

STABILITY OF ALTERED FOREST ECOSYSTEMS (SAFE) PROJECT RISK ASSESSMENT

HAZARD	DANGER	RISK LEVEL	PEOPLE AT RISK	CONTROL MEASURES	FURTHER MEASURES
Vehicles	Serious injury or death through road traffic accidents	High	Scientists and RAs	<ul style="list-style-type: none"> ➤ Ensure that all drivers are approved by senior staff and aware of the heavy plantation vehicles in use on the roads in this area ➤ Drive at safe speeds and always within the vehicles' capability to keep control ➤ Do not drive when tired or after drinking alcohol ➤ Ensure that all vehicles are well-maintained and the tires are properly inflated – drivers to be responsible for checking the vehicle they are to drive ➤ Seat belts to be worn ➤ Training in driving off-road vehicles for inexperienced staff & scientists 	<ul style="list-style-type: none"> ➤ All vehicles to have first aid kits and fire extinguishers ➤ Driving by non-staff must be with the express, written permission of the senior scientist ➤ Roll-bars fitted to pick-ups ➤ Disciplinary action for dangerous or inappropriate driving ➤ First aid and fire extinguishers to be regularly checked ➤ Review emergency procedures regularly ➤ Any damage or vehicle problems should be reported
Tropical environment	<p>Visitors getting heatstroke, sunburn or dehydration.</p> <p>Malaria and Dengue fever</p>	Medium - high	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that all visitors are aware of the need to acclimatise slowly ➤ Encourage non-locals to consume a lot of water ➤ Keep covered from the sun or wear sunscreen ➤ If they begin to feel too hot or ill they must be told to rest and cooled down ➤ Ensure there is no stagnant water in and around camp 	<ul style="list-style-type: none"> ➤ Ensure that all visitors are aware of the need to acclimatise and prepare themselves prior to coming to SAFE Project base camp ➤ RA's trained in recognition and treatment of heat illness and injury ➤ Advise medication etc. for short term visitors
Insects, bees, wasps, scorpions, centipedes etc..	Death through Suffering extreme allergic reaction and anaphylactic shock	Medium - high	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that there is always a comprehensive medical kit on site ➤ Take care in the forest to watch out for centipedes, scorpions, bee and wasps nests ➤ Advise visitors to shake out their shoes in the morning 	<ul style="list-style-type: none"> ➤ Have visitors fill in a medical questionnaire before they come to SAFE Project base camp in order to identify those with known allergies ➤ RA's trained in recognition and treatment of anaphylaxis ➤ Be prepared to administer pain killers

Forest	Getting lost	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that all visitors and scientists are always accompanied by research assistants when they go to the forest ➤ The duty manager is to monitor who goes into the forest and ensure that they are back safely ➤ All field teams to carry a radio and GPS each ➤ All forest workers to carry simple compass and whistle 	<ul style="list-style-type: none"> ➤ Basic instruction for all scientists before being permitted to work in the forest including self-help lost procedure ➤ RA's skilled at search and rescue ➤ Review emergency procedures regularly
Rivers	Drowning / injury from being carried by strong currents	Medium - high	All staff and visitors	<ul style="list-style-type: none"> ➤ Consider carrying ropes in the field for roped river crossings 	<ul style="list-style-type: none"> ➤ Ensure that all teams working in the forest leave a route plan ➤ Ensure all staff know safe river crossing techniques and put in place a river crossing safety procedure ➤ Senior staff will have leave to declare the weather too dangerous to allow field work to continue and prevent any teams from going out to do so
Disease in water	Diarrhoea and vomiting	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that all drinking water is boiled / Puritabs ➤ Ensure that the toilet facilities are cleaned daily and disinfected ➤ All visitors to be informed of the drinking water risks 	<ul style="list-style-type: none"> ➤ Monitor all cases of fever. ➤ Evacuation procedures in place ➤ All cases of illness to be recorded ➤ Review emergency procedures regularly
Poisoning	Diarrhoea, vomiting and salmonella	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that food is prepared with clean hands and fruit and vegetables are washed in boiled water first (use alcohol-based hand gel) ➤ All meat and fish must be fresh or stored properly in a refrigerator or freezer ➤ Store rat poison safely 	<ul style="list-style-type: none"> ➤ Monitor all cases of fever. ➤ Evacuation procedures in place ➤ All cases of illness to be recorded ➤ Review emergency procedures regularly
Work tools – machetes (parangs), catapult etc.	Serious injury or death	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that all tools are in good and complete condition ➤ Ensure that only staff and visitors who are competent with tools are permitted to use them 	<ul style="list-style-type: none"> ➤ Record all incidents in incident book ➤ Ensure first aid kit is maintained ➤ Ensure each team carries lightweight hammock stretcher ➤ Staff are encouraged to report concerns regarding equipment to senior scientist

Mechanical & electrical equipment – generator, grass cutters etc.	Serious injury or death through improper use or poorly maintained equipment	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that proper protective equipment is used when necessary ➤ Equipment is only to be used by staff who are competent ➤ All equipment is well maintained 	<ul style="list-style-type: none"> ➤ Staff are encouraged to report concerns regarding equipment to senior scientist
Snakes	Staff or visitors getting bitten by venomous snake and suffering serious illness or dying	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Remind visitors that there are venomous snakes in the forests of Sabah ➤ Ensure all wear trousers and adequate footwear ➤ Ensure that there are always staff trained in the treatment of snakebite on site ➤ Discourage the handling of snakes ➤ Basic training of scientists to include the avoidance of snakes 	<ul style="list-style-type: none"> ➤ Have staff carry laminated snake bite treatment cards with them in the forest ➤ Formally established evacuation procedure in place including helicopter support
Laboratory work	Injury from chemical spills, cuts from sharp objects Fire	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Scientists advised to keep chemicals stored safely when not in use ➤ Protective clothing and equipment to be used ➤ Fume cupboard available for dangerous fumes ➤ Scientists advised to exercise extreme caution at all times when working in the lab 	<ul style="list-style-type: none"> ➤ Fire extinguishers and first aid kits provided ➤ Emergency exits kept clear at all times ➤ Emergency evacuation procedures in place ➤ Brief all new scientists and RAs ➤ Designated smoking zone
Trail clearing and forest maintenance work	Injury from chainsaw, Deadfall, Injury from environmental hazards	Medium	RA's	<ul style="list-style-type: none"> ➤ Only trained staff to use chainsaw ➤ Protective equipment and clothing to be worn ➤ All environmental measures to be respected as directed by this document 	<ul style="list-style-type: none"> ➤ Staff trained in first aid ➤ First aid kit to be carried at all times in the forest ➤ Maintain protective equipment
Fire	Serious injury or death	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Store kerosene, gas and other fuel safely and in designated area 	<ul style="list-style-type: none"> ➤ Fire extinguishers and first aid kits provided ➤ Emergency exits kept clear at all times ➤ Emergency evacuation procedures in place ➤ Brief all new scientists and RAs

					➤ Designated smoking zone
Mosquitos	Malaria & dengue fever	Low/ Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Eliminate breeding areas by removing all exposed standing water ➤ Encourage staff and visitors to keep covered at dawn and dusk and to wear repellent ➤ Advise visitors to seek malaria prophylaxis advice from their home countries medical authorities prior to departing 	<ul style="list-style-type: none"> ➤ Monitor all cases of fever. ➤ Evacuation procedures in place ➤ All cases of illness to be recorded
Working at height	Injury or death through falling	Low - medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that everyone who climbs is trained to do so and uses appropriate safety equipment – helmets, harnesses etc.. ➤ Staff will not allow untrained or ill-equipped people to climb 	<ul style="list-style-type: none"> ➤ Full medical kit including spinal board & neck brace on site ➤ Senior scientist to be informed of intention to climb
Terrain	Injury due to falling over or deadfall	High	Scientists and RA's	<ul style="list-style-type: none"> ➤ Take care with visitors who are new to the forest ➤ Walk slowly ➤ Wear appropriate footwear, not sandals. ➤ Scientists required to write destination and estimated return time on the board at SAFE Project base camp ➤ Scientists advised to carry compass, whistle, first aid kit and torch ➤ Staff and scientists advised to not enter the forest during heavy rain 	<ul style="list-style-type: none"> ➤ Medically trained and equipped search teams on-location to enter the forest at short notice ➤ Scientists advised not to work alone ➤ Review emergency procedures regularly ➤ Provide roped access on steep slopes
Mammals i.e. elephants, bears, wild boar etc.	Injury through being attacked	Low	Scientists and RA's	<ul style="list-style-type: none"> ➤ Ensure that all staff and visitors are aware that they should always move away from mammals slowly and quietly ➤ Be especially careful of mothers with young ➤ Protecting camp from elephants. 	<ul style="list-style-type: none"> ➤ All scientists to be briefed before starting work ➤ Review emergency procedures regularly
Bridge failure / road degradation	Getting cut-off	Medium	Scientists and RA's	<ul style="list-style-type: none"> ➤ During the wet season, keep one vehicle at Enforcement Camp at all times 	<ul style="list-style-type: none"> ➤ Ensure adequate supplies in case of isolation ➤ GIS of fresh water supply locations