

TREE ADVENTURES RISK REGISTER - Hazard Identification And Risk Management

<p>CONTROL MEASURES KEY:</p> <ul style="list-style-type: none"> - Eliminate risk (ELIM.) - Minimise risk via: Substitution (a.) - via: Isolation (b.) - via: Engineering control (c.) - via: Administration control (d.) - via: Use of PPE (e.) - Monitoring and reviewing (M&R) 	<p>INDUSTRY CERTIFICATION:</p> <p>Tree Adventures is an approved Adventure Activity Operator (AAO 324) and registered with MBIE's WorkSafe. This means our Safety Management System is independently audited by Qualworx, under their OutdoorsMark certification scheme. A copy of our current certificate is available upon request.</p> <p>CLIENT DISCLOSURE STATEMENT:</p> <p>This version of Tree Adventures Risk Register is intended for clients who require this as part of their activity preparation. This version does not include the full risk assessment relating to likelihood, consequence, risk level and residual risk level in the interest of providing a concise version which can be easily revised. All of the identified hazards and associated risks listed in this table have a resulting residual risk level of 'low/acceptable' due to the ongoing effectiveness of the implemented control measures. The full version of Tree Adventures Risk Register is available upon request.</p>
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ENVIRONMENTAL RISKS		
IDENTIFIED RISK(S)	IDENTIFIED HAZARD(S)	IMPLEMENTED CONTROL MEASURES
Drowning	Standing Water	<ul style="list-style-type: none"> - Areas prone to water build up fenced off (c.) - Participants/visitors under 16 required to have adult supervision (d.)
Fire	Barbecue, Fuels/oils	<ul style="list-style-type: none"> - Use of barbecues restricted during very-high/extreme fire danger (ELIM.) - Fuels/Oils stored in off limits maintenance area, kept in suitable containers, out of sunlight (b.) - Barbecues maintained in good working order (c.) - LPG bottles kept in good condition (c.) - Fire extinguishers on site – serviced annually (c.) - Customer barbecues required to be self contained gas units, no charcoal (d.)
	Forest Fire	<ul style="list-style-type: none"> - Forest closed during periods of extreme fire danger (ELIM.) - Forestry management assess fire danger, and alert operators when high levels are reached (d.) - Use of barbecues, power tools, generator restricted during periods of high - very high fire danger (ELIM.) - No smoking/vaping in forest – signs displayed in car park, reception and picnic area and enforced by Park Staff (d.) - Fire extinguishers on site – serviced annually (c.) - Forest fire response plan in place (d.) - Evacuation procedure in place (d.)

		<ul style="list-style-type: none"> - Participants/supervisors advised of evacuation procedure during safety briefings (d.) - Exit pathways and assembly point clearly marked with signage (d.) - Staff required to undertake periodic emergency scenario practice (d.)
Natural Disaster	Earthquake/Tsunami	<ul style="list-style-type: none"> - Forest close if natural disaster predicted (ELIM.) - Evacuation procedure in place (d.) - Participants/supervisors advised of evacuation procedure during safety briefings (d.) - Exit pathways and assembly point clearly marked with signage (d.) - Staff required to undertake periodic emergency scenario practice (d.)
Insect bites and stings (bees, wasps, spiders, etc)	Forest Environment	<ul style="list-style-type: none"> - Daily course check removes spider webs and allows Park Staff to check for nests (c.) - Medical conditions and allergies identified during customer check-in (d.) - First aid supplies held on site (c.) - First aid trained Park Staff available (d.)
Lightning strike (electrocution)	Thunderstorm	<ul style="list-style-type: none"> - Weather forecasts closely monitored by Park Manager. Park closed during periods of severe weather or when weather warning from MetService in place (ELIM.) - Weather conditions on site monitored closely. Activities suspended/park closed if conditions become unsafe (d.) - Severe weather response plan in place. Activities suspended for storms in close proximity to the park (d.) - Evacuation plan in place if conditions deteriorate rapidly, without warning (d.) - Staff required to undertake periodic emergency scenario practice (d.)
Minor injuries	Forest environment, tripping/stumbling	<ul style="list-style-type: none"> - Low branches posing risk removed (ELIM.) - Pathways clearly marked with mulch and regularly cleared of debris (c.) - Course starts lined with astroturf and maintained to remain level (c.) - Course starts, zipline corridors and landing areas cleared of hazardous vegetation (c.)
		<ul style="list-style-type: none"> - All activities inspected prior to opening and course/activity closed if significant hazards detected (ELIM.)

Struck by falling tree debris or trees	Forest environment – trees with excessive dead wood, loose limbs, and leaning trees	<ul style="list-style-type: none"> - Ongoing assessment and pruning of trees supporting activities/overhanging courses and main pathways (c.) - Annual tree health inspection performed by qualified arborist (d.) - Trees/large limbs identified as potentially hazardous removed by arborist (c.)
	High Winds	<ul style="list-style-type: none"> - Weather forecasts closely monitored by Park Manager. Park closed during periods of severe weather or when weather warning from MetService in place (ELIM.) - Weather conditions on site monitored closely. Park closed if conditions become unsafe (d.) - Severe weather response plan in place. Activities suspended for storms in close proximity to the park (d.) - Evacuation plan in place if conditions deteriorate rapidly, without warning (d.)

EQUIPMENT - ACTIVITY - FACILITY RELATED RISKS		
IDENTIFIED RISK(S)	IDENTIFIED HAZARD(S)	EXISTING CONTROL MEASURES
Biological infection	Septic waste	<ul style="list-style-type: none"> - Portable toilets provided on site (c.) - Toilets are cleaned regularly by Park Staff (c.) - Toilets are serviced and emptied twice each week (c.) - Hand washing facilities and sanitiser available on site (c.)
	Soiled/contaminated equipment	<ul style="list-style-type: none"> - Safety equipment inspected by competent Park Staff after each use (d.) - Soiled equipment is placed offline, and washed in accordance with manufacturer guidelines (d.) - Gloves are available for staff to handle soiled equipment (e.) - Park Staff adhere to hygiene standards specific to the handling of soiled equipment (d.) - Helmets sprayed with isopropyl alcohol after use and periodically cleaned (d.)
Poisoning	Contact with/consumption of harmful chemicals	<ul style="list-style-type: none"> - Majority of harmful chemicals kept in maintenance container behind locked gates (b.) - Remaining less harmful/regular use chemicals stored on high shelf in staff container, out of sight/reach of customers (b.) - Warning/NO ENTRY signs on all gates/entry points where chemicals are stored (d.) - Warning labels on all potentially harmful chemicals (d.)
Collision with participant/spectator at		<ul style="list-style-type: none"> - Element installed & monitored by experienced park builder (c.)

Collision with participant/spectator at ground level (while ziplining)	Inadequate fence placement	- Fence relocated when concerns/near-misses arise regarding suitable placement (d.)
Collision with structure or tree	Inadequate participant deceleration	- Element installed & monitored by experienced park builder (c.) - Landing area adequate for safe landing & regularly maintained (c.) - Disconnection hook positioned adequate distance from stopper (c.) - Park Staff patrol the park (indirect supervision) (d.) - Records of near misses and low severity incidents kept for continued safety development (d.) - Zipline Landing speed reviewed during operational inspection (d.) - Independent course inspection carried out annually (d.)
	Inadequate impact protection	- Element installed & monitored by experienced park builder (c.) - Daily course inspection undertaken prior to participant access (d.) - Impact protection reviewed during operational inspection (d.)
	Inadequate zipline pathway selection	- Element installed & monitored by experienced park builder (c.) - Independent course inspection carried out annually (d.) - Pathway relocated when concerns/near-misses arise regarding safe landing (d.)
	Tree branch/tree blocking zipline pathway	- Daily course inspection undertaken prior to participant access (d.) - Post storm inspection undertaken from ground level prior to Park Staff access following periods of severe weather (d.) - Park Staff patrol the park (indirect supervision) (d.)
	Safety equipment failure	- All participants over 100kg weighed on digital scales during check-in and maximum participant weight of 130kg strictly enforced (ELIM.) - Any equipment that fails inspection is either placed in the designated "off-line" area until it is repaired or retired from use permanently (b.) - Equipment used is specifically designed for use in adventure parks and fit for purpose (c.) - Equipment used in accordance with manufacturer guidelines and limitations (d.) - Clic-it "Smart" belay system used by participants to prevent accidental and intentional disconnection from safety system (c.) - Safety equipment only fitted by competent Park Staff, or fitting closely monitored during new-staff training period (d.) - Safety equipment inspected by competent Park Staff after each use (d.)

Falling from height		<ul style="list-style-type: none"> - Periodic PPE inspections carried out by competent Park Staff. Inspections recorded (d.) - Full-body harnesses provided for larger participants to reduce risk of inversion/ill-fitting harness (e.) - Records of near misses kept for continued safety development (d.)
	Structural defect/system failure	<ul style="list-style-type: none"> - Daily course inspection undertaken prior to participant access, element/course closed if significant hazards detected (ELIM.) - 'Daily', 'operational' and 'periodic' inspections undertaken to ensure ongoing integrity of hardware, activities and supporting structures (d.) - Routine repairs and maintenance undertaken by experienced park builders (c.) - Independent course inspection carried out annually (d.) - Access to activities restricted outside of opening hours – ladders raised, closed signs used, and forest gates locked over night to reduce risk of unauthorised access and potential vandalism (b.)
Strangulation	Unsuitable safety equipment / safety system compatibility	<ul style="list-style-type: none"> - Clic-it 'Smart' belay system used by participants includes asymmetrical lanyards which significantly reduce likelihood of potential strangulation (c.) - Park structures and activities installed & monitored by experienced park builder (c.) - Lifeline cable ergonomics suitable for participant & Park Staff lanyard lengths (c.)
Minor injuries	Course structures and activities	<ul style="list-style-type: none"> - Helmets worn while participating in activities (e.) - Cultural/religious headwear can be worn in place of a helmet if helmet is unable to be fitted appropriately by Park Manager (e.) - Suitable footwear required to cover and protect feet (e.) - Specific activities provided with extra grip surface (c.) - Platforms sprayed/scrubbed periodically to remove algae build up and reduce likelihood of slipping (c.) - Routine repairs and maintenance undertaken by experienced park builders (c.) - Specific activities/structures padded to protect from impact (c.) - Platforms sprayed/scrubbed periodically to remove algae build up and reduce likelihood of slipping (c.) - Park Staff patrol the park (indirect supervision) (d.) - Records of near miss and low severity incidents kept for continued safety development (d.)

Struck by an activity counterweight	Counterweights reaching ground level	<ul style="list-style-type: none"> - Where possible counterweights are kept above ground level using pulleys (c.) - Counter weights that reach ground level are positioned away from marked paths (b.) - Park Staff patrol the park (indirect supervision) (d.)
Suspension trauma	Activity retrieval cord stuck/breaks	<ul style="list-style-type: none"> - Daily course inspection undertaken prior to participant access (d.) - Cord/rope condition checked during all types of course inspections and replaced as needed (d.) - Park Staff patrol the park, concerns reported and addressed (d.) - Competent rescue staff available to assist and respond quickly at all times (d.) - Transfer ropes installed to allow Park Staff to cross retrievable activities (c.)

PARTICIPANT - VISITOR - STAFF RELATED RISKS		
IDENTIFIED RISK(S)	IDENTIFIED HAZARD(S)	EXISTING CONTROL MEASURES
Collision with participant/spectator at ground level (while ziplining)	Failure to wait until cable is free before commencing zipline	<ul style="list-style-type: none"> - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Park Staff patrol the park (indirect supervision) (d.) - Participants warned/removed from activities when safety rules or staff instructions are not followed or respected (d.) - Zipline safety signage in place at the start of each zipline (d.)
	Failure to exit landing area	<ul style="list-style-type: none"> - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Park Staff patrol the park (indirect supervision) (d.)
	Spectator/participant unaware of danger	<ul style="list-style-type: none"> - Element installed and monitored by experienced park builder (c.) - Zipline corridor and landing area fenced off (b.) - Park Staff patrol the park (indirect supervision) (d.) - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.)
Collision with structure or tree	Inadequate training/understanding of	<ul style="list-style-type: none"> - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.)

Collision with structure or tree	zipline use	<ul style="list-style-type: none"> - Park Staff patrol the park (indirect supervision) (d.) - Participants warned/removed from activities when safety rules or staff instructions are not followed or respected (d.) - Zipline safety signage in place at the start of each zipline (d.)
Contact with hazardous materials	Maintenance storage area	<ul style="list-style-type: none"> - All power tools and hazardous materials stored in maintenance area (b.) - Maintenance area fenced off with warning signs at entry points (b.) - Gates into maintenance area kept closed when park is open (b.)
	Incorrect use of safety equipment	<ul style="list-style-type: none"> - "Conditions Of Park Entry" signage displayed at reception (d.) - Risk Disclosure and supervision responsibilities covered during check-in (d.) - "Park Safety Rules" signage displayed at practise area / park entrance (d.) - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Clic-it "Smart" belay system used by participants to prevent accidental and intentional disconnection from safety system (c.) - 'Climbing Safety Rules' signage in place at start of each course outlining correct procedure and rules (d.) - Park Staff patrol the park (indirect supervision) (d.) - Activity signage in place to remind and guide participants on safe use of retrievable and unique activities (d.) - Records of near misses kept for continued safety development (d.)
	Ineffective supervision	<ul style="list-style-type: none"> - Staffing levels appropriate for expected visitors numbers / group type (d.) - Park Manager restricts availability/capacity when staffing levels are low (d.) - Risk Disclosure and supervision responsibilities covered during check-in (d.) - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Supervision Requirements signage placed throughout the park to remind supervisors of their responsibilities (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.)

Falling from height		<ul style="list-style-type: none"> - Patrolling staff able to detect unsupervised children and remove them from activities until adequate supervision is provided (d.) - Park Staff understand how to monitor risk levels (dynamic risks) and when to request assistance to ensure adequate supervision levels are maintained (d.) - Park Manager monitors supervision levels throughout the day, and increases levels when required (d.)
	Unauthorised access (non-participants)	<ul style="list-style-type: none"> - Participants are issued with coloured wristbands to indicate approved park entry (d.) - 'Climbing Safety Rules' signage in place at start of each course outlining correct procedure and rules (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Patrolling staff can identify non-participants attempting to access activities and intervene/issue appropriate reminder/warning (d.) - Access to activities is restricted outside of operating hours. Ladders raised or closed signs in place (b.) - Road access to the forest restricted outside operating hours by locked gates (b.)
	Vandalism	<ul style="list-style-type: none"> - Daily course inspection undertaken prior to participant access (d.) - Access to activities is restricted outside of operating hours. Ladders raised or closed signs in place (b.) - Road access to the forest restricted outside operating hours by locked gates (b.)
	Staff error	<ul style="list-style-type: none"> - All Park Staff receive thorough in-house training and regular competency assessments (d.) - Trainee Park Staff supervised at all times when performing safety critical tasks during training (c.) - Park Staff can only perform tasks (independently) for which they have been assessed as competent and signed off on (d.) - Drug and alcohol and wellbeing policy in place to ensure Park Staff are fit for work and in a suitable state of mind to perform safety critical tasks (d.)
Strangulation	Entrapment	<ul style="list-style-type: none"> - Participants instructed not to place head between lanyards during briefing (d.) - Patrolling Park Staff provide assistance and ensure participants keep their heads well clear of lanyards (d.)
		<ul style="list-style-type: none"> - Risk Disclosure and supervision responsibilities covered during check-in (d.)

Suspension trauma	Ineffective supervision	<ul style="list-style-type: none"> - Participants and supervisors required to attend a thorough safety briefing (direct supervision) (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Park Staff trained on supervision objectives and importance of proactive monitoring of activities to detect stuck participants/prolonged suspension (d.) - Park Staff patrol the park (indirect supervision) (d.) - Rescue staff trained to respond in a timely manner to participants in difficulty (d.)
	Inadequate staff response	<ul style="list-style-type: none"> - Minimum of two competent rescue staff onsite when park operational (d.) - Rescue staff receive comprehensive inhouse training and competency is reassessed periodically (d.) - Rescue staff trained to respond in a timely manner to participants in difficulty (d.) - Staff required to undertake periodic emergency scenario practice (d.)
Hypothermia	Excessive exposure to rain and low temperatures/Unsuitably dressed for conditions	<ul style="list-style-type: none"> - Weather forecasts closely monitored. Park closed during periods of severe weather or when weather warning from MetService in place (ELIM.) - Weather conditions on site monitored closely. Park closed if conditions become unsafe (d.) - Participants advised to dress appropriately for forecast weather conditions (e.) - First-Aid trained staff onsite at all times (d.) - Staff provided with warm/thermal layers as part of uniform, and have waterproof jackets available (e.) - Kitchen available onsite to boil water and make hot drinks (c.)
Minor injuries	Loss of balance on activities	<ul style="list-style-type: none"> - Safety systems prevent high factor falls (c.) - Participants are required to wear helmets on activities (e.) - Platforms where participants arrive at speed have ramps for improved landing and impact protection (c.) - Patrolling Park Staff can provide advice and assistance to participants having difficulty on activities (d.)
	Finger/skin caught in pulley	<ul style="list-style-type: none"> - Correct use of pulley demonstrated during safety briefing (d.) - Patrolling Park Staff monitor participants for correct use of equipment (d.)

	Finger/skin caught in pulley	<ul style="list-style-type: none"> - Carabiners positioned in front of pulley, reducing likelihood of entrapment (d.) - Zipline safety signage in place at the start of each zipline (d.)
	Hair caught in pulley	<ul style="list-style-type: none"> - Participants with long hair required to tie hair back during equipment fitting (hair ties available on site) (c.) - Correct use of pulley demonstrated during safety briefing (d.) - Carabiners positioned in front of pulley, reducing likelihood of entrapment (d.)
Participant disturbed by another participant/visitor	Disrespectful/negligent behaviour	<ul style="list-style-type: none"> - “Conditions Of Park Entry” signage displayed at reception (d.) - Risk Disclosure and supervision responsibilities covered during check-in (d.) - Participants under 16 years old are required to be actively supervised by a responsible adult (d.) - Participants and supervisors advised to notify Park Staff when concerns arise (d.) - Patrolling Park Staff monitor participants/visitors for unsuitable behaviour (d.) - Park Staff restrict access and remove participants from activities where necessary (b.) - Emergency response plan in place (d.)
Participant or supervisor has impaired judgement	Intoxication/impairment (alcohol or illicit/prescription drugs)	<ul style="list-style-type: none"> - Intoxicated/impaired persons denied participation in activities and may be asked to leave the park (ELIM.) - “Conditions Of Park Entry” signage displayed at reception (d.) - Risk Disclosure and supervision responsibilities covered during check-in (d.) - Consumption of alcohol is prohibited before and during participation in activities (d.) - Participants come face to face with Park Staff during check-in, equipment fitting and safety training allowing Park Staff to identify potential intoxication/impairment and refuse access to activities when required (d.) - Patrolling Park Staff monitor participants/supervisors for behaviour that might suggest intoxication/impairment (d.)
Rope burn	Activity and assistance ropes	<ul style="list-style-type: none"> - Participants and supervisors instructed on correct belay technique to assist with vertical climbs (d.) - Knots and loops placed in activity assistance ropes to provide appropriate hand holds (c.)

Struck by falling object	Participants on courses with unsecured items	<ul style="list-style-type: none"> - “Conditions Of Park Entry” signage displayed at reception (d.) - “Selfie sticks” are required to have a wrist strap to prevent dropping (c.) - Participants advised to place all loose items in secure pocket or return them to vehicles during check-in (ELIM.) - Storage service provided for participant car keys (ELIM.)
	Staff performing maintenance while park operational	<ul style="list-style-type: none"> - Participants/supervisors/visitors advised when maintenance is in progress (d.) - “No drop” policy in place for staff when performing maintenance, all tools attach to harnesses/cables via lanyard to prevent accidental dropping (c.) - Warning signs put in place or areas roped off during maintenance (b.)
Struck by moving vehicle	On site car park	<ul style="list-style-type: none"> - Warning sign at entrance advising 5km/ph speed limit and to watch out for children (d.) - Fences around car park perimeter (c.) - All facilities in locations that do not require crossing of car park to access (b.)