FIELDWORK SAFETY
All staff members, postdoctoral researchers, postgraduate students or undergraduate students must read this handbook prior to undertaking fieldwork. Undergraduate students and postgraduate students must firstly discuss the proposed fieldwork with their academic supervisor and have their supervisors consent prior to undertaking any fieldwork. Similarly, any associated laboratory work should be agreed upon by the relevant academic supervisor, before being undertaken. This handbook is designed for the safety of field researchers and the safety of those they come into contact with. All personnel, including students, have a legal responsibility to take due care and safe practices must be adhered to at all times. If any questions arise and students cannot contact their academic supervisor please contact the Head of Discipline, the Discipline Safety Officers or Technical Officers for advice.

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Discipline Safety Officers

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# Table of Contents

1. Definition of Fieldwork ........................................ 4
2. Legal Background ............................................ 5
3. Insurance .......................................................... 6
5. Fieldwork Risk Assessment ..................................... 8
6. Supervision ....................................................... 9
   6.1. Independent Activity ...................................... 9
7. Training and Skills ............................................... 10
8. Working in and Around Water ................................... 11
   8.1. Boats and Watercraft .................................... 12
9. Transport ........................................................ 14
   9.1. Walking and Hiking ..................................... 14
   9.2. Vehicles ................................................... 15
10. Equipment ........................................................ 16
   10.1. Electrical Equipment ................................. 16
11. Clothing and Personal Protective Equipment (PPE) .... 17
   11.1. Standard Clothing .................................... 17
   11.2. PPE ......................................................... 17
12. Sampling ........................................................... 19
13. Security .......................................................... 20
14. Leisure Time .................................................... 20
15. Catering and Hygiene .......................................... 21
16. Health Matters ................................................... 22
17. Emergencies ..................................................... 23
18. Hazardous Substances ......................................... 24
19. Lone working ..................................................... 25
1. Definition of Fieldwork

Fieldwork is defined as any practical work carried out by staff or students of the University for the purpose of teaching and/or research in places which are not under University control, but where the University is responsible for the safety of its staff and students and those exposed to their activities.

The following activities are examples of fieldwork in the Discipline of Geography:

- Archaeology
- Caving
- Environmental studies
- Examining and logging sections of gravel pits and sandy areas of beaches
- Examining the landscape for clues to historical settlement
- Examining vegetation
- Meteorology
- Photography
- Social survey interviews
- Soil and peat sampling
- Surveying
- Traffic studies
- Urban examinations
- Water sampling
- Field Walking
- Diving

It should be noted that specialist training or previous experience will be essential for particular activities e.g. caving, diving or working in extreme environments.

The risks involved in voluntary and leisure activities are not included in this document on fieldwork safety. However, students on residential fieldtrips should be aware of the particular risks inherent in spending recreational time in unfamiliar locations, particularly bars and clubs, and in travelling to and from those locations and their place of temporary residence. Thus students on residential fieldtrips are advised to take all necessary precautions during their recreational time, and to keep staff on fieldtrips informed of their plans.
2. Legal Background

Carrying out a Risk Assessment by identifying hazards, the associated risks and implementing control measures are not only essential to any safety, health and welfare system, they are required by law.

Universities must exercise a “duty of care” to employees and to those they supervise and this duty is recognised in both criminal and civil law. There is also a moral duty that a tutor or instructor has towards the student. It is the responsibility of the governing body of a university, through its officers, to ensure that statutory requirements are met and that appropriate standards are applied.

The Head of Discipline has overall responsibility for Health and Safety within their discipline and are required to make a suitable and sufficient assessment of the risks as to the health and safety of employees and of the risks to the health and safety of persons not in their employment arising out of or in connection with the conduct by them of their undertaking. It is therefore the responsibility of the Head of Discipline to ensure that all fieldwork is risk assessed and to ensure that a safe system of work has been established for all staff and students. The Discipline of Geography requires that a risk assessment must be completed by fieldworkers or fieldtrip leaders in advance of any proposed fieldwork. The completed risk assessment must be signed by the relevant supervisor or member of staff and the Head of Discipline.

Frequently, the Head of Discipline will delegate the duty of risk assessment to the member of staff organising or supervising the fieldwork. In such circumstances the Head of Discipline must be satisfied the person to whom they have delegated this responsibility has the competence to lead and sufficient awareness of the legal situation to those under supervision. The Head of Discipline must ensure that the fieldwork meets the safety criteria of the discipline and that any accidents are reported and investigated.

Some staff and students may be unable to carry out certain types of fieldwork for health reasons and early identification of such problems is essential. It is therefore compulsory to complete the School of Natural Sciences Health Questionnaire prior to undertaking any fieldwork in order that the participant can be declared fit for the intended activities.

The Head of Discipline must ensure that workers are not only adequately trained but also adequately informed.

There is also a duty on the fieldwork participants to take reasonable care for their own safety and that of those affected by them.
3. Insurance

Trinity College Dublin holds Public and Employer Liability Cover.

This policy covers all activities involving College staff and postgraduate students, including fieldwork. Undergraduates are covered by College Liability Insurance as long as the activity is related to their degree course and permission for the activity has been approved by their supervisor and the Head of Discipline.

The Head of Discipline has a responsibility to ensure that all fieldworkers in the Discipline of Geography are adequately covered.

Those visiting commercial, industrial or privately owned sites may be covered by the site owners insurance. However, the laws concerning liability are complex and beyond the scope of this manual. If any part of your fieldwork will be conducted on a commercial or industrial site or on privately owned land you should discuss insurance arrangements with the relevant persons in advance. It is the Fieldworker or Fieldwork Leaders’ responsibility to ensure adequate cover is in place in such circumstances.

College staff and postgraduates undertaking fieldwork outside of Ireland are covered by the College Travel Insurance Policy. Before embarking on overseas fieldwork the College travel insurance form must be completed online. You should also download and familiarise yourself with the Department of Foreign Affairs ‘TravelWise’ app before embarking on your journey. Links for both are given below.

College travel insurance form: http://www.tcd.ie/Buildings/insurance.php
TravelWise app: https://www.dfa.ie/travelwise/

Undergraduates are not covered by this insurance policy. It is recommended that undergraduates obtain personal overseas travel insurance if they are undertaking fieldwork outside Ireland. It is advised that you discuss this with your supervisor in advance of any overseas fieldwork.

All fieldwork, whether disciplinary or of the student Geographical Society, must be adequately insured through the University.
4. General Rules of Safety for Fieldwork

- The Head of Discipline must ensure that before any fieldwork activity is undertaken, a comprehensive risk assessment is completed and safe systems of work are devised based on the recommendations set out in this document.
- The supervision of people undertaking activities must be adequate. A minimum of one member of staff to ten students is required. All groups or sub-groups must have a leader whose authority and responsibilities are clear to everyone (see section 5).
- Independent (Lone working) activities are discouraged and may only take place if the procedures for lone working approval have been completed. Lone working for undergraduates is forbidden.
- Itineraries of all trips must be left with a responsible person before each fieldwork session and the Fieldwork Leader must check in with this person on safe return. Contact must be maintained on a planned basis. (see Reporting Systems section in Appendix)
- All staff and students must be competent and capable of participating in planned activities and suitably qualified and/or experienced where required.
- Health Questionnaires must be completed well in advance of the fieldwork as should any necessary training. No one should be expected to or attempt to undertake tasks beyond their abilities.
- All fieldwork activities should be conducted in a manner that will cause the absolute minimum damage or disturbance to the environment. Where possible, any disturbance should be remedied when the work is complete. Fire risk must be kept to a minimum, particularly during dry or hot spells of weather.
- It is the duty of the Fieldwork Leader to arrange access to commercial, industrial or privately owned sites by arrangement with the owner or manager of the proposed site. This should include agreement on the nature of the intended work and any remediation required after the work is complete.
- Health and Safety and any other specific regulations or instructions pertaining to commercial, industrial or privately owned sites must be adhered to.
- Appropriate Personal Protective Equipment (PPE) must be worn. This includes appropriate footwear for the expected conditions underfoot and clothing to suit weather conditions. Extra clothing and changes of footwear should be carried if necessary.
- Contingency plans for dealing with emergencies must be determined in advance. A First Aid Kit should always be carried. Contact details for local medical facilities and emergency services should be sourced in advance and carried throughout the fieldwork.
- If a participant has any individual medical or dietary needs that have not been declared on the Health Questionnaire, they should inform the Fieldwork Leader well in advance of the fieldwork taking place, in order that suitable arrangements can be put in place.
For the welfare of all participants, reasonable standards of personal hygiene must be maintained at all times. Any catering or food preparation must be in carried out in a hygienic manner.

Equipment used on fieldwork must be well maintained and safe to use. Do not begin to use any equipment that you think may be faulty or unsafe. Equipment should only be used for its intended purpose. Participants should report any faults or safety issues with equipment to the Fieldwork Leader as soon as it is identified.

Hazardous substances or equipment must be handled, stored, transported and disposed of in a safe manner and in accordance with the Safety Data Sheet for specific chemicals or the manufacturer’s safety instructions for equipment.

Any vehicles used for fieldwork must be well maintained and be driven only by those who are qualified, insured and authorised to do so.

5. Fieldwork Risk Assessment

It is a legal requirement that a fieldwork risk assessment is undertaken to identify any potential hazards connected with the work. In most circumstances a fieldwork risk assessment will need to be carried out. This applies to all staff and students in the Discipline of Geography who intend to undertake any fieldwork where there is an identifiable hazard or hazards. This should be discussed in advance of carrying out the risk assessment with your supervisor and/or all relevant participants and any other significant persons (e.g. land owners, outside agencies) who may be involved. On completion this must be signed by the assessor and approved and signed by their supervisor (if the assessor is a student) and the Head of Discipline. Always ensure that the risk assessment is completed well in advance (at least one week) of your fieldwork commencing in order that any amendments can be made and that the relevant persons who have to sign can be contacted.

The main considerations for any risk assessment are the hazards you will encounter and the level of risk that they pose to you or others. The hazard or hazards will be dependent on the nature of the work and may arise from travel, environment, equipment or substances, methods or activities, climatic conditions or any variety of other circumstances. It is for the assessor to scrutinise all aspects of the fieldwork, identify the hazards and assess what level of risk this poses to those who may come into contact with the hazard. In circumstances where hazardous chemicals or substances will be used in the field and additional Risk Assessment for Laboratory and Chemical Procedures will also need to be completed.

The Discipline of Geography Fieldwork Risk Assessment form and Risk Assessment for Laboratory and Chemical Procedures are available on the Geography homepage. Go to: Menu>Local and sign in with your TCD login. Both have detailed instructions of how to complete the assessment. If you have any questions, don’t hesitate to contact the Discipline safety Officer or Technical Officers for advice.
6. Supervision

In many situations fieldwork and other outdoor activities cannot be supervised in the same manner as laboratory or classroom activities. The Head of Discipline is ultimately responsible for ensuring adequate supervision is in place at all times and the Fieldwork Leader should adhere to the supervision requirements and organise this accordingly when in the field. The supervision of people undertaking activities must be adequate. A staff to student ratio of around 1:10, dependant on environment and experience is recommended.

If, during the course of the fieldwork, sub-groups are formed, there should be a nominated leader for each sub-group. This applies for groups of two or more. Sub-group leaders will remain under the general supervision of the Fieldwork Leader. It should be clearly understood by all fieldworkers that they are in a work situation under supervision.

Fully supervised courses are usually of low risk and short duration (up to one week). Fieldwork Leaders will usually be very familiar with the environment. Students are closely supervised by staff and all activities are well structured and planned. As many of the students participating in such courses may be inexperienced, safety instruction should be an integral part of the work. If a risk assessment has been completed, students should have access to this and read it before beginning the fieldwork.

Field expeditions can be longer in duration (more than one week). Participants are usually experienced and trained (normally postgraduate or post doctorate students). There must be a leader whose authority is clearly defined and understood by all and who is trained in the skills needed for fieldwork. A deputy must be appointed in case of injury to the leader.

Undergraduates planning to carry out independent fieldwork (e.g. for dissertation projects) should be aware that they must be accompanied by at least one other person for the duration of the fieldwork. Ideally, this should be a person who is covered by Trinity College Dublin, Public and Employer Liability Cover. If the accompanying person is not a member of staff or a student at TCD (e.g. a family member or friend), it is advised that they will not be covered by the above insurance policy and it is advised that they should make their own arrangements with regards insurance cover.

6.1 Independent Activity

It may be necessary for some activities to be undertaken alone, although this practice is generally not encouraged. Lone-working should only be undertaken when the option of having a co-worker is not achievable. Lone working is prohibited for undergraduate students. For more information on this topic see section 19. Lone Working on page 25.
7. Training and Skills

The skills required for outdoor fieldwork are varied and dependant on the activity involved. It is important that participants are adequately trained before or during the activity. No one should be asked to carry out tasks beyond their competence, ability or confidence. It is vital that Fieldwork Leaders have sufficient training and experience to lead activities and understand the limitations of all participants. Students should receive relevant training before embarking on fieldwork if this is required. It is recommended that at least one member of any group should hold a current certificate for Occupational First Aid or Rescue and Emergency Care.

Some examples of training that may be required for fieldwork in Geography are listed below:

- Wilderness training (First Aid, survival etc.)
- Handling dangerous substances
- Fire safety
- Physical fitness
- Lifting and carrying
- Navigation and map reading
- Use, care and maintenance of equipment
- Driving vehicles
- Boat handling/Sea craft
- Mountaineering/ Hill-walking
- Caving
- Diving
- Communications (radio)
- Collecting specimens
- Catering and hygiene

This is not an exclusive list. When organising your fieldwork you should consider what skills may be needed to effectively carry out your activities. Postgraduate students should discuss any training needs with their supervisor well in advance of the work going ahead.
8. Working in and Around Water

When working in or around water specific precautions must be taken. Casualties are often experienced field workers. The unpredictable nature of rivers, lakes and seas under the influence of other factors can very quickly lead to dangerous situations.

- Before any trip on or near water carry out a risk assessment to establish the associated risks. No work should be undertaken if there is any risk to your safety or that of others.
- Be familiar with the area and check water levels and tidal effects before any trip. Water clarity, floating debris and eddies should be taken into account.
- Check the weather forecast and don’t take any chances. Be aware that adverse weather conditions can impede your ability to assess tidal conditions. Wind is highly significant as it affects the condition of water and the buoyancy of floating items and can also contribute to hypothermia.
- Choose a safe access to the site with no erosion of riverbanks.
- Wear appropriate high visibility protective clothing, suitable for the task, time of year, weather and sea conditions. Always wear a life jacket on or near water. Try to stay warm and dry. Always wear appropriate footwear and headgear if necessary.
- Never work alone on or near water and always employ a “Buddy System”.
- Be familiar with rescue techniques and carry a First Aid Kit as well as an appropriate length of throw bag when near rivers.
- Be aware of the dangers associated with sinkholes, slippery surfaces silt and look for potentially hazardous areas.
- Be aware of contaminants in water often caused by floodwaters, which can possibly carry Hepatitis, Gastro Enteritis or Weil’s disease. There is always a risk of infection in these circumstances and all precautions should be taken to minimize these risks.
- If working from riverbanks or on a bridge be aware of passing traffic and pedestrians. Always maintain safe hand and foot holds while checking if the structure or bank can hold the weight to be used on it.
- Avoid wearing chest or thigh high waders in deep or fast flowing water as they are a potential drowning risk. Where possible, carry out all work in water no deeper than knee high and wear rubber boots or thigh high waders. If entering the water above this level wet or dry suits with a life jacket or floatation vest are the safest option.
- Be aware of any animals in or near the water that may cause a hazard.
- Be aware of the boundaries of private property on water courses and do not work on private land without first seeking permission.
- Checks should be made by the Fieldwork Leader to ascertain if participants will require specific training for any activities undertaken on or near water.
- Check if there is a way of seeking assistance if it is required in an emergency.
- Establishing a safe means of communication with fellow workers onshore is essential.
- An ability to swim at least 50m, fully clothed, when on or near water is advisable.
When working on or near water you should never;

- Wade into fast moving water
- Work in areas where flooding has occurred
- Work close to weirs
- Work in caves with flowing water.

Before working in water a survey of the depth, flow rate and underlying substrate should be carried out and always take account of;

- Tides,
- Weather
- Currents
- Temperature
- Underwater/unseen objects
- Depth and stability of substrate
- Sudden shelving

These are all potential hazards that must be assessed prior to any work being undertaken.

### 8.1 Boats and Watercraft

**Anyone in charge of a boat or watercraft should have appropriate training.**

- Be aware of safety and condition of the vessel
- Only leave a boat in conditions where it is safe to do so.
- Ensure there are a set of oars, anchor, neatly coiled rope, safety line and bailer on-board.
- Discuss the planned activity with the skipper in advance of the work taking place.
- Never permit smoking on boats or near fuel tanks and carry fuel in appropriate containers.
- No equipment needing a power supply or having internal voltage greater than 50 volts AC or DC should be used on small boats.
- A boat float plan should be lodged with a responsible person on shore before operating a small boat. It should include planned departure and return times, site of operation, P.I. on board, names of all on board, communication and safety equipment on board.
When using a hire boat ensure;

- The skipper has formal qualifications.
- The vessel is licensed to carry passengers if required.
- There is Public Liability Insurance.
- The vessel is well maintained and seaworthy including appropriate navigational lights and distress flares.
- Sufficient fuel is on-board for the journey.
- Everyone is wearing a suitable Personal Floatation Device (PFD) or life jacket (See links below for advice on the law concerning PFD’s/Lifejackets and suitability for your fieldwork)


- Radio and communications equipment is on-board.
- There are fire extinguishers on-board.
- The emergency procedures are explained to all.

When using a small boat:

- Assess weather and sea conditions including tidal and bottom conditions.
- Inspect the boat and equipment before the trip.
- Inform passengers of emergency procedures and any additional hazards.
- Inform passengers of the location of emergency equipment.
- Always file a float plan with a responsible person on land and check in on return.
- Always carry floatation devices, fire extinguisher and distress signal.
- The following are essential; Anchor and sufficient chain, bailer, oars, first aid kit, communication device, extra fuel, water, tool kit, sun protection, light, GPS.
- If the boat is to be used for diving special COPs for scuba activities should be consulted.
- When operating Rigid Inflatable Boats (RIBs), occupants should wear a PFD or lifejacket in addition to their wet/dry suit.
- The weight of persons and equipment on board must not jeopardize safety. The operator of the RIB must wear an engine kill cord when under way.

Small Boat Safety Checklist and Float Plan used by the Discipline of Geography/School of Natural Science are available from the Geography Homepage under Menu>Local
9. Transport

9.1 Walking and Hiking:

Fieldwork sites can be situated some distance from roads or tracks and walking or hiking is often the only accessible option. Fieldwork Leaders should assess the ability of the participants of any group where walking or hiking over distance is required, particularly if this will involve difficult or challenging terrain. Small groups or pairs of fieldworkers should also be confident that they have the skills and ability to cover the required distance and terrain before embarking on any journey. The following general points should be considered when planning any walking or hiking trips.

- Walking/hiking itineraries must be well planned, allowing for adequate time to accomplish objectives with particular reference to the return journey and daylight hours.
- Walkers/hikers must be appropriately dressed. Specific attention should be given to choices of foot-wear and weather appropriate/resistant clothing. Weather conditions at your destination may well be different to that of your start point, particularly if ascent to height is involved. Additional clothing should be carried if deemed necessary (see section 9).
- Essential safety and survival equipment must always be carried e.g. torches, first aid kit, emergency food supply, maps, whistles, survival bags, etc. Leaders must ensure participants have the knowledge and ability to use the equipment.
- Adequate supplies of food and drink must be taken, and regular breaks for food and rest should be planned and taken as appropriate. Always carry a small personal supply of food and water. Fieldwork Leaders should carry additional supplies of high energy food, e.g. dried fruit, nuts, etc. and water.
- The loads being carried must be suited to the physical ability of the participants. As a general rule, a backpack should weigh no ore that 20% of your body weight. If heavier loads or equipment is involved, this should be alternated between participants at regular intervals.
- In larger group situations, one experienced person should take the lead and one should take the rear to ensure the group is not split and no one is left behind. Rest breaks and small amounts of food and water should be taken at regular intervals if required. Over challenging terrain or in difficult weather conditions, Fieldwork Leaders should ensure that the whole group is accounted for at all times. If conditions become hazardous, the Fieldwork Leader should abandon the walk and return to base or to the nearest shelter.
- Anyone walking along roads at night or in poor visibility should wear reflective clothing and carry a rear light. Always walk on the side of the road with oncoming traffic (in Ireland; right hand side of road) and never with traffic approaching from behind. Stand off the road where possible in situations where it is safer to allow traffic to pass.
- Accurate weather forecasts for the duration of the journey should be obtained in advance.
9.2 Vehicles

Vehicles are often necessary for fieldwork; for transportation to and from sites or as a part of the fieldwork. They are the cause of a considerable number of accidents and fatalities during fieldwork worldwide. Accident prevention measures and good maintenance are essential when vehicles are used.

General points for all vehicles
- Any vehicle must be suitable for its intended use, adequately insured and operated by qualified and experienced persons only.
- All national or local laws and regulations pertaining to vehicle use; e.g. seatbelts, speed limits, safety equipment, must be adhered to.
- All safety regulations pertaining to vehicle use and any control measures from your risk assessment must be adhered to.
- Vehicles must be properly maintained throughout use.
- If considered unsafe for use, vehicles should not be used and repair or replacement should be arranged as soon as is possible.
- Any load carried must be safe and secure, within weight limitations and suitably packed.
- If dangerous substances are carried they must be safely packed in line with safety data sheet recommendations and have the correct safety warning signs clearly displayed.
- Ensure that any hire vehicle is adequately insured for your purpose before taking charge of it.

General points for boats
- Boat operators must be suitably qualified and familiar with the area where the fieldwork will be carried out.
- Life-jackets must be worn at all times.
- All on board must be able to swim (at least 50m fully clothed under normal conditions).
- Appropriate clothing must be worn.
- The boat should be fit for purpose and not exceed the limits for persons or weight.
- Essential safety equipment e.g. tool kit, flares, etc. should be carried.
- The Fieldwork Leader should be familiar with the fieldwork area
- Tidal and weather forecasts to be checked in advance and throughout for changes.
- All on board should be familiar with rescue procedures.

Public Transport
- Appropriate conduct and respect for other passengers should be observed at all times.
- Regulations put in place by the transport provider must be adhered to.
- If equipment is to be carried on public transport it should be suitably packaged and stored safely and securely. This should be organised in advance if required.
- Hazardous or dangerous items should not be carried on public transport. Such items should be transported by courier if required.
10. Equipment

- All equipment for fieldwork must be selected for its suitability to the required task and fit for purpose.
- All equipment must be safe to use and must adhere to appropriate standards where appropriate.
- All equipment should be thoroughly checked and tested by competent persons prior to use and specialist testing or servicing should be arranged if necessary e.g. life jackets, diving bottles etc.
- Essential items for First Aid and survival should be duplicated and carried by different members of the group.
- Equipment should be operated in a safe manner, by trained persons only and safety guards should be used where appropriate. People should be trained to use tools or equipment being used for fieldwork.
- Equipment, which has become contaminated by any source, must be decontaminated before use or before storage.
- Damaged equipment must be repaired or replaced and should not be used if it creates a potential hazard. All damage should be reported to the fieldtrip leader.

10.1 Electrical Equipment

- Equipment must have accessible and identifiable means of isolation.
- Equipment must be mechanically and reliably sound, and live terminals should be insulated.
- All batteries should be insulated.
- Any damaged cables must be replaced or repaired immediately.
- Equipment should not be operated in damp or wet conditions, unless designed for such use.
- Plugs, sockets, extension leads, etc. must comply with the set standards.
- Mains equipment used out of doors should be protected by earth leakage or circuit breakers and where possible operated at a reduced voltage of 110 volts.
11. Clothing and Personal Protective Equipment (PPE)

Always wear clothing appropriate for the expected conditions. Always check the weather forecast in advance. Being adequately protected from the elements is essential in order that you can concentrate on the job in hand without distraction. PPE may also be recommended or required as a part of the control measures of a risk assessment.

11.1 Standard clothing

You are responsible for providing your own standard clothing for fieldwork. The table below contains some suggestions of what to wear in certain conditions.

<table>
<thead>
<tr>
<th>Expected conditions</th>
<th>What to wear/carry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>Waterproof walking boots or robust rubber boots (avoid cheap or novelty rubber boots as they are not designed for walking on difficult terrain). Good quality, (Gore-Tex or similar) waterproof jacket, trousers, hat and gloves. Avoid wearing jeans – once wet they are difficult to dry.</td>
</tr>
<tr>
<td>Cold or wind chill</td>
<td>Layers of clothing rather than thick or bulky clothing. Always carry extra layers with you. Warm socks and footwear. Gloves, scarf, extra socks.</td>
</tr>
<tr>
<td>Direct sunlight</td>
<td>Sleeves and long trousers to protect arms and legs, shoes that completely cover the feet (not sandals), brimmed hat, sunblock, sunglasses.</td>
</tr>
</tbody>
</table>

Always be prepared for the conditions to change, especially at height where weather and temperature can change suddenly and dramatically. Always keep track of where you are. Do not reply on mobile phones, a signal may not be available. Carry a handheld GPS if possible and always carry a map of the area. Always carry a small personal supply of high energy food (nuts, dried fruit, protein bar etc.) and water. Always make sure there is a First Aid Kit available.

11.2 PPE

Where required, adequate and appropriate PPE, which is in good condition and fit for purpose, must be worn on fieldwork, particularly if listed as a control measure in the risk assessment. After use, PPE should be cleaned and repaired if necessary then stored away until next required. Any contaminated PPE or clothing (e.g. with sewage or from contaminated land) should be decontaminated or disposed of appropriately. Never bring or wear contaminated items indoors until it has been completely decontaminated.

Fieldwork Leaders are responsible for ensuring that all participants are appropriately dressed for fieldwork and that the required PPE is available in the correct quantities.

Most PPE you will need is available to borrow, free of charge, from the Discipline of Geography Technical Officers.
The table below lists some commonly used types of PPE and some examples of situations where you would be expected to use it.

<table>
<thead>
<tr>
<th>Type of PPE</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>High visibility outer clothing</td>
<td>In poor visibility or low light. When working near roads or traffic. When in contact with members of the public (to alert them that work is being carried out). To identify your co-workers.</td>
</tr>
<tr>
<td>Hard hats</td>
<td>To avoid any hazard that may cause a head injury, e.g. working near cliffs, working with equipment/machinery with moving parts, moving or handling heavy or large equipment etc.</td>
</tr>
<tr>
<td>Safety glasses or goggles</td>
<td>To protect the eyes from; hazardous chemicals, loose chippings from rock excavations, equipment/machinery with moving parts etc.</td>
</tr>
<tr>
<td>Life Jacket, Personal floatation device (PFD), wet or dry suit*</td>
<td>When on board a boat or when working in or near water.</td>
</tr>
<tr>
<td>Ear protection (mufflers or ear plugs)</td>
<td>When working with equipment that may damage hearing e.g., drills, chainsaws etc.</td>
</tr>
<tr>
<td>Protective footwear (hard toed, ankle support)</td>
<td>When work involves heavy equipment or loads, walking on difficult terrain.</td>
</tr>
<tr>
<td>Face mask or respirator</td>
<td>When working with dust, gasses or vapours from chemicals or from other sources.</td>
</tr>
<tr>
<td>Gloves</td>
<td>When handling hazardous materials or as protection against injury.</td>
</tr>
</tbody>
</table>

*It is advised against wearing chest high or thigh high waders when working in fast moving water or in calm water at significant depth. If either type is breached by water it can present a serious risk to your safety. Wet or dry suits are recommended for any work in or near water. If chest or thigh waders are to be used, only work in calm water at depth no greater than knee high.

For certain activities, e.g. caving, diving, mountaineering, specialist equipment may be required. Forward planning to ensure these items are available and any training in how to use them is essential and should be considered well in advance of the fieldwork commencement date.
12. Sampling

Ideally, you will have visited your site or have discussed your proposed fieldwork with someone who has prior knowledge of the site before the fieldwork begins. In this way, you will be able to carry out a comprehensive risk assessment of the work and be prepared for any hazards you may encounter. However, before any activities commence, you should re-examine the site for any hazards or difficulties you may have overlooked or that are present on the day due to weather or other changes at the site. Particular care should be taken where there are specific hazards present.

For example: Avalanche; Falling rocks or other objects; Caves; Mines; Derelict Buildings; Trenches; Military Ranges; Overhead Power Supplies; Traffic; Marshy or Boggy Ground; Quicksand; Tidal Hazards; Fire; Flood; Volcanic Activity; Dangerous Animals; Extreme Climatic Conditions, etc.

This is not an exclusive list and you should discuss any hazards you have identified or been made aware of with your supervisor, detail the hazard in your risk assessment and apply the necessary control measures. Some activities, e.g. diving, rock climbing etc., may need to be carried out by a suitably qualified person or you may need to receive appropriate training in advance.

The following points are worthy of note when sampling:

- Ensure that you have all of the equipment you will need before setting out on your fieldwork. This should be prepared well in advance in the form of a checklist that can be referenced before departure.
- Mudflats, saltmarsh, estuaries and coastal areas in general can be hazardous areas for fieldworkers and local knowledge is essential. Currents, tides and wave conditions must be assessed in advance.
- Where necessary, e.g. on roads, incoming tides, where animals are present, lookouts should be posted to convey any relevant safety information.
- When working on public or private roads adequate warning must be posted to alert traffic.
- Scaffolds and ladders must be of sound construction and checked regularly. They must be secured correctly prior to use by qualified persons.
- A suitably qualified person should be present to supervise the digging of excavations and trenches. These activities must be well planned in advance. Ensure that excavations and trenches are protected against collapse and inspected regularly. Sites should be cordoned off and appropriate warning signs displayed.
- Great care should be taken when visiting derelict buildings and ruins. Prior knowledge of the site is essential and the appropriate PPE must be worn.
- Quarries and mines present multiple hazards e.g. unstable rock faces, concealed shafts. Any site rules must be adhered to.
- Contact with potentially dangerous plants and animals should be avoided where possible.
- Always be alert to any sources of ignition during your fieldwork and ensure they are kept under control.
- Communications systems, where required, should be set up in advance and tested before activities begin.
13. Security

Crimes such as theft, vandalism and personal attack can occur while you are on fieldwork. Any hazards of this nature should be considered and should be included in your risk assessment. The local environment should be risk assessed for potential hazards of this nature and control measures put in place. Risk assessment of security is very much dependent on the environment. The hazards you may encounter when working in a rural environment will be different to that of an urban environment and you should make yourself familiar with the area you intend to work in with regards your security.

Some general points to consider:

- Avoid situations and places where you consider your security might be at risk
- Be aware; avoid excess alcohol or illegal drugs
- Avoid carrying large sums of money or personal belongings of value
- Be aware of local customs and laws and be respectful of them
- Keep valuables, including fieldwork equipment locked away and out of sight when not in use
- Make sure cars are parked in well-lit areas where possible and always keep doors locked
- Try to be in the company of someone you know at all times where possible

14. Leisure Time

During longer field trips, participants will have free time where they can plan their own leisure activities. It should be noted that while these periods are unsupervised, participants should be aware that they are still representing their school and the college and should conduct themselves in an appropriate manner.

The potential for accidents or incidents to occur during leisure time is significant. In unfamiliar surroundings there is the possibility that participants may become disorientated, become lost or find themselves in dangerous situations. When socialising excess alcohol and the use of illegal substances should be avoided as this can result in illness or injury, and can often put you in circumstances you may later regret. Participants should be aware of and abide by the rules and regulations of transport providers and of any accommodation where they are staying and be respectful to their hosts, locals and any others they come into contact with. Confrontation of any kind should be avoided and any concerns of any nature should be taken up as soon as possible with any of the Fieldwork Leaders. Care should be taken when participating in any activities such as swimming or sports. Any accidents, however minor, should be reported at once to any of the Fieldwork Leaders. Any form of unacceptable behaviour will be recorded and this may have implications for the continuation of your studies. The Fieldwork Leader may ask any participant to leave the Field Trip if it is considered that their behaviour is not of the standard required.
15. Catering and Hygiene

The Fieldwork Leader or organiser must aim to provide participants with a wholesome, balanced diet. If requested, options for dietary preferences must be made available. If self-catering is required, food must be prepared in a hygienic manner. All areas, rooms, kitchens, bathrooms and common areas must be kept clean and tidy. If required, rotas for cleaning and food preparation duties should be drawn up in advance.

Points worth noting with regard to catering and hygiene on fieldwork:

- Kitchens and food preparation areas should always be clean and tidy
- All fruit and vegetables should be washed and/or peeled if required
- Hands should be washed before handling or preparing food
- Anyone who has a cold or other infection should not be involved with food preparation
- People preparing food should be clean as should their clothing.
- Dishes, pots, pans and cutlery must be washed after every meal
- Food should be served and stored at safely (Cool: below 5°C, Hot: 70°C+).
- Food should never be cooked one day for consumption on the next unless properly stored.
- Waste food must be disposed of carefully and hygienically.
- Cookers, fridges, microwaves etc. must be safe, well maintained and clean.
- Care should be taken if gas cylinders are in use.
- Bathrooms must be maintained in a clean and hygienic condition.
16. Health Matters

During the course of any fieldwork, the health, safety and welfare of all participants should be a priority for all Fieldwork Leaders. Participants should be made aware of what is expected of them, physically and psychologically. All Participants should have completed a Health Questionnaire at least one week before the field trip is due to commence. This will advise if any assistance or specific procedures need to be put in place. Where possible, every effort will be made to accommodate all that are declared fit to take part. If you have any health issues before or during the fieldwork you should discuss this as soon as is possible with the Fieldwork leader.

Participants must be made aware of any relevant potential health hazards they may encounter during the course of the fieldwork, for example:

- Environmental: e.g. hypothermia, frostbite, sunburn, exhaustion
- Chemicals: naturally occurring or manufactured
- Pathogens: From contaminated land, sewage, animals
- Animals and plants: Bites, stings, toxins
- Food poisoning: Food hygiene, allergy
- Personal hygiene: Rashes, cross contamination
- Care of feet: Blisters, athlete’s foot
- For overseas fieldwork the Fieldwork Leader should advise if immunisation is needed and ensure that all participants are covered prior to departure.
- If remote areas are being visited outside of Ireland it is advisable to have a dental check prior to departure.
- In the event of injury or illness in the field, prompt First Aid assistance must be given. Any illness or injury treated with only First Aid should be monitored for some time afterwards. What may appear to be a routine injury or illness can, on occasion, become serious if not treated. If in doubt seek professional medical advice.
- Fieldwork Leaders and First Aiders should be alert to any signs or symptoms of illness in participants.
17. Emergencies

Fieldwork Leaders must compile details of local emergency services. In line with the risk assessment, reasonable foreseeable emergency plans should also be made. The Fieldwork Leader has a duty to ensure any casualty is removed to a safe place and receives immediate emergency First Aid. Professional medical assistance should be sought when required.

When planning your fieldwork you may wish to consider what emergency procedures should be in place. This may include;

- Communications to contact emergency services: radio, phone
- Provision of First Aid by a certified person
- Evacuation procedures if a casualty occurs
- Decontamination of casualty or equipment
- Liaison with police and rescue team
- Recording of accidents procedure

The level of emergency planning required will be dependent on the nature of the field work and you should consider this seriously when planning your field trip.

Fieldwork Leaders must be aware of their duties and responsibilities under the Health and Safety at Work Act 2005 and other relevant legislation.
18. Hazardous Substances

On fieldwork such substances should be handled with the same degree of care and safety as they would be in the laboratory. A Risk Assessment for Laboratory and Chemical Procedures should be completed along with your Fieldwork Risk Assessment. Emergency procedures should be considered and amended to suit the fieldwork environment. The method of transportation should also be taken into consideration.

If transporting chemicals for fieldwork or demonstration purposes, the following protocols should be followed:

- The transportation of chemicals should be avoided where possible.
- The use of hazardous chemicals in the field should be avoided where possible.
- The fieldtrip leader should have an inventory of any chemicals carried.
- Chemicals which are being transported should be kept out of sight e.g. in the boot of a car.
- Vehicles should be kept locked at all times when unattended.
- Chemicals should not be left in vehicles overnight.
- Transport the smallest amounts of chemicals possible.
- Use the bottles and outer packaging in which the chemicals were originally supplied or ensure any new bottles or packaging are secure and appropriately labelled in line with current legislation.
- Caps and stoppers on bottles should be securely fastened, and, if necessary, sealed with ‘Parafilm’ or adhesive tape.
- Bottles should be supported with bubble-wrap or similar packing material in a robust secondary container with a secured lid. The container should carry a label indicating the contents and any relevant hazard warnings.
- Pack all substances in a manner that will avoid spillage or breakage.
- Chemicals should be separated by hazard type. Incompatible chemicals e.g. acids and bases, oxidising and reducing agents, alkali metals and water/aqueous solutions and flammables should be in separate containers.
- The owner/user of the chemical or substance should be personally responsible for their loading and unloading and not delegate these tasks to others.
- If required relevant safety signage should be used on vehicles transporting chemicals.
19. Lone Working

Lone working is carried out on a greater scale than is perhaps realised. There is a need for practical guidance to assist Heads of Disciplines and supervisors to meet the demands of current legislation. **Lone working by employees and students should be discouraged as far as possible**, but it is recognised that in some situations it is not reasonably practicable to avoid it. Lone working should only be sanctioned by the HOD or Supervisor after a thorough risk assessment has been carried out taking into account the nature of the work, the hostility and location of the site, the qualification and experience of the worker, the climatic conditions and the ability of the worker to undertake the task in hand. **The supervisor must ensure that a safe system of work as far as is reasonably practicable is being employed in order to reduce the risks from foreseeable hazards to an acceptable level.**

In most cases the lone worker will be a postgraduate student who should be involved in the risk assessment, and the postgraduate must be made aware that they are still under supervision while in the field and have a responsibility to their supervisor back on campus who must take immediate responsibility for his/her safety.

The student must inform the supervisor or Discipline each time they go in the field as to the nature of their work, the hazards involved, and their estimated departure and return times. A system of communications must be put in place and rigidly adhered to so that failure to return can be acted upon within a reasonable time.

Students must be given clear guidelines by their supervisors with checking in arrangements and they must be trained in the use of equipment and techniques required. As well as the danger of personal injury, the possibility of exhaustion or hypothermia should be considered, although any such risk should come to light during the risk assessment. Lone working is generally prohibited in these types of situations.

Checks on lone workers must be made on a regular and planned basis. The frequency is dictated by the nature of the work and its likely hazards. Checks might take the form of periodic visits by the supervisor or regular phone communications.

Any system for lone working should meet the following criteria. **This applies to both students and staff in a lone working situation**

- All health and safety risks should be identified and assessed.
- Protective and preventative measures should be adequate to control the risk.
- The lone worker should be medically fit and competent to work alone.
- Training, instruction and information should be provided to ensure the lone worker fully understands the residual risks associated with the work, the precautions to be taken and how to respond to unplanned events.
- The monitoring system should provide adequate control of the work being undertaken.
- All accident data and incidents should be reported to the Discipline Safety Officer and action taken as required.

Lone working control measures, as outlined, should be regularly audited to ensure their effectiveness. Accident data and incident reports provide a useful indicator of the adequacy
of existing controls. Audits enable us to review existing control measures and to identify where changes are needed to maintain a safe working system.

Risk assessments should be reviewed when there is a reason to believe they are no longer valid. It is prudent to plan reviews at regular intervals, possibly yearly.

Approval forms and risk assessments for lone working can be found on the geography Homepage under Menu>Local and sign in with your TCD login details.