<i>Semecarpus australiensis</i>)			
C E F	<p>This native canopy tree grows abundantly at the research site.</p> <p>The dark exudate of this tree can cause eye irritations and severe dermatitis or allergic reactions.</p> <p>If rubbed into the eye it can cause blindness.</p> <p>The fruit and seeds are toxic and must not be eaten.</p>	<p>Everyone visiting or undertaking research at the site must familiarise themselves with this plant so they can visually avoid it. The DRO staff will assist with the familiarisation of this species. Contact with this plant must be avoided at all times.</p> <p>Those conducting research on this plant must have filled out the risk management sheet and wear safety gloves, safety glasses and avoid touching other areas of their body.</p>	<p>Personnel conducting research on this tree must wear protective gloves. Reduce the chance of further irritations by not contacting other body parts with the gloves, such as your face and eyes.</p> <p>The application of dermatitis type creams may assist in the treatment of the reaction. Severe reactions to the tree may require medical treatment.</p>

HAZARDS FROM FAUNA

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Feral Animals - Pigs And Dogs			
E F	<p>Feral pigs and dogs are occasionally seen on the site, they usually retreat into the forest when they encounter humans.</p> <p>Both animals have been known to attack humans and inflict severe injuries.</p>	<p>If you encounter a pig or a dog on the site and it does not retreat, you must back away slowly and find a safe place (i.e. a vehicle, building or fenced area).</p> <p>Immediately notify responsible personnel of the animal's presence.</p> <p>Do not continue to work on the site until you are certain that the animal has gone and do not work on the site alone.</p>	<p>Injuries resulting from a dog or pig attack may be severe and require urgent First Aid and medical attention.</p> <p>If you are on the ground a UHF radio must always be carried to call for assistance if necessary.</p>

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Cassowaries			
E F	Cassowaries are occasionally seen on the site, generally they will retreat into the forest when they encounter a human, however, they are known to occasionally attack and can inflict severe injuries	<p>If you encounter a cassowary on the site and it does not retreat, you must back away slowly and retreat to a safe place (i.e. the crane base, building or fenced area). Position yourself behind or near a tree and wait until the cassowary leaves; if possible place an object in front of your body.</p> <p>It may help to raise your hands over your head to give yourself a taller appearance. (Cassowaries will reputedly avoid an attack on a taller animal)</p> <p>Do not continue to work on the site until you are certain that the cassowary has gone. Do not work on the site alone.</p>	<p>Injuries resulting from an attack by a cassowary may be severe and require urgent First Aid and medical attention.</p> <p>If you are on the ground a UHF radio must always be carried to call for assistance if necessary.</p>
Bites and Stings			
A B C D E F G H	<p>A number of animal species on the site (such as spiders, snakes and wasps) can inflict painful and dangerous stings and bites.</p> <p>Even a minor wasp sting has the potential to cause a dangerous lapse of attention that could result in a fall.</p> <p>Snakes are occasionally seen in the canopy. Although most are non-venomous tree snakes or pythons, highly venomous species occur in the area therefore it is essential to treat all snakes with caution and avoid contact with them.</p>	<p>If you have any known allergies to bee and wasp stings etc, make sure you carry appropriate medication while working on the site at all times. Inform DRO staff of your allergies.</p> <p>Ensure your companions are aware of your allergies and how to respond to an emergency situation.</p> <p>If you see any wasp nests or spider webs being built within the gondola, make sure they are removed as soon as possible.</p> <p>Avoid all contact with snakes and exercise caution when working on the forest floor, especially in sunlit areas where snakes might bask.</p>	<p>Administer First Aid and call for immediate medical assistance as appropriate.</p> <p>Follow the snake bite protocol located in the first aid kits available on site and detailed above.</p>

HEAT HAZARDS

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Heat Exhaustion and Stroke			
<p>A B C D E F G</p>	<p>During the summer months conditions can become extremely hot and humid in the rainforest.</p> <p>The extreme heat together with dehydration can cause heat exhaustion or potentially fatal heat stroke.</p>	<p>Always wear a hat when working in the forest in summer.</p> <p>During the summer months particularly, always carry at least two litres of water per person per half days work</p>	<p>Heat exhaustion</p> <p>Signs and symptoms include: include pale clammy skin, profuse and prolonged sweating, cramps in the limbs and/or abdomen, nausea and/or vomiting, headache and lethargy.</p> <p>Treatment</p> <p>Complete rest in the shade, cool the casualty by sponging with tepid water, cautiously give cool water to drink.</p> <p>Ensure casualty has assistance when recovered.</p> <p>Heat Stroke is potentially fatal! Urgent ambulance transport is required,</p> <p>Signs and symptoms include: flushed, hot, dry skin, rapid, strong pulse (sometimes irregular) , irrational or aggressive behaviour, staggering gait, visual disturbances, vomiting, collapse and seizures, coma then death.</p> <p>First Aid involves complete rest in shade, removing the casualty's clothing, cool the casualty by any means available, be prepared to resuscitate if required.</p> <p>Rehydration is required via intravenous fluids administered by a doctor or ambulance crew.</p>

SLIP AND TRIP HAZARDS

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Slipping or Falling While Climbing in the Crane Tower Section			
B	<p>The tower section of the crane is designed as a safe climbing structure. The guardrails that surround the ladders and section platforms are a requirement to provide protection against falling either out of the tower or down through the tower.</p> <p>There is always a risk of falling and sustaining a serious injury, even if you only fall a short distance.</p>	<p>Always be extremely careful while climbing on these structures as painted sections can become very slippery when wet or muddy.</p> <p>Do not lean out beyond the guardrails on the tower unless you are wearing a fall arrest harness with a lanyard attached to the crane structure</p> <p>Never climb the crane tower alone unless another person is located close by and you can visually see each other at all times. Both personnel in this situation must have a UHF radio to call for assistance.</p>	<p>A fall in these areas can cause serious or fatal injuries.</p> <p>First aid for broken limbs, head injuries etc may be required.</p> <p>Always carry a UHF radio to call for help if necessary</p>
Slipping or Falling While Working Around the Crane Base Compound or on the Crane Ballast.			
B	<p>Uneven areas around the base of the crane, on top of the crane ballast blocks and especially around the crane legs that cross the ballast blocks to the base of the crane tower are all areas that may present as trip hazards. These areas may also become slippery with fungi and moss during times of high rainfall.</p>	<p>Always be extremely careful while working around the base of the crane.</p> <p>Be aware that concrete and painted sections can become very slippery when wet or muddy. Maintain the area by cleaning with a water and mould killer solution.</p> <p>At least two persons must be in the work party and have a UHF radio to call for assistance.</p>	<p>A fall in these areas can cause serious injuries.</p> <p>First aid for broken limbs, head injuries etc may be required.</p> <p>Always carry a UHF radio to call for help if necessary.</p>

WORKING IN THE GONDOLA

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Slipping or Tripping while Working in the Gondola			
C	<p>The presence of plant matter, equipment, oil or water on the gondola floor surface may cause a slip hazard resulting in an injury or a fall.</p> <p>Tripping may cause the crane driver to lose control of the crane.</p>	<p>Always be careful with your footing in this area. If there is either plant matter, oil or water on the floor of the gondola, clean it up immediately. Ensure that equipment is stored away in one corner and not creating a hazard when the crane is being operated.</p> <p>The floor of the gondola <u>must always</u> be kept tidy and free from trip hazards. When operating the crane the crane driver must keep the gondola clean on a daily basis.</p>	Administer First Aid and call for assistance if necessary.
Objects Entering the Gondola			
C	While the gondola is moving through the rainforest canopy there is a chance that objects may enter the gondola and cause a variety of injuries (i.e. sticks, green tree ants, wait-a-while, etc.).	Avoiding these hazards is the responsibility of the crane driver; however, it is an obligation of the passengers in the gondola to assist the driver by warning them of any approaching hazards.	Administer First Aid and call for assistance in required.
Falling From The Gondola			
C	A fall from the Gondola would be expected to cause very serious if not fatal injuries.	All personnel MUST be fitted with a fall-arrest harness that is attached by a lanyard to the gondola structure at all times .	Administer First Aid and call for assistance if necessary. Maintain UHF radio contact with personnel at the research station.
Moving between the Gondola and the Crane Tower			
B C	<p>There is a risk of personnel being crushed as they move between the gondola and the crane tower.</p> <p>The person could fall from the structure during the transfer. A fall like this will probably be fatal.</p>	Personnel must never move between the gondola and the crane tower .	Administer First Aid and call for assistance if necessary. Maintain UHF radio contact with personnel at the research station.

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Fire			
C	A potential fire hazard in the gondola may develop if research methods involve the use of flammable materials such as ethanol or aerosol cans.	<p>Only take the minimum quantities of flammable materials into the gondola at one time. The maximum quantity of flammable material is (100mL).</p> <p>Smoking is prohibited in the gondola at all times.</p> <p>A fire extinguisher must be carried in the gondola when flammable materials are being used.</p>	<p>In the event of a fire evacuate all personnel and call for immediate assistance.</p> <p>Maintain UHF radio contact with personnel at the research station.</p>
Crane Breakdown			
C	Although the maintenance of the crane and generator are rigorous, there is always a small chance that that the crane or the generator may breakdown.	<p>All personnel are required to report anything that may indicate a potential malfunction of the generator or crane.</p> <p>If the crane breaks down while people are in the gondola initiate the emergency evacuation procedure, using the rope rescue procedure as a last resort.</p> <p>Rope rescue equipment <u>must</u> be carried in the gondola at all times.</p> <p>Always carry a fully charged UHF radio handset and spare battery in the gondola.</p> <p>The radio must be tuned to an agreed channel and continually turned on while work is undertaken in the gondola.</p> <p>Never work in the gondola alone and maintain UHF radio contact with personnel at the research station.</p>	<p>If the crane or the generator experiences a breakdown DO NOT PANIC.</p> <p>The emergency evacuation procedure is the responsibility of the crane driver.</p> <p>If the driver is injured and cannot carry out the evacuation, UHF radio contact must be made with the research station where staff trained in rope rescue techniques will be able to carry out the emergency evacuation procedure.</p>

WORKING IN THE GENERATOR AND CRANE BASE SHEDS

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Battery acid			
D	The bank of batteries in the generator shed and crane base shed contain significant quantities of acid (sulfuric).	The batteries are sealed gel and therefore maintenance free. There is no reason to touch the batteries.	Any part of the body that comes into contact with acid should be immediately flushed with water. Administer First Aid and call for immediate medical assistance as appropriate.
Dangerous gases			
D	Despite the vents in the walls of the generator shed, there exists the potential for dangerous gases to accumulate. These gases may be explosive or could lead to asphyxiation. Specifically they include, but are not limited to, HYDROGEN from the batteries, EXHAUST FUMES from the generators (CO ₂ , CO), and UNBURNT FUEL VAPOURS from fuel leaks (diesel and petrol).	When opening the door of the generator shed, allow plenty of air to circulate, and look for any fuel spills. NEVER introduce any ignition sources into the shed. Always start machinery outside, well away from the shed. Attend to any fuel or exhaust leaks immediately. Never enter the shed when a significant risk from dangerous gases exists.	Initiate fire evacuation plan (see above) where necessary. Administer First Aid and call for immediate medical assistance as appropriate.
Snakes			
B D	A number of small-eyed snakes live in both sheds and surrounds (corrugated iron). Although these snakes are not regarded as aggressive, they are venomous, and should therefore be considered as potentially dangerous.	People entering the sheds should exercise caution when moving tools, opening cupboards etc, as snakes may be residing within. When snakes are disturbed, give them plenty of room to move away. Do not corner them or attempt to catch or kill them.	In the unlikely event of a snake bite, administer First Aid and call for immediate medical assistance as detailed above. DO NOT PANIC. The bite from a small-eyed snake may not necessarily puncture the skin, or may be a dry bite.

UNAUTHORISED ACCESS

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Unauthorised Access to the Crane Jib and Drivers Cabin			
B	<p>While working on the tower section of the crane there may be some temptation to climb up to the crane jib or drivers cabin.</p> <p>These areas are extremely dangerous.</p>	<p>Do not attempt to climb up to the crane counterweight jib or drivers cabin unless you have appropriate permission to enter Permit Zone A and G. Do not enter these areas.</p> <p><u>Access is prohibited by key access under control of the Crane Operator and the Site Manager.</u></p>	<p>Administer First Aid and call for assistance if necessary.</p> <p>Maintain UHF radio contact with personnel at the research station.</p>

FIRE HAZARD

Permit Zones	SAFETY HAZARD	HAZARD AVOIDANCE	EMERGENCY RESPONSE
Fire			
A B C D E F G H	<p>Smoking in proximity to combustible material has the potential to cause fires which may cause damage to property, the environment and potentially endanger personnel.</p>	<p><u>Smoking is not permitted</u> in the gondola, the crane tower and driver's cabin, the forest, the generator shed, the crane base shed and the facility field station.</p> <p>Note: smoking is permitted in the outside area external to the field station.</p>	<p>In the event of a fire evacuate all personnel and call for immediate assistance.</p> <p>Maintain UHF radio contact with personnel at the research station.</p>