

## An inclusive risk assessment tool for travel and fieldwork

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### Abstract

Travel and fieldwork are integral to the geosciences, and it is usual for students, academics and professionals to need to assess the risks and hazards of a planned trip in advance. In the UK, health and safety law focusses on the idea of a “risk assessment” - a process by which hazards are identified and mitigations are planned to reduce the overall risk of the activity. A recent review of our risk assessment procedures highlighted the need to better consider the needs of a diverse community, including those with “protected characteristics” in UK law (these are: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation). We present our improved risk assessment forms and suggest some approaches to considering hazards and appropriate mitigations that particularly affect those people with protected characteristics. These include the need to consider how laws and attitudes, such as those towards women, or LGBT+ people, may affect the safety of participants. It is particularly important to address this in the geosciences, where fieldwork is frequently an integral part of teaching and learning activities.

### Introduction

A large part of the appeal of geosciences to both students and professionals alike is the scope it offers for travel and fieldwork. However, issues around personal safety and comfort when travelling or in the field do not affect everyone equally and have historically been used to exclude women and minorities from working in the field. In an extreme case, the British Antarctic Survey prohibited women from working in Antarctica until 1983 – Janet Thompson being the first [1]. The first women to spend the winter at its southernmost research station, Halley, were Kate Charles and Lucy Yeomans in 1996 [2]. There has been much discussion recently in the geoscience communities about good practice in making fieldwork inclusive and accessible to all [3]. We want to share a tool that we have devised to help to do this.

### Legal background

In the UK, where we are based, there are two important laws (“Acts of Parliament”) that must be complied with whilst at work. The first is the Health & Safety at Work Act 1974, which is the overarching framework for the UK’s laws on workplace safety. The second is the Equality Act 2010, which has a similar function for anti-discrimination and equality law, and is specifically derived from the European Convention on Human Rights. The Equality Act sets out nine “protected characteristics” where discrimination is forbidden by law in the UK. These are:

Characteristic	Example of banned discrimination
Age	Refusing someone a job because they are too young or too old.
Disability	Refusing to employ a disabled person if they could do the job with “reasonable accommodations”.
Gender reassignment	Humiliating a transgender person by making rude remarks about their appearance in a meeting.
Marriage and civil partnership	Dismissing a member of staff because they have got married (for younger readers, yes, this really used to happen regularly to young women! HSBC even used to make its male staff get permission from management before getting married).

Pregnancy and maternity	Dismissing a member of staff because they have become pregnant.
Race	Refusing to hire someone on the basis of their race.
Religion or belief	Requiring someone to break their religious beliefs – such as to eat during a period of fasting.
Sex	Insisting that female staff do the cooking on a field camp.
Sexual orientation	Mocking or ridiculing a lesbian, gay or bisexual student because of their sexual orientation.

Meanwhile, the Health & Safety at Work Act creates a general duty on employers and public bodies to look after the safety of their employees and members of the public who may be affected by their activities. However, the specific rules that must be followed are implemented by Regulations, which are regularly updated by government. One such set of Regulations is the Management of Health and Safety at Work Regulations 1999, which requires a process of “risk assessment”. This has become a very widely-understood process throughout the UK, because most people encounter it as part of their work, regardless of the type of work that they do.

The process of risk assessment is to assess the hazards (these are things that may cause harm) and then look at both the likelihood of a bad outcome and the severity of that outcome. The risk is assessed by combining the likelihood and the severity, so something that is both severe and likely to happen is considered to be a high risk. This is often done using a risk matrix, like the one below. The likelihood score is multiplied by the severity score to give a risk score.

#### Likelihood

<b>5</b>	Almost Certain	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>
<b>4</b>	Very Likely	<b>4</b>	<b>8</b>	<b>12</b>	<b>16</b>	<b>20</b>
<b>3</b>	Likely	<b>3</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>16</b>
<b>2</b>	Unlikely	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>
<b>1</b>	Very Unlikely	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
	<b>Severity</b>	No Injury / Illness	First Aid Required	Minor Injury	Major Injury	Death
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

The colours on the matrix relate to action thresholds (see below), which are used to indicate where mitigation measures are required, and where institutional safety policies may require additional authorisation if the risk cannot be reduced by mitigations. Risk matrices are not standardised and both the scales and the action thresholds vary between organisations.

Score once control measures have been implemented:	Action to be taken
0-5 <b>Low Risk</b>	No further action needed.
6-9 <b>Medium Risk</b>	Appropriate additional control measures should be explored and implemented. Where additional controls cannot be adopted to reduce the risk to 'low' then the risk assessment must be authorised by the relevant manager / supervisor.
10-25 <b>High Risk</b>	If all control measures have been implemented and the residual risk remains 'high' then the activities must be reviewed and authorised by Head of School / Director of Department.

The onus is then on the person assessing to take steps to reduce the risk, by changing the way the task is done, or by using processes or protective equipment to reduce either the likelihood or the severity of harm being done. For example, being vaccinated against yellow fever reduces the likelihood of getting the disease to very close to zero; whereas wearing a safety helmet reduces the severity of having something fall on your head.

This risk assessment process is often codified in a form, and many UK organisations require the submission of a risk assessment form as part of the process of seeking authorisation for an activity from management. In our School, risk assessment forms are required for travel abroad, and for all types of fieldwork. There is a particular form for assessing the risk of fieldwork with students. The form acts as a useful prompt or thinking tool, reminding the person using it of the potential hazards that may be encountered.

In a recent revision of the School's processes, it was decided to revise the forms so that they specifically mention the nine "protected characteristics", because there may be additional hazards that affect only some groups of people. We found this to be a valuable tool to aid our thinking and planning. Leaving aside the legal specifics that apply in the UK, the principle of assessing risk and planning how best to mitigate it is a good one for any trip leader.

Our example form is in the Appendix.

### How to approach risk assessment for travel and fieldwork

It's not always possible to know in advance that your colleagues/students have particular protected characteristics, so try and think around the issues yourself during the planning phase. Think carefully about local laws, culture and attitudes in the place you intend to visit. Are there expectations around how people dress and behave? If this fieldwork forms part of your teaching, you need to take extra care to ensure that it is inclusive of all your students. Ask colleagues to help you – they may well have a different perspective. Don't just see the form as a frustrating piece of admin – it's a tool to help you think and plan ahead.

The basic principles:

- **Understand** the local laws and customs at your destination
- **Consult** with colleagues who have different perspectives from yourself
- **Plan** how you will mitigate the risks
- **Communicate** your plan to the rest of the trip party, and listen to any concerns

In countries where there is a greater risk to your party, hiring a local guide or "fixer" is highly valuable. They can speak the language, deal with officials, arrange suitable accommodation and transport and help you manage local cultural issues.

Some specific advice by characteristic:

### **Age**

Age restrictions for smoking and the consumption of alcohol and other drugs vary considerably by country, notably between Europe and the Americas. If you have students with you, they may find that their legal status is drastically different from at home, so brief them well and be prepared for the fallout.

### **Disability**

Much has already been written on the subject of making fieldwork accessible for geoscientists with disabilities, particularly for students where fieldwork forms a key part of their assessment [4]. It is important to bear in mind that not all disabilities are visible – be accommodating of those who need extra rest time or other accommodations to manage their conditions.

Not all countries have general anti-discrimination laws – so you may find that hotels are unable or unwilling to accommodate guests with disabilities, particularly wheelchair users. For example, Japan only introduced a law requiring new hotels to provide for disabled guests in 2018, so many older hotels remain inaccessible.

### **Gender reassignment**

Single-sex dormitories are a traditional form of cheap accommodation for student trips, but there is a need to be sensitive around how a trans person may be perceived by others (either other guests or staff) in a single-sex environment. In many cases it causes no issue, but take advice from your organisation's LGBT network. Issues for trans people in academia in general are helpfully outlined in [5].

### **Marriage and civil partnership**

Be aware that local men's attitudes to single women in many countries (including those with sex equality laws!) may put women at risk in bars, restaurants and public places.

### **Pregnancy and maternity**

If someone on your trip is pregnant, they know best how to manage themselves, but be prepared to offer extra support if required – particularly with toilet stops and access to medication. Bear in mind that rural areas can have poor mobile phone coverage, so make plans for raising the alarm if anyone requires urgent medical attention (not just for pregnancy, but for any condition).

The Swedish firm Blåkläder [6] and the British firm Leo Workwear [7] both make protective clothing (including high visibility) suitable for wearing during pregnancy. Alternatively, it is possible to expand an existing waterproof jacket with a zip-in waterproof panel, such as the one made by Zip Us In [8].

### **Race**

Make yourself aware of prevailing racial prejudices at your destination. You may get stared at or hassled because of your race. In many countries (including in Europe) Black people may be disproportionately likely to be targeted by local police or security guards. In some cases (notably in rural South Africa) we have found it necessary to write to landowners in advance, advising them that a party of Black students will be working close to their land, so as to head off any risk of students being threatened or even attacked. Geosciences have a particularly poor record on racial diversity [9], so we should make every effort to ensure that people of colour feel safe and included in all aspects of our work.

### **Religion or belief**

Religion and culture are very tightly intertwined, so doing your homework on the local situation is essential. If you visit places of worship, there are often dress and behaviour codes to follow. Be aware of locations where there are religious or sectarian tensions: even the colour of your clothing may make you a target for abuse from one side or the other (for example, wearing orange on St Patrick's Day is a political statement that you should not make unwittingly). Likewise, you should allow for colleagues and students who want to make religious observances or who have particular dietary restrictions arising from their beliefs. Philosophical beliefs are also part of this law, so you need to make provision for vegetarians and vegans.

## **Sex**

Practical measures can be taken to ensure that everyone has a good experience in the field. In particular, we recommend reading this guide to the importance of planning for toilet stops on field trips [10]. A “bothy bag” – an inexpensive packable emergency shelter, like a tent with no frame and no groundsheet [11] – can provide privacy and protection from the elements for toilet stops if nothing better is available. Personal protective equipment (such as safety helmets, cold weather clothing and the like) is often designed primarily for men, and so care should be taken to provide appropriate sizes and shapes to suit everyone.

Local customs around dress affect everyone: a requirement for “modest dress” (long sleeves and covered legs) often applies in and around places of worship - this notably applies to men when visiting churches in Italy. Likewise, British men are not used to having rules affect what they wear, so the French custom of banning baggy swimming shorts in swimming pools often provokes a reaction!

## **Sexual orientation**

Attitudes towards sexual orientation vary from “couldn’t care less” to “capital punishment” depending on local laws and attitudes. We recommend the use of the ILGA map (<https://ilga.org/maps-sexual-orientation-laws>) to familiarise yourself with laws on sexual orientation. However, the ILGA map only tells you the letter of the law, which is often at odds with local customs. Sometimes, as in Singapore, anti-LGBT laws are in place but rarely enforced. In other cases, the law grants protection on paper but society still discriminates without enforcement. Countries are not homogenous: pay close attention to countries where laws vary by region (Indonesia is one example). Think carefully before planning a trip to a country coloured red or dark red on the ILGA map, especially if you are planning to bring students with you. Is it really necessary to travel somewhere where your LGBT colleagues will feel unsafe? If it is, take extra precautions and stay in a trusted venue. A premium, name-brand hotel is less likely to call the police on you than a family-run guesthouse, and private rentals (e.g. AirBnB or similar) should be avoided unless you know and trust the owner. Remember the risk calculation: capital punishment is the most severe outcome, so you need to make every attempt to reduce the likelihood in order to reduce the risk.

## **Conclusion**

Risk assessment is a useful technique for planning any kind of activity, including travel and fieldwork. Risks are not necessarily the same for everyone in your group, so it is valuable to think about how these may vary based on characteristics such as age, disability, gender identity, marital status, pregnancy/maternity, race, religion/belief, sex and sexual orientation. Planning ahead will help to ensure that you have an enjoyable and safe trip.

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## Appendix - Example risk assessment

Category	Associated problems (note these are examples, not a prescriptive list)	Risk level before mitigations	Mitigations - measures you are taking to reduce risk
<b>Crime</b>	street crime, local scams, theft, hotel room security		
<b>Terrorism</b>	bombings, security alerts, terror attacks		
<b>Conflict</b>	localised tensions or fighting that could result in outbreak of hostilities		
<b>Political</b>	civil unrest, strikes, riots, political demonstrations, upcoming elections or significant events		
<b>Kidnap</b>	abduction/kidnapping		
<b>Infrastructure:</b> Transportation	airport collection, local driving standards, hazardous terrain, roadworthiness, safety belts		
Medical capabilities	hospital proximity and standards, methods of payment for treatment, access to local doctor		
Contaminated food	allergies, Hepatitis A, dysentery/diarrhoea, severe stomach upset		
Contaminated water & Drinking water	dysentery/diarrhoea, legionella, leptospirosis, polio, cholera, typhoid		
Utilities	compatibility of equipment, voltage, safety standards, power cuts		
<b>Natural Risks:</b> Climate conditions	extreme heat or cold, high humidity, monsoon /storms, altitude		
Natural disasters	typhoon, tornado, tsunami, avalanche, earthquake, flood		
Contact – with insects etc	bites/stings, Lyme’s disease, malaria, yellow fever		

Contact – with animals	allergies, asthma, bird flu, bites, dermatitis, rabies, stings		
<b>Cultural Risks:</b> Local culture	customs, dress, religion, behaviour		
Legal differences	local codes/guidance, local statute		
<b>Attitude towards Protected Characteristics:</b>	LGBTQ, age, disability, sex, race, marriage and civil partnership, pregnancy and maternity, religion or belief.		
<b>Hazardous Activities:</b> Activities	Skiing, white water rafting, bungee jumping, diving etc.		
Hazardous substances/chemicals	usage, available antidotes, transport requirements, spillage		
Field work/research *****	permits to work, safe systems, tides and water conditions, medical back-up, remoteness of work site, lab hazards		
<b>Other:</b>	any unusual risks, or risks specific to this trip and associated activities		