



The University of Melbourne
School of Botany

Quantitative and Applied Ecology
Group

Safety Training Document

Induction, Training and Authorization Procedures for Safety and the Environment

for all staff and students using the
Quantitative and Applied Ecology Group Equipment and Facilities

Please ensure the workplace is safe for you and your colleagues

This document is to be read in conjunction with the School of BioSciences Environment, Health and Safety Induction document.

The University's environment and safety management system is a pro-active approach to managing the issues of personnel and environmental health and safety. It is about preventative action and the setting of standards that continually improve the environmental and safety performance of the University of Melbourne. The Management System provides a formal framework to identify and manage all of its environmental and safety risks.

The University holds a Self Insurance license from WorkSafe Victoria for workers' compensation. As part of its license, it must conform to a nominated audit standard. WorkSafe is currently adopting a new standard, the National Self Insurer OHS Audit Tool (NAT).

Safety Information

This document outlines procedures for safety and the environment relevant to the **Quantitative and Applied Ecology Group**. Further information on safety and environmental issues can be found in the School of BioSciences Environment Health and Safety induction document and the University's Safety website <http://www.safety.unimelb.edu.au/>

Posters with **emergency and first aid personnel** and phone numbers are located on the walls in our work area (*ie in the kitchen, outside Mick McCarthy's office and in Room 106*).

Heini Kujala and Reid Tingley are the **Floor wardens** on the ground floor of **BioSciences 2**.

Vanessa Mollard and Dean Goodman are the **Floor Wardens** on the 1st level of **BioSciences 2** (*where some QAEco staff are located*).

Ouda Khammy is the Building Emergency Controller/Chief Warden for BioSciences 2 (Botany South).

Nicole Middleton is the **EHS Co-ordinator** for the School of Botany (x53188).

Ross Hortin is the **Deputy Safety Co-ordinator (x45261)**.

Anton Cozijnsen is the **Health and Safety Representative** for Botany (x45748)

The **Campus Security** (University Security and Emergency) 24 hour phone number is **8344 6666** (ext 46666).

Fire Extinguishers (*see School of BioSciences EHS Induction document for detailed information*)

There are a number of fire extinguishers located around the QAEco work area:

- Outside Room 106 and Old Library (Room 116) and in Botany North (next to electrical switchboard): A dry chemical extinguisher used for paper, wood, textile, oil, liquid and electrical fires.
- In Vesk Lab (Room 108) and in corridor leading to Botany North: Co2 extinguisher used for paint, oil, electrical and other liquid fires.

First Aid (see School of BioSciences EHS Induction document for detailed information)

- A first aid kit is located on the wall of the Vesk lab (Room 108) and in the corridor outside the Vesk lab (opposite Room 112).
- First Aid in the School of BioSciences is coordinated by Kaija Jordan (x45748; kaija@unimelb.edu.au).
- Inform Pauline Byron if an item in the first aid kit is running low or out of date and she will notify Kaija.
- There are a number of first aiders in our group and they are identified on the Emergency Posters.

After Hours Work

There is an After Hours log book inside the main entrance to the building. This must be filled in when you are in your work area outside of normal work hours (8.30 – 5.30 pm Mon-Fri) so that in case of an emergency, evacuation personnel know who is where in the building.

Other

- All aisles and doorways in the laboratory are to be kept clear at all times
- Bicycles are not permitted in the laboratory, or in the School of BioSciences buildings.

EMERGENCY PROCEDURES**Incident Reporting**

All staff and students are required to report incidents and near misses as soon as possible to your local supervisor. This must be followed up with an official Incident Report on Themis or the S3 form within 24hrs of the incident occurring. Reporting accidents, incidents and near misses helps us to

Identify and eliminate the contributing factors reducing the likelihood of further injuries. Failure to report an accident, incident or illness could adversely affect insurance claims.

Serious incidents that result in medical treatment or expose people to a health risk must be immediately reported to Alex Buckle 8344 7718.

Evacuation

Break glass alarms (Fire, Emergency Door Release & Emergency) are used to set off the building alarms and inform personnel to evacuate. The alarms closest to our area are located:

BioSciences 2: entrance to building (*on the fire panel on the right hand side as you enter the building*) and in the corridor next to the main stairs on 1st floor. In case of fire or other emergency, evacuate the area via the front door, or through the Tea Room to the garden. The emergency muster location is the raised area in front of BioSciences 2 at the west end of the Student Union building.

BioSciences 1 (*where the meeting rooms are located*): inside door to fire panel next to main external glass (sliding) doors. In case of fire or other emergency, evacuate the laboratory via the sliding exit doors (*you can only exit by pressing the green "Exit" button located on the wall next to the doors*). The emergency muster location is the raised area in front of BioSciences 2 at the west end of the Student Union building.

To report an emergency, phone Campus Security 24 hours 83446666 (ext 46666) or Fire, Ambulance (000).

EQUIPMENT / FACILITIES

Electrical

All portable electrical equipment is annually tested and tagged – do not use any equipment which doesn't have a current tag.

Fumehoods

There is a fume hood in the Vesk lab which is never used. If you need to use it, please speak to your Supervisor.

ERGONOMICS

Ergonomics involves finding the best fit between the user, equipment and their environment to prevent muscular skeletal injuries such as Repetitive Strain Injury (RSI). The Computer Workstation Ergonomic Self-Assessment Checklist included in the School of BioSciences safety induction document is an educational tool that must be completed once you have a permanent desk. If the form highlights any issues with your seat and/or desk, inform your supervisor. The completed form is kept with the safety training documents held by the QAeco Administrator. Report any physical discomfort you believe is associated with your work to your supervisor or EHS Coordinator.

VEHICLES

Vehicles are managed through "Smartfleet Online Pool Car Booking System" and a Smartfleet Account is required to use the vehicles. To register with Smartfleet provide a copy of your driver's license and completed registration forms (*pages 22, 23 & 24 of the School of BioSciences Safety Induction document*) to [Jess Salvador x59973, jessica.salvador@unimelb.edu.au](mailto:jessica.salvador@unimelb.edu.au).

When possible, the use of public transport is encouraged for short trips. Cabcharge vouchers are available for taxi use (see the QAeco Administrator), and vehicles can also be hired through GoGet, Carshare and AVIS. See [Third-party Vehicle Bookings](#) for further information.

ACCESSING SAFETY TRAINING

See Appendix 1 for details on how to access safety training for staff and students.

Compulsory Health & Safety Roles and Responsibilities for staff and students

As of May 2017, there is only one Roles and Responsibilities course for all staff and students. This course includes Risk Management and Incident Investigation training. Everyone's previous R&R training will be recognised until it is due for refreshing, at which time the new version will be required.

See Appendix 1 for details on how to access this course.

FIELD WORK

Read the following:

- <http://qaeco.com/> (Field Work & Safety tab on right hand side of screen)
- <http://safety.unimelb.edu.au/topics/travel/>
- Appendix 2 below.

All staff and students who propose to undertake field trips must complete a risk assessment and field work plan with their supervisor prior to departing (see above links) **and** undertake the online risk management training (see below for details). The risk assessment process will involve the identification and measurement of the risks involved and the development of methods to control or eliminate them. An itinerary and communication plan should be developed and adhered to. Failure to report in when indicated on your plan could result in a search party being sent looking for you.

Examples of risk assessments are provided in the QAECO Risk Assessment folder in the Administrator's office.

- Read the documents contained in this link <http://qaeco.com/> (*Field Work & Safety tab on right hand side of screen*)
- Read the QAECO Field Work Risk Assessment Cover Sheet (*Appendix 2 below*).
- Complete a risk assessment and field work plan of the fieldwork as outlined in the procedures. The risk assessment should be accompanied by the proposed itinerary detailing time of departure and arrival, exact location/s, names and emergency contact details for people involved, communication arrangements, maps, etc. As part of the assessment procedure, persons nominated to take part in fieldwork should complete a medical information and authorization form shown in Appendix 1 of the Fieldwork Guidelines. A field trip briefing prior to departure should discuss the completed risk assessment and any additional safety concerns.

Herbarium

Dr Gillian Brown, Herbarium Curator, has prepared a guide for collecting herbarium specimens when doing ecological fieldwork (see Appendix 3).

GENERAL HOUSEKEEPING

Power Use

The use of power should be kept to a minimum.

- Turn off lights in areas that are not in use
- Completely turnoff computers and printers (don't simply leave them on standby)
- Turn off the airconditioner/heater when not required
- Turn off ovens, growth cabinets etc. when not in use

Using kitchens/kitchenettes

There are several small kitchens scattered throughout the School. These provide basic appliances such as fridges, microwave ovens, kettles, sandwich toaster, etc, for cups of tea/coffee and reheating lunch. Each area has its own system regarding supply of milk, tea, coffee etc. You will be shown the nearest kitchen/s told about this in your Induction tour. There are some standard rules for using the kitchens:

- DO NOT TAKE LABORATORY PPE, EQUIPMENT, CHEMICALS, ETC, INTO THE KITCHENS.
- Do not leave food in the fridge for more than a day or so.
- Bring your own cup.
- Use boiling water and sharp cutlery with care.
- Clean up after yourself, including spills on the floor.
- Always turn off appliances, especially sandwich toasters, when you have finished.
- If there is a dishwasher, get someone to show you how to use it before attempting to turn it on.
- If there is a fire blanket, know its whereabouts.
- There is an MSDS in the kitchen for cleaning chemicals.

Appendix 1: ACCESSING SAFETY TRAINING

UoM OHS have recently made several changes to the delivery of safety training. For staff the system has become a lot easier, with more courses now online via [TrainMe](#). However, for students without [TrainMe](#), access to the system isn't quite as easy to navigate.

In summary:

Staff

Staff can enrol via [TrainMe](#) on the Staff Hub.

1. Log in with your UoM username and password.
2. Go to **LEARNING -> COURSE CATALOGUE** -> Search and enrol into a course.

TrainMe data will be linked to your Themis account so you can continue to access 'Learning History' information on Themis. Supervisors can enrol their direct reports into training on TrainMe by clicking the 'My Team' tab and assign learning.

TrainMe will send out reminder emails when training is due and will automatically enrol you in a refresher course every 3 years.

Staff can now access and complete the following safety courses online via [TrainMe](#). (no classroom attendance is required):

- **Health and Safety Roles and Responsibilities** (includes Risk Management and Incident Investigation)
- **Chemical Management** (available 12 May 2017)
- **Gas Safety**
- **Personal Protective Equipment** (for anyone working in Labs).
- **Office Ergonomics**
- **Manual Tasks** (formerly Manual Handling)
- **Warden/Chief Warden** training (available 1 July 2017)

Other online courses not on TrainMe include:

- **BioHazard Laboratory Practice**
- **AA (Quarantine) Accredited Persons**
- **ChemWatch – General User**

Some courses remain classroom based. For information and access details refer to the attached table "Staff Access to Safety Training May 2017". In some cases, refresher training options are no longer available. See [UoM Health & Safety-Training](#).

Roles & Responsibilities core compliance training changes

From now on, there is only one **Roles and Responsibilities** course for all staff. This course includes **Risk Management** and **Incident Investigation** training. Everyone's previous R&R training will be recognised until it is due for refreshing, at which time the new version will be required.

Students

Roles & Responsibilities core compliance training changes

The new version of the **Roles and Responsibilities** course for students includes **Risk Management** and **Incident Investigation** training. Everyone's previous R&R training will be recognised until it is due for refreshing, at which time the new version will be required.

Students access this training by this link <https://staff.unimelb.edu.au/mdhs/health-safety/ohs-training-requirements/rr-training/ohs-roles-response>

See below for details on how students can access other online and classroom based safety courses.

Student Access to Safety Training May 2017

If you have access to TrainMe you should go to the Staff Hub click on [TrainMe](#) and enroll into Health and Safety Roles & Responsibilities, Chemical Management, Gas Safety, PPE, Manual Tasks and Office Ergonomics. This will ensure your staff record is correctly updated.

For those without a TrainMe account, details for accessing safety training courses are given below.

Course	Delivery	Information
Health and Safety Roles & Responsibilities	online	Compulsory for UoM staff/students. Combines Roles & Responsibilities with Risk Management and Incident Investigations training. Details: Students access this training by this link https://staff.unimelb.edu.au/mdhs/health-safety/ohs-training-requirements/rr-training/ohs-roles-response
BioHazard Laboratory Practice	online	Compulsory for anyone working in PC2 or Quarantine areas working in a biological lab with hazards. Details: BioHazard Laboratory Practice training.
Complying with Gene Technology Requirements (OGTR)	classrm	Required by those working in OGTR facilities and/or with GMOs. Details: Complying with Gene Technology Requirements .
Ionising Radiation	classrm	Compulsory for anyone using radioactive material. Details: UoM OHS-training . Enrol: http://goo.gl/forms/x9QAgn3xbu .
Laser Safety	classrm	Compulsory for anyone using lasers Details: UoM OHS-training . Enroll: http://goo.gl/forms/x9QAgn3xbu .
Chemical Management	classrm	Compulsory for anyone working with chemicals. Includes labeling, storage, hazardous waste & spill control. Contact local EHS Coordinator.
ChemWatch – General User	online	Learn how to use the electronic MSDS Management System. See: GoldFFX for general users .
ChemWatch – Lab Supervisor (Administrator)	classrm	Learn how to manage chemical inventories within ChemWatch. Details: UoM OHS-training . Enroll: http://goo.gl/forms/x9QAgn3xbu .
Gas Safety	classrm	Compulsory for anyone using liquid nitrogen, other compressed gases, cryogenic liquids or gas cylinders.

		Contact local EHS Coordinator.
PPE (Personal Protective Equipment)	classrm	Compulsory for anyone working with chemical, gases or equipment that requires special clothing. Contact local EHS Coordinator.
Office Ergonomics	online	Highly recommended for anyone whose role primarily involves computer work. See: Office Ergonomics training videos. Competancy quiz: Office Ergonomics quiz.
Manual Tasks (Manual Handling)	classrm	Advice on identifying, assessing and controlling risks of muscular skeletal injury. Contact: local EHS Coordinator.
AA (Quarantine) Accredited Persons	online	Compulsory for anyone working in a quarantine approved facility or with quarantine material. Contact: Kaija Jordan (BioSecurity Officer).
Animal Ethics Induction	classrm	Information about the AEC process for anyone planning to work with laboratory or wild vertebrate animals (fish, amphibians, reptiles, birds or mammals). Contact: Marilyn Renfree .
Diving	classrm	Anyone diving, snorkeling or boating must contact John Ahern (University Dive Officer) prior to these activities.
Off-road/Four Wheel Driver Training	classrm	Only required if undertaking off-road four wheel driving. Contact: Nicole Middleton (Fieldwork Safety Specialist)
First Aid	classrm	Advisable if undertaking fieldwork or teaching on excursions. See: Fieldwork OHS Guidelines for fieldwork first aid requirements. Contact: Nicole Middleton (Fieldwork Safety)
Warden / Chief Warden (BEC)	classrm	Emergency avacuation training only needed by Floor/Fire Wardens and Chief Wardens (formerly BECs). Details: UoM OHS-training . Enroll: http://goo.gl/forms/x9QAgn3xbu
Fire Extinguisher	classrm	Recommended for Chief Wardens/Wardens. Practical training in the use of different types of fire extinguishers. Details: UoM OHS-training . Enroll: http://goo.gl/forms/x9QAgn3xbu .

Staff Access to Safety Training May 2017

Many safety courses are now available online through [TrainMe](#). Information on these and how to access courses that are not on TrainMe. is tabulated below.

1. Log in with your UoM username and password.
2. Go to **LEARNING -> COURSE CATALOGUE** ->Search and enrol into a course.

Course	Delivery	Information
Health and Safety Roles & Responsibilities	online	Compulsory for UoM staff/students. Combines Roles & Responsibilities with Risk Management and Incident Investigations training. See: TrainMe .
BioHazard Laboratory Practice	online	Compulsory for anyone working in PC2 or Quarantine areas working in a biological lab with hazards. See: BioHazard Laboratory Practice training.
Complying with Gene Technology Requirements (OGTR)	classrm	Required by those working in OGTR facilities and/or with GMOs. See: Complying with Gene Technology Requirements .
Ionising Radiation	classrm	Compulsory for anyone using radioactive material. Details: UoM OHS-training . Enroll: Themis .
Laser Safety	classrm	Compulsory for anyone using lasers Details: UoM OHS-training . Enroll: Themis .
Chemical Management	online	Compulsory for anyone working with chemicals. Includes labeling, storage, hazardous waste & spill control. See: TrainMe .
ChemWatch – General User	online	Learn how to use the electronic MSDS Management System. See: GoldFFX for general users .
ChemWatch – Lab Supervisor (Administrator)	classrm	Learn how to manage chemical inventories within ChemWatch. Details: UoM OHS-training . Enroll: Themis .
Gas Safety	online	Compulsory for anyone using liquid nitrogen, other compressed gases, cryogenic liquids or gas cylinders. See: TrainMe .
PPE (Personal Protective Equipment)	online	Compulsory for anyone working with chemical, gases or equipment that requires special clothing. See: TrainMe .

Office Ergonomics	online	Highly recommended for anyone whose role primarily involves computer work. See: Office Ergonomics training videos. Competancy quiz: Office Ergonomics quiz.
Manual Tasks (Manual Handling)	online	Advice on identifying, assessing and controlling risks of muscular skeletal injury. See: TrainMe.
AA (Quarantine) Accredited Persons	online	Compulsory for anyone working in a quarantine approved facility or with quarantine material. Contact: Kaija Jordan (BioSecurity Officer).
Animal Ethics Induction	classrm	Information about the AEC process for anyone planning to work with laboratory or wild vertebrate animals (fish, amphibians, reptiles, birds or mammals). Contact: Marilyn Renfree.
Diving	classrm	Anyone diving, snorkeling or boating must contact John Ahern (UoM Dive Officer) prior to fieldwork.
Off-road/Four Wheel Driver Training	classrm	Only required if undertaking off-road four wheel driving. Contact: Nicole Middleton (Fieldwork Safety Specialist)
First Aid	classrm	Advisable if undertaking fieldwork or teaching on excursions. See Fieldwork OHS Guidelines for fieldwork first aid requirements. Contact: Nicole Middleton (Fieldwork Safety)
Warden / Chief Warden (BEC)	online from 1/7/17	Emergency avacuation training only needed by Floor/Fire Wardens and Chief Wardens (formerly BECs). Details: UoM OHS-training. See: TrainMe.
Fire Extinguisher	classrm	Recommended for Chief Wardens/Wardens. Practical training in the use of different types of fire extinguishers. Details: UoM OHS-training. Enroll: Themis.

Appendix 2: QAECO Field Work Checklist

There are certain things you **MUST** do/note before heading into the field:

1. **Discuss the field work** with your supervisor and, if necessary, Nicole Middleton, School of BioSciences EHS Coordinator on n.middleton@unimelb.edu.au or 9035 3188.
2. Note that **fieldwork is not to be conducted alone or on Code Red fire danger days**.
3. Complete the **Health and Safety Roles & Responsibilities** online training course (*see link below*).
4. Fill in the '**Field work risk assessment**' form and give to Pauline (*with a copy to your supervisor and designated contact person*).
5. Fill in the '**Field work plan**' form (includes your itinerary) and give to Pauline (*with a copy to your supervisor and designated contact person*).
6. Complete **first aid training**. (*Organise this through Pauline*). **The number of first aiders required on field trips is 1 for 1-9 participant; 2 for 10-30 participants**.
7. **Register your travel** on the Student Portal (*students only and only if you are flying into the field or driving interstate*).
8. Fill in the '**Non Travel Portal risk assessment form**' and return to Pauline.
9. Fill in the **Volunteer Registration form (if applicable)**. Once the form has been signed by your Supervisor and Head of School (please email the EA Biosciences ea-biosciences@unimelb.edu.au who will use the Head's electronic signature), please give Pauline a copy and take the original up to Jess in BioSciences 2 reception for filing.

You can find all the forms and additional information at www.qaeco.com in the bottom right hand corner.

Health and Safety Roles & Responsibilities for Staff and Supervisors

All fixed-term, continuing, casual staff (*whether going into the field or not*) should complete the Health and Safety - Roles and Responsibilities for Staff/Supervisors online training module. This module combines Roles & Responsibilities with Risk Management and Incident Investigations training.

The **staff link** to this training is here <http://safety.unimelb.edu.au/#training>

The **student link** to this training is here <https://staff.unimelb.edu.au/mdhs/health-safety/ohs-training-requirements/rr-training/ohs-roles-response>

Forms

You can find all the forms and additional information at www.qaeco.com in the bottom right hand corner.

You must take one printed copy of each form with you into the field.

A copy of each form should also be emailed to Pauline (*to keep on file in her office*), your lab contact and your supervisor.

If you are making many return visits to the field on different occasions, you need a new Field Work Plan each time, but you can re-use the Field Work Risk assessment if it still applies.

Student Portal

Students must register their travel plans on the student portal (*if they are flying to their destination or driving interstate*): <https://fpg.unimelb.edu.au/io/internal/students/std-travreg.html>

Volunteer Registration

If you are taking a volunteer out into the field, they should complete the Volunteer Form under “Field Work & Safety/School of Biosciences” on the QAEco website (*bottom right hand corner*) <http://qaeco.com/>. The form should be signed by your Supervisor and the Head of Department. To get the Head of Department’s signature, email EA Biosciences ea-biosciences@unimelb.edu.au who will use the Head’s electronic signature. Then give Pauline a copy and take the original up to Jess in BioSciences 2 reception for filing.

Lab check in procedure

You are required to check in at a designated time/s each day you are in the field and/or traveling to field sites. These designated times are agreed upon between you and your check-in person and should be included in the field work plan itinerary. If you are a student, your check-in person should be your supervisor (*if they are not travelling with you*). If they are travelling with you, your Supervisor will nominate a check-in person. This should preferably be another postdoc.

Checking in means that you are sure that your communication has been received, i.e. you have spoken to your contact person or you receive a reply to your text message or voicemail.

If the field worker does not check-in, the lab contact person will attempt to contact them. If there is no response within one hour, the lab contact person will alert the field worker’s supervisor and the accommodation contact (if applicable), the volunteers (*if applicable*) then the external emergency contact. For night field work in Melbourne, someone should then go to the field worker’s house.

If at this point the field worker is still not contactable, the police will be alerted.

Special precaution must be taken during the fire season. Read the Fire Danger Ratings document (http://www.cfa.vic.gov.au/firesafety/bushfire/documents/fire_danger_rating.pdf) and make a plan that can be adjusted for changing conditions. Check the Fire Danger Rating each day. You may need to check in with the local CFA.

Equipment

The Vesk lab has a small supply of safety equipment but the School has a suite of safety equipment you can borrow for fieldwork (eg first aid kits, communication and navigation devices, portable defibrillators and 4WD gear). These can be booked online through Outlook (see Jess in Reception or Nicole Middleton).

The BioSciences Field Store also contains general equipment (eg eskis, water containers, measuring tapes, daypacks, compasses, etc) for use on research trips and teaching excursions. Ask Nicole Middleton for a list of what is held in the field store and the borrowing procedure.

The departmental Emergency Personal Locator Beacon should be taken if required (read the http://www.botany.unimelb.edu.au/admin/EHSwebmanual/forms_download/AccusatManual.pdf beforehand). Contact Nicole Middleton School of BioSciences EHS Coordinator on n.middleton@unimelb.edu.au or 9035 3188 to access the EPERB.

CHECKLISTTo do:

- √ Ensure that the items in points 1 – 10 above have been checked off.
- √ Ensure you know the procedure for booking Botany Vehicles eg how do I book them; where do I collect the keys; can I take them home overnight; where the cars are kept; where can I get petrol; what is the pin number for the petrol card; who is allowed to drive the cars; what do I do if I'm going to get back late? If you don't know, ask Jess in BioSciences 2 reception or Pauline.
- √ Check the weather.
- √ Check the fire conditions.
- √ Check spare tyre.
- √ Contact the Park Service or relevant agency.
- √ Check in with the CFA (if applicable).
- √ Ensure that volunteers are made aware of the travel arrangements, understand the physical demands of the work, your expectations and the duration of the activity (eg how long the day/s will be).

To bring:

- √ Adequate food and water.
- √ Vehicle First Aid Kit (should be in the car).
- √ Hiking First Aid Kit (from Botany office).
- √ Copy of Collecting Permit (if applicable).
- √ Copy of Risk Assessment and Field Work Plan forms.
- √ GPS/Maps.
- √ Appropriate Clothing (Gaiters, hats, raincoat, rain pants, spare dry clothing).
- √ Equipment (meter tapes, flagging tape, compass).
- √ Data Sheets and Pencils/Textas.
- √ Batteries.
- √ Bug spray/Sunscreen.

Are you working, camping or hiking in remote areas such as the Mallee?

- √ Have you read the Remote Field Work Document on the QAeco website <http://qaeco.com/>?
- √ Whistle.
- √ Shovel.
- √ Thick woollen blanket (one per person) for fire protection or warmth overnight.
- √ Mobile, satellite phone, distress beacon (EPIRB); UHF radios where appropriate
- √ Enough food & water: in hot weather at least 10L of drinking water in the car at all times
- √ Be aware of fire danger and always have fire escape routes planned.
- √ Have location and travel routes planned for the nearest hospital.

APPENDIX 3: Guidelines for collecting herbarium specimens during ecological fieldwork

Dr Gill Brown, University of Melbourne Herbarium, April 2014

“Accessible voucher specimens are critical for accurate identification and subsequent verification of species. Species are the raw material of biodiversity research, whether the focus of that research is taxonomic, evolutionary, ecological, genetic, behavioural or physiological.”¹

Why do I need to collect plant specimens during ecological fieldwork?

- As a voucher specimen, so you have a verifiable record of your research data/study organisms
A herbarium voucher specimen allows you to confirm the identity of the plant at a later date. This is extremely useful if you get odd/misleading results, perhaps you do not actually have the species you think you have!
- Add dots to maps!
Detailed species distribution maps have to come from somewhere. Herbarium specimens provide verifiable collection records of species through space and time.
- To help other researchers by making material available for study and sampling. Below are some examples of how herbarium specimens have been used by researchers:
 - Seed mass measurements
 - DNA sampling (e.g. for systematic, phylogenetic, population genetic or evolutionary studies)
 - Lead isotope analyses to trace the change in lead concentration and composition around Australian capital cities from the late 1800s until the present day.
 - Morphological variation assessment
 - Identifying populations/areas to target their fieldwork
 - Change in flowering times in response to climate change
 - Track the spread of weeds over time to identify to inform management of future spread

What do I need to collect?

Voucher specimens from ecological studies should include as many identified species as possible from across the range of habitats, seasons, treatments or other variables examined in the study¹. The number of specimens per site/trip will be variable depending on your project and site. Please talk to Gill Brown prior to going in the field for advice on your specific project.

- You must have permits and/or permission from the land holders before you collect plants (see Kathy Vohs or Gill Brown for School of Botany permit)
- The plant material you collect should be fertile and include all parts of the plant (i.e. fruits, flowers and buds, as well as bark, leaves, juvenile or coppice foliage, etc.). No scraps will be accepted. It is often useful to collect two samples of the plant, one for dissection and identification, and another for the herbarium specimen. Material for one specimen should fit into one newspaper fold (i.e. between front and back page of Herald Sun).
- Take photos (e.g. habit, close ups of flowers/fruits/etc.). These can be added to the herbarium database if you are able to match the collecting number to the photo.
- Record detailed notes on the plant in your field notebook. Your notebook can be hardcopy, electronic or a phone app, but to be lodged at MELU it will need to be in an excel spreadsheet or the Specify mobile workbench. See “Data entry notes for field collections.doc” and the “MELU Collecting Data spreadsheet.doc” for further information about data requirements.

What do I need to do after I collect them?

- Press and dry the specimens.
- Mount the specimens on archival card. Come to Voucher Specimen Mounting Day, run twice a year, to help you find time to do this before you finish your project!
- Lodge your data and specimens at the herbarium (labels for your specimens will be produced from your data).

Contact Gill Brown (browngk@unimelb.edu.au; ph: 8344 5040) if you have any questions.

See how to [Make Your Own Herbarium Specimen](#) document on the University of Melbourne Herbarium website for more detailed information on collecting and preserving specimens.

¹ Wheeler, T.A. (2003), The Role of Voucher Specimens in Validating Faunistic and Ecological Research, *Biological Survey of Canada (Terrestrial Arthropods) Document series no. 9*.

Name:

Position:

Supervisor:

Quantitative and Applied Ecology Group Safety Induction

I have read the :

Quantitative and Applied Ecology Group Safety Document (<i>this document</i>)	
I have been shown the location of:	
University Safety Website http://www.safety.unimelb.edu.au/	
Emergency Information Safety Notice (<i>ie in the kitchen, outside Mick McCarthy's office and in Room 106</i>)	

I have been taken on a tour of QAECO work area and know the location of:

<u>First Aid Kits</u> located on the wall of the Vesk lab (Room 108) and in the corridor outside the Vesk lab (opposite Room 112).	
<u>Fire Extinguishers:</u> outside Room 106 and Old Library (Room 116) and in Botany North (next to electrical switchboard): A dry chemical extinguisher used for paper, wood, textile, oil, liquid and electrical fires. In Vesk Lab (Room 108) and in corridor leading to Botany North: Co2 extinguisher used for paint, oil, electrical and other liquid fires.	
<u>Break Glass Alarm:</u> located in entrance to building (on the fire panel on the right hand side as you enter the building) and in the corridor next to the main stairs on 1st floor.)	

Signed:.....Date:.....