

TERN Ecological Monitoring

Methods Training 2026

Session 4. 11:00 am – 12:30 pm



Agenda Session 4 – Field Operations

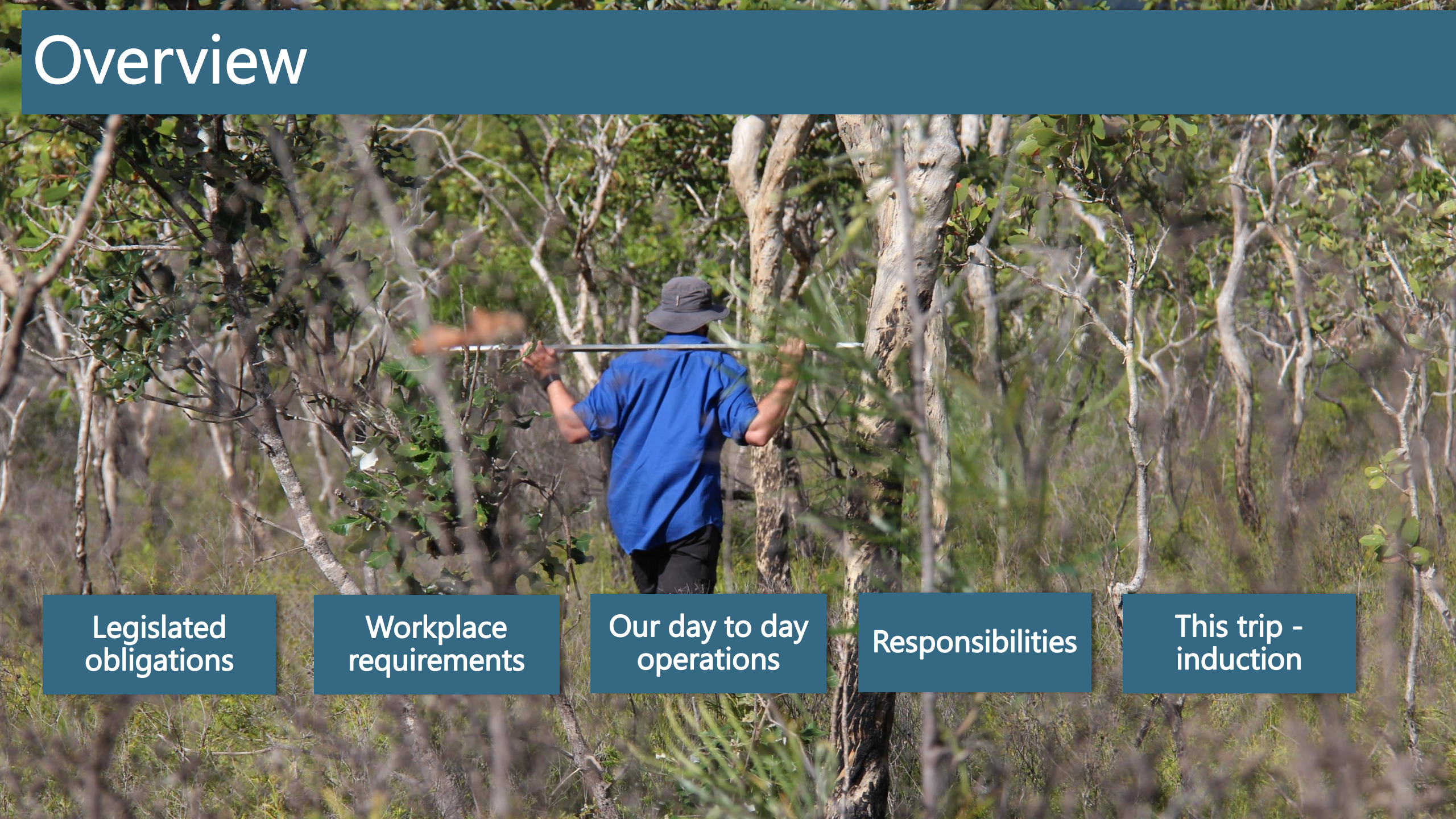
- 01 Safety
- 02 Permitting and land access





Health and Safety Obligations and Considerations

Overview

A person wearing a blue short-sleeved shirt, dark pants, and a wide-brimmed hat is seen from behind, using a long-handled tool (possibly a brush cutter or axe) to clear brush in a wooded area. The person is standing in a clearing surrounded by trees and dense vegetation. The background is filled with green foliage and tree trunks.

Legislated obligations

Workplace requirements

Our day to day operations

Responsibilities

This trip - induction

Legislated obligations



The Work Health and Safety Act 2012

Workplace requirements

A low-angle photograph of a person in a khaki uniform climbing a tree. The person is positioned in the center-right of the frame, reaching up towards the branches. The tree has many thin, light-colored branches and green leaves. The background is a clear blue sky. The overall scene suggests a workplace activity, possibly related to forestry or maintenance.

Appropriate training
and supervision

Hazard management
approach to all our
activities

Appropriate control
measures and
resources

Internal audit
program monitoring
performance

Responsibilities



Protect own health
and safety, and
avoid adversely
affecting others

Report
incidents and
hazards

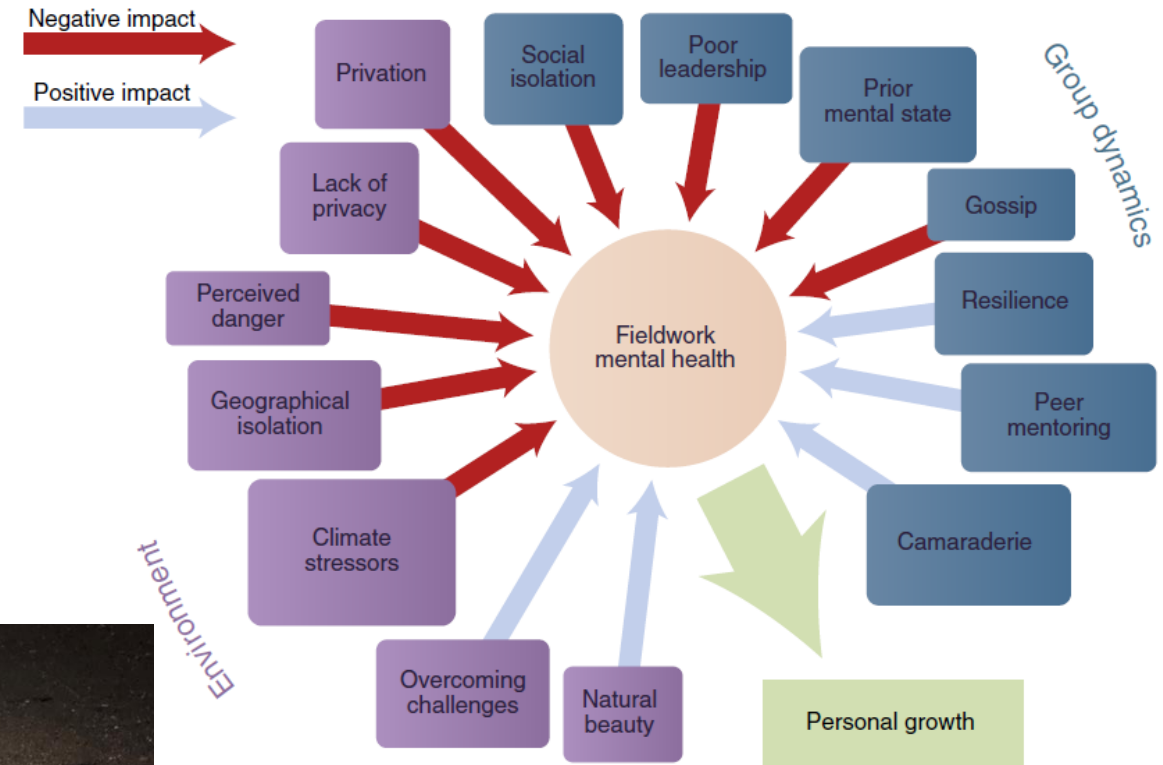
Follow reasonable
instruction, SOPs
and control
measures

Use
equipment
provided

Identify hazards,
assess risks and
implement risk
control measures

Wellbeing, Health and Safety

- + Hazard identification and risk management
- + PPE and safety equipment – first aid kits, vehicle recovery gear
- + Safe Operating Procedures and communications protocols
- + Personal safety and wellbeing
 - + Fatigue management
 - + Mental health in the field



from John, C.M and S.B. Kahn. Mental health in the field. Nature Geosci 11, 618–620 (2018)



Training



Four-wheel drive

Apply First Aid

Remote Area First Aid

Experience and
supervision

Our identified biggest risks



Driving

Remote locations with
limited assistance

Manual handling

Fatigue

Our identified biggest risks

HAZARD IDENTIFICATION (or action identified)

If you are completing this form electronically, double click on the check box and select "checked" under the default value

- | | |
|---|---|
| <ul style="list-style-type: none">☐ Amenities inadequate, insufficient☒ Animals that might pose a hazard☐ Communication issues☐ Disabled access/facilities required☐ Electrical hazards (e.g. portable electrical equipment)☐ Emergency evacuation foreseeable (e.g. bushfire, flood, medical)☐ Engulfment (e.g. unstable landforms, excavations and trenches)☒ Environment – dirty, muddy, dusty, wet, slippery, hot, sunny☐ Environment – other (specify) _____☐ Fall from a height (e.g. cliffs, pits, ladders, trees)☐ Fire hazard/naked flame (e.g. open fires, fire bans)☐ Hazardous chemicals (e.g. fuel and other flammables, cryogenics)☐ Hazardous Plant or Equipment to be used off-campus (e.g. chain saws, drill rigs, neutron probes)☒ Hazardous Manual Tasks – lifting, pushing, or use of manual tools (e.g. manual rock breaking, manual excavation)☐ Hit by a vehicle (e.g. moving vehicles in proximity to pedestrians)☐ Lighting (e.g. due to time of the day/night/location)☐ LPG cylinders and heaters are required☐ Medical emergency – first aid☐ Noise (e.g. > 85dBA, or 140dB Peak)☐ Powered equipment☒ Remote or isolated location☒ Slip, trip hazards or uneven surfaces | <ul style="list-style-type: none">☐ Scaffolding, elevated work platform, towers (i.e. potential for collapse)☐ Scientific experiments☐ Temperature extremes (cold)☐ Temperature extremes (hot)☐ Temporary structures to be installed☐ Transportation – vehicle appropriateness and safety☒ Transportation – fatigue☒ Transportation – heavy equipment (e.g. stowage and loading)☒ Transportation – contingencies (e.g. vehicle breakdown)☐ Violence/aggression/personal threat (e.g. dealing with difficult people or challenging circumstances)☐ Workplace/surface is unstable or uneven☒ Weather conditions (e.g. windy, lightning, hot)☐ Other (specify) _____☐ Other (specify) _____ <p>Other compliance issues for consideration:</p> <ul style="list-style-type: none">☐ Minors (i.e. children under the age of 18) are attending☐ Permits, licenses and/or permission may be required, (including but not limited to)<ul style="list-style-type: none">☐ Access to property or government lands☐ Trapping, catching or taking plants or animals☐ Liquor or other licence and/or registration |
|---|---|

Our identified biggest risks

Likelihood Table

CATEGORY	DESCRIPTION
Almost certain	There is an expectation that an event/incident will occur.
Likely	There is an expectation that an event/incident could occur but not certain to occur.
Slight	This expectation lies somewhere in the midpoint between "could" and "improbable".
Unlikely	There is an expectation that an event/incident is doubtful or improbable to occur.
Rare	There is no expectation that the event/incident will occur.

Consequences Table

CATEGORY	DESCRIPTION
Severe	Injury resulting in death, permanent incapacity.
Major	Injury requiring extensive medical treatment, hospitalisation, or activities could result in a Notifiable occurrence.
Moderate	Injury requires formal medical treatment (hospital outpatient/doctors visit etc), activities could result in an Improvement Notice.
Minor	Injury requires first aid.
Negligible	Injury requires minor first aid (e.g. bandaid), or result in short term discomfort (e.g. bruise, headache, muscular aches etc), no medical treatment.

Risk matrix

Likelihood	Consequences				
	Negligible	Minor	Moderate	Major	Severe
Almost Certain	Medium	High	Very High	Very High	Very High
Likely	Medium	Medium	High	Very High	Very High
Slight	Low	Medium	High	High	Very High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

Our identified biggest risks

Stage 2 and Stage 3 – Risk Assessment and Control

Record the potential hazards/issues identified in Hazard Identification Process on Appendix A1 and When and where the hazard is present (i.e. when is the worker exposed?)	Inherent risk assessment rating Before controls are implemented (Refer to the risk assessment Tables – Appendix A3) L, M, H, VH	List the control measures implemented (i.e. in place)	Residual risk rating After controls in place The highest rating is to be transferred to the top of page A1.
Environment – dirty, muddy, dusty, wet, slippery, hot, sunny	L	- Control measures are to be in accordance with the Hierarchy of Control. Refer to Appendix C3 for examples. - Choose the control(s) that most effectively eliminate the hazard or minimises the risk. - Record the control measures in place under the relevant control measure (e.g. list in order under the following headings - substitution, isolation, engineering, administrative, Personal Protective Equipment). - Ensure that control measures do not introduce new hazards.	Low
Remote or isolated location	L	- Calperum Station is located 20 km from Renmark - Staff to carry mobile phone at all times, when visiting areas outside of dependable phone range, staff to carry SPOT device and have satellite phone within range (in the vehicle, or in carried if working more than 300 m from the vehicle) - Check-in with Activity Coordinator when arriving at site, when leaving site, and every 3 hours if applicable (mobile phone, or SPOT device if limited mobile reception).	Low
Animals that might pose a hazard	L	All team members wear sturdy work boots, long pants or gaiters. Be aware of where you are putting your feet, especially if walking amongst leaf litter and fallen branches. Only trained, experienced staff to remove venomous snakes from traps. No handling of venomous snakes, even by trained staff. All personnel to take care handling animals, removing animals from traps, using bags where appropriate, covering the animals head, and holding it securely to avoid movement to enable biting/scatching.	Low

Standard operating procedures - examples



Communications



Driving at night



Extreme weather

Day to day operations

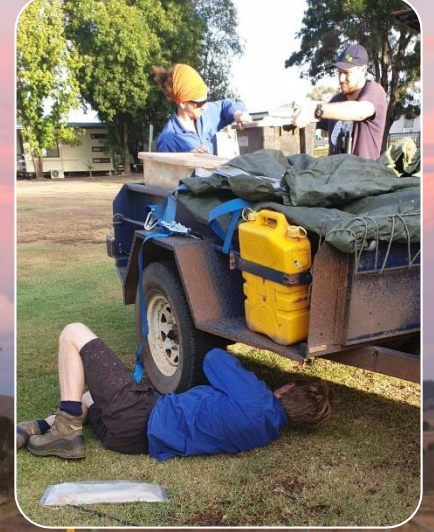


Planning all
activities

Manual handling
and using fit for
purpose equipment



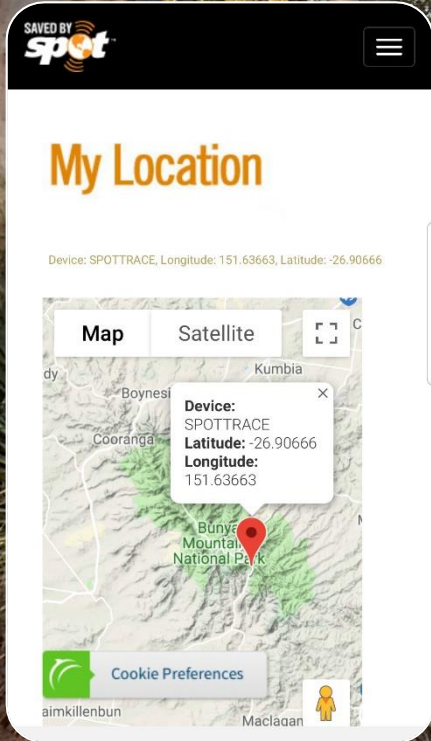
Day to day operations



Driving to the
conditions



Communications



GPS movement
trackers on vehicle



Personal GPS trackers
and an activation
procedure



Vehicle radios and
satellite phone



Regular contact and
updates of planned
activities

Personnel Protective Equipment



First aid



All field staff – Emrys, Luke,
Nikki, Michael, Christina =
First Aid Officers



This trip – what to do



Protect your
safety, and the
safety of others

Report incidents
and hazards to
TERN personnel

Follow reasonable
instruction

Use equipment
provided

Identify hazards,
assess risks,
implement control
measures

This trip - emergency procedure



Assess situation,
take action to
contain the
emergency (if safe)

Notify personnel in
immediate proximity

Notify TERN staff

Assist – including
incident review and
reporting

Summary - Induction checklist

OFF-CAMPUS SAFETY MANAGEMENT : INDUCTION CHECKLIST

Activity	TERN Field Method Training	Date	29 April 2019
----------	----------------------------	------	---------------

This checklist provides a guide to the safety induction items that may be useful for workers on off-campus activities.

University Off-Campus Activity Supervisor or Co-ordinator has:

- ☒ provided, where appropriate, a tour (or point out the key features) of the site/area which includes :
 - ☒ location of facilities and amenities
 - ☒ restricted areas or equipment (unless authorised by the Off-Campus Activity Co-ordinator/Supervisor)
- ☒ explained (or reminded) participants of any key hazards that those attending the off-campus activity need to be mindful/aware of
- ☒ explained any control measures and requirements as per the Risk Assessment (where applicable)
- ☒ explained to participants how to report a safety issue or incident/Injury
- ☒ provided the names of First Aid personnel and information on specific first aid procedures (if applicable)
- ☒ explained emergency, evacuation and/or contingency procedures, including:
 - ☒ method of raising an alarm, evacuation procedures and location of assembly area/s
 - ☒ location of first aid and emergency equipment (including, extinguishers, communications)
 - ☒ emergency contact numbers
 - ☒ roles and responsibilities
 - ☒ arrangements for person(s) with a disability (if applicable)
- ☒ provided sufficient information, instruction and training to safely complete any activities required during off-campus activities including Safe Operating Procedures where identified by a Risk Assessment.
- ☒ explained requirements for vehicles on site (if not addressed in the Risk Assessment above)
- ☒ explained any security arrangements
- ☒ explained any local fire restrictions and requirements (if applicable)
- ☒ confirmed that phone contact details are current and key personnel can be contacted if required during the activity

Other Compliance issues that may apply:

- ☒ Explained any license/permit compliance requirements (if applicable)
- ☒ Explained requirements for the care/protection of children under 18 years (if applicable)





We at TERN acknowledge the Traditional Custodians throughout Australia, New Zealand and all nations. We honour their profound connections to land, water, biodiversity and culture and pay our respects to their Elders past, present and emerging.

TERN is enabled by NCRIS.

Our work is a result of collaborative partnerships with many universities and research institutions.

To find out more please go to **tern.org.au**.

Operating a national ecosystem monitoring program

- See session 2 from 2019 training for content guidance
 - Field equipment and logistics – picking up from before morning tea
 - How plots are selected
- Current focus on revisits
- Sally's slides from:
 - Training in remote operations
 - Health and safety
 - Permitting

- Organisation based
 - Consider these things, but it's up to your organization/ legal entity (e.g. AU)
 - Interpret against your own obligations
 - Guidelines only
 - Safety is more important than data
- Risk assessments and mitigation

- Intro to emsa at end of session 2